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KENNAMETAL®

FIRST CHOICE KEEPS YOU RUNNING

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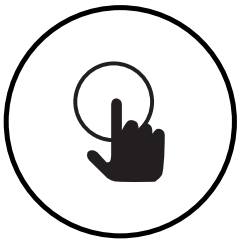
KENNAMETAL

FIRST CHOICE

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

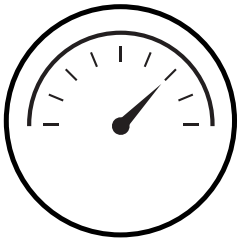
Easy to select, easy to order, easy to apply.

Whether you browse through the catalog 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 before 6pm (EST) are shipped the same day.



Premium Performance

Do more with less.

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

Premium Support

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

Need assistance with tool selection and performance optimization?

No problem, call our customer application support (CAS) today at 1 800 835 3668.

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
North America	**USA** **Mexico**	English Spanish	800 835 3668 1800 253 0758	na.techsupport@kennametal.com na.techsupport@kennametal.com

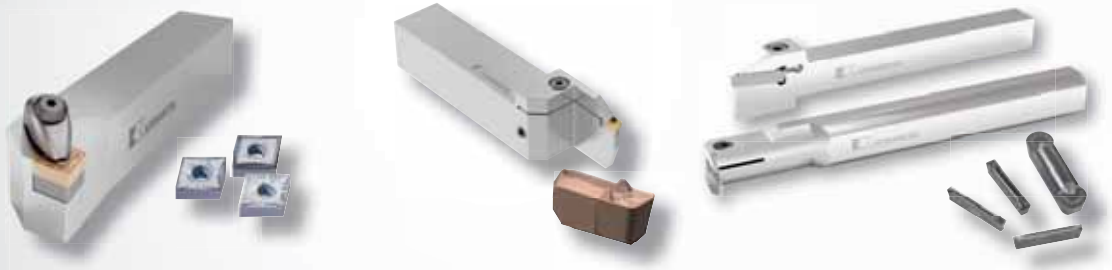
Numbers shown only serve the originating country listed.

Service & Sales Centers Around the World

Region	Country	Sales Hotline	Email
North America	**United States** **Canada** **Mexico**	+1 800 446 7738 +1 800 446 7738 +1 888 402 4963	FtMill.Service@kennametal.com toronto.service@kennametal.com k-mx.service@kennametal.com
Central/South America	**Argentina** **Brazil** **Chile**	+54 11 4719 0700 +55 19 3936 9200 +56 2 2264 1177	buenos-aires.ventas@kennametal.com bra.marketing@kennametal.com kennametalchile@kennametalchile.cl

Visit kennametal.com to find local Authorized Kennametal Distributors.

ISO Turning, Grooving, Cut-Off

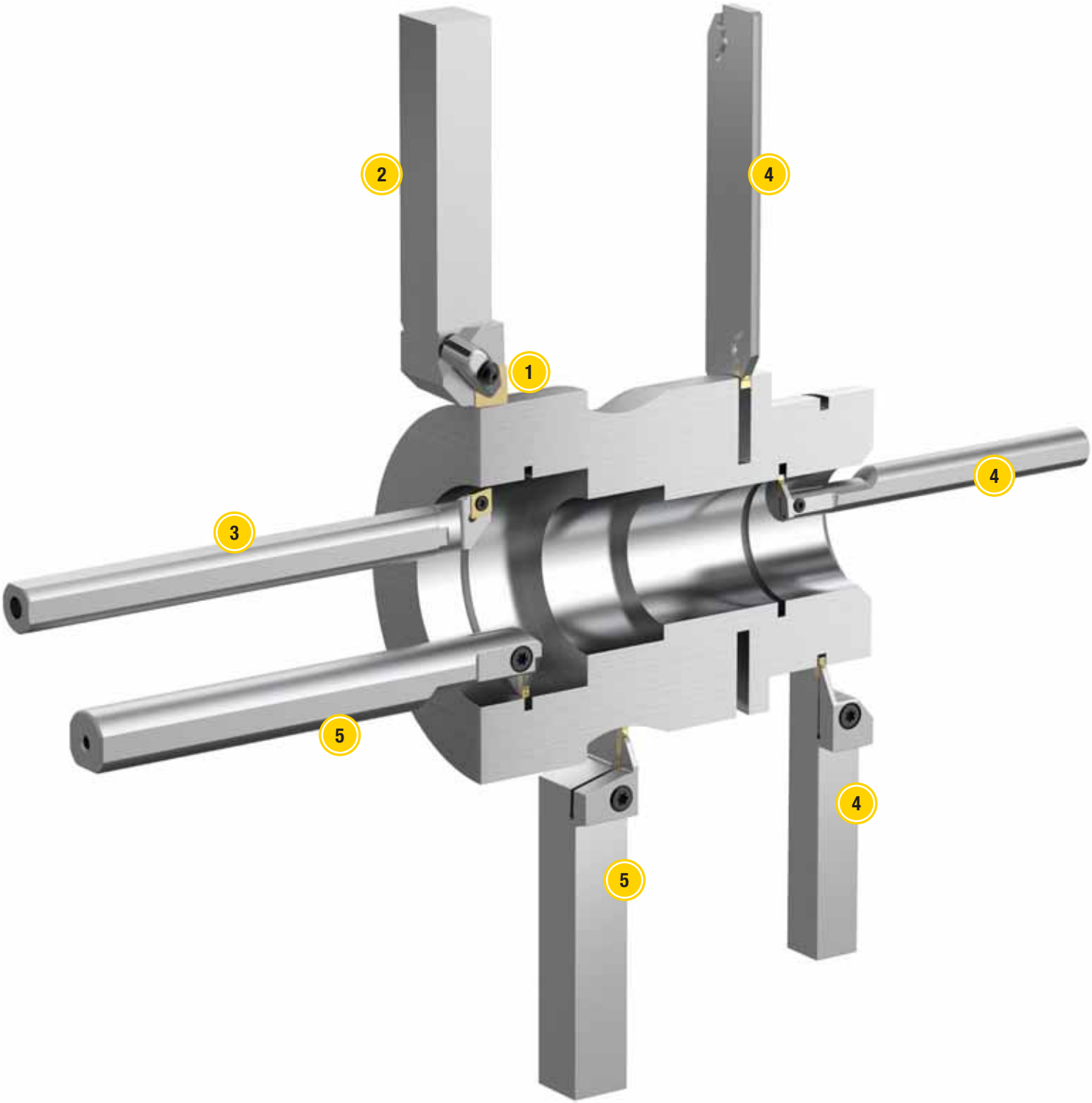


Indexable Milling and Solid End Milling

Holemaking and Tapping

Tooling Systems

Turning



Turning

ISO/ANSI Turning

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ISO/ANSI 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.

Features and Benefits

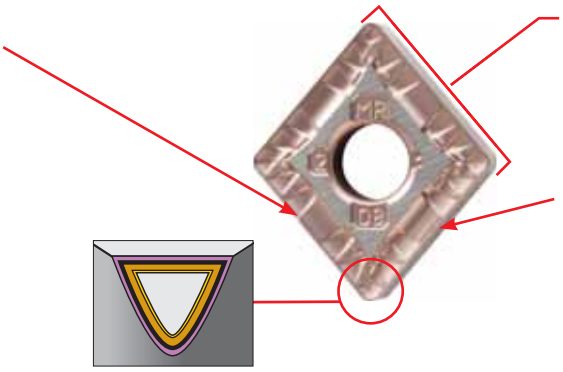
Beyond™ Drive™ Inserts • Technology Details

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/Al_2O_3/TiOCN

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 pages E8–E9 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:

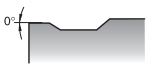
- Smooth cut, pre-turned surface.
- Varying depths of cut, casting or forging skin.
- Lightly interrupted cut.
- Heavily interrupted cut.

Turning Inserts • Carbide

Steel • Medium Machining

KENNAMETAL

MN



cutting conditions				
cutting speed (SFM) range	P0/P1	460 **1300** 1480	440 **900** 1180	425 **690** 790
	P2	590 **870** 1150	440 **640** 1150	425 **490** 755
	P3	555 **625** 820	440 **510** 755	330 **395** 560
	P4	295 **475** 655	230 **345** 590	165 **310** 460
carbide grade		KCP10B	KCP25B	KCP40B

ISO catalog number	ANSI catalog number	KCP10B	KCP25B	KCP40B	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
CNMG090304MN	CNMG321MN	–	5694080	–	9,67	.381	0,4	1/64	.011	**.031**	.098	.004	**.007**	.009
CNMG090308MN	CNMG322MN	5697917	5694081	–	9,67	.381	0,8	1/32	.019	**.051**	.137	.005	**.013**	.019
CNMG120404MN	CNMG431MN	5697921	5694082	5591773	12,90	.508	0,4	1/64	.011	**.031**	.137	.004	**.007**	.009
CNMG120408MN	CNMG432MN	5388036	5387662	5596457	12,90	.508	0,8	1/32	.019	**.051**	.177	.005	**.013**	.019
CNMG120412MN	CNMG433MN	5388061	5387667	5591716	12,90	.508	1,2	3/64	.027	**.074**	.197	.006	**.015**	.021
CNMG120416MN	CNMG434MN	5697929	5694085	–	12,90	.508	1,6	1/16	.035	**.094**	.197	.011	**.019**	.023
CNMG160608MN	CNMG542MN	5697931	5694086	–	16,12	.635	0,8	1/32	.019	**.051**	.216	.005	**.013**	.019

Select preferred insert style, size, and corner radius.

Insert order code.

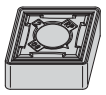
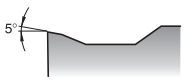
Material-specific surface speed.

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 (SFM) range	P0/P1	460 **1300** 1480	440 **900** 1180	425 **690** 790
	P2	590 **870** 1150	440 **640** 1150	425 **490** 755
	P3	555 **625** 820	440 **510** 755	330 **395** 560
	P4	295 **475** 655	230 **345** 590	165 **310** 460
	P5	490 **705** 985	395 **640** 885	360 **440** 490
	P6	360 **590** 885	345 **490** 720	260 **345** 460
carbide grade		KCP10B	KCP25B	KCP40B

RP

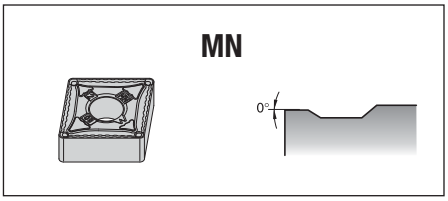



ISO catalog number	ANSI catalog number	KCP10B	KCP25B	KCP40B	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
CNMG120404RP	CNMG431RP	–	5694083	–	12,90	.508	0,4	1/64	.023	**.070**	.137	.007	**.011**	.015
CNMG120408RP	CNMG432RP	5388039	5387665	–	12,90	.508	0,8	1/32	.039	**.114**	.177	.007	**.017**	.023
CNMG120412RP	CNMG433RP	5413174	5413175	5886541	12,90	.508	1,2	3/64	.047	**.137**	.197	.008	**.019**	.025
CNMG120416RP	CNMG434RP	5413176	5413177	–	12,90	.508	1,6	1/16	.055	**.161**	.197	.009	**.019**	.027
CNMG160608RP	CNMG542RP	–	5694088	–	16,12	.635	0,8	1/32	.039	**.114**	.275	.007	**.017**	.023
CNMG160612RP	CNMG543RP	5413180	5413181	5886542	16,12	.635	1,2	3/64	.047	**.137**	.275	.008	**.019**	.025
CNMG160616RP	CNMG544RP	5413182	5413183	–	16,12	.635	1,6	1/16	.055	**.161**	.315	.009	**.019**	.027
CNMG190612RP	CNMG643RP	5697939	5694092	5591971	19,34	.762	1,2	3/64	.047	**.137**	.354	.008	**.019**	.027
CNMG190616RP	CNMG644RP	–	5694093	–	19,34	.762	1,6	1/16	.055	**.161**	.354	.009	**.023**	.031
DNMG110408RP	DNMG332RP	–	5694108	–	11,63	.458	0,8	1/32	.039	**.094**	.157	.007	**.015**	.019
DNMG110412RP	DNMG333RP	–	5694109	–	11,63	.458	1,2	3/64	.047	**.114**	.157	.008	**.015**	.021
DNMG150408RP	DNMG432RP	5697968	5694121	–	15,50	.610	0,8	1/32	.039	**.094**	.197	.007	**.017**	.023
DNMG150412RP	DNMG433RP	5413195	5413196	–	15,50	.610	1,2	3/64	.047	**.114**	.197	.008	**.019**	.025
DNMG150608RP	DNMG442RP	5413197	5413198	–	15,50	.610	0,8	1/32	.039	**.094**	.197	.007	**.017**	.023
DNMG150612RP	DNMG443RP	5413202	5387543	–	15,50	.610	1,2	3/64	.047	**.114**	.197	.008	**.019**	.025
DNMG150616RP	DNMG444RP	5387851	5387545	–	15,50	.610	1,6	1/16	.055	**.133**	.197	.009	**.019**	.027
SNMG120408RP	SNMG432RP	–	5631151	–	12,70	.500	0,8	1/32	.039	**.114**	.236	.007	**.017**	.023
SNMG120412RP	SNMG433RP	5387874	5387563	–	12,70	.500	1,2	3/64	.047	**.137**	.236	.008	**.019**	.025
SNMG150612RP	SNMG543RP	5387882	5387567	–	15,88	.625	1,2	3/64	.047	**.137**	.275	.008	**.021**	.029
SNMG150616RP	SNMG544RP	5697163	–	–	15,88	.625	1,6	1/16	.055	**.161**	.275	.009	**.023**	.031
SNMG190612RP	SNMG643RP	–	5698113	5886544	19,05	.750	1,2	3/64	.047	**.137**	.354	.008	**.023**	.033
TNMG160408RP	TNMG332RP	5697030	5698189	–	16,50	.650	0,8	1/32	.039	**.114**	.236	.007	**.017**	.023
TNMG160412RP	TNMG333RP	5387896	5387575	–	16,50	.650	1,2	3/64	.047	**.137**	.236	.008	**.019**	.025
TNMG220408RP	TNMG432RP	5697178	5698131	5886545	22,00	.866	0,8	1/32	.039	**.114**	.295	.007	**.017**	.025
TNMG220412RP	TNMG433RP	–	5698135	–	22,00	.866	1,2	3/64	.047	**.137**	.295	.008	**.019**	.027
TNMG220416RP	TNMG434RP	–	5387577	–	22,00	.866	1,6	1/16	.055	**.161**	.295	.009	**.021**	.029
TNMG220432RP	TNMG438RP	5387901	5698136	–	22,00	.866	3,2	1/8	.094	**.275**	.295	.011	**.025**	.035
TNMG330924RP	TNMG666RP	–	–	5591974	33,00	1.299	2,4	3/32	.078	**.228**	.512	.011	**.025**	.035
WNMG060408RP	WNMG332RP	5697203	–	–	6,52	.257	0,8	1/32	.039	**.114**	.157	.007	**.015**	.019
WNMG080408RP	WNMG432RP	5387915	5413206	5591972	8,69	.342	0,8	1/32	.039	**.114**	.197	.007	**.017**	.023
WNMG080412RP	WNMG433RP	5387919	5413207	–	8,69	.342	1,2	3/64	.047	**.137**	.197	.008	**.019**	.025
WNMG080416RP	WNMG434RP	–	5413208	–	8,69	.342	1,6	1/16	.055	**.161**	.197	.009	**.019**	.027

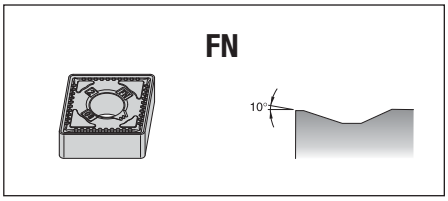
A30

A35

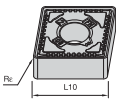
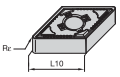
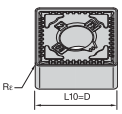
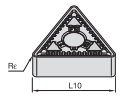
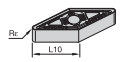
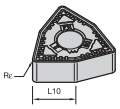
A46

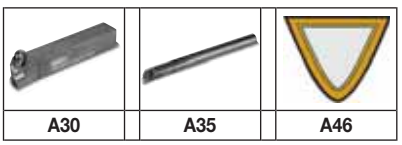


| cutting conditions | | |



cutting conditions								
cutting speed (SFM) range	P0/P1	460	**1300**	1480	440	**900**	1180
	P2	590	**870**	1150	440	**640**	1150
	P3	555	**625**	820	440	**510**	755
	P4	295	**475**	655	230	**345**	590
carbide grade			**KCP10B**			**KCP25B**	

	ISO catalog number	ANSI catalog number	KCP10B	KCP25B	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CNMG090308FN**	**CNMG322FN**	**5523306**	**–**	9,67	.381	0,8	1/32	.015	**.039**	.078	.003	**.007**	.011
	CNMG120404FN	**CNMG431FN**	**5531836**	**5531838**	12,90	.508	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	CNMG120408FN	**CNMG432FN**	**5531839**	**5531890**	12,90	.508	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011
	CNMG120412FN	**CNMG433FN**	**5531894**	**5531893**	12,90	.508	1,2	3/64	.019	**.047**	.118	.004	**.007**	.011
	**DNMG110404FN**	**DNMG331FN**	**5531896**	**5698171**	11,63	.458	0,4	1/64	.007	**.019**	.059	.003	**.005**	.009
	DNMG110408FN	**DNMG332FN**	**5697020**	**5531897**	11,63	.458	0,8	1/32	.015	**.039**	.078	.003	**.007**	.011
	DNMG110412FN	**DNMG333FN**	**5544755**	**–**	11,63	.458	1,2	3/64	.019	**.047**	.098	.004	**.007**	.011
	DNMG150404FN	**DNMG431FN**	**5697021**	**5531899**	15,50	.610	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	DNMG150408FN	**DNMG432FN**	**5531900**	**5698172**	15,50	.610	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011
	DNMG150412FN	**DNMG433FN**	**5697023**	**–**	15,50	.610	1,2	3/64	.019	**.047**	.118	.004	**.007**	.011
	DNMG150604FN	**DNMG441FN**	**5531901**	**5531903**	15,50	.610	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	DNMG150608FN	**DNMG442FN**	**5388116**	**5531906**	15,50	.610	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011
	DNMG150612FN	**DNMG443FN**	**5531908**	**–**	15,50	.610	1,2	3/64	.019	**.047**	.118	.004	**.007**	.011
	**SNMG120404FN**	**SNMG431FN**	**5531910**	**–**	12,70	.500	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	SNMG120408FN	**SNMG432FN**	**5697027**	**–**	12,70	.500	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011
	**TNMG160404FN**	**TNMG331FN**	**5697029**	**5698187**	16,50	.650	0,4	1/64	.007	**.019**	.098	.003	**.005**	.009
	TNMG160408FN	**TNMG332FN**	**5413249**	**5698188**	16,50	.650	0,8	1/32	.015	**.039**	.118	.003	**.007**	.011
	TNMG160412FN	**TNMG333FN**	**5413251**	**–**	16,50	.650	1,2	3/64	.019	**.047**	.137	.004	**.007**	.011
	TNMG220408FN	**TNMG432FN**	**5507610**	**–**	22,00	.866	0,8	1/32	.015	**.039**	.137	.003	**.007**	.011
	**VNMG160404FN**	**VNMG331FN**	**5697035**	**5698197**	16,61	.654	0,4	1/64	.007	**.015**	.078	.003	**.005**	.009
	VNMG160408FN	**VNMG332FN**	**5615609**	**5615650**	16,61	.654	0,8	1/32	.011	**.023**	.098	.003	**.007**	.011
	**WNMG080404FN**	**WNMG431FN**	**5697036**	**5698198**	8,69	.342	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	WNMG080408FN	**WNMG432FN**	**5697037**	**5698199**	8,69	.342	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011



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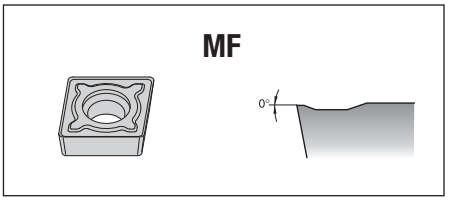
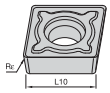
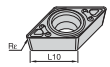
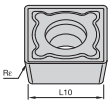
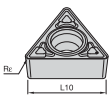


cutting conditions								
cutting speed (SFM) range	P0/P1	460	**1300**	1480	440	**900**	1180
	P2	590	**870**	1150	440	**640**	1150
	P3	555	**625**	820	440	**510**	755
	P4	295	**475**	655	230	**345**	590
	P5	490	**705**	985	395	**640**	885
	P6	360	**590**	885	345	**490**	720
carbide grade			**KCP10B**			**KCP25B**	

	ISO catalog number	ANSI catalog number	KCP10B	KCP25B	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CCMT060204MF**	**CCMT2151MF**	**5697910**	**5694055**	6,45	.254	0,4	1/64	.019	**.047**	.070	.003	**.007**	.009
	CCMT09T304MF	**CCMT3251MF**	**5697912**	**5694058**	9,67	.381	0,4	1/64	.019	**.047**	.078	.004	**.007**	.011
	CCMT09T308MF	**CCMT3252MF**	**5388033**	**5387629**	9,67	.381	0,8	1/32	.031	**.074**	.098	.005	**.009**	.013
	CCMT09T312MF	**CCMT3253MF**	**–**	**5413170**	9,67	.381	1,2	3/64	.039	**.090**	.118	.007	**.011**	.015
	CCMT120408MF	**CCMT432MF**	**5388035**	**5387661**	12,90	.508	0,8	1/32	.031	**.074**	.137	.005	**.009**	.013
	CCMT120412MF	**CCMT433MF**	**–**	**5694059**	12,90	.508	1,2	3/64	.039	**.090**	.157	.007	**.011**	.015
	**DCMT11T304MF**	**DCMT3251MF**	**5697956**	**5694103**	11,63	.458	0,4	1/64	.019	**.043**	.070	.003	**.005**	.007
	DCMT11T308MF	**DCMT3252MF**	**5413190**	**5413191**	11,63	.458	0,8	1/32	.031	**.070**	.090	.004	**.007**	.009
	DCMT11T312MF	**DCMT3253MF**	**5388097**	**5387729**	11,63	.458	1,2	3/64	.039	**.086**	.098	.005	**.009**	.011
	**SCMT09T308MF**	**SCMT3252MF**	**5387858**	**5387553**	9,53	.375	0,8	1/32	.031	**.078**	.098	.005	**.009**	.013
	SCMT09T312MF	**SCMT3253MF**	**–**	**5387555**	9,52	.375	1,2	3/64	.039	**.098**	.118	.007	**.011**	.015
	SCMT120408MF	**SCMT432MF**	**–**	**5387557**	12,70	.500	0,8	1/32	.031	**.078**	.137	.005	**.009**	.013
	SCMT120412MF	**SCMT433MF**	**–**	**5387559**	12,70	.500	1,2	3/64	.039	**.098**	.157	.007	**.011**	.015
	**TCMT110208MF**	**TCMT2152MF**	**–**	**5698119**	11,00	.433	0,8	1/32	.031	**.074**	.078	.003	**.007**	.011
	TCMT16T308MF	**TCMT3252MF**	**–**	**5698122**	16,50	.650	0,8	1/32	.031	**.074**	.118	.005	**.009**	.011
	TCMT16T312MF	**TCMT3253MF**	**–**	**5698123**	16,50	.650	1,2	3/64	.039	**.090**	.137	.007	**.011**	.013

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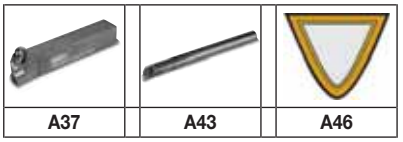
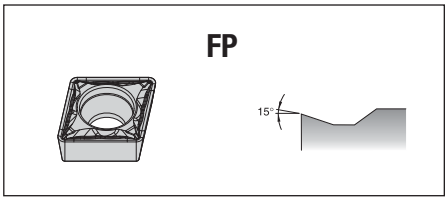
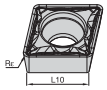
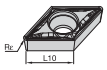
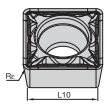
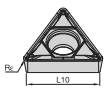

A37 A43 A46



cutting conditions								
cutting speed (SFM) range	P0/P1	460	**1300**	1480	440	**900**	1180
	P2	590	**870**	1150	440	**640**	1150
	P3	555	**625**	820	440	**510**	755
	P4	295	**475**	655	230	**345**	590
	P5	490	**705**	985	395	**640**	885
	P6	360	**590**	885	345	**490**	720
carbide grade		KCP10B			KCP25B		

	ISO catalog number	ANSI catalog number	KCP10B	KCP25B	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	CCMT060204FP	CCMT2151FP	5537375	5537376	6,45	.254	0,4	1/64	.007	**.019**	.063	.002	**.005**	.007
	CCMT060208FP	CCMT2152FP	–	5537378	6,45	.254	0,8	1/32	.015	**.035**	.078	.003	**.007**	.009
	CCMT09T302FP	CCMT32505FP	–	5537379	9,67	.381	0,2	.008	.006	**.015**	.039	.002	**.003**	.004
	CCMT09T304FP	CCMT3251FP	5537420	5537421	9,67	.381	0,4	1/64	.007	**.019**	.063	.002	**.005**	.007
	CCMT09T308FP	CCMT3252FP	5537422	5537423	9,67	.381	0,8	1/32	.015	**.035**	.078	.003	**.007**	.009
	CCMT120404FP	CCMT431FP	5537425	5537426	12,90	.508	0,4	1/64	.007	**.019**	.078	.002	**.005**	.009
	CCMT120408FP	CCMT432FP	–	5537427	12,90	.508	0,8	1/32	.015	**.035**	.118	.003	**.007**	.011
	DCMT070202FP	DCMT21505FP	–	5537436	7,75	.305	0,2	.008	.006	**.015**	.039	.002	**.003**	.004
	DCMT070208FP	DCMT2152FP	–	5537437	7,75	.305	0,8	1/32	.015	**.035**	.078	.003	**.007**	.009
	DCMT11T302FP	DCMT32505FP	5537439	5537438	11,63	.458	0,2	.008	.006	**.015**	.039	.002	**.003**	.004
	DCMT11T304FP	DCMT3251FP	5537442	5537443	11,63	.458	0,4	1/64	.007	**.019**	.063	.002	**.005**	.007
	DCMT11T308FP	DCMT3252FP	5538858	–	11,63	.458	0,8	1/32	.015	**.035**	.078	.003	**.007**	.009
	SCMT09T308FP	SCMT3252FP	–	5387551	9,53	.375	0,8	1/32	.015	**.039**	.078	.003	**.007**	.009
	SCMT120408FP	SCMT432FP	–	5387556	12,70	.500	0,8	1/32	.015	**.039**	.118	.003	**.007**	.011
	TCMT090204FP	TCMT18151FP	–	5538891	9,63	.379	0,4	1/64	.007	**.019**	.063	.002	**.003**	.005
	TCMT110304FP	TCMT221FP	5538894	–	11,00	.433	0,4	1/64	.007	**.019**	.078	.002	**.005**	.007
	VBMT160404FP	VBMT331FP	5387907	5387584	16,61	.654	0,4	1/64	.007	**.015**	.078	.002	**.005**	.007
	VBMT160408FP	VBMT332FP	5538903	5538904	16,61	.654	0,8	1/32	.015	**.031**	.098	.003	**.007**	.011
	VBMT160412FP	VBMT333FP	5387910	5387588	16,61	.654	1,2	3/64	.023	**.047**	.098	.003	**.007**	.011

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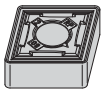
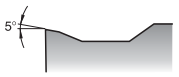
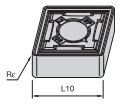
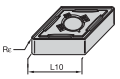
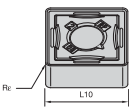
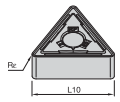
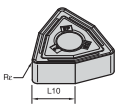
RP

cutting conditions			
cutting speed (SFM) range	M1	330 **590** 820	295 **490** 590
	M2	330 **540** 855	295 **460** 590
	M3	330 **490** 820	295 **395** 590
carbide grade		KCM15B	KCM25B

	ISO catalog number	ANSI catalog number	KCM15B	KCM25B	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CNMG120404RP**	**CNMG431RP**	–	**5591950**	12,90	.508	0,4	1/64	.023	**.070**	.137	.007	**.011**	.015
	CNMG120408RP	**CNMG432RP**	**5640482**	**5596468**	12,90	.508	0,8	1/32	.039	**.114**	.177	.007	**.017**	.023
	CNMG120412RP	**CNMG433RP**	**5640483**	**5596469**	12,90	.508	1,2	3/64	.047	**.137**	.197	.008	**.019**	.025
	CNMG120416RP	**CNMG434RP**	–	**5591957**	12,90	.508	1,6	1/16	.055	**.161**	.197	.009	**.019**	.027
	CNMG160612RP	**CNMG543RP**	**5640986**	**5591919**	16,12	.635	1,2	3/64	.047	**.137**	.275	.008	**.019**	.025
	CNMG160616RP	**CNMG544RP**	–	**5591960**	16,12	.635	1,6	1/16	.055	**.161**	.315	.009	**.019**	.027
	CNMG190612RP	**CNMG643RP**	–	**5591931**	19,34	.762	1,2	3/64	.047	**.137**	.354	.008	**.019**	.027
	CNMG190616RP	**CNMG644RP**	–	**5591955**	19,34	.762	1,6	1/16	.055	**.161**	.354	.009	**.023**	.031
	**DNMG150408RP**	**DNMG432RP**	–	**5591976**	15,50	.610	0,8	1/32	.039	**.094**	.197	.007	**.017**	.023
	DNMG150608RP	**DNMG442RP**	–	**5591932**	15,50	.610	0,8	1/32	.039	**.094**	.197	.007	**.017**	.023
	**SNMG120412RP**	**SNMG433RP**	–	**5591982**	12,70	.500	1,2	3/64	.047	**.137**	.236	.008	**.019**	.025
	SNMG150616RP	**SNMG544RP**	**5641107**	**5591953**	15,88	.625	1,6	1/16	.055	**.161**	.275	.009	**.023**	.031
	SNMG190612RP	**SNMG643RP**	–	**5591935**	19,05	.750	1,2	3/64	.047	**.137**	.354	.008	**.023**	.033
	SNMG190616RP	**SNMG644RP**	–	**5591936**	19,05	.750	1,6	1/16	.055	**.161**	.354	.009	**.025**	.035
	**TNMG220408RP**	**TNMG432RP**	–	**5591962**	22,00	.866	0,8	1/32	.039	**.114**	.295	.007	**.017**	.025
	TNMG220412RP	**TNMG433RP**	–	**5591964**	22,00	.866	1,2	3/64	.047	**.137**	.295	.008	**.019**	.027
	TNMG270612RP	**TNMG543RP**	–	**5591967**	27,50	1.083	1,2	3/64	.047	**.137**	.354	.008	**.019**	.027
	**WNMG080408RP**	**WNMG432RP**	**5641122**	**5591959**	8,69	.342	0,8	1/32	.039	**.114**	.197	.007	**.017**	.023
	WNMG080412RP	**WNMG433RP**	–	**5591938**	8,69	.342	1,2	3/64	.047	**.137**	.197	.008	**.019**	.025

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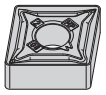
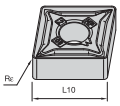
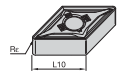
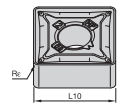
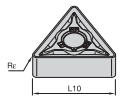
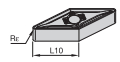
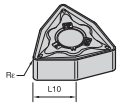
cutting conditions				
cutting speed (SFM) range	M1	425 **705** 790	330 **590** 820	295 **490** 590
	M2	425 **655** 790	330 **540** 855	295 **460** 590
	M3	425 **605** 790	330 **490** 820	295 **395** 590
carbide grade		KCU10	KCM15B	KCM25B

MP

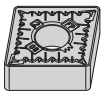


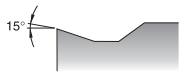
	ISO catalog number	ANSI catalog number	KCU10	KCM15B	KCM25B	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CNMG090308MP**	**CNMG322MP**	–	**5640969**	–	9,67	.381	0,8	1/32	.031	**.082**	.137	.005	**.013**	.019
	CNMG120404MP	**CNMG431MP**	**4050679**	**5640971**	**5591779**	12,90	.508	0,4	1/64	.023	**.063**	.137	.004	**.007**	.009
	CNMG120408MP	**CNMG432MP**	**4050686**	**5640480**	**5596460**	12,90	.508	0,8	1/32	.031	**.082**	.177	.005	**.013**	.019
	CNMG120412MP	**CNMG433MP**	**4050692**	**5640979**	**5591901**	12,90	.508	1,2	3/64	.039	**.102**	.197	.006	**.013**	.021
	CNMG120416MP	**CNMG434MP**	–	**5640981**	–	12,90	.508	1,6	1/16	.047	**.126**	.197	.007	**.015**	.023
	CNMG160608MP	**CNMG542MP**	**4050700**	**5640982**	–	16,12	.635	0,8	1/32	.031	**.082**	.216	.005	**.013**	.021
	CNMG160612MP	**CNMG543MP**	**4050702**	**5640985**	**5591780**	16,12	.635	1,2	3/64	.039	**.102**	.236	.006	**.015**	.023
	CNMG160616MP	**CNMG544MP**	–	–	**5591775**	16,12	.635	1,6	1/16	.047	**.126**	.236	.007	**.015**	.023
	CNMG190608MP	**CNMG642MP**	–	**5640988**	**5591787**	19,34	.762	0,8	1/32	.031	**.082**	.295	.005	**.013**	.021
	CNMG190612MP	**CNMG643MP**	–	–	**5591799**	19,34	.762	1,2	3/64	.039	**.102**	.315	.006	**.015**	.023
	**DNMG110408MP**	**DNMG332MP**	–	–	**5591791**	11,63	.458	0,8	1/32	.023	**.059**	.098	.004	**.007**	.009
	DNMG110412MP	**DNMG333MP**	–	–	**5591930**	11,63	.458	1,2	3/64	.031	**.078**	.137	.005	**.013**	.019
	DNMG150404MP	**DNMG431MP**	**4053379**	**5641098**	**5591902**	15,50	.610	0,4	1/64	.023	**.059**	.137	.004	**.007**	.009
	DNMG150408MP	**DNMG432MP**	**4053384**	**5641099**	**5591782**	15,50	.610	0,8	1/32	.031	**.078**	.177	.005	**.013**	.019
	DNMG150412MP	**DNMG433MP**	**4053390**	–	–	15,50	.610	1,2	3/64	.039	**.094**	.197	.006	**.013**	.021
	DNMG150604MP	**DNMG441MP**	**4053396**	**5641101**	**5591788**	15,50	.610	0,4	1/64	.023	**.059**	.137	.004	**.007**	.009
	DNMG150608MP	**DNMG442MP**	**4053400**	**5641102**	**5591900**	15,50	.610	0,8	1/32	.031	**.078**	.177	.005	**.013**	.019
	DNMG150612MP	**DNMG443MP**	–	–	**5591795**	15,50	.610	1,2	3/64	.039	**.094**	.197	.006	**.013**	.021
	**SNMG120408MP**	**SNMG432MP**	**5062106**	**5641105**	**5591907**	12,70	.500	0,8	1/32	.023	**.070**	.137	.004	**.007**	.009
	SNMG120412MP	**SNMG433MP**	–	–	**5591933**	12,70	.500	1,2	3/64	.031	**.094**	.177	.005	**.013**	.019
	SNMG120416MP	**SNMG434MP**	–	–	**5591952**	12,70	.500	1,6	1/16	.039	**.114**	.197	.006	**.013**	.021
	SNMG150608MP	**SNMG542MP**	–	–	**5591939**	15,88	.625	0,8	1/32	.023	**.070**	.197	.004	**.007**	.011
	SNMG190612MP	**SNMG643MP**	–	–	**5591934**	19,05	.750	1,2	3/64	.031	**.094**	.275	.005	**.013**	.021
	**TNMG160404MP**	**TNMG331MP**	**5062131**	**5641110**	**5591785**	16,50	.650	0,4	1/64	.023	**.070**	.137	.004	**.007**	.009
	TNMG160408MP	**TNMG332MP**	**5062135**	**5640490**	**5596461**	16,50	.650	0,8	1/32	.031	**.094**	.177	.005	**.013**	.019
	TNMG160412MP	**TNMG333MP**	–	**5641111**	**5591956**	16,50	.650	1,2	3/64	.039	**.114**	.197	.006	**.013**	.021
	TNMG220408MP	**TNMG432MP**	**5062140**	**5641113**	**5591910**	22,00	.866	0,8	1/32	.031	**.094**	.177	.005	**.013**	.019
	TNMG220412MP	**TNMG433MP**	–	–	**5591796**	22,00	.866	1,2	3/64	.039	**.114**	.236	.006	**.013**	.021
	**VNMG160404MP**	**VNMG331MP**	**4045150**	**5641115**	**5591789**	16,61	.654	0,4	1/64	.023	**.055**	.118	.004	**.007**	.009
	VNMG160408MP	**VNMG332MP**	**4045164**	**5641116**	**5591781**	16,61	.654	0,8	1/32	.031	**.070**	.137	.005	**.011**	.015
	VNMG160412MP	**VNMG333MP**	–	**5641117**	–	16,61	.654	1,2	3/64	.039	**.086**	.157	.006	**.011**	.015
	**WNMG060404MP**	**WNMG331MP**	–	–	**5591937**	6,52	.257	0,4	1/64	.023	**.070**	.137	.004	**.007**	.009
	WNMG060408MP	**WNMG332MP**	**4045177**	–	**5591912**	6,52	.257	0,8	1/32	.031	**.094**	.137	.005	**.011**	.017
	WNMG080408MP	**WNMG432MP**	**4045182**	**5641120**	**5591774**	8,69	.342	0,8	1/32	.031	**.094**	.177	.005	**.013**	.019
	WNMG080412MP	**WNMG433MP**	–	–	**5591790**	8,69	.342	1,2	3/64	.039	**.114**	.197	.006	**.013**	.021

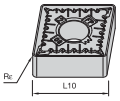
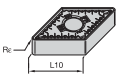
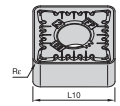
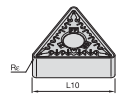
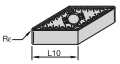
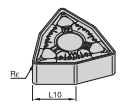
A30	**A35**	**A46**

cutting conditions									
cutting speed (SFM) range	M1	425	**705**	790	330	**590**	820
	M2	425	**655**	790	330	**540**	855
	M3	425	**605**	790	330	**490**	820
carbide grade			**KCU10**			**KCM15B**	

FP





	ISO catalog number	ANSI catalog number	KCU10	KCM15B	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CNMG120404FP**	**CNMG431FP**	**4171824**	**–**	12,90	.508	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	CNMG120408FP	**CNMG432FP**	**4050061**	**5640449**	12,90	.508	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011
	CNMG120412FP	**CNMG433FP**	**4050062**	**–**	12,90	.508	1,2	3/64	.019	**.047**	.098	.004	**.009**	.013
	**DNMG110404FP**	**DNMG331FP**	**4171826**	**5640486**	11,63	.458	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	DNMG110408FP	**DNMG332FP**	**4050743**	**–**	11,63	.458	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011
	DNMG150404FP	**DNMG431FP**	**4171827**	**–**	15,50	.610	0,4	1/64	.007	**.019**	.098	.003	**.005**	.009
	DNMG150408FP	**DNMG432FP**	**4171828**	**–**	15,50	.610	0,8	1/32	.015	**.039**	.118	.003	**.007**	.011
	DNMG150412FP	**DNMG433FP**	**4171829**	**–**	15,50	.610	1,2	3/64	.019	**.047**	.137	.004	**.009**	.013
	DNMG150604FP	**DNMG441FP**	**4171830**	**–**	15,50	.610	0,4	1/64	.007	**.019**	.098	.003	**.005**	.009
	DNMG150608FP	**DNMG442FP**	**4171831**	**–**	15,50	.610	0,8	1/32	.015	**.039**	.118	.003	**.007**	.011
	DNMG150612FP	**DNMG443FP**	**–**	**5640487**	15,50	.610	1,2	3/64	.019	**.047**	.137	.004	**.009**	.013
	**SNMG120404FP**	**SNMG431FP**	**4171835**	–	12,70	.500	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	SNMG120408FP	**SNMG432FP**	**4171836**	–	12,70	.500	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011
	**TNMG160404FP**	**TNMG331FP**	**4171838**	–	16,50	.650	0,4	1/64	.007	**.019**	.098	.003	**.005**	.009
	TNMG160408FP	**TNMG332FP**	**4171839**	–	16,50	.650	0,8	1/32	.015	**.039**	.118	.003	**.007**	.011
	TNMG160412FP	**TNMG333FP**	**4171840**	–	16,50	.650	1,2	3/64	.019	**.047**	.137	.004	**.009**	.013
	TNMG220404FP	**TNMG431FP**	**4171841**	–	22,00	.866	0,4	1/64	.007	**.019**	.118	.003	**.005**	.009
	TNMG220408FP	**TNMG432FP**	**4171842**	–	22,00	.866	0,8	1/32	.015	**.039**	.197	.003	**.007**	.011
	**VNMG160404FP**	**VNMG331FP**	**4171843**	–	16,61	.654	0,4	1/64	.007	**.015**	.078	.003	**.005**	.009
	VNMG160408FP	**VNMG332FP**	**4171844**	–	16,61	.654	0,8	1/32	.011	**.023**	.098	.003	**.007**	.011
	**WNMG060404FP**	**WNMG331FP**	**4050746**	**–**	6,52	.257	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	WNMG080404FP	**WNMG431FP**	**4171849**	**–**	8,69	.342	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	WNMG080408FP	**WNMG432FP**	**4171851**	**5640494**	8,69	.342	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011

TURNING
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A30

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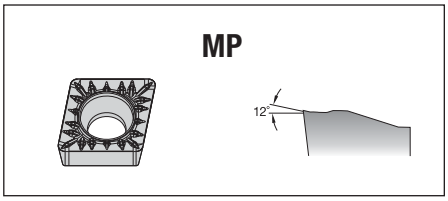
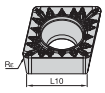
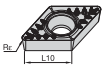
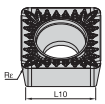
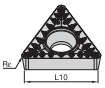
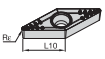
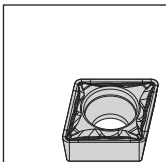
A46



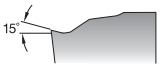
cutting conditions								
cutting speed (SFM) range	M1	330	**590**	820	295	**490**	590
	M2	330	**540**	855	295	**460**	590
	M3	330	**490**	820	295	**395**	590
carbide grade			KCM15B			KCM25B	

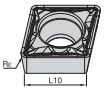
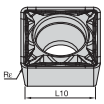
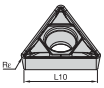
	ISO catalog number	ANSI catalog number	KCM15B	KCM25B	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CCMT060204MP**	**CCMT2151MP**	**5640906**	**5591914**	6,45	.254	0,4	1/64	.015	**.039**	.078	.004	**.005**	.007
	CCMT09T304MP	**CCMT3251MP**	**5640960**	**5591792**	9,67	.381	0,4	1/64	.015	**.039**	.090	.004	**.007**	.009
	CCMT09T308MP	**CCMT3252MP**	**5640964**	**5591783**	9,67	.381	0,8	1/32	.023	**.059**	.118	.005	**.009**	.011
	CCMT120408MP	**CCMT432MP**	**–**	**5591777**	12,90	.508	0,8	1/32	.023	**.059**	.157	.005	**.009**	.013
	CCMT120412MP	**CCMT433MP**	**–**	**5591793**	12,90	.508	1,2	3/64	.031	**.078**	.157	.006	**.011**	.015
	**DCMT11T308MP**	**DCMT3252MP**	**–**	**5591784**	11,63	.458	0,8	1/32	.023	**.059**	.090	.004	**.007**	.009
	**SCMT09T308MP**	**SCMT3252MP**	**–**	**5591776**	9,53	.375	0,8	1/32	.023	**.070**	.118	.005	**.009**	.011
	SCMT120408MP	**SCMT432MP**	**–**	**5591794**	12,70	.500	0,8	1/32	.023	**.070**	.137	.005	**.009**	.013
	**TCMT16T304MP**	**TCMT3251MP**	**–**	**5591904**	16,50	.650	0,4	1/64	.015	**.039**	.118	.004	**.007**	.009
	TCMT16T308MP	**TCMT3252MP**	**–**	**5591906**	16,50	.650	0,8	1/32	.023	**.059**	.137	.005	**.009**	.013
	**VBMT160404MP**	**VBMT331MP**	**–**	**5591786**	16,61	.654	0,4	1/64	.007	**.019**	.059	.003	**.005**	.007
	VBMT160408MP	**VBMT332MP**	**–**	**5591778**	16,61	.654	0,8	1/32	.015	**.035**	.059	.005	**.007**	.009

cutting conditions				
cutting speed (SFM) range	M1	425	**705**	790
	M2	425	**655**	790
	M3	425	**605**	790
carbide grade			KCU10	



FP



	ISO catalog number	ANSI catalog number	KCU10	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CCMT060202FP**	**CCMT21505FP**	**3769290**	6,45	.254	0,2	.008	.006	**.015**	.039	.002	**.003**	.004
	CCMT060204FP	**CCMT2151FP**	**3769291**	6,45	.254	0,4	1/64	.007	**.019**	.063	.002	**.005**	.007
	CCMT060208FP	**CCMT2152FP**	**3769292**	6,45	.254	0,8	1/32	.015	**.035**	.078	.003	**.007**	.009
	CCMT09T302FP	**CCMT32505FP**	**3769343**	9,67	.381	0,2	.008	.006	**.015**	.039	.002	**.003**	.004
	CCMT09T304FP	**CCMT3251FP**	**3769344**	9,67	.381	0,4	1/64	.007	**.019**	.063	.002	**.005**	.007
	CCMT09T308FP	**CCMT3252FP**	**3482532**	9,67	.381	0,8	1/32	.015	**.035**	.078	.003	**.007**	.009
	CCMT120404FP	**CCMT431FP**	**3769345**	12,90	.508	0,4	1/64	.007	**.019**	.078	.002	**.005**	.009
	CCMT120408FP	**CCMT432FP**	**3769346**	12,90	.508	0,8	1/32	.015	**.035**	.118	.003	**.007**	.011
	DCMT070202FP	**DCMT21505FP**	**3769355**	7,75	.305	0,2	.008	.006	**.015**	.039	.002	**.003**	.004
	DCMT070204FP	**DCMT2151FP**	**3769356**	7,75	.305	0,4	1/64	.007	**.019**	.063	.002	**.005**	.007
	DCMT070208FP	**DCMT2152FP**	**3769357**	7,75	.305	0,8	1/32	.015	**.035**	.078	.003	**.007**	.009
	DCMT11T302FP	**DCMT32505FP**	**3769358**	11,63	.458	0,2	.008	.006	**.015**	.039	.002	**.003**	.004
	DCMT11T304FP	**DCMT3251FP**	**3769359**	11,63	.458	0,4	1/64	.007	**.019**	.063	.002	**.005**	.007
	DCMT11T308FP	**DCMT3252FP**	**3769360**	11,63	.458	0,8	1/32	.015	**.035**	.078	.003	**.007**	.009
	**SCMT09T304FP**	**SCMT3251FP**	**3769370**	9,53	.375	0,4	1/64	.007	**.019**	.063	.002	**.005**	.007
	SCMT09T308FP	**SCMT3252FP**	**3769371**	9,53	.375	0,8	1/32	.015	**.039**	.078	.003	**.007**	.009
	SCMT120404FP	**SCMT431FP**	**3769372**	12,70	.500	0,4	1/64	.007	**.019**	.078	.002	**.005**	.009
	SCMT120408FP	**SCMT432FP**	**3769373**	12,70	.500	0,8	1/32	.015	**.039**	.118	.003	**.007**	.011
	**TCMT090204FP**	**TCMT18151FP**	**3769377**	9,63	.379	0,4	1/64	.007	**.019**	.063	.002	**.003**	.005
	TCMT090208FP	**TCMT18152FP**	**3769378**	9,63	.379	0,8	1/32	.015	**.039**	.078	.003	**.005**	.007
	TCMT110204FP	**TCMT2151FP**	**3769380**	11,00	.433	0,4	1/64	.007	**.019**	.078	.002	**.005**	.007
	TCMT110208FP	**TCMT2152FP**	**3769381**	11,00	.433	0,8	1/32	.015	**.039**	.118	.003	**.007**	.009
	TCMT110304FP	**TCMT221FP**	**3769382**	11,00	.433	0,4	1/64	.007	**.019**	.078	.002	**.005**	.007
	TCMT110308FP	**TCMT222FP**	**3769383**	11,00	.433	0,8	1/32	.015	**.039**	.118	.003	**.007**	.009
	TCMT110312FP	**TCMT223FP**	**3769384**	11,00	.433	1,2	3/64	.023	**.055**	.118	.003	**.007**	.009
	TCMT16T304FP	**TCMT3251FP**	**3769386**	16,50	.650	0,4	1/64	.007	**.019**	.078	.002	**.005**	.009
	TCMT16T308FP	**TCMT3252FP**	**3769387**	16,50	.650	0,8	1/32	.015	**.039**	.118	.003	**.007**	.011
	TCMT16T312FP	**TCMT3253FP**	**3769388**	16,50	.650	1,2	3/64	.023	**.055**	.118	.003	**.007**	.011
	VBMT110302FP	**VBMT2205FP**	**3769401**	11,07	.436	0,2	.008	.006	**.015**	.039	.002	**.003**	.004
	VBMT110304FP	**VBMT221FP**	**3769402**	11,07	.436	0,4	1/64	.007	**.015**	.063	.002	**.005**	.007
	VBMT110308FP	**VBMT222FP**	**3769403**	11,07	.436	0,8	1/32	.015	**.031**	.078	.003	**.007**	.009
	VBMT160402FP	**VBMT3305FP**	**3769404**	16,61	.654	0,2	.008	.006	**.015**	.059	.002	**.003**	.004
	VBMT160404FP	**VBMT331FP**	**3769405**	16,61	.654	0,4	1/64	.007	**.015**	.078	.002	**.005**	.007
	VBMT160408FP	**VBMT332FP**	**3769406**	16,61	.654	0,8	1/32	.015	**.031**	.098	.003	**.007**	.011

TURNING
FIRST CHOICE
MILLING
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TOOLING SYSTEMS
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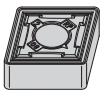
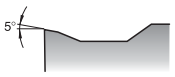
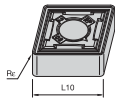
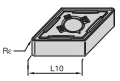
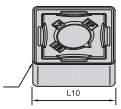
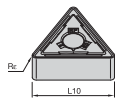
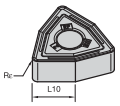
cutting conditions								
cutting speed (SFM) range	K1	920	**1475**	1970	790	**1180**	1800
	K2	755	**1180**	1800	490	**885**	1475
	K3	490	**790**	1640	460	**705**	1345
carbide grade			**KCK05**			**KCK15**	

RP





	ISO catalog number	ANSI catalog number	KCK05	KCK15	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CNMG120408RP**	**CNMG432RP**	**3751862**	**3752176**	12,90	.508	0,8	1/32	.039	**.114**	.177	.007	**.017**	.023
	CNMG120412RP	**CNMG433RP**	**3752114**	**3752050**	12,90	.508	1,2	3/64	.047	**.137**	.197	.008	**.019**	.025
	CNMG160612RP	**CNMG543RP**	**–**	**3752052**	16,12	.635	1,2	3/64	.047	**.137**	.275	.008	**.019**	.025
	CNMG190612RP	**CNMG643RP**	**–**	**3752053**	19,34	.762	1,2	3/64	.047	**.137**	.354	.008	**.019**	.027
	**DNMG150612RP**	**DNMG443RP**	**–**	**3752057**	15,50	.610	1,2	3/64	.047	**.114**	.197	.008	**.019**	.025
	**SNMG120412RP**	**SNMG433RP**	**–**	**3752061**	12,70	.500	1,2	3/64	.047	**.137**	.236	.008	**.019**	.025
	**TNMG160408RP**	**TNMG332RP**	**3752122**	**–**	16,50	.650	0,8	1/32	.039	**.114**	.236	.007	**.017**	.023
	VNMG160408RP	**VNMG332RP**	**–**	**3752067**	16,61	.654	0,8	1/32	.039	**.086**	.137	.007	**.015**	.019
	**WNMG080408RP**	**WNMG432RP**	**3752124**	**–**	8,69	.342	0,8	1/32	.039	**.114**	.197	.007	**.017**	.023
	WNMG080412RP	**WNMG433RP**	**3752125**	**3752070**	8,69	.342	1,2	3/64	.047	**.137**	.197	.008	**.019**	.025

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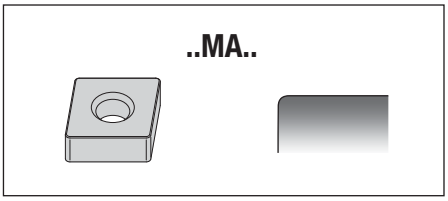
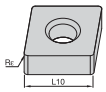
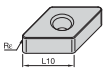
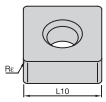
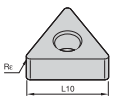
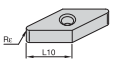
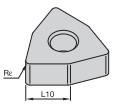


cutting conditions				
cutting speed (SFM) range	K1	790	**1180**	1800
	K2	490	**885**	1480
	K3	460	**705**	1345
carbide grade		KCK15		

	ISO catalog number	ANSI catalog number	KCK15	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	CNMA120408	CNMA432	3752128	12,90	.508	0,8	1/32	.039	**.114**	.236	.011	**.017**	.023
	CNMA120412	CNMA433	3752129	12,90	.508	1,2	3/64	.047	**.137**	.236	.012	**.019**	.025
	CNMA120416	CNMA434	3752130	12,90	.508	1,6	1/16	.055	**.161**	.236	.013	**.021**	.027
	CNMA160608	CNMA542	3752131	16,12	.635	0,8	1/32	.039	**.114**	.275	.011	**.017**	.023
	CNMA160612	CNMA543	3752132	16,12	.635	1,2	3/64	.047	**.137**	.275	.012	**.019**	.025
	CNMA160616	CNMA544	3752143	16,12	.635	1,6	1/16	.055	**.161**	.315	.013	**.021**	.027
	CNMA190612	CNMA643	3752144	19,34	.762	1,2	3/64	.047	**.137**	.354	.012	**.019**	.027
	DNMA150408	DNMA432	3752145	15,50	.610	0,8	1/32	.039	**.114**	.236	.012	**.017**	.023
	DNMA150412	DNMA433	3752146	15,50	.610	1,2	3/64	.047	**.137**	.236	.013	**.019**	.025
	DNMA150608	DNMA442	3752147	15,50	.610	0,8	1/32	.039	**.114**	.236	.012	**.017**	.023
	SNMA120412	SNMA433	3752152	12,70	.500	1,2	3/64	.047	**.137**	.236	.012	**.019**	.025
	TNMA160408	TNMA332	3752157	16,50	.650	0,8	1/32	.039	**.094**	.236	.011	**.017**	.023
	TNMA160412	TNMA333	3752158	16,50	.650	1,2	3/64	.047	**.114**	.236	.012	**.019**	.025
	TNMA160416	TNMA334	3752159	16,50	.650	1,6	1/16	.070	**.173**	.236	.012	**.019**	.025
	VNMA160408	VNMA332	3752164	16,61	.654	0,8	1/32	.023	**.055**	.157	.009	**.015**	.019
	WNMA060408	WNMA332	3752165	6,52	.257	0,8	1/32	.039	**.094**	.157	.011	**.015**	.019
	WNMA080408	WNMA432	3752167	8,69	.342	0,8	1/32	.039	**.094**	.197	.011	**.017**	.023
	WNMA080412	WNMA433	3752168	8,69	.342	1,2	3/64	.047	**.114**	.197	.012	**.019**	.025

cutting conditions				
cutting speed (SFM) range	K1	920	**1475**	1970
	K2	755	**1180**	1800
	K3	490	**790**	1640
carbide grade			KCK05	

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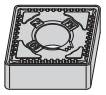
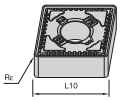
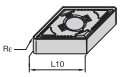
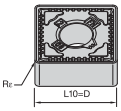
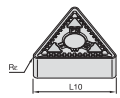
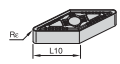
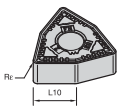


	ISO catalog number	ANSI catalog number	KCK05	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CNMG090308FN**	**CNMG322FN**	**3751944**	9,67	.381	0,8	1/32	.015	**.039**	.078	.003	**.007**	.011
	CNMG120404FN	**CNMG431FN**	**3751945**	12,90	.508	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	CNMG120408FN	**CNMG432FN**	**3751946**	12,90	.508	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011
	**DNMG110404FN**	**DNMG331FN**	**3751950**	11,63	.458	0,4	1/64	.007	**.019**	.059	.003	**.005**	.009
	DNMG110408FN	**DNMG332FN**	**3751952**	11,63	.458	0,8	1/32	.015	**.039**	.078	.003	**.007**	.011
	DNMG150404FN	**DNMG431FN**	**3751955**	15,50	.610	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	DNMG150408FN	**DNMG432FN**	**3751956**	15,50	.610	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011
	DNMG150412FN	**DNMG433FN**	**3751958**	15,50	.610	1,2	3/64	.019	**.047**	.118	.004	**.007**	.011
	DNMG150604FN	**DNMG441FN**	**3751959**	15,50	.610	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	DNMG150608FN	**DNMG442FN**	**3751960**	15,50	.610	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011
	DNMG150612FN	**DNMG443FN**	**3751961**	15,50	.610	1,2	3/64	.019	**.047**	.118	.004	**.007**	.011
	**SNMG090308FN**	**SNMG322FN**	**3751963**	9,53	.375	0,8	1/32	.015	**.039**	.078	.003	**.007**	.011
	SNMG120404FN	**SNMG431FN**	**3751964**	12,70	.500	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	**TNMG160404FN**	**TNMG331FN**	**3751970**	16,50	.650	0,4	1/64	.007	**.019**	.098	.003	**.005**	.009
	TNMG160408FN	**TNMG332FN**	**3751971**	16,50	.650	0,8	1/32	.015	**.039**	.118	.003	**.007**	.011
	TNMG160412FN	**TNMG333FN**	**3751972**	16,50	.650	1,2	3/64	.019	**.047**	.137	.004	**.007**	.011
	**VNMG160404FN**	**VNMG331FN**	**3751974**	16,61	.654	0,4	1/64	.007	**.015**	.078	.003	**.005**	.009
	VNMG160408FN	**VNMG332FN**	**3751975**	16,61	.654	0,8	1/32	.011	**.023**	.098	.003	**.007**	.011
	**WNMG060404FN**	**WNMG331FN**	**3751976**	6,52	.257	0,4	1/64	.007	**.019**	.059	.003	**.005**	.009
	WNMG080404FN	**WNMG431FN**	**3751978**	8,69	.342	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	WNMG080408FN	**WNMG432FN**	**3751979**	8,69	.342	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011

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cutting conditions				
cutting speed (SFM) range	K1	755	**985**	1800
	K2	490	**790**	1380
	K3	490	**690**	1150
carbide grade			KCK20	

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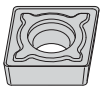
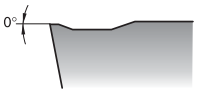
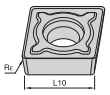
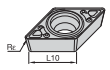
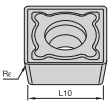
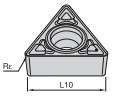




	ISO catalog number	ANSI catalog number	KCK20	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CCMT060204MF**	**CCMT2151MF**	**3755531**	6,45	.254	0,4	1/64	.019	**.047**	.070	.003	**.007**	.009
	CCMT09T304MF	**CCMT3251MF**	**3755532**	9,67	.381	0,4	1/64	.019	**.047**	.078	.004	**.007**	.011
	CCMT09T308MF	**CCMT3252MF**	**3758173**	9,67	.381	0,8	1/32	.031	**.074**	.098	.005	**.009**	.013
	CCMT09T312MF	**CCMT3253MF**	**3755533**	9,67	.381	1,2	3/64	.039	**.090**	.118	.007	**.011**	.015
	CCMT120408MF	**CCMT432MF**	**3758174**	12,90	.508	0,8	1/32	.031	**.074**	.137	.005	**.009**	.013
	CCMT120412MF	**CCMT433MF**	**3755534**	12,90	.508	1,2	3/64	.039	**.090**	.157	.007	**.011**	.015
	**DCMT11T304MF**	**DCMT3251MF**	**3755538**	11,63	.458	0,4	1/64	.019	**.043**	.070	.003	**.005**	.007
	DCMT11T308MF	**DCMT3252MF**	**3755539**	11,63	.458	0,8	1/32	.031	**.070**	.090	.004	**.007**	.009
	DCMT11T312MF	**DCMT3253MF**	**3755540**	11,63	.458	1,2	3/64	.039	**.086**	.098	.005	**.009**	.011
	**SCMT09T308MF**	**SCMT3252MF**	**3755542**	9,53	.375	0,8	1/32	.031	**.078**	.098	.005	**.009**	.013
	SCMT120408MF	**SCMT432MF**	**3755543**	12,70	.500	0,8	1/32	.031	**.078**	.137	.005	**.009**	.013
	SCMT120412MF	**SCMT433MF**	**3755544**	12,70	.500	1,2	3/64	.039	**.098**	.157	.007	**.011**	.015
	**TCMT110208MF**	**TCMT2152MF**	**3755547**	11,00	.433	0,8	1/32	.031	**.074**	.078	.003	**.007**	.011
	TCMT16T308MF	**TCMT3252MF**	**3755548**	16,50	.650	0,8	1/32	.031	**.074**	.118	.005	**.009**	.011
	TCMT16T312MF	**TCMT3253MF**	**3755549**	16,50	.650	1,2	3/64	.039	**.090**	.137	.007	**.011**	.013

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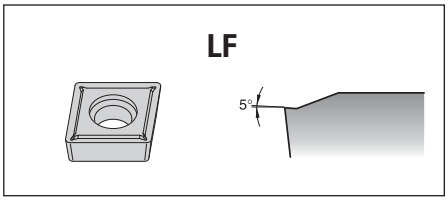
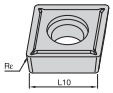
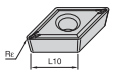
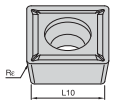
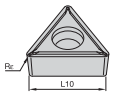
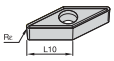


cutting conditions				
cutting speed (SFM) range	K1	755	**985**	1800
	K2	490	**790**	1380
	K3	490	**690**	1150
carbide grade			KCK20	

	ISO catalog number	ANSI catalog number	KCK20	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CCMT060204LF**	**CCMT2151LF**	**3758167**	6,45	.254	0,4	1/64	.015	**.031**	.078	.003	**.005**	.007
	CCMT09T304LF	**CCMT3251LF**	**3758168**	9,67	.381	0,4	1/64	.015	**.031**	.078	.003	**.007**	.011
	CCMT09T308LF	**CCMT3252LF**	**3758169**	9,67	.381	0,8	1/32	.031	**.059**	.090	.003	**.007**	.011
	CCMT120404LF	**CCMT431LF**	**3758170**	12,90	.508	0,4	1/64	.015	**.031**	.098	.003	**.007**	.011
	CCMT120408LF	**CCMT432LF**	**3755481**	12,90	.508	0,8	1/32	.031	**.059**	.118	.003	**.009**	.015
	**DCMT070204LF**	**DCMT2151LF**	**3755486**	7,75	.305	0,4	1/64	.015	**.035**	.078	.003	**.005**	.007
	DCMT11T304LF	**DCMT3251LF**	**3758172**	11,63	.458	0,4	1/64	.015	**.035**	.078	.003	**.007**	.011
	DCMT11T308LF	**DCMT3252LF**	**3755487**	11,63	.458	0,8	1/32	.031	**.070**	.090	.003	**.007**	.011
	**SCMT09T304LF**	**SCMT3251LF**	**3755504**	9,53	.375	0,4	1/64	.015	**.039**	.078	.003	**.007**	.011
	SCMT09T308LF	**SCMT3252LF**	**3755505**	9,53	.375	0,8	1/32	.031	**.078**	.090	.003	**.007**	.011
	SCMT120408LF	**SCMT432LF**	**3755507**	12,70	.500	0,8	1/32	.031	**.078**	.118	.003	**.009**	.015
	SCMT120412LF	**SCMT433LF**	**3755508**	12,70	.500	1,2	3/64	.039	**.098**	.118	.003	**.009**	.015
	**TCMT110204LF**	**TCMT2151LF**	**3755511**	11,00	.433	0,4	1/64	.015	**.039**	.078	.003	**.007**	.011
	TCMT16T308LF	**TCMT3252LF**	**3755514**	16,50	.650	0,8	1/32	.031	**.074**	.090	.003	**.009**	.013
	TCMT16T312LF	**TCMT3253LF**	**3755515**	16,50	.650	1,2	3/64	.039	**.098**	.118	.003	**.009**	.015
	**VBMT160408LF**	**VBMT332LF**	**3755526**	16,61	.654	0,8	1/32	.023	**.047**	.078	.003	**.005**	.009
	VBMT160412LF	**VBMT333LF**	**3755527**	16,61	.654	1,2	3/64	.031	**.063**	.090	.003	**.007**	.011

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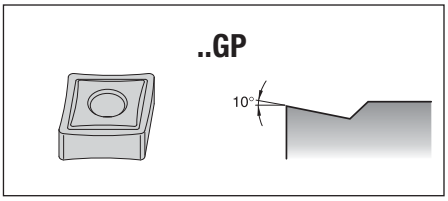
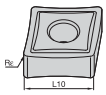
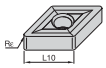
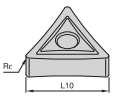
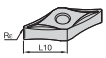
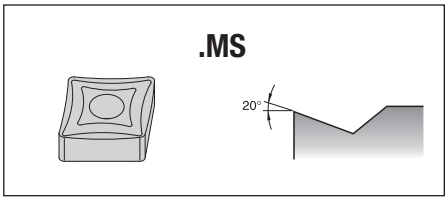
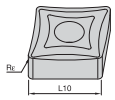
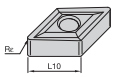
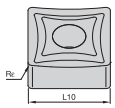
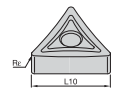
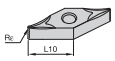


cutting conditions				
cutting speed (SFM) range	N1–N2	410	**1800**	3280
	N4	410	**900**	2460
	N5	410	**560**	3940
	N6	328	**655**	1640
	N8	328	**705**	1640
carbide grade			**KC5410**	

	ISO catalog number	ANSI catalog number	KC5410	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CNGP120401**	**CNGP430**	**1785715**	12,90	.508	0,1	.004	.003	**.011**	.039	.001	**.003**	.004
	CNGP120402	**CNGP4305**	**1785716**	12,90	.508	0,2	.008	.007	**.019**	.070	.003	**.005**	.007
	CNGP120404	**CNGP431**	**1785717**	12,90	.508	0,4	1/64	.011	**.031**	.110	.011	**.013**	.017
	CNGP120408	**CNGP432**	**1785718**	12,90	.508	0,8	1/32	.019	**.047**	.126	.011	**.015**	.019
	CNGP120412	**CNGP433**	**1785719**	12,90	.508	1,2	3/64	.031	**.078**	.137	.011	**.017**	.021
	**DNGP150402**	**DNGP4305**	**1560717**	15,50	.610	0,2	.008	.007	**.019**	.070	.003	**.005**	.007
	DNGP150404	**DNGP431**	**1785733**	15,50	.610	0,4	1/64	.011	**.031**	.110	.011	**.013**	.017
	DNGP150408	**DNGP432**	**1785734**	15,50	.610	0,8	1/32	.019	**.047**	.126	.011	**.015**	.019
	DNGP150604	**DNGP441**	**1785735**	15,50	.610	0,4	1/64	.011	**.031**	.110	.011	**.013**	.017
	**TNGP160404**	**TNGP331**	**1785740**	16,50	.650	0,4	1/64	.011	**.031**	.110	.011	**.013**	.017
	TNGP160408	**TNGP332**	**1785741**	16,50	.650	0,8	1/32	.019	**.047**	.126	.011	**.015**	.019
	**VNGP160401**	**VNGP330**	**1785746**	16,61	.654	0,1	.004	.003	**.011**	.039	.001	**.003**	.003
	VNGP160402	**VNGP3305**	**1785747**	16,61	.654	0,2	.008	.007	**.019**	.070	.003	**.005**	.007



cutting conditions				
cutting speed (SFM) range	N1–N2	410	**1800**	3280
	N4	410	**900**	2460
	N5	410	**560**	3940
	N6	328	**655**	1640
	N8	328	**705**	1640
carbide grade			**KC5410**	

	ISO catalog number	ANSI catalog number	KC5410	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CNMS120408**	**CNMS432**	**1560797**	12,90	.508	0,8	1/32	.023	**.059**	.090	.005	**.011**	.015
	CNMS160608	**CNMS542**	**1560799**	16,12	.635	0,8	1/32	.023	**.059**	.118	.005	**.011**	.015
	CNMS190608	**CNMS642**	**1560801**	19,34	.762	0,8	1/32	.023	**.059**	.197	.005	**.011**	.017
	**DNMS150408**	**DNMS432**	**1560803**	15,50	.610	0,8	1/32	.023	**.059**	.090	.005	**.011**	.015
	**SNMS190612**	**SNMS643**	**1560808**	19,05	.750	1,2	3/64	.039	**.094**	.197	.005	**.011**	.017
	**TNMS220408**	**TNMS432**	**1560829**	22,00	.866	0,8	1/32	.023	**.059**	.197	.005	**.011**	.017
	**VNMS160404**	**VNMS331**	**1560833**	16,61	.654	0,4	1/64	.007	**.019**	.078	.005	**.009**	.013
	VNMS160408	**VNMS332**	**1560834**	16,61	.654	0,8	1/32	.023	**.055**	.090	.005	**.011**	.015

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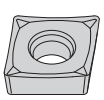
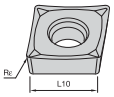
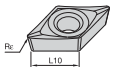
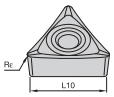
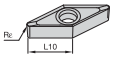


cutting conditions				
cutting speed (SFM) range	N1–N2	410	**1800**	3280
	N4	410	**900**	2460
	N5	410	**560**	3940
	N6	328	**655**	1640
	N8	328	**705**	1640
carbide grade			**KC5410**	

HP

	ISO catalog number	ANSI catalog number	KC5410	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	CCGT060202HP	CCGT21505HP	1560600	6,45	.254	0,2	.008	.007	**.015**	.039	.001	**.003**	.005
	CCGT060204HP	CCGT2151HP	1560389	6,45	.254	0,4	1/64	.015	**.031**	.070	.003	**.005**	.011
	CCGT060208HP	CCGT2152HP	1623193	6,45	.254	0,8	1/32	.023	**.043**	.078	.003	**.009**	.015
	CCGT09T302HP	CCGT32505HP	1560390	9,67	.381	0,2	.008	.007	**.015**	.059	.001	**.003**	.005
	CCGT09T304HP	CCGT3251HP	1560651	9,67	.381	0,4	1/64	.015	**.031**	.078	.003	**.005**	.011
	CCGT09T308HP	CCGT3252HP	1623194	9,67	.381	0,8	1/32	.023	**.043**	.090	.003	**.009**	.015
	CCGT120404HP	CCGT431HP	1560653	12,90	.508	0,4	1/64	.015	**.031**	.137	.003	**.005**	.011
	CCGT120408HP	CCGT432HP	1560655	12,90	.508	0,8	1/32	.023	**.043**	.157	.003	**.009**	.015
	DCGT070202HP	DCGT21505HP	1623200	7,75	.305	0,2	.008	.007	**.015**	.039	.001	**.003**	.005
	DCGT070204HP	DCGT2151HP	1623271	7,75	.305	0,4	1/64	.015	**.031**	.070	.003	**.005**	.011
	DCGT070208HP	DCGT2152HP	1785753	7,75	.305	0,8	1/32	.023	**.043**	.078	.003	**.009**	.015
	DCGT11T302HP	DCGT32505HP	1560699	11,63	.458	0,2	.008	.007	**.015**	.059	.001	**.003**	.005
	DCGT11T304HP	DCGT3251HP	1560714	11,63	.458	0,4	1/64	.015	**.031**	.078	.003	**.005**	.011
	DCGT11T308HP	DCGT3252HP	1560715	11,63	.458	0,8	1/32	.023	**.043**	.090	.003	**.009**	.015
	TCGT110202HP	TCGT21505HP	1623272	11,00	.433	0,2	.008	.007	**.015**	.039	.001	**.003**	.005
	TCGT110204HP	TCGT2151HP	1623273	11,00	.433	0,4	1/64	.015	**.027**	.070	.003	**.005**	.011
	TCGT16T304HP	TCGT3251HP	1623274	16,50	.650	0,4	1/64	.015	**.027**	.137	.003	**.005**	.011
	TCGT16T308HP	TCGT3252HP	1623275	16,50	.650	0,8	1/32	.023	**.039**	.157	.003	**.009**	.015
	VBGT110302HP	VBGT2205HP	1910043	11,07	.436	0,2	.008	.007	**.015**	.039	.001	**.003**	.005
	VBGT110304HP	VBGT221HP	1910044	11,07	.436	0,4	1/64	.015	**.027**	.070	.003	**.005**	.011
	VBGT160404HP	VBGT331HP	1623278	16,61	.654	0,4	1/64	.015	**.027**	.137	.003	**.005**	.011
	VBGT160408HP	VBGT332HP	1623279	16,61	.654	0,8	1/32	.023	**.039**	.157	.003	**.009**	.015

TURNING
FIRST CHOICE
MILLING
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TOOLING SYSTEMS
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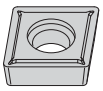
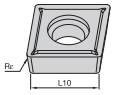
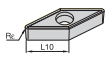
cutting conditions				
cutting speed (SFM) range	N1–N2	410	**1800**	3280
	N4	410	**900**	2460
	N5	410	**560**	3940
	N6	328	**655**	1640
	N8	328	**705**	1640
carbide grade			**KC5410**	

LF



	ISO catalog number	ANSI catalog number	KC5410	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CCGT09T304LF**	**CCGT3251LF**	**1807220**	9,67	.381	0,4	1/64	.011	**.023**	.078	.003	**.007**	.011
	**VBGT110301LF**	**VBGT220LF**	**1866757**	11,07	.436	0,1	.004	.001	**.003**	.039	.001	**.001**	.003
	VBGT160402LF	**VBGT3305LF**	**1866761**	16,61	.654	0,2	.008	.003	**.007**	.059	.002	**.003**	.004
	VBGT160404LF	**VBGT331LF**	**1866762**	16,61	.654	0,4	1/64	.011	**.023**	.078	.003	**.005**	.007

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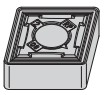
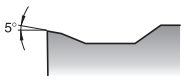
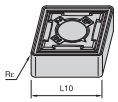
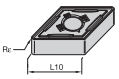
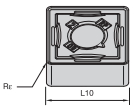
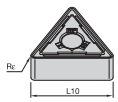
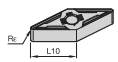
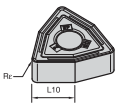
cutting conditions								
cutting speed (SFM) range	S1	50	**180**	460	30	**130**	200
	S2	50	**200**	460	30	**100**	250
	S3	50	**230**	460	50	**130**	250
	S4	50	**230**	560	50	**180**	345
carbide grade		**KCU10**			**KCU25**		

RP





	ISO catalog number	ANSI catalog number	KCU10	KCU25	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CNMG120404RP**	**CNMG431RP**	**4050682**	**4050453**	12,90	.508	0,4	1/64	.023	**.070**	.137	.007	**.011**	.015
	CNMG120408RP	**CNMG432RP**	**4050689**	**4050057**	12,90	.508	0,8	1/32	.039	**.114**	.177	.007	**.017**	.023
	CNMG120412RP	**CNMG433RP**	**4050695**	**4050456**	12,90	.508	1,2	3/64	.047	**.137**	.197	.008	**.019**	.025
	CNMG120416RP	**CNMG434RP**	**4050699**	**4050459**	12,90	.508	1,6	1/16	.055	**.161**	.197	.009	**.019**	.027
	CNMG160608RP	**CNMG542RP**	**4050701**	**4050461**	16,12	.635	0,8	1/32	.039	**.114**	.275	.007	**.017**	.023
	CNMG160612RP	**CNMG543RP**	**4050704**	**4050463**	16,12	.635	1,2	3/64	.047	**.137**	.275	.008	**.019**	.025
	CNMG160616RP	**CNMG544RP**	**–**	**4050465**	16,12	.635	1,6	1/16	.055	**.161**	.315	.009	**.019**	.027
	CNMG190612RP	**CNMG643RP**	**4050712**	**4050468**	19,34	.762	1,2	3/64	.047	**.137**	.354	.008	**.019**	.027
	CNMG190616RP	**CNMG644RP**	**4050714**	**4050470**	19,34	.762	1,6	1/16	.055	**.161**	.354	.009	**.023**	.031
	**DNMG110408RP**	**DNMG332RP**	**4053374**	**4050478**	11,63	.458	0,8	1/32	.039	**.094**	.157	.007	**.015**	.019
	DNMG150408RP	**DNMG432RP**	**4053387**	**4050482**	15,50	.610	0,8	1/32	.039	**.094**	.197	.007	**.017**	.023
	DNMG150412RP	**DNMG433RP**	**4053391**	**4050485**	15,50	.610	1,2	3/64	.047	**.114**	.197	.008	**.019**	.025
	DNMG150416RP	**DNMG434RP**	**4053393**	**–**	15,50	.610	1,6	1/16	.055	**.133**	.197	.009	**.019**	.027
	DNMG150608RP	**DNMG442RP**	**4053403**	**4050488**	15,50	.610	0,8	1/32	.039	**.094**	.197	.007	**.017**	.023
	DNMG150612RP	**DNMG443RP**	**4053407**	**4050490**	15,50	.610	1,2	3/64	.047	**.114**	.197	.008	**.019**	.025
	DNMG150616RP	**DNMG444RP**	**–**	**4050491**	15,50	.610	1,6	1/16	.055	**.133**	.197	.009	**.019**	.027
	**SNMG120408RP**	**SNMG432RP**	**5062108**	**4121684**	12,70	.500	0,8	1/32	.039	**.114**	.236	.007	**.017**	.023
	SNMG120412RP	**SNMG433RP**	**5062111**	**4050518**	12,70	.500	1,2	3/64	.047	**.137**	.236	.008	**.019**	.025
	SNMG120416RP	**SNMG434RP**	**5090763**	**–**	12,70	.500	1,6	1/16	.055	**.161**	.236	.009	**.019**	.027
	SNMG150612RP	**SNMG543RP**	**5062113**	**4050519**	15,88	.625	1,2	3/64	.047	**.137**	.275	.008	**.021**	.029
	SNMG150616RP	**SNMG544RP**	**–**	**4121688**	15,88	.625	1,6	1/16	.055	**.161**	.275	.009	**.023**	.031
	SNMG190612RP	**SNMG643RP**	**5062117**	**4050520**	19,05	.750	1,2	3/64	.047	**.137**	.354	.008	**.023**	.033
	SNMG190616RP	**SNMG644RP**	**5062120**	**4121690**	19,05	.750	1,6	1/16	.055	**.161**	.354	.009	**.025**	.035
	**TNMG160408RP**	**TNMG332RP**	**5062137**	**4121698**	16,50	.650	0,8	1/32	.039	**.114**	.236	.007	**.017**	.023
	TNMG160412RP	**TNMG333RP**	**–**	**4121699**	16,50	.650	1,2	3/64	.047	**.137**	.236	.008	**.019**	.025
	TNMG220408RP	**TNMG432RP**	**5062142**	**4121702**	22,00	.866	0,8	1/32	.039	**.114**	.295	.007	**.017**	.025
	TNMG220412RP	**TNMG433RP**	**5062145**	**4121704**	22,00	.866	1,2	3/64	.047	**.137**	.295	.008	**.019**	.027
	TNMG220416RP	**TNMG434RP**	**–**	**4121705**	22,00	.866	1,6	1/16	.055	**.161**	.295	.009	**.021**	.029
	TNMG270612RP	**TNMG543RP**	**5062147**	**–**	27,50	1.083	1,2	3/64	.047	**.137**	.354	.008	**.019**	.027
	TNMG270616RP	**TNMG544RP**	**6353749**	**–**	27,50	1.083	1,6	1/16	.055	**.161**	.354	.009	**.021**	.029
	TNMG330924RP	**TNMG666RP**	**5062148**	**–**	33,00	1.299	2,4	3/32	.078	**.228**	.512	.011	**.025**	.035
	**VNMG160408RP**	**VNMG332RP**	**4045167**	**4121716**	16,61	.654	0,8	1/32	.039	**.086**	.137	.007	**.015**	.019
	VNMG160412RP	**VNMG333RP**	**5090857**	**4121717**	16,61	.654	1,2	3/64	.047	**.106**	.137	.008	**.015**	.019
	**WNMG060408RP**	**WNMG332RP**	**4045178**	**4121721**	6,52	.257	0,8	1/32	.039	**.114**	.157	.007	**.015**	.019
	WNMG080408RP	**WNMG432RP**	**4045185**	**4121725**	8,69	.342	0,8	1/32	.039	**.114**	.197	.007	**.017**	.023
	WNMG080412RP	**WNMG433RP**	**4045188**	**4121726**	8,69	.342	1,2	3/64	.047	**.137**	.197	.008	**.019**	.025
	WNMG080416RP	**WNMG434RP**	**–**	**4121727**	8,69	.342	1,6	1/16	.055	**.161**	.197	.009	**.019**	.027

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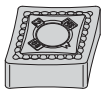
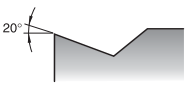
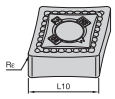
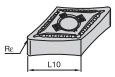
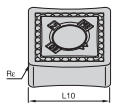
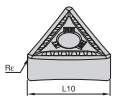
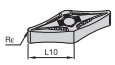
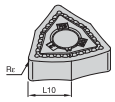
cutting conditions							
cutting speed (SFM) range	S1	50	**180**	460	30	**130**	200
	S2	50	**200**	460	30	**100**	250
	S3	50	**230**	460	50	**130**	250
	S4	50	**230**	560	50	**180**	345
carbide grade		**KCU10**			**KCU25**		

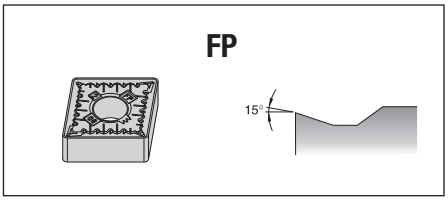
MS

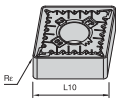
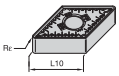
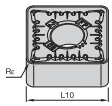
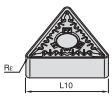
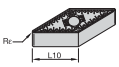
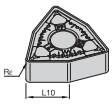




	ISO catalog number	ANSI catalog number	KCU10	KCU25	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CNMG120401MS**	**CNMG430MS**	**5090495**	**–**	12,90	.508	0,1	.004	.005	**.011**	.039	.001	**.003**	.004
	CNMG120402MS	**CNMG4305MS**	**5090494**	**4050399**	12,90	.508	0,2	.008	.011	**.023**	.059	.003	**.005**	.007
	CNMG120404MS	**CNMG431MS**	**5090496**	**4050402**	12,90	.508	0,4	1/64	.015	**.031**	.118	.003	**.007**	.011
	CNMG120408MS	**CNMG432MS**	**5090497**	**4050454**	12,90	.508	0,8	1/32	.023	**.047**	.157	.004	**.009**	.013
	CNMG120412MS	**CNMG433MS**	**5090498**	**4050455**	12,90	.508	1,2	3/64	.039	**.074**	.197	.004	**.009**	.015
	CNMG120416MS	**CNMG434MS**	**5090499**	**4050458**	12,90	.508	1,6	1/16	.047	**.090**	.197	.005	**.009**	.015
	CNMG160608MS	**CNMG542MS**	**5090680**	**4050460**	16,12	.635	0,8	1/32	.023	**.047**	.275	.004	**.011**	.017
	CNMG160612MS	**CNMG543MS**	**5090681**	**4050462**	16,12	.635	1,2	3/64	.039	**.074**	.275	.005	**.011**	.017
	CNMG190608MS	**CNMG642MS**	**5090682**	**4050466**	19,34	.762	0,8	1/32	.039	**.074**	.354	.004	**.011**	.017
	CNMG190612MS	**CNMG643MS**	**5531238**	**5062149**	19,34	.762	1,2	3/64	.047	**.090**	.354	.004	**.011**	.019
	CNMG190616MS	**CNMG644MS**	**5090684**	**4050469**	19,34	.762	1,6	1/16	.055	**.106**	.354	.005	**.011**	.019
	**DNMG110408MS**	**DNMG332MS**	**5090685**	**4050477**	11,63	.458	0,8	1/32	.023	**.047**	.137	.004	**.009**	.013
	DNMG150401MS	**DNMG430MS**	**5090687**	**–**	15,50	.610	0,1	.004	.005	**.011**	.039	.001	**.003**	.004
	DNMG150402MS	**DNMG4305MS**	**5090686**	**4050479**	15,50	.610	0,2	.008	.011	**.023**	.078	.003	**.005**	.007
	DNMG150404MS	**DNMG431MS**	**5090688**	**4050480**	15,50	.610	0,4	1/64	.015	**.031**	.118	.003	**.007**	.011
	DNMG150408MS	**DNMG432MS**	**5090689**	**4050481**	15,50	.610	0,8	1/32	.023	**.047**	.157	.004	**.009**	.013
	DNMG150412MS	**DNMG433MS**	**5090740**	**4050484**	15,50	.610	1,2	3/64	.039	**.074**	.197	.004	**.009**	.015
	DNMG150604MS	**DNMG441MS**	**5090741**	**4050486**	15,50	.610	0,4	1/64	.015	**.031**	.118	.003	**.007**	.011
	DNMG150608MS	**DNMG442MS**	**5090742**	**4050487**	15,50	.610	0,8	1/32	.031	**.063**	.157	.004	**.009**	.013
	DNMG150612MS	**DNMG443MS**	**5090743**	**4050489**	15,50	.610	1,2	3/64	.039	**.074**	.197	.004	**.009**	.015
	**SNMG120408MS**	**SNMG432MS**	**5090760**	**4121683**	12,70	.500	0,8	1/32	.031	**.094**	.157	.004	**.009**	.013
	SNMG120412MS	**SNMG433MS**	**5090761**	**4121685**	12,70	.500	1,2	3/64	.039	**.114**	.197	.004	**.009**	.015
	SNMG150608MS	**SNMG542MS**	**–**	**4121686**	15,88	.625	0,8	1/32	.039	**.114**	.275	.004	**.011**	.017
	SNMG150612MS	**SNMG543MS**	**–**	**4121687**	15,88	.625	1,2	3/64	.047	**.137**	.275	.005	**.011**	.017
	SNMG190612MS	**SNMG643MS**	**–**	**4121689**	19,05	.750	1,2	3/64	.043	**.126**	.354	.004	**.011**	.019
	**TNMG160402MS**	**TNMG3305MS**	**5090767**	**4121695**	16,50	.650	0,2	.008	.011	**.035**	.078	.003	**.005**	.007
	TNMG160404MS	**TNMG331MS**	**5090768**	**4121696**	16,50	.650	0,4	1/64	.015	**.047**	.118	.003	**.007**	.011
	TNMG160408MS	**TNMG332MS**	**5090769**	**4121697**	16,50	.650	0,8	1/32	.031	**.094**	.157	.004	**.009**	.013
	TNMG220404MS	**TNMG431MS**	**5090810**	**4121700**	22,00	.866	0,4	1/64	.015	**.047**	.315	.003	**.009**	.015
	TNMG220408MS	**TNMG432MS**	**5090811**	**4121701**	22,00	.866	0,8	1/32	.031	**.094**	.354	.004	**.011**	.017
	TNMG220412MS	**TNMG433MS**	**5090812**	**4121703**	22,00	.866	1,2	3/64	.039	**.114**	.354	.004	**.011**	.019
	TNMG270608MS	**TNMG542MS**	**–**	**4121706**	27,50	1.083	0,8	1/32	.031	**.094**	.433	.004	**.011**	.019
	**VNMG160401MS**	**VNMG330MS**	**5090852**	**4121713**	16,61	.654	0,1	.004	.005	**.015**	.039	.001	**.003**	.004
	VNMG160402MS	**VNMG3305MS**	**5090851**	**4121712**	16,61	.654	0,2	.008	.011	**.027**	.078	.003	**.005**	.007
	VNMG160404MS	**VNMG331MS**	**5090853**	**4121714**	16,61	.654	0,4	1/64	.015	**.035**	.118	.003	**.007**	.011
	VNMG160408MS	**VNMG332MS**	**5090854**	**4121715**	16,61	.654	0,8	1/32	.031	**.070**	.157	.004	**.009**	.013
	VNMG220404MS	**VNMG431MS**	**5090855**	**4121718**	22,14	.872	0,4	1/64	.015	**.035**	.315	.003	**.009**	.015
	VNMG220408MS	**VNMG432MS**	**5090856**	**4121719**	22,14	.872	0,8	1/32	.031	**.070**	.354	.004	**.011**	.017
	**WNMG060408MS**	**WNMG332MS**	**5090890**	**4121720**	6,52	.257	0,8	1/32	.031	**.094**	.118	.004	**.007**	.011
	WNMG080401MS	**WNMG430MS**	**5090892**	**–**	8,69	.342	0,1	.004	.005	**.019**	.039	.001	**.003**	.004
	WNMG080402MS	**WNMG4305MS**	**5090891**	**4121722**	8,69	.342	0,2	.008	.011	**.035**	.078	.003	**.005**	.007
	WNMG080404MS	**WNMG431MS**	**5090893**	**4121723**	8,69	.342	0,4	1/64	.015	**.047**	.118	.003	**.007**	.011
	WNMG080408MS	**WNMG432MS**	**5090894**	**4121724**	8,69	.342	0,8	1/32	.031	**.094**	.157	.004	**.009**	.013

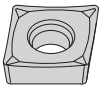
cutting conditions				
cutting speed (SFM) range	S1	50	**180**	460
	S2	50	**200**	460
	S3	50	**230**	460
	S4	50	**230**	560
carbide grade			KCU10	

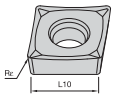
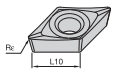
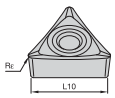
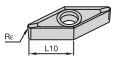


	ISO catalog number	ANSI catalog number	KCU10	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	CNMG120404FP	CNMG431FP	4171824	12,90	.508	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	CNMG120408FP	CNMG432FP	4050061	12,90	.508	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011
	CNMG120412FP	CNMG433FP	4050062	12,90	.508	1,2	3/64	.019	**.047**	.098	.004	**.009**	.013
	DNMG110404FP	DNMG331FP	4171826	11,63	.458	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	DNMG110408FP	DNMG332FP	4050743	11,63	.458	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011
	DNMG150404FP	DNMG431FP	4171827	15,50	.610	0,4	1/64	.007	**.019**	.098	.003	**.005**	.009
	DNMG150408FP	DNMG432FP	4171828	15,50	.610	0,8	1/32	.015	**.039**	.118	.003	**.007**	.011
	DNMG150412FP	DNMG433FP	4171829	15,50	.610	1,2	3/64	.019	**.047**	.137	.004	**.009**	.013
	DNMG150604FP	DNMG441FP	4171830	15,50	.610	0,4	1/64	.007	**.019**	.098	.003	**.005**	.009
	DNMG150608FP	DNMG442FP	4171831	15,50	.610	0,8	1/32	.015	**.039**	.118	.003	**.007**	.011
	SNMG120404FP	SNMG431FP	4171835	12,70	.500	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	SNMG120408FP	SNMG432FP	4171836	12,70	.500	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011
	TNMG160404FP	TNMG331FP	4171838	16,50	.650	0,4	1/64	.007	**.019**	.098	.003	**.005**	.009
	TNMG160408FP	TNMG332FP	4171839	16,50	.650	0,8	1/32	.015	**.039**	.118	.003	**.007**	.011
	TNMG160412FP	TNMG333FP	4171840	16,50	.650	1,2	3/64	.019	**.047**	.137	.004	**.009**	.013
	TNMG220404FP	TNMG431FP	4171841	22,00	.866	0,4	1/64	.007	**.019**	.118	.003	**.005**	.009
	TNMG220408FP	TNMG432FP	4171842	22,00	.866	0,8	1/32	.015	**.039**	.197	.003	**.007**	.011
	VNMG160404FP	VNMG331FP	4171843	16,61	.654	0,4	1/64	.007	**.015**	.078	.003	**.005**	.009
	VNMG160408FP	VNMG332FP	4171844	16,61	.654	0,8	1/32	.011	**.023**	.098	.003	**.007**	.011
	WNMG060404FP	WNMG331FP	4050746	6,52	.257	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	WNMG080404FP	WNMG431FP	4171849	8,69	.342	0,4	1/64	.007	**.019**	.078	.003	**.005**	.009
	WNMG080408FP	WNMG432FP	4171851	8,69	.342	0,8	1/32	.015	**.039**	.098	.003	**.007**	.011

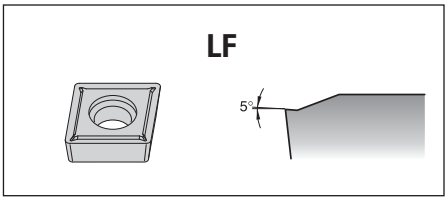
cutting conditions							
cutting speed (SFM) range	S1	50	**180**	460	30	**130**	200
	S2	50	**200**	460	30	**100**	250
	S3	50	**230**	460	50	**130**	250
	S4	50	**230**	560	50	**180**	345
carbide grade		KCU10			KCU25		

HP

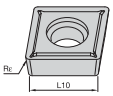
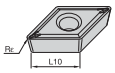
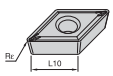
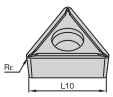
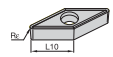


	ISO catalog number	ANSI catalog number	KCU10	KCU25	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CCGT060202HP**	**CCGT21505HP**	**4045134**	**4050372**	6,45	.254	0,2	.008	.007	**.015**	.039	.001	**.003**	.005
	CCGT060204HP	**CCGT2151HP**	**4045137**	**4050403**	6,45	.254	0,4	1/64	.015	**.031**	.070	.003	**.005**	.011
	CCGT060208HP	**CCGT2152HP**	**–**	**4050404**	6,45	.254	0,8	1/32	.023	**.043**	.078	.003	**.009**	.015
	CCGT09T302HP	**CCGT32505HP**	**4045141**	**4050405**	9,67	.381	0,2	.008	.007	**.015**	.059	.001	**.003**	.005
	CCGT09T304HP	**CCGT3251HP**	**4045194**	**4050406**	9,67	.381	0,4	1/64	.015	**.031**	.078	.003	**.005**	.011
	CCGT09T308HP	**CCGT3252HP**	**4045196**	**4050407**	9,67	.381	0,8	1/32	.023	**.043**	.090	.003	**.009**	.015
	CCGT120402HP	**CCGT4305HP**	**4045198**	**4050408**	12,90	.508	0,2	.008	.007	**.015**	.078	.001	**.003**	.005
	CCGT120404HP	**CCGT431HP**	**4045199**	**–**	12,90	.508	0,4	1/64	.015	**.031**	.137	.003	**.005**	.011
	CCGT120408HP	**CCGT432HP**	**4045200**	**–**	12,90	.508	0,8	1/32	.023	**.043**	.157	.003	**.009**	.015
	**DCGT070202HP**	**DCGT21505HP**	**4045237**	**4050421**	7,75	.305	0,2	.008	.007	**.015**	.039	.001	**.003**	.005
	DCGT070204HP	**DCGT2151HP**	**4045239**	**4050422**	7,75	.305	0,4	1/64	.015	**.031**	.070	.003	**.005**	.011
	DCGT070208HP	**DCGT2152HP**	**4045240**	**–**	7,75	.305	0,8	1/32	.023	**.043**	.078	.003	**.009**	.015
	DCGT11T302HP	**DCGT32505HP**	**4045241**	**4050424**	11,63	.458	0,2	.008	.007	**.015**	.059	.001	**.003**	.005
	DCGT11T304HP	**DCGT3251HP**	**4045263**	**4050425**	11,63	.458	0,4	1/64	.015	**.031**	.078	.003	**.005**	.011
	DCGT11T308HP	**DCGT3252HP**	**4045264**	**4050426**	11,63	.458	0,8	1/32	.023	**.043**	.090	.003	**.009**	.015
	**TCGT110202HP**	**TCGT21505HP**	**–**	**4050434**	11,00	.433	0,2	.008	.007	**.015**	.039	.001	**.003**	.005
	TCGT110204HP	**TCGT2151HP**	**–**	**4050435**	11,00	.433	0,4	1/64	.015	**.027**	.070	.003	**.005**	.011
	TCGT16T302HP	**TCGT32505HP**	**–**	**4050437**	16,50	.650	0,2	.008	.007	**.015**	.078	.001	**.003**	.005
	TCGT16T304HP	**TCGT3251HP**	**4045316**	**–**	16,50	.650	0,4	1/64	.015	**.027**	.137	.003	**.005**	.011
	TCGT16T308HP	**TCGT3252HP**	**4045318**	**–**	16,50	.650	0,8	1/32	.023	**.039**	.157	.003	**.009**	.015
	**VBGT110302HP**	**VBGT2205HP**	**4045335**	**–**	11,07	.436	0,2	.008	.007	**.015**	.039	.001	**.003**	.005
	VBGT110304HP	**VBGT221HP**	**4045338**	**4050447**	11,07	.436	0,4	1/64	.015	**.027**	.070	.003	**.005**	.011
	VBGT160404HP	**VBGT331HP**	**4045342**	**4050448**	16,61	.654	0,4	1/64	.015	**.027**	.137	.003	**.005**	.011
	VBGT160408HP	**VBGT332HP**	**4045344**	**4050449**	16,61	.654	0,8	1/32	.023	**.039**	.157	.003	**.009**	.015

A37	A43	A46



cutting conditions				
cutting speed (SFM) range	S1	50	**180**	460
	S2	50	**200**	460
	S3	50	**230**	460
	S4	50	**230**	560
carbide grade			KCU10	

	ISO catalog number	ANSI catalog number	KCU10	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	**CCGT060201LF**	**CCGT2150LF**	**4045136**	6,45	.254	0,1	.004	.001	**.003**	.039	.001	**.001**	.003
	CCGT060202LF	**CCGT21505LF**	**4045135**	6,45	.254	0,2	.008	.003	**.007**	.059	.002	**.003**	.004
	CCGT060204LF	**CCGT2151LF**	**4045138**	6,45	.254	0,4	1/64	.011	**.023**	.078	.003	**.005**	.007
	CCGT060208LF	**CCGT2152LF**	**4045140**	6,45	.254	0,8	1/32	.023	**.043**	.090	.003	**.007**	.011
	CCGT09T301LF	**CCGT3250LF**	**4045193**	9,67	.381	0,1	.004	.003	**.007**	.039	.001	**.001**	.003
	CCGT09T302LF	**CCGT32505LF**	**4045142**	9,67	.381	0,2	.008	.007	**.015**	.059	.002	**.003**	.004
	CCGT09T304LF	**CCGT3251LF**	**4045195**	9,67	.381	0,4	1/64	.011	**.023**	.078	.003	**.007**	.011
	CCGT09T308LF	**CCGT3252LF**	**4045197**	9,67	.381	0,8	1/32	.023	**.043**	.090	.003	**.009**	.015
	**DCGT070201LF**	**DCGT2150LF**	**4045238**	7,75	.305	0,1	.004	.001	**.003**	.039	.001	**.001**	.003
	DCGT11T301LF	**DCGT3250LF**	**4045242**	11,63	.458	0,1	.004	.001	**.003**	.039	.001	**.001**	.003
	**DCMT11T308LF**	**DCMT3252LF**	**4045269**	11,63	.458	0,8	1/32	.031	**.070**	.090	.003	**.007**	.011
	**TCGT110204LF**	**TCGT2151LF**	**4044822**	11,00	.433	0,4	1/64	.011	**.023**	.078	.003	**.007**	.011
	TCGT16T304LF	**TCGT3251LF**	**4045317**	16,50	.650	0,4	1/64	.011	**.023**	.078	.003	**.007**	.011
	TCGT16T308LF	**TCGT3252LF**	**4045319**	16,50	.650	0,8	1/32	.023	**.043**	.090	.003	**.009**	.015
	**VBGT110301LF**	**VBGT220LF**	**4045337**	11,07	.436	0,1	.004	.001	**.003**	.039	.001	**.001**	.003
	VBGT110302LF	**VBGT2205LF**	**4045336**	11,07	.436	0,2	.008	.003	**.007**	.059	.002	**.003**	.004
	VBGT110304LF	**VBGT221LF**	**4045339**	11,07	.436	0,4	1/64	.011	**.023**	.078	.003	**.005**	.007
	VBGT160401LF	**VBGT330LF**	**4045341**	16,61	.654	0,1	.004	.001	**.003**	.039	.001	**.001**	.003
	VBGT160402LF	**VBGT3305LF**	**4045340**	16,61	.654	0,2	.008	.003	**.007**	.059	.002	**.003**	.004
	VBGT160404LF	**VBGT331LF**	**4045343**	16,61	.654	0,4	1/64	.011	**.023**	.078	.003	**.005**	.007

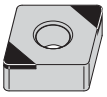
TURNING
FIRST CHOICE
MILLING
FIRST CHOICE
HOLEMAKING
FIRST CHOICE
TOOLING SYSTEMS
FIRST CHOICE

A37

A43

A46

cutting conditions				
cutting speed (SFM) range	H1	390	**590**	850
	H2	390	**590**	850
	H3	260	**390**	590
	H4	260	**390**	590
PcBN grade			KBH20	

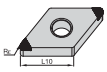
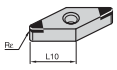


Edge Preparation Details:

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

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

..FW..: Wiper Geometry

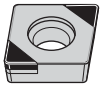
	ISO catalog number	ANSI catalog number	KBH20	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	CNGA120408S01015FWMT	**CNGA432S0415FWMT**	**5330832**	12,90	.508	0,8	1/32	.003	**.007**	.019	.003	**.005**	.007
	CNGA120412S01015FWMT	**CNGA433S0415FWMT**	**5330836**	12,90	.508	1,2	3/64	.003	**.007**	.019	.003	**.005**	.007
	CNGA120408S01225MT	**CNGA432S0525MT**	**5330699**	12,90	.508	0,8	1/32	.003	**.011**	.019	.003	**.005**	.007
	CNGA120412S01225MT	**CNGA433S0525MT**	**5330833**	12,90	.508	1,2	3/64	.004	**.011**	.015	.003	**.005**	.009
	**DNGA150608S01225MT**	**DNGA442S0525MT**	**5330850**	15,50	.610	0,8	1/32	.004	**.011**	.015	.003	**.005**	.007
	DNGA150612S01015MT	**DNGA443S0415MT**	**5330854**	15,50	.610	1,2	3/64	.003	**.011**	.015	.003	**.005**	.007
	**VNGA160412S01225MT**	**VNGA333S0525MT**	**5330873**	16,61	.654	1,2	3/64	.003	**.011**	.015	.003	**.005**	.007

A30

A35

A46

cutting conditions				
cutting speed (SFM) range	H1	390	**590**	850
	H2	390	**590**	850
	H3	260	**390**	590
	H4	260	**390**	590
PcBN grade			KBH20	

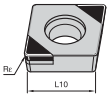
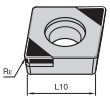


Edge Preparation Details:

..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 catalog number	ANSI catalog number	KBH20	L10 mm	L10 in	Rε mm	Rε in	ap min	starting value depth of cut (in)	ap max	f/rev min	starting value feed rate (in/rev)	f/rev max
	CCGW09T304S01015FWMT	CCGW3251S0415FWMT	5330136	9,67	.381	0,4	1/64	.003	**.007**	.009	.003	**.003**	.005
	CCGW09T308S01015FWMT	CCGW3252S0415FWMT	5330139	9,67	.381	0,8	1/32	.003	**.007**	.011	.003	**.005**	.007
	CCGW09T308S01015MT	CCGW3252S0415MT	5330138	9,67	.381	0,8	1/32	.003	**.007**	.011	.003	**.005**	.007
	CCGW09T308S01225MT	CCGW3252S0525MT	5330137	9,67	.381	0,8	1/32	.004	**.011**	.015	.003	**.005**	.007

TURNING
FIRST CHOICE
MILLING
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TOOLING SYSTEMS
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A37

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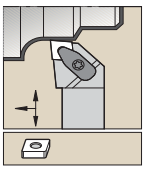
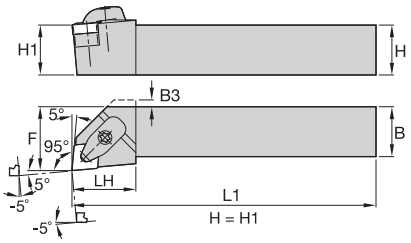
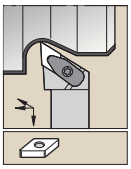
A46

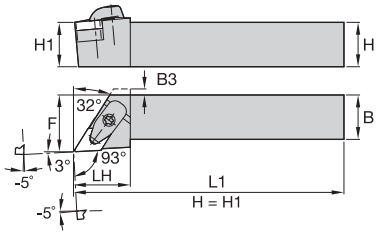


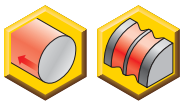


DCLN-KC -5°

order number	catalog number	H	B	F	L1	LH	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand														
2417292	**DCLNR123BKC3**	.75	.75	1.000	4.50	1.12	.06	CN..322	**ICSN332**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1875137	**DCLNR124BKC3**	.75	.75	1.000	4.50	1.25	.15	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1875134	**DCLNR164CKC3**	1.00	1.00	1.250	5.00	1.25	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1874862	**DCLNR164DKC3**	1.00	1.00	1.250	6.00	1.25	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1875141	**DCLNR204DKC3**	1.25	1.25	1.500	6.00	1.25	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1875161	**DCLNR165CKC4**	1.00	1.00	1.250	5.00	1.38	—	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
1875145	**DCLNR165DKC4**	1.00	1.00	1.250	6.00	1.38	—	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
1875150	**DCLNR205DKC4**	1.25	1.25	1.500	6.00	1.38	—	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
2273008	**DCLNR166DKC4**	1.00	1.00	1.250	6.00	1.38	—	CN..643	**ICSN633**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**
2273010	**DCLNR206DKC4**	1.25	1.25	1.500	6.00	1.63	—	CN..643	**ICSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**
left hand														
1875142	**DCLNL124BKC3**	.75	.75	1.000	4.50	1.25	.15	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1875135	**DCLNL164CKC3**	1.00	1.00	1.250	5.00	1.25	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1875133	**DCLNL164DKC3**	1.00	1.00	1.250	6.00	1.25	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1875146	**DCLNL204DKC3**	1.25	1.25	1.500	6.00	1.25	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1875173	**DCLNL165CKC4**	1.00	1.00	1.250	5.00	1.38	—	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
1875147	**DCLNL165DKC4**	1.00	1.00	1.250	6.00	1.38	—	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
1875153	**DCLNL205DKC4**	1.25	1.25	1.500	6.00	1.38	—	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
2273011	**DCLNL206DKC4**	1.25	1.25	1.500	6.00	1.63	—	CN..643	**ICSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**

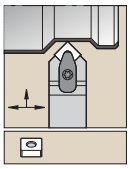


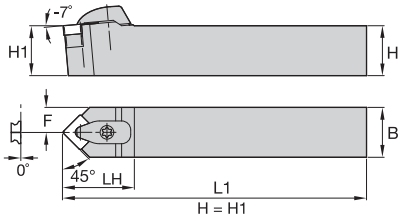


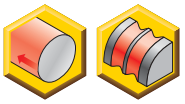


DDJN-KC -3°

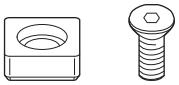
order number	catalog number	H	B	F	L1	LH	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand														
2273014	**DDJNR123BKC3**	.75	.75	1.000	4.50	1.25	.06	DN..332	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
2273065	**DDJNR163CKC3**	1.00	1.00	1.250	5.00	1.25	—	DN..332	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
2273016	**DDJNR163DKC3**	1.00	1.00	1.250	6.00	1.25	—	DN..332	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1875140	**DDJNR164CKC3**	1.00	1.00	1.250	5.00	1.25	—	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1875136	**DDJNR164DKC3**	1.00	1.00	1.250	6.00	1.25	—	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1875148	**DDJNR204DKC3**	1.25	1.25	1.500	6.00	1.25	—	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1875170	**DDJNR165DKC4**	1.00	1.00	1.250	6.00	1.38	.15	DN..543	**IDSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
left hand														
2273015	**DDJNL123BKC3**	.75	.75	1.000	4.50	1.25	.06	DN..332	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
2273066	**DDJNL163CKC3**	1.00	1.00	1.250	5.00	1.25	—	DN..332	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
2273017	**DDJNL163DKC3**	1.00	1.00	1.250	6.00	1.25	—	DN..332	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1875149	**DDJNL164CKC3**	1.00	1.00	1.250	5.00	1.25	—	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1875139	**DDJNL164DKC3**	1.00	1.00	1.250	6.00	1.25	—	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1875151	**DDJNL204DKC3**	1.25	1.25	1.500	6.00	1.25	—	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**



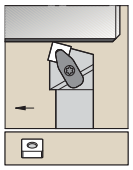


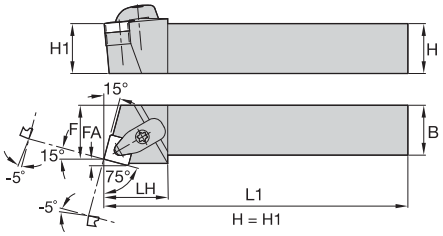


DSDN-KC 45°



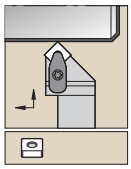
order number	catalog number	H	B	F	L1	LH	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
2273072	**DSDNN124KC3**	.75	.75	.375	4.50	1.44	SN..432	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1908834	**DSDNN164KC3**	1.00	1.00	.500	6.00	1.44	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1908835	**DSDNN204KC3**	1.25	1.25	.625	6.00	1.44	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**

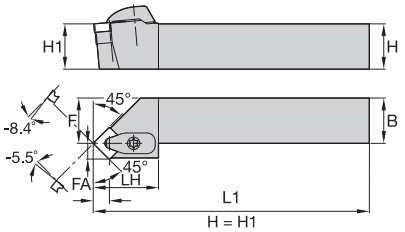




DSRN-KC 15°

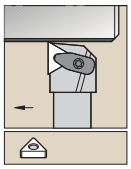
order number	catalog number	H	B	F	L1	LH	FA	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
left hand														
1875168	**DSRNL164DKC3**	1.00	1.00	1.130	6.00	1.25	.12	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**

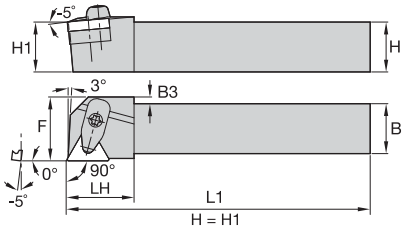




DSSN-KC 45°

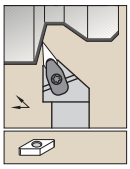
order number	catalog number	H	B	F	L1	LH	FA	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand														
1875163	**DSSNR164DKC3**	1.00	1.00	.912	6.00	1.50	.34	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**

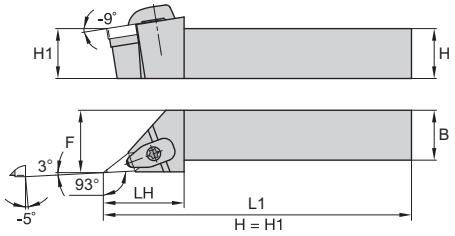




DTGN-KC 0°

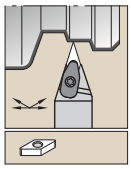
order number	catalog number	H	B	F	L1	LH	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand														
2273035	**DTGNR123BKC3**	.75	.75	1.000	4.50	1.12	.25	TN..332	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
1875152	**DTGNR164DKC3**	1.00	1.00	1.250	6.00	1.25	.09	TN..432	**ITSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**

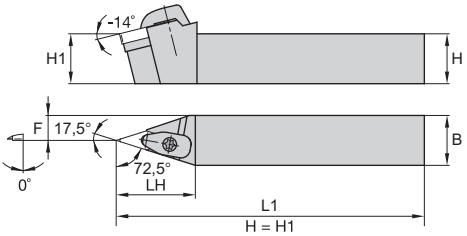


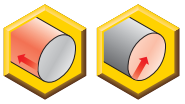


DVJN-KC -3°

order number	catalog number	H	B	F	L1	LH	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand													
2503996	**DVJNR123CKC3**	.75	.75	1.000	5.00	1.82	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
2503998	**DVJNR163DKC3**	1.00	1.00	1.250	6.00	1.82	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
2504000	**DVJNR853DKC3**	1.25	1.00	1.250	6.00	1.82	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
2504002	**DVJNR164DKC3**	1.00	1.00	1.250	6.00	2.15	VN..432	**IVSN432**	**KMSP415IP**	15 IP	**CM235R ASSY**	15 IP	**SSP025016M**
left hand													
2503997	**DVJNL123CKC3**	.75	.75	1.000	5.00	1.82	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
2503999	**DVJNL163DKC3**	1.00	1.00	1.250	6.00	1.82	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
2504001	**DVJNL853DKC3**	1.25	1.00	1.250	6.00	1.82	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
2504003	**DVJNL164DKC3**	1.00	1.00	1.250	6.00	2.15	VN..432	**IVSN432**	**KMSP415IP**	15 IP	**CM235R ASSY**	15 IP	**SSP025016M**

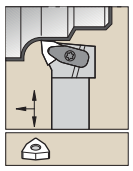


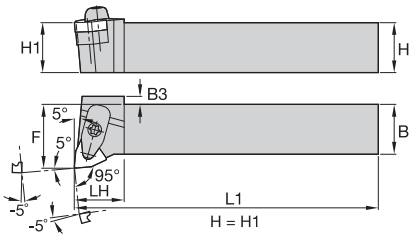




DVVN-KC 17.5°

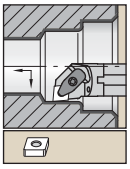
order number	catalog number	H	B	F	L1	LH	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
neutral hand													
2504012	DVVNN123CKC3	.75	.75	.371	5.00	1.94	VN..332	IVSN322	KMSP315IP	15 IP	CM215R ASSY	15 IP	SSP025016M
2504013	DVVNN163DKC3	1.00	1.00	.496	6.00	1.97	VN..332	IVSN322	KMSP315IP	15 IP	CM215R ASSY	15 IP	SSP025016M
2504015	DVVNN164DKC3	1.00	1.00	.496	6.00	2.28	VN..432	IVSN432	KMSP415IP	15 IP	CM235R ASSY	15 IP	SSP025016M



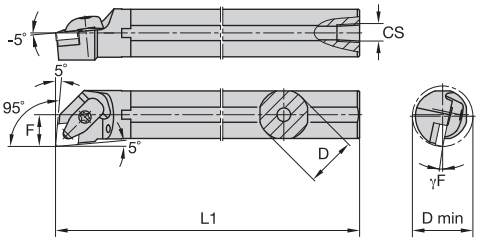


DWLN-KC -5°

order number	catalog number	H	B	F	L1	LH	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand														
2273045	DWLNR123BKC3	.75	.75	1.000	4.50	1.00	.28	WN..332	IWSN322	KMSP315IP	15 IP	CM234R ASSY	15 IP	SSP025016M
2273047	DWLNR163CKC3	1.00	1.00	1.250	5.00	1.00	.06	WN..332	IWSN322	KMSP315IP	15 IP	CM234R ASSY	15 IP	SSP025016M
2273049	DWLNR163DKC3	1.00	1.00	1.250	6.00	1.00	.06	WN..332	IWSN322	KMSP315IP	15 IP	CM234R ASSY	15 IP	SSP025016M
1875144	DWLNR164CKC3	1.00	1.00	1.250	5.00	1.00	.15	WN..432	IWSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M
1875138	DWLNR164DKC3	1.00	1.00	1.250	6.00	1.00	.15	WN..432	IWSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M
1875166	DWLNR204DKC3	1.25	1.25	1.500	6.00	1.00	–	WN..432	IWSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M
left hand														
2273046	DWLNL123BKC3	.75	.75	1.000	4.50	1.00	.28	WN..332	IWSN322	KMSP315IP	15 IP	CM234R ASSY	15 IP	SSP025016M
2273048	DWLNL163CKC3	1.00	1.00	1.250	5.00	1.00	.06	WN..332	IWSN322	KMSP315IP	15 IP	CM234R ASSY	15 IP	SSP025016M
1875155	DWLNL164CKC3	1.00	1.00	1.250	5.00	1.00	.15	WN..432	IWSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M
1875143	DWLNL164DKC3	1.00	1.00	1.250	6.00	1.00	.15	WN..432	IWSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M
1875172	DWLNL204DKC3	1.25	1.25	1.500	6.00	1.00	–	WN..432	IWSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M

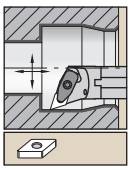


Steel shank with through coolant.

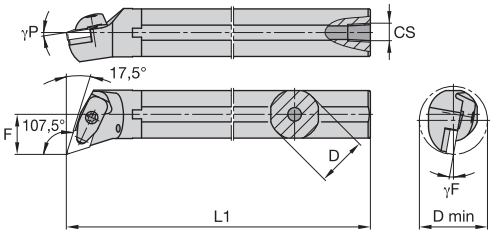


A-DCLN-KC -5°

order number	catalog number	D	D min	F	L1	CS	γF°	gage insert	shim	shim screw	Torx Plus	clamp assembly	slotted pin	Torx Plus
right hand														
2408517	**A16TDCLNR3KC2**	1.000	1.200	.640	12.00	1/4-18 NPT	-10.0	CN..322	–	–	–	**CM234RLP ASSY**	**SSP025016M**	15 IP
2408518	**A16TDCLNR4KC3**	1.000	1.200	.640	12.00	1/4-18 NPT	-12.0	CN..432	–	–	–	**CM234RLP ASSY**	**SSP025016M**	15 IP
2408519	**A20UDCLNR4KC3**	1.250	1.470	.765	14.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP4S15IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
2408520	**A24UDCLNR4KC3**	1.500	1.760	.890	14.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
2408521	**A24UDCLNR5KC4**	1.500	1.760	.890	14.00	1/4-18 NPT	-14.0	CN..543	**ICSN533**	**KMSP5S15IP**	15 IP	**CM209R ASSY**	**SSP025018M**	15 IP
2408522	**A28UDCLNR4KC3**	1.750	2.010	1.015	14.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
2408523	**A32VDCLNR4KC3**	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
2408524	**A32VDCLNR5KC4**	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..543	**ICSN533**	**KMSP515IP**	15 IP	**CM209R ASSY**	**SSP025018M**	15 IP
2408526	**A40VDCLNR4KC3**	2.500	3.030	1.531	16.00	1/4-18 NPT	-8.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
left hand														
2408507	**A16TDCLNL4KC3**	1.000	1.200	.640	12.00	1/4-18 NPT	-12.0	CN..432	–	–	–	**CM234RLP ASSY**	**SSP025016M**	15 IP
2408508	**A20UDCLNL4KC3**	1.250	1.470	.765	14.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP4S15IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
2408509	**A24UDCLNL4KC3**	1.500	1.760	.890	14.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
2408511	**A28UDCLNL4KC3**	1.750	2.010	1.015	14.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
2408512	**A32VDCLNL4KC3**	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
2408516	**A40VDCLNL6KC4**	2.500	3.030	1.531	16.00	1/4-18 NPT	-10.0	CN..643	**ICSN633**	**KMSP625IP**	25 IP	**CM210R ASSY**	**SSP025018M**	25 IP

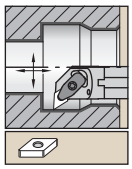


Steel shank with through coolant.

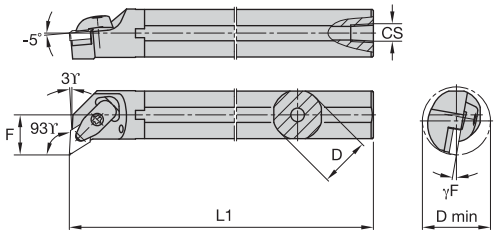


A-DDQN-KC -17.5°

order number	catalog number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	shim screw	Torx Plus	clamp assembly	slotted pin	Torx Plus
right hand															
2408549	**A20UDDQNR4KC3**	1.250	1.705	1.000	14.00	1/4-18 NPT	-10.0	-12.0	DN.432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
2408550	**A24UDDQNR4KC3**	1.500	2.000	1.125	14.00	1/4-18 NPT	-8.5	-8.5	DN.432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
left hand															
2408547	**A20UDDQNL4KC3**	1.250	1.705	1.000	14.00	1/4-18 NPT	-10.0	-12.0	DN.432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP

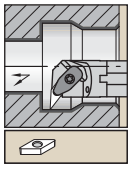


Steel shank with through coolant.

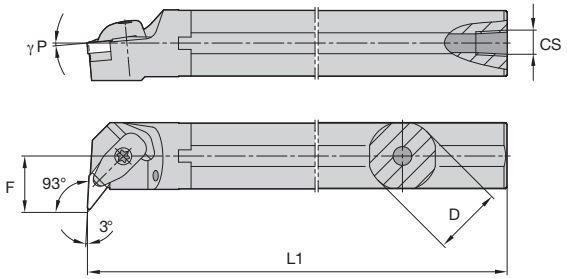


A-DDUN-KC -3°

order number	catalog number	D	D min	F	L1	CS	γF°	gage insert	shim	shim screw	Torx Plus	clamp assembly	slotted pin	Torx Plus
right hand														
2408389	**A16TDDUNR3KC3**	1.000	1.300	.750	12.00	1/4-18 NPT	-12.0	DN..332	**–**	**–**	–	**CM234RLP ASSY**	**SSP025016M**	15 IP
2408390	**A20UDDUNR3KC3**	1.250	1.705	1.000	14.00	1/4-18 NPT	-10.0	DN..332	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
2408391	**A20UDDUNR4KC3**	1.250	1.705	1.000	14.00	1/4-18 NPT	-12.0	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
2408392	**A24UDDUNR4KC3**	1.500	2.000	1.125	14.00	1/4-18 NPT	-10.0	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
2408464	**A32VDDUNR4KC3**	2.000	2.500	1.375	16.00	1/4-18 NPT	-8.0	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
left hand														
2408528	**A16TDDUNL3KC3**	1.000	1.300	.750	12.00	1/4-18 NPT	-12.0	DN..332	**–**	**–**	–	**CM234RLP ASSY**	**SSP025016M**	15 IP

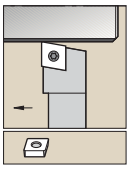


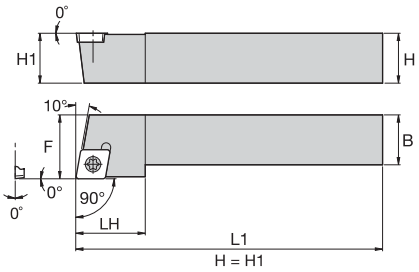
Steel shank with through coolant.

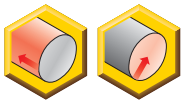


A-DVUN-KC 3°

order number	catalog number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	shim screw	Torx Plus	clamp assembly	slotted pin	Torx Plus
right hand															
2659293	**A20UDVUNR3KC3**	1.250	1.705	1.000	14.00	1/4-18 NPT	-9.0	-5.0	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
2659295	**A24UDVUNR3KC3**	1.500	2.000	1.125	14.00	1/4-18 NPT	-8.0	-5.0	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	**SSP025016M**	15 IP

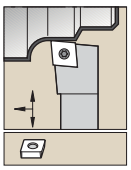


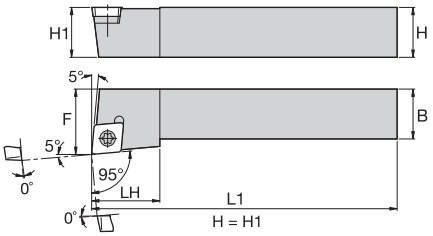




SCGC 0°

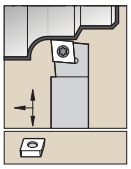
order number	catalog number	H	B	F	L1	LH	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
1094455	**SCGCR082**	.50	.50	.625	3.50	.50	CC..2151	–	–	–	**MS1153**	T7
1094461	**SCGCR123**	.75	.75	1.000	4.50	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand												
1094462	**SCGCL123**	.75	.75	1.000	4.50	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15

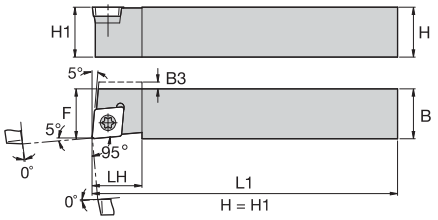




SCLC -5°

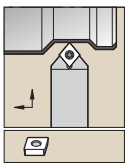
order number	catalog number	H	B	F	L1	LH	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
1094475	**SCLCR052**	.31	.31	.375	2.50	.50	CC..2151	–	–	–	**MS1153**	T7
1094477	**SCLCR062**	.38	.38	.500	2.50	.50	CC..2151	–	–	–	**MS1153**	T7
1094479	**SCLCR082**	.50	.50	.625	3.50	.50	CC..2151	–	–	–	**MS1153**	T7
1094481	**SCLCR102**	.63	.63	.750	4.00	.50	CC..2151	–	–	–	**MS1153**	T7
1094483	**SCLCR103**	.63	.63	.750	4.00	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
1094485	**SCLCR123**	.75	.75	1.000	4.50	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
1094576	**SCLCR163**	1.00	1.00	1.250	6.00	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
1843875	**SCLCR124B**	.75	.75	1.000	4.50	.75	CC..432	**SKCP453**	**SRS4**	4 mm	**MS1158**	T15
1843877	**SCLCR164D**	1.00	1.00	1.250	6.00	.75	CC..432	**SKCP453**	**SRS4**	4 mm	**MS1158**	T15
left hand												
1094478	**SCLCL062**	.38	.38	.500	2.50	.50	CC..2151	–	–	–	**MS1153**	T7
1094480	**SCLCL082**	.50	.50	.625	3.50	.50	CC..2151	–	–	–	**MS1153**	T7
1094482	**SCLCL102**	.63	.63	.750	4.00	.50	CC..2151	–	–	–	**MS1153**	T7
1094484	**SCLCL103**	.63	.63	.750	4.00	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
1094486	**SCLCL123**	.75	.75	1.000	4.50	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
1094577	**SCLCL163**	1.00	1.00	1.250	6.00	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
1843874	**SCLCL124B**	.75	.75	1.000	4.50	.75	CC..432	**SKCP453**	**SRS4**	4 mm	**MS1158**	T15
1843876	**SCLCL164D**	1.00	1.00	1.250	6.00	.75	CC..432	**SKCP453**	**SRS4**	4 mm	**MS1158**	T15

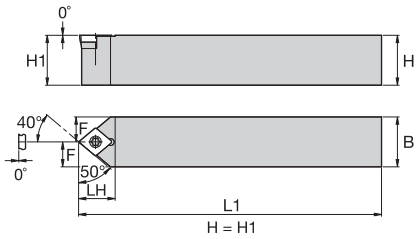


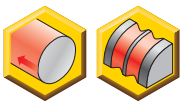


SCLC-F -5°

order number	catalog number	H	B	F	L1	LH	B3	gage insert	shim	shim screw	hex	insert screw	Torx
right hand													
1094491	**SCLCRF062D**	.38	.38	.375	6.00	.50	–	CC..2151	–	–	–	**MS1153**	T7
1094493	**SCLCRF082D**	.50	.50	.500	6.00	.50	–	CC..2151	–	–	–	**MS1153**	T7
1094495	**SCLCRF083D**	.50	.50	.500	6.00	.62	.09	CC..3252	–	–	–	**MS1155**	T15
1094591	**SCLCRF523Z**	.50	.63	.625	3.25	.62	–	CC..3252	–	–	–	**MS1155**	T15
1094593	**SCLCRF103B**	.63	.63	.625	4.50	.62	–	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand													
1094496	**SCLCLF083D**	.50	.50	.500	6.00	.62	.09	CC..3252	–	–	–	**MS1155**	T15
1094594	**SCLCLF103B**	.63	.63	.625	4.50	.62	–	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15

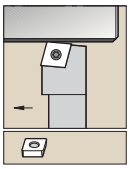


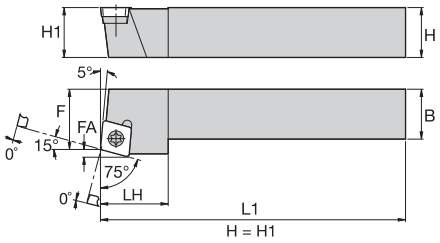




SCMC 40°

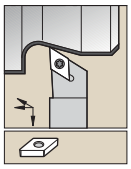
order number	catalog number	H	B	F	L1	LH	gage insert	shim	shim screw	hex	insert screw	Torx
1094498	**SCMCN082**	.50	.50	.250	3.50	.50	CC..2151	–	–	–	**MS1153**	T7
1094500	**SCMCN083**	.50	.50	.250	3.50	.62	CC..3252	–	–	–	**MS1155**	T15
1094502	**SCMCN123**	.75	.75	.375	4.50	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15

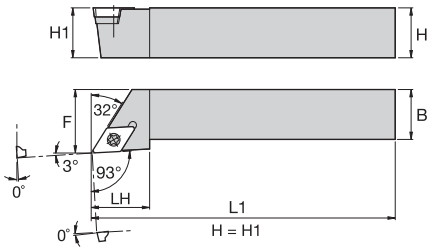




SCRC 15°

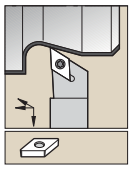
order number	catalog number	H	B	F	L1	LH	FA	gage insert	insert screw	Torx
right hand										
1094511	**SCRCR083**	.50	.50	.548	3.50	.62	.09	CC..3252	**MS1155**	T15
left hand										
1094512	**SCRCL083**	.50	.50	.548	3.50	.62	.09	CC..3252	**MS1155**	T15

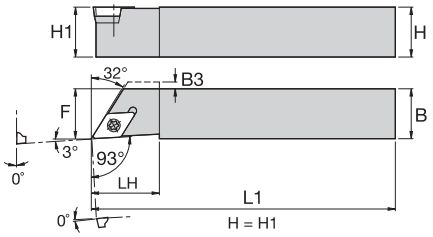


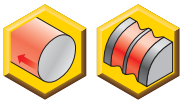


SDJC -3°

order number	catalog number	H	B	F	L1	LH	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
1094519	**SDJCR062**	.38	.38	.500	2.50	.62	DC..2151	–	–	–	**MS1153**	T7
1094521	**SDJCR082**	.50	.50	.625	3.50	.62	DC..2151	–	–	–	**MS1153**	T7
1094523	**SDJCR102**	.63	.63	.750	4.00	.62	DC..2151	–	–	–	**MS1153**	T7
1094525	**SDJCR083**	.50	.50	.625	3.50	.88	DC..3252	–	–	–	**MS1155**	T15
1094527	**SDJCR103**	.63	.63	.750	4.00	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
1094529	**SDJCR123**	.75	.75	1.000	4.50	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
1094531	**SDJCR163**	1.00	1.00	1.250	6.00	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand												
1094520	**SDJCL062**	.38	.38	.500	2.50	.62	DC..2151	–	–	–	**MS1153**	T7
1094522	**SDJCL082**	.50	.50	.625	3.50	.62	DC..2151	–	–	–	**MS1153**	T7
1094524	**SDJCL102**	.63	.63	.750	4.00	.62	DC..2151	–	–	–	**MS1153**	T7
1094526	**SDJCL083**	.50	.50	.625	3.50	.88	DC..3252	–	–	–	**MS1155**	T15
1094528	**SDJCL103**	.63	.63	.750	4.00	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
1094530	**SDJCL123**	.75	.75	1.000	4.50	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
1094532	**SDJCL163**	1.00	1.00	1.250	6.00	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15

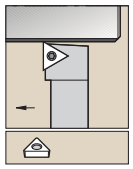


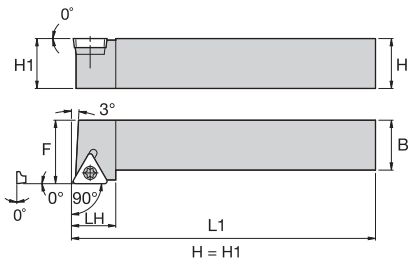




SDJC-F -3°

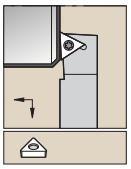
order number	catalog number	H	B	F	L1	LH	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
1094601	**SDJCRF062D**	.38	.38	.375	6.00	.62	DC..2151	–	–	–	**MS1153**	T7
1094603	**SDJCRF082D**	.50	.50	.500	6.00	.62	DC..2151	–	–	–	**MS1153**	T7
1232019	**SDJCRF083D**	.50	.50	.500	6.00	.88	DC..3252	–	–	–	**MS1155**	T15
1094605	**SDJCRF103B**	.63	.63	.625	4.50	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand												
1094602	**SDJCLF062D**	.38	.38	.375	6.00	.62	DC..2151	–	–	–	**MS1153**	T7
1094604	**SDJCLF082D**	.50	.50	.500	6.00	.62	DC..2151	–	–	–	**MS1153**	T7
1886490	**SDJCLF083D**	.50	.50	.500	6.00	.88	DC..3252	–	–	–	**MS1155**	T15
1094606	**SDJCLF103B**	.63	.63	.625	4.50	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15

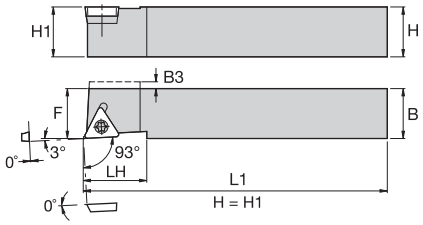


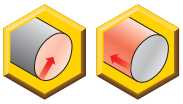


STGC 0°

order number	catalog number	H	B	F	L1	LH	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
1094423	**STGCR082**	.50	.50	.625	3.50	.62	TC..2151	–	–	–	**MS1153**	T7
1094427	**STGCR103**	.63	.63	.750	4.00	.75	TC..3252	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
1094429	**STGCR123**	.75	.75	1.000	4.50	.75	TC..3252	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand												
1094424	**STGCL082**	.50	.50	.625	3.50	.62	TC..2151	–	–	–	**MS1153**	T7

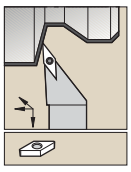


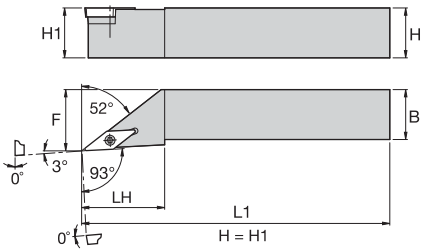


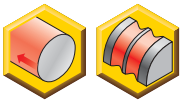


STJC-F -3°

order number	catalog number	H	B	F	L1	LH	B3	gage insert	insert screw	Torx Plus
right hand										
1772124	STJCRF062D	.38	.38	.375	6.00	.62	.09	TC..2151	MS1153	T7
1772126	STJCRF082D	.50	.50	.500	6.00	.62	—	TC..2151	MS1153	T7

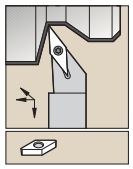


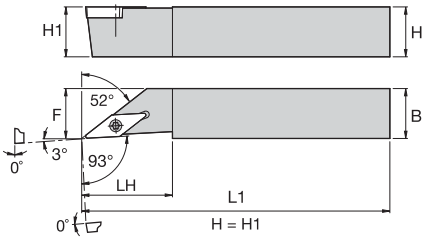


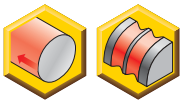


SVJB -3°

order number	catalog number	H	B	F	L1	LH	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
1094533	SVJBR062	.38	.38	.500	2.50	.88	VB..221	—	—	—	MS1153	T7
1094535	SVJBR082	.50	.50	.625	3.50	.88	VB..221	—	—	—	MS1153	T7
1094537	SVJBR102	.63	.63	.750	4.00	.88	VB..221	—	—	—	MS1153	T7
1094539	SVJBR123	.75	.75	1.000	4.50	1.38	VB..332	SKVN343	SRS3	3.5 mm	MS1156	T15
1094541	SVJBR163	1.00	1.00	1.250	6.00	1.38	VB..332	SKVN343	SRS3	3.5 mm	MS1156	T15
left hand												
1094536	SVJBL082	.50	.50	.625	3.50	.88	VB..221	—	—	—	MS1153	T7
1094538	SVJBL102	.63	.63	.750	4.00	.88	VB..221	—	—	—	MS1153	T7
1094540	SVJBL123	.75	.75	1.000	4.50	1.38	VB..332	SKVN343	SRS3	3.5 mm	MS1156	T15
1094542	SVJBL163	1.00	1.00	1.250	6.00	1.38	VB..332	SKVN343	SRS3	3.5 mm	MS1156	T15

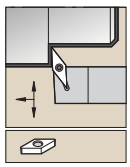


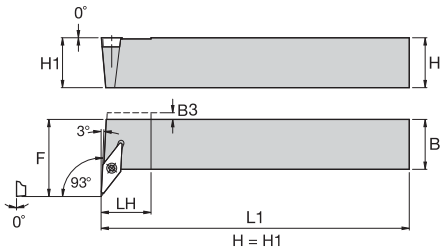


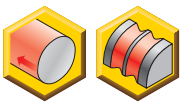


SVJB-F -3°

order number	catalog number	H	B	F	L1	LH	gage insert	insert screw	Torx Plus
right hand									
1094615	**SVJBRF062D**	.38	.38	.375	6.00	.93	VB..221	**MS1153**	T7
1094617	**SVJBRF082D**	.50	.50	.500	6.00	.93	VB..221	**MS1153**	T7
1094613	**SVJBRF103B**	.63	.63	.625	4.50	1.43	VB..332	**MS1155**	T15
left hand									
1094616	**SVJBLF062D**	.38	.38	.375	6.00	.93	VB..221	**MS1153**	T7
1094618	**SVJBLF082D**	.50	.50	.500	6.00	.93	VB..221	**MS1153**	T7
1094614	**SVJBLF103B**	.63	.63	.625	4.50	1.43	VB..332	**MS1155**	T15

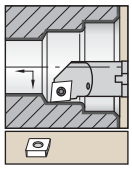




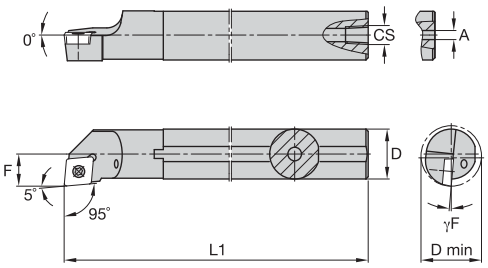


SVUB -3°

order number	catalog number	H	B	F	L1	LH	B3	gage insert	insert screw	Torx
right hand										
1095633	**SVUBR102**	.63	.63	.955	4.00	.50	–	VB..221	**MS1153**	T7
left hand										
1095634	**SVUBL082**	.50	.50	.830	3.50	.50	.12	VB..221	**MS1153**	T7

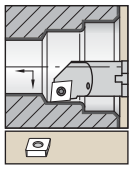


Steel shank with through coolant.

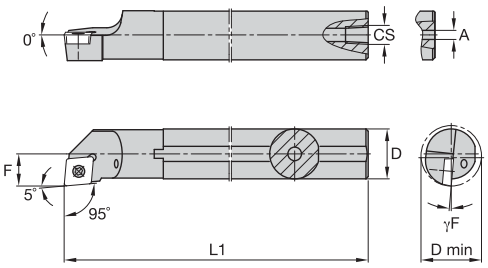


A-SCLC -5°

order number	catalog number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand											
1328582	**A06MSCLCR2**	.375	.480	.250	6.00	.13	—	-8.0	CC..2151	**MS1939**	T7
1328584	**A08RSCLCR2**	.500	.600	.312	8.00	—	1/16-27 NPT	-7.0	CC..2151	**MS1153**	T7
1328586	**A10SSCLCR2**	.625	.770	.406	10.00	—	1/8-27 NPT	-5.0	CC..2151	**MS1153**	T7
1328588	**A10SSCLCR3**	.625	.770	.406	10.00	—	1/8-27 NPT	-8.0	CC..3252	**MS1155**	T15
1328590	**A12SSCLCR3**	.750	.930	.500	10.00	—	1/8-27 NPT	-5.0	CC..3252	**MS1155**	T15
1328592	**A16TSCLCR3**	1.000	1.200	.640	12.00	—	1/4-18 NPT	-4.0	CC..3252	**MS1155**	T15
left hand											
1328583	**A06MSCLCL2**	.375	.480	.250	6.00	.13	—	-8.0	CC..2151	**MS1939**	T7
1328585	**A08RSCLCL2**	.500	.600	.312	8.00	—	1/16-27 NPT	-7.0	CC..2151	**MS1153**	T7
1328587	**A10SSCLCL2**	.625	.770	.406	10.00	—	1/8-27 NPT	-5.0	CC..2151	**MS1153**	T7
1328589	**A10SSCLCL3**	.625	.770	.406	10.00	—	1/8-27 NPT	-8.0	CC..3252	**MS1155**	T15
1328591	**A12SSCLCL3**	.750	.930	.500	10.00	—	1/8-27 NPT	-5.0	CC..3252	**MS1155**	T15
1328593	**A16TSCLCL3**	1.000	1.200	.640	12.00	—	1/4-18 NPT	-4.0	CC..3252	**MS1155**	T15

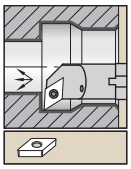


Carbide shank with through coolant.

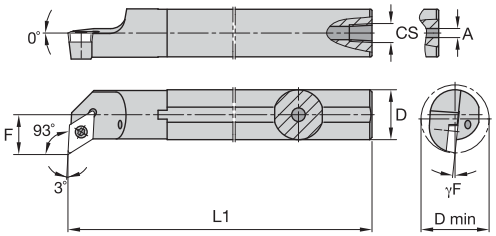


E-SCLC -5°

order number	catalog number	D	D min	F	L1	A	γF°	gage insert	insert screw	Torx
right hand										
2598552	**E06MSCLCR2**	.375	.480	.250	6.00	.13	-8.0	CC..2151	**MS2066**	7 IP
2598694	**E08RSCLCR2**	.500	.600	.312	8.00	.19	-7.0	CC..2151	**MS2066**	7 IP
2598696	**E10SSCLCR2**	.625	.770	.406	10.00	.22	-4.0	CC..2151	**MS2066**	7 IP
2598698	**E10SSCLCR3**	.625	.770	.406	10.00	.22	-7.0	CC..3252	**MS2055**	15 IP
2598700	**E12SSCLCR3**	.750	.930	.500	10.00	.28	-5.0	CC..3252	**MS2055**	15 IP
2598702	**E16TSCLCR3**	1.000	1.200	.640	12.00	.31	-4.0	CC..3252	**MS2055**	15 IP
left hand										
2598697	**E10SSCLCL3**	.625	.770	.406	10.00	.22	-7.0	CC..3252	**MS2055**	15 IP

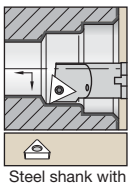


Steel shank with through coolant.

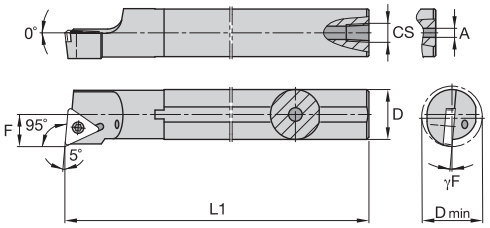


A-SDUC -3°

order number	catalog number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand											
1328616	**A06MSDUCR2**	.375	.600	.375	6.00	.13	—	-7.0	DC..2151	**MS1153**	T7
1328619	**A08RSDUCR2**	.500	.730	.437	8.00	.16	1/16-27 NPT	-5.0	DC..2151	**MS1153**	T7
1328623	**A10SSDUCR2**	.625	.850	.500	10.00	.16	1/8-27 NPT	-4.0	DC..2151	**MS1153**	T7
1328625	**A12SSDUCR3**	.750	.980	.562	10.00	—	1/8-27 NPT	-5.0	DC..3252	**MS1155**	T15
1328628	**A16TSDUCR3**	1.000	1.300	.750	12.00	—	1/4-18 NPT	-3.0	DC..3252	**MS1155**	T15
left hand											
1328624	**A10SSDUCL2**	.625	.850	.500	10.00	.16	1/8-27 NPT	-4.0	DC..2151	**MS1153**	T7
1328626	**A12SSDUCL3**	.750	.980	.562	10.00	—	1/8-27 NPT	-5.0	DC..3252	**MS1155**	T15
1328629	**A16TSDUCL3**	1.000	1.300	.750	12.00	—	1/4-18 NPT	-3.0	DC..3252	**MS1155**	T15

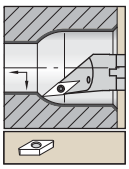


Steel shank with through coolant.

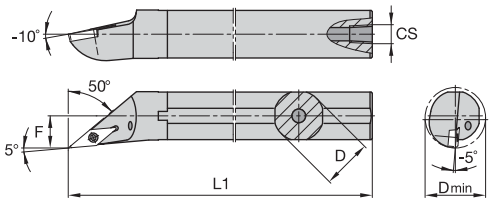


A-STLC -5°

order number	catalog number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand											
1328605	**A06MSTLCR2**	.375	.480	.250	6.00	.13	—	-8.0	TC..2151	**MS1153**	T7
1328607	**A08RSTLCR2**	.500	.600	.312	8.00	—	1/16-27 NPT	-7.0	TC..2151	**MS1153**	T7
1328610	**A10SSTLCR2**	.625	.770	.406	10.00	—	1/8-27 NPT	-5.0	TC..2151	**MS1153**	T7
1328612	**A12SSTLCR3**	.750	.930	.500	10.00	.16	1/8-27 NPT	-5.0	TC..3252	**MS1155**	T15
1328614	**A16STLCR3**	1.000	1.200	.640	12.00	—	1/4-18 NPT	-4.0	TC..3252	**MS1155**	T15
left hand											
1328606	**A06MSTLCL2**	.375	.480	.250	6.00	.13	—	-8.0	TC..2151	**MS1153**	T7
1328608	**A08RSTLCL2**	.500	.600	.312	8.00	.16	1/16-27 NPT	-7.0	TC..2151	**MS1153**	T7
1328613	**A12SSTLCL3**	.750	.930	.500	10.00	.16	1/8-27 NPT	-5.0	TC..3252	**MS1155**	T15
1328615	**A16STLCL3**	1.000	1.200	.640	12.00	—	1/4-18 NPT	-4.0	TC..3252	**MS1155**	T15

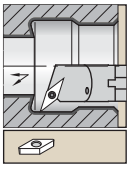


Steel shank with through coolant.

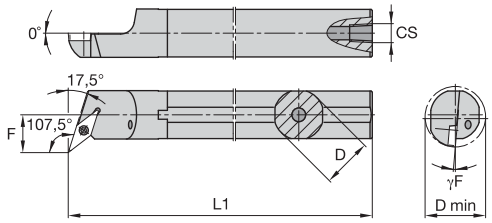


A-SVMB -5°

order number	catalog number	D	D min	F	L1	CS	gage insert	insert screw	Torx
right hand									
1236002	**A08RSVMBR2E**	.500	.980	.312	8.00	1/16-27 NPT	VB..221	**MS1153**	T7
1236006	**A10SSVMBR2E**	.625	.980	.406	10.00	1/8-27 NPT	VB..221	**MS1153**	T7
1236007	**A12SSVMBR3E**	.750	1.286	.500	10.00	1/8-27 NPT	VB..332	**MS1155**	T15
1236018	**A16TSVMBR3E**	1.000	1.286	.640	12.00	1/4-18 NPT	VB..332	**MS1155**	T15

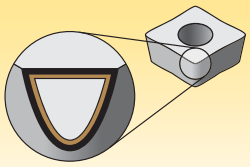


Steel shank with through coolant.



A-SVQB -17.5°

order number	catalog number	D	D min	F	L1	CS	γF°	gage insert	insert screw	Torx
right hand										
1094719	**A10SSVQBR2**	.625	.850	.500	10.00	1/8-27 NPT	-6.0	VB..221	**MS1153**	T7
1094721	**A12SSVQBR2**	.750	.980	.562	10.00	1/8-27 NPT	-5.0	VB..221	**MS1153**	T7
1094723	**A16TSVQBR3**	1.000	1.300	.750	12.00	1/4-18 NPT	-5.0	VB..332	**MS1155**	T15
left hand										
1094720	**A10SSVQBL2**	.625	.850	.500	10.00	1/8-27 NPT	-6.0	VB..221	**MS1153**	T7
1094722	**A12SSVQBL2**	.750	.980	.562	10.00	1/8-27 NPT	-5.0	VB..221	**MS1153**	T7
1094724	**A16TSVQBL3**	1.000	1.300	.750	12.00	1/4-18 NPT	-5.0	VB..332	**MS1155**	T15



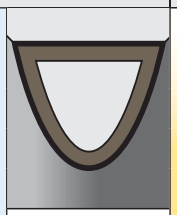
Coatings provide high-speed capability and are engineered for finishing to light roughing.

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

wear resistance ⟷ toughness

PVD-Coated Carbide Grades

KCU10



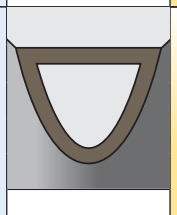
–

Composition: An advanced multilayer PVD coating over a very deformation-resistant unalloyed carbide substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities.
Application: The KCU10™ grade is ideal for finishing to general machining of most workpiece materials at a wide range of speed and feed capabilities. Excellent for machining most steels, stainless steels, cast irons, non-ferrous materials, and high-temp alloys with improved edge toughness, notch resistance, and higher cutting speed/feed capability.

beyond

	05	10	15	20	25	30	35	40	45
P		■	■	■					
M		■	■	■					
K	■	■	■	■					
N		■	■	■					
S		■	■	■					
H		■							

KCU25



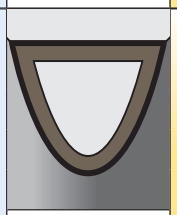
—

Composition: An advanced PVD grade with hard AlTiN coating and fine-grain unalloyed substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities.
Application: The KCU25™ grade is ideal for general machining of most steels, stainless steels, high-temp alloys, titanium, irons, and non-ferrous materials in a wide range of speeds and feeds with improved edge toughness for interrupted cuts and high feed rates.

beyond

	05	10	15	20	25	30	35	40	45
P				■	■	■			
M				■	■	■			
K				■	■	■			
N				■	■	■			
S				■	■	■			

KC5410



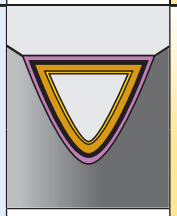
–

Composition: A PVD TiB_2 coating over a very deformation-resistant unalloyed substrate.
Application: Designed for roughing, semi-finishing, and finishing of free machining (hypoeutectic <12.2% Si) aluminum, aluminum alloys, and magnesium alloys. The TiB_2 coating is harder than TiN and TiAlN coatings and has an extremely smooth surface, resulting in reduced surface friction, speedy chip flow, and outstanding wear resistance. Built-up edge is prevented because this coating has a very low affinity for aluminum. The substrate is unalloyed and fine grained and offers sharp edges, smooth surfaces, and excellent thermal deformation resistance and edge integrity. Inserts with a ground periphery are polished before coating and have a sharp edge. Molded inserts have a light hone.

	05	10	15	20	25	30	35	40	45
N		■	■	■					

CVD-Coated Carbide Grades

KCP10B



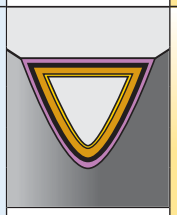
–

Composition: A specially engineered cobalt-enriched carbide grade with thick MTCVD TiCN-Al_2O_3-TiOCN coating for maximum wear resistance.
Application: An excellent finishing to medium machining grade for a variety of workpiece materials, including most steels, ferritic, martensitic, and PH stainless steels, and cast irons. The cobalt-enriched substrate offers a balanced combination of deformation resistance and edge toughness, while the thick coating layers offer outstanding abrasion resistance and crater wear resistance for high-speed machining. Smooth coating provides resistance to edge build-up and microchipping and produces excellent surface finishes.

beyond DRIVE

	05	10	15	20	25	30	35	40	45
P		■	■	■					
K					■	■	■		

KCP25B



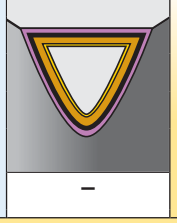
–

Composition: A tough cobalt-enriched carbide grade with a multilayer MTCVD TiCN-Al_2O_3-TiOCN coating with superior interlayer adhesion.
Application: Best general-purpose turning grade for most steels and ferritic and martensitic stainless steels. The substrate design ensures adequate deformation resistance with excellent insert edge strength. Coating layers offer good wear resistance over a wide range of machining conditions and the post-coat treatment minimizes microchipping and improves coating adhesion to substrate leading to long tool life and improved workpiece finishes.

beyond DRIVE

	05	10	15	20	25	30	35	40	45
P				■	■	■			
K						■	■	■	

KCP40B

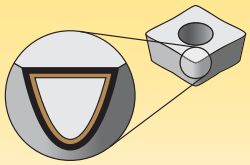


–

Composition: A tough carbide grade with a thin MTCVD TiCN-Al_2O_3-TiOCN coating.
Application: For heavy roughing of carbon, alloy, and stainless steels. The substrate-coating combination provides unbelievable toughness and operational security allowing high metal removal rates even in most demanding interrupted cuts.

beyond DRIVE

	05	10	15	20	25	30	35	40	45
P							■	■	■
M				■	■	■			



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
CVD-Coated Carbide Grades	KCK05	**Composition:** A multilayered coating with moderately thick MTCVD TiCN-Al_2O_3 layers over a highly deformation-resistant carbide substrate. **Application:** Designed for high-speed machining of gray and ductile irons. The substrate and coating architecture together with post-coat treatment ensure a tremendous tool life advantage, especially when cutting higher tensile strength ductile and gray irons where workpiece size consistency and reliability of tool life are critical. Excellent both in continuous cuts and varied depths of cut. beyond	P	P	K	K					
	KCK15	**Composition:** A multilayered coating with thick MTCVD TiCN-Al_2O_3 layers applied over a carbide substrate specifically engineered for cast irons. **Application:** Delivers consistent performance in high-speed machining of gray and ductile irons. The substrate design permits the insert to stay in the cut for a long time at high speeds with minimum deformation. The thick CVD coating and post-coat treatment provide superior wear resistance ensuring long and consistent tool life. Can be applied both in continuous and lightly interrupted cuts. beyond	P	P	K	K					
	KCK20	**Composition:** A specially toughened MTCVD TICN-Al_2O_3 coating over a wear-resistant substrate. **Application:** Specifically engineered to maximize coating adhesion and edge strength making this grade ideal in wet interrupted cutting of gray and ductile irons. It can be used in a wide range of applications from finishing to roughing to maximize productivity wherever strength and reliability are needed. beyond	P	P	K	K	K	K			
	KCM15B	**Composition:** A multilayer MTCVD TiCN-Al_2O_3 coated carbide grade. **Application:** An excellent finishing to medium machining grade for austenitic stainless steels at higher speeds and covers a broad range of steel applications in the P20–P25 range. KCM15B grade in combination with unique geometries have been designed to resist depth-of-cut notching and minimize bur formation. The post-coat treatment reduces coating stresses, improves coating adhesion, minimizes microchipping and edge build-up, and improves workpiece finish. beyond DRIVE™	P	P	M	M	M				
	KCM25B	**Composition:** A multilayer MTCVD TiCN-Al_2O_3-TiOCN coated carbide grade. **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. beyond DRIVE™	P	P	M	M	M	M	P	P	P
PcBN – Polycrystalline Cubic Boron Nitride Grades	KBH20	**Composition:** A low content PcBN grade with a PVD TiN/AlTiN coating for added wear resistance. **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.			H	H	H				

Getting started made **EASY**

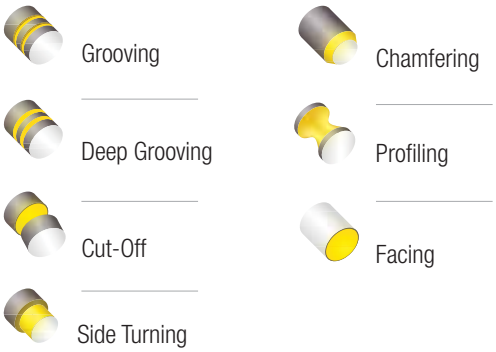
beyond™ EVOLUTION™

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**

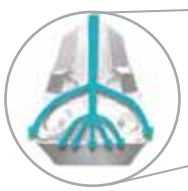
Active Coolant Control

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).

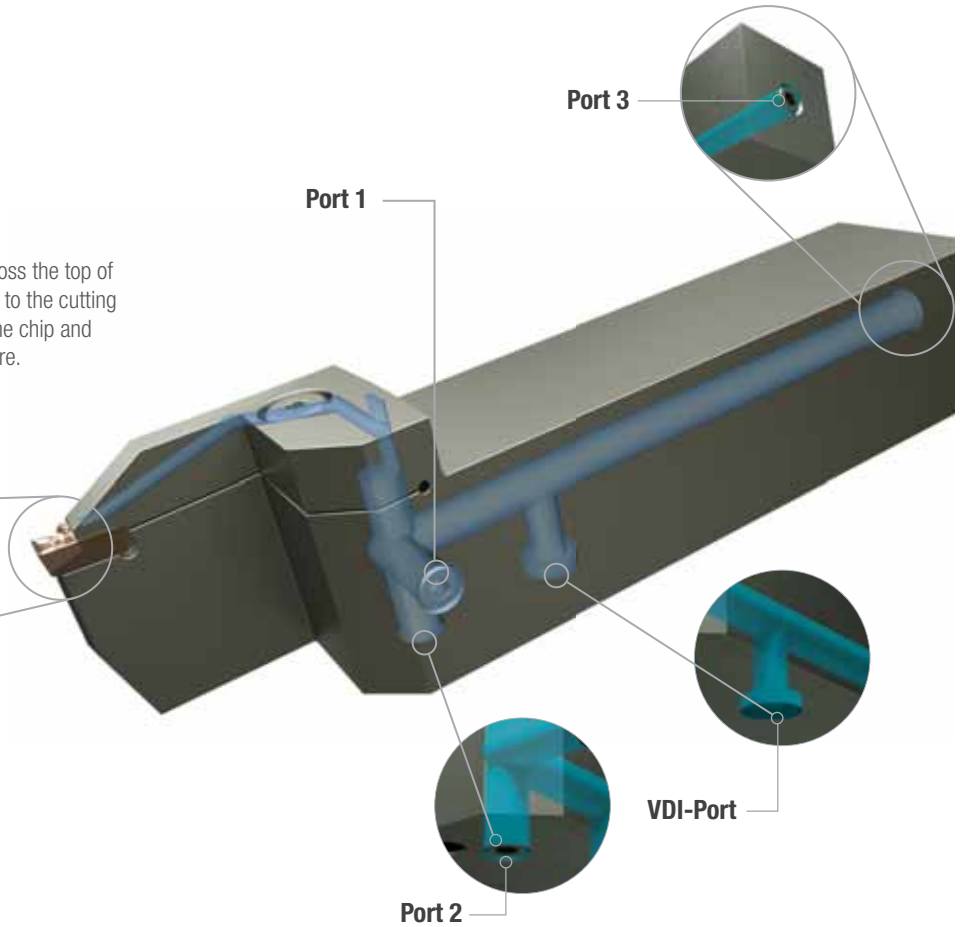
Fan Effect

Directs coolant across the top of the insert precisely to the cutting zone underneath the chip and controls temperature.



Chipbreaking Effect

Improve chip control in all grooving, cut-off, and multi-directional turning applications.



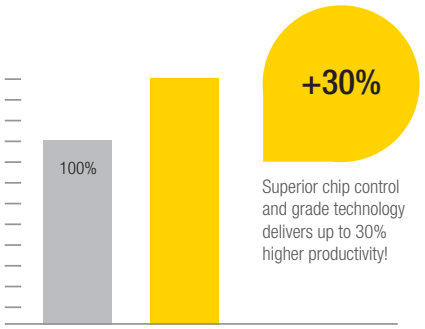
Smooth surface finish made **EASY**

Triple-V Seating

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

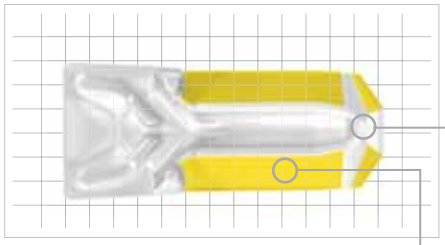
Solution: The Beyond™ Evolution™ proprietary new Triple-V Seating feature provides functional stability and minimizes vibration.

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



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.



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

Top and Bottom-V
Precise and secure insert positioning for increased rigidity and dimensional accuracy

NOVO™

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

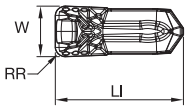
For more information, please visit kennametal.com/novo.

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		○	

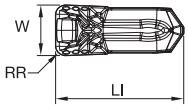


GUP Precision Molded • Metric

ISO catalog number	ANSI catalog number	SSC	W mm	W in	W tol ± mm	W tol ± in	RR mm	RR in	LI mm	LI in	KCU10	KCU25
EG0212M02U02GUP	EG0212M02U02GUP	2	2,125	.084	0,050	.002	0,20	.008	8,97	.353	6013031	5532930
EG0251M02U02GUP	EG0251M02U02GUP	2	2,511	.099	0,050	.002	0,20	.008	8,97	.353	6013032	5532931
EG0312M03U02GUP	EG0312M03U02GUP	3	3,125	.123	0,075	.003	0,20	.008	9,60	.378	6013033	5941056
EG0312M03U04GUP	EG0312M03U04GUP	3	3,125	.123	0,075	.003	0,40	.016	9,60	.378	6013034	5941057
EG0412M04U04GUP	EG0412M04U04GUP	4	4,125	.162	0,075	.003	0,40	.016	10,19	.401	6012944	5941071
EG0412M04U08GUP	EG0412M04U08GUP	4	4,125	.162	0,075	.003	0,80	.031	10,19	.401	–	5941083
EG0512M05U04GUP	EG0512M05U04GUP	5	5,125	.202	0,075	.003	0,40	.016	12,25	.482	6012946	5533212
EG0512M05U08GUP	EG0512M05U08GUP	5	5,125	.202	0,075	.003	0,80	.031	12,25	.482	6012947	5533214
EG0612M06U04GUP	EG0612M06U04GUP	6	6,125	.241	0,075	.003	0,40	.016	14,60	.575	6012948	5533120
EG0612M06U08GUP	EG0612M06U08GUP	6	6,125	.241	0,075	.003	0,80	.031	14,60	.574	6012949	5533124
EG0812M08U08GUP	EG0812M08U08GUP	8	8,125	.320	0,075	.003	0,80	.031	17,47	.688	6012961	5532941
EG1012M10U12GUP	EG1012M10U12GUP	10	10,125	.399	0,075	.003	1,20	.047	20,80	.817	6012963	5533220

SSC = To correspond with the SSC on the toolholder.

- More precise widths and better repeatability.



GUP Precision Ground • Metric

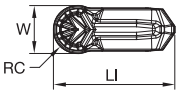
ISO catalog number	ANSI catalog number	SSC	W mm	W in	W tol ± mm	W tol ± in	RR mm	RR in	LI mm	LI in	KCU10	KCU25
EG0200M02P02GUP	EG0200M02P02GUP	2	2,000	.079	0,025	.001	0,20	.008	8,80	.347	6012687	5988771
EG0300M03P02GUP	EG0300M03P02GUP	3	3,000	.118	0,025	.001	0,20	.008	9,40	.372	6012688	5941101
EG0300M03P04GUP	EG0300M03P04GUP	3	3,000	.118	0,025	.001	0,40	.016	9,60	.376	6012689	5941102
EG0400M04P04GUP	EG0400M04P04GUP	4	4,000	.157	0,025	.001	0,40	.016	10,10	.399	6012690	5941103
EG0400M04P08GUP	EG0400M04P08GUP	4	4,000	.158	0,025	.001	0,80	.032	10,10	.399	6012701	5941104
EG0500M05P04GUP	EG0500M05P04GUP	5	5,000	.197	0,025	.001	0,40	.016	12,20	.480	6012702	5988774
EG0500M05P08GUP	EG0500M05P08GUP	5	5,000	.197	0,025	.001	0,80	.032	12,20	.480	6012703	5988775
EG0600M06P04GUP	EG0600M06P04GUP	6	6,000	.236	0,025	.001	0,40	.016	14,50	.572	6012704	5988772
EG0600M06P08GUP	EG0600M06P08GUP	6	6,000	.236	0,025	.001	0,80	.031	14,50	.572	6012705	5988773
EG0700M06P08GUP	EG0700M06P08GUP	6	7,000	.276	0,025	.001	0,80	.031	14,50	.572	6012707	–
EG0800M08P08GUP	EG0800M08P08GUP	8	8,000	.315	0,025	.001	0,80	.031	17,40	.685	6012708	5988777
EG0800M08P12GUP	EG0800M08P12GUP	8	8,000	.315	0,025	.001	1,20	.047	17,40	.685	–	5988778
EG1000M10P12GUP	EG1000M10P12GUP	10	10,000	.394	0,025	.001	1,20	.047	20,70	.815	6012711	–

SSC = To correspond with the SSC on the toolholder.

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

● first choice
○ alternate choice

P	●	●
M	●	●
K	○	○
N	●	○
S	●	●
H	○	

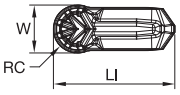


GUP Full Radius Precision Molded • Metric

ISO catalog number	ANSI catalog number	SSC	W mm	W in	W tol ± mm	W tol ± in	RC mm	RC in	LI mm	LI in	KCU10	KCU25
ER0212M02U00GUP	**ER0212M02U00GUP**	2	2,120	.084	0,050	.002	1,060	.042	8,97	.353	**6231902**	**6231905**
ER0312M03U00GUP	**ER0312M03U00GUP**	3	3,125	.123	0,075	.003	1,560	.062	9,60	.378	**6013037**	**5534274**
ER0412M04U00GUP	**ER0412M04U00GUP**	4	4,125	.162	0,075	.003	2,060	.081	10,20	.401	**6012970**	**–**
ER0512M05U00GUP	**ER0512M05U00GUP**	5	5,125	.202	0,075	.003	2,560	.101	12,20	.482	**–**	**5534278**
ER0612M06U00GUP	**ER0612M06U00GUP**	6	6,125	.241	0,075	.003	3,060	.121	14,60	.575	**–**	**5534290**
ER0812M08U00GUP	**ER0812M08U00GUP**	8	8,125	.320	0,075	.003	4,060	.160	17,50	.688	**6012973**	**5534292**

SSC = To correspond with the SSC on the toolholder.

- More precise widths and better repeatability.



GUP Full Radius Precision Ground • Metric

ISO catalog number	ANSI catalog number	SSC	W mm	W in	W tol ± mm	W tol ± in	RC mm	RC in	LI mm	LI in	KCU10	KCU25
ER0200M02P00GUP	**ER0200M02P00GUP**	2	2,000	.079	0,025	.001	1,000	.039	8,91	.351	**6231903**	**6231906**
ER0300M03P00GUP	**ER0300M03P00GUP**	3	3,000	.118	0,025	.001	1,500	.059	9,50	.376	**6012720**	**5988780**
ER0400M04P00GUP	**ER0400M04P00GUP**	4	4,000	.157	0,025	.001	2,000	.079	10,10	.399	**6012721**	**5988781**
ER0500M05P00GUP	**ER0500M05P00GUP**	5	5,000	.197	0,025	.001	2,500	.098	12,20	.480	**6012722**	**5988782**
ER0600M06P00GUP	**ER0600M06P00GUP**	6	6,000	.236	0,025	.001	3,000	.118	14,50	.572	**6012723**	**5988783**
ER0800M08P00GUP	**ER0800M08P00GUP**	8	8,000	.315	0,025	.001	4,000	.157	17,40	.685	**6012724**	**5988785**

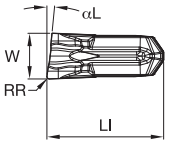
SSC = To correspond with the SSC on the toolholder.

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

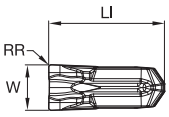
Left Hand

Neutral

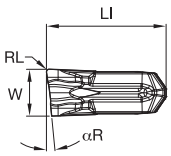
Right Hand



Left Hand



Neutral



Right Hand

● first choice
○ alternate choice

P		●
M		●
K		○
N		○
S		●
H		

CF Precision Molded • Metric

ISO catalog number	ANSI catalog number	SSC	W mm	W in	W tol ± mm	W tol ± in	LI mm	LI in	αR	αL	RR mm	RR in	RL mm	RL in	KCU25
EC014M1BL06CF01	**EC014M1BL06CF01**	1B	1,404	.055	0,050	.002	9,00	.355	–	6	0,15	.006	–	–	**5533516**
EC014M1BN00CF01	**EC014M1BN00CF01**	1B	1,400	.055	0,050	.002	9,00	.355	–	–	0,15	.006	0,15	.006	**5533081**
EC014M1BR06CF01	**EC014M1BR06CF01**	1B	1,404	.055	0,050	.002	9,00	.355	6	–	–	–	0,15	.006	**5533517**
EC020M02L06CF02	**EC020M02L06CF02**	2	2,000	.079	0,050	.002	8,97	.353	–	6	0,20	.008	–	–	**5533150**
EC020M02N00CF02	**EC020M02N00CF02**	2	2,000	.079	0,050	.002	8,97	.353	–	–	0,20	.008	0,20	.008	**5533082**
EC020M02R06CF02	**EC020M02R06CF02**	2	2,000	.079	0,050	.002	8,97	.353	6	–	–	–	0,20	.008	**5533151**
EC030M03L06CF02	**EC030M03L06CF02**	3	3,000	.118	0,075	.003	9,60	.378	–	6	0,20	.008	–	–	**5941074**
EC030M03N00CF02	**EC030M03N00CF02**	3	3,000	.118	0,075	.003	9,60	.378	–	–	0,20	.008	0,20	.008	**5941073**
EC030M03R06CF02	**EC030M03R06CF02**	3	3,000	.118	0,075	.003	9,60	.378	6	–	–	–	0,20	.008	**5941075**
EC040M04L06CF02	**EC040M04L06CF02**	4	4,000	.157	0,075	.003	10,19	.401	–	6	0,20	.008	–	–	**5941077**
EC040M04N00CF02	**EC040M04N00CF02**	4	4,000	.158	0,075	.003	10,19	.401	–	–	0,20	.008	0,20	.008	**5941076**
EC040M04R06CF02	**EC040M04R06CF02**	4	4,000	.158	0,075	.003	10,19	.401	6	–	–	–	0,20	.008	**5941078**
EC050M05N00CF03	**EC050M05N00CF03**	5	5,000	.197	0,075	.003	12,20	.482	–	–	0,30	.012	0,30	.012	**5533518**

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.

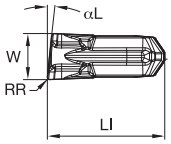
P		●
M		●
K		○
N		○
S		●
H		

● first choice
○ alternate choice

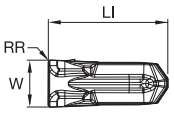
Left Hand

Neutral

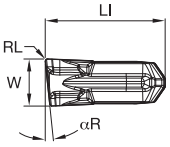
Right Hand



Left Hand



Neutral



Right Hand

CM Precision Molded • Metric

ISO catalog number	ANSI catalog number	SSC	W mm	W in	W tol ± mm	W tol ± in	LI mm	LI in	αR	αL	RR mm	RR in	RL mm	RL in	KCU25
EC014M1BL06CM02	**EC014M1BL06CM02**	1B	1,400	.055	0,050	.002	9,00	.355	—	6	0,20	.008	0,20	.008	**5533519**
EC014M1BN00CM01	**EC014M1BN00CM01**	1B	1,400	.055	0,050	.002	9,00	.355	—	—	0,15	.006	0,15	.006	**5533089**
EC014M1BR06CM02	**EC014M1BR06CM02**	1B	1,400	.055	0,050	.002	9,02	.355	6	—	—	—	0,20	.008	**5533520**
EC020M02N00CM02	**EC020M02N00CM02**	2	2,000	.079	0,050	.002	8,98	.353	—	—	0,20	.008	0,20	.008	**5533090**
EC020M02R06CM02	**EC020M02R06CM02**	2	2,000	.079	0,050	.002	9,00	.353	6	—	—	—	0,20	.008	**5533522**
EC030M03L06CM02	**EC030M03L06CM02**	3	3,000	.118	0,075	.003	9,60	.378	—	6	0,20	.008	—	—	**5941085**
EC030M03N00CM02	**EC030M03N00CM02**	3	3,000	.118	0,075	.003	9,60	.378	—	—	0,20	.008	0,20	.008	**5941079**
EC030M03R06CM02	**EC030M03R06CM02**	3	3,000	.118	0,075	.003	9,60	.378	6	—	—	—	0,20	.008	**5941086**
EC040M04L06CM02	**EC040M04L06CM02**	4	4,000	.157	0,075	.003	10,20	.401	—	6	0,20	.008	—	—	**5941087**
EC040M04N00CM02	**EC040M04N00CM02**	4	4,000	.158	0,075	.003	10,20	.402	—	—	0,20	.008	0,20	.008	**5941080**
EC040M04R06CM02	**EC040M04R06CM02**	4	4,000	.157	0,075	.003	10,20	.401	6	—	—	—	0,20	.008	**5941088**
EC050M05N00CM03	**EC050M05N00CM03**	5	5,000	.197	0,075	.003	12,20	.482	—	—	0,30	.012	0,30	.012	**5533523**
EC060M06N00CM03	**EC060M06N00CM03**	6	6,000	.236	0,075	.003	14,59	.574	—	—	0,30	.012	0,30	.012	**5533093**
EC080M08N00CM04	**EC080M08N00CM04**	8	8,000	.315	0,075	.003	17,50	.688	—	—	0,40	.016	0,40	.016	**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.

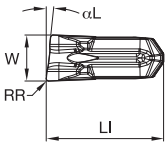
● first choice
○ alternate choice

P		●
M		●
K		○
N		○
S		●
H		

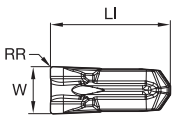
Left Hand

Neutral

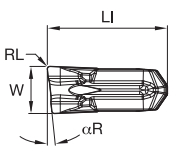
Right Hand



Left Hand



Neutral



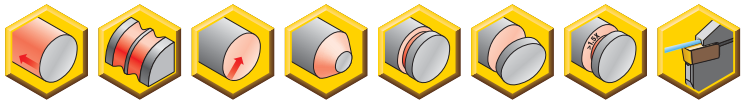
Right Hand

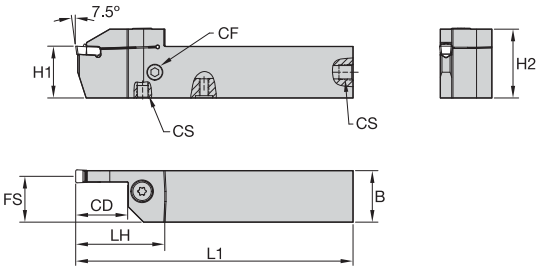
CR Precision Molded • Metric

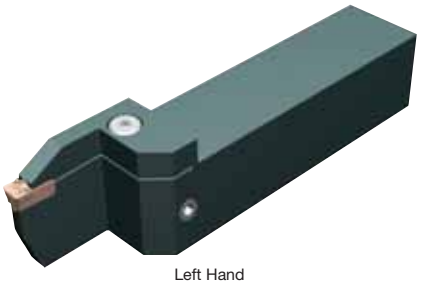
ISO catalog number	ANSI catalog number	SSC	W mm	W in	W tol ± mm	W tol ± in	LI mm	LI in	αR	αL	RR mm	RR in	RL mm	RL in	KCU25
EC020M02L06CR02	**EC020M02L06CR02**	2	2,000	.079	0,050	.002	9,00	.353	–	6	0,20	.008	–	–	**5533528**
EC020M02N00CR02	**EC020M02N00CR02**	2	2,000	.079	0,050	.002	8,98	.353	–	–	0,20	.008	0,20	.008	**5533156**
EC020M02R06CR02	**EC020M02R06CR02**	2	2,000	.079	0,050	.002	9,00	.353	6	–	–	–	0,20	.008	**5533529**
EC030M03L06CR02	**EC030M03L06CR02**	3	3,000	.118	0,075	.003	9,60	.378	–	6	0,20	.008	–	–	**5941089**
EC030M03N00CR02	**EC030M03N00CR02**	3	3,000	.118	0,075	.003	9,60	.378	–	–	0,20	.008	0,20	.008	**5941081**
EC030M03R06CR02	**EC030M03R06CR02**	3	3,000	.118	0,075	.003	9,60	.378	6	–	–	–	0,20	.008	**5941090**
EC040M04L06CR02	**EC040M04L06CR02**	4	4,000	.157	0,075	.003	10,20	.402	–	6	0,20	.008	–	–	**5941091**
EC040M04N00CR02	**EC040M04N00CR02**	4	4,000	.158	0,075	.003	10,20	.402	–	–	0,20	.008	0,20	.008	**5941082**
EC040M04R06CR02	**EC040M04R06CR02**	4	4,000	.157	0,075	.003	10,20	.402	6	–	–	–	0,20	.008	**5941092**
EC050M05N00CR03	**EC050M05N00CR03**	5	5,000	.197	0,075	.003	12,25	.482	–	–	0,30	.012	0,30	.012	**5533526**
EC060M06N00CR03	**EC060M06N00CR03**	6	6,000	.236	0,075	.003	14,59	.574	–	–	0,30	.012	0,30	.012	**5533096**
EC070M06N00CR04	**EC070M06N00CR04**	6	7,000	.276	0,075	.003	14,60	.574	–	–	0,40	.016	0,40	.016	**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.






Left Hand

Integral Straight • Inch

order number	catalog number	SSC	CD	H1	B	H2	L1	FS	LH	CF	CS	Torx clamp screw	Torx clamp screw	Torx
right hand														
5956542	**EVSMR120216**	2	.63	.750	.750	1.03	4.50	.71	1.22	–	–	**–**	**MS1160**	T20
5956450	**EVSMR160216**	2	.63	1.000	1.000	1.28	6.00	.96	1.22	–	–	**–**	**MS1160**	T20
5956541	**EVSMR120222**	2	.87	.750	.750	1.10	4.50	.71	1.50	–	–	**MS2091**	**–**	25 IP
5956449	**EVSMR160226**	2	1.02	1.000	1.000	1.35	6.00	.96	1.65	–	–	**MS2091**	**–**	25 IP
5939462	**EVSMR120316C**	3	.63	.750	.750	1.04	4.50	.69	1.46	M8X1	M8X1	**MS1595**	**–**	T30
5939458	**EVSMR160316C**	3	.63	1.000	1.000	1.35	6.00	.94	1.46	G1/8-28	G1/8-28	**MS1595**	**–**	T30
5939461	**EVSMR120322C**	3	.87	.750	.750	1.12	4.50	.69	1.69	M8X1	M8X1	**MS1595**	**–**	T30
5939457	**EVSMR160326C**	3	1.02	1.000	1.000	1.39	6.00	.94	1.85	G1/8-28	G1/8-28	**MS1595**	**–**	T30
5939460	**EVSMR120416C**	4	.63	.750	.750	1.10	4.50	.68	1.46	M8X1	M8X1	**MS1595**	**–**	T30
5939456	**EVSMR160416C**	4	.63	1.000	1.000	1.35	6.00	.93	1.46	G1/8	G1/8	**MS1595**	**–**	T30
5939459	**EVSMR120422C**	4	.87	.750	.750	1.12	4.50	.68	1.69	M8X1	M8X1	**MS1595**	**–**	T30
5939455	**EVSMR160426C**	4	1.02	1.000	1.000	1.39	6.00	.93	1.85	G1/8-28	G1/8-28	**MS1595**	**–**	T30
5939454	**EVSMR200426C**	4	1.02	1.250	1.250	1.64	6.00	1.18	1.85	G1/8-28	G1/8-28	**MS1970**	**–**	T30
5939463	**EVSMR200432C**	4	1.26	1.250	1.250	1.65	6.00	1.18	2.09	G1/8-28	G1/8-28	**MS1970**	**–**	T30
5955430	**EVSMR160526C**	5	1.02	1.000	1.000	1.35	6.00	.91	1.85	G1/8-28	G1/8-28	**MS1970**	**–**	T30
5955443	**EVSMR120616C**	6	.63	.750	.750	1.10	4.50	.64	1.46	M8X1	M8X1	**MS1595**	**–**	T30
5955429	**EVSMR160616C**	6	.63	1.000	1.000	1.34	6.00	.89	1.46	G1/8-28	G1/8-28	**MS1970**	**–**	T30
5955428	**EVSMR160626C**	6	1.02	1.000	1.000	1.35	6.00	.89	1.85	G1/8-28	G1/8-28	**MS1970**	**–**	T30
5955450	**EVSMR240640C**	6	1.58	1.500	1.500	1.93	7.00	1.39	2.48	G1/8-28	G1/8-28	**MS1490**	**–**	T45
5955427	**EVSMR160826C**	8	1.02	1.000	1.000	1.39	6.00	.86	1.93	G1/8-28	G1/8-28	**MS1490**	**–**	T45
5955453	**EVSMR240840C**	8	1.58	1.500	1.500	1.93	7.00	1.36	2.48	G1/8-28	G1/8-28	**MS1490**	**–**	T45

(continued)

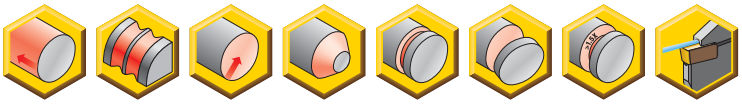
(Integral Straight • Inch — continued)

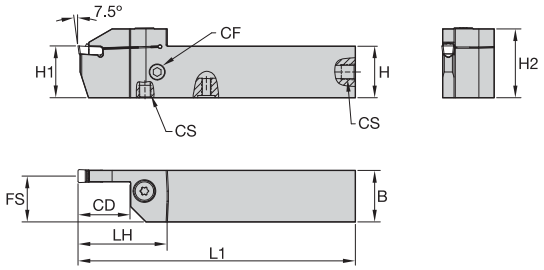
order number	catalog number	SSC	CD	H1	B	H2	L1	FS	LH	CF	CS	Torx clamp screw	Torx clamp screw	Torx
left hand														
5956545	**EVSML160216**	2	.63	1.000	1.000	1.28	6.00	.96	1.22	—	—	**—**	**MS1160**	T20
5956544	**EVSML120222**	2	.87	.750	.750	1.10	4.50	.71	1.50	—	—	**MS2091**	**—**	25 IP
5939464	**EVSML120316C**	3	.63	.750	.750	1.10	4.50	.69	1.46	M8X1	M8X1	**MS1595**	**—**	T30
5939466	**EVSML160316C**	3	.63	1.000	1.000	1.35	6.00	.94	1.46	G1/8-28	G1/8-28	**MS1595**	**—**	T30
5939465	**EVSML120322C**	3	.87	.750	.750	1.12	4.50	.69	1.69	M8X1	M8X1	**MS1595**	**—**	T30
5939467	**EVSML160326C**	3	1.02	1.000	1.000	1.39	6.00	.94	1.85	G1/8-28	G1/8-28	**MS1595**	**—**	T30
5939471	**EVSML160426C**	4	1.02	1.000	1.000	1.39	6.00	.93	1.85	G1/8-28	G1/8-28	**MS1595**	**—**	T30
5939472	**EVSML200426C**	4	1.02	1.250	1.250	1.64	6.00	1.18	1.85	G1/8-28	G1/8-28	**MS1970**	**—**	T30
5955465	**EVSML160626C**	6	1.02	1.000	1.000	1.35	6.00	.89	1.85	G1/8-28	G1/8-28	**MS1970**	**—**	T30
5955467	**EVSML200632C**	6	1.26	1.250	1.250	1.66	6.00	1.14	2.17	G1/8-28	G1/8-28	**MS1490**	**—**	T45
5955468	**EVSML240640C**	6	1.58	1.500	1.500	1.93	7.00	1.39	2.48	G1/8-28	G1/8-28	**MS1490**	**—**	T45
5955472	**EVSML240840C**	8	1.58	1.500	1.500	1.93	7.00	1.36	2.48	G1/8-28	G1/8-28	**MS1490**	**—**	T45

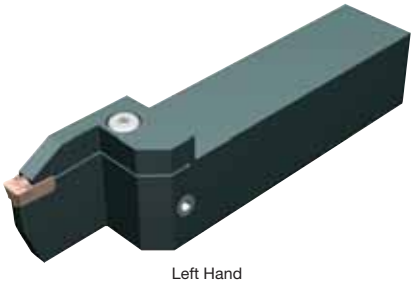
SSC = To correspond with the SSC on the insert.

screw catalog number	screw order number	torque Nm	torque in. lbs.	thread	socket	wrench catalog number	wrench order number
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**

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







Left Hand

Integral Straight • Metric

order number	catalog 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)

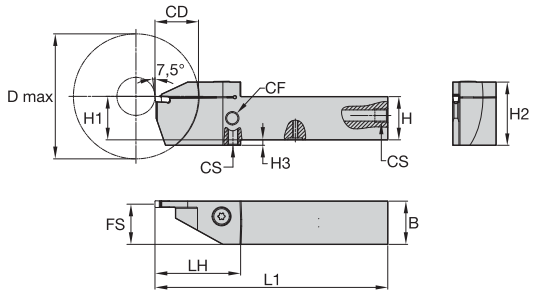
(Integral Straight • Metric — continued)

order number	catalog number	SSC	CD	H1	H	B	H2	L1	FS	LH	CF	CS	Torx clamp screw	Torx clamp screw	Torx
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 catalog number	screw order number	torque Nm	torque in. lbs.	thread	socket	wrench catalog number	wrench order number
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

Left Hand

Integral Reinforced Straight Top Clamp • Inch

order number	catalog number	SSC	CD	D max	H1	B	H2	H3	L1	FS	LH	CF	CS	Torx clamp screw	Torx clamp screw	Torx
right hand																
6179398	**EVSCTR081B16**	1B	.63	1.654	.500	.500	.93	—	4.50	.47	1.22	—	—	**—**	**MS1160**	T20
6179399	**EVSCTR081F16**	1F	.63	1.654	.500	.500	.93	—	4.50	.47	1.22	—	—	**—**	**MS1160**	T20
6179400	**EVSCTR080216**	2	.63	1.654	.500	.500	.93	—	4.50	.46	1.22	—	—	**—**	**MS1160**	T20
5980815	**EVSCTR100216**	2	.63	1.654	.625	.625	.90	—	4.50	.59	1.22	—	—	**—**	**MS1160**	T20
5980818	**EVSCTR120216**	2	.63	1.654	.750	.750	1.03	—	4.50	.71	1.22	—	—	**—**	**MS1160**	T20
5980913	**EVSCTR160216**	2	.63	1.654	1.000	1.000	1.28	—	6.00	.96	1.22	—	—	**—**	**MS1160**	T20
5980914	**EVSCTR160226**	2	1.02	2.441	1.000	1.000	1.35	—	6.00	.96	1.65	—	—	**MS2091**	**—**	25 IP
6179721	**EVSCTR080316C**	3	.63	2.047	.500	.500	.94	.16	4.50	.45	1.31	M8X1	M8X1	**MS1944**	**—**	T25
5980816	**EVSCTR100316C**	3	.63	2.047	.625	.625	.90	—	4.50	.57	1.38	M8X1	M8X1	**MS2091**	**—**	25 IP
5980819	**EVSCTR120316C**	3	.63	2.047	.750	.750	1.10	—	4.50	.69	1.45	M8X1	M8X1	**MS1595**	**—**	T30
5980915	**EVSCTR160316C**	3	.63	2.441	1.000	1.000	1.40	—	6.00	.94	1.45	G1/8-28	G1/8-28	**MS1595**	**—**	T30
5980820	**EVSCTR120326C**	3	1.02	2.441	.750	.750	1.28	.16	4.50	.69	1.85	M8X1	M8X1	**MS1595**	**—**	T30
5980916	**EVSCTR160326C**	3	1.02	2.441	1.000	1.000	1.40	—	6.00	.94	1.85	G1/8-28	G1/8-28	**MS1595**	**—**	T30
5980817	**EVSCTR100416C**	4	.63	2.047	.625	.625	.90	—	4.50	.55	1.38	M8X1	M8X1	**MS2091**	**—**	25 IP
5980911	**EVSCTR120416C**	4	.63	2.047	.750	.750	1.10	—	4.50	.68	1.45	M8X1	M8X1	**MS1595**	**—**	T30
5980912	**EVSCTR120426C**	4	1.02	2.441	.750	.750	1.28	.16	4.50	.68	1.85	M8X1	M8X1	**MS1595**	**—**	T30
5980917	**EVSCTR160426C**	4	1.02	2.441	1.000	1.000	1.40	—	6.00	.93	1.85	G1/8-28	G1/8-28	**MS1595**	**—**	T30
5980918	**EVSCTR160432C**	4	1.26	2.520	1.000	1.000	1.56	.16	6.00	.93	2.09	G1/8-28	G1/8-28	**MS1595**	**—**	T30
5980933	**EVSCTR200540C**	5	1.58	3.228	1.250	1.250	1.85	.16	6.00	1.16	2.48	G1/8-28	G1/8-28	**MS1490**	**—**	T45

(continued)

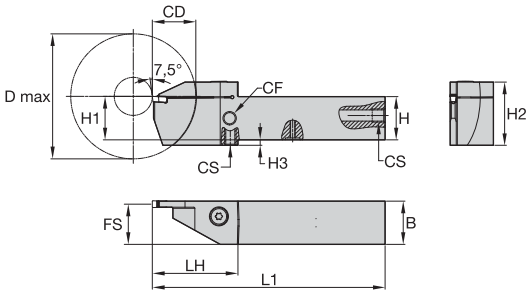
(Integral Reinforced Straight Top Clamp • Inch — continued)

order number	catalog number	SSC	CD	D max	H1	B	H2	H3	L1	FS	LH	CF	CS	Torx clamp screw	Torx clamp screw	Torx
left hand																
5980938	**EVSCTL100216**	2	.63	1.654	.625	.625	.90	—	4.50	.59	1.22	—	—	**—**	**MS1160**	T20
5981011	**EVSCTL120216**	2	.63	1.654	.750	.750	1.03	—	4.50	.71	1.22	—	—	**—**	**MS1160**	T20
5980939	**EVSCTL100316C**	3	.63	2.047	.625	.625	.90	—	4.50	.57	1.38	M8X1	M8X1	**MS2091**	**—**	25 IP
5981012	**EVSCTL120316C**	3	.63	2.047	.750	.750	1.10	—	4.50	.69	1.45	M8X1	M8X1	**MS1595**	**—**	T30
5981013	**EVSCTL120326C**	3	1.02	2.441	.750	.750	1.28	.16	4.50	.69	1.85	M8X1	M8X1	**MS1595**	**—**	T30
5981019	**EVSCTL160326C**	3	1.02	2.441	1.000	1.000	1.40	—	6.00	.94	1.85	G1/8-28	G1/8-28	**MS1595**	**—**	T30
5981015	**EVSCTL120426C**	4	.63	2.441	.750	.750	1.28	.16	4.50	.68	1.85	M8X1	M8X1	**MS1595**	**—**	T30
5981021	**EVSCTL160432C**	4	1.26	2.520	1.000	1.000	1.56	.16	6.00	.93	2.09	G1/8-28	G1/8-28	**MS1595**	**—**	T30

SSC = To correspond with the SSC on the insert.

screw catalog number	screw order number	torque Nm	torque in. lbs.	thread	socket	wrench catalog number	wrench order number
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.



Left Hand

Integral Reinforced Straight Top Clamp • Metric

order number	catalog 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

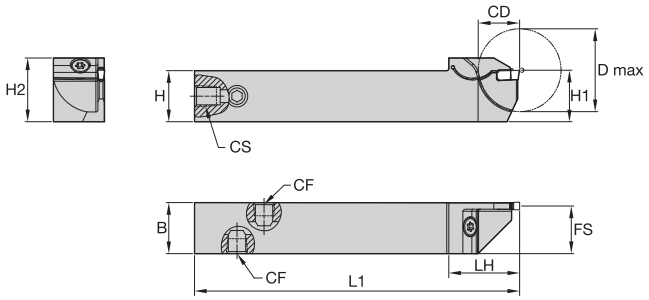
(continued)

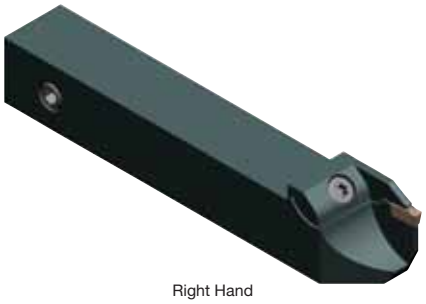
(Integral Reinforced Straight Top Clamp • Metric — continued)

order number	catalog number	SSC	CD	D max	H1	H	B	H2	H3	L1	FS	LH	CF	CS	Torx clamp screw	Torx clamp screw	Torx
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

SSC = To correspond with the SSC on the insert.

screw catalog number	screw order number	torque Nm	torque in. lbs.	thread	socket	wrench catalog number	wrench order number
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**



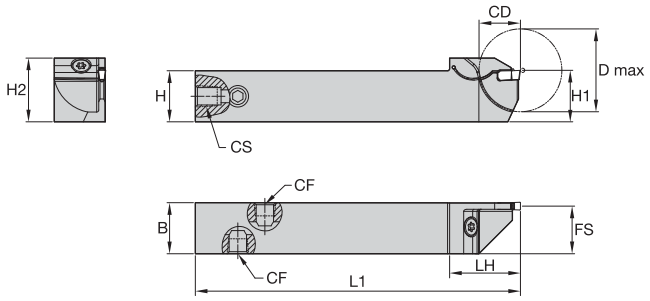

Right Hand

Integral Reinforced Front Clamp • Inch

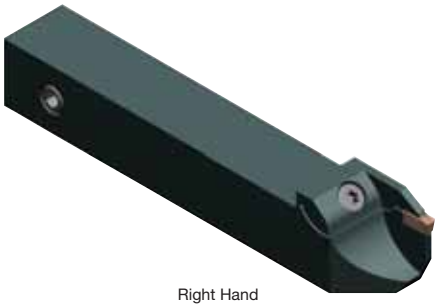
order number	catalog number	SSC	CD	D max	H1	B	H2	L1	FS	LH	CF	CS	Torx clamp screw	Torx
right hand														
6180143	**EVSCFR121B16**	1B	.63	1.260	.750	.750	.93	4.50	.72	1.04	—	—	**MS1160**	T20
6180144	**EVSCFR121F16**	1F	.63	1.260	.750	.750	.93	4.50	.72	1.04	—	—	**MS1160**	T20
6180125	**EVSCFR080210**	2	.39	.787	.500	.500	.66	4.50	.46	.81	—	—	**191.916**	T15
6180126	**EVSCFR080216**	2	.63	1.260	.500	.500	.66	4.50	.46	1.04	—	—	**191.916**	T15
6180141	**EVSCFR100216**	2	.63	1.260	.625	.625	.80	4.50	.59	1.04	—	—	**MS1160**	T20
6180127	**EVSCFR080310C**	3	.39	.787	.500	.500	.69	4.50	.44	.85	M8X1	M8X1	**191.916**	T15
6180142	**EVSCFR100316C**	3	.63	1.260	.625	.625	.81	4.50	.57	1.08	M8X1	M8X1	**MS1160**	T20
left hand														
6179730	**EVSCFL081B13**	1B	.51	1.024	.500	.500	.66	4.50	.47	.93	—	—	**191.916**	T15
6179733	**EVSCFL080210**	2	.39	.787	.500	.500	.66	4.50	.46	.81	—	—	**191.916**	T15
6179734	**EVSCFL080216**	2	.63	1.260	.500	.500	.66	4.50	.46	1.04	—	—	**191.916**	T15
6179754	**EVSCFL120316C**	3	.63	1.260	.750	.750	.94	4.50	.69	1.08	M8X1	M8X1	**MS1160**	T20

SSC = To correspond with the SSC on the insert.

screw catalog number	screw order number	torque Nm	torque in. lbs.	thread	socket	wrench catalog number	wrench order number
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**



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



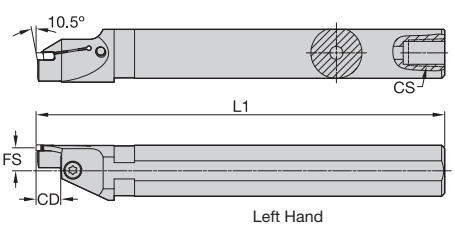
Right Hand

Integral Reinforced Front Clamp • Metric

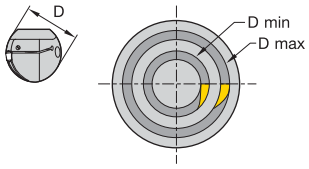
order number	catalog number	SSC	CD	D max	H1	H	B	H2	L1	FS	LH	CF	CS	Torx clamp screw	Torx
right hand															
6179766	**EVSCFR1212K1B10**	1B	10	20	12	12	12	16	125	11	21	—	—	**191.916**	T15
6179767	**EVSCFR1212K1B13**	1B	13	26	12	12	12	16	125	11	24	—	—	**191.916**	T15
6179774	**EVSCFR1616K1B16**	1B	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

SSC = To correspond with the SSC on the insert.

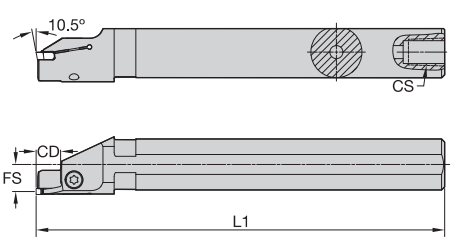
screw catalog number	screw order number	torque Nm	torque in. lbs.	thread	socket	wrench catalog number	wrench order number
MS1160	**1099645**	7	62	M5	T20	**KT20**	**1022703**
MS1162	**1127019**	9	80	M6	T25	**KT25**	**1022725**
MS1163	**1124104**	18	159	M8	T30	**KT30L**	**3782185**
MS1273	**1020977**	4	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**



Left Hand



Left Hand



Right Hand

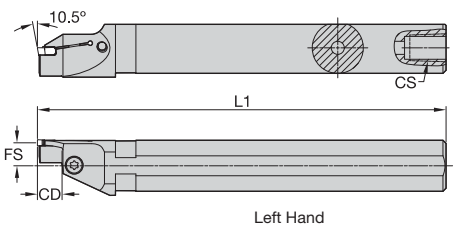
Right Hand

Steel Face Grooving Boring Bar • Inch

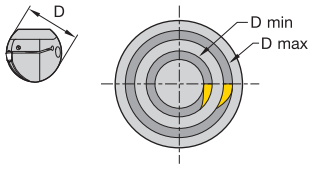
order number	catalog number	SSC	CD	D	D min	D max	L1	FS	CS	Torx clamp screw	Torx
right hand											
6116533	**A16REVSAR0212I026030**	2	.472	1.000	1.024	1.181	7.87	.471	1/4-18 NPT	**MS1160**	T20
6116529	**A20SEVSAR0312I033042**	3	.472	1.250	1.299	1.654	9.84	.576	1/4-18 NPT	**MS1162**	T25
6116531	**A24TEVSAR0312I041050**	3	.472	1.500	1.614	1.969	11.81	.701	1/4-18 NPT	**MS1162**	T25

SSC = To correspond with the SSC on the insert.

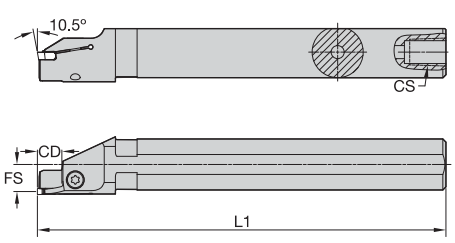
screw catalog number	screw order number	torque Nm	torque in. lbs.	thread	socket	wrench catalog number	wrench order number
MS1160	**1099645**	7	62	M5	T20	**KT20**	**1022703**
MS1162	**1127019**	9	80	M6	T25	**KT25**	**1022725**
MS1163	**1124104**	18	159	M8	T30	**KT30L**	**3782185**
MS1273	**1020977**	4	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**



Left Hand



Left Hand



Right Hand

Right Hand

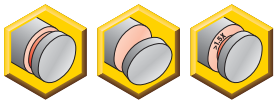
Steel Face Grooving Boring Bar • Metric

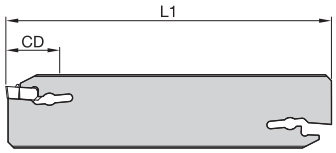
order number	catalog number	SSC	CD	D	D min	D max	L1	FS	CS	Torx clamp screw	Torx
right hand											
6116521	**A25REVSAR0212M026030**	2	12,00	25	26	30	200	12	1/4-18 NPT	**MS1160**	T20
6116522	**A25REVSAR0312M030035**	3	12,00	25	30	35	200	11	1/4-18 NPT	**MS1162**	T25
left hand											
6116528	**A25REVSAL0312M030035**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

SSC = To correspond with the SSC on the insert.

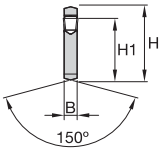
screw catalog number	screw order number	torque Nm	torque in. lbs.	thread	socket	wrench catalog number	wrench order number
MS1160	**1099645**	7	62	M5	T20	**KT20**	**1022703**
MS1162	**1127019**	9	80	M6	T25	**KT25**	**1022725**
MS1163	**1124104**	18	159	M8	T30	**KT30L**	**3782185**
MS1273	**1020977**	4	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**

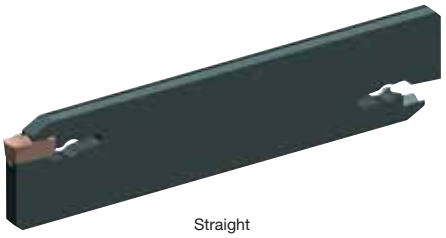
- For deep groove and cut-off applications.
- Universal pocket for holding all insert geometries.



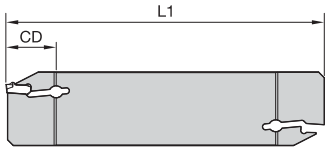


Straight

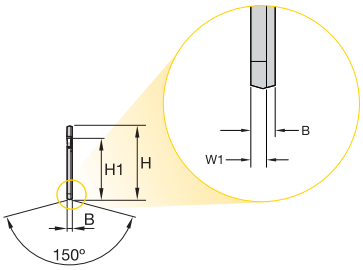


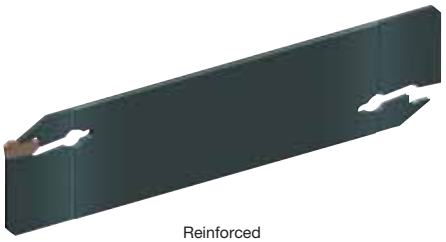


Straight



Reinforced





Reinforced

Double-Ended Cut-Off Blade

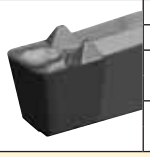
order number	catalog number	SSC	H	W1	H1	L1	B	CD	assembly wrench
neutral hand									
5941706	**EVBSN19G1B14**	1B	19	1,15	15,5	90	2	14	**SCW5E**
5941708	**EVBSN26J1B15**	1B	26	1,15	21,5	110	2	15	**SCW5E**
5955392	**EVBSN26J1F17**	1F	26	1,30	21,5	110	2	17	**SCW5E**
5941707	**EVBSN19G0220**	2	19	–	15,5	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 in (mm)	Starting Conditions in (mm)	Plunge Feed Rates inch/rev (mm/rev) .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)	◇					

Chip Control Geometry Designation

Pictorial View of Insert

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

Seat Size

Corner Radius

Recommended Starting Feed Rate

Recommended Feed Rate Range

Plunge Feed Rates

Maximum Feed Rate Values

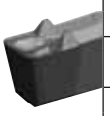
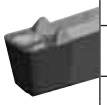
Data above is for P and K material groups. **Maximum** feed rates should be adjusted by multiplying max feed rate values by following factors for shown material groups.

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 in (mm)	Starting Conditions in (mm)	Plunge Feed Rates inch/rev (mm/rev) .0020 (0,05)	.0040 (0,10)	.0060 (0,15)	.0080 (0,20)	.0100 (0,25)	.0120 (0,30)	.0140 (0,35)
-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)							
			5	.016 (0,4)	.0059 (0,15)							
				.031 (0,8)	.0059 (0,16)							
			6	.016 (0,4)	.0059 (0,15)							
				.031 (0,8)	.0071 (0,18)							
				.047 (1,2)	.0079 (0,20)							
			8	.031 (0,8)	.0079 (0,20)							
				.047 (1,2)	.0087 (0,22)							
			10	.047 (1,2)	.0094 (0,24)							
-GUN	Stable negative cutting edge allowing for more aggressive applications.		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)							
			5	.016 (0,4)	.0059 (0,15)							
				.031 (0,8)	.0059 (0,16)							
			6	.016 (0,4)	.0059 (0,15)							
				.031 (0,8)	.0071 (0,18)							
				.047 (1,2)	.0079 (0,20)							
			8	.031 (0,8)	.0079 (0,20)							
				.047 (1,2)	.0087 (0,22)							
			10	.047 (1,2)	.0094 (0,24)							

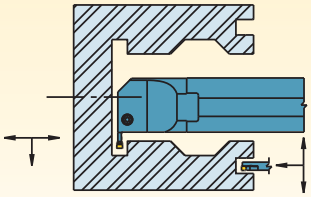
Maximum Feed Rate Values

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

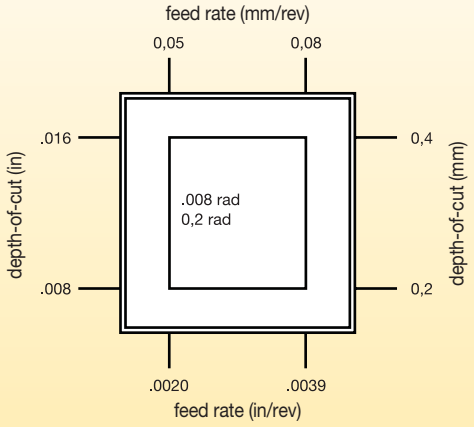
I.D. and Face Grooving

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

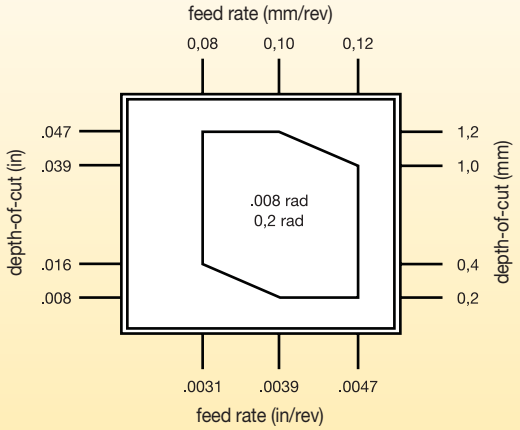


Turn and profile feed rates

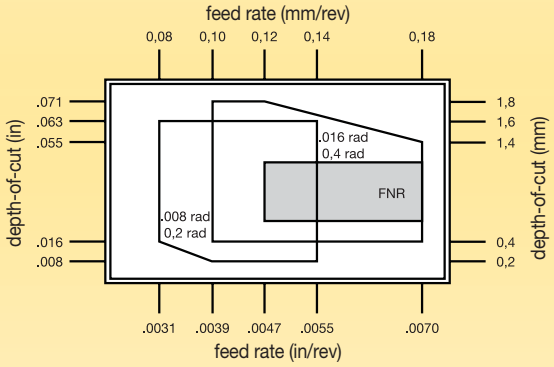
Seat Size 1F



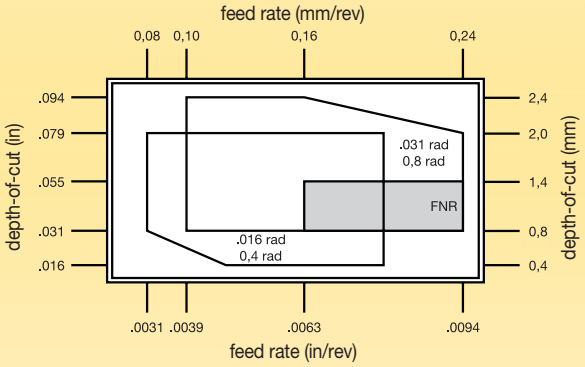
Seat Size 2



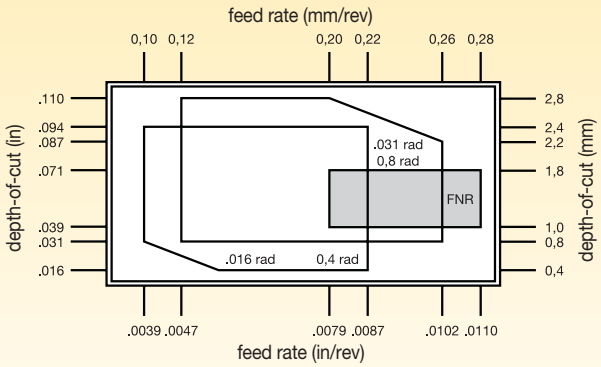
Seat Size 3



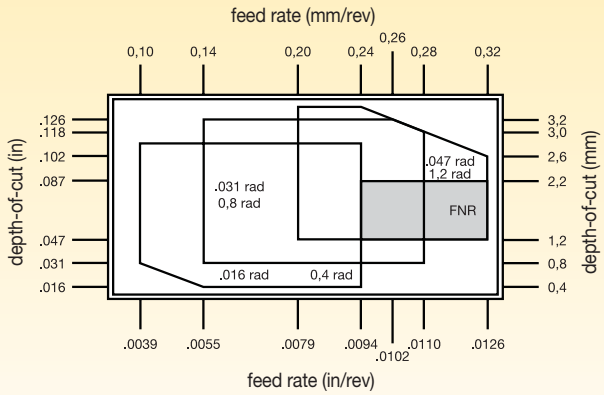
Seat Size 4



Seat Size 5



Seat Size 6

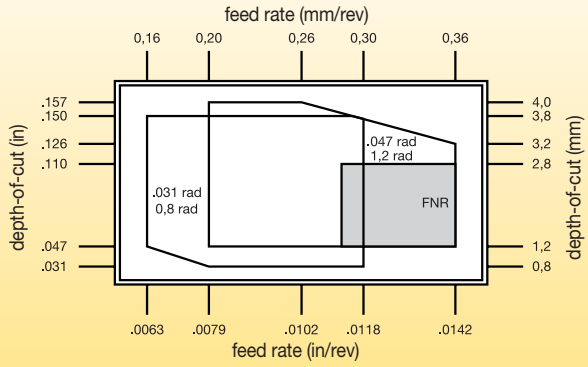


* FNR = Full Nose Radius

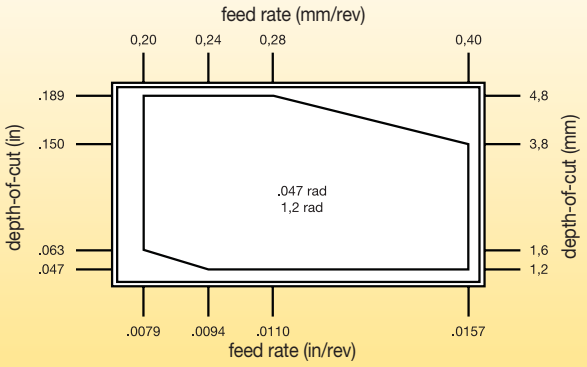
(continued)

(Turn and profile feed rates — continued)

Seat Size 8



Seat Size 10

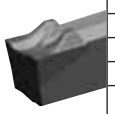
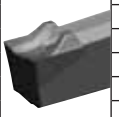
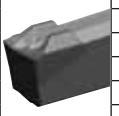
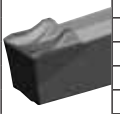


Cut-Off Feed Rates

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 in (mm)	Cut-Off Feed Rates inch/rev (mm/rev) .0020 (0,05) – .0160 (0,40)
-CL	Aggressive geometry for hard to break chips.		1B	.0024 (0,06)	
			2	.0028 (0,07)	
			3	.0031 (0,08)	
			4	.0035 (0,09)	
-CF	Positive geometry for reduced cutting forces.		1B	.0024 (0,06)	
			2	.0028 (0,07)	
			3	.0035 (0,09)	
			4	.0043 (0,11)	
			5	.0051 (0,13)	
-CM	Stable cutting edge for aggressive feed rates. Primarily in cast iron.		1B	.0024 (0,06)	
			2	.0028 (0,07)	
			3	.0035 (0,09)	
			4	.0043 (0,11)	
			5	.0055 (0,14)	
			6	.0063 (0,16)	
			8	.0067 (0,17)	
-CR	Most stable cutting edge for steel.		2	.0039 (0,10)	
			3	.0055 (0,14)	
			4	.0063 (0,16)	
			5	.0075 (0,19)	
			6	.0083 (0,21)	
			8	.0090 (0,23)	

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	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Recommended Starting Speeds [SFM]

Material Group		K313			KCU10			KCU25			KCM35B			KCP10B			KCP25B			KCK20B		
P	0–1	–	–	–	450	**925**	1180	360	**740**	880	290	**590**	700	600	**1320**	1475	475	**925**	1200	660	**1450**	1620
	2	–	–	–	450	**650**	1000	360	**520**	880	290	**420**	510	600	**880**	1150	475	**650**	1000	660	**970**	1260
	3	–	–	–	450	**510**	800	360	**410**	800	290	**330**	510	550	**630**	850	450	**510**	800	600	**700**	920
	4	–	–	–	250	**360**	550	200	**290**	540	160	**230**	350	300	**480**	650	250	**360**	600	330	**530**	710
	5	–	–	–	400	**660**	850	320	**530**	680	260	**420**	540	500	**720**	1000	400	**650**	875	550	**800**	1100
	6	–	–	–	350	**500**	750	280	**400**	600	220	**320**	480	400	**600**	900	350	**500**	750	440	**660**	990
M	1	200	**300**	400	450	**700**	940	300	**550**	800	250	**400**	450	–	–	–	–	–	–	–	–	–
	2	150	**250**	350	400	**650**	800	300	**500**	800	250	**350**	450	–	–	–	–	–	–	–	–	–
	3	120	**220**	320	400	**600**	800	300	**450**	700	250	**300**	450	–	–	–	–	–	–	–	–	–
K	1	100	**250**	400	400	**600**	800	320	**480**	760	–	–	–	560	**800**	1440	455	**650**	1170	700	**1000**	1800
	2	75	**225**	350	300	**500**	800	240	**400**	560	–	–	–	400	**640**	1120	325	**520**	910	500	**800**	1400
	3	65	**190**	300	200	**350**	500	160	**280**	400	–	–	–	400	**560**	880	325	**455**	715	500	**700**	1100
N	1–2	500	**1200**	2000	500	**1800**	3200	400	**1440**	2560	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	400	**900**	1400	400	**1200**	2360	320	**960**	1600	–	–	–	–	–	–	–	–	–	–	–	–
	5	150	**300**	500	300	**550**	800	240	**440**	640	–	–	–	–	–	–	–	–	–	–	–	–
	6	120	**250**	500	400	**700**	1000	320	**560**	800	–	–	–	–	–	–	–	–	–	–	–	–
S	1	25	**100**	250	50	**180**	450	25	**125**	200	25	**125**	200	–	–	–	–	–	–	–	–	–
	2	25	**110**	250	50	**195**	450	25	**100**	250	25	**100**	200	–	–	–	–	–	–	–	–	–
	3	25	**125**	250	50	**225**	500	50	**125**	250	50	**125**	200	–	–	–	–	–	–	–	–	–
	4	25	**150**	250	50	**225**	550	25	**175**	350	50	**150**	300	–	–	–	–	–	–	–	–	–
H	1	–	–	–	100	**150**	200	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	50	**100**	150	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	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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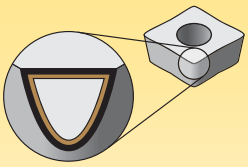
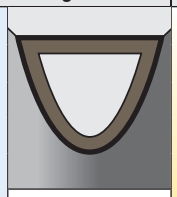
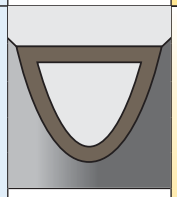


Coatings provide high-speed capability and are engineered for finishing to light roughing.

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

Grades

Coating	Grade Description	wear resistance ⟷ toughness	05	10	15	20	25	30	35	40	45
KCU10  —	**Composition:** An advanced multilayer PVD coating over a very deformation-resistant unalloyed carbide substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities. **Application:** The KCU10™ grade is ideal for finishing to general machining of most workpiece materials at a wide range of speed and feed capabilities. Excellent for machining most steels, stainless steels, cast irons, non-ferrous materials, and super alloys with improved edge toughness and higher cutting speed/feed capability.	P		■	■	■					
		M		■	■	■					
		K		■	■	■					
		N		■	■	■					
		S		■	■	■					
		H		■							
		beyond									
KCU25  —	**Composition:** An advanced PVD grade with hard AlTiN coating and fine-grain unalloyed substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities. **Application:** The KCU25™ grade is ideal for general machining of most steels, stainless steels, high-temp alloys, titanium, irons, and non-ferrous materials in a wide range of speeds and feeds with improved edge toughness for interrupted cuts and high feed rates.	P				■	■	■			
		M				■	■	■			
		K				■	■	■			
		N				■	■	■			
		S				■	■	■			
		beyond									

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A4™ Tooling and Beyond™ Inserts

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

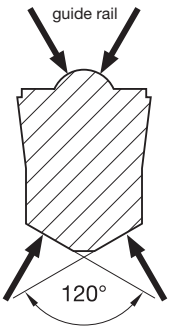
Primary Application

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

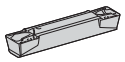
GMN Chipbreaker

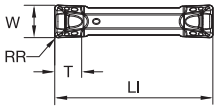
GMP Chipbreaker

GUP Chipbreaker

The A4™ System Increases Productivity

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





A4G-U-GUP

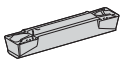
● first choice
○ alternate choice

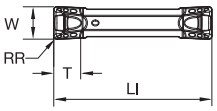
P		●	●
M		●	●
K		○	○
N		●	○
S		●	●
H		○	

GUP Precision Molded

ISO catalog number	ANSI catalog number	SSC	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in	KCU10	KCU25
A4G0205M02U02GUP	A4G0205M02U02GUP	2	2,05	.081	0,2	.008	20	.79	2,0	.079	3791263	3791279
A4G0305M03U02GUP	A4G0305M03U02GUP	3	3,05	.120	0,2	.008	20	.79	3,0	.118	–	3791280
A4G0305M03U04GUP	A4G0305M03U04GUP	3	3,05	.120	0,4	.016	20	.79	3,0	.118	3791266	3791281
A4G0405M04U04GUP	A4G0405M04U04GUP	4	4,05	.159	0,4	.016	20	.79	3,4	.134	3791267	3774691
A4G0505M05U04GUP	A4G0505M05U04GUP	5	5,05	.199	0,4	.016	25	.99	4,2	.165	–	3791282
A4G0505M05U08GUP	A4G0505M05U08GUP	5	5,05	.199	0,8	.031	25	.99	4,2	.165	3791270	3774723
A4G0605M06U04GUP	A4G0605M06U04GUP	6	6,05	.238	0,4	.016	30	1.19	4,5	.177	–	3791283
A4G0605M06U08GUP	A4G0605M06U08GUP	6	6,05	.238	0,8	.031	30	1.19	4,5	.177	–	3791284
A4G0605M06U12GUP	A4G0605M06U12GUP	6	6,05	.238	1,2	.047	30	1.19	4,5	.177	–	3791285
A4G0805M08U08GUP	A4G0805M08U08GUP	8	8,05	.317	0,8	.031	30	1.19	6,0	.236	–	3791286
A4G1005M10U08GUP	A4G1005M10U08GUP	10	10,05	.396	0,8	.031	30	1.19	6,0	.236	–	3791287

SSC = To correspond with the SSC on the toolholder.



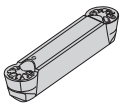


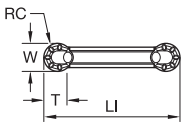
A4G-P-GUP

GUP Precision Ground

ISO catalog number	ANSI catalog number	SSC	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in	KCU10	KCU25
A4G0200M02P02GUP	A4G0200M02P02GUP	2	2,00	.079	0,2	.008	20	.79	1,9	.075	3781192	3781252
A4G0300M03P02GUP	A4G0300M03P02GUP	3	3,00	.118	0,2	.008	20	.79	2,9	.115	3781278	3781253
A4G0300M03P04GUP	A4G0300M03P04GUP	3	3,00	.118	0,4	.016	20	.79	2,9	.115	3781279	3781254
A4G0400M04P02GUP	A4G0400M04P02GUP	4	4,00	.157	0,2	.008	20	.79	3,3	.130	3781280	3781255
A4G0400M04P04GUP	A4G0400M04P04GUP	4	4,00	.157	0,4	.016	20	.79	3,3	.130	3781281	3781256
A4G0400M04P08GUP	A4G0400M04P08GUP	4	4,00	.157	0,8	.031	20	.79	3,3	.130	3781282	3781257
A4G0500M05P04GUP	A4G0500M05P04GUP	5	5,00	.197	0,4	.016	25	.98	4,1	.163	3781283	–
A4G0500M05P08GUP	A4G0500M05P08GUP	5	5,00	.197	0,8	.031	25	.98	4,1	.163	–	3781259
A4G0600M06P04GUP	A4G0600M06P04GUP	6	6,00	.236	0,4	.016	30	1.18	4,5	.176	–	3781260
A4G0600M06P08GUP	A4G0600M06P08GUP	6	6,00	.236	0,8	.031	30	1.18	4,5	.176	3781286	3781261
A4G0800M08P08GUP	A4G0800M08P08GUP	8	8,00	.315	0,8	.031	30	1.18	6,0	.235	3781287	–

SSC = To correspond with the SSC on the toolholder.





A4R-P-GUP

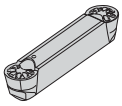
● first choice
○ alternate choice

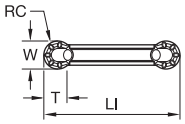
P		●	●
M		●	●
K		○	○
N		●	○
S		●	●
H		○	

GUP Full Radius Precision Molded

ISO catalog number	ANSI catalog number	SSC	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in	KCU10	KCU25
A4R0305M03U00GUP	A4R0305M03U00GUP	3	3,05	.120	1,5	.060	20	.79	—	—	–	5146918
A4R0405M04U00GUP	A4R0405M04U00GUP	4	4,05	.159	2,0	.080	20	.79	—	—	–	5136359
A4R0505M05U00GUP	A4R0505M05U00GUP	5	5,05	.199	2,5	.099	25	.99	—	—	5327663	5146919
A4R0805M08U00GUP	A4R0805M08U00GUP	8	8,05	.317	4,0	.159	30	1.19	6,5	.256	–	5136423

SSC = To correspond with the SSC on the toolholder.



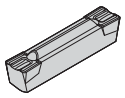


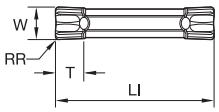
A4R-P-GUP

GUP Full Radius Precision Ground

ISO catalog number	ANSI catalog number	SSC	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in	KCU10	KCU25
A4R0300M03P00GUP	A4R0300M03P00GUP	3	3,00	.118	1,5	.059	20	.79	—	—	–	5147211
A4R0400M04P00GUP	A4R0400M04P00GUP	4	4,00	.157	2,0	.079	20	.79	—	—	–	5147212
A4R0500M05P00GUP	A4R0500M05P00GUP	5	5,00	.197	2,5	.098	25	.98	—	—	–	5147213

SSC = To correspond with the SSC on the toolholder.





A4G-U-GMP

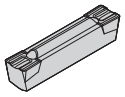
● first choice
○ alternate choice

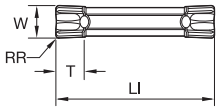
P	●	●	○	○
M	●	●	●	○
K	○	○	○	○
N	●	○	●	○
S	●	●	○	○
H	○		○	

GMP Precision Molded

ISO catalog number	ANSI catalog number	SSC	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in	KCU10	KCU25	KC5010	KC5025
A4G0205M02U02GMP	A4G0205M02U02GMP	2	2,05	.081	0,2	.008	20	.79	2,0	.079	–	4114297	2983982	2984013
A4G0305M03U02GMP	A4G0305M03U02GMP	3	3,05	.120	0,2	.008	20	.79	3,5	.138	–	4114303	–	1952744
A4G0305M03U04GMP	A4G0305M03U04GMP	3	3,05	.120	0,4	.016	20	.79	3,5	.138	4034776	–	1952746	1952747
A4G0405M04U04GMP	A4G0405M04U04GMP	4	4,05	.159	0,4	.015	20	.79	3,4	.134	–	–	1952749	1952750
A4G0505M05U04GMP	A4G0505M05U04GMP	5	5,05	.199	0,4	.015	25	.99	4,2	.165	–	–	1952755	1923838
A4G0505M05U08GMP	A4G0505M05U08GMP	5	5,05	.199	0,8	.032	25	.99	4,2	.165	–	–	1952758	–
A4G0605M06U04GMP	A4G0605M06U04GMP	6	6,05	.238	0,4	.016	30	1.19	4,9	.193	–	–	–	2263387

SSC = To correspond with the SSC on the toolholder.





A4G-P-GMP

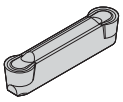
GMP Precision Ground

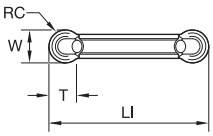
ISO catalog number	ANSI catalog number	SSC	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in	KCU10	KCU25	KC5010	KC5025
A4G0200M02P02GMP	A4G0200M02P02GMP	2	2,00	.079	0,2	.008	20	.78	2,0	.079	–	4114295	2984015	2984016
A4G0300M03P02GMP	A4G0300M03P02GMP	3	3,00	.118	0,2	.008	20	.78	3,5	.138	–	4114299	1952760	1923833
A4G0300M03P04GMP	A4G0300M03P04GMP	3	3,00	.118	0,4	.016	20	.78	3,5	.138	–	–	1952762	1952763
A4G0400M04P02GMP	A4G0400M04P02GMP	4	4,00	.158	0,2	.008	20	.78	—	—	4034777	–	–	1952765
A4G0400M04P04GMP	A4G0400M04P04GMP	4	4,00	.158	0,4	.016	20	.78	3,5	.138	–	–	1952766	1952767
A4G0400M04P08GMP	A4G0400M04P08GMP	4	4,00	.158	0,8	.032	20	.78	3,5	.138	–	–	1952768	–
A4G0500M05P04GMP	A4G0500M05P04GMP	5	5,00	.197	0,4	.016	25	.98	—	—	–	–	1923835	–
A4G0500M05P08GMP	A4G0500M05P08GMP	5	5,00	.197	0,8	.032	25	.98	—	—	–	–	1923840	1952773
A4G0600M06P04GMP	A4G0600M06P04GMP	6	6,00	.236	0,4	.016	30	1.18	4,9	.192	–	–	2263414	–
A4G0600M06P08GMP	A4G0600M06P08GMP	6	6,00	.236	0,8	.031	30	1.18	4,9	.192	–	–	2263415	–

SSC = To correspond with the SSC on the toolholder.

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

● first choice
○ alternate choice



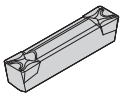


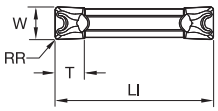
A4R-P-GMP

GMP Full Radius Precision Ground

ISO catalog number	ANSI catalog number	SSC	W mm	W in	RC mm	RC in	LI mm	LI in	T mm	T in	KCU10	KCU25	KC5010	KC5025
A4R0200M02P00GMP	A4R0200M02P00GMP	2	2,00	.079	1,0	.039	20	.78	1,7	.065	4034813	4114343	2984026	2984027
A4R0300M03P00GMP	A4R0300M03P00GMP	3	3,00	.118	1,5	.059	20	.78	2,5	.098	4034815	4114345	2234826	2234825
A4R0400M04P00GMP	A4R0400M04P00GMP	4	4,00	.157	2,0	.079	20	.78	—	—	4034817	4114347	1952778	1952779
A4R0500M05P00GMP	A4R0500M05P00GMP	5	5,00	.197	2,5	.098	25	.98	4,1	.160	4034819	–	1952780	–
A4R0600M06P00GMP	A4R0600M06P00GMP	6	6,00	.236	3,0	.118	30	1.18	4,8	.189	–	–	2263403	–

SSC = To correspond with the SSC on the toolholder.



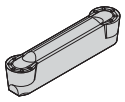


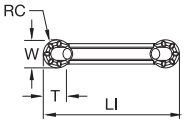
A4G-U-GMN

GMN Precision Molded

ISO catalog number	ANSI catalog number	SSC	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in	KCU10	KCU25	KC5010	KC5025
A4G0205M02U02GMN	A4G0205M02U02GMN	2	2,05	.081	0,2	.008	20	.79	2,0	.079	4034718	4114296	2983980	2983981
A4G0305M03U02GMN	A4G0305M03U02GMN	3	3,05	.120	0,2	.008	20	.79	3,5	.138	–	4114302	1952700	1952701
A4G0305M03U04GMN	A4G0305M03U04GMN	3	3,05	.120	0,4	.016	20	.79	3,5	.138	–	4114304	1952702	1952733
A4G0405M04U04GMN	A4G0405M04U04GMN	4	4,05	.159	0,4	.016	20	.79	3,4	.134	4034780	4114309	1952734	1952735
A4G0405M04U08GMN	A4G0405M04U08GMN	4	4,05	.159	0,8	.031	20	.79	3,4	.134	4034782	4114311	1952736	1952737
A4G0505M05U04GMN	A4G0505M05U04GMN	5	5,05	.199	0,4	.016	25	.98	4,2	.165	4034786	4114316	1952738	1923836
A4G0505M05U08GMN	A4G0505M05U08GMN	5	5,05	.199	0,8	.031	25	.98	4,2	.165	4034788	4114318	1952740	1923837
A4G0605M06U04GMN	A4G0605M06U04GMN	6	6,05	.238	0,4	.016	30	1.18	4,9	.193	4034792	–	2263361	2263362
A4G0605M06U08GMN	A4G0605M06U08GMN	6	6,05	.238	0,8	.031	30	1.18	4,9	.193	–	–	–	2263375
A4G0805M08U08GMN	A4G0805M08U08GMN	8	8,05	.317	0,8	.031	30	1.18	6,4	.252	–	–	2263378	–

SSC = To correspond with the SSC on the toolholder.





A4R-U-GMN

● first choice
○ alternate choice

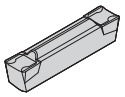
P	●	●	○	○
M	●	●	●	○
K	○	○	○	○
N	●	○	●	○
S	●	●	○	○
H	○		○	

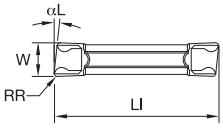
GMN Full Radius Precision Molded

ISO catalog number	ANSI catalog number	SSC	W mm	W in	RC mm	RC in	LI mm	LI in	T mm	T in	KCU10	KCU25	KC5010	KC5025
A4R0205M02U00GMN	**A4R0205M02U00GMN**	2	2,05	.081	1,1	.042	20	.79	1,8	.069	–	**4114344**	–	–
A4R0305M03U00GMN	**A4R0305M03U00GMN**	3	3,05	.120	1,5	.060	20	.79	2,6	.101	–	**4114346**	**2234824**	**2234823**
A4R0405M04U00GMN	**A4R0405M04U00GMN**	4	4,05	.159	2,0	.080	20	.79	3,5	.136	**4034818**	–	**1952774**	**1952775**
A4R0505M05U00GMN	**A4R0505M05U00GMN**	5	5,05	.199	2,5	.099	25	.99	4,2	.163	–	**4114350**	**1952776**	**1952777**
A4R0605M06U00GMN	**A4R0605M06U00GMN**	6	6,05	.238	3,0	.119	30	1.19	4,9	.194	–	–	**2263397**	–
A4R0805M08U00GMN	**A4R0805M08U00GMN**	8	8,05	.317	4,0	.159	30	1.19	6,5	.256	**4034824**	–	**2263399**	**2263400**

SSC = To correspond with the SSC on the toolholder.

A4™ Cut-Off Inserts





A4C-L-CF

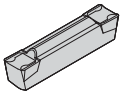
● first choice
○ alternate choice

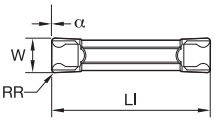
P	○
M	○
K	○
N	○
S	○
H	

CF Precision Molded • Left Hand

ISO catalog number	ANSI catalog number	SSC	W mm	W in	RR mm	RR in	LI mm	LI in	αL	KC5025
A4C0205L10CF02	**A4C0205L10CF02**	2	1,99	.078	0,2	.008	20	.79	10.0	**2979110**
A4C0305L06CF02	**A4C0305L06CF02**	3	3,05	.120	0,2	.008	20	.79	6.0	**1952849**

SSC = To correspond with the SSC on the toolholder.





A4C-N-CF

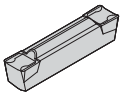
● first choice
○ alternate choice

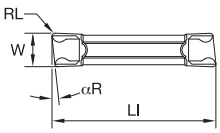
P		●	○
M		●	○
K		○	○
N		○	○
S		●	○
H			

CF Precision Molded • Neutral

ISO catalog number	ANSI catalog number	SSC	W mm	W in	RR mm	RR in	LI mm	LI in	α	KCU25	KC5025
A4C0155N00CF01	**A4C0155N00CF01**	1	1,50	.059	0,2	.006	16	.61	–	**4113708**	**2972258**
A4C0205N00CF02	**A4C0205N00CF02**	2	2,05	.081	0,2	.008	20	.79	–	**4113711**	**2979111**
A4C0255N00CF02	**A4C0255N00CF02**	2B	2,50	.098	0,2	.008	20	.79	–	**4114284**	**2979216**
A4C0305N00CF02	**A4C0305N00CF02**	3	3,05	.120	0,2	.008	20	.79	–	**4114287**	**1952847**
A4C0405N00CF02	**A4C0405N00CF02**	4	4,05	.159	0,2	.008	20	.79	–	**–**	**2234816**

SSC = To correspond with the SSC on the toolholder.



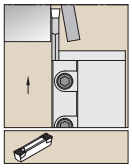


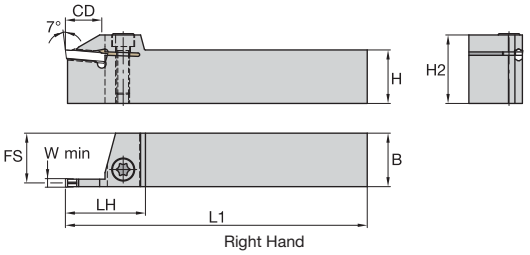
A4C-R-CF

CF Precision Molded • Right Hand

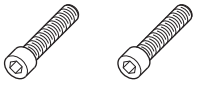
ISO catalog number	ANSI catalog number	SSC	W mm	W in	RR mm	RR in	LI mm	LI in	αR	KCU25	KC5025
A4C0155R06CF01	**A4C0155R06CF01**	1	1,50	.059	0,2	.006	16	.61	6.0	**–**	**2972262**
A4C0155R10CF01	**A4C0155R10CF01**	1	1,50	.059	0,2	.006	16	.61	10.0	**4113709**	**–**
A4C0155R16CF01	**A4C0155R16CF01**	1	1,50	.059	0,2	.006	16	.61	16.0	**–**	**2973094**
A4C0205R06CF02	**A4C0205R06CF02**	2	1,99	.078	0,2	.008	20	.79	6.0	**4113712**	**2979112**
A4C0205R10CF02	**A4C0205R10CF02**	2	1,99	.078	0,2	.008	20	.79	10.0	**4114283**	**–**
A4C0255R06CF02	**A4C0255R06CF02**	2B	2,49	.098	0,2	.008	20	.79	6.0	**–**	**2979217**
A4C0305R06CF02	**A4C0305R06CF02**	3	3,05	.120	0,2	.008	20	.79	6.0	**4114288**	**1952848**
A4C0305R10CF02	**A4C0305R10CF02**	3	3,05	.120	0,2	.008	20	.79	10.0	**4114289**	**2234819**

SSC = To correspond with the SSC on the toolholder.



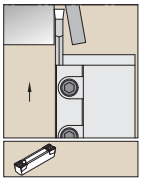


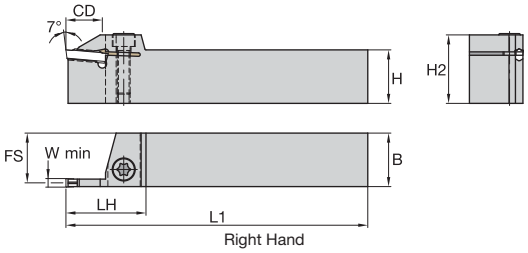
Integral Straight • Inch



order number	catalog number	SSC	CD	W min	H	B	H2	L1	FS	LH	clamp screw	clamp screw	Torx
right hand													
2976495	**A4SMR100214**	2	.55	.079	.625	.625	.98	5.00	.59	1.18	–	**MS1160**	T20
2976496	**A4SMR120214**	2	.55	.079	.750	.750	.95	5.00	.71	1.18	–	**MS1160**	T20
2976497	**A4SMR120217**	2	.67	.079	.750	.750	1.18	5.00	.71	1.34	**MS1944**	–	T25
2976498	**A4SMR160217**	2	.67	.079	1.000	1.000	1.24	6.00	.96	1.34	**MS1944**	–	T25
1953177	**A4SMR100314**	3	.55	.118	.625	.625	1.03	5.00	.57	1.38	**MS2091**	–	T25
1953179	**A4SMR120314**	3	.55	.118	.750	.750	1.06	5.00	.69	1.38	**MS1595**	–	T30
1953181	**A4SMR160317**	3	.67	.118	1.000	1.000	1.26	6.00	.94	1.46	**MS1970**	–	T30
1957224	**A4SMR100414**	4	.55	.157	.625	.625	1.03	5.00	.55	1.38	**MS2091**	–	T25
1953323	**A4SMR120414**	4	.55	.157	.750	.750	1.06	5.00	.67	1.38	**MS1595**	–	T30
1953325	**A4SMR160417**	4	.67	.157	1.000	1.000	1.26	6.00	.92	1.46	**MS1970**	–	T30
1957226	**A4SMR200417**	4	.67	.157	1.250	1.250	1.54	6.00	1.17	1.46	**MS1970**	–	T30
1953327	**A4SMR120519**	5	.75	.197	.750	.750	1.10	5.00	.65	1.57	**MS1595**	–	T30
1953329	**A4SMR160520**	5	.79	.197	1.000	1.000	1.30	6.00	.90	1.57	**MS1970**	–	T30
1957228	**A4SMR200522**	5	.87	.197	1.250	1.250	1.54	6.00	1.15	1.65	**MS1970**	–	T30
2263175	**A4SMR120620**	6	.79	.236	.750	.750	1.06	5.00	.64	1.57	**MS1595**	–	T30
2263176	**A4SMR160620**	6	.79	.236	1.000	1.000	1.30	6.00	.89	1.57	**MS1970**	–	T30
2263177	**A4SMR160624**	6	.94	.236	1.000	1.000	1.30	6.00	.89	1.69	**MS1970**	–	T30
2263178	**A4SMR200626**	6	1.02	.236	1.250	1.250	1.57	6.00	1.14	1.77	**MS1970**	–	T30
2263185	**A4SMR160820**	8	.79	.315	1.000	1.000	1.34	6.00	.86	1.69	**MS1490**	–	T45
2263186	**A4SMR160824**	8	.94	.315	1.000	1.000	1.34	6.00	.86	1.81	**MS1490**	–	T45
2263187	**A4SMR200826**	8	1.02	.315	1.250	1.250	1.61	6.00	1.11	1.85	**MS1490**	–	T45
left hand													
2976491	**A4SML100214**	2	.55	.079	.625	.625	.98	5.00	.59	1.18	–	**MS1160**	T20
2976493	**A4SML120217**	2	.67	.079	.750	.750	1.18	5.00	.71	1.34	**MS1944**	–	T25
2976494	**A4SML160217**	2	.67	.079	1.000	1.000	1.24	6.00	.96	1.34	**MS1944**	–	T25
1953178	**A4SML100314**	3	.55	.118	.625	.625	1.03	5.00	.57	1.38	**MS2091**	–	T25
1953180	**A4SML120314**	3	.55	.118	.750	.750	1.06	5.00	.69	1.38	**MS1595**	–	T30
1953182	**A4SML160317**	3	.67	.118	1.000	1.000	1.26	6.00	.94	1.46	**MS1970**	–	T30
1953324	**A4SML120414**	4	.55	.157	.750	.750	1.06	5.00	.67	1.38	**MS1595**	–	T30
1953326	**A4SML160417**	4	.67	.157	1.000	1.000	1.26	6.00	.92	1.46	**MS1970**	–	T30
1957227	**A4SML200417**	4	.67	.157	1.250	1.250	1.54	6.00	1.17	1.46	**MS1970**	–	T30
1953328	**A4SML120519**	5	.75	.197	.750	.750	1.10	5.00	.65	1.57	**MS1595**	–	T30
1953330	**A4SML160520**	5	.79	.197	1.000	1.000	1.30	6.00	.90	1.57	**MS1970**	–	T30
1957229	**A4SML200522**	5	.87	.197	1.250	1.250	1.54	6.00	1.15	1.65	**MS1970**	–	T30
2263181	**A4SML160620**	6	.79	.236	1.000	1.000	1.30	6.00	.89	1.57	**MS1970**	–	T30
2263182	**A4SML160624**	6	.94	.236	1.000	1.000	1.30	6.00	.89	1.69	**MS1970**	–	T30
2263183	**A4SML200626**	6	1.02	.236	1.250	1.250	1.57	6.00	1.14	1.77	**MS1970**	–	T30
2263190	**A4SML160824**	8	.94	.315	1.000	1.000	1.34	6.00	.86	1.81	**MS1490**	–	T45

SSC = To correspond with the SSC on the insert.





Integral Straight • Metric

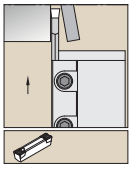
order number	catalog number	SSC	CD	W min	H	B	H2	L1	FS	LH	clamp screw	clamp screw	Torx
right hand													
3017341	A4SMR2020K0214	2	14	–	20	20	25	125	19	30	–	MS1160	T20
3017342	A4SMR1616K0214	2	14	2	16	16	25	125	15	30	–	MS1160	T20
2974425	A4SMR2020K0217	2	17	2	20	20	31	125	19	34	MS1944	–	T25
3017340	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

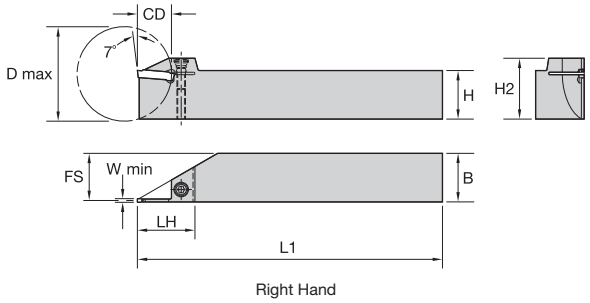
(continued)

(Integral Straight • Metric — continued)

order number	catalog number	SSC	CD	W min	H	B	H2	L1	FS	LH	clamp screw	clamp screw	Torx
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

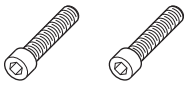
SSC = To correspond with the SSC on the insert.





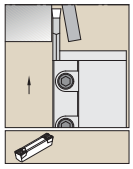
Right Hand

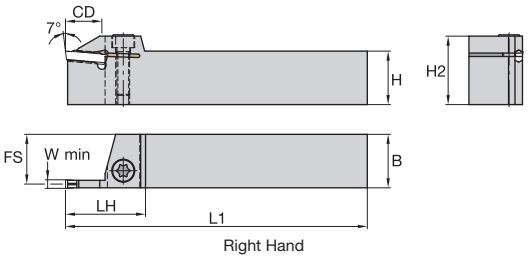
Integral Straight Top Clamp • Metric



number	catalog 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

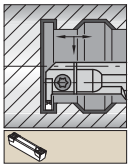
SSC = To correspond with the SSC on the insert.



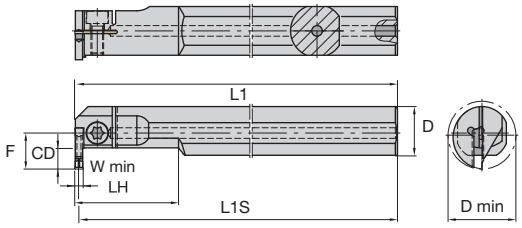


Integral Straight • Short Projection Toolholders • Metric

order number	catalog 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



Steel shank with through coolant.

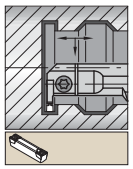


Right Hand

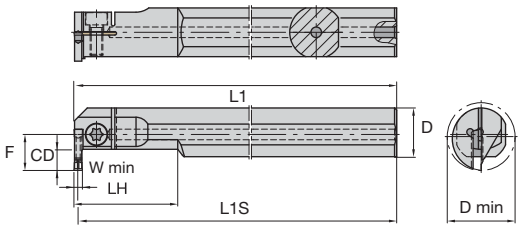
Steel Boring Bar • Inch

order number	catalog number	SSC	CD	W min	D	D min	L1	LH	F	L1S	clamp screw	wrench size clamp screw
right hand												
2979227	**A12RA4EMR0207N**	2	.291	.079	.750	.984	8.02	1.56	.507	7.98	**MS2089**	25 IP
1953335	**A12RA4EMR0307N**	3	.293	.118	.750	.984	8.02	1.56	.508	7.94	**MS2089**	25 IP
1953341	**A12RA4EMR0407N**	4	.289	.157	.750	.984	8.02	1.56	.505	7.92	**MS2089**	25 IP
2979229	**A16RA4EMR0210N**	2	.410	.079	1.000	1.260	8.02	1.96	.664	7.98	**MS2089**	25 IP
1953337	**A16RA4EMR0310N**	3	.409	.118	1.000	1.260	8.02	1.98	.994	7.96	**MS1595**	T30
1953343	**A16RA4EMR0410N**	4	.409	.157	1.000	1.260	8.01	1.98	.664	7.94	**MS1595**	T30
1953339	**A20SA4EMR0312N**	3	.484	.118	1.250	1.575	10.02	2.51	.857	9.94	**MS1595**	T30
1953345	**A20SA4EMR0412N**	4	.484	.157	1.250	1.575	10.02	2.51	.860	9.92	**MS1595**	T30
1953349	**A20SA4EMR0516N**	5	.642	.197	1.250	1.732	10.02	2.51	1.015	9.90	**MS1595**	T30
2263203	**A20SA4EMR0616N**	6	.646	.236	1.250	1.732	10.02	2.52	1.019	9.88	**MS1595**	T30
1953347	**A24TA4EMR0416N**	4	.630	.157	1.500	2.047	12.02	3.14	1.176	11.92	**MS1970**	T30
1953351	**A24TA4EMR0516N**	5	.650	.197	1.500	2.047	12.02	3.14	1.180	11.90	**MS1970**	T30
2263199	**A24TA4EMR0616N**	6	.646	.236	1.500	2.047	12.02	3.15	1.176	11.88	**MS1970**	T30
2263200	**A32TA4EMR0616N**	6	.646	.236	2.000	2.559	12.00	3.94	1.378	11.88	**MS1970**	T30
left hand												
1953336	**A12RA4EML0307N**	3	.293	.118	.750	.984	8.00	1.56	.508	7.94	**MS2089**	25 IP
1953338	**A16RA4EML0310N**	3	.409	.118	1.000	1.260	8.02	1.98	.994	7.96	**MS1595**	T30
1953344	**A16RA4EML0410N**	4	.409	.157	1.000	1.260	8.01	1.98	.664	7.94	**MS1595**	T30

SSC = To correspond with the SSC on the insert.



Steel shank with through coolant.

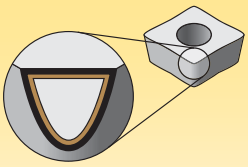


Right Hand

Steel Boring Bar • Metric

order number	catalog 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
KCU10	**Composition:** An advanced multilayer PVD coating over a very deformation-resistant unalloyed carbide substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities. **Application:** The KCU10™ grade is ideal for finishing to general machining of most workpiece materials at a wide range of speed and feed capabilities. Excellent for machining most steels, stainless steels, cast irons, non-ferrous materials, and high-temp alloys with improved edge toughness, notch resistance, and higher cutting speed/feed capability.		P	P	P					
			M	M	M					
			K	K	K					
			N	N	N					
			S	S	S					
				H						
KCU25	**Composition:** An advanced PVD grade with hard AlTiN coating and fine-grain unalloyed substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities. **Application:** The KCU25™ grade is ideal for general machining of most steels, stainless steels, high-temp alloys, titanium, irons, and non-ferrous materials in a wide range of speeds and feeds with improved edge toughness for interrupted cuts and high feed rates.				P	P	P			
					M	M	M			
					K	K	K			
					N	N	N			
					S	S	S			
KC5010	**Composition:** An advanced PVD AlTiN 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	P	P					
			M	M	M					
			K	K	K					
			N	N	N					
			S	S	S					
				H						
KC5025	**Composition:** An advanced PVD-AlTiN-coated grade with a tough, ultra-fine-grain unalloyed substrate. **Application:** For general-purpose machining of most steels, stainless steels, high-temp alloys, titanium, irons, and non-ferrous materials. Speeds may vary from low to medium and will handle interruptions and high feed rates.				P	P	P			
					M	M	M			
					K	K	K			
					N	N	N			
					S	S	S			

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 in (mm)	Starting Conditions in (mm)	Plunge Feed Rates inch/rev (mm/rev) .0020 (0,05)	.0040 (0,10)	.0060 (0,15)	.0080 (0,20)	.0100 (0,25)	.0120 (0,30)	.0140 (0,35)
-GUP	Groove and turn inserts in new Beyond™ grades.		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)							

Recommended Starting Feed Rate

Corner Radius

Plunge Feed Rates

Pictorial View of Insert

Seat Size

Recommended Feed Rate Range

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

	Material Group	Feed Factor
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.	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 in (mm)	Starting Conditions in (mm)	Plunge Feed Rates inch/rev (mm/rev) .0020 (0,05)	.0040 (0,10)	.0060 (0,15)	.0080 (0,20)	.0100 (0,25)	.0120 (0,30)	.0140 (0,35)
-GUP	• Groove and turn inserts in new Beyond™ grades. • Available in molded and precision-ground styles. • Positive rake angle with enhanced chip control. • Available in metric widths only.		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)							
			5	.016 (0,4)	.0059 (0,15)							
				.031 (0,8)	.0059 (0,16)							
			6	.016 (0,4)	.0059 (0,16)							
				.031 (0,8)	.0071 (0,18)							
				.047 (1,2)	.0079 (0,20)							
			8	.016 (0,4)	.0067 (0,17)							
				.031 (0,8)	.0079 (0,20)							
				.047 (1,2)	.0087 (0,22)							
			10	.016 (0,4)	.0071 (0,18)							
				.031 (0,8)	.0087 (0,22)							
				.047 (1,2)	.0094 (0,24)							
-GMP	• Groove and turn inserts. • Available in molded and precision-ground styles. • Positive rake angle. • Available in metric widths only.		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)							
			5	.016 (0,4)	.0059 (0,15)							
				.031 (0,8)	.0059 (0,16)							
			6	.016 (0,4)	.0059 (0,16)							
				.031 (0,8)	.0071 (0,18)							
				.047 (1,2)	.0079 (0,20)							
			8	.016 (0,4)	.0067 (0,17)							
				.031 (0,8)	.0079 (0,20)							
				.047 (1,2)	.0087 (0,22)							
			10	.016 (0,4)	.0071 (0,18)							
				.031 (0,8)	.0087 (0,22)							
				.047 (1,2)	.0094 (0,24)							
-GMN	• Groove and turn molded and precision ground inserts. • Stable cutting edge. • Available in metric and inch widths.		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)							
			5	.016 (0,4)	.0059 (0,15)							
				.031 (0,8)	.0059 (0,16)							
			6	.016 (0,4)	.0059 (0,16)							
				.031 (0,8)	.0071 (0,18)							
				.047 (1,2)	.0079 (0,20)							
			8	.016 (0,4)	.0067 (0,17)							
				.031 (0,8)	.0079 (0,20)							
				.047 (1,2)	.0087 (0,22)							
			10	.016 (0,4)	.0071 (0,18)							
				.031 (0,8)	.0087 (0,22)							
				.047 (1,2)	.0094 (0,24)							

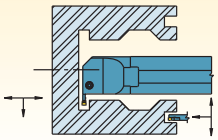
Maximum Feed Rate Values

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

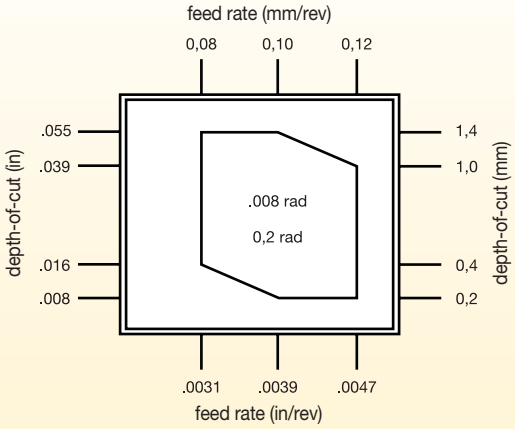
I.D. and Face Grooving

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

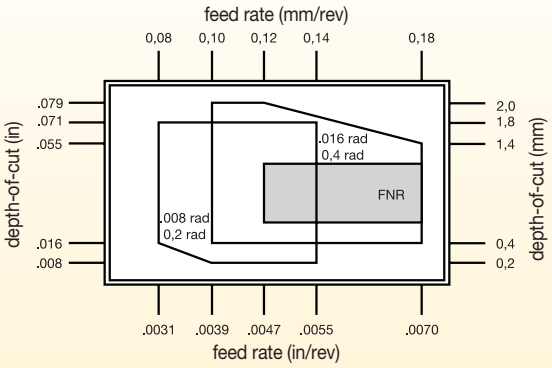


Turn and profile feed rates • GUP/GMP Geometries

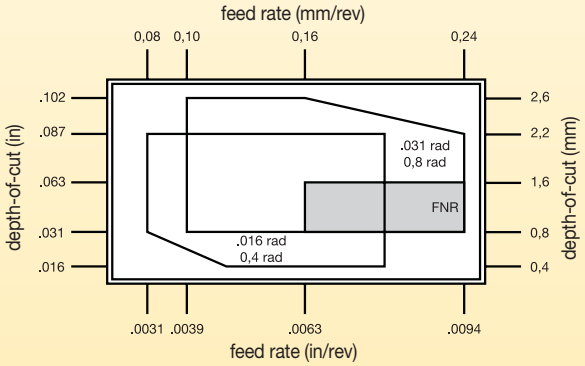
Seat Size 2



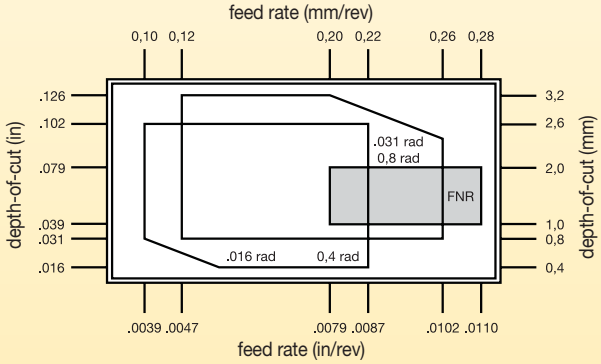
Seat Size 3



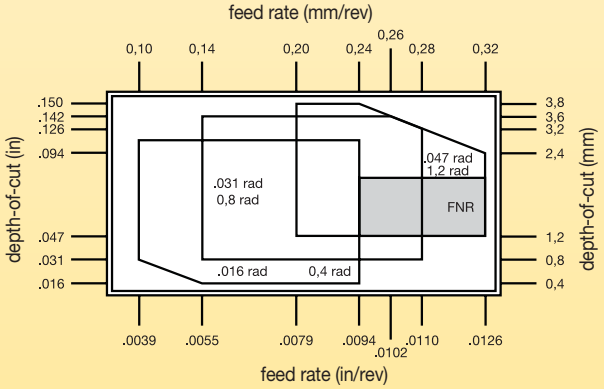
Seat Size 4



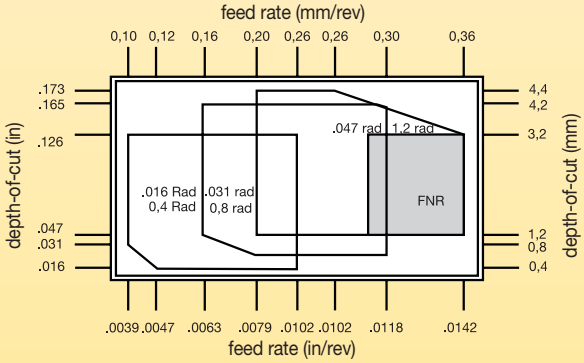
Seat Size 5



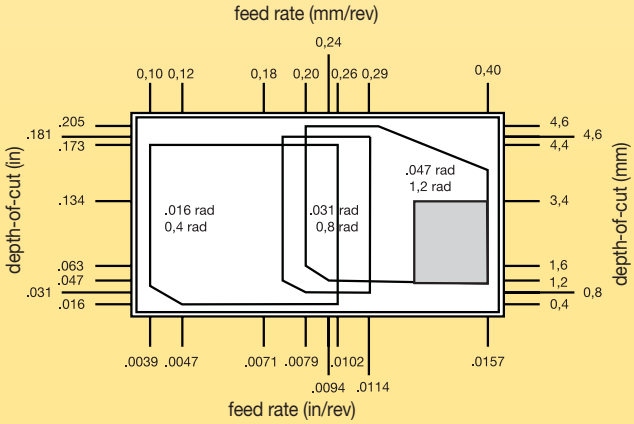
Seat Size 6



Seat Size 8

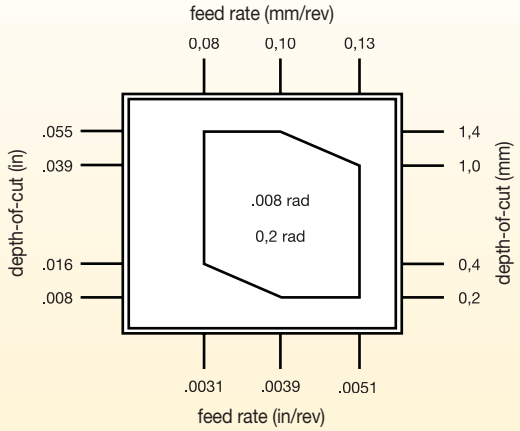


Seat Size 10

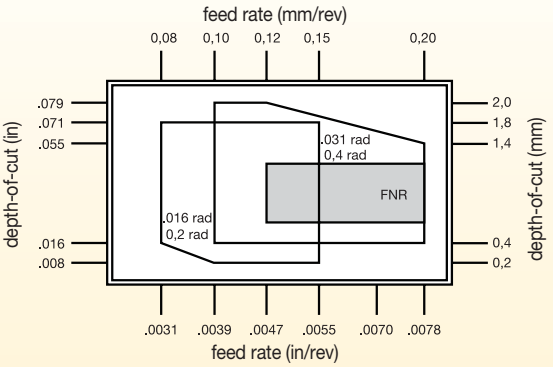


Turn and profile feed rates • GMN Geometries

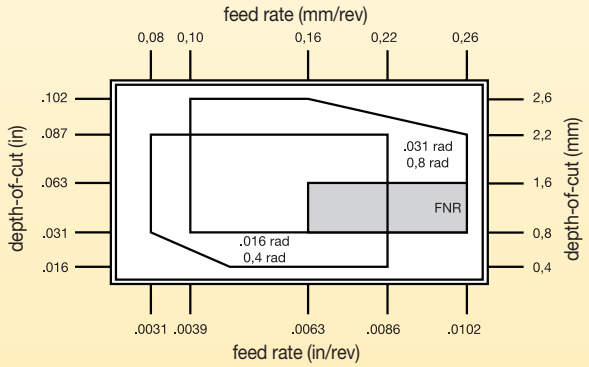
Seat Size 2



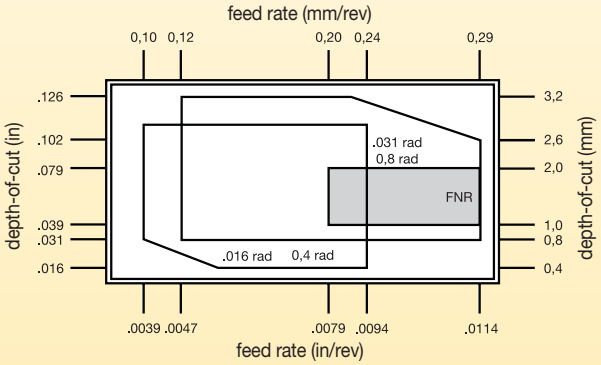
Seat Size 3



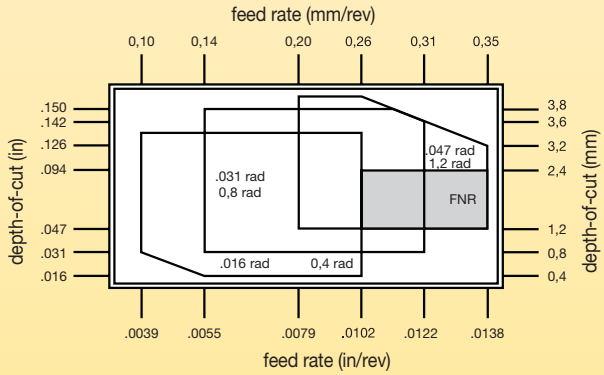
Seat Size 4



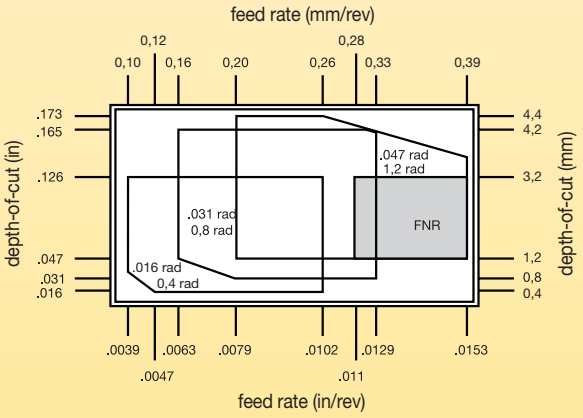
Seat Size 5



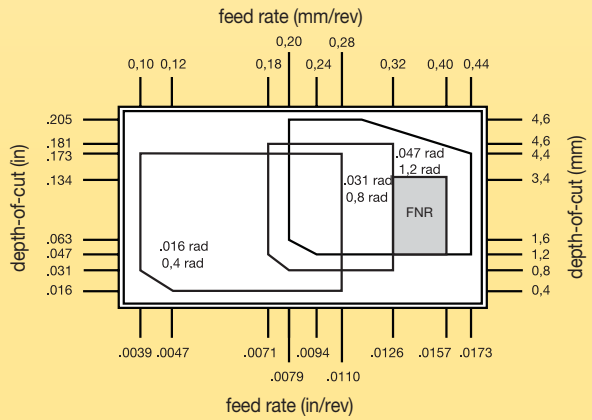
Seat Size 6



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 in (mm)	Cut-Off Feed Rates inch/rev (mm/rev) .0020 (0,05)	.0040 (0,10)	.0060 (0,15)	.0080 (0,20)
-A4C-CF	• High positive rake angle. • Sharp cutting edge. • Available in neutral lead angle in 6° and 10° right- and left-hand styles.		1B	.0024 (0,06)				
			2/2B	.0028 (0,07)				
			3	.0035 (0,09)				
			4	.0043 (0,11)				

Maximum Feed Rate Values

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

Mobile Apps

The Kennametal mobile app makes it easy to access 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

Utilize 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.

ANDROID APP ON Google play
Available on the App Store

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.

(continued)

(Recommended Starting Speeds — continued)

Recommended Starting Speeds [SFM]

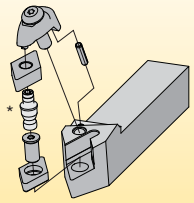
Material Group		K313			KCU10/KC5010			KCU25/KC5025			KCP10			KCP25			KCK20B			KY3500		
P	0–1	–	–	–	450	**925**	1100	360	**740**	880	600	**1320**	1475	475	**925**	1200	660	**1450**	1620	–	–	–
	2	–	–	–	450	**650**	800	360	**520**	640	600	**880**	1150	475	**650**	1000	660	**970**	1260	–	–	–
	3	–	–	–	450	**510**	800	360	**410**	640	550	**630**	850	450	**510**	800	600	**700**	920	–	–	–
	4	–	–	–	250	**360**	550	200	**290**	440	300	**480**	650	250	**360**	600	330	**530**	710	–	–	–
	5	–	–	–	400	**660**	850	320	**530**	680	500	**720**	1000	400	**650**	875	550	**800**	1100	–	–	–
	6	–	–	–	350	**500**	750	280	**400**	600	400	**600**	900	350	**500**	750	440	**660**	990	–	–	–
M	1	200	**300**	400	450	**700**	850	300	**550**	800	–	–	–	–	–	–	–	–	–	–	–	–
	2	150	**250**	350	400	**650**	800	300	**500**	800	–	–	–	–	–	–	–	–	–	–	–	–
	3	120	**220**	320	400	**600**	800	300	**450**	700	–	–	–	–	–	–	–	–	–	–	–	–
K	1	100	**250**	400	400	**600**	800	320	**480**	640	560	**800**	1440	455	**650**	1170	700	**1000**	1800	600	**2500**	3400
	2	75	**225**	350	300	**500**	700	240	**400**	560	400	**640**	1120	325	**520**	910	500	**800**	1400	900	**1200**	1650
	3	65	**190**	300	200	**350**	500	160	**280**	400	400	**560**	880	325	**455**	715	500	**700**	1100	–	–	–
N	1–2	500	**1200**	2000	500	**1800**	3200	400	**1440**	2560	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	400	**900**	1400	400	**1200**	2000	320	**960**	1600	–	–	–	–	–	–	–	–	–	–	–	–
	5	150	**300**	500	300	**550**	800	240	**440**	640	–	–	–	–	–	–	–	–	–	–	–	–
	6	120	**250**	500	400	**700**	1000	320	**560**	800	–	–	–	–	–	–	–	–	–	–	–	–
S	1	25	**100**	250	50	**180**	450	25	**125**	200	–	–	–	–	–	–	–	–	–	–	–	–
	2	25	**110**	250	50	**195**	450	25	**100**	250	–	–	–	–	–	–	–	–	–	–	–	–
	3	25	**125**	250	50	**225**	450	50	**125**	250	–	–	–	–	–	–	–	–	–	–	–	–
	4	25	**150**	250	50	**225**	550	25	**175**	350	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	100	**150**	200	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	50	**100**	150	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KT315			KB5625			KB1630			KD1405		
P	0–1	600	**1450**	1600	–	–	–	–	–	–	–	–	–
	2	650	**880**	1300	–	–	–	–	–	–	–	–	–
	3	600	**680**	900	–	–	–	–	–	–	–	–	–
	4	300	**530**	725	–	–	–	–	–	–	–	–	–
	5	500	**800**	1025	–	–	–	–	–	–	–	–	–
	6	475	**660**	975	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	200	**900**	1800	–	–	–	600	**2500**	3400	–	–	–
	2	450	**900**	1200	–	–	–	–	–	–	–	–	–
	3	600	**750**	1200	–	–	–	–	–	–	–	–	–
N	1–2	–	–	–	–	–	–	–	–	–	1200	**2000**	3400
	3	–	–	–	–	–	–	–	–	–	900	**1600**	2600
	4	–	–	–	–	–	–	–	–	–	1000	**1800**	3000
	5	–	–	–	–	–	–	–	–	–	900	**2000**	3500
	6	–	–	–	–	–	–	–	–	–	500	**1500**	2500
S	1	–	–	–	–	–	–	400	**650**	900	–	–	–
	2	–	–	–	–	–	–	400	**700**	900	–	–	–
	3	–	–	–	–	–	–	400	**810**	900	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	150	**500**	760	150	**400**	560	–	–	–
	2	–	–	–	150	**460**	760	150	**360**	560	–	–	–
	3	–	–	–	150	**430**	760	150	**330**	560	–	–	–
	4	–	–	–	150	**400**	760	150	**300**	560	–	–	–

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

Kenclamp™

D-style clamping



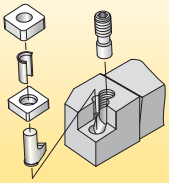
*The pin is an optional spare part and not in the standard configuration.

catalog 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

catalog 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™

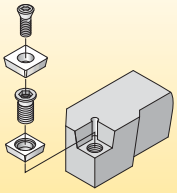
P-style clamping



catalog 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

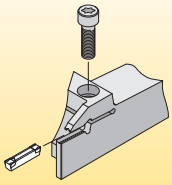
Screw-On

S-style clamping



catalog 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

A4

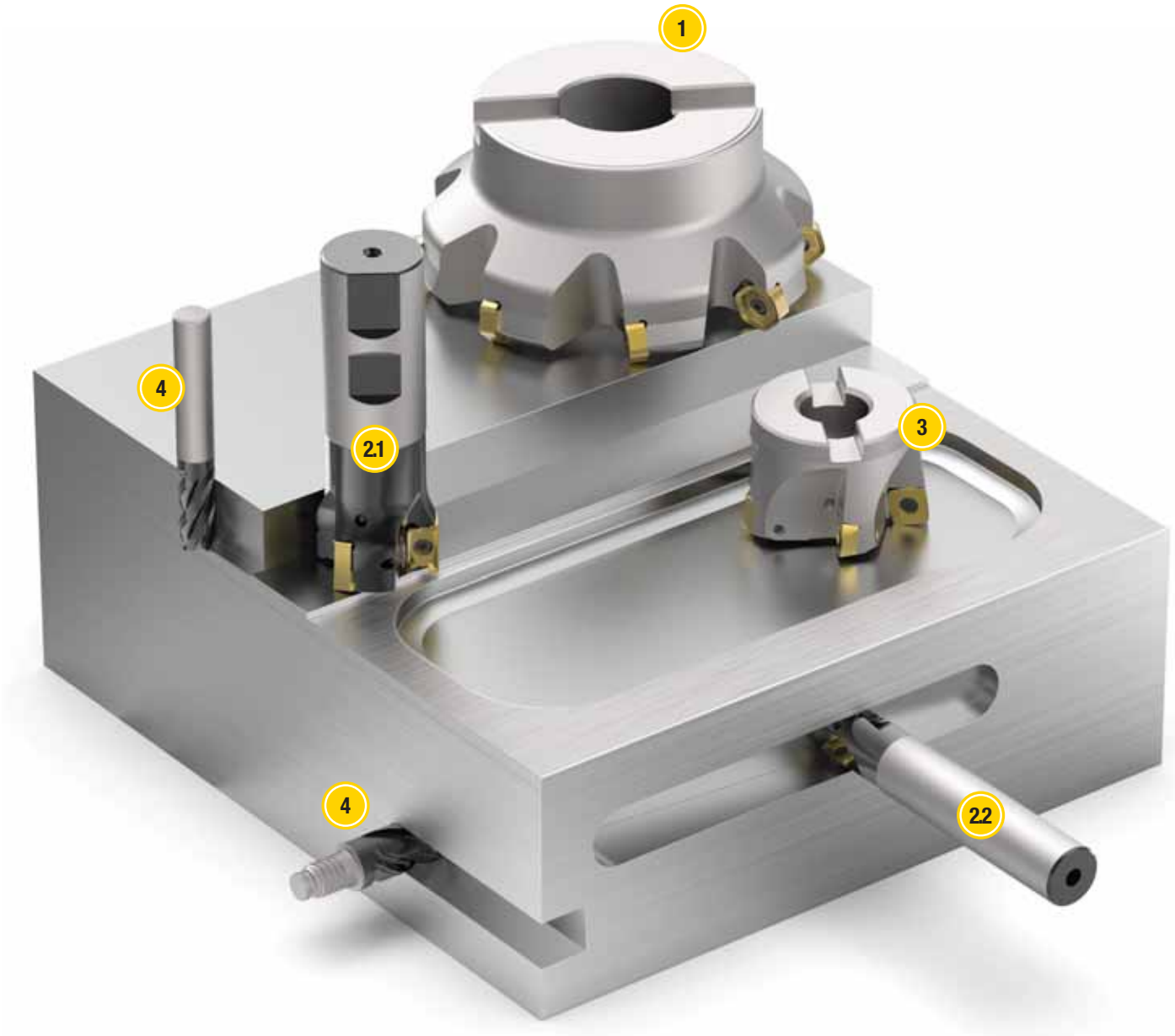


catalog number	thread size	drive size	recommended torque Nm	in. lbs.	ft. lbs.
MS1156	M3,5 x 0,6	T15	3,5	31	3
MS1160	M5 x 0,8	T20	7	62	5
MS1490	M8 x 1,25	T45	17	151	13
MS1595	M6 x 1,0	T30	12	106	9
MS1944	M4 x 0,7	T25	4	35	3
MS1970	M6 x 1,0	T30	12	106	9
MS2091	M5 x 0,8	25 IP	9	80	7

Beyond™ Evolution™

catalog 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

Milling



Indexable Milling

Face Milling **B2–B27**

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Mill 4-15 ..... B44–B57

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7792 IC12 ..... B114–B115, B130–B142

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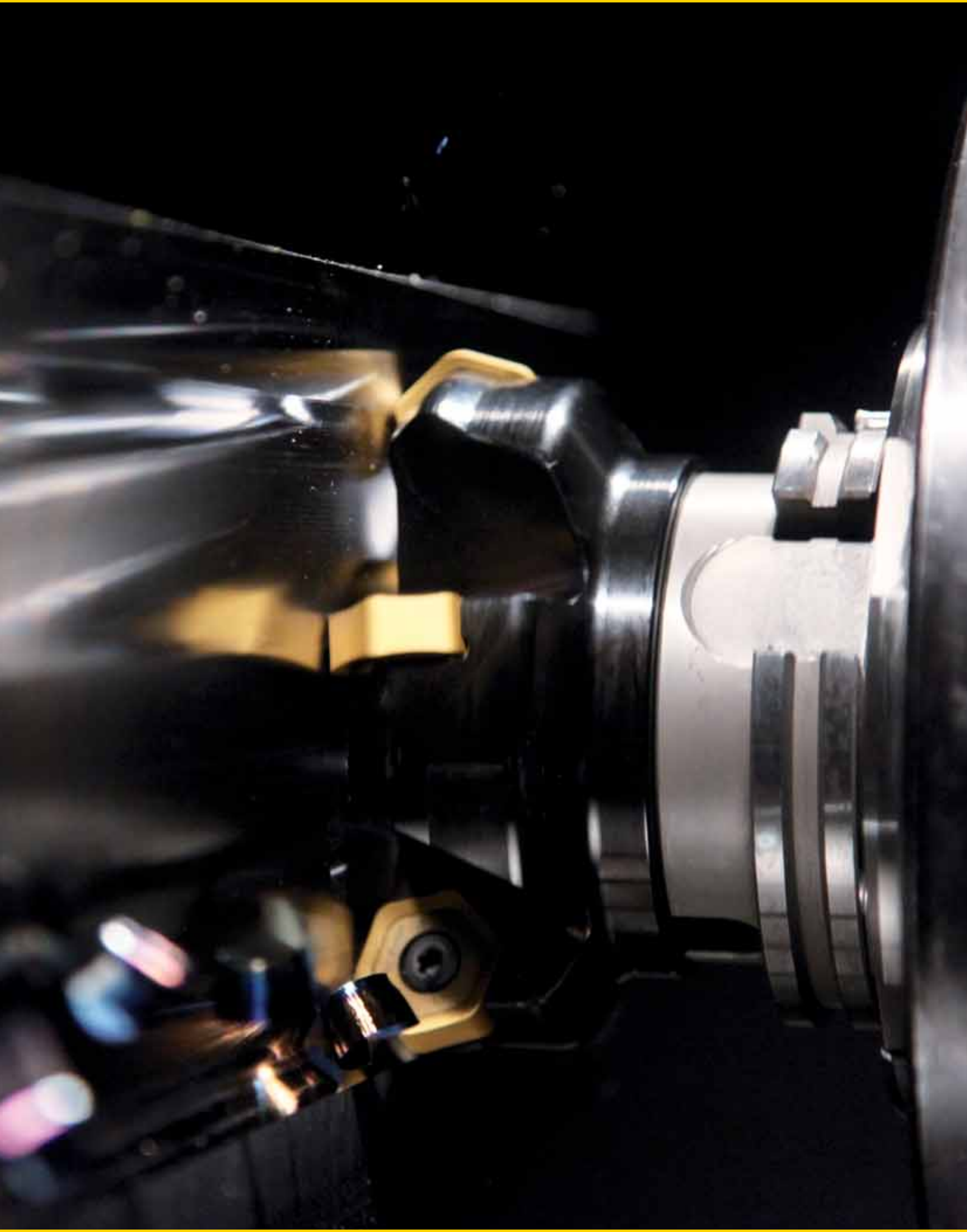
Workpiece Material Cross Reference **E8–E9**



Application

1

Machining Conditions and Spindle Size

2

- 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

3

Platform

4

Dodeka™ Mini

45° cutter — Ap max: .127"
30° cutter — Ap max: .174"
Cutter body: 1.0–5.0"
Insert style: HN*J43AN..
12 cutting edges

Dodeka™

45° cutter — Ap max: .178"
Cutter body: 2.0–12.0"
Insert style: HN*J535AN..
12 cutting edges

Insert Selection

5

Easy insert selection based on:
- Workpiece material
- Cutting conditions
- Coolant type

Directly on the product pages B6-B18.

Easy insert selection based on:
- Workpiece material
- Cutting conditions
- Coolant type

Directly on the product pages B19-B27.

Tech Tips:

- 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

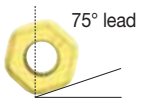
Dodeka Mini and Dodeka platforms are the most comprehensive face milling boosters on the market today. Twelve true cutting edges per insert mean low cost-per-edge and high productivity. With Beyond™ premium milling grades, achieve up to 30% higher metal removal rates (MRR), 25% lower cutting forces due 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 75°
Dodeka High-Feed 75°



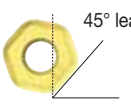
12 True Cutting Edges

Dodeka Mini	**Ap1 max = .065"**
Dodeka	**Ap1 max = .087"**

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

See High-Feed section, pages B143–B152.

Dodeka Mini 45°
Dodeka 45°

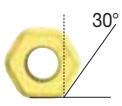


12 True Cutting Edges

Dodeka Mini	**Ap1 max = .127"**
Dodeka	**Ap1 max = .178"**

Best-in-class leader in face milling up to Ap1 max = .178".

Dodeka Mini 30°



12 True Cutting Edges

Dodeka Mini	**Ap1 max = .171"**

Achieve a higher axial depth-of-cut capability up to Ap1 = .174" with standard Dodeka Mini inserts.

Dodeka™ Mini Series

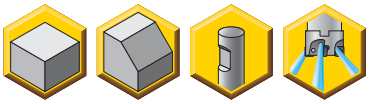
insert size HN.J43
Ap1 max = .171"
(for approach angle 30°)

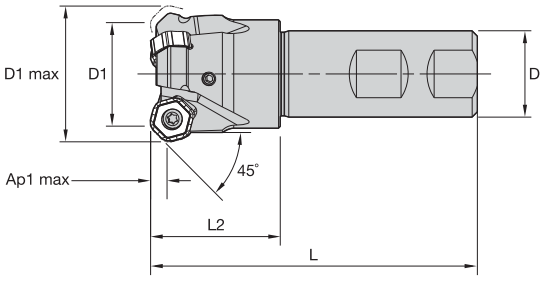
Dodeka

insert size HN.J535
Ap1 max = .178"

P M K N S — **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.





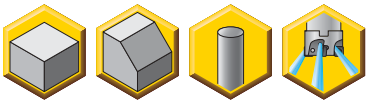
Dodeka Mini 45° • Weldon End Mills

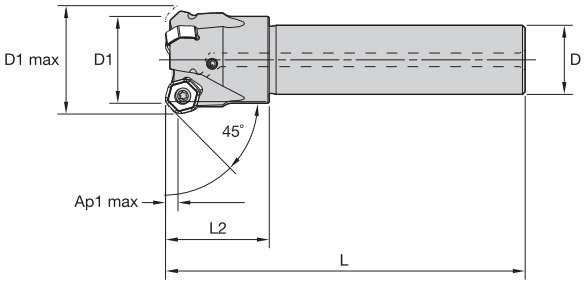
order number	catalog number	D1	D1 max	D	L	L2	Ap1 max	Z	lbs	max RPM
4130515	**KSHR100D03W075HN06**	1.000	1.322	.750	3.280	1.250	.127	3	.44	19800
4130517	**KSHR125D04W100HN06**	1.250	1.572	1.000	3.780	1.500	.127	4	.89	17600

Spare Parts

D1	insert screw	in. lbs.	wrench
1.000	**193.492**	31	**170.025**
1.250	**193.492**	31	**170.025**

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





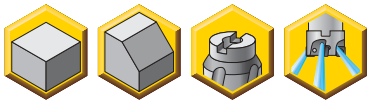
Dodeka Mini 45° • Cylindrical End Mills

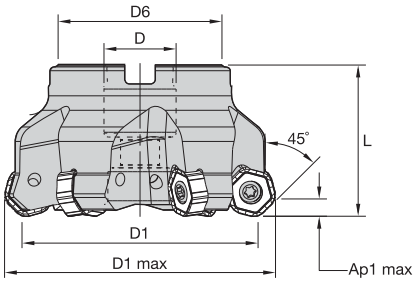
order number	catalog number	D1	D1 max	D	L	L2	Ap1 max	Z	lbs	max RPM
4130518	**KSHR100D02C075HN06L480**	1.000	1.322	.750	4.800	1.250	.127	2	.64	19800
4130519	**KSHR100D03C075HN06L480**	1.000	1.322	.750	4.800	1.250	.127	3	.62	19800
4130520	**KSHR125D03C100HN06L520**	1.250	1.572	1.000	5.200	1.500	.127	3	1.19	17600
4130521	**KSHR125D04C100HN06L520**	1.250	1.572	1.000	5.200	1.500	.127	4	1.20	17600

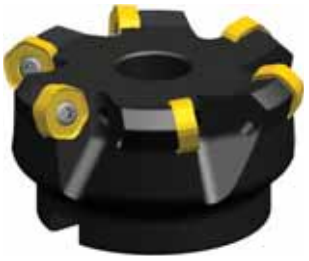
Spare Parts

D1	insert screw	in. lbs.	wrench
1.000	**193.492**	31	**170.025**
1.250	**193.492**	31	**170.025**

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







Dodeka Mini 45° • Shell Mills

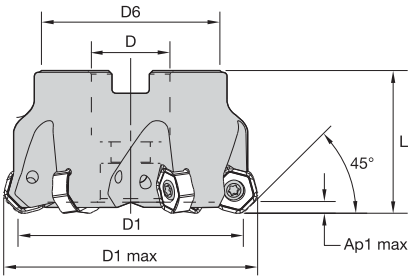
order number	catalog number	D1	D1 max	D	D6	L	Ap1 max	Z	lbs	max RPM
4130426	**KSHR150HN4345M3**	1.500	1.822	.500	1.440	1.575	.127	4	.57	16700
4130427	**KSHR150HN4345F2**	1.500	1.822	.500	1.440	1.575	.127	5	.56	16700
4130428	**KSHR200HN4345C3**	2.000	2.321	.750	1.750	1.575	.127	4	.93	12500
4130429	**KSHR200HN4345M3**	2.000	2.321	.750	1.750	1.575	.127	5	.93	12500
4130430	**KSHR200HN4345F3**	2.000	2.321	.750	1.750	1.575	.127	6	.97	12500
4130431	**KSHR250HN4345C3**	2.500	2.821	.750	1.750	1.575	.127	4	1.20	10000
4130432	**KSHR250HN4345M3**	2.500	2.821	.750	1.750	1.575	.127	6	1.27	10000
4130493	**KSHR250HN4345F3**	2.500	2.821	.750	1.750	1.575	.127	8	1.29	10000
4130494	**KSHR300HN4345C4**	3.000	3.321	1.000	2.189	1.750	.127	5	1.90	8300
4130495	**KSHR300HN4345M4**	3.000	3.321	1.000	2.189	1.750	.127	8	2.09	8300
4130496	**KSHR300HN4345F4**	3.000	3.321	1.000	2.189	1.750	.127	10	2.07	8300
4130497	**KSHR400HN4345C6**	4.000	4.321	1.500	3.661	1.750	.127	6	3.48	6300
4130498	**KSHR400HN4345M6**	4.000	4.321	1.500	3.661	1.750	.127	9	3.66	6300
4130499	**KSHR400HN4345F6**	4.000	4.321	1.500	3.661	1.750	.127	12	3.62	6300
4130500	**KSHR500HN4345C6**	5.000	5.320	1.500	3.652	2.380	.127	8	6.38	5000
4130501	**KSHR500HN4345M6**	5.000	5.320	1.500	3.652	2.380	.127	12	6.59	5000

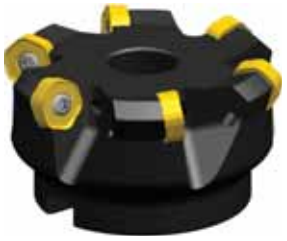
Spare Parts

D1	insert screw	in. lbs.	wrench	socket-head cap screw	coolant lock screw assembly
1.500	**193.492**	31	**170.025**	**S424**	**–**
2.000	**193.492**	31	**170.025**	**S445**	**–**
2.500	**193.492**	31	**170.025**	**S445**	**–**
3.000	**193.492**	31	**170.025**	**S458**	**–**
4.000	**193.492**	31	**170.025**	**–**	**S2165C**
5.000	**193.492**	31	**170.025**	**–**	**S2163C**

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

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

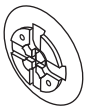




Dodeka Mini 45° • Shell Mills • Metric

order number	catalog number	D1	D1 max	D	D6	L	Ap1 max	Z	kg	max RPM
4124313	**KSHR040A05RS45HN06**	40	48,2	22	38	40	3,2	5	0,25	15800
4126392	**KSHR080A08RS45HN06**	80	88,1	27	64	50	3,2	8	1,25	7900
4124262	**KSHR125B16RS45HN06**	125	133,1	40	90	63	3,2	16	3,05	5050

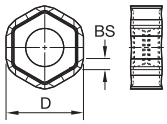
Spare Parts

D1	insert screw	Nm	wrench	socket-head cap screw	coolant lock screw	 coolant shower plate
40	**193.492**	3,5	**170.025**	**125.025**	**–**	**–**
80	**193.492**	3,5	**170.025**	**125.230**	**–**	**–**
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 catalog number	ANSI catalog number	D mm	D in	BS mm	BS in	KC410M	KC510M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
Light Machining													
HNGJ0604ANFNLDJ	HNGJ43ANFNLDJ	12	.472	1,54	.060	4121575	–	–	–	–	–	–	–
HNGJ0604ANENLD	HNGJ43ANENLD	12	.472	1,54	.060	–	4121576	4121578	–	4119227	4119190	5550701	6165862
General Machining													
HNPJ0604ANSNGD	HNPJ43ANSNGD	12	.472	1,45	.057	–	–	4119697	4119701	4119699	4119700	5550703	6165759
Heavy Machining													
HNGJ0604ANSNHD	HNGJ43ANSNHD	12	.472	1,45	.057	–	–	–	–	–	–	6039659	–
HNPJ0604ANSNHD	HNPJ43ANSNHD	12	.472	1,45	.057	–	–	–	4119229	–	4119228	5550702	–
HNPJ060432ANSNHD	HNPJ438ANSNHD	12	.472	–	–	–	–	–	–	–	–	–	6165861

Recommended Starting Feeds

Recommended Starting Feeds [IPT]

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	.007	**.018**	.032	.005	**.013**	.023	.004	**.010**	.017	.003	**.009**	.015	.003	**.008**	.014	.F..LDJ
.E..LD	.007	**.024**	.040	.005	**.017**	.029	.004	**.013**	.021	.003	**.011**	.019	.003	**.010**	.017	.E..LD
.S..GD	.013	**.031**	.046	.009	**.022**	.033	.007	**.016**	.025	.006	**.014**	.022	.006	**.013**	.020	.S..GD
.S..HD	.013	**.033**	.053	.009	**.024**	.038	.007	**.018**	.028	.006	**.015**	.025	.006	**.014**	.023	.S..HD

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.

Material Group		KC410M *			KC510M			KC522M			KC725M		
P	1	–	–	–	–	–	–	1295	**1115**	1065	1015	**900**	855
	2	–	–	–	–	–	–	1085	**950**	785	870	**755**	625
	3	–	–	–	–	–	–	1000	**855**	690	785	**675**	560
	4	–	–	–	970	**785**	675	885	**720**	590	705	**590**	475
	5	–	–	–	–	–	–	720	**675**	590	590	**525**	475
	6	–	–	–	–	–	–	655	**490**	395	510	**395**	310
M	1	–	–	–	–	–	–	805	**705**	655	675	**590**	525
	2	–	–	–	–	–	–	720	**625**	510	605	**510**	425
	3	–	–	–	–	–	–	560	**475**	375	460	**395**	310
K	1	–	–	–	1165	**1050**	950	900	**805**	720	–	–	–
	2	–	–	–	900	**805**	755	705	**625**	590	–	–	–
	3	–	–	–	770	**690**	625	590	**525**	475	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	625	**510**	360	475	**360**	280	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	1790	**1560**	1460	1165	**1015**	970	–	–	–
	2	–	–	–	1100	**1000**	900	985	**855**	705	–	–	–
	3	–	–	–	1000	**900**	805	900	**770**	625	–	–	–
	4	–	–	–	755	**690**	625	805	**675**	525	–	–	–
	5	–	–	–	1015	**900**	820	675	**605**	525	675	**575**	475
	6	–	–	–	625	**525**	475	590	**460**	360	590	**425**	310
M	1	–	–	–	805	**720**	605	770	**675**	605	820	**675**	560
	2	–	–	–	720	**625**	560	690	**590**	490	705	**575**	475
	3	–	–	–	575	**510**	460	510	**460**	360	575	**425**	330
K	1	1655	**1510**	1345	1165	**1050**	950	–	–	–	–	–	–
	2	1310	**1165**	1085	920	**820**	755	–	–	–	–	–	–
	3	1100	**985**	900	770	**690**	625	–	–	–	–	–	–
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			KC522M			KC725M		
P	1	–	–	–	–	–	–	1035	**890**	850	810	**720**	685
	2	–	–	–	–	–	–	870	**760**	630	695	**605**	500
	3	–	–	–	–	–	–	800	**685**	550	630	**540**	450
	4	–	–	–	775	**630**	540	710	**575**	470	565	**470**	380
	5	–	–	–	–	–	–	575	**540**	470	470	**420**	380
	6	–	–	–	–	–	–	525	**390**	315	410	**315**	250
M	1	–	–	–	–	–	–	645	**565**	525	540	**470**	420
	2	–	–	–	–	–	–	575	**500**	410	485	**410**	340
	3	–	–	–	–	–	–	450	**380**	300	370	**315**	250
K	1	–	–	–	930	**840**	760	720	**645**	575	–	–	–
	2	–	–	–	720	**645**	605	565	**500**	470	–	–	–
	3	–	–	–	615	**550**	500	470	**420**	380	–	–	–
N	1	3830	**3400**	3135	2020	**1795**	1650	–	–	–	–	–	–
	2	3400	**3135**	2890	1825	**1680**	1550	–	–	–	–	–	–
	3	3400	**3135**	2890	1825	**1680**	1550	–	–	–	–	–	–
S	1	–	–	–	–	–	–	130	**105**	80	105	**90**	80
	2	–	–	–	–	–	–	130	**105**	80	105	**90**	80
	3	–	–	–	–	–	–	155	**130**	80	145	**105**	80
	4	–	–	–	–	–	–	225	**155**	105	170	**145**	90
H	1	–	–	–	500	**410**	290	380	**290**	225	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	1430	**1250**	1170	930	**810**	775	–	–	–
	2	–	–	–	880	**800**	720	790	**685**	565	–	–	–
	3	–	–	–	800	**720**	645	720	**615**	500	–	–	–
	4	–	–	–	605	**550**	500	645	**540**	420	–	–	–
	5	–	–	–	810	**720**	655	540	**485**	420	540	**460**	380
	6	–	–	–	500	**420**	382	470	**370**	290	470	**340**	250
M	1	–	–	–	645	**575**	485	615	**540**	485	655	**540**	450
	2	–	–	–	575	**500**	450	550	**470**	390	565	**460**	380
	3	–	–	–	460	**410**	370	410	**370**	290	460	**340**	265
K	1	1325	**1210**	1075	930	**840**	760	–	–	–	–	–	–
	2	1050	**930**	870	735	**655**	605	–	–	–	–	–	–
	3	880	**790**	720	615	**550**	500	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	130	**105**	90	130	**105**	80
	2	–	–	–	–	–	–	130	**105**	90	130	**105**	80
	3	–	–	–	–	–	–	155	**130**	90	155	**130**	80
	4	–	–	–	210	**155**	105	210	**155**	105	185	**155**	90
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 *			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	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

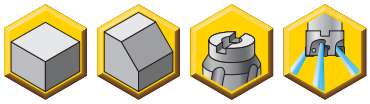
Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	435	**380**	355	285	**250**	235	–	–	–
	2	–	–	–	270	**245**	220	240	**210**	170	–	–	–
	3	–	–	–	245	**220**	195	220	**190**	150	–	–	–
	4	–	–	–	185	**170**	150	195	**165**	130	–	–	–
	5	–	–	–	250	**220**	200	165	**150**	130	165	**140**	115
	6	–	–	–	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	–	–	–	–	–	–	–	–	–	–	–	–

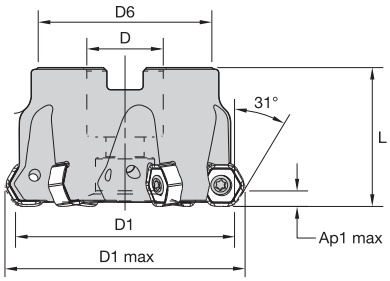
NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

- Twelve cutting edges per insert.
- Higher Ap1 max with standard inserts.
- Productivity booster in all materials.





Dodeka Mini 30° • Shell Mills

order number	catalog number	D1	D1 max	D	D6	L	Ap1 max	Z	lbs	max RPM
4136390	**KSHRHD150HN43F2**	1.500	1.750	.500	1.440	1.575	.171	5	.48	16700
4136392	**KSHRHD200HN43M3**	2.000	2.250	.750	1.750	1.575	.171	5	.87	12500
4136395	**KSHRHD300HN43C4**	3.000	3.250	1.000	2.189	1.750	.171	5	1.86	8300
4136397	**KSHRHD400HN43C6**	4.000	4.249	1.500	3.661	1.750	.171	6	3.36	6300

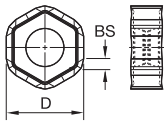
Spare Parts

D1	insert screw	in. lbs.	wrench	socket-head cap screw	coolant lock screw assembly
1.500	**193.492**	31	**170.025**	**S424**	**—**
2.000	**193.492**	31	**170.025**	**S445**	**—**
3.000	**193.492**	31	**170.025**	**S458**	**—**
4.000	**193.492**	31	**170.025**	**—**	**S2165C**

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 catalog number	ANSI catalog number	D mm	D in	BS mm	BS in	KC410M	KC510M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
Light Machining													
HNGJ0604ANFNLDJ	HNGJ43ANFNLDJ	12	.472	1,54	.060	4121575	–	–	–	–	–	–	–
HNGJ0604ANENLD	HNGJ43ANENLD	12	.472	1,54	.060	–	4121576	4121578	–	4119227	4119190	5550701	6165862
General Machining													
HNPJ0604ANSNGD	HNPJ43ANSNGD	12	.472	1,45	.057	–	–	4119697	4119701	4119699	4119700	5550703	–
Heavy Machining													
HNGJ0604ANSNHD	HNGJ43ANSNHD	12	.472	1,45	.057	–	–	–	–	–	–	6039659	–
HNPJ0604ANSNHD	HNPJ43ANSNHD	12	.472	1,45	.057	–	–	–	4119229	–	4119228	5550702	–
HNPJ060432ANSNHD	HNPJ438ANSNHD	12	.472	—	—	–	–	–	–	–	–	–	6165861

Recommended Starting Feeds

Recommended Starting Feeds [IPT]

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	.005	**.015**	.026	.004	**.011**	.019	.003	**.008**	.014	.003	**.007**	.012	.002	**.006**	.011	.F..LDJ
.E..LD	.006	**.019**	.032	.004	**.014**	.023	.003	**.010**	.017	.003	**.009**	.015	.003	**.008**	.014	.E..LD
.S..GD	.011	**.025**	.038	.008	**.018**	.027	.006	**.013**	.020	.005	**.012**	.018	.005	**.011**	.016	.S..GD
.S..HD	.011	**.027**	.043	.008	**.019**	.031	.006	**.014**	.023	.005	**.013**	.020	.005	**.012**	.018	.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			KC522M			KC725M		
P	1	–	–	–	–	–	–	1295	**1115**	1065	1015	**900**	855
	2	–	–	–	–	–	–	1085	**950**	785	870	**755**	625
	3	–	–	–	–	–	–	1000	**855**	690	785	**675**	560
	4	–	–	–	970	**785**	675	885	**720**	590	705	**590**	475
	5	–	–	–	–	–	–	720	**675**	590	590	**525**	475
	6	–	–	–	–	–	–	655	**490**	395	510	**395**	310
M	1	–	–	–	–	–	–	805	**705**	655	675	**590**	525
	2	–	–	–	–	–	–	720	**625**	510	605	**510**	425
	3	–	–	–	–	–	–	560	**475**	375	460	**395**	310
K	1	–	–	–	1165	**1050**	950	900	**805**	720	–	–	–
	2	–	–	–	900	**805**	755	705	**625**	590	–	–	–
	3	–	–	–	770	**690**	625	590	**525**	475	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	625	**510**	360	475	**360**	280	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	1790	**1560**	1460	1165	**1015**	970	–	–	–
	2	–	–	–	1100	**1000**	900	985	**855**	705	–	–	–
	3	–	–	–	1000	**900**	805	900	**770**	625	–	–	–
	4	–	–	–	755	**690**	625	805	**675**	525	–	–	–
	5	–	–	–	1015	**900**	820	675	**605**	525	675	**575**	475
	6	–	–	–	625	**525**	475	590	**460**	360	590	**425**	310
M	1	–	–	–	805	**720**	605	770	**675**	605	820	**675**	560
	2	–	–	–	720	**625**	560	690	**590**	490	705	**575**	475
	3	–	–	–	575	**510**	460	510	**460**	360	575	**425**	330
K	1	1655	**1510**	1345	1165	**1050**	950	–	–	–	–	–	–
	2	1310	**1165**	1085	920	**820**	755	–	–	–	–	–	–
	3	1100	**985**	900	770	**690**	625	–	–	–	–	–	–
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			KC522M			KC725M		
P	1	–	–	–	–	–	–	1035	**890**	850	810	**720**	685
	2	–	–	–	–	–	–	870	**760**	630	695	**605**	500
	3	–	–	–	–	–	–	800	**685**	550	630	**540**	450
	4	–	–	–	775	**630**	540	710	**575**	470	565	**470**	380
	5	–	–	–	–	–	–	575	**540**	470	470	**420**	380
	6	–	–	–	–	–	–	525	**390**	315	410	**315**	250
M	1	–	–	–	–	–	–	645	**565**	525	540	**470**	420
	2	–	–	–	–	–	–	575	**500**	410	485	**410**	340
	3	–	–	–	–	–	–	450	**380**	300	370	**315**	250
K	1	–	–	–	930	**840**	760	720	**645**	575	–	–	–
	2	–	–	–	720	**645**	605	565	**500**	470	–	–	–
	3	–	–	–	615	**550**	500	470	**420**	380	–	–	–
N	1	3830	**3400**	3135	2020	**1795**	1650	–	–	–	–	–	–
	2	3400	**3135**	2890	1825	**1680**	1550	–	–	–	–	–	–
	3	3400	**3135**	2890	1825	**1680**	1550	–	–	–	–	–	–
S	1	–	–	–	–	–	–	130	**105**	80	105	**90**	80
	2	–	–	–	–	–	–	130	**105**	80	105	**90**	80
	3	–	–	–	–	–	–	155	**130**	80	145	**105**	80
	4	–	–	–	–	–	–	225	**155**	105	170	**145**	90
H	1	–	–	–	500	**410**	290	380	**290**	225	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

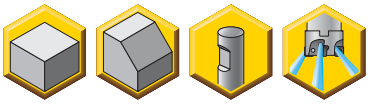
Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	1430	**1250**	1170	930	**810**	775	–	–	–
	2	–	–	–	880	**800**	720	790	**685**	565	–	–	–
	3	–	–	–	800	**720**	645	720	**615**	500	–	–	–
	4	–	–	–	605	**550**	500	645	**540**	420	–	–	–
	5	–	–	–	810	**720**	655	540	**485**	420	540	**460**	380
	6	–	–	–	500	**420**	382	470	**370**	290	470	**340**	250
M	1	–	–	–	645	**575**	485	615	**540**	485	655	**540**	450
	2	–	–	–	575	**500**	450	550	**470**	390	565	**460**	380
	3	–	–	–	460	**410**	370	410	**370**	290	460	**340**	265
K	1	1325	**1210**	1075	930	**840**	760	–	–	–	–	–	–
	2	1050	**930**	870	735	**655**	605	–	–	–	–	–	–
	3	880	**790**	720	615	**550**	500	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	130	**105**	90	130	**105**	80
	2	–	–	–	–	–	–	130	**105**	90	130	**105**	80
	3	–	–	–	–	–	–	155	**130**	90	155	**130**	80
	4	–	–	–	210	**155**	105	210	**155**	105	185	**155**	90
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

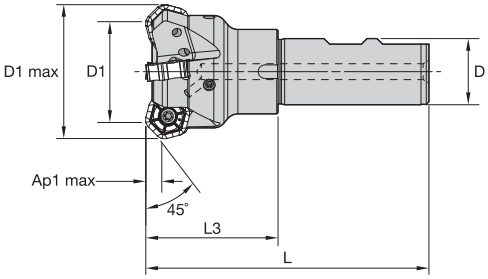
NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

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





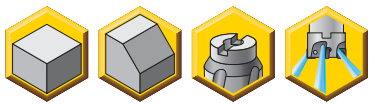
Dodeka 45° • Weldon End Mills • Metric

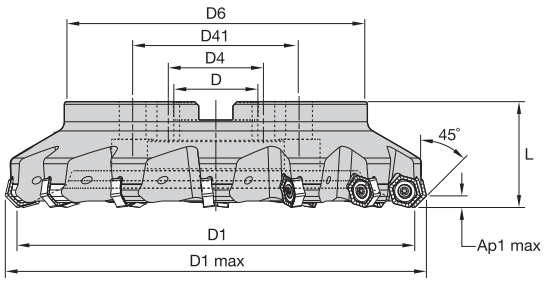
order number	catalog number	D1	D1 max	D	L	L3	Ap1 max	Z	kg	max RPM
3324830	**KSHR40D04R50B25SHN09**	40	51,0	25	107	50,00	4,5	4	0,52	15800

Spare Parts

D1	insert screw	Nm	wrench
40	**193.492**	3,5	**170.025**

- Twelve cutting edges per insert.
- Through-coolant on cutters <4.0" diameter. 5.0" diameter cutters and above do not have through coolant.
- Soft cutting action.





Dodeka 45° • Shell Mills

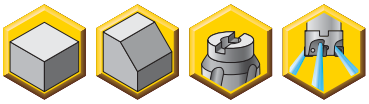
order number	catalog number	D1	D1 max	D	D4	D41	D6	L	Ap1 max	Z	lbs	max RPM
3326850	**KSHR200HN5345C3**	2.000	2.434	.750	–	–	1.593	1.570	.178	4	.81	12500
3326851	**KSHR200HN5345M3**	2.000	2.434	.750	–	–	1.593	1.570	.178	5	.82	12500
3747124	**KSHR250HN5345XC3**	2.500	2.933	.750	–	–	1.986	1.570	.177	5	1.25	10000
3326852	**KSHR250HN5345C3**	2.500	2.933	.750	–	–	1.986	1.570	.178	6	1.32	10000
3326923	**KSHR250HN5345M3**	2.500	2.933	.750	–	–	1.986	1.570	.178	7	1.34	10000
3747125	**KSHR300HN5345XC4**	3.000	3.433	1.000	–	–	2.189	1.750	.177	5	1.86	8300
3326924	**KSHR300HN5345C4**	3.000	3.433	1.000	–	–	2.189	1.750	.178	6	1.79	8300
3326925	**KSHR300HN5345M4**	3.000	3.433	1.000	–	–	2.032	1.750	.178	9	1.97	8300
3747126	**KSHR400HN5345XC5**	4.000	4.232	1.250	–	–	2.722	1.750	.177	6	3.17	6300
3326926	**KSHR400HN5345C5**	4.000	4.432	1.250	–	–	2.722	1.750	.178	8	2.93	6300
3326927	**KSHR400HN5345M5**	4.000	4.432	1.250	–	–	2.722	1.750	.178	11	3.14	6300
3747127	**KSHR500HN5345XC6**	5.000	5.431	1.500	–	–	3.652	2.380	.177	8	6.20	5000
3326928	**KSHR500HN5345C6**	5.000	5.431	1.500	–	–	3.652	2.380	.178	10	5.94	5000
3326929	**KSHR500HN5345M6**	5.000	5.431	1.500	–	–	3.652	2.380	.178	14	6.21	5000
3747128	**KSHR600HN5345XC8**	6.000	6.432	2.000	–	–	4.722	2.380	.177	10	9.01	4100
3326930	**KSHR600HN5345C8**	6.000	6.432	2.000	–	–	4.722	2.380	.178	12	9.10	4100
3326931	**KSHR600HN5345M8**	6.000	6.432	2.000	–	–	4.722	2.380	.178	16	9.36	4100
3494648	**KSHR800HN5345C10**	8.000	8.432	2.500	4.000	–	5.118	2.380	.177	16	13.14	3130
3494649	**KSHR1000HN5345C10**	10.000	10.433	2.500	4.000	–	7.120	2.380	.177	20	24.52	2510
3494650	**KSHR1200HN5345C10**	12.000	12.433	2.500	4.000	7.000	9.016	3.150	.177	24	42.66	2090

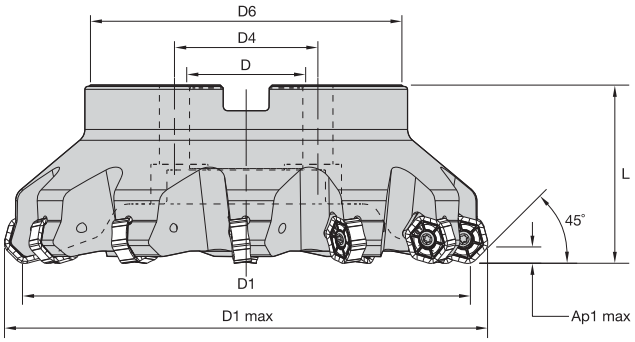
Spare Parts

D1	insert screw	in. lbs.	wrench	socket-head cap screw	socket-head cap screw with coolant groove	coolant lock screw	coolant lock screw assembly	coolant shower plate
2.000	**193.492**	31	**170.025**	**S445**	**S445CG**	–	–	–
2.500	**193.492**	31	**170.025**	**S445**	**S445CG**	–	–	–
3.000	**193.492**	31	**170.025**	**S458**	**S458CG**	–	–	–
4.000	**193.492**	31	**170.025**	–	–	–	**S2162C**	–
5.000	**193.492**	31	**170.025**	–	–	**420.201**	–	**470.240**
6.000	**193.492**	31	**170.025**	–	–	**420.241**	–	**470.241**
8.000	**193.492**	31	**170.025**	–	–	–	–	**470.242**
10.000	**193.492**	31	**170.025**	–	–	–	–	**470.243**
12.000	**193.492**	31	**170.025**	–	–	–	–	**470.244**

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

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





Dodeka 45° • Shell Mills • Metric

order number	catalog number	D1	D1 max	D	D4	D6	L	Ap1 max	Z	kg	max RPM
3325163	**KSHR63A06RS45HN09**	63	74,0	22	–	50	40	4,5	6	0,56	10100
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
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
3325169	**KSHR125B10RS45HN09**	125	135,9	40	–	90	63	4,5	10	2,77	5050
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

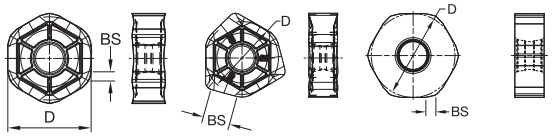
Spare Parts

D1	insert screw	Nm	wrench	mounting screw with coolant grooves	socket-head cap screw	coolant lock screw assembly	coolant lock screw	coolant shower plate
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**

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 catalog number	ANSI catalog number	D mm	D in	BS mm	BS in	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40	KY3500
Light Machining														
HNGJ0905ANFNLDJ	HNGJ535ANFNLDJ	16	.625	1,80	.071	3849320	–	–	–	–	–	–	–	–
HNGJ0905ANENLD	HNGJ535ANENLD	16	.625	1,80	.071	–	3331174	3093561	3331175	3330952	3331178	–	6178103	–
General Machining														
HNGJ0905ANSNGD	HNGJ535ANSNGD	16	.625	1,80	.071	–	–	–	3331176	3331173	3093719	5550793	6178104	–
HNPJ0905ANSNGD	HNPJ535ANSNGD	16	.625	1,80	.071	–	–	3774250	3763727	3763725	3763728	5550795	–	–
Heavy Machining														
HNGJ0905ANSNHD	HNGJ535ANSNHD	16	.625	1,66	.065	–	–	–	3556331	3556330	3556332	5550794	6178105	–
HNPJ0905ANSNHD	HNPJ535ANSNHD	16	.625	1,66	.065	–	–	3774249	3763723	3763185	3763724	5550796	6178108	–
HNGJ090543ANSNHD	HNGJ53511ANSNHD	16	.625	–	–	–	–	–	3556374	–	3556375	–	6178106	–
HNPJ090543ANSNHD	HNPJ53511ANSNHD	16	.625	–	–	–	–	–	–	3763729	3763731	5550797	6178109	–
Finishing with Wiper														
XNGJ0905ANSNGD3W	XNGJ535ANSNGD3W	16	.625	6,00	.230	–	–	–	–	3547022	3547035	–	–	–
High Speed Cast Iron Machining														
HNEC0905ANSN	HNEC535ANSN	16	.625	1,95	.077	–	–	–	–	–	–	–	–	6140064

Recommended Starting Feeds [IPT]

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	.007	**.018**	.032	.005	**.013**	.023	.004	**.010**	.017	.003	**.009**	.015	.003	**.008**	.014	.F..LDJ
.E..LD	.009	**.026**	.040	.007	**.019**	.029	.005	**.014**	.021	.004	**.012**	.019	.004	**.011**	.017	.E..LD
.S..GD	.013	**.028**	.045	.009	**.020**	.032	.007	**.015**	.024	.006	**.013**	.021	.006	**.012**	.019	.S..GD
.S..HD	.013	**.033**	.053	.009	**.024**	.038	.007	**.018**	.028	.006	**.015**	.025	.006	**.014**	.023	.S..HD

Recommended Starting Feeds [mm]

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	–	–	–	–	–	–	1295	**1115**	1065	1015	**900**	855	–	–	–
	2	–	–	–	–	–	–	1085	**950**	785	870	**755**	625	–	–	–
	3	–	–	–	–	–	–	1000	**855**	690	785	**675**	560	–	–	–
	4	–	–	–	–	–	–	885	**720**	590	705	**590**	475	–	–	–
	5	–	–	–	–	–	–	720	**675**	590	590	**525**	475	–	–	–
	6	–	–	–	–	–	–	655	**490**	395	510	**395**	310	–	–	–
M	1	–	–	–	–	–	–	805	**705**	655	675	**590**	525	–	–	–
	2	–	–	–	–	–	–	720	**625**	510	605	**510**	425	–	–	–
	3	–	–	–	–	–	–	560	**475**	375	460	**395**	310	–	–	–
K	1	–	–	–	1065	**970**	855	900	**805**	720	–	–	–	1655	**1510**	1345
	2	–	–	–	820	**755**	690	705	**625**	590	–	–	–	1310	**1165**	1085
	3	–	–	–	690	**625**	575	590	**525**	475	–	–	–	1100	**985**	900
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	475	**360**	280	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCPK30			KCPM40			KCSM40			KY3500		
P	1	1790	**1560**	1460	1165	**1015**	970	–	–	–	–	–	–
	2	1100	**1000**	900	985	**855**	705	–	–	–	–	–	–
	3	1000	**900**	805	900	**770**	625	–	–	–	–	–	–
	4	755	**690**	625	805	**675**	525	–	–	–	–	–	–
	5	1015	**900**	820	675	**605**	525	675	**575**	475	–	–	–
	6	625	**525**	475	590	**460**	360	590	**425**	310	–	–	–
M	1	805	**720**	605	770	**675**	605	820	**675**	560	–	–	–
	2	720	**625**	560	690	**590**	490	705	**575**	475	–	–	–
	3	575	**510**	460	510	**460**	360	575	**425**	330	–	–	–
K	1	1165	**1050**	950	–	–	–	–	–	–	3165	**2870**	2560
	2	920	**820**	755	–	–	–	–	–	–	2495	**2245**	2085
	3	770	**690**	625	–	–	–	–	–	–	–	–	–
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	–	–	–	–	–	–	1035	**890**	850	810	**720**	685	–	–	–
	2	–	–	–	–	–	–	870	**760**	630	695	**605**	500	–	–	–
	3	–	–	–	–	–	–	800	**685**	550	630	**540**	450	–	–	–
	4	–	–	–	–	–	–	710	**575**	470	565	**470**	380	–	–	–
	5	–	–	–	–	–	–	575	**540**	470	470	**420**	380	–	–	–
	6	–	–	–	–	–	–	525	**390**	315	410	**315**	250	–	–	–
M	1	–	–	–	–	–	–	645	**565**	525	540	**470**	420	–	–	–
	2	–	–	–	–	–	–	575	**500**	410	485	**410**	340	–	–	–
	3	–	–	–	–	–	–	450	**380**	300	370	**315**	250	–	–	–
K	1	–	–	–	850	**775**	685	720	**645**	575	–	–	–	1325	**1210**	1075
	2	–	–	–	655	**605**	550	565	**500**	470	–	–	–	1050	**930**	870
	3	–	–	–	550	**500**	460	470	**420**	380	–	–	–	880	**790**	720
N	1	3830	**3400**	3135	–	–	–	–	–	–	–	–	–	–	–	–
	2	3400	**3135**	2890	–	–	–	–	–	–	–	–	–	–	–	–
	3	3400	**3135**	2890	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	130	**105**	80	105	**90**	80	–	–	–
	2	–	–	–	–	–	–	130	**105**	80	105	**90**	80	–	–	–
	3	–	–	–	–	–	–	155	**130**	80	145	**105**	80	–	–	–
	4	–	–	–	–	–	–	225	**155**	105	170	**145**	90	–	–	–
H	1	–	–	–	–	–	–	380	**290**	225	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCPK30			KCPM40			KCSM40			KY3500		
P	1	1430	**1250**	1170	930	**810**	775	–	–	–	–	–	–
	2	880	**800**	720	790	**685**	565	–	–	–	–	–	–
	3	800	**720**	645	720	**615**	500	–	–	–	–	–	–
	4	605	**550**	500	645	**540**	420	–	–	–	–	–	–
	5	810	**720**	655	540	**485**	420	540	**460**	380	–	–	–
	6	500	**420**	382	470	**370**	290	470	**340**	250	–	–	–
M	1	645	**575**	485	615	**540**	485	655	**540**	450	–	–	–
	2	575	**500**	450	550	**470**	390	565	**460**	380	–	–	–
	3	460	**410**	370	410	**370**	290	460	**340**	265	–	–	–
K	1	930	**840**	760	–	–	–	–	–	–	2530	**2295**	2050
	2	735	**655**	605	–	–	–	–	–	–	1995	**1795**	1670
	3	615	**550**	500	–	–	–	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	130	**105**	90	130	**105**	80	–	–	–
	2	–	–	–	130	**105**	90	130	**105**	80	–	–	–
	3	–	–	–	155	**130**	90	155	**130**	80	–	–	–
	4	210	**155**	105	210	**155**	105	185	**155**	90	–	–	–
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*			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	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

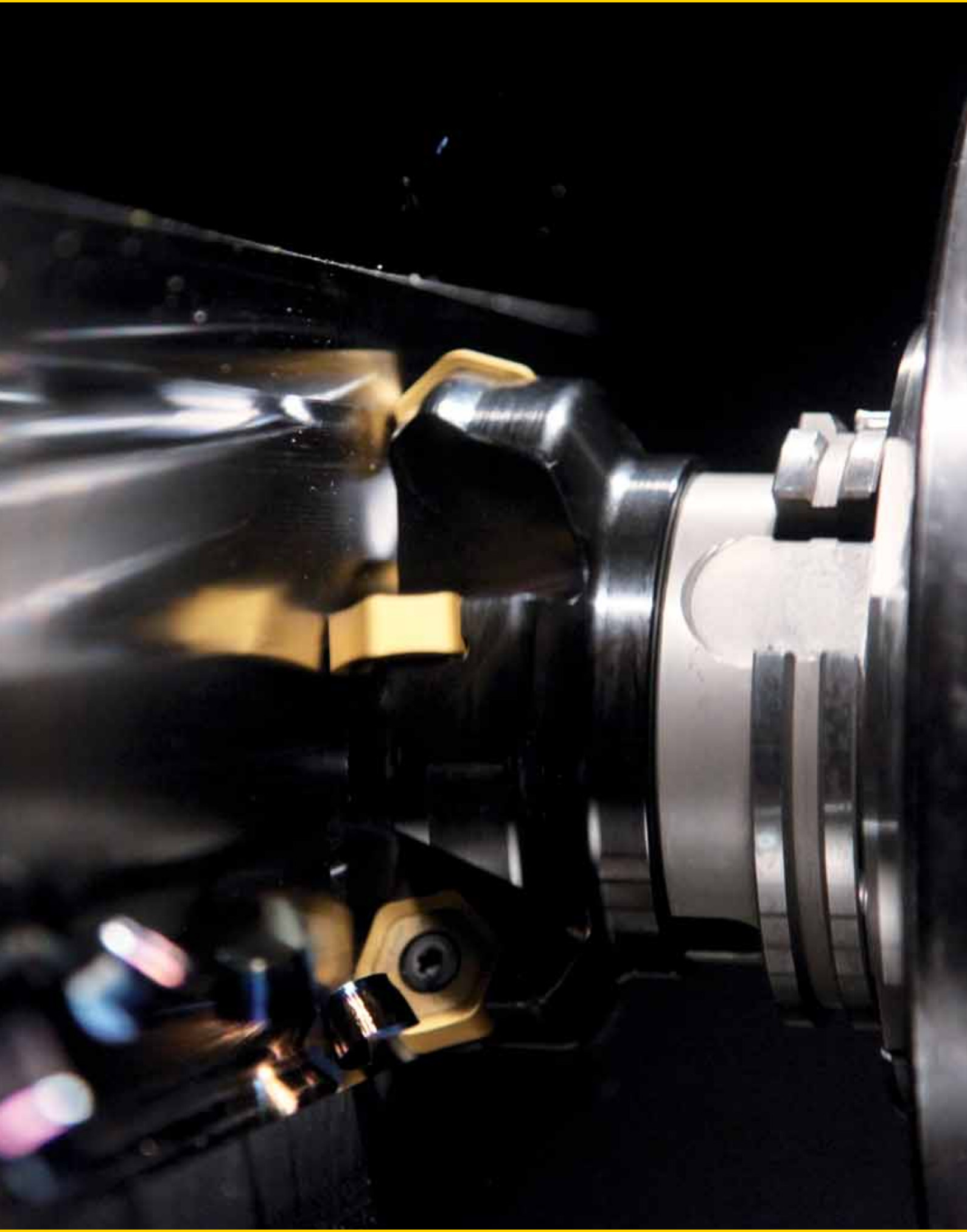
Material Group		KCPK30			KCPM40			KCSM40			KY3500*		
P	1	435	**380**	355	285	**250**	235	–	–	–	–	–	–
	2	270	**245**	220	240	**210**	170	–	–	–	–	–	–
	3	245	**220**	195	220	**190**	150	–	–	–	–	–	–
	4	185	**170**	150	195	**165**	130	–	–	–	–	–	–
	5	250	**220**	200	165	**150**	130	165	**140**	115	–	–	–
	6	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



Application

1

Machining Conditions and Spindle Size

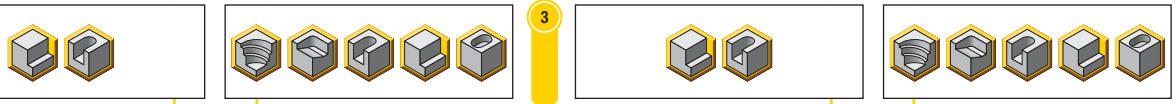
2

- Small to medium machines.
- Best fit for steep taper 40 / HSK63 and similar spindle sizes.
- All shoulder finishing cuts with medium depth of cut.

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

Capabilities

3



Platform

4

Mill 4-11™

Ap max: .433"
Cutter body: .0625–3.0"
Insert style: LN*U43..
4 cutting edges

Mill 1-10™

Ap max: .396"
Cutter body: .50–3.0"
Insert style: EC10
2 cutting edges

Mill 4-15™

Ap max: .610"
Cutter body: 1.0–6.0"
Insert style: LN*U54..
4 cutting edges

Mill 1-14™

Ap max: .551–.580"
Cutter body 1.0–6.0"
Insert style: EC14
2 cutting edges

Insert Selection

5

Easy insert selection based on:
- Workpiece material
- Cutting conditions
- Coolant type

Directly on the product pages B32–B43, B59–B84.

Easy insert selection based on:
- Workpiece material
- Cutting conditions
- Coolant type

Directly on the product pages B46–B57, B86–B111.

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.

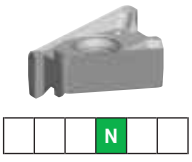
The Mill 4™ series is specially engineered to achieve excellent surface quality and higher metal removal rates in shoulder milling applications. Its unique design allows you to apply the tool in multiple passes (stepping down) with outstanding results.

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

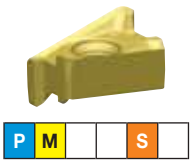
- Double-sided strong insert with 4 cutting edges.
- High positive geometry for lower cutting forces.
- Superior wall and surface finish capabilities.
- “Stepless” solution for multiple-pass operations.
- Comprehensive offering to cover all applications in all material groups.

-ELEJ



For non-ferrous materials.

-EGE



1st choice for stainless steel. Lower cutting forces.

-SGE

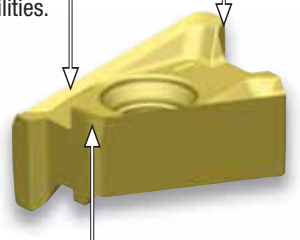
First choice for the Mill 4 platform, especially when machining steels.

-SGEM

1st choice for cast iron. Strongest cutting edge.

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

Up to 0.433" (11mm) Ap capabilities.

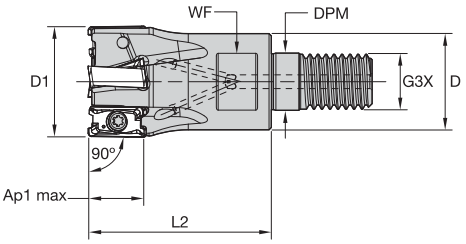


Multiple corner nose radii available from .016" (0,4mm) up to .063" (1,6mm).

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 finish capabilities. Best choice for stepping down operations.
- Up to 0.433" (11mm) depth of cut.
- Screw-on cutters provided 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.



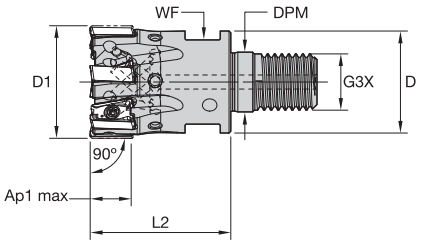
Screw-On End Mills

order number	catalog number	D1	D	DPM	G3X	L2	WF (mm)	Ap1 max	Z	lbs	max RPM
6139893	**M4D075L1103M10L110**	.750	.705	.413	M10	1.100	15	.433	3	.01	41700
6139894	**M4D100L1104M12L125**	1.000	.827	.492	M12	1.250	17	.433	4	.19	33900
6139895	**M4D125L1105M16L175**	1.250	1.142	.669	M16	1.750	24	.433	5	.49	29200

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
.750	**MS2263**	13.3	**DT9IP**
1.000	**MS2263**	13.3	**DT9IP**
1.250	**MS2263**	13.3	**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.
- 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.



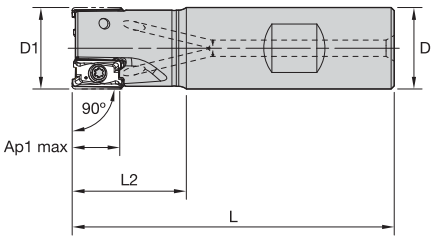
Screw-On End Mills • Metric

order number	catalog number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	kg	max RPM
6136793	**M4D032Z05M16LN11**	32	29	17,0	M16	40	24	11,0	5	0,20	29200

Spare Parts

D1	insert screw	Nm	Torx Plus driver
32	**MS2263**	1,5	**DT9IP**

- One tool for all applications: from roughing to finishing.
- Superior wall and surface finish capabilities.
- Best choice for stepping down operations.
- Up to 0.433" (11mm) depth of cut.



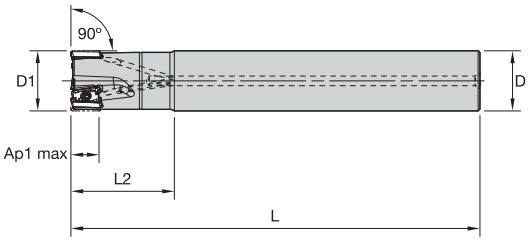
Weldon End Mills

order number	catalog number	D1	D	L	L2	Ap1 max	Z	lbs	max RPM
6139928	**M4D062L1102W062L100**	.625	.625	2.906	1.000	.433	2	.20	48000
6139929	**M4D075L1102W075L110**	.750	.750	3.130	1.100	.433	2	.32	41700
6139930	**M4D075L1103W075L110**	.750	.750	3.130	1.100	.433	3	.32	41700
6139896	**M4D100L1103W075L175**	1.000	.750	3.780	1.750	.433	3	.45	33900
6140051	**M4D100L1103W100L175**	1.000	1.000	4.030	1.750	.433	3	.77	33900
6140052	**M4D125L1104W125L225**	1.250	1.250	4.530	2.250	.433	4	1.37	29200
6139897	**M4D150L1105W125L225**	1.500	1.250	4.530	2.250	.433	5	1.48	26200

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
.625	**MS2263**	13.3	**DT9IP**
.750	**MS2263**	13.3	**DT9IP**
1.000	**MS2263**	13.3	**DT9IP**
1.250	**MS2263**	13.3	**DT9IP**
1.500	**MS2263**	13.3	**DT9IP**

- One tool for all applications: from roughing to finishing.
- Superior wall and surface finish capabilities.
- Best choice for stepping down operations.
- Up to 0.433" (11mm) depth of cut.



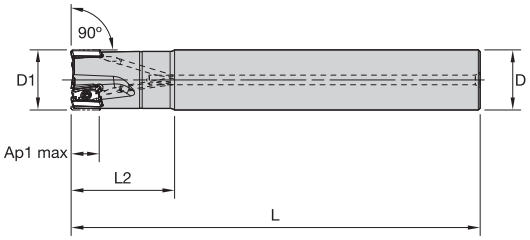
Cylindrical End Mills

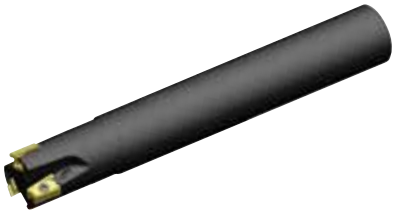
order number	catalog number	D1	D	L	L2	Ap1 max	Z	lbs	max RPM
6140053	**M4D062L1102C062L400**	.625	.625	4.000	1.000	.433	2	.30	48000
6139898	**M4D062L1102C062L600**	.625	.625	6.000	1.000	.433	2	.47	48000
6140055	**M4D075L1102C075L600**	.750	.750	6.000	1.100	.433	2	.67	41700
6140054	**M4D075L1103C075L400**	.750	.750	4.000	1.100	.433	3	.43	41700
6139899	**M4D075L1103C075L600**	.750	.750	6.000	1.100	.433	3	.66	41700
6201903	**M4D100L1104C075L450**	1.000	.750	4.500	1.750	.433	4	.53	33900
6140057	**M4D100L1103C100L700**	1.000	1.000	7.000	1.750	.433	3	1.42	33900
6140056	**M4D100L1104C100L450**	1.000	1.000	4.500	1.750	.433	4	.87	33900
6139900	**M4D100L1104C100L700**	1.000	1.000	7.000	1.750	.433	4	1.41	33900
6201904	**M4D125L1105C100L500**	1.250	1.000	5.000	2.250	.433	5	1.05	29200
6139921	**M4D125L1104C125L800**	1.250	1.250	8.000	2.250	.433	4	2.57	29200
6140058	**M4D125L1105C125L500**	1.250	1.250	5.000	2.250	.433	5	1.55	29200

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
.625	**MS2263**	13.3	**DT9IP**
.750	**MS2263**	13.3	**DT9IP**
1.000	**MS2263**	13.3	**DT9IP**
1.250	**MS2263**	13.3	**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.





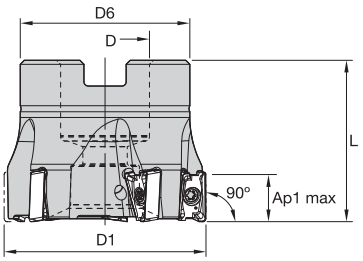
Cylindrical End Mills • Metric

order number	catalog number	D1	D	L	L2	Ap1 max	Z	kg	max RPM
6131685	**M4D025Z04A25LN11L100**	25	25	100	43	11,0	4	0,33	34300

Spare Parts

D1	insert screw	Nm	Torx Plus driver
25	**MS2263**	1,5	**DT9IP**

- One tool for all applications: from roughing to finishing.
- Superior wall and surface finish capabilities.
- Best choice for stepping down operations.
- Up to 0.433" (11mm) depth of cut.



Shell Mills

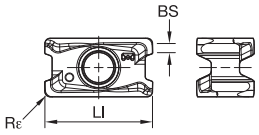
order number	catalog number	D1	D	D6	L	Ap1 max	Z	lbs	max RPM
6140059	**M4D150L1105S050L157**	1.500	.500	1.421	1.575	.433	5	.49	26200
6139922	**M4D150L1106S050L157**	1.500	.500	1.421	1.575	.433	6	.49	26200
6140060	**M4D200L1105S075L157**	2.000	.750	1.750	1.575	.433	5	.80	22100
6140061	**M4D200L1107S075L157**	2.000	.750	1.750	1.575	.433	7	.81	22100
6140062	**M4D250L1107S075L157**	2.500	.750	1.750	1.575	.433	7	1.20	19500
6139923	**M4D250L1107S100L157**	2.500	1.000	2.190	1.575	.433	7	1.28	19500
6140063	**M4D300L1108S100L175**	3.000	1.000	2.190	1.750	.433	8	2.01	17600
6139924	**M4D300L1108S125L175**	3.000	1.250	2.665	1.750	.433	8	2.13	17600

Spare Parts

D1	D	insert screw	in. lbs.	Torx Plus driver	socket-head cap screw
1.500	.500	**MS2263**	13.3	**DT9IP**	**S424**
2.000	.750	**MS2263**	13.3	**DT9IP**	**S445**
2.500	.750	**MS2263**	13.3	**DT9IP**	**S445**
2.500	1.000	**MS2263**	13.3	**DT9IP**	**S458**
3.000	1.000	**MS2263**	13.3	**DT9IP**	**S458**
3.000	1.250	**MS2263**	13.3	**DT9IP**	**S467**

✦✦ 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 catalog number	ANSI catalog number	LI mm	LI in	BS mm	BS in	Rε mm	Rε in	KC422M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
Light Machining															
LNGU110404ERGE	LNGU431ERGE	12,16	.479	1,40	.054	0,4	.016	–	–	–	6131514	–	–	6131516	–
LNGU110408ERGE	LNGU432ERGE	12,16	.479	1,00	.039	0,8	.031	–	–	6131542	6131541	–	–	6131543	6201354
LNGU110412ERGE	LNGU433ERGE	12,17	.479	0,60	.025	1,2	.047	–	–	–	–	–	–	6201353	6201351
General Machining															
LNGU110404ERLEJ	LNGU431ERLEJ	12,16	.479	1,40	.054	0,4	.016	6201292	–	–	–	–	–	–	–
LNGU110408ERLEJ	LNGU432ERLEJ	12,16	.479	1,00	.039	0,8	.031	6131556	–	–	–	–	–	–	–
LNGU110404SRGE	LNGU431SRGE	12,16	.479	1,40	.054	0,4	.016	–	–	–	–	–	–	6201280	6201291
LNGU110408SRGE	LNGU432SRGE	12,16	.479	1,00	.039	0,8	.031	–	–	6132022	6132024	–	6132025	6132023	6165397
LNPU110408SRGE	LNPU432SRGE	12,10	.476	0,90	.036	0,8	.031	–	6131506	6131502	6131504	–	6131505	6131503	–
LNPU110416SRGE	LNPU434SRGE	12,10	.476	0,02	.001	1,6	.063	–	–	–	6131559	–	6131560	6131558	–
Heavy Machining															
LNGU110408SRGEM	LNGU432SRGEM	12,16	.479	0,90	.036	0,8	.031	–	6131604	–	–	6131602	6131603	6131606	–
LNGU110412SRGEM	LNGU433SRGEM	12,16	.479	0,60	.022	1,2	.047	–	6131425	–	–	–	–	6131426	–
LNGU110416SRGEM	LNGU434SRGEM	12,16	.479	0,10	.004	1,6	.063	–	–	–	–	–	–	6201022	–

Recommended Starting Feeds [IPT]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.E..LEJ	.005	**.014**	.023	.004	**.010**	.017	.003	**.008**	.012	.002	**.007**	.011	.002	**.006**	.010	.E..LEJ
.E..GE	.009	**.016**	.022	.007	**.012**	.016	.005	**.009**	.012	.004	**.008**	.010	.004	**.007**	.010	.E..GE
.S..GE	.009	**.018**	.025	.007	**.013**	.018	.005	**.010**	.014	.004	**.009**	.012	.004	**.008**	.011	.S..GE
.S..GEM	.009	**.018**	.028	.007	**.013**	.020	.005	**.010**	.015	.004	**.009**	.013	.004	**.008**	.012	.S..GEM

Recommended Starting Feeds [mm]

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 aluminum 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	–	–	–	–	–	–	1085	**935**	885	855	**755**	705
	2	–	–	–	–	–	–	900	**785**	655	720	**625**	525
	3	–	–	–	–	–	–	835	**705**	575	655	**560**	460
	4	–	–	–	–	–	–	740	**605**	490	590	**490**	395
	5	–	–	–	–	–	–	605	**560**	490	490	**445**	395
	6	–	–	–	–	–	–	540	**410**	330	425	**330**	260
M	1	–	–	–	–	–	–	675	**590**	540	560	**490**	445
	2	–	–	–	–	–	–	605	**525**	425	510	**425**	360
	3	–	–	–	–	–	–	460	**395**	310	375	**330**	260
K	1	–	–	–	885	**805**	705	755	**675**	605	–	–	–
	2	–	–	–	690	**625**	575	590	**525**	490	–	–	–
	3	–	–	–	575	**525**	475	490	**445**	395	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	395	**295**	230	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	1495	**1295**	1215	970	**855**	805	–	–	–
	2	–	–	–	920	**835**	755	820	**705**	590	–	–	–
	3	–	–	–	835	**755**	675	755	**640**	525	–	–	–
	4	–	–	–	625	**575**	525	675	**560**	445	–	–	–
	5	–	–	–	855	**755**	690	560	**510**	445	560	**475**	395
	6	–	–	–	525	**445**	405	490	**375**	295	490	**360**	260
M	1	–	–	–	675	**605**	510	640	**560**	510	690	**560**	460
	2	–	–	–	605	**525**	460	575	**490**	410	590	**475**	395
	3	–	–	–	475	**425**	375	425	**375**	295	475	**360**	280
K	1	1380	**1265**	1115	970	**870**	785	–	–	–	–	–	–
	2	1100	**970**	900	770	**690**	625	–	–	–	–	–	–
	3	920	**820**	755	640	**575**	525	–	–	–	–	–	–
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	–	–	–	–	–	–	870	**750**	710	685	**605**	565
	2	–	–	–	–	–	–	720	**630**	525	575	**500**	420
	3	–	–	–	–	–	–	670	**565**	460	525	**450**	370
	4	–	–	–	–	–	–	590	**485**	390	470	**390**	315
	5	–	–	–	–	–	–	485	**450**	390	390	**355**	315
	6	–	–	–	–	–	–	430	**330**	265	340	**265**	210
M	1	–	–	–	–	–	–	540	**470**	430	450	**390**	355
	2	–	–	–	–	–	–	485	**420**	340	410	**340**	290
	3	–	–	–	–	–	–	370	**315**	250	300	**265**	210
K	1	–	–	–	710	**645**	565	605	**540**	485	–	–	–
	2	–	–	–	550	**500**	460	470	**420**	390	–	–	–
	3	–	–	–	460	**420**	380	390	**355**	315	–	–	–
N	1	2820	**2480**	2295	–	–	–	–	–	–	–	–	–
	2	2480	**2295**	1995	–	–	–	–	–	–	–	–	–
	3	2480	**2295**	1995	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	105	**90**	65	90	**80**	65
	2	–	–	–	–	–	–	105	**90**	65	90	**80**	65
	3	–	–	–	–	–	–	130	**105**	65	120	**90**	65
	4	–	–	–	–	–	–	185	**130**	90	145	**120**	80
H	1	–	–	–	–	–	–	315	**235**	185	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	1195	**1035**	970	775	**685**	645	–	–	–
	2	–	–	–	735	**670**	605	655	**565**	470	–	–	–
	3	–	–	–	670	**605**	540	605	**510**	420	–	–	–
	4	–	–	–	500	**460**	420	540	**450**	355	–	–	–
	5	–	–	–	685	**605**	550	450	**410**	355	450	**380**	315
	6	–	–	–	420	**355**	325	390	**300**	235	390	**290**	210
M	1	–	–	–	540	**485**	410	510	**450**	410	550	**450**	370
	2	–	–	–	485	**420**	370	460	**390**	330	470	**380**	315
	3	–	–	–	380	**340**	300	340	**300**	235	380	**290**	225
K	1	1105	**1010**	890	775	**695**	630	–	–	–	–	–	–
	2	880	**775**	720	615	**550**	500	–	–	–	–	–	–
	3	735	**655**	605	510	**460**	420	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	105	**90**	80	105	**90**	65
	2	–	–	–	–	–	–	105	**90**	80	105	**90**	65
	3	–	–	–	–	–	–	130	**105**	80	130	**105**	65
	4	–	–	–	170	**130**	90	170	**130**	90	155	**130**	80
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		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 4-15™ • Double-Sided Shoulder Milling

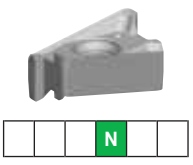
Primary Application

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

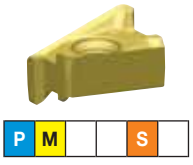
- Double-sided strong insert with 4 cutting edges.
- High positive geometry for lower cutting forces.
- Superior wall and surface finish capabilities.
- "Stepless" solution. No mismatch when machining walls in different steps.

-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.

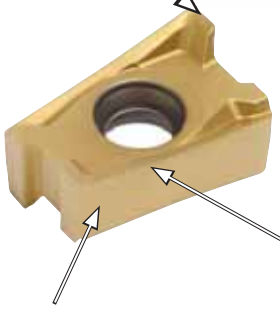
-SGEM

1st choice for cast iron. Strongest cutting edge.

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

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

Multiple corner nose radii available.

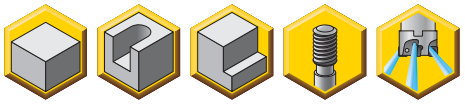


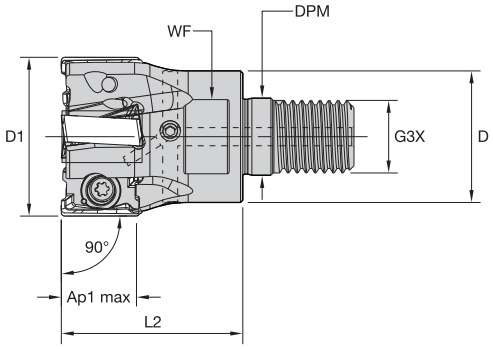
Up to .610" (15,5mm) depth-of-cut capabilities.

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

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

- Superior wall and surface finish capabilities.
- True 90° capabilities. Stepless solution when using multiple steps.
- Engineered to run up to .610" (15,5mm) depth of cut.
- Effective internal coolant feature, reaching the cutting edge precisely.





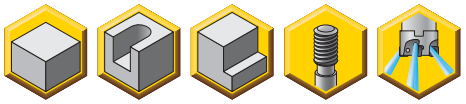
Screw-On End Mills

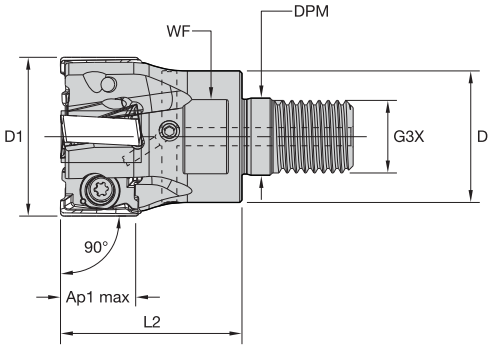
order number	catalog number	D1	D	DPM	G3X	L2	WF (mm)	Ap1 max	Z	lbs	max RPM
5568064	**M4D100L1502M12L125**	1.000	.827	.492	M12	1.250	17	.610	2	.73	26300
5568065	**M4D125L1503M16L175**	1.250	1.142	.669	M16	1.750	24	.610	3	.44	22100
5568066	**M4D150L1504M16L175**	1.500	1.142	.669	M16	1.750	24	.610	4	.52	19500

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
1.000	**MS-2071**	31.0	**DT15IP**
1.250	**MS-2071**	31.0	**DT15IP**
1.500	**MS-2071**	31.0	**DT15IP**

- Superior wall and surface finish capabilities.
- True 90° capabilities. Stepless solution when using multiple steps.
- Engineered to run up to .610" (15,5mm) depth of cut.
- Effective internal coolant feature, reaching the cutting edge precisely.





Screw-On End Mills • Metric

order number	catalog number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	kg	max RPM
5531913	**M4D040Z05M16LN15**	40	29	17,0	M16	40	24	15,5	5	0,23	18800

Spare Parts

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

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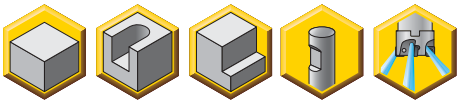
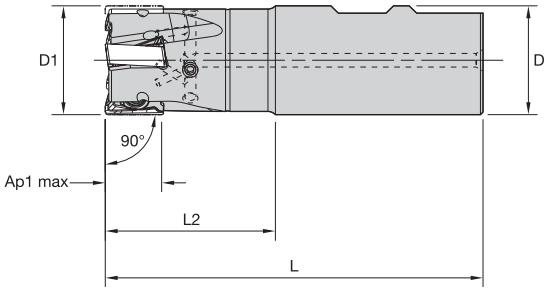
- True 90° capabilities. Stepless solution when using multiple steps.
- Engineered to run up to .610" (15,5mm) depth of cut.
- Effective internal coolant feature, reaching the cutting edge precisely.





Weldon End Mills

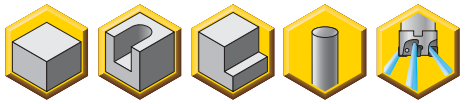
order number	catalog number	D1	D	L	L2	Ap1 max	Z	lbs	max RPM
5568067	**M4D100L1502W075L175**	1.000	.750	3.780	1.750	.610	2	.73	26300
5544366	**M4D100L1502W100L175**	1.000	1.000	4.030	1.750	.610	2	.73	26300
5544367	**M4D125L1503W100L225**	1.250	1.000	4.530	2.250	.610	3	.90	22100
5568068	**M4D125L1503W125L225**	1.250	1.250	4.530	2.250	.610	3	1.30	22100
5568069	**M4D150L1503W125L225**	1.500	1.250	4.530	2.250	.610	3	1.41	19500
5544368	**M4D150L1504W125L225**	1.500	1.250	4.530	2.250	.610	4	1.41	19500

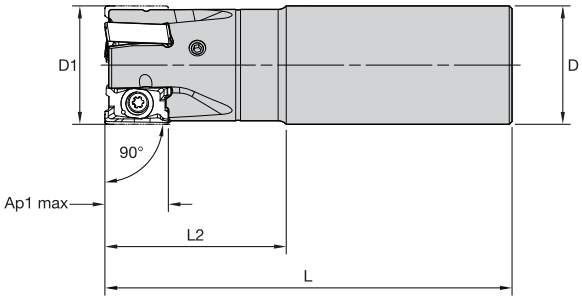
NOTE: Weldon type not recommended for finishing operations.

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
1.000	**MS-2071**	31.0	**DT15IP**
1.250	**MS-2071**	31.0	**DT15IP**
1.500	**MS-2071**	31.0	**DT15IP**

- Superior wall and surface finish capabilities.
- True 90° capabilities. Stepless solution when using multiple steps.
- Engineered to run up to .610" (15,5mm) depth of cut.
- Effective internal coolant feature, reaching the cutting edge precisely.





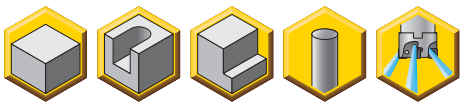
Cylindrical End Mills

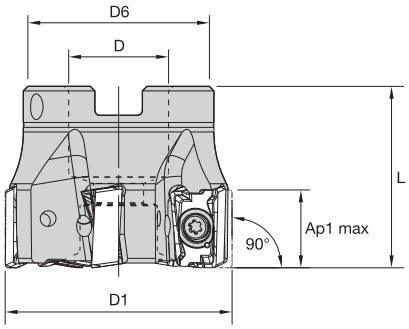
order number	catalog number	D1	D	L	L2	Ap1 max	Z	lbs	max RPM
5544369	**M4D100L1502C100L800**	1.000	1.000	8.000	1.750	.610	2	1.59	26300
5568080	**M4D100L1502C100L1000**	1.000	1.000	10.000	1.750	.610	2	2.03	26300
5544400	**M4D125L1503C125L800**	1.250	1.250	8.000	2.250	.610	3	2.50	22100
5568081	**M4D125L1503C125L1000**	1.250	1.250	10.000	2.250	.610	3	3.18	22100
5544401	**M4D150L1504C125L800**	1.500	1.250	8.000	2.250	.610	4	2.60	19500
5568082	**M4D150L1504C125L1000**	1.500	1.250	10.000	2.250	.610	4	3.29	19500

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
1.000	**MS-2071**	31.0	**DT15IP**
1.250	**MS-2071**	31.0	**DT15IP**
1.500	**MS-2071**	31.0	**DT15IP**

- Superior wall and surface finish capabilities.
- True 90° capabilities. Stepless solution when using multiple steps.
- Engineered to run up to .610" (15,5mm) depth of cut.
- Effective internal coolant feature, reaching the cutting edge precisely.





Shell Mills

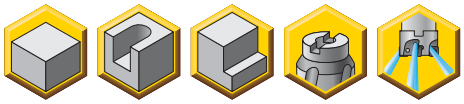
order number	catalog number	D1	D	D6	L	Ap1 max	Z	lbs	max RPM
5544402	**M4D150L1505S050L157**	1.500	.500	1.420	1.575	.610	5	.43	19500
5702499	**M4D200L1504S075L175**	2.000	.750	1.750	1.575	.610	4	.78	16100
5544403	**M4D200L1505S075L157**	2.000	.750	1.750	1.575	.610	5	.73	16100
5544404	**M4D200L1506S075L157**	2.000	.750	1.750	1.575	.610	6	.71	16100
5568083	**M4D250L1505S075L157**	2.500	.750	1.750	1.575	.610	5	1.09	14100
5544405	**M4D250L1506S075L157**	2.500	.750	1.750	1.575	.610	6	1.05	14100
5568084	**M4D250L1507S100L175**	2.500	1.000	2.190	1.750	.610	7	1.31	14100
5702495	**M4D300L1505S100L175**	3.000	1.000	2.190	1.750	.610	5	1.86	12700
5544406	**M4D300L1507S100L175**	3.000	1.000	2.190	1.750	.610	7	1.82	12700
5568085	**M4D300L1509S100L175**	3.000	1.000	2.190	1.750	.610	9	1.85	12700
5544407	**M4D300L1508S125L200**	3.000	1.250	2.665	2.000	.610	8	2.22	12700
5702496	**M4D400L1506S150L200**	4.000	1.500	3.380	2.000	.610	6	3.33	10800
5568086	**M4D400L1508S150L200**	4.000	1.500	3.380	2.000	.610	8	3.31	10800
5544408	**M4D400L1511S150L200**	4.000	1.500	3.380	2.000	.610	11	3.25	10800
5702500	**M4D500L1507S150L238**	5.000	1.500	3.907	2.380	.610	7	6.91	9600
5613026	**M4D500L1509S150L238**	5.000	1.500	3.907	2.380	.610	9	6.84	9660
5613027	**M4D500L1512S150L238**	5.000	1.500	3.907	2.380	.610	12	6.98	9660
5702497	**M4D600L1508S200L238**	6.000	2.000	4.880	2.380	.610	8	12.20	8600

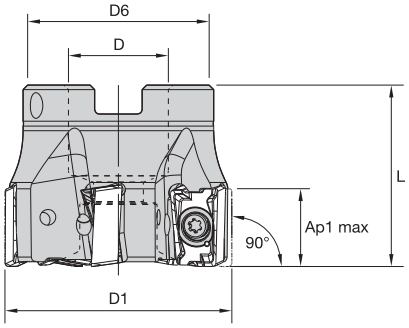
Spare Parts

D1	D	insert screw	in. lbs.	Torx Plus driver	coolant lock screw assembly
1.500	.500	**MS-2071**	31	**DT15IP**	**–**
2.000	.750	**MS-2071**	31	**DT15IP**	**–**
2.500	.750	**MS-2071**	31	**DT15IP**	**–**
2.500	1.000	**MS-2071**	31	**DT15IP**	**–**
3.000	1.000	**MS-2071**	31	**DT15IP**	**–**
3.000	1.250	**MS-2071**	31	**DT15IP**	**–**
4.000	1.500	**MS-2071**	31	**DT15IP**	**S2165C**
5.000	1.500	**MS-2071**	31	**DT15IP**	**S2165C**
6.000	2.000	**MS-2071**	31	**DT15IP**	**S2192C**

NOTE: Coolant lock screw assembly must be ordered separately.

- Superior wall and surface finish capabilities.
- True 90° capabilities. Stepless solution when using multiple steps.
- Engineered to run up to .610" (15,5mm) depth of cut.
- Effective internal coolant feature, reaching the cutting edge precisely.





Shell Mills • Metric

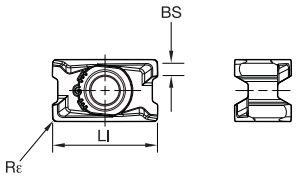
order number	catalog number	D1	D	D6	L	Ap1 max	Z	kg	max RPM
5528632	**M4D040Z04S16LN15**	40	16	37	40	15,5	4	0,20	18800
5555801	**M4D040Z05S16LN15**	40	16	37	40	15,5	5	0,19	18800
5528633	**M4D050Z05S22LN15**	50	22	42	40	15,5	5	0,28	16300
5528634	**M4D050Z06S22LN15**	50	22	42	40	15,5	6	0,27	16300
5528635	**M4D063Z06S22LN15**	63	22	50	40	15,5	6	0,49	14200
5528636	**M4D063Z07S22LN15**	63	22	50	40	15,5	7	0,50	14200
5528637	**M4D080Z07S27LN15**	80	27	60	50	15,5	7	1,02	12300
5555802	**M4D080Z09S27LN15**	80	27	60	50	15,5	9	1,04	12300

Spare Parts

D1	insert screw	Nm	Torx Plus driver	socket-head cap screw
40	**MS-2071**	3,5	**DT15IP**	**125.825**
50	**MS-2071**	3,5	**DT15IP**	**125.025**
63	**MS-2071**	3,5	**DT15IP**	**125.025**
80	**MS-2071**	3,5	**DT15IP**	**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 catalog number	ANSI catalog number	LI mm	LI in	BS mm	BS in	Rε mm	Rε in	KC422M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
Light Machining															
LNGU15T604ERGE	LNGU541ERGE	17,01	.670	2,20	.087	0,4	.016	–	–	–	5588513	–	–	5588515	–
LNGU15T608ERGE	LNGU542ERGE	17,01	.670	1,80	.072	0,8	.031	–	–	5588388	5588385	–	–	5588387	6165422
LNGU15T612ERGE	LNGU543ERGE	17,01	.670	1,40	.057	1,2	.047	–	–	–	5588517	–	–	5588519	6165423
LNGU15T616ERGE	LNGU544ERGE	17,01	.670	1,07	.042	1,6	.063	–	–	–	5627789	–	–	5627871	–
General Machining															
LNPU15T604SRGE	LNPU541SRGE	16,90	.665	2,20	.085	0,4	.016	–	–	–	5608036	–	–	–	–
LNGU15T604ERGEJ	LNGU541ERGEJ	17,00	.670	2,20	.087	0,4	.016	6001231	–	–	–	–	–	–	–
LNGU15T604SRGE	LNGU541SRGE	17,00	.669	2,20	.086	0,4	.016	–	–	–	5516075	–	–	–	–
LNPU15T608SRGE	LNPU542SRGE	16,90	.665	1,80	.070	0,8	.031	–	5547848	5547849	5548040	5548041	5548042	5684657	–
LNGU15T608ERGEJ	LNGU542ERGEJ	17,00	.670	1,80	.072	0,8	.031	6001232	–	–	–	–	–	–	–
LNGU15T608SRGE	LNGU542SRGE	17,01	.670	1,80	.071	0,8	.031	–	5515759	5515890	5515891	5515892	5515893	–	6165400
LNPU15T612SRGE	LNPU543SRGE	16,90	.665	1,50	.058	1,2	.047	–	–	–	5607998	–	–	5976169	–
LNGU15T612SRGE	LNGU543SRGE	17,01	.670	1,40	.056	1,2	.047	–	–	–	5515748	–	–	–	6165421
LNPU15T616SRGE	LNPU544SRGE	16,90	.666	1,10	.042	1,6	.063	–	–	–	6019503	–	6019505	6019506	–
LNGU15T616SRGE	LNGU544SRGE	17,01	.670	1,07	.042	1,6	.063	–	–	–	5627786	–	5627788	–	–
Heavy Machining															
LNGU15T608SRGEM	LNGU542SRGEM	17,01	.670	1,70	.067	0,8	.031	–	5575827	–	–	5575828	5575829	5976170	–
LNGU15T612SRGEM	LNGU543SRGEM	17,01	.670	1,30	.053	1,2	.047	–	–	–	–	–	–	5976671	–
LNGU15T616SRGEM	LNGU544SRGEM	17,01	.670	0,95	.037	1,6	.064	–	–	–	–	–	5630070	5976672	–

Recommended Starting Feeds [IPT]

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	.005	**.019**	.034	.003	**.014**	.024	.003	**.010**	.018	.002	**.009**	.016	.002	**.008**	.014	.E..GEJ
.E..GE	.009	**.020**	.035	.007	**.015**	.025	.005	**.011**	.019	.004	**.009**	.016	.004	**.009**	.015	.E..GE
.S..GE	.009	**.023**	.037	.007	**.017**	.027	.005	**.013**	.020	.004	**.011**	.017	.004	**.010**	.016	.S..GE
.S..GEM	.009	**.023**	.037	.007	**.017**	.027	.005	**.013**	.020	.004	**.011**	.017	.004	**.010**	.016	.S..GEM

Recommended Starting Feeds [mm]

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 aluminum 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	–	–	–	–	–	–	1085	**935**	885	855	**755**	705
	2	–	–	–	–	–	–	900	**785**	655	720	**625**	525
	3	–	–	–	–	–	–	835	**705**	575	655	**560**	460
	4	–	–	–	–	–	–	740	**605**	490	590	**490**	395
	5	–	–	–	–	–	–	605	**560**	490	490	**445**	395
	6	–	–	–	–	–	–	540	**410**	330	425	**330**	260
M	1	–	–	–	–	–	–	675	**590**	540	560	**490**	445
	2	–	–	–	–	–	–	605	**525**	425	510	**425**	360
	3	–	–	–	–	–	–	460	**395**	310	375	**330**	260
K	1	–	–	–	885	**805**	705	755	**675**	605	–	–	–
	2	–	–	–	690	**625**	575	590	**525**	490	–	–	–
	3	–	–	–	575	**525**	475	490	**445**	395	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	395	**295**	230	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	1495	**1295**	1215	970	**855**	805	–	–	–
	2	–	–	–	920	**835**	755	820	**705**	590	–	–	–
	3	–	–	–	835	**755**	675	755	**640**	525	–	–	–
	4	–	–	–	625	**575**	525	675	**560**	445	–	–	–
	5	–	–	–	855	**755**	690	560	**510**	445	560	**475**	395
	6	–	–	–	525	**445**	405	490	**375**	295	490	**360**	260
M	1	–	–	–	675	**605**	510	640	**560**	510	690	**560**	460
	2	–	–	–	605	**525**	460	575	**490**	410	590	**475**	395
	3	–	–	–	475	**425**	375	425	**375**	295	475	**360**	280
K	1	1380	**1265**	1115	970	**870**	785	–	–	–	–	–	–
	2	1100	**970**	900	770	**690**	625	–	–	–	–	–	–
	3	920	**820**	755	640	**575**	525	–	–	–	–	–	–
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	–	–	–	–	–	–	870	**750**	710	685	**605**	565
	2	–	–	–	–	–	–	720	**630**	525	575	**500**	420
	3	–	–	–	–	–	–	670	**565**	460	525	**450**	370
	4	–	–	–	–	–	–	590	**485**	390	470	**390**	315
	5	–	–	–	–	–	–	485	**450**	390	390	**355**	315
	6	–	–	–	–	–	–	430	**330**	265	340	**265**	210
M	1	–	–	–	–	–	–	540	**470**	430	450	**390**	355
	2	–	–	–	–	–	–	485	**420**	340	410	**340**	290
	3	–	–	–	–	–	–	370	**315**	250	300	**265**	210
K	1	–	–	–	710	**645**	565	605	**540**	485	–	–	–
	2	–	–	–	550	**500**	460	470	**420**	390	–	–	–
	3	–	–	–	460	**420**	380	390	**355**	315	–	–	–
N	1	2820	**2480**	2295	–	–	–	–	–	–	–	–	–
	2	2480	**2295**	1995	–	–	–	–	–	–	–	–	–
	3	2480	**2295**	1995	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	105	**90**	65	90	**80**	65
	2	–	–	–	–	–	–	105	**90**	65	90	**80**	65
	3	–	–	–	–	–	–	130	**105**	65	120	**90**	65
	4	–	–	–	–	–	–	185	**130**	90	145	**120**	80
H	1	–	–	–	–	–	–	315	**235**	185	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	1195	**1035**	970	775	**685**	645	–	–	–
	2	–	–	–	735	**670**	605	655	**565**	470	–	–	–
	3	–	–	–	670	**605**	540	605	**510**	420	–	–	–
	4	–	–	–	500	**460**	420	540	**450**	355	–	–	–
	5	–	–	–	685	**605**	550	450	**410**	355	450	**380**	315
	6	–	–	–	420	**355**	320	390	**300**	235	390	**290**	210
M	1	–	–	–	540	**485**	410	510	**450**	410	550	**450**	370
	2	–	–	–	485	**420**	370	460	**390**	330	470	**380**	315
	3	–	–	–	380	**340**	300	340	**300**	235	380	**290**	225
K	1	1105	**1010**	890	775	**695**	630	–	–	–	–	–	–
	2	880	**775**	720	615	**550**	500	–	–	–	–	–	–
	3	735	**655**	605	510	**460**	420	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	105	**90**	80	105	**90**	65
	2	–	–	–	–	–	–	105	**90**	80	105	**90**	65
	3	–	–	–	–	–	–	130	**105**	80	130	**105**	65
	4	–	–	–	170	**130**	90	170	**130**	90	155	**130**	80
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		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

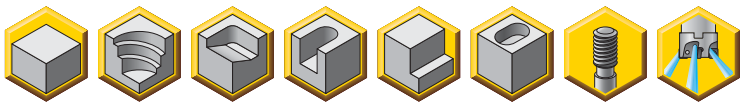
Versatility

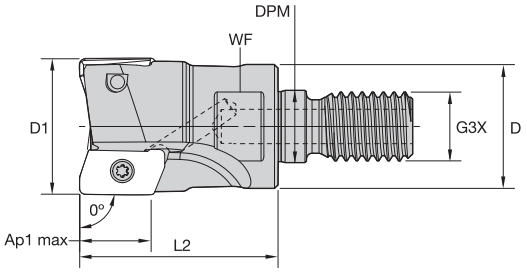
- Works with all workpiece materials.
- Capable of shoulder, ramp, plunge, and helical milling.
- Internal coolant and air supply.

Advantages

- Optimized soft cutting edge.
- Elliptical edge generates 0° 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.

- Mill 0° walls.
- Ramping capable for all Mill 1-10.
- Generates superior surface finish.
- High RPM capabilities.





Screw-On End Mills

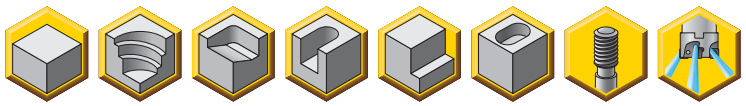
order number	catalog number	D1	D	DPM	G3X	L2	WF (mm)	Ap1 max	Z	max ramp angle	lbs	max RPM
3742470	**M1D062E1002CM08**	.625	.512	.335	M8	1.000	10	.396	2	9.5°	.05	53000
3742472	**M1D075E1003CM10**	.750	.709	.413	M10	1.100	15	.398	3	6.5°	.10	45900
3742513	**M1D100E1003CM12**	1.000	.827	.492	M12	1.250	17	.395	3	4.0°	.19	39700
3742514	**M1D100E1004CM12**	1.000	.827	.492	M12	1.250	17	.395	4	4.0°	.18	39700
3742516	**M1D125E1005CM16**	1.250	1.142	.669	M16	1.500	22	.392	5	2.5°	.38	35500
3742517	**M1D150E1006CM16**	1.500	1.142	.669	M16	1.500	22	.390	6	2.0°	.46	32400

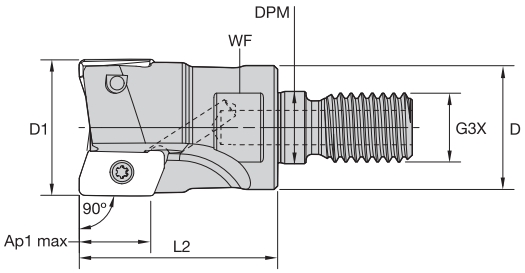
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.

Spare Parts

D1	insert screw	in. lbs.	Torx Plus wrench
.625	**MS2205**	9.0	**F7IP**
.750	**MS2205**	9.0	**F7IP**
1.000	**MS2205**	9.0	**F7IP**
1.250	**MS2205**	9.0	**F7IP**
1.500	**MS2205**	9.0	**F7IP**

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





Screw-On End Mills • Metric

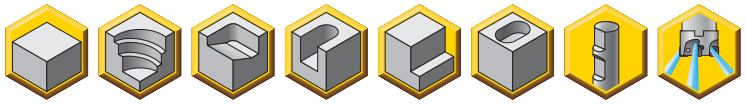
order number	catalog number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	kg	max RPM
3745708	**16A02R025M08ED10**	16	13	8,5	M8	25	10	10,1	2	9.5°	0,02	50100
3745710	**20A03R028M10ED10**	20	18	10,5	M10	28	15	10,1	3	6.0°	0,05	44800
3745724	**32A05R040M16ED10**	32	29	17,0	M16	40	24	10,0	5	2.8°	0,19	35400

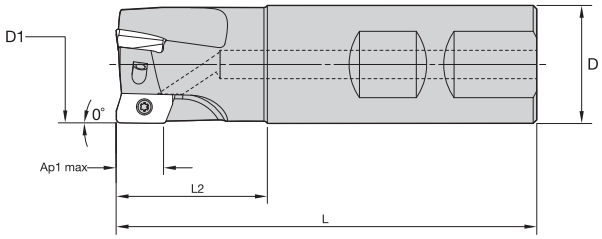
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.

Spare Parts

D1	insert screw	Nm	Torx wrench
16	**MS2205**	1,0	**F7IP**
20	**MS2205**	1,0	**F7IP**
32	**MS2205**	1,0	**F7IP**

- Mill 0° walls.
- Aggressive ramping rates.
- Generates superior surface finish.
- High RPM capabilities.





Weldon End Mills

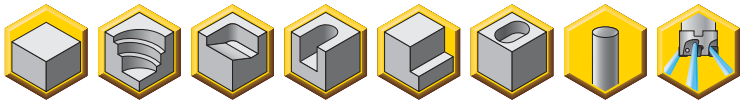
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
3742552	**M1D062E1002W075L100**	.625	.750	3.030	1.000	.396	2	9.5°	.28	50300
3742554	**M1D075E1003W075L110**	.750	.750	3.130	1.100	.398	3	6.5°	.30	45900
3742555	**M1D100E1003W100L125**	1.000	1.000	3.530	1.250	.395	3	4.0°	.65	39700
3742556	**M1D100E1004W100L125**	1.000	1.000	3.530	1.250	.395	4	4.0°	.64	39700
3742558	**M1D125E1005W125L160**	1.250	1.250	3.880	1.600	.392	5	2.5°	1.11	35500

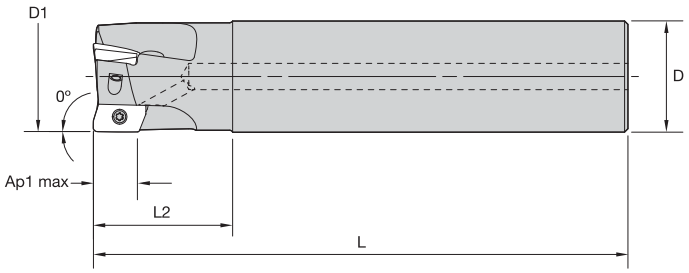
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
.625	**MS2205**	9.0	**DT7IP**
.750	**MS2205**	9.0	**DT7IP**
1.000	**MS2205**	9.0	**DT7IP**
1.250	**MS2205**	9.0	**DT7IP**

- Mill 0° walls.
- Aggressive ramping rates.
- Generates superior surface finish.
- High RPM capabilities.





Cylindrical End Mills

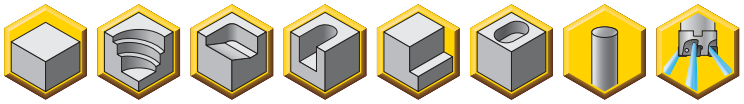
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
3742518	**M1D050E1001C062L350**	.500	.625	3.500	.800	.404	1	11.5°	.25	56500
3742536	**M1D062E1002C062L670**	.625	.625	6.700	.999	.396	2	9.5°	.49	50300
3742519	**M1D062E1002C075L400**	.625	.750	4.000	1.000	.396	2	9.5°	.40	50300
3742520	**M1D075E1002C075L450**	.750	.750	4.500	1.100	.398	2	6.5°	.46	45900
3742538	**M1D075E1002C075L670**	.750	.750	6.700	1.250	.398	2	6.5°	.70	45900
3742521	**M1D075E1003C075L450**	.750	.750	4.500	1.100	.398	3	6.5°	.46	45900
3742540	**M1D075E1003C075L670**	.750	.750	6.700	1.250	.398	3	6.5°	.71	45900
3742542	**M1D088E1003C075L670**	.875	.750	6.700	1.250	.396	3	5.0°	.74	42600
3897780	**M1D100E1004C075L480**	1.000	.750	4.800	1.250	.395	4	4.0°	.58	39700
3742522	**M1D100E1003C100L480**	1.000	1.000	4.800	1.250	.395	3	4.0°	.92	39700
3742543	**M1D100E1003C100L800**	1.000	1.000	8.000	1.600	.395	3	4.0°	1.59	39700
3742533	**M1D100E1004C100L480**	1.000	1.000	4.800	1.250	.395	4	4.0°	.92	39700
3742545	**M1D100E1004C100L800**	1.000	1.000	8.000	1.600	.395	4	4.0°	1.59	39700
3742547	**M1D110E1004C100L800**	1.100	1.000	8.000	1.600	.394	4	3.3°	1.64	38000
3742548	**M1D125E1004C125L800**	1.250	1.250	8.000	1.900	.392	4	2.5°	2.48	35500
3742535	**M1D125E1005C125L520**	1.250	1.250	5.200	1.600	.392	5	2.5°	1.57	35500
3742550	**M1D125E1005C125L800**	1.250	1.250	8.000	1.900	.392	5	2.5°	2.48	35500

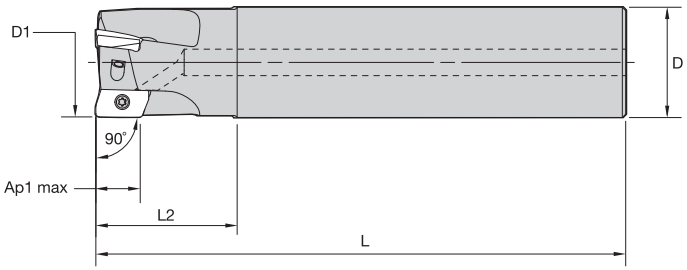
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
.500	**MS2205**	9.0	**DT7IP**
.625	**MS2205**	9.0	**DT7IP**
.750	**MS2205**	9.0	**DT7IP**
.875	**MS2205**	9.0	**DT7IP**
1.000	**MS2205**	9.0	**DT7IP**
1.100	**MS2205**	9.0	**DT7IP**
1.250	**MS2205**	9.0	**DT7IP**

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





Cylindrical End Mills • Metric

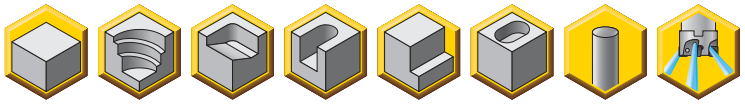
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3744538	**12A01R020A16ED10**	12	16	90	20	10,3	1	11.5°	0,12	57800
3744539	**16A02R025A16ED10**	16	16	100	25	10,1	2	9.5°	0,13	50100
3744541	**20A03R028A20ED10**	20	20	110	28	10,1	3	6.0°	0,22	44800
3744613	**25A04R032A25ED10**	25	25	120	32	10,0	4	4.0°	0,40	40000

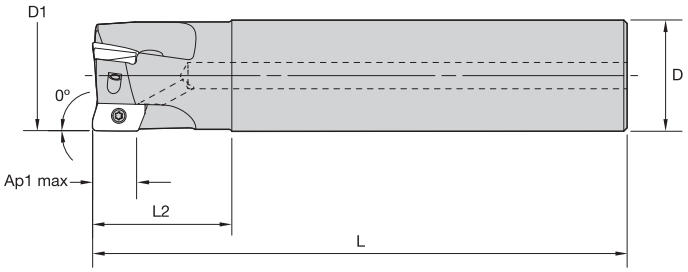
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.

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**

- Mill 0° walls.
- Aggressive ramping rates.
- Generates superior surface finish.
- High RPM capabilities.





Cylindrical End Mills • Long Length

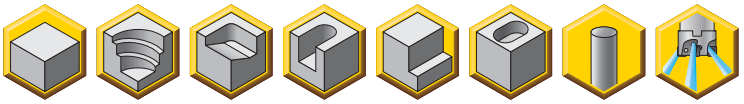
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
3742537	**M1D062E1002C062L670R**	.625	.625	6.688	.987	.384	2	8.0°	.49	50300
3742541	**M1D075E1003C075L670R**	.750	.750	6.689	1.239	.387	3	5.3°	.71	45900
3742546	**M1D100E1004C100L800R**	1.000	1.000	7.989	1.589	.384	4	3.0°	1.59	39700

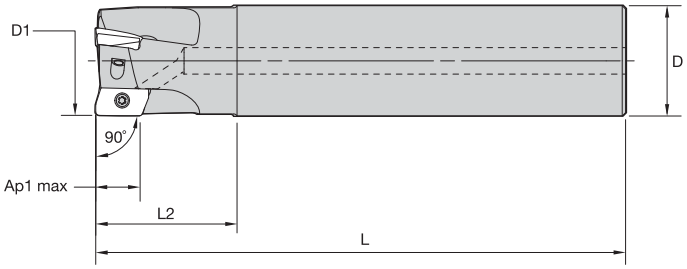
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.
"R" in catalog number designates factory-relieved tool for insert radii greater than .079".

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
.625	**MS2205**	9.0	**DT7IP**
.750	**MS2205**	9.0	**DT7IP**
1.000	**MS2205**	9.0	**DT7IP**

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





Cylindrical End Mills • Long Length • Metric

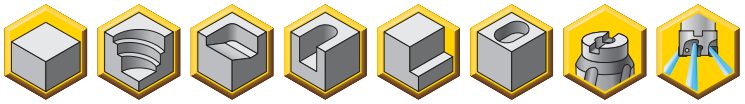
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3744616	**16A02R025A16ED10-170**	16	16	170	25	10,1	2	9.5°	0,23	50100
3744617	**16A02R025A16ED10R31-170**	16	16	170	25	9,7	2	8.0°	0,23	50100
3744618	**18A02R028A16ED10-170**	18	16	170	28	10,1	2	7.5°	0,24	47200
3744619	**20A02R032A20ED10-170**	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

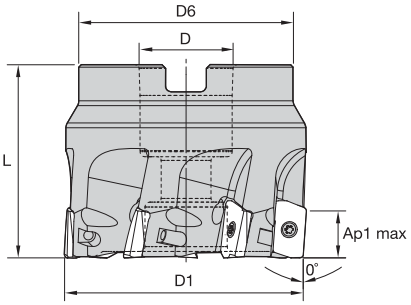
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.
"R31" in catalog number designates factory-relieved tool which accepts inserts with nose radii > .079".

Spare Parts

D1	insert screw	Nm	Torx Plus driver
16	**MS2205**	1,0	**DT7IP**
18	**MS2205**	1,0	**DT7IP**
20	**MS2205**	1,0	**DT7IP**

- Mill 0° walls.
- Aggressive ramping rates.
- Generates superior surface finish.
- High RPM capabilities.





Shell Mills

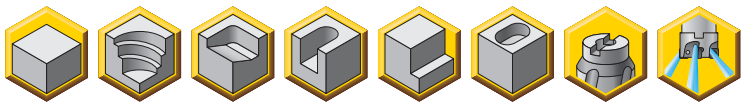
order number	catalog number	D1	D	D6	L	Ap1 max	Z	max ramp angle	lbs	max RPM
3745039	**M1D150E1004S075L157**	1.500	.750	1.420	1.575	.391	4	2.0	.46	32400
3745040	**M1D150E1006S075L157**	1.500	.750	1.420	1.575	.391	6	2.0	.49	32400
3745041	**M1D200E1005S075L157**	2.000	.750	1.750	1.575	.389	5	1.5	.92	28100
3745042	**M1D200E1008S075L157**	2.000	.750	1.750	1.575	.389	8	1.5	.89	28100
3745043	**M1D250E1006S075L157**	2.500	.750	1.750	1.575	.389	6	1.0	1.29	25100
3745047	**M1D300E1008S100L175**	3.000	1.000	2.190	1.750	.389	8	.8	2.08	22900

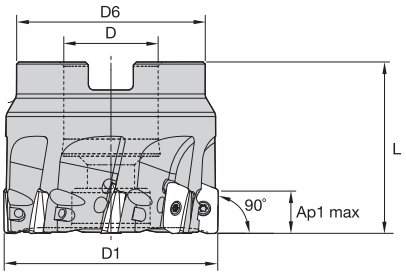
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver	socket-head cap screw
1.500	**MS2205**	9.0	**DT7IP**	**S445**
2.000	**MS2205**	9.0	**DT7IP**	**S445**
2.500	**MS2205**	9.0	**DT7IP**	**S445**
3.000	**MS2205**	9.0	**DT7IP**	**S458**

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





Shell Mills • Metric

order number	catalog number	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
3745675	**40A06RS90ED10D**	40	16	37	40	9,9	6	2.0°	0,24	31600

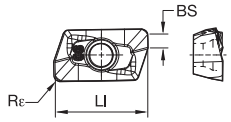
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

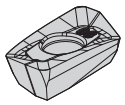
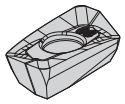
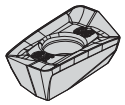
Spare Parts

D1	insert screw	Nm	Torx Plus driver
40	**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 catalog number	ANSI catalog number	LI mm	LI in	BS mm	BS in	Rε mm	Rε in	KC422M	KC520M	KC522M	KC725M	KCPK30	KCPM40	KCSM40
	Light Machining														
	EDCT10T302PDERLD	EC1002ELD	12,04	.474	2,29	.090	0,2	.008	–	–	–	3959611	–	–	–
	EDCT10T304PDERLD	EC1004ELD	12,05	.474	1,98	.078	0,4	.016	–	–	3682513	3682514	–	–	–
	EDCT10T308PDERLD	EC1008ELD	12,05	.474	1,70	.067	0,8	.031	–	3649189	3649190	3649191	3649192	5545217	6176096
	EDCT10T312PDERLD	EC1012ELD	12,06	.475	1,30	.051	1,2	.047	–	–	–	3682655	–	–	–
	EDCT10T316PDERLD	EC1016ELD	12,06	.475	0,90	.036	1,6	.062	–	–	–	3682781	–	–	–
	EDCT10T320PDERLD	EC1020ELD	12,06	.475	0,49	.019	2,0	.079	–	–	–	3766023	–	–	–
	EDCT10T324PDERLD	EC1024ELD	12,06	.475	0,11	.004	2,4	.094	–	–	–	3766029	–	–	–
	EDCT10T331PDERLD	EC1031ELD	11,52	.453	—	—	3,1	.122	–	–	–	3684828	–	–	–
	General Machining														
	EDCT10T304PDERLDJ	EC1004ELDJ	12,05	.474	1,98	.078	0,4	.016	3682451	–	–	–	–	–	–
	EDCT10T308PDERLDJ	EC1008ELDJ	12,05	.474	1,70	.067	0,8	.031	3649188	–	–	–	–	–	–
	EDPT10T304PDERHD	EP1004EHD	12,05	.474	2,07	.082	0,4	.016	–	–	–	3641741	–	5545215	–
	EDPT10T308PDERHD	EP1008EHD	12,05	.474	1,70	.067	0,8	.031	–	3753593	3641712	3641734	3641736	5545214	6175756
	EDPT10T312PDERHD	EP1012EHD	12,06	.475	1,30	.051	1,2	.047	–	–	–	3642029	–	6127887	–
	EDPT10T316PDERHD	EP1016EHD	12,06	.475	0,90	.036	1,6	.062	–	–	–	3642094	3642096	6127888	6175758
	EDPT10T320PDERHD	EP1020EHD	12,06	.475	0,49	.019	2,0	.079	–	–	–	3642097	–	6127889	–
	EDPT10T324PDERHD	EP1024EHD	12,06	.475	0,11	.004	2,4	.094	–	–	–	3642102	–	–	–
	EDPT10T331PDERHD	EP1031EHD	11,52	.453	—	—	3,1	.122	–	–	–	3642137	–	–	–
	Heavy Machining														
	EDPT10T304PDSRGD	EP1004SGD	12,05	.474	2,07	.082	0,4	.016	–	–	–	3642141	–	–	–
	EDPT10T308PDSRGD	EP1008SGD	12,05	.474	1,70	.067	0,8	.031	–	–	–	3642170	3642172	5545216	–
	EDPT10T312PDSRGD	EP1012SGD	12,06	.475	1,30	.051	1,2	.047	–	–	–	3642193	–	–	–
	EDPT10T316PDSRGD	EP1016SGD	12,06	.475	0,90	.036	1,6	.062	–	–	–	3642196	3642198	–	–
	EDPT10T308PDSRGE	EP1008SGE	12,05	.474	1,70	.067	0,8	.031	–	–	3775016	–	–	–	–

Recommended Starting Feeds [IPT]

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	.005	**.014**	.023	.003	**.010**	.017	.003	**.008**	.013	.002	**.007**	.011	.002	**.006**	.010	.F..LDJ
.F..-PCD	.005	**.014**	.023	.003	**.010**	.017	.003	**.008**	.013	.002	**.007**	.011	.002	**.006**	.010	.F..-PCD
.E..LDJ	.005	**.014**	.023	.003	**.010**	.017	.003	**.008**	.013	.002	**.007**	.011	.002	**.006**	.010	.E..LDJ
.E..LD	.005	**.014**	.023	.004	**.010**	.016	.003	**.008**	.012	.002	**.007**	.011	.002	**.006**	.010	.E..LD
.S..GE	.009	**.018**	.028	.007	**.013**	.020	.005	**.010**	.015	.004	**.009**	.013	.004	**.008**	.012	.S..GE
.S..GD	.009	**.019**	.028	.007	**.013**	.020	.005	**.010**	.015	.004	**.009**	.013	.004	**.008**	.012	.S..GD
.E..HD	.009	**.020**	.032	.007	**.014**	.023	.005	**.011**	.017	.004	**.009**	.015	.004	**.009**	.014	.E..HD

Recommended Starting Feeds [mm]

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.

.E.LDJ: For aluminum 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.

Material Group		KC422M*			KC520M			KC522M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	–	**–**	–	–	**–**	–	1085	**935**	885	855	**755**	705	1495	**1295**	1215	970	**855**	805	–	**–**	–
	2	–	**–**	–	–	**–**	–	900	**785**	655	720	**625**	525	920	**835**	755	820	**705**	590	–	**–**	–
	3	–	**–**	–	–	**–**	–	835	**705**	575	655	**560**	460	835	**755**	675	755	**640**	525	–	**–**	–
	4	–	**–**	–	–	**–**	–	740	**605**	490	590	**490**	395	625	**575**	525	675	**560**	445	–	**–**	–
	5	–	**–**	–	–	**–**	–	605	**560**	490	490	**445**	395	855	**755**	690	560	**510**	445	560	**475**	395
	6	–	**–**	–	–	**–**	–	540	**410**	330	425	**330**	260	525	**445**	410	490	**375**	295	490	**360**	260
M	1	–	**–**	–	–	**–**	–	675	**590**	540	560	**490**	445	675	**605**	510	640	**560**	510	690	**560**	460
	2	–	**–**	–	–	**–**	–	605	**525**	425	510	**425**	360	605	**525**	460	575	**490**	410	590	**475**	395
	3	–	**–**	–	–	**–**	–	460	**395**	310	375	**330**	260	475	**425**	375	425	**375**	295	475	**360**	280
K	1	–	**–**	–	885	**805**	705	755	**675**	605	–	**–**	–	970	**870**	785	–	**–**	–	–	**–**	–
	2	–	**–**	–	690	**625**	575	590	**525**	490	–	**–**	–	770	**690**	625	–	**–**	–	–	**–**	–
	3	–	**–**	–	575	**525**	475	490	**445**	395	–	**–**	–	640	**575**	525	–	**–**	–	–	**–**	–
N	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
S	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	4	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
H	1	–	**–**	–	–	**–**	–	395	**295**	230	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	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			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	–	–	–	870	**750**	710	685	**605**	565	1195	**1035**	970	775	**685**	645	–	–	–
	2	–	–	–	–	–	–	720	**630**	525	575	**500**	420	735	**670**	605	655	**565**	470	–	–	–
	3	–	–	–	–	–	–	670	**565**	460	525	**450**	370	670	**605**	540	605	**510**	420	–	–	–
	4	–	–	–	–	–	–	590	**485**	390	470	**390**	315	500	**460**	420	540	**450**	355	–	–	–
	5	–	–	–	–	–	–	485	**450**	390	390	**355**	315	685	**605**	550	450	**410**	355	450	**380**	315
	6	–	–	–	–	–	–	430	**330**	265	340	**265**	210	420	**355**	325	390	**300**	235	390	**290**	210
M	1	–	–	–	–	–	–	540	**470**	430	450	**390**	355	540	**485**	410	510	**450**	410	550	**450**	370
	2	–	–	–	–	–	–	485	**420**	340	410	**340**	290	485	**420**	370	460	**390**	330	470	**380**	315
	3	–	–	–	–	–	–	370	**315**	250	300	**265**	210	380	**340**	300	340	**300**	235	380	**290**	225
K	1	–	–	–	710	**645**	565	605	**540**	485	–	–	–	775	**695**	630	–	–	–	–	–	–
	2	–	–	–	550	**500**	460	470	**420**	390	–	–	–	615	**550**	500	–	–	–	–	–	–
	3	–	–	–	460	**420**	380	390	**355**	315	–	–	–	510	**460**	420	–	–	–	–	–	–
N	1	2820	**2480**	2295	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	2480	**2295**	1995	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	2480	**2295**	1995	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	105	**90**	65	90	**80**	65	–	–	–	105	**90**	80	105	**90**	65
	2	–	–	–	–	–	–	105	**90**	65	90	**80**	65	–	–	–	105	**90**	80	105	**90**	65
	3	–	–	–	–	–	–	130	**105**	65	120	**90**	65	–	–	–	130	**105**	80	130	**105**	65
	4	–	–	–	–	–	–	185	**130**	90	145	**120**	80	170	**130**	90	170	**130**	90	155	**130**	80
H	1	–	–	–	–	–	–	315	**235**	185	–	–	–	–	–	–	–	–	–	–	–	–
	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		KC422M*			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	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

*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

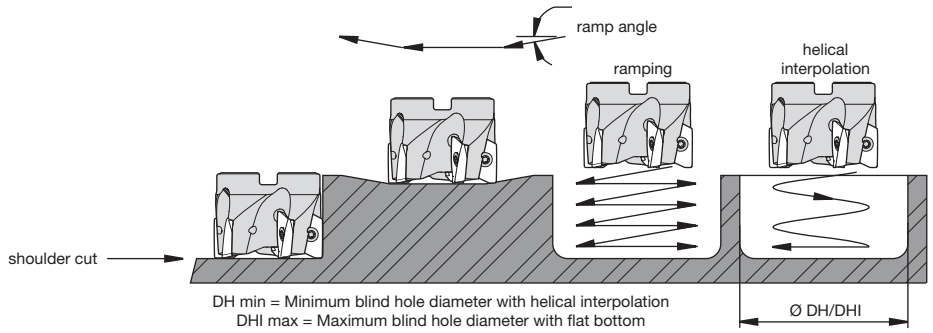
Material Group		KC422M			KC520M			KC522M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	–	**–**	–	–	**–**	–	265	**230**	215	210	**185**	170	365	**315**	295	285	**250**	235	–	**–**	–
	2	–	**–**	–	–	**–**	–	220	**190**	160	175	**150**	130	225	**205**	185	240	**210**	170	–	**–**	–
	3	–	**–**	–	–	**–**	–	205	**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	860	**755**	700	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	755	**700**	610	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	755	**700**	610	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
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

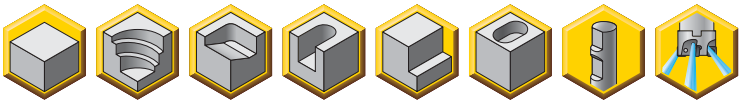
Application Examples

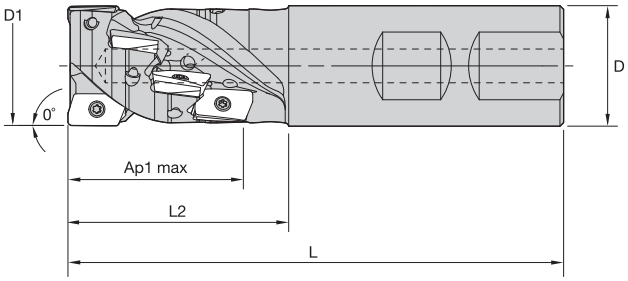


insert style	cutting diameter	max ramp angle to non-cutting corner tangent	max ramp angle to steel body interference	DH min (min hole diameter)	DHI min (min flat-bottomed hole diameter)	max diameter (no flat bottom)
Mill-1, 10mm	.500	not recommended	not recommended	not recommended	not recommended	not recommended
Mill-1, 10mm	.625	9.9°	12.5°	.758	1.121	1.250
Mill-1, 10mm	.750	6.8°	9.7°	.998	1.367	1.500
Mill-1, 10mm	.875	5.1°	6.8°	1.248	1.617	1.750
Mill-1, 10mm	1.000	4.1°	5.1°	1.498	1.867	2.000
Mill-1, 10mm	1.100	3.5°	4.3°	1.698	2.067	2.200
Mill-1, 10mm	1.250	2.9°	3.4°	1.999	2.367	2.500
Mill-1, 10mm	1.500	2.2°	2.4°	2.499	2.867	3.000
Mill-1, 10mm	2.000	1.2°	1.6°	3.509	3.876	4.000
Mill-1, 10mm	2.500	1.2°	1.2°	4.509	4.876	5.000
Mill-1, 10mm	3.000	0.9°	1.0°	5.509	5.876	6.000
Mill-1, 10mm	4.000	0.7°	0.7°	7.509	7.876	8.000

NOTE: Max ramp angle decreases as nose radius increases.

- Mill 0° walls.
- Aggressive ramping rates.
- Generates superior surface finish.





Weldon Helical Mills

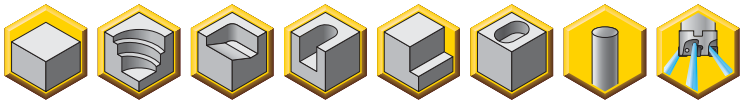
order number	catalog number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	lbs	max RPM
3746097	**M1HR100ED10W100Z2L180C8**	1.000	1.000	4.071	1.790	1.432	8	2	4.0°	.64	32900
3746099	**M1HR125ED10W125Z3L210C15**	1.250	1.250	4.371	2.090	1.764	15	3	2.5°	1.08	29400

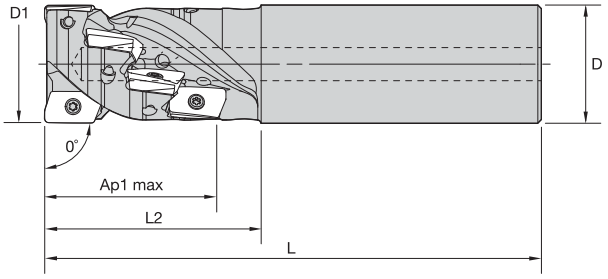
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
1.000	**MS2205**	9.0	**DT7IP**
1.250	**MS2205**	9.0	**DT7IP**

- Mill 0° walls.
- Aggressive ramping rates.
- Generates superior surface finish.





Cylindrical Helical Mills

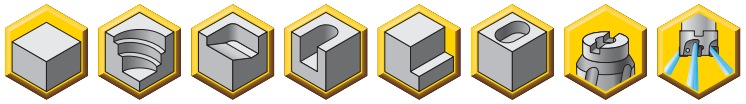
order number	catalog number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	lbs	max RPM
3746100	**M1HR075ED10C075Z2L110C4**	.750	.750	4.406	1.053	.745	4	2	6.5°	.47	38000
3746101	**M1HR100ED10C100Z2L110C4**	1.000	1.000	4.800	1.053	.740	4	2	4.0°	.89	32900

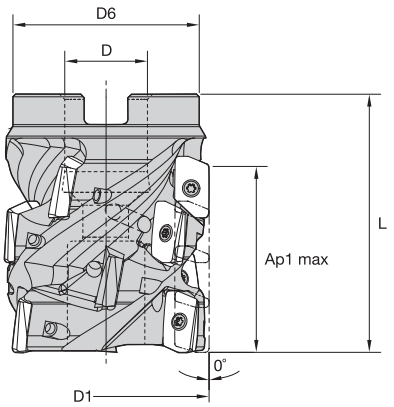
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
.750	**MS2205**	9.0	**DT7IP**
1.000	**MS2205**	9.0	**DT7IP**

- Mill 0° walls.
- Aggressive ramping rates.
- Generates superior surface finish.





Helical Shell Mills

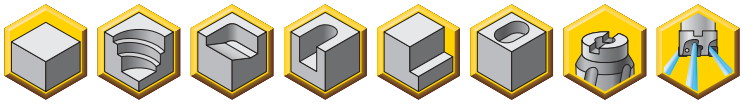
order number	catalog number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	lbs	max RPM
3746111	**M1HR200ED10S075Z5L240C25**	2.000	.750	1.750	2.400	1.745	25	5	1.5	1.31	23300

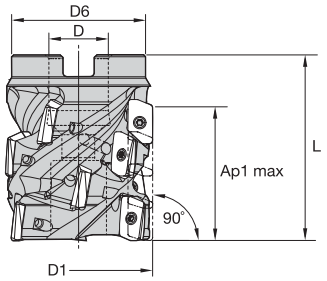
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
2.000	**MS2205**	9.0	**DT7IP**

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





Helical Shell Mills • Metric

order number	catalog number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773817	**M1H50T05R60A22ED10C25**	50	22	44	60	44,3	25	5	1.5°	0,55	23400

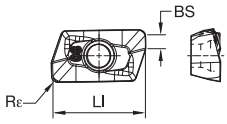
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.

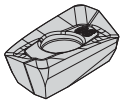
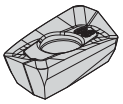
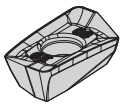
Spare Parts

D1	insert screw	Nm	Torx Plus driver	socket-head cap screw
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 catalog number	ANSI catalog number	LI mm	LI in	BS mm	BS in	Rε mm	Rε in	KC422M	KC520M	KC522M	KC725M	KCPK30	KCPM40	KCSM40
	Light Machining														
	EDCT10T302PDERLD	EC1002ELD	12,04	.474	2,29	.090	0,2	.008	–	–	–	3959611	–	–	–
	EDCT10T304PDERLD	EC1004ELD	12,05	.474	1,98	.078	0,4	.016	–	–	3682513	3682514	–	–	–
	EDCT10T308PDERLD	EC1008ELD	12,05	.474	1,70	.067	0,8	.031	–	3649189	3649190	3649191	3649192	–	6176096
	EDCT10T312PDERLD	EC1012ELD	12,06	.475	1,30	.051	1,2	.047	–	–	–	3682655	–	–	–
	EDCT10T316PDERLD	EC1016ELD	12,06	.475	0,90	.036	1,6	.062	–	–	–	3682781	–	–	–
	EDCT10T320PDERLD	EC1020ELD	12,06	.475	0,49	.019	2,0	.079	–	–	–	3766023	–	–	–
	EDCT10T324PDERLD	EC1024ELD	12,06	.475	0,11	.004	2,4	.094	–	–	–	3766029	–	–	–
	General Machining														
	EDCT10T304PDERLDJ	EC1004ELDJ	12,05	.474	1,98	.078	0,4	.016	3682451	–	–	–	–	–	–
	EDCT10T308PDERLDJ	EC1008ELDJ	12,05	.474	1,70	.067	0,8	.031	3649188	–	–	–	–	–	–
	EDPT10T304PDERHD	EP1004EHD	12,05	.474	2,07	.082	0,4	.016	–	–	–	3641741	–	5545215	–
	EDPT10T308PDERHD	EP1008EHD	12,05	.474	1,70	.067	0,8	.031	–	3753593	3641712	3641734	3641736	5545214	6175756
	EDPT10T312PDERHD	EP1012EHD	12,06	.475	1,30	.051	1,2	.047	–	–	–	3642029	–	6127887	–
	EDPT10T316PDERHD	EP1016EHD	12,06	.475	0,90	.036	1,6	.062	–	–	–	3642094	3642096	6127888	6175758
	EDPT10T320PDERHD	EP1020EHD	12,06	.475	0,49	.019	2,0	.079	–	–	–	3642097	–	6127889	–
	EDPT10T324PDERHD	EP1024EHD	12,06	.475	0,11	.004	2,4	.094	–	–	–	3642102	–	–	–
	EDPT10T331PDERHD	EP1031EHD	11,52	.453	—	—	3,1	.122	–	–	–	3642137	–	–	–
	Heavy Machining														
	EDPT10T304PDSRGD	EP1004SGD	12,05	.474	2,07	.082	0,4	.016	–	–	–	3642141	–	–	–
	EDPT10T308PDSRGD	EP1008SGD	12,05	.474	1,70	.067	0,8	.031	–	–	–	3642170	3642172	5545216	–
	EDPT10T312PDSRGD	EP1012SGD	12,06	.475	1,30	.051	1,2	.047	–	–	–	3642193	–	–	–
	EDPT10T316PDSRGD	EP1016SGD	12,06	.475	0,90	.036	1,6	.062	–	–	–	3642196	3642198	–	–
	EDPT10T308PDSRGE	EP1008SGE	12,05	.474	1,70	.067	0,8	.031	–	–	3775016	–	–	–	–

Recommended Starting Feeds [IPT]

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	.005	**.014**	.023	.003	**.010**	.017	.003	**.008**	.013	.002	**.007**	.011	.002	**.006**	.010	.F..LDJ
.F..-PCD	.005	**.014**	.023	.003	**.010**	.017	.003	**.008**	.013	.002	**.007**	.011	.002	**.006**	.010	.F..-PCD
.E..LDJ	.005	**.014**	.023	.003	**.010**	.017	.003	**.008**	.013	.002	**.007**	.011	.002	**.006**	.010	.E..LDJ
.E..LD	.005	**.014**	.023	.004	**.010**	.016	.003	**.008**	.012	.002	**.007**	.011	.002	**.006**	.010	.E..LD
.S..GE	.009	**.018**	.028	.007	**.013**	.020	.005	**.010**	.015	.004	**.009**	.013	.004	**.008**	.012	.S..GE
.S..GD	.009	**.019**	.028	.007	**.013**	.020	.005	**.010**	.015	.004	**.009**	.013	.004	**.008**	.012	.S..GD
.E..HD	.009	**.020**	.032	.007	**.014**	.023	.005	**.011**	.017	.004	**.009**	.015	.004	**.009**	.014	.E..HD

Recommended Starting Feeds [mm]

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.

.E.LDJ: For aluminum 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.

Material Group		KC422M*			KC520M			KC522M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	–	–	–	1085	**935**	885	855	**755**	705	1495	**1295**	1215	970	**855**	805	–	–	–
	2	–	–	–	–	–	–	900	**785**	655	720	**625**	525	920	**835**	755	820	**705**	590	–	–	–
	3	–	–	–	–	–	–	835	**705**	575	655	**560**	460	835	**755**	675	755	**640**	525	–	–	–
	4	–	–	–	–	–	–	740	**605**	490	590	**490**	395	625	**575**	525	675	**560**	445	–	–	–
	5	–	–	–	–	–	–	605	**560**	490	490	**445**	395	855	**755**	690	560	**510**	445	560	**475**	395
	6	–	–	–	–	–	–	540	**410**	330	425	**330**	260	525	**445**	405	490	**375**	295	490	**360**	260
M	1	–	–	–	–	–	–	675	**590**	540	560	**490**	445	675	**605**	510	640	**560**	510	690	**560**	460
	2	–	–	–	–	–	–	605	**525**	425	510	**425**	360	605	**525**	460	575	**490**	410	590	**475**	395
	3	–	–	–	–	–	–	460	**395**	310	375	**330**	260	475	**425**	375	425	**375**	295	475	**360**	280
K	1	–	–	–	885	**805**	705	755	**675**	605	–	–	–	970	**870**	785	–	–	–	–	–	–
	2	–	–	–	690	**625**	575	590	**525**	490	–	–	–	770	**690**	625	–	–	–	–	–	–
	3	–	–	–	575	**525**	475	490	**445**	395	–	–	–	640	**575**	525	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	395	**295**	230	–	–	–	–	–	–	–	–	–	–	–	–
	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			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	–	–	–	870	**750**	710	685	**605**	565	1195	**1035**	970	775	**685**	645	–	–	–
	2	–	–	–	–	–	–	720	**630**	525	575	**500**	420	735	**670**	605	655	**565**	470	–	–	–
	3	–	–	–	–	–	–	670	**565**	460	525	**450**	370	670	**605**	540	605	**510**	420	–	–	–
	4	–	–	–	–	–	–	590	**485**	390	470	**390**	315	500	**460**	420	540	**450**	355	–	–	–
	5	–	–	–	–	–	–	485	**450**	390	390	**355**	315	685	**605**	550	450	**410**	355	450	**380**	315
	6	–	–	–	–	–	–	430	**330**	265	340	**265**	210	420	**355**	325	390	**300**	235	390	**290**	210
M	1	–	–	–	–	–	–	540	**470**	430	450	**390**	355	540	**485**	410	510	**450**	410	550	**450**	370
	2	–	–	–	–	–	–	485	**420**	340	410	**340**	290	485	**420**	370	460	**390**	330	470	**380**	315
	3	–	–	–	–	–	–	370	**315**	250	300	**265**	210	380	**340**	300	340	**300**	235	380	**290**	225
K	1	–	–	–	710	**645**	565	605	**540**	485	–	–	–	775	**695**	630	–	–	–	–	–	–
	2	–	–	–	550	**500**	460	470	**420**	390	–	–	–	615	**550**	500	–	–	–	–	–	–
	3	–	–	–	460	**420**	380	390	**355**	315	–	–	–	510	**460**	420	–	–	–	–	–	–
N	1	2820	**2480**	2295	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	2480	**2295**	1995	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	2480	**2295**	1995	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	105	**90**	65	90	**80**	65	–	–	–	105	**90**	80	105	**90**	65
	2	–	–	–	–	–	–	105	**90**	65	90	**80**	65	–	–	–	105	**90**	80	105	**90**	65
	3	–	–	–	–	–	–	130	**105**	65	120	**90**	65	–	–	–	130	**105**	80	130	**105**	65
	4	–	–	–	–	–	–	185	**130**	90	145	**120**	80	170	**130**	90	170	**130**	90	155	**130**	80
H	1	–	–	–	–	–	–	315	**235**	185	–	–	–	–	–	–	–	–	–	–	–	–
	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		KC422M*			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	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

*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			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	860	**755**	700	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	755	**700**	610	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	755	**700**	610	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
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 0º walls have proven excellent with the GD2 geometry.

Features and Benefits

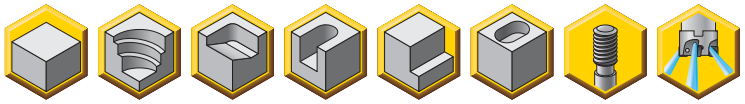
Features

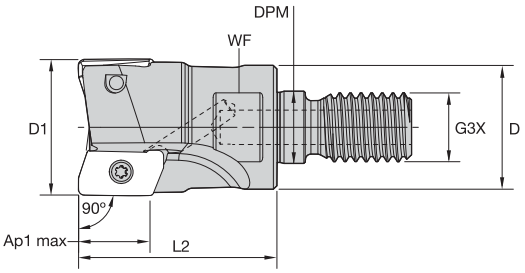
- Insert geometries and grades for most workpiece materials.
- Insert radii from .016" (0,15mm) up to .157" (4mm).
- Axial depth of cut up to .551" (14mm).
- Beyond™ grade technology.

Benefits

- Easy cutting action, even on entry and exiting the workpiece.
- Polished geometry for aluminum 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 • Metric

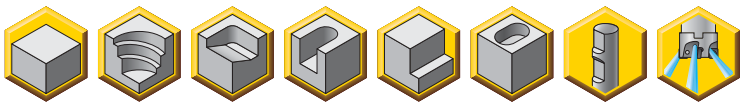
order number	catalog number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	kg	max RPM
2968370	**20A02R035M10SED14**	20	18	10,5	M10	35	15	14,6	2	16.6°	0,05	47500
2968371	**25A02R035M12SED14**	25	21	12,5	M12	35	17	14,5	2	10.5°	0,08	39700
3345679	**25A03R035M12SED14**	25	21	12,5	M12	35	17	14,5	3	10.5°	0,08	39700

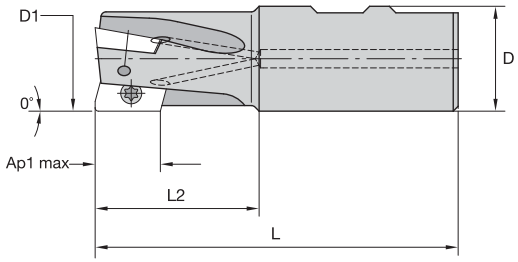
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

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

- Mill 0° walls.
- Aggressive ramping angles.
- Generates superior surface finish.
- High RPM capabilities.





Weldon End Mills

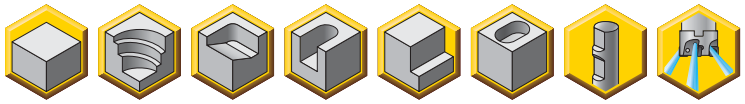
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
2624243	**M1D062E1401W075L150**	.625	.750	3.530	1.500	.580	1	25.0°	.31	8000
2623856	**M1D075E1402W075L175**	.750	.750	3.780	1.750	.580	2	18.0°	.35	49600
2623857	**M1D100E1402W100L175**	1.000	1.000	4.030	1.750	.580	2	10.4°	.71	39200
2479508	**M1D100E1403W100L175**	1.000	1.000	4.030	1.750	.580	3	10.2°	.71	39200
2479506	**M1D125E1404W125L225**	1.250	1.250	4.530	2.250	.570	4	7.2°	1.25	33400

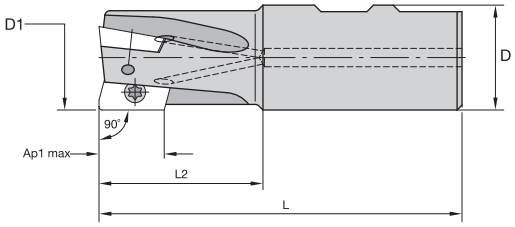
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
.625	**MS2167**	20.0	**DT9IP**
.750	**MS2167**	20.0	**DT9IP**
1.000	**MS2166**	20.0	**DT9IP**
1.250	**MS2166**	20.0	**DT9IP**

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





Weldon End Mills • Metric

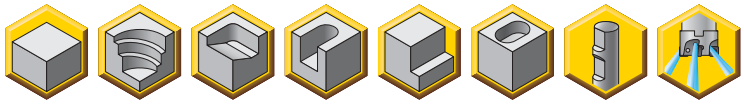
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
2622232	**20A02R039B20SED14**	20	20	90	39	14,7	2	16.6°	0,17	47500
2478640	**25A03R044B25SED14**	25	25	101	44	14,6	3	10.5°	0,30	39700

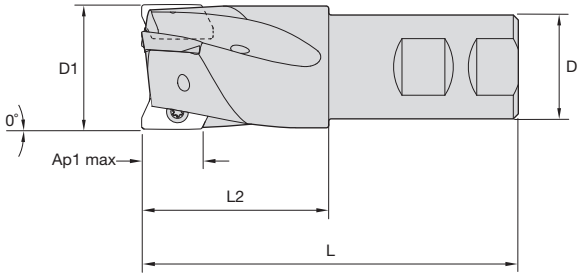
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

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

- Mill 0° walls.
- Aggressive ramping angles.
- Generates superior surface finish.
- High RPM capabilities.





Weldon End Mills • Reduced Shank

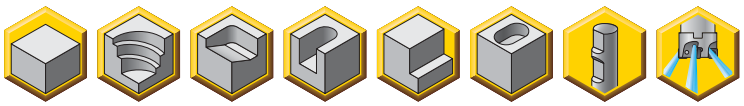
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
2479507	**M1D100E1403W075L175**	1.000	.750	3.780	1.750	.575	3	10.4°	.46	39200
2624199	**M1D100E1403W100L175R**	1.000	1.000	4.010	1.730	.580	3	10.4°	.70	39200
2623858	**M1D125E1403W100L225**	1.250	1.000	4.530	2.250	.571	3	7.2°	.94	33400
2479512	**M1D125E1404W100L225**	1.250	1.000	4.530	2.250	.571	4	7.2°	.97	33400
2624194	**M1D150E1404W125L225**	1.500	1.250	4.530	2.250	.567	4	5.5°	1.49	29600
2623859	**M1D150E1405W125L225**	1.500	1.250	4.530	2.250	.567	5	5.5°	1.53	29600

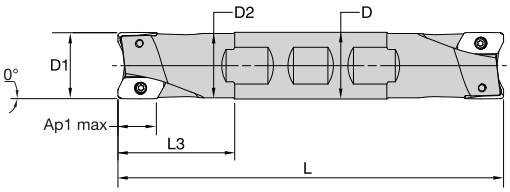
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.
"R" in catalog number designates factory-relieved tool for insert radii greater than .079".

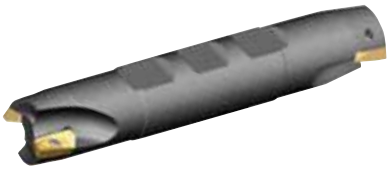
Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
1.000	**MS2166**	20.0	**DT9IP**
1.250	**MS2166**	20.0	**DT9IP**
1.500	**MS2166**	20.0	**DT9IP**

- Mill 0° walls.
- Aggressive ramping angles.
- Generates superior surface finish.
- High RPM capabilities.







Weldon End Mills • Double Ended

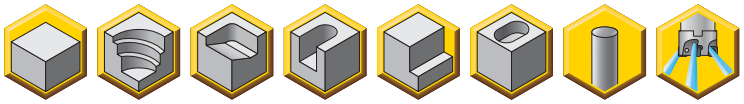
order number	catalog number	D1	D	D2	L	L3	Ap1 max	Z	max ramp angle	lbs	max RPM
2624188	**M1D075E1402W075L175DE**	.750	.750	.681	5.530	1.750	.551	2	18.0°	.53	49600

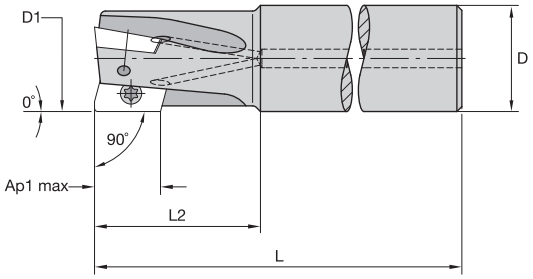
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
.750	**MS2167**	20	**DT9IP**

- Aggressive ramping angles.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.





Cylindrical End Mills

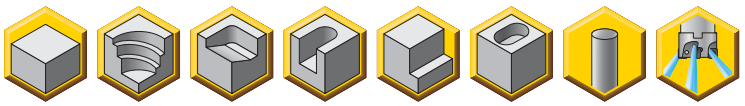
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
2624187	**M1D075E1402C075L650**	.750	.750	6.500	1.750	.570	2	18.5°	.65	49600
2624197	**M1D075E1402C075L800**	.750	.750	8.000	1.750	.570	2	18.5°	.82	49600
2624198	**M1D100E1402C100L1000**	1.000	1.000	10.000	1.750	.570	2	10.2°	1.91	39200
2624190	**M1D100E1403C100L750**	1.000	1.000	7.500	1.750	.570	3	10.2°	1.44	39200
2624200	**M1D125E1403C125L1000**	1.250	1.250	10.000	2.250	.570	3	6.9°	3.09	33400
2624192	**M1D125E1404C125L800**	1.250	1.250	8.000	2.250	.570	4	6.9°	2.44	33400
2624202	**M1D150E1404C125L1000**	1.500	1.250	10.000	2.250	.560	4	5.2°	3.31	29600
2624250	**M1D150E1405C125L800**	1.500	1.250	8.000	2.250	.560	5	5.2°	2.65	29600

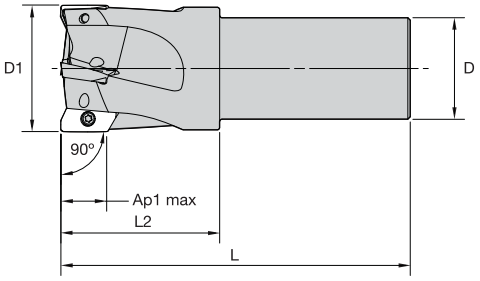
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
.750	**MS2167**	20	**DT9IP**
1.000	**MS2166**	20	**DT9IP**
1.250	**MS2166**	20	**DT9IP**
1.500	**MS2166**	20	**DT9IP**

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





Cylindrical End Mills • Metric

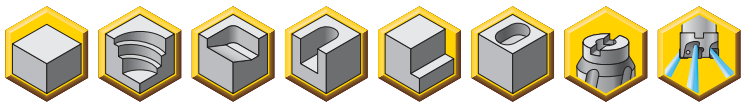
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
2968367	**25A02R050A25SED14-170**	25	25	170	50	14,6	2	10.5°	0,56	39700
2968364	**25A03R050A25SED14-170**	25	25	170	50	14,6	3	10.5°	0,56	39700
2968368	**32A03R050A32SED14-200**	32	32	200	50	14,6	3	6.8°	1,10	33300
2968366	**40A05R050A32SED14-200**	40	32	200	50	14,4	5	4.8°	1,25	28700

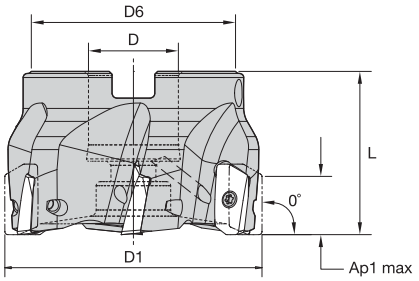
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

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

- Mill 0° walls.
- Aggressive ramping angles.
- Generates superior surface finish.
- High RPM capabilities.





Shell Mills

order number	catalog number	D1	D	D6	L	Ap1 max	Z	max ramp angle	lbs	max RPM
2479509	**M1D125E1404S050L157**	1.250	.500	1.204	1.575	.570	4	6.9	.28	33400
2624255	**M1D150E1405S075L157**	1.500	.750	1.414	1.575	.560	5	5.2	.39	29600
5898598	**M1D200E1403S075L157**	2.000	.750	1.750	1.575	.560	3	3.4	.67	24700
2624270	**M1D200E1405S075L157**	2.000	.750	1.750	1.575	.560	5	3.4	.72	24700
2479510	**M1D200E1406S075L157**	2.000	.750	1.750	1.575	.560	6	3.4	.70	24700
2624274	**M1D250E1405S075L157**	2.500	.750	1.750	1.575	.560	5	2.5	1.04	21700
2624254	**M1D250E1407S075L157**	2.500	.750	1.750	1.575	.560	7	2.5	1.04	21700
2624277	**M1D300E1406S100L175**	3.000	1.000	2.188	1.750	.560	6	2.0	1.79	19600
2624275	**M1D300E1408S100L175**	3.000	1.000	2.188	1.750	.560	8	2.0	1.78	19600
2624279	**M1D400E1408S150L200**	4.000	1.500	3.625	2.000	.560	8	1.5	3.97	16700

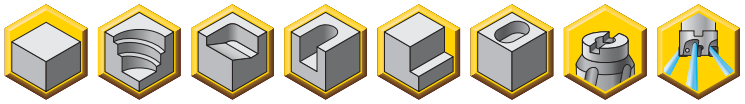
NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.

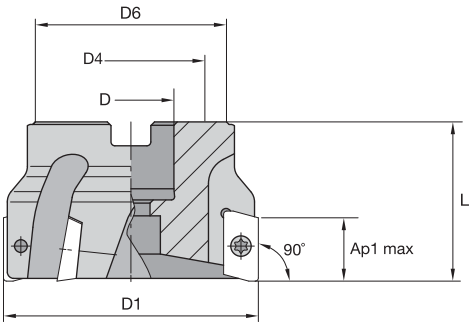
Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver	socket-head cap screw with coolant groove	coolant screw assembly
1.250	**MS2166**	20	**DT9IP**	**–**	**–**
1.500	**MS2166**	20	**DT9IP**	**–**	**–**
2.000	**MS2166**	20	**DT9IP**	**S445CG**	**–**
2.500	**MS2166**	20	**DT9IP**	**S445CG**	**–**
3.000	**MS2166**	20	**DT9IP**	**S2044CG**	**–**
4.000	**MS2166**	20	**DT9IP**	**–**	**S2165C**

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

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





Shell Mills • Metric

order number	catalog number	D1	D	D4	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
2623934	**40A05RS90ED14D**	40	16	—	37	40	14,3	5	4.8°	0,21	28700
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

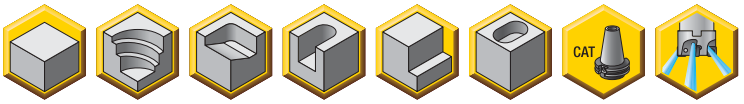
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

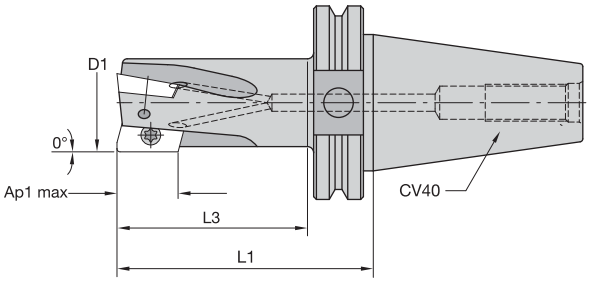
Spare Parts

D1	insert screw	Nm	Torx Plus driver	mounting screw
40	**MS2166**	2,3	**DT9IP**	**MS1294**
63	**MS2166**	2,3	**DT9IP**	**MS1234**
80	**MS2166**	2,3	**DT9IP**	**MS2038**

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

- Mill 0° walls.
- Aggressive ramping angles.
- Generates superior surface finish.
- High RPM capabilities.





End Mills • Steep Taper CV40

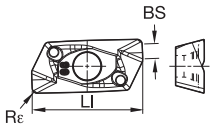
order number	catalog number	CSMS system size	D1	L1	L3	Ap1 max	Z	max ramp angle	lbs	max RPM
2624246	**M1D100E1403CV40L300**	CV40	1.000	3.000	1.500	.570	3	10.2°	2.40	39200

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
1.000	**MS2166**	20	**DT9IP**

✦✦ 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 catalog number	ANSI catalog number	LI mm	LI in	BS mm	BS in	Rε mm	Rε in	KC422M	KC520M	KC725M	KCPK30	KCPM40	KCSM40
Light Machining													
EDCT140404PDERGD	EC1404EGD	17,46	.687	2,95	.116	0,4	.016	–	–	2983890	–	5545068	–
EDCT140408PDERGD	EC1408EGD	17,47	.688	2,56	.101	0,8	.031	–	–	2983331	–	5545067	6171518
EDCT140412PDERGD	EC1412EGD	17,48	.688	2,17	.085	1,2	.047	–	–	2984210	–	–	6171519
EDCT140416PDERGD	EC1416EGD	17,49	.688	1,77	.070	1,6	.062	–	–	2984773	–	–	6171520
EDCT140431PDERGD	EC1431EGD	17,50	.689	0,26	.010	3,1	.122	–	–	2983891	–	–	6171591
General Machining													
EDCT140404PDERLDJ	EC1404ELDJ	17,46	.687	2,95	.116	0,4	.016	3324993	–	–	–	–	–
EDCT140408PDERLDJ	EC1408ELDJ	17,47	.688	2,56	.101	0,8	.031	3324994	–	–	–	–	–
EDPT140404PDERHD	EP1404EHD	17,46	.687	2,95	.116	0,4	.016	–	3051866	3051863	–	–	–
EDPT140408PDERHD	EP1408EHD	17,47	.688	2,56	.101	0,8	.031	–	3033727	3033729	3033731	5545160	6172122
EDPT140412PDERHD	EP1412EHD	17,48	.688	2,16	.085	1,2	.047	–	3032732	3033724	–	5545069	–
EDPT140416PDERHD	EP1416EHD	17,49	.688	1,77	.070	1,6	.062	–	–	3033752	3033954	6128134	6172124
EDPT140420PDERHD	EP1420EHD	17,49	.688	1,37	.054	2,0	.079	–	–	3051245	–	–	–
EDPT140424PDERHD	EP1424EHD	17,50	.689	0,99	.039	2,4	.094	–	–	3051550	–	–	6172126
EDPT140431PDERHD	EP1431EHD	17,51	.689	0,26	.010	3,1	.122	–	–	3051248	–	–	–
EDPT140440PDERHD	EP1440EHD	16,53	.651	–	–	4,0	.157	–	–	3051251	–	–	–
Heavy Machining													
EDPT140408PDSRGD	EP1408SGD	17,47	.688	2,55	.101	0,8	.031	–	2980530	2981644	2980531	6128133	6172129
EDPT140412PDSRGD	EP1412SGD	17,48	.688	2,17	.085	1,2	.047	–	2980527	2980568	–	5545066	–
EDPT140416PDSRGD	EP1416SGD	17,49	.688	1,77	.070	1,6	.062	–	–	2982077	2982091	–	–

Recommended Starting Feeds [IPT]

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	.005	**.013**	.023	.003	**.009**	.017	.003	**.007**	.013	.002	**.006**	.011	.002	**.006**	.010	.F..LDJ
.E..LDJ	.005	**.017**	.028	.003	**.012**	.020	.003	**.009**	.015	.002	**.008**	.013	.002	**.007**	.012	.E..LDJ
.E..LD	.005	**.016**	.028	.004	**.012**	.020	.003	**.009**	.015	.002	**.008**	.013	.002	**.007**	.012	.E..LD
.E..GD	.007	**.019**	.032	.005	**.013**	.023	.004	**.010**	.017	.003	**.009**	.015	.003	**.008**	.014	.E..GD
.S..GE	.009	**.020**	.032	.007	**.014**	.023	.005	**.011**	.017	.004	**.009**	.015	.004	**.009**	.014	.S..GE
.S..GD	.009	**.020**	.032	.007	**.014**	.023	.005	**.011**	.017	.004	**.009**	.015	.004	**.009**	.014	.S..GD
.S..GD2	.009	**.020**	.032	.007	**.014**	.023	.005	**.011**	.017	.004	**.009**	.015	.004	**.009**	.014	.S..GD2
.E..HD	.009	**.023**	.037	.007	**.017**	.027	.005	**.013**	.020	.004	**.011**	.017	.004	**.010**	.016	.E..HD
.E..HD2	.008	**.023**	.037	.006	**.017**	.027	.004	**.013**	.020	.004	**.011**	.017	.004	**.010**	.016	.E..HD2

Recommended Starting Feeds [mm]

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.

.E.LDJ: For aluminum 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.

Material Group		KC422M*			KC520M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	–	**–**	–	–	**–**	–	855	**755**	705	1495	**1295**	1215	970	**855**	805	–	**–**	–
	2	–	**–**	–	–	**–**	–	720	**625**	525	920	**835**	755	820	**705**	590	–	**–**	–
	3	–	**–**	–	–	**–**	–	655	**560**	460	835	**755**	675	755	**640**	525	–	**–**	–
	4	–	**–**	–	–	**–**	–	590	**490**	395	625	**575**	525	675	**560**	445	–	**–**	–
	5	–	**–**	–	–	**–**	–	490	**445**	395	855	**755**	690	560	**510**	445	560	**475**	395
	6	–	**–**	–	–	**–**	–	425	**330**	260	525	**445**	405	490	**375**	295	490	**360**	260
M	1	–	**–**	–	–	**–**	–	560	**490**	445	675	**605**	510	640	**560**	510	690	**560**	460
	2	–	**–**	–	–	**–**	–	510	**425**	360	605	**525**	460	575	**490**	410	590	**475**	395
	3	–	**–**	–	–	**–**	–	375	**330**	260	475	**425**	375	425	**375**	295	475	**360**	280
K	1	–	**–**	–	885	**805**	705	–	**–**	–	970	**870**	785	–	**–**	–	–	**–**	–
	2	–	**–**	–	690	**625**	575	–	**–**	–	770	**690**	625	–	**–**	–	–	**–**	–
	3	–	**–**	–	575	**525**	475	–	**–**	–	640	**575**	525	–	**–**	–	–	**–**	–
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			KC725M			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	–	–	–	685	**605**	565	1195	**1035**	970	775	**685**	645	–	–	–
	2	–	–	–	–	–	–	575	**500**	420	735	**670**	605	655	**565**	470	–	–	–
	3	–	–	–	–	–	–	525	**450**	370	670	**605**	540	605	**510**	420	–	–	–
	4	–	–	–	–	–	–	470	**390**	315	500	**460**	420	540	**450**	355	–	–	–
	5	–	–	–	–	–	–	390	**355**	315	685	**605**	550	450	**410**	355	450	**380**	315
	6	–	–	–	–	–	–	340	**265**	210	420	**355**	325	390	**300**	235	390	**290**	210
M	1	–	–	–	–	–	–	450	**390**	355	540	**485**	410	510	**450**	410	550	**450**	370
	2	–	–	–	–	–	–	410	**340**	290	485	**420**	370	460	**390**	330	470	**380**	315
	3	–	–	–	–	–	–	300	**265**	210	380	**340**	300	340	**300**	235	380	**290**	225
K	1	–	–	–	710	**645**	565	–	–	–	775	**695**	630	–	–	–	–	–	–
	2	–	–	–	550	**500**	460	–	–	–	615	**550**	500	–	–	–	–	–	–
	3	–	–	–	460	**420**	380	–	–	–	510	**460**	420	–	–	–	–	–	–
N	1	2820	**2480**	2295	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	2480	**2295**	1995	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	2480	**2295**	1995	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	90	**80**	65	–	–	–	105	**90**	80	105	**90**	65
	2	–	–	–	–	–	–	90	**80**	65	–	–	–	105	**90**	80	105	**90**	65
	3	–	–	–	–	–	–	120	**90**	65	–	–	–	130	**105**	80	130	**105**	65
	4	–	–	–	–	–	–	145	**120**	80	170	**130**	90	170	**130**	90	155	**130**	80
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		KC422M*			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	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

*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

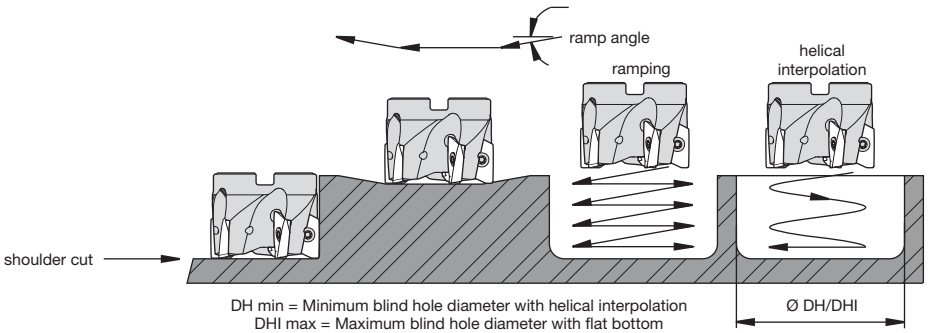
Material Group		KC422M			KC520M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	–	–	–	210	**185**	170	365	**315**	295	285	**250**	235	–	–	–
	2	–	–	–	–	–	–	175	**150**	130	225	**205**	185	240	**210**	170	–	–	–
	3	–	–	–	–	–	–	160	**135**	110	205	**185**	165	220	**190**	150	–	–	–
	4	–	–	–	–	–	–	145	**120**	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	860	**755**	700	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	755	**700**	610	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	755	**700**	610	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
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 (no flat bottom)
Mill-1, 14mm	.625	25°	.625	1.065	1.25
Mill-1, 14mm	.750	18°	.869	1.130	1.50
Mill-1, 14mm	.875	13°	1.113	1.562	1.75
Mill-1, 14mm	.970	11°	1.300	1.752	1.94
Mill-1, 14mm	1.000	10°	1.360	1.812	2.00
Mill-1, 14mm	1.250	7°	1.862	2.312	2.50
Mill-1, 14mm	1.500	6°	2.361	2.812	3.00
Mill-1, 14mm	1.250	7°	1.873	2.322	2.50
Mill-1, 14mm	1.500	5°	2.370	2.822	3.00
Mill-1, 14mm	2.000	4°	3.368	3.822	4.00
Mill-1, 14mm	2.500	3°	4.367	4.822	5.00
Mill-1, 14mm	3.000	2°	5.366	5.822	6.00
Mill-1, 14mm	4.000	2°	7.366	7.822	8.00

NOTE: Max ramp angle decreases as nose radius increases.

Mill 1-14™
Helical Cutters

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-Optimized Insert Spacing™ (LOIS) technology. LOIS dramatically minimizes 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

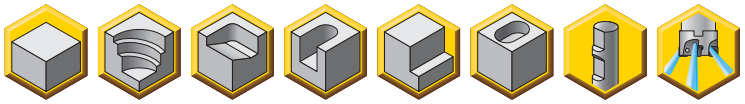
Functions

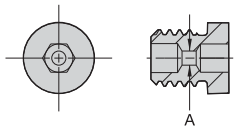
- Improves axial depth of cut better than standard end mills due to the positioning of inserts in helical configuration.
- Up to nine different coolant nozzle diameters tailored to suit each machine tool.
- One tool that offers features common to end mills, but rarely seen on a helical cutter:
  Helical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

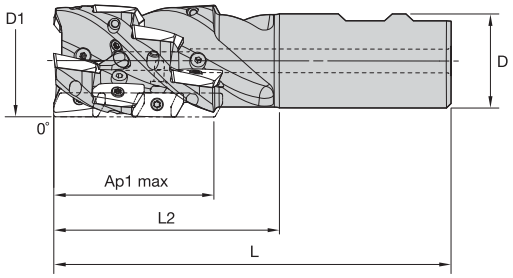
Benefits

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

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 0° walls.
- Axial support pins.
- Unique coolant nozzles.







Helical Weldon End Mills • Slot and Profile

order number	catalog number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	lbs	max RPM
3732889	M1HR125E14W125Z2L200C4	1.250	1.250	4.280	2.000	1.100	4	2	6.9°	1.10	31100
3732891	M1HR150E14W125Z3L250C9	1.500	1.250	4.780	2.500	1.612	9	3	5.2°	1.31	28400
3732892	M1HR150E14W125Z3L300C12	1.500	1.250	5.280	3.000	2.130	12	3	5.2°	1.39	28400
3732935	M1HR200E14W150Z3L300C12	2.000	1.500	5.690	3.001	2.104	12	3	3.4°	2.63	24600

NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver	pin	coolant nozzle screw
1.250	MS2148	20	DT9IP	ASPM07001802	MS2191C20
1.500	MS2148	20	DT9IP	ASPM07001802	MS2191C20
2.000	MS2148	20	DT9IP	ASPM07001802	MS2191C20

Optional Coolant Nozzle Screws

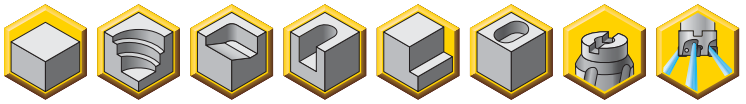
order number	catalog number	A
3400611	MS2191C00	–
3400612	MS2191C06	.024
3400613	MS2191C08	.032
3400614	MS2191C10	.039
3400616	MS2191C12	.047
3400617	MS2191C14	.055
3400618	MS2191C16	.063
3400619	MS2191C18	.071
3400620	MS2191C20	.079

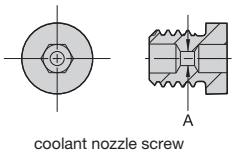
Coolant Nozzle Key

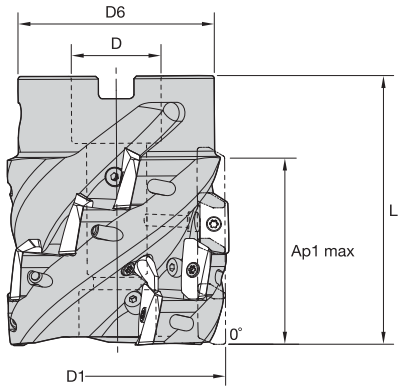
order number	catalog number	drive size
1993552	THW2M	2 MM

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 this is a .047" hole.
All coolant nozzles are interchangeable with the original that is supplied with the cutter. This gives flexibility for coolant flow.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 0° walls.
- Axial support pins.
- Unique coolant nozzles.







Helical Shell Mills • Slot and Profile

order number	catalog number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	lbs	max RPM
3732934	**M1HR200E14S075Z3L250C9**	2.000	.750	1.750	2.500	1.591	9	3	3.4	1.27	24600
3732939	**M1HR250E14S100Z3L300C12**	2.500	1.000	2.188	3.000	2.080	12	3	2.5	2.61	22000

NOTE: Standard milling cutters will accept insert nose radii up to .079" without modification.

Spare Parts

order number	D1	L	insert screw	in. lbs.	Torx Plus driver	pin	socket-head cap screw	coolant nozzle screw
3732934	2.000	2.500	**MS2148**	20	**DT9IP**	**ASPM07001802**	**S449**	**MS2191C20**
3732939	2.500	3.000	**MS2148**	20	**DT9IP**	**ASPM07001802**	**S464**	**MS2191C16**

Optional Coolant Nozzle Screws

order number	catalog number	A
3400611	**MS2191C00**	–
3400612	**MS2191C06**	.024
3400613	**MS2191C08**	.032
3400614	**MS2191C10**	.039
3400616	**MS2191C12**	.047
3400617	**MS2191C14**	.055
3400618	**MS2191C16**	.063
3400619	**MS2191C18**	.071
3400620	**MS2191C20**	.079

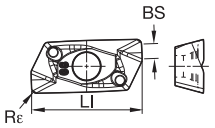
Coolant Nozzle Key

order number	catalog 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 this is a .047" hole.
All coolant nozzles are interchangeable with the original that is supplied with the cutter. This gives flexibility for 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 catalog number	ANSI catalog number	LI mm	LI in	BS mm	BS in	Rε mm	Rε in	KC422M	KC520M	KC725M	KCPK30	KCPM40	KCSM40
Light Machining													
EDCT140404PDERGD	EC1404EGD	17,46	.687	2,95	.116	0,4	.016	–	–	2983890	–	5545068	–
EDCT140408PDERGD	EC1408EGD	17,47	.688	2,56	.101	0,8	.031	–	–	2983331	–	5545067	6171518
EDCT140412PDERGD	EC1412EGD	17,48	.688	2,17	.085	1,2	.047	–	–	2984210	–	–	6171519
EDCT140416PDERGD	EC1416EGD	17,49	.688	1,77	.070	1,6	.062	–	–	2984773	–	–	6171520
EDCT140431PDERGD	EC1431EGD	17,50	.689	0,26	.010	3,1	.122	–	–	2983891	–	–	6171591
General Machining													
EDCT140404PDERLDJ	EC1404ELDJ	17,46	.687	2,95	.116	0,4	.016	3324993	–	–	–	–	–
EDCT140408PDERLDJ	EC1408ELDJ	17,47	.688	2,56	.101	0,8	.031	3324994	–	–	–	–	–
EDPT140404PDERHD	EP1404EHD	17,46	.687	2,95	.116	0,4	.016	–	3051866	3051863	–	–	–
EDPT140408PDERHD	EP1408EHD	17,47	.688	2,56	.101	0,8	.031	–	3033727	3033729	3033731	5545160	6172122
EDPT140412PDERHD	EP1412EHD	17,48	.688	2,16	.085	1,2	.047	–	3032732	3033724	–	5545069	–
EDPT140416PDERHD	EP1416EHD	17,49	.688	1,77	.070	1,6	.062	–	–	3033752	3033954	6128134	6172124
EDPT140420PDERHD	EP1420EHD	17,49	.688	1,37	.054	2,0	.079	–	–	3051245	–	–	–
EDPT140424PDERHD	EP1424EHD	17,50	.689	0,99	.039	2,4	.094	–	–	3051550	–	–	6172126
EDPT140431PDERHD	EP1431EHD	17,51	.689	0,26	.010	3,1	.122	–	–	3051248	–	–	–
EDPT140440PDERHD	EP1440EHD	16,53	.651	—	—	4,0	.157	–	–	3051251	–	–	–
Heavy Machining													
EDPT140408PDSRGD	EP1408SGD	17,47	.688	2,55	.101	0,8	.031	–	2980530	2981644	2980531	6128133	6172129
EDPT140412PDSRGD	EP1412SGD	17,48	.688	2,17	.085	1,2	.047	–	2980527	2980568	–	5545066	–
EDPT140416PDSRGD	EP1416SGD	17,49	.688	1,77	.070	1,6	.062	–	–	2982077	2982091	–	–

Recommended Starting Feeds [IPT]

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	.005	**.019**	.033	.003	**.013**	.023	.003	**.010**	.018	.002	**.009**	.015	.002	**.008**	.014	.F..LDJ
.E..LDJ	.005	**.019**	.033	.003	**.014**	.024	.003	**.010**	.018	.002	**.009**	.015	.002	**.008**	.014	.E..LDJ
.E..LD	.005	**.018**	.032	.004	**.013**	.023	.003	**.010**	.017	.002	**.009**	.015	.002	**.008**	.014	.E..LD
.E..GD	.007	**.020**	.035	.005	**.015**	.025	.004	**.011**	.019	.003	**.010**	.016	.003	**.009**	.015	.E..GD
.S..GE	.009	**.020**	.035	.007	**.014**	.025	.005	**.011**	.019	.004	**.009**	.017	.004	**.009**	.015	.S..GE
.S..GD	.009	**.020**	.035	.007	**.014**	.025	.005	**.011**	.019	.004	**.009**	.016	.004	**.009**	.015	.S..GD
.S..GD2	.009	**.020**	.035	.007	**.014**	.025	.005	**.011**	.019	.004	**.009**	.016	.004	**.009**	.015	.S..GD2
.E..HD	.009	**.023**	.037	.007	**.017**	.027	.005	**.013**	.020	.004	**.011**	.017	.004	**.010**	.016	.E..HD
.E..HD2	.008	**.023**	.037	.006	**.017**	.027	.004	**.013**	.020	.004	**.011**	.017	.004	**.010**	.016	.E..HD2

Recommended Starting Feeds [mm]

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.

.E.LDJ: For aluminum 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.

Material Group		KC422M*			KC520M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	–	**–**	–	–	**–**	–	855	**755**	705	1495	**1295**	1215	970	**855**	805	–	**–**	–
	2	–	**–**	–	–	**–**	–	720	**625**	525	920	**835**	755	820	**705**	590	–	**–**	–
	3	–	**–**	–	–	**–**	–	655	**560**	460	835	**755**	675	755	**640**	525	–	**–**	–
	4	–	**–**	–	–	**–**	–	590	**490**	395	625	**575**	525	675	**560**	445	–	**–**	–
	5	–	**–**	–	–	**–**	–	490	**445**	395	855	**755**	690	560	**510**	445	560	**475**	395
	6	–	**–**	–	–	**–**	–	425	**330**	260	525	**445**	405	490	**375**	295	490	**360**	260
M	1	–	**–**	–	–	**–**	–	560	**490**	445	675	**605**	510	640	**560**	510	690	**560**	460
	2	–	**–**	–	–	**–**	–	510	**425**	360	605	**525**	460	575	**490**	410	590	**475**	395
	3	–	**–**	–	–	**–**	–	375	**330**	260	475	**425**	375	425	**375**	295	475	**360**	280
K	1	–	**–**	–	885	**805**	705	–	**–**	–	970	**870**	785	–	**–**	–	–	**–**	–
	2	–	**–**	–	690	**625**	575	–	**–**	–	770	**690**	625	–	**–**	–	–	**–**	–
	3	–	**–**	–	575	**525**	475	–	**–**	–	640	**575**	525	–	**–**	–	–	**–**	–
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			KC725M			KCPK30			KCPM40			KCSM40		
P	1	–	**–**	–	–	**–**	–	685	**605**	565	1195	**1035**	970	775	**685**	645	–	**–**	–
	2	–	**–**	–	–	**–**	–	575	**500**	420	735	**670**	605	655	**565**	470	–	**–**	–
	3	–	**–**	–	–	**–**	–	525	**450**	370	670	**605**	540	605	**510**	420	–	**–**	–
	4	–	**–**	–	–	**–**	–	470	**390**	315	500	**460**	420	540	**450**	355	–	**–**	–
	5	–	**–**	–	–	**–**	–	390	**355**	315	685	**605**	550	450	**410**	355	450	**380**	315
	6	–	**–**	–	–	**–**	–	340	**265**	210	420	**355**	325	390	**300**	235	390	**290**	210
M	1	–	**–**	–	–	**–**	–	450	**390**	355	540	**485**	410	510	**450**	410	550	**450**	370
	2	–	**–**	–	–	**–**	–	410	**340**	290	485	**420**	370	460	**390**	330	470	**380**	315
	3	–	**–**	–	–	**–**	–	300	**265**	210	380	**340**	300	340	**300**	235	380	**290**	225
K	1	–	**–**	–	710	**645**	565	–	**–**	–	775	**695**	630	–	**–**	–	–	**–**	–
	2	–	**–**	–	550	**500**	460	–	**–**	–	615	**550**	500	–	**–**	–	–	**–**	–
	3	–	**–**	–	460	**420**	380	–	**–**	–	510	**460**	420	–	**–**	–	–	**–**	–
N	1	2820	**2480**	2295	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	2480	**2295**	1995	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	2480	**2295**	1995	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
S	1	–	**–**	–	–	**–**	–	90	**80**	65	–	**–**	–	105	**90**	80	105	**90**	65
	2	–	**–**	–	–	**–**	–	90	**80**	65	–	**–**	–	105	**90**	80	105	**90**	65
	3	–	**–**	–	–	**–**	–	120	**90**	65	–	**–**	–	130	**105**	80	130	**105**	65
	4	–	**–**	–	–	**–**	–	145	**120**	80	170	**130**	90	170	**130**	90	155	**130**	80
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		KC422M*			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	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

*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			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	860	**755**	700	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	755	**700**	610	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	755	**700**	610	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
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	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–

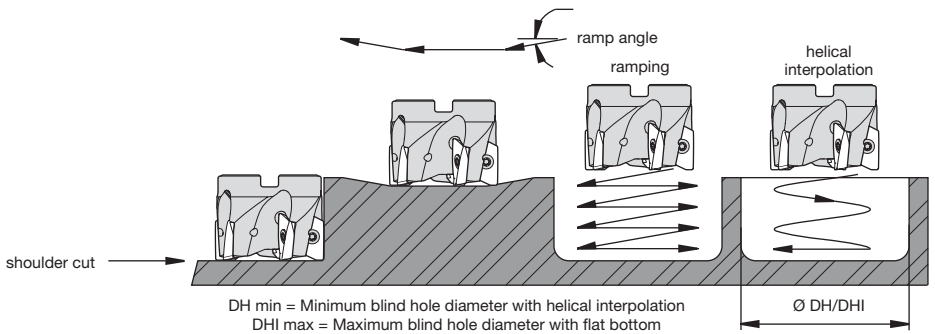
NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

Application Data

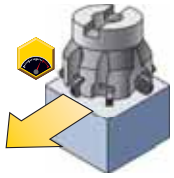
Application Examples



insert style	cutting diameter	max ramp angle	DH min (min hole diameter)	DHI min (min flat-bottomed hole diameter)	max diameter (no flat bottom)
Mill 1-14	1.25	5.4°	1.862	2.312	2.5
Mill 1-14	1.50	4.0°	2.370	2.822	3
Mill 1-14	2.00	2.6°	3.368	3.822	4
Mill 1-14	2.50	1.9°	4.367	4.822	5

Application

1



Machining Conditions and Spindle Size

2

- All applications with average Ap .040" (1,0mm), up to max. .065" (1,6mm).
- Small to medium machines.
- Application requires a small cutter body.

- All applications with average Ap .065" (1,6mm), up to max. .098" (2,5mm).
- Medium and large machines.
- Cutter body with larger diameter required.

Capabilities

3

Platform

4

Dodeka™ Mini 75° HF

Ap max: .065" (1,6mm)
Cutter body: Ø1.25–3.0"
Insert style: HN*J43
12 cutting edges

7792VXD09

Ap max: .059" (1,5mm)
Cutter body: 1.0–2.0" and 25mm
Insert style: XD*T0904
4 cutting edges

Dodeka™ 75° HF

Ap max: .087" (2,2mm)
Cutter body: 2.0–6.0"
Insert style: HN*J535..
12 cutting edges

7792VXD12

Ap max: .098" (2,5mm)
Cutter body: 1.25–6.0" and 25–160mm
Insert style: XD*T1205
4 cutting edges

Insert Selection

5

Easy insert selection based on:
- Workpiece material
- Cutting conditions
- Coolant type

Directly on the product pages B144–B148, B116–B129.

Easy insert selection based on:
- Workpiece material
- Cutting conditions
- Coolant type

Directly on the product pages B149–B152, B130–B142.

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 optimize the tool, adjust depth of cut (Ap) and cutting speed (vc), 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 aluminum alloys.

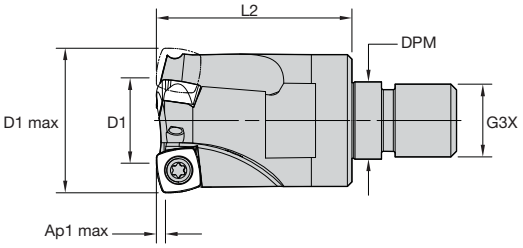
Features and Benefits

- 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 (1,6µ) when used at <0.020 in/z.

7792VXD09:
Maximum ap = 0.059"
Diameter Range = 1.000–2.000" and 25mm

7792VXD12:
Maximum ap = 0.098"
Diameter Range = 1.250–6.000" and 25–160mm

- 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.



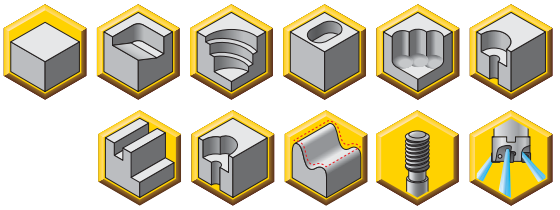
7792VXD09 Modular Head • Screw-On

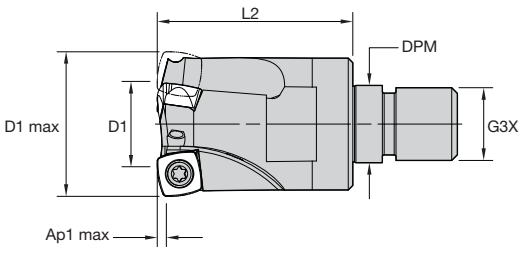
order number	catalog number	D1 max	D1	L2	G3X	DPM	Ap1 max	Z U
5659840	**A7792VXD09SA1.0Z2R1.4**	1.000	.487	1.378	M12	.492	.059	2
5660449	**A7792VXD09SA1.25Z3R2**	1.250	.738	1.692	M16	.669	.059	3

Spare Parts

catalog number	insert screw	in. lbs.	Torx driver
A7792VXD09SA1.0Z2R1.4	**F3508T**	18.6	**T15**
A7792VXD09SA1.25Z3R2	**F3510T**	18.6	**T15**

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





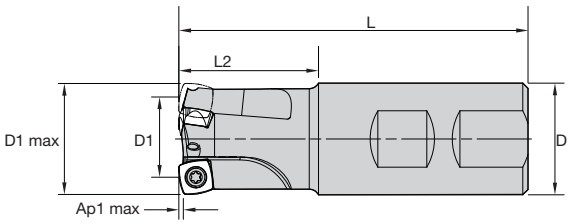
7792VXD09 Modular Head • Screw-On • Metric

order number	catalog number	D1 max	D1	L2	G3X	DPM	Ap1 max	Z U
6024361	7792VXD09SA025Z3R35	25	12	35	M12	12,50	1,50	3

Spare Parts

catalog number	insert screw	Nm	Torx driver
7792VXD09SA025Z3R35	F3508T	2,1	TB15

- 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.



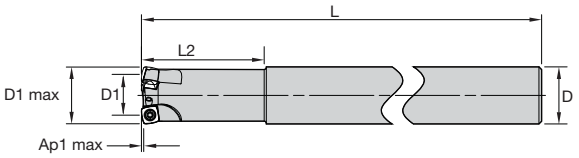
7792VXD09 Weldon Shank

order number	catalog number	D1 max	D	D1	L	L2	Ap1 max	Z U
5658075	C7792VXD09WA1.00Z2R	1.000	1.000	.487	3.856	1.575	.059	2
5666067	C7792VXD09WA1.25Z3R	1.250	1.250	.738	3.855	1.574	.059	3

Spare Parts

catalog number	insert screw	in. lbs.	Torx driver
C7792VXD09WA1.00Z2R	F3508T	18.6	T15
C7792VXD09WA1.25Z3R	F3510T	18.6	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.



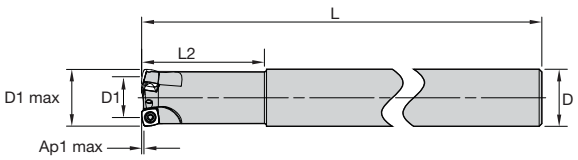
7792VXD09 Cylindrical Shank

order number	catalog number	D1 max	D	D1	L	L2	Ap1 max	Z U
5667564	C7792VXD09CA1.00Z2R2	1.000	1.000	.487	7.874	1.969	.059	2
6025590	C7792VXD09CA1.00Z3R2	1.000	1.000	.677	8.000	2.000	.059	3
5659948	C7792VXD09CA1.25Z3R3	1.250	1.250	.737	9.843	2.756	.059	3
6025611	C7792VXD09CA1.25Z4R3	1.251	1.250	.737	10.000	3.000	.059	4

Spare Parts

catalog number	insert screw	in. lbs.	Torx driver
C7792VXD09CA1.00Z2R2	F3508T	18.6	T15
C7792VXD09CA1.00Z3R2	F3508T	18.6	T15
C7792VXD09CA1.25Z3R3	F3510T	18.6	T15
C7792VXD09CA1.25Z4R3	F3510T	18.6	T15

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



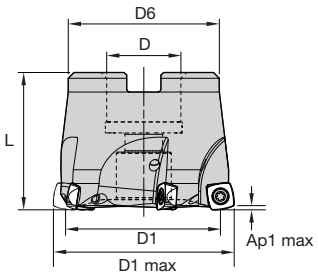
7792VXD09 Cylindrical Shank • Metric

order number	catalog number	D1 max	D	D1	L	L2	Ap1 max	Z U
5659947	**7792VXD09CA025Z2R50**	25	25	12	200	50	1,50	2

Spare Parts

catalog number	insert screw	Nm	Torx driver
7792VXD09CA025Z2R50	**F3508T**	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	catalog number	D1 max	D	D1	D6	L	Ap1 max	Z U
5656731	C7792VXD09-A1.50Z4R	1.500	.500	.989	1.339	1.260	.059	4
5658170	C7792VXD09-A1.50Z5R	1.500	.500	.980	1.339	1.260	.059	5
5667832	C7792VXD09-A2.00Z5R	2.000	.750	1.478	1.811	1.575	.059	5
5665795	C7792VXD09-A2.00Z6R	2.000	.750	1.486	1.811	1.575	.059	6
6025612	C7792VXD09-A2.00Z7R	2.000	.750	1.486	1.772	1.575	.059	7

Spare Parts

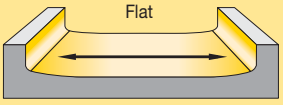
catalog number	insert screw	in. lbs.	Torx driver	mounting screw
C7792VXD09-A1.50Z4R	F3510T	18.6	T15	#1/4-28X3/4SHCSA
C7792VXD09-A1.50Z5R	F3510T	18.6	T15	#1/4-28X3/4SHCSA
C7792VXD09-A2.00Z5R	F3510T	18.6	T15	#3/8-24X1SHCSA
C7792VXD09-A2.00Z6R	F3510T	18.6	T15	#3/8-24X1SHCSA
C7792VXD09-A2.00Z7R	F3510T	18.6	TB15	#3/8-24X1SHCSA

Technical Information (in)

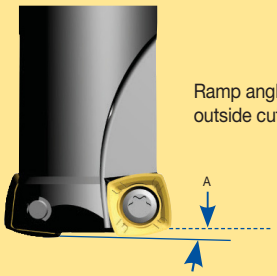
order number	catalog number	dimension						max RPM
		facing pitch	ramping angle	helical hole min–max		ap max helical/ linear	a_e max plunging	
5658075	C7792VXD09WA1.00Z2R	0.487	2.70	1.370	1.920	0.039	0.236	48,000
5666067	C7792VXD09WA1.25Z3R	0.738	1.50	1.870	2.420	0.039	0.236	40,500
5667564	C7792VXD09CA1.00Z2R2	0.487	2.70	1.370	1.920	0.039	0.236	48,000
6025590	C7792VXD09CA1.00Z3R2	0.487	2.70	1.370	1.920	0.039	0.236	48,000
5659948	C7792VXD09CA1.25Z3R3	0.728	1.50	1.870	2.420	0.039	0.236	40,500
6025611	C7792VXD09CA1.25Z4R3	0.728	1.50	1.870	2.420	0.039	0.236	40,500
5656731	C7792VXD09-A1.50Z4R	0.980	1.10	2.370	2.920	0.039	0.236	36,000
5658170	C7792VXD09-A1.50Z5R	0.980	1.10	2.370	2.920	0.039	0.236	36,000
5667832	C7792VXD09-A2.00Z5R	1.478	0.70	3.370	3.920	0.039	0.236	30,000
5665795	C7792VXD09-A2.00Z6R	1.478	0.70	3.370	3.920	0.039	0.236	30,000
6025612	C7792VXD09-A2.00Z7R	1.478	0.70	3.370	3.920	0.039	0.236	30,000
5659840	A7792VXD09SA1.0Z2R1.4	0.487	2.70	1.370	1.920	0.039	0.236	48,000
5660449	A7792VXD09SA1.25Z3R2	0.738	1.50	1.870	2.420	0.039	0.236	40,500

Helical Interpolation

Plunging



Facing Pitch



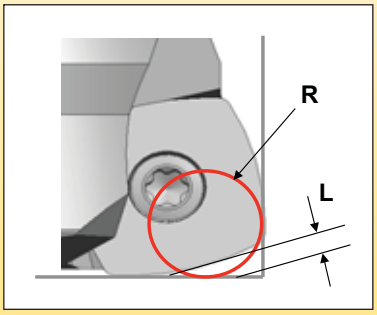
Ramp angle A uses one outside cutting edge only.

A = max ramp angle utilizing full face contact.

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 below and in the reference table.

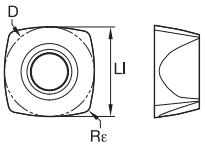
For finish pass applications:
Wiper facet for finishing use max. feed 0.031"



Programming Data (inch)			
Insert corner nose size (IC)	Rε	R	L
06	0.750	1.100	1.420
09	0.031	0.079	0.028
	0.047	0.089	0.026
12	0.031	0.098	0.040
	0.047	0.107	0.038
16	0.047	0.164	0.057

✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2			✧/✦		✧✧	✦✦		
P3–P4		✧			✧✧	✦✦		
P5–P6		✧			✧	✦✦	✧✧	✧/✦
M1			✦✦			✧✧		✦
M3			✦			✦		✦✦
K1				✧✧	✧	✦✦		
K3				✧✧	✧	✦✦		
N1	✦✦							
N2	✦✦							
S1			✦			✦		✦✦
S2			✦			✦		✦✦
S3			✦✦			✦		✦
S4			✦✦			✦		✦



ISO catalog number	ANSI catalog number	D mm	D in	LI mm	LI in	Rε mm	Rε in	GH2	KCPM40	KCSM40	SC3025	SC6525	SP6519	X400	X500
Light Machining															
XDPT090412ERD411	XDPT090412ERD411	9,53	.375	9,53	.375	1,2	.047	–	–	6185922	–	–	–	–	–
General Machining															
XDLT090408ERD41	XDLT090408ERD41	9,53	.375	9,53	.375	0,8	.031	–	–	–	–	5653106	5652490	–	5654896
XDLT090408ERD721	XDLT090408ERD721	9,53	.375	9,53	.375	0,8	.031	5655472	–	–	–	–	–	–	–
XDPT090408ERD41	XDPT090408ERD41	9,53	.375	9,53	.375	0,8	.031	–	–	6185921	–	6010771	6010730	–	6010729
XDLT090412ERD411	XDLT090412ERD411	9,53	.375	9,53	.375	1,2	.047	–	–	–	–	–	5652249	–	5655172
Heavy Machining															
XDLW090408SRD	XDLW090408SRD	9,53	.375	9,53	.375	0,8	.031	–	–	–	5656081	–	–	5652239	5651222
XDPW090412SRD	XDPW090412SRD	9,52	.375	9,52	.375	1,2	.047	–	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.

Recommended Starting Feeds [IPT] • High-Feed

Light Machining	General Purpose	Heavy Machining

At .060 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	.012	**.038**	.067	.009	**.027**	.047	.006	**.020**	.034	.006	**.018**	.030	.005	**.016**	.027	.E..D721
.E..D41	.015	**.044**	.067	.011	**.031**	.047	.008	**.023**	.034	.007	**.020**	.030	.006	**.018**	.027	.E..D41
.E..D411	.015	**.044**	.067	.011	**.031**	.047	.008	**.023**	.034	.007	**.020**	.030	.006	**.018**	.027	.E..D411
.S..D	.021	**.048**	.079	.015	**.034**	.055	.011	**.025**	.040	.010	**.022**	.035	.009	**.020**	.032	.S..D
.S..GP	.021	**.048**	.079	.015	**.034**	.054	.011	**.025**	.040	.010	**.022**	.035	.009	**.020**	.032	.S..GP

At .040 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	.015	**.047**	.083	.010	**.033**	.057	.008	**.024**	.042	.007	**.021**	.036	.006	**.019**	.033	.E..D721
.E..D41	.018	**.053**	.083	.013	**.038**	.057	.010	**.028**	.042	.009	**.024**	.036	.008	**.022**	.033	.E..D41
.E..D411	.018	**.053**	.083	.013	**.038**	.057	.010	**.028**	.042	.009	**.024**	.036	.008	**.022**	.033	.E..D411
.S..D	.026	**.059**	.098	.019	**.041**	.067	.014	**.031**	.049	.012	**.027**	.042	.011	**.024**	.039	.S..D
.S..GP	.026	**.058**	.097	.019	**.041**	.067	.014	**.030**	.049	.012	**.026**	.042	.011	**.024**	.038	.S..GP

At .030 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	.017	**.054**	.097	.012	**.038**	.066	.009	**.028**	.048	.008	**.024**	.042	.007	**.022**	.038	.E..D721
.E..D41	.021	**.062**	.097	.015	**.043**	.066	.011	**.032**	.048	.010	**.028**	.042	.009	**.025**	.038	.E..D41
.E..D411	.021	**.062**	.097	.015	**.043**	.066	.011	**.032**	.048	.010	**.028**	.042	.009	**.025**	.038	.E..D411
.S..D	.030	**.069**	.115	.021	**.048**	.078	.016	**.035**	.056	.014	**.031**	.049	.013	**.028**	.044	.S..D
.S..GP	.030	**.068**	.114	.021	**.047**	.077	.016	**.035**	.056	.014	**.030**	.048	.013	**.028**	.044	.S..GP

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

Insert Geometry	Programmed Feed per Tooth (fz) Max .236" insert engagement (ae radial engagement)			Insert Geometry
.E..D721	.002	**.007**	.012	.E..D721
.E..D41	.003	**.008**	.012	.E..D41
.E..D411	.003	**.008**	.012	.E..D411
.S..D	.004	**.009**	.014	.S..D
.S..GP	.004	**.009**	.014	.S..GP

Recommended Starting Feeds [mm] • High-Feed

Light Machining	General Purpose	Heavy Machining

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) Max 6mm insert engagement (ae radial engagement)			Insert Geometry
.E..D721	0,06	**0,18**	0,30	.E..D721
.E..D41	0,07	**0,20**	0,30	.E..D41
.E..D411	0,07	**0,20**	0,30	.E..D411
.S..D	0,10	**0,22**	0,35	.S..D
.S..GP	0,10	**0,22**	0,35	.S..GP

Material Group		GH2			KCPM40			KCSM40			SC3025		
P	1	–	–	–	1165	**1015**	970	–	–	–	–	–	–
	2	–	–	–	985	**855**	705	–	–	–	–	–	–
	3	–	–	–	900	**770**	625	–	–	–	–	–	–
	4	–	–	–	805	**675**	525	–	–	–	–	–	–
	5	–	–	–	675	**605**	525	675	**575**	475	–	–	–
	6	–	–	–	590	**460**	360	590	**425**	310	–	–	–
M	1	–	–	–	770	**675**	605	820	**675**	560	–	–	–
	2	–	–	–	690	**590**	490	705	**575**	475	–	–	–
	3	–	–	–	510	**460**	360	575	**425**	330	–	–	–
K	1	985	**720**	475	–	–	–	–	–	–	1560	**1085**	590
	2	855	**625**	410	–	–	–	–	–	–	1310	**900**	475
	3	720	**575**	395	–	–	–	–	–	–	1085	**755**	410
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		SC6525			SP6519			X400			X500		
P	1	1460	**1000**	560	1165	**855**	510	1015	**755**	475	1065	**785**	510
	2	1280	**885**	475	1015	**755**	460	900	**675**	410	950	**705**	460
	3	1150	**785**	410	900	**655**	395	785	**590**	375	820	**605**	395
	4	820	**575**	310	690	**490**	295	590	**425**	280	625	**475**	295
	5	625	**475**	310	560	**410**	280	–	–	–	510	**395**	280
	6	560	**395**	230	475	**330**	195	–	–	–	425	**310**	195
M	1	785	**705**	560	1065	**770**	460	–	–	–	985	**720**	460
	2	755	**625**	475	920	**675**	410	–	–	–	870	**625**	395
	3	575	**510**	360	770	**560**	330	–	–	–	705	**510**	310
K	1	1540	**1065**	575	1165	**870**	560	–	–	–	1015	**870**	675
	2	1200	**820**	460	950	**690**	425	–	–	–	870	**705**	510
	3	–	–	–	870	**625**	395	–	–	–	675	**560**	395
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	375	**280**	180	–	–	–
	2	–	–	–	–	–	–	310	**230**	130	–	–	–
	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			KCPM40			KCSM40			SC3025		
P	1	–	–	–	930	**810**	775	–	–	–	–	–	–
	2	–	–	–	790	**685**	565	–	–	–	–	–	–
	3	–	–	–	720	**615**	500	–	–	–	–	–	–
	4	–	–	–	645	**540**	420	–	–	–	–	–	–
	5	–	–	–	540	**485**	420	540	**460**	380	–	–	–
	6	–	–	–	470	**370**	290	470	**340**	250	–	–	–
M	1	–	–	–	615	**540**	485	655	**540**	450	–	–	–
	2	–	–	–	550	**470**	390	565	**460**	380	–	–	–
	3	–	–	–	410	**370**	290	460	**340**	265	–	–	–
K	1	790	**575**	380	–	–	–	–	–	–	1250	**870**	470
	2	685	**500**	330	–	–	–	–	–	–	1050	**720**	380
	3	575	**460**	315	–	–	–	–	–	–	870	**605**	330
N	1	3780	**2980**	1260	–	–	–	–	–	–	–	–	–
	2	3780	**2980**	1260	–	–	–	–	–	–	–	–	–
	3	2785	**2295**	930	–	–	–	–	–	–	–	–	–
S	1	–	–	–	130	**105**	90	130	**105**	80	–	–	–
	2	–	–	–	130	**105**	90	130	**105**	80	–	–	–
	3	–	–	–	155	**130**	90	155	**130**	80	–	–	–
	4	–	–	–	210	**155**	105	185	**155**	90	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		SC6525			SP6519			X400			X500		
P	1	1170	**800**	450	930	**685**	410	810	**605**	380	850	**630**	410
	2	1025	**710**	380	810	**605**	370	720	**540**	330	760	**565**	370
	3	920	**630**	330	720	**525**	315	630	**470**	300	655	**485**	315
	4	655	**460**	250	550	**390**	235	470	**340**	225	500	**380**	235
	5	500	**380**	250	450	**330**	225	–	–	–	410	**315**	225
	6	450	**315**	185	380	**265**	155	–	–	–	340	**250**	155
M	1	630	**565**	450	850	**615**	370	–	–	–	790	**575**	370
	2	605	**500**	380	735	**540**	330	–	–	–	695	**500**	315
	3	460	**410**	290	615	**450**	265	–	–	–	565	**410**	250
K	1	1230	**850**	460	930	**695**	450	–	–	–	810	**695**	540
	2	960	**655**	370	760	**550**	340	–	–	–	695	**565**	410
	3	–	–	–	695	**500**	315	–	–	–	540	**450**	315
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	170	**130**	80	–	–	–	155	**105**	80
	2	–	–	–	155	**105**	65	–	–	–	145	**105**	65
	3	–	–	–	170	**130**	80	–	–	–	155	**130**	80
	4	–	–	–	250	**185**	120	–	–	–	235	**170**	105
H	1	–	–	–	–	–	–	300	**225**	145	–	–	–
	2	–	–	–	–	–	–	250	**185**	105	–	–	–
	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	–	–	–	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	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

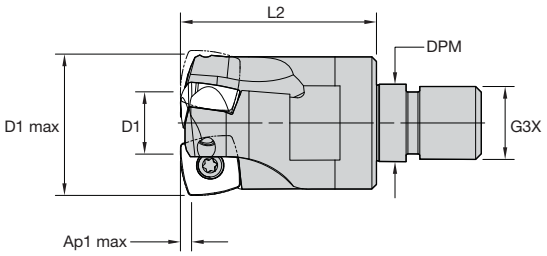
Material Group		SC3025			SC6525			SP6519			X400			X500		
P	1	355	**245**	135	445	**305**	170	285	**210**	125	250	**185**	115	260	**190**	125
	2	310	**215**	115	390	**270**	145	250	**185**	110	220	**165**	100	230	**170**	110
	3	280	**190**	100	350	**240**	125	220	**160**	95	190	**145**	90	200	**150**	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	catalog number	D1 max	D1	L2	G3X	DPM	Ap1 max	Z U
5659929	**A7792VXD12SA1.25Z2R2**	1.250	.520	1.693	M16	.669	.098	2
5667487	**A7792VXD12SA1.5Z3R1.7**	1.500	.785	1.750	M16	.669	.098	3

Spare Parts

catalog number	insert screw	in. lbs.	Torx driver
A7792VXD12SA1.25Z2R2	**D4010T**	27.4	**T15**
A7792VXD12SA1.5Z3R1.7	**D4010T**	27.4	**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.
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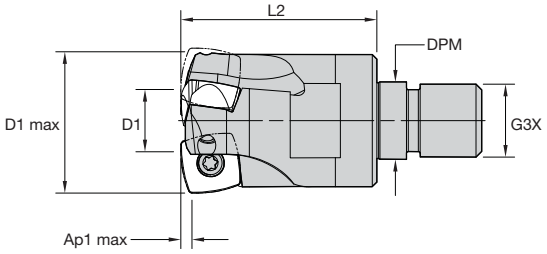
- Screw-on cutters provide better rigidity and stability when used with small spindles: BT30, BT40, DV40, HSK50, HSK63, etc.
- Screw-on cutters can be less expensive when compared to cylindrical shank cutters due to their higher flexibility through multiple holder combinations.



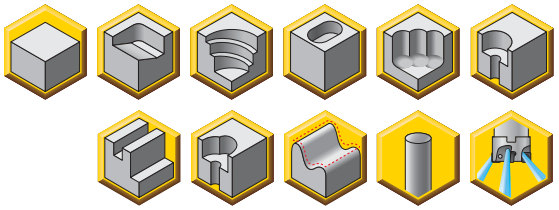
7792VXD12 Modular Head • Screw-On • Metric

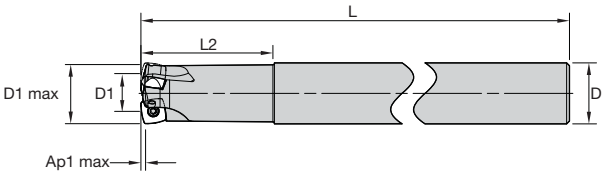
order number	catalog number	D1 max	D1	L2	G3X	DPM	Ap1 max	Z U
6025280	7792VXD12SA032Z3R43	32	14	43	M16	17,00	2,50	3

Spare Parts

catalog number	insert screw	Nm	Torx driver
7792VXD12SA032Z3R43	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.





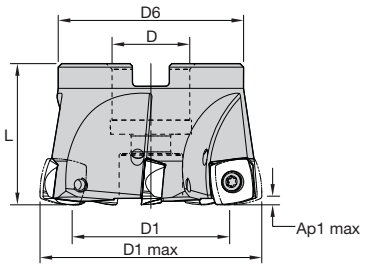
7792VXD12 Cylindrical Shank

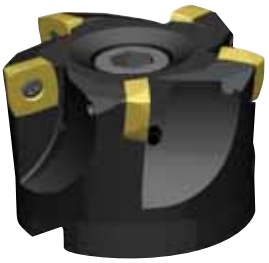
order number	catalog number	D1 max	D	D1	L	L2	Ap1 max	Z U
5666596	**C7792VXD12CA1.25Z2R3**	1.250	1.250	.536	9.843	2.756	.098	2
6025588	**C7792VXD12CA1.25Z3R3**	1.250	1.250	.536	10.000	3.000	.098	3
5665832	**C7792VXD12CA1.2/1.5Z3**	1.500	1.250	.770	9.843	2.755	.098	3
6025589	**C7792VXD12CA1.50Z4R3**	1.500	1.500	.785	10.000	3.000	.098	4

Spare Parts

catalog number	insert screw	in. lbs.	Torx driver
C7792VXD12CA1.25Z2R3	**D4010T**	27.4	**T15**
C7792VXD12CA1.25Z3R3	**D4010T**	27.4	**T15**
C7792VXD12CA1.2/1.5Z3	**D4010T**	27.4	**T15**
C7792VXD12CA1.50Z4R3	**D4010T**	27.4	**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 Shell Mill • Coarse, Medium, and Fine Pitch

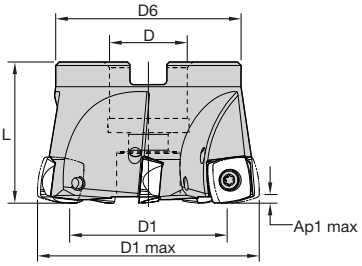
order number	catalog number	D1 max	D	D1	D6	L	Ap1 max	Z U
6025581	C7792VXD12-A1.50Z4R	1.500	.750	1.067	1.417	1.575	.098	4
5657237	C7792VXD12-A2.00Z3R	2.000	.750	1.276	1.811	1.575	.098	3
5667404	C7792VXD12-A2.00Z4R	2.000	.750	1.276	1.772	1.575	.098	4
5656382	C7792VXD12-A2.00Z5R	2.000	.750	1.276	1.811	1.575	.098	5
6025582	C7792VXD12-A2.00Z6R	2.000	.750	1.284	1.772	1.575	.098	6
5667809	C7792VXD12-A2.50Z4R	2.500	1.000	1.776	1.969	1.575	.098	4
5656732	C7792VXD12-A2.50Z5R	2.500	1.000	1.784	1.969	1.575	.098	5
6025583	C7792VXD12-A2.50Z7R	2.500	1.000	1.784	2.087	1.575	.098	7
5665708	C7792VXD12-A3.00Z5R	3.000	1.000	2.276	2.087	1.969	.098	5
5656919	C7792VXD12-A3.00Z8R	3.000	1.000	2.276	1.969	1.969	.098	8
6025584	C7792VXD12-A3.00Z9R	3.000	1.000	2.284	2.087	1.969	.098	9
5667833	C7792VXD12-A4.00Z6R	4.000	1.250	3.280	2.559	1.969	.098	6
5656378	C7792VXD12-A4.00Z9R	4.000	1.250	3.280	2.559	1.969	.098	9
6025585	C7792VXD12-A4.00Z11R	4.000	1.250	3.280	2.559	1.969	.098	11
5667476	C7792VXD12-A5.00Z8R	5.000	1.500	4.270	3.244	2.480	.098	8
6025586	C7792VXD12-A5.00Z13R	5.000	1.500	4.280	3.189	2.480	.098	13
5656915	C7792VXD12-6.00Z12R	6.000	1.500	5.270	3.953	2.480	.098	12
6025587	C7792VXD12-6.00Z15R	6.000	1.500	5.279	4.323	2.480	.098	15

NOTE: No through coolant for cutters where D1 max = 6.00".

Spare Parts

catalog number	insert screw	in. lbs.	Torx driver	mounting screw	mounting screw
C7792VXD12-A1.50Z4R	D4010T	27.4	T15	–	KLSS0714C
C7792VXD12-A2.00Z3R	D4012T	27.4	T15	#3/8-24X1SHCSA	–
C7792VXD12-A2.00Z4R	D4012T	27.4	T15	#3/8-24X1SHCSA	–
C7792VXD12-A2.00Z5R	D4010T	27.4	T15	#3/8-24X1SHCSA	–
C7792VXD12-A2.00Z6R	D4010T	27.4	TB15	#3/8-24X1SHCSA	–
C7792VXD12-A2.50Z4R	D4012T	27.4	T15	#1/2-20X1-1/4 LHCSA	–
C7792VXD12-A2.50Z5R	D4012T	27.4	T15	#1/2-20X1-1/4 LHCSA	–
C7792VXD12-A2.50Z7R	D4012T	27.4	TB15	#1/2-20X1-1/4 LHCSA	–
C7792VXD12-A3.00Z5R	D4012T	27.4	T15	#1/2-20X1-1/4SHCSA	–
C7792VXD12-A3.00Z8R	D4012T	27.4	T15	#1/2-20X1-1/4SHCSA	–
C7792VXD12-A3.00Z9R	D4012T	27.4	TB15	#1/2-20X1-1/4SHCSA	–
C7792VXD12-A4.00Z6R	D4012T	27.4	T15	#5/8-18X1-1/2SHCSA	–
C7792VXD12-A4.00Z9R	D4012T	27.4	T15	#5/8-18X1-1/2SHCSA	–
C7792VXD12-A4.00Z11R	D4012T	27.4	TB15	#5/8-18X1-1/2SHCSA	–
C7792VXD12-A5.00Z8R	D4012T	27.4	T15	#3/4-16X1-3/4SHCSA	–
C7792VXD12-A5.00Z13R	D4012T	27.4	TB15	#3/4-16X1-3/4SHCSA	–
C7792VXD12-6.00Z12R	D4012T	27.4	T15	–	–
C7792VXD12-6.00Z15R	D4010T	27.4	TB15	–	–

- 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 • Metric

order number	catalog number	D1 max	D	D1	D6	L	Ap1 max	Z U
5666187	7792VXD12-A052Z4R	52	22	34	48	40	2,50	4
5656383	7792VXD12-A052Z5R	52	22	34	48	40	2,50	5
5656730	7792VXD12-A080Z5R	80	27	62	55	50	2,50	5
5659130	7792VXD12-160Z7R	160	40	142	110	63	2,50	7

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

Spare Parts

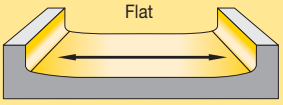
catalog number	insert screw	Nm	Torx driver	mounting screw
7792VXD12-A052Z4R	D4012T	3,1	T15	M10 1.5 X 25 SHCS
7792VXD12-A052Z5R	D4010T	3,1	T15	M10 1.5 X 25 SHCS
7792VXD12-A080Z5R	D4012T	3,1	T15	M12 X 1.75 X 30 SHCS
7792VXD12-160Z7R	D4012T	3,1	T15	–

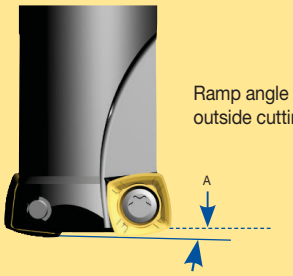
Technical Information (in)

order number	catalog number	dimension						max RPM
		facing pitch	ramping angle	helical hole min–max		ap max helical/ linear	a_e max plunging	
5666596	C7792VXD12CA1.25Z2R3	0.527	1.8	1.630	2.420	0.070	0.354	31,500
5665832	C7792VXD12CA1.2/1.5Z3	0.785	0.95	2.130	2.920	0.070	0.354	27,500
6025581	C7792VXD12-A1.50Z4R	0.785	0.95	2.130	2.920	0.070	0.354	27,500
5657237	C7792VXD12-A2.00Z3R	1.276	0.90	3.130	3.920	0.070	0.354	22,500
5667404	C7792VXD12-A2.00Z4R	1.276	0.90	3.130	3.920	0.070	0.354	22,500
5656382	C7792VXD12-A2.00Z5R	1.276	0.90	3.370	3.920	0.070	0.354	22,500
6025582	C7792VXD12-A2.00Z6R	1.276	0.90	3.130	3.920	0.070	0.354	22,500
5667809	C7792VXD12-A2.50Z4R	1.776	0.60	4.130	4.920	0.070	0.354	22,500
5656732	C7792VXD12-A2.50Z5R	1.776	0.60	4.130	4.920	0.070	0.354	22,500
6025583	C7792VXD12-A2.50Z7R	1.776	0.60	4.130	4.920	0.070	0.354	19,500
5665708	C7792VXD12-A3.00Z5R	2.276	0.45	5.130	5.920	0.070	0.354	17,500
5656919	C7792VXD12-A3.00Z8R	2.276	0.45	5.130	5.920	0.070	0.354	17,500
6025584	C7792VXD12-A3.00Z9R	2.276	0.45	5.130	5.920	0.070	0.354	17,500
5667833	C7792VXD12-A4.00Z6R	3.270	0.31	7.130	7.920	0.070	0.354	14,500
5656378	C7792VXD12-A4.00Z9R	3.270	0.31	7.130	7.920	0.070	0.354	14,500
6025585	C7792VXD12-A4.00Z11R	3.270	0.31	7.130	7.920	0.070	0.354	14,500
5667476	C7792VXD12-A5.00Z8R	4.270	0.24	9.130	9.920	0.070	0.354	13,000
6025586	C7792VXD12-A5.00Z13R	4.270	0.24	9.130	9.920	0.070	0.354	13,000
5656915	C7792VXD12-6.00Z12R	5.270	0.19	11.130	11.920	0.070	0.354	11,500
6025587	C7792VXD12-6.00Z15R	5.270	0.19	11.130	11.920	0.070	0.354	11,500
5659929	A7792VXD12SA1.25Z2R2	0.527	1.8	1.630	2.420	0.070	0.354	31,500
6025588	C7792VXD12CA1.25Z3R3	0.527	1.8	1.630	2.420	0.070	0.354	31,500
5667487	A7792VXD12SA1.5Z3R1.7	0.785	0.95	2.130	2.920	0.070	0.354	27,500
6025589	C7792VXD12CA1.50Z4R3	0.785	0.95	2.130	2.920	0.070	0.354	27,500

Helical Interpolation

Plunging





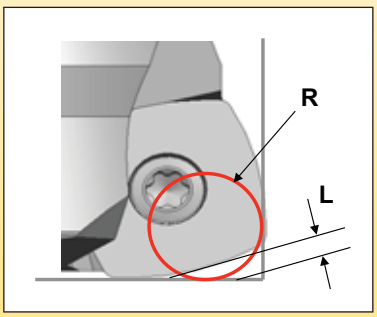
Ramp angle A uses one outside cutting edge only.

A = max ramp angle utilizing full face contact.

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 below and in the reference table.

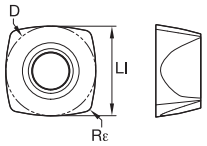
For finish pass applications:
Wiper facet for finishing use max. feed 0.031"



Programming Data (inch)			
Insert corner nose size (IC)	Rε	R	L
06	0.750	1.100	1.420
09	0.031	0.079	0.028
	0.047	0.089	0.026
12	0.031	0.098	0.040
	0.047	0.107	0.038
16	0.047	0.164	0.057

✦✦ 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 catalog number	ANSI catalog number	D mm	D in	LI mm	LI in	Rε mm	Rε in	GH2	KC522M	KCPK30	KCPM40	KCSM40	SC3025	SC6525	SP6519	X400	X500
Light Machining																	
XDPT120512ERD411	XDPT120512ERD411	12,70	.500	12,70	.500	1,2	.047	–	–	–	–	6187808	–	–	–	–	–
General Machining																	
XDLT120508ERD41	XDLT120508ERD41	12,70	.500	12,70	.500	0,8	.031	–	–	–	–	6441067	–	5652729	5654220	–	5653930
XDLT120508ERD721	XDLT120508ERD721	12,70	.500	12,70	.500	0,8	.031	5656252	–	–	–	–	–	–	–	–	–
XDPT120508ERD41	XDPT120508ERD41	12,70	.500	12,70	.500	0,8	.031	–	–	–	–	6187806	–	6010774	6010773	–	6010772
XDLT120512ERD411	XDLT120512ERD411	12,70	.500	12,70	.500	1,2	.047	–	–	–	–	6441068	–	–	5652899	–	5652248
XDPT120515SRGP	XDPT120515SRGP	12,70	.500	12,70	.500	1,5	.059	–	6074030	6074028	6074027	–	–	–	–	–	–
Heavy Machining																	
XDLW120508SRD	XDLW120508SRD	12,70	.500	12,70	.500	0,8	.031	–	–	–	–	–	5656214	–	–	5651223	5655109
XDPW120515SRD	XDPW120515SRD	12,70	.500	12,70	.500	1,5	.058	–	–	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 [IPT] • High-Feed

Light Machining	General Purpose	Heavy Machining

At .100 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	.011	**.041**	.066	.008	**.029**	.047	.006	**.022**	.035	.005	**.019**	.030	.005	**.017**	.028	.E..D721
.E..D41	.014	**.046**	.072	.010	**.033**	.051	.008	**.024**	.038	.007	**.021**	.033	.006	**.019**	.030	.E..D41
.E..D411	.014	**.046**	.072	.010	**.033**	.051	.008	**.024**	.038	.007	**.021**	.033	.006	**.019**	.030	.E..D411
.S..GP	.020	**.051**	.077	.015	**.036**	.055	.011	**.027**	.041	.009	**.024**	.035	.009	**.022**	.032	.S..GP
.S..D	.020	**.051**	.077	.015	**.036**	.055	.011	**.027**	.041	.009	**.024**	.036	.009	**.022**	.032	.S..D

At .070 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	.013	**.048**	.078	.010	**.035**	.056	.007	**.026**	.041	.006	**.022**	.036	.006	**.021**	.033	.E..D721
.E..D41	.017	**.054**	.086	.012	**.039**	.061	.009	**.029**	.045	.008	**.025**	.039	.007	**.023**	.036	.E..D41
.E..D411	.017	**.054**	.086	.012	**.039**	.061	.009	**.029**	.045	.008	**.025**	.039	.007	**.023**	.036	.E..D411
.S..GP	.024	**.061**	.092	.017	**.043**	.065	.013	**.032**	.048	.011	**.028**	.042	.010	**.026**	.038	.S..GP
.S..D	.024	**.061**	.092	.017	**.043**	.065	.013	**.032**	.048	.011	**.028**	.042	.010	**.026**	.038	.S..D

At .055 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	.015	**.054**	.088	.011	**.039**	.063	.008	**.029**	.046	.007	**.025**	.040	.007	**.023**	.037	.E..D721
.E..D41	.019	**.061**	.097	.014	**.044**	.069	.010	**.033**	.051	.009	**.028**	.044	.008	**.026**	.040	.E..D41
.E..D411	.019	**.061**	.097	.014	**.044**	.069	.010	**.033**	.051	.009	**.028**	.044	.008	**.026**	.040	.E..D411
.S..GP	.027	**.068**	.104	.019	**.049**	.073	.014	**.036**	.054	.013	**.031**	.047	.012	**.029**	.043	.S..GP
.S..D	.027	**.068**	.104	.019	**.049**	.074	.014	**.036**	.054	.013	**.031**	.047	.012	**.029**	.043	.S..D

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

Insert Geometry	Programmed Feed per Tooth (fz) Max .354" insert engagement (ae radial engagement)			Insert Geometry
.E..D721	.002	**.008**	.013	.E..D721
.E..D41	.003	**.009**	.014	.E..D41
.E..D411	.003	**.009**	.014	.E..D411
.S..GP	.004	**.010**	.015	.S..GP
.S..D	.004	**.010**	.015	.S..D

Recommended Starting Feeds [mm] • High-Feed

Light Machining	General Purpose	Heavy Machining

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) Max 9mm insert engagement (ae radial engagement)			Insert Geometry
.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	–	–	–	1295	**1115**	1065	1790	**1560**	1460	1165	**1015**	970	–	–	–
	2	–	–	–	1085	**950**	785	1100	**1000**	900	985	**855**	705	–	–	–
	3	–	–	–	1000	**855**	690	1000	**900**	805	900	**770**	625	–	–	–
	4	–	–	–	885	**720**	590	755	**690**	625	805	**675**	525	–	–	–
	5	–	–	–	720	**675**	590	1015	**900**	820	675	**605**	525	675	**575**	475
	6	–	–	–	655	**490**	395	625	**525**	475	590	**460**	360	590	**425**	310
M	1	–	–	–	805	**705**	655	805	**720**	605	770	**675**	605	820	**675**	560
	2	–	–	–	720	**625**	510	720	**625**	560	690	**590**	490	705	**575**	475
	3	–	–	–	560	**475**	375	575	**510**	460	510	**460**	360	575	**425**	330
K	1	985	**720**	475	900	**805**	720	1165	**1050**	950	–	–	–	–	–	–
	2	855	**625**	410	705	**625**	590	920	**820**	755	–	–	–	–	–	–
	3	720	**575**	395	590	**525**	475	770	**690**	625	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	475	**360**	280	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		SC3025			SC6525			SP6519			X400			X500		
P	1	–	–	–	1460	**1000**	560	1165	**855**	510	1015	**755**	475	1065	**785**	510
	2	–	–	–	1280	**885**	475	1015	**755**	460	900	**675**	410	950	**705**	460
	3	–	–	–	1150	**785**	410	900	**655**	395	785	**590**	375	820	**605**	395
	4	–	–	–	820	**575**	310	690	**490**	295	590	**425**	280	625	**475**	295
	5	–	–	–	625	**475**	310	560	**410**	280	–	–	–	510	**395**	280
	6	–	–	–	560	**395**	230	475	**330**	195	–	–	–	425	**310**	195
M	1	–	–	–	785	**705**	560	1065	**770**	460	–	–	–	985	**720**	460
	2	–	–	–	755	**625**	475	920	**675**	410	–	–	–	870	**625**	395
	3	–	–	–	575	**510**	360	770	**560**	330	–	–	–	705	**510**	310
K	1	1560	**1085**	590	1540	**1065**	575	1165	**870**	560	–	–	–	1015	**870**	675
	2	1310	**900**	475	1200	**820**	460	950	**690**	425	–	–	–	870	**705**	510
	3	1085	**755**	410	–	–	–	870	**625**	395	–	–	–	675	**560**	395
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	375	**280**	180	–	–	–
	2	–	–	–	–	–	–	–	–	–	310	**230**	130	–	–	–
	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	–	–	–	1035	**890**	850	1430	**1250**	1170	930	**810**	775	–	–	–
	2	–	–	–	870	**760**	630	880	**800**	720	790	**685**	565	–	–	–
	3	–	–	–	800	**685**	550	800	**720**	645	720	**615**	500	–	–	–
	4	–	–	–	710	**575**	470	605	**550**	500	645	**540**	420	–	–	–
	5	–	–	–	575	**540**	470	810	**720**	655	540	**485**	420	540	**460**	380
	6	–	–	–	525	**390**	315	500	**420**	385	470	**370**	290	470	**340**	250
M	1	–	–	–	645	565	525	645	**575**	485	615	**540**	485	655	**540**	450
	2	–	–	–	575	**500**	410	575	**500**	450	550	**470**	390	565	**460**	380
	3	–	–	–	450	**380**	300	460	**410**	370	410	**370**	290	460	**340**	265
K	1	790	**575**	380	720	**645**	575	930	**840**	760	–	–	–	–	–	–
	2	685	**500**	330	565	**500**	470	735	**655**	605	–	–	–	–	–	–
	3	575	**460**	315	470	**420**	380	615	**550**	500	–	–	–	–	–	–
N	1	3780	**2980**	1260	–	–	–	–	–	–	–	–	–	–	–	–
	2	3780	**2980**	1260	–	–	–	–	–	–	–	–	–	–	–	–
	3	2785	**2295**	930	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	130	**105**	80	–	–	–	130	**105**	90	130	**105**	80
	2	–	–	–	130	**105**	80	–	–	–	130	**105**	90	130	**105**	80
	3	–	–	–	155	**130**	80	–	–	–	155	**130**	90	155	**130**	80
	4	–	–	–	225	**155**	105	210	**155**	105	210	**155**	105	185	**155**	90
H	1	–	–	–	380	**290**	225	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		SC3025			SC6525			SP6519			X400			X500		
P	1	–	–	–	1170	**800**	450	930	**685**	410	810	**605**	380	850	**630**	410
	2	–	–	–	1025	**710**	380	810	**605**	370	720	**540**	330	760	**565**	370
	3	–	–	–	920	**630**	330	720	**525**	315	630	**470**	300	655	**485**	315
	4	–	–	–	655	**460**	250	550	**390**	235	470	**340**	225	500	**380**	235
	5	–	–	–	500	**380**	250	450	**330**	225	–	–	–	410	**315**	225
	6	–	–	–	450	**315**	185	380	**265**	155	–	–	–	340	**250**	155
M	1	–	–	–	630	565	450	850	**615**	370	–	–	–	790	**575**	370
	2	–	–	–	605	**500**	380	735	**540**	330	–	–	–	695	**500**	315
	3	–	–	–	460	**410**	290	615	**450**	265	–	–	–	565	**410**	250
K	1	1250	**870**	470	1230	**850**	460	930	**695**	450	–	–	–	810	**695**	540
	2	1050	**720**	380	960	**655**	370	760	**550**	340	–	–	–	695	**565**	410
	3	870	**605**	330	–	–	–	695	**500**	315	–	–	–	540	**450**	315
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	170	**130**	80	–	–	–	155	**105**	80
	2	–	–	–	–	–	–	155	**105**	65	–	–	–	145	**105**	65
	3	–	–	–	–	–	–	170	**130**	80	–	–	–	155	**130**	80
	4	–	–	–	–	–	–	250	**185**	120	–	–	–	235	**170**	105
H	1	–	–	–	–	–	–	–	–	–	300	**225**	145	–	–	–
	2	–	–	–	–	–	–	–	–	–	250	**185**	105	–	–	–
	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	–	–	–	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™ 75° High-Feed

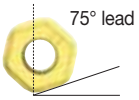
Primary Application

- 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 75° Series — Most comprehensive high-feed milling platform. Provides excellent cost per cutting edge. Equipped with standard Dodeka inserts.

Dodeka Mini High-Feed 75°
Dodeka High-Feed 75°



12 True Cutting Edges

Dodeka Mini	**Ap1 max = .065"**
Dodeka	**Ap1 max = .087"**

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

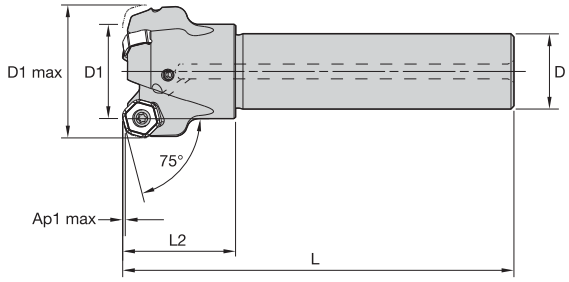
Dodeka Mini High-Feed

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.

- High-feed capability.
- .065" depth-of-cut capability.
- Twelve cutting edges per insert.



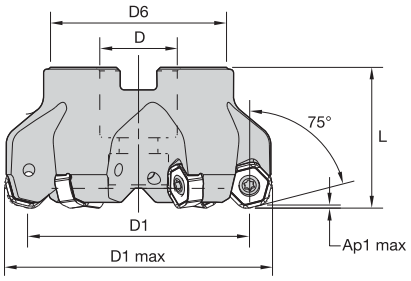
Dodeka Mini High-Feed 75° • Cylindrical End Mills

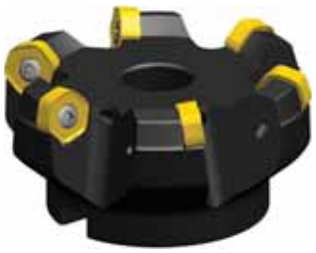
order number	catalog number	D1	D1 max	D	L	L2	Ap1 max	Z	lbs	max RPM
4136410	**KSHRHF125D04C100HN43L520**	1.250	1.768	1.000	5.200	1.500	.065	4	1.28	17600

Spare Parts

D1	insert screw	in. lbs.	wrench
1.250	**193.492**	31	**170.025**

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





Dodeka Mini High-Feed 75° • Shell Mills

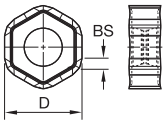
order number	catalog number	D1	D1 max	D	D6	L	Ap1 max	Z	lbs	max RPM
4136412	**KSHRHF200HN43M3**	2.000	2.517	.750	1.750	1.575	.065	5	1.10	12500
4136414	**KSHRHF300HN43M4**	3.000	3.517	1.000	2.189	1.750	.065	8	2.21	8300

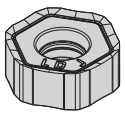
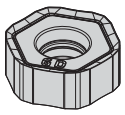
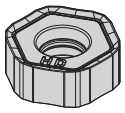
Spare Parts

D1	insert screw	in. lbs.	wrench	socket-head cap screw
2.000	**193.492**	31	**170.025**	**S445**
3.000	**193.492**	31	**170.025**	**S458**

✦✦ 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 catalog number	ANSI catalog number	D mm	D in	BS mm	BS in	KC410M	KC510M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
	Light Machining													
	HNGJ0604ANFNLDJ	HNGJ43ANFNLDJ	12	.472	1,54	.060	4121575	–	–	–	–	–	–	–
	HNGJ0604ANENLD	HNGJ43ANENLD	12	.472	1,54	.060	–	4121576	4121578	–	4119227	4119190	5550701	6165862
	General Machining													
	HNPJ0604ANSNGD	HNPJ43ANSNGD	12	.472	1,45	.057	–	–	4119697	4119701	4119699	4119700	5550703	6165759
	Heavy Machining													
	HNGJ0604ANSNHD	HNGJ43ANSNHD	12	.472	1,45	.057	–	–	–	–	–	–	6039659	–
	HNPJ0604ANSNHD	HNPJ43ANSNHD	12	.472	1,45	.057	–	–	–	4119229	–	4119228	5550702	–
	HNPJ060432ANSNHD	HNPJ438ANSNHD	12	.472	—	—	–	–	–	–	–	–	–	6165861

Recommended Starting Feeds

Recommended Starting Feeds [IPT]

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	.018	**.051**	.089	.013	**.036**	.063	.010	**.027**	.047	.008	**.024**	.041	.008	**.022**	.037	.F..LDJ
.E..LD	.020	**.066**	.112	.015	**.047**	.079	.011	**.035**	.058	.010	**.030**	.051	.009	**.028**	.046	.E..LD
.S..GD	.036	**.086**	.132	.026	**.061**	.092	.019	**.045**	.068	.017	**.039**	.059	.015	**.036**	.054	.S..GD
.S..HD	.036	**.093**	.153	.026	**.066**	.106	.019	**.049**	.078	.017	**.042**	.068	.015	**.039**	.062	.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			KC522M			KC725M		
P	1	–	–	–	–	–	–	1295	**1115**	1065	1015	**900**	855
	2	–	–	–	–	–	–	1085	**950**	785	870	**755**	625
	3	–	–	–	–	–	–	1000	**855**	690	785	**675**	560
	4	–	–	–	970	**785**	675	885	**720**	590	705	**590**	475
	5	–	–	–	–	–	–	720	**675**	590	590	**525**	475
	6	–	–	–	–	–	–	655	**490**	395	510	**395**	310
M	1	–	–	–	–	–	–	805	**705**	655	675	**590**	525
	2	–	–	–	–	–	–	720	**625**	510	605	**510**	425
	3	–	–	–	–	–	–	560	**475**	375	460	**395**	310
K	1	–	–	–	1165	**1050**	950	900	**805**	720	–	–	–
	2	–	–	–	900	**805**	755	705	**625**	590	–	–	–
	3	–	–	–	770	**690**	625	590	**525**	475	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	625	**510**	360	475	**360**	280	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	1790	**1560**	1460	1165	**1015**	970	–	–	–
	2	–	–	–	1100	**1000**	900	985	**855**	705	–	–	–
	3	–	–	–	1000	**900**	805	900	**770**	625	–	–	–
	4	–	–	–	755	**690**	625	805	**675**	525	–	–	–
	5	–	–	–	1015	**900**	820	675	**605**	525	675	**575**	475
	6	–	–	–	625	**525**	475	590	**460**	360	590	**425**	310
M	1	–	–	–	805	**720**	605	770	**675**	605	820	**675**	560
	2	–	–	–	720	**625**	560	690	**590**	490	705	**575**	475
	3	–	–	–	575	**510**	460	510	**460**	360	575	**425**	330
K	1	1655	**1510**	1345	1165	**1050**	950	–	–	–	–	–	–
	2	1310	**1165**	1085	920	**820**	755	–	–	–	–	–	–
	3	1100	**985**	900	770	**690**	625	–	–	–	–	–	–
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			KC522M			KC725M		
P	1	–	–	–	–	–	–	1035	**890**	850	410	**380**	315
	2	–	–	–	–	–	–	870	**760**	630	380	**340**	330
	3	–	–	–	–	–	–	800	**685**	550	340	**315**	290
	4	–	–	–	775	**630**	540	710	**575**	470	315	**290**	250
	5	–	–	–	–	–	–	575	**540**	470	290	**250**	235
	6	–	–	–	–	–	–	525	**390**	315	250	**235**	225
M	1	–	–	–	–	–	–	645	**565**	525	330	**290**	250
	2	–	–	–	–	–	–	575	**500**	410	300	**265**	235
	3	–	–	–	–	–	–	450	**380**	300	225	**185**	170
K	1	–	–	–	930	**840**	760	720	**645**	575	–	–	–
	2	–	–	–	720	**645**	605	565	**500**	470	–	–	–
	3	–	–	–	615	**550**	500	470	**420**	380	–	–	–
N	1	3830	**3400**	3135	2020	**1795**	1650	–	–	–	–	–	–
	2	3400	**3135**	2890	1825	**1680**	1550	–	–	–	–	–	–
	3	3400	**3135**	2890	1825	**1680**	1550	–	–	–	–	–	–
S	1	–	–	–	–	–	–	130	**105**	80	–	–	–
	2	–	–	–	–	–	–	130	**105**	80	–	–	–
	3	–	–	–	–	–	–	155	**130**	80	–	–	–
	4	–	–	–	–	–	–	225	**155**	105	–	–	–
H	1	–	–	–	500	**410**	290	380	**290**	225	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

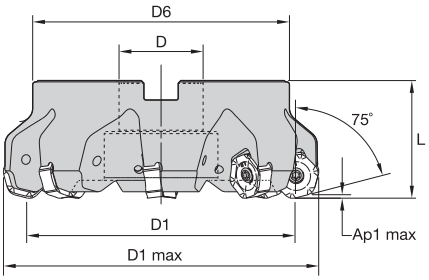
Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	1430	**1250**	1170	930	**810**	775	–	–	–
	2	–	–	–	880	**800**	720	790	**685**	565	–	–	–
	3	–	–	–	800	**720**	645	720	**615**	500	–	–	–
	4	–	–	–	605	**550**	500	645	**540**	420	–	–	–
	5	–	–	–	810	**720**	655	540	**485**	420	540	**460**	380
	6	–	–	–	500	**420**	385	470	**370**	290	470	**340**	250
M	1	–	–	–	645	**575**	485	615	**540**	485	655	**540**	450
	2	–	–	–	575	**500**	450	550	**470**	390	565	**460**	380
	3	–	–	–	460	**410**	370	410	**370**	290	460	**340**	265
K	1	1325	**1210**	1075	930	**840**	760	–	–	–	–	–	–
	2	1050	**930**	870	735	**655**	605	–	–	–	–	–	–
	3	880	**790**	720	615	**550**	500	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	130	**105**	90	130	**105**	80
	2	–	–	–	–	–	–	130	**105**	90	130	**105**	80
	3	–	–	–	–	–	–	155	**130**	90	155	**130**	80
	4	–	–	–	210	**155**	105	210	**155**	105	185	**155**	90
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

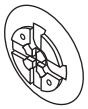
- High feed rates for rough face milling.
- .087" depth-of-cut capability.
- Twelve cutting edges per insert.



Dodeka High-Feed 75° • Shell Mills

order number	catalog number	D1	D1 max	D	D6	L	Ap1 max	Z	lbs	max RPM
4047419	**KSHRHF200HN5315C3**	2.000	2.746	.750	1.750	1.595	.087	4	1.13	11300
4047420	**KSHRHF250HN5315C3**	2.500	3.245	.750	2.144	1.595	.087	5	1.60	8900
4047421	**KSHRHF300HN5315C4**	3.000	3.745	1.000	2.346	1.770	.087	6	2.23	7400
4047422	**KSHRHF400HN5315C5**	4.000	4.744	1.250	3.819	1.770	.087	8	3.91	5800
4047583	**KSHRHF500HN5315C6**	5.000	5.416	1.500	3.810	2.400	.087	9	6.87	4700
4047584	**KSHRHF600HN5315C8**	6.000	6.748	2.000	4.880	2.400	.087	12	10.51	4000

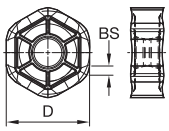
Spare Parts

D1	insert screw	in. lbs.	wrench	socket-head cap screw	socket-head cap screw with coolant groove	coolant lock screw	coolant lock screw	 coolant shower plate
2.000	**193.492**	31	**170.025**	**S445**	**S445CG**	**–**	**–**	**–**
2.500	**193.492**	31	**170.025**	**S445**	**S445CG**	**–**	**–**	**–**
3.000	**193.492**	31	**170.025**	**S458**	**S458CG**	**–**	**–**	**–**
4.000	**193.492**	31	**170.025**	**–**	**–**	**S2162C**	**–**	**–**
5.000	**193.492**	31	**170.025**	**–**	**–**	**–**	**420.201**	**470.240**
6.000	**193.492**	31	**170.025**	**–**	**–**	**–**	**420.241**	**470.241**

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		✦✦			✧✧			
K3–K2		✦✦				✧✧		
N1	✦✦							
N2	✦✦							
S1				✦				✦✦
S2				✦				✦✦
S3			✦	✦				✦✦
S4			✦	✦				✦✦



ISO catalog number	ANSI catalog number	D mm	D in	BS mm	BS in	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
Light Machining													
HNGJ0905ANFNLDJ	HNGJ535ANFNLDJ	16	.625	1,80	.071	3849320	–	–	–	–	–	–	–
HNGJ0905ANENLD	HNGJ535ANENLD	16	.625	1,80	.071	–	3331174	3093561	3331175	3330952	3331178	–	6178103
General Machining													
HNGJ0905ANSNGD	HNGJ535ANSNGD	16	.625	1,80	.071	–	–	–	3331176	3331173	3093719	5550793	6178104
HNPJ0905ANSNGD	HNPJ535ANSNGD	16	.625	1,80	.071	–	–	3774250	3763727	3763725	3763728	5550795	–
Heavy Machining													
HNGJ0905ANSNHD	HNGJ535ANSNHD	16	.625	1,66	.065	–	–	–	3556331	3556330	3556332	5550794	6178105
HNPJ0905ANSNHD	HNPJ535ANSNHD	16	.625	1,66	.065	–	–	3774249	3763723	3763185	3763724	5550796	6178108
HNGJ090543ANSNHD	HNGJ53511ANSNHD	16	.625	—	—	–	–	–	3556374	–	3556375	–	6178106
HNPJ090543ANSNHD	HNPJ53511ANSNHD	16	.625	—	—	–	–	–	–	3763729	3763731	5550797	6178109

Recommended Starting Feeds

Recommended Starting Feeds [IPT]

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	.018	**.051**	.089	.013	**.036**	.063	.010	**.027**	.047	.008	**.024**	.041	.008	**.022**	.037	.F..LDJ
.E..LD	.025	**.073**	.112	.018	**.052**	.079	.014	**.039**	.058	.012	**.034**	.051	.011	**.031**	.046	.E..LD
.S..GD	.036	**.079**	.129	.026	**.056**	.090	.019	**.042**	.066	.017	**.036**	.058	.015	**.033**	.053	.S..GD
.S..HD	.036	**.093**	.153	.026	**.066**	.106	.019	**.049**	.078	.017	**.042**	.068	.015	**.039**	.062	.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		KC522M			KC725M			KCK15			KCPK30		
P	1	1295	**1115**	1065	1015	**900**	855	–	–	–	1790	**1560**	1460
	2	1085	**950**	785	870	**755**	625	–	–	–	1100	**1000**	900
	3	1000	**855**	690	785	**675**	560	–	–	–	1000	**900**	805
	4	885	**720**	590	705	**590**	475	–	–	–	755	**690**	625
	5	720	**675**	590	590	**525**	475	–	–	–	1015	**900**	820
	6	655	**490**	395	510	**395**	310	–	–	–	625	**525**	475
M	1	805	**705**	655	675	**590**	525	–	–	–	805	**720**	605
	2	720	**625**	510	605	**510**	425	–	–	–	720	**625**	560
	3	560	**475**	375	460	**395**	310	–	–	–	575	**510**	460
K	1	900	**805**	720	–	–	–	1655	**1510**	1345	1165	**1050**	950
	2	705	**625**	590	–	–	–	1310	**1165**	1085	920	**820**	755
	3	590	**525**	475	–	–	–	1100	**985**	900	770	**690**	625
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	475	**360**	280	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCPM40			KCSM40			KY3500		
P	1	1165	**1015**	970	–	–	–	–	–	–
	2	985	**855**	705	–	–	–	–	–	–
	3	900	**770**	625	–	–	–	–	–	–
	4	805	**675**	525	–	–	–	–	–	–
	5	675	**605**	525	675	**575**	475	–	–	–
	6	590	**460**	360	590	**425**	310	–	–	–
M	1	770	**675**	605	820	**675**	560	–	–	–
	2	690	**590**	490	705	**575**	475	–	–	–
	3	510	**460**	360	575	**425**	330	–	–	–
K	1	–	–	–	–	–	–	3165	**2870**	2560
	2	–	–	–	–	–	–	2495	**2245**	2085
	3	–	–	–	–	–	–	–	–	–
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

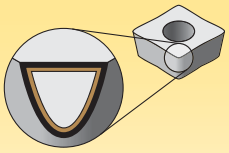
Material Group		KC522M			KC725M			KCK15			KCPK30		
P	1	1035	**890**	850	810	**720**	685	–	**–**	–	1430	**1250**	1170
	2	870	**760**	630	695	**605**	500	–	**–**	–	880	**800**	720
	3	800	**685**	550	630	**540**	450	–	**–**	–	800	**720**	645
	4	710	**575**	470	565	**470**	380	–	**–**	–	605	**550**	500
	5	575	**540**	470	470	**420**	380	–	**–**	–	810	**720**	655
	6	525	**390**	315	410	**315**	250	–	**–**	–	500	**420**	385
M	1	645	**565**	525	540	**470**	420	–	**–**	–	645	**575**	485
	2	575	**500**	410	485	**410**	340	–	**–**	–	575	**500**	450
	3	450	**380**	300	370	**315**	250	–	**–**	–	460	**410**	370
K	1	720	**645**	575	–	**–**	–	1325	**1210**	1075	930	**840**	760
	2	565	**500**	470	–	**–**	–	1050	**930**	870	735	**655**	605
	3	470	**420**	380	–	**–**	–	880	**790**	720	615	**550**	500
N	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
S	1	130	**105**	80	105	**90**	80	–	**–**	–	–	**–**	–
	2	130	**105**	80	105	**90**	80	–	**–**	–	–	**–**	–
	3	155	**130**	80	145	**105**	80	–	**–**	–	–	**–**	–
	4	225	**155**	105	170	**145**	90	–	**–**	–	210	**155**	105
H	1	380	**290**	225	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–

Material Group		KCPM40			KCSM40			KY3500		
P	1	930	**810**	775	–	**–**	–	–	**–**	–
	2	790	**685**	565	–	**–**	–	–	**–**	–
	3	720	**615**	500	–	**–**	–	–	**–**	–
	4	645	**540**	420	–	**–**	–	–	**–**	–
	5	540	**485**	420	540	**460**	380	–	**–**	–
	6	470	**370**	290	470	**340**	250	–	**–**	–
M	1	615	**540**	485	655	**540**	450	–	**–**	–
	2	550	**470**	390	565	**460**	380	–	**–**	–
	3	410	**370**	290	460	**340**	265	–	**–**	–
K	1	–	**–**	–	–	**–**	–	2530	**2295**	2050
	2	–	**–**	–	–	**–**	–	1995	**1795**	1670
	3	–	**–**	–	–	**–**	–	–	**–**	–
N	1	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–
S	1	130	**105**	90	130	**105**	80	–	**–**	–
	2	130	**105**	90	130	**105**	80	–	**–**	–
	3	155	**130**	90	155	**130**	80	–	**–**	–
	4	210	**155**	105	185	**155**	90	–	**–**	–
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

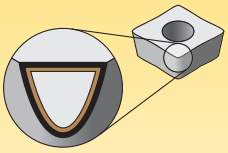


Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

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

Grades

Coating	Grade Description		05	10	15	20	25	30	35	40	45
			wear resistance ← → toughness								
GH2	Uncoated, fine grained carbide grade with good strength. GH is suitable for machining of aluminum and non-ferrous materials. Also a 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 buring, and generates excellent surface finishes. The grade is best suited for aluminum 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 aluminum <10% silicon and other non-ferrous materials.	N									
KC510M	Coated carbide grade with a TiAiN coating (PVD). KC510M is a highly wear-resistant grade primarily for use in milling aluminum 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 a 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									

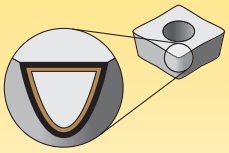


Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

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

Grades

Coating	Grade Description	wear resistance ← → toughness	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						■	■	■	
		S						■	■	■	
KCK15	Coated carbide grade with CVD multilayer coating (TiN/MT TiCN/Al_2O_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		■	■	■					
KCPK30	Coated carbide grade with CVD multilayer (TiN/TiCN/Al_2O_3) and advanced Beyond™ post-coat treatment. Substrate is very tough. KCPK30 has a wide application area in general and rough 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_3N_4 primarily for use in light to general machining of gray cast iron and ferritic ductile cast iron. Dry machining is preferred while using this grade.	K				■	■	■	■		



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

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

Grades

Coating	Grade Description	wear resistance ⟷ toughness	05	10	15	20	25	30	35	40	45
SC3025	Coated carbide grade with CVD multilayer coating (TiN/TiCN/Al_2O_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.	K									
SC6525	Coated carbide grade with CVD multi-layer (TiN/TiCN/Al_2O_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									
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 H									
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 H									
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 S									

platform	unequal fluting	series		flute Z	D1 diameter (inch)	length of cut (inch)	helix
High Performance							
HARVI™ I Duo-Lock™	✓	UKDV		ZU=4	3/8–1-1/4	1.5 x D	37°/39°
HARVI I Duo-Lock	✓	ULDV		ZU=4	3/8–1-1/4	1.5 x D	37°/39°
HARVI I	✓	HPHV/UADE		ZU=4	1/8–1-1/4	1.3–6 x D1	38°
HARVI I	✓	HPHVBN		ZU=4	1/8–1	1.25–4 x D1	38°
HARVI II	✓	UCDE		ZU=5	3/16–1	1.75–3.3 x D1	38°
HARVI II	✓	UGDE		ZU=5	1/4–1	5 x D	43°
HARVI III	✓	UJDE		ZU=6	3/8–1	1.33–4 x D	38°
HARVI III Ball Nose	✓	UJBE		ZU=6	3/8–1	1.5–2,5 x D	38°
Rougher		MDRHEC		ZU=3 ZU=4 ZU=5	1/4–1	1.25–3 x D	20°
Rougher		HPRST		ZU=3 ZU=4 ZU=6	1/4–1	1.25–3 x D	45°
Aluminum MaxiMet™		ABDF		ZU=2	3/16–3/4	~2 x D1	45°
Aluminum MaxiMet		ABDE		ZU=3	1/4–3/4	~2 x D1	38°
Aluminum MaxiMet		ABDE extended neck		ZU=3	3/8–1/2	1.25–1.5 x D1	38°
General Purpose							
GOmill™ GP		2SE		ZU=2	1/64–1	1.66–4 x D	30°
GOmill GP		2BN		ZU=2	1/32–1	1.66–3 x D	30°
GOmill GP		3SE		ZU=3	1/32–1	1.33–4 x D	30°
GOmill GP		4SE		ZU=4	1/64–1	1.66–4 x D	30°
GOmill GP		4BN		ZU=4	1/32–1	1.33–4 x D	30°

center cutting	neck				P	M	K	N	S	H	product page(s)	cutting data page(s)
High Performance *(continued)*												
✓	✓	✓	✓	✓	●	●			○	○	B160	B162
✓	✓	✓	✓	✓	●	●	○		●	○	B161	B163
✓		✓	✓	✓	●	●	●		○	○	B168–B171	B173
✓		✓	✓		●	●	●		○	○	B172	B174
		✓	✓	Max 3°	●	●	●		○	○	B178	B179
			✓		●	●	○		●		B182	B183
✓			✓	✓	○	●			●	○	B186–B187	B188
✓			✓	✓	○	●			●	○	B192	B193
✓		✓	✓	✓	●	●	●			○	B196	B198
✓		✓	✓	✓	○	●	○		●	●	B197	B199
✓		✓	✓	✓				●			B202	B205
✓		✓	✓	✓				●			B203	B205
✓	✓	✓	✓	✓				●			B204	B205
General Purpose *(continued)*												
✓		✓	✓	✓	●	●	●				B208–B209	B212
✓		✓	✓		●	●	●				B210–B211	B213
✓		✓	✓	✓	●	●	●				B216	B217
✓		✓	✓	✓	●	●	●				B220–B221	B224
✓		✓	✓		●	●	●				B222–B223	B225

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.
- Extensive offering of straight and conical shank tools, and integral adapters that include CV, BT, and HSK.

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.

Customization

- Intermediate diameters are available between 3/8–1 1/4".
- 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 3/8–1 1/4".
- Steel extensions with Safe-Lock™ by HAIMER shanks to prevent pullout.

High-performance modular solid carbide end mills.

Intelligent Thread
Ensures that stress levels remain below critical values.

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.

3rd Contact Surface
Delivers high stiffness and highest accuracy below .0002" runout.

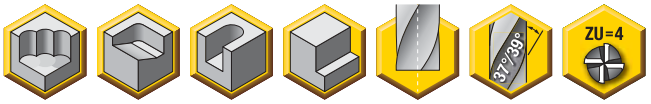
DUO-LOCK®
by HAIMER® and Kennametal

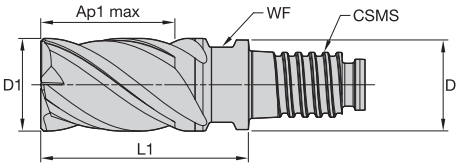
Unequal Flute Spacing
Reduces vibrations.
Improves surface finish.

Double Cone
Eliminates expensive presetting processes by providing an axial .0004" repeatability.

37°/ 39° Variable Helix Technology
Minimizes chatter and harmonics for smoother machining.

- Asymmetrical flute spacing and variable helix configuration minimize chatter and harmonics for smoother machining.
- Center cutting.
- Single tool for both roughing and finishing, reducing setups.
- Standard items listed. Additional styles and coatings made-to-order.

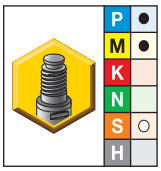




End Mill Tolerances

D1	tolerance e8
13/32–23/32"	-0,00126"/-0,00232"
23/32–1-3/16"	-0,00157"/-0,00287"
> 1-3/16"	-0,00197"/-0,00350"

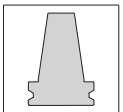
UKDV • 4 Flute • Inch



grade KCPM15

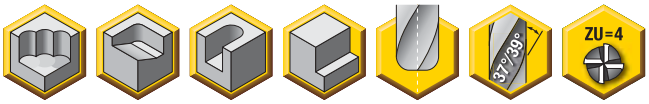
● first choice
○ alternate choice

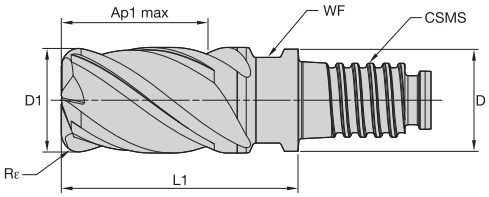
order #	catalog #	D1	D	Ap1 max	L1	CSMS system size	WF
6072333	UKDV0375Y4CU	3/8	.359	9/16	.843	DL10	.315
6072334	UKDV0500Y4CU	1/2	.480	3/4	1.126	DL12	.374
6072335	UKDV0625Y4CU	5/8	.605	15/16	1.406	DL16	.512
6072337	UKDV0750Y4CU	3/4	.730	1 1/8	1.689	DL20	.630
6072338	UKDV1000Y4CU	1	.961	1 1/2	2.252	DL25	.827
6072339	UKDV1250Y4CU	1 1/4	1.211	1 7/8	2.803	DL32	1.102



B164

- Asymmetrical flute spacing and variable helix configuration minimize chatter and harmonics for smoother machining.
- Center cutting.
- Single tool for both roughing and finishing, reducing setups.
- Standard items listed. Additional styles and coatings made-to-order.

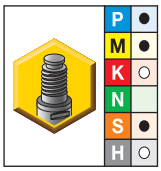




End Mill Tolerances

D1	tolerance e8
13/32–23/32"	-0,00126"/-0,00232"
23/32–1-3/16"	-0,00157"/-0,00287"
> 1-3/16"	-0,00197"/-0,00350"

ULDV • 4 Flute • Inch



grade KCSM15

● first choice
○ alternate choice

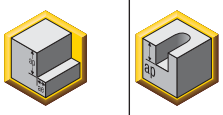
order #	catalog #	D1	D	Ap1 max	L1	CSMS system size	WF	Rε
6072347	ULDV0375Y4CQA	3/8	.359	9/16	.843	DL10	.315	.015
6072348	ULDV0375Y4CQB	3/8	.359	9/16	.843	DL10	.315	.030
6072349	ULDV0375Y4CQC	3/8	.359	9/16	.843	DL10	.315	.060
6072350	ULDV0375Y4CQD	3/8	.359	9/16	.843	DL10	.315	.090
6072351	ULDV0500Y4CQA	1/2	.480	3/4	1.126	DL12	.374	.015
6072352	ULDV0500Y4CQB	1/2	.480	3/4	1.126	DL12	.374	.030
6072353	ULDV0500Y4CQC	1/2	.480	3/4	1.126	DL12	.374	.060
6072354	ULDV0500Y4CQD	1/2	.480	3/4	1.126	DL12	.374	.090
6072355	ULDV0500Y4CQE	1/2	.480	3/4	1.126	DL12	.374	.120
6072356	ULDV0625Y4CQA	5/8	.605	15/16	1.406	DL16	.512	.015
6072357	ULDV0625Y4CQB	5/8	.605	15/16	1.406	DL16	.512	.030
6072359	ULDV0625Y4CQD	5/8	.605	15/16	1.406	DL16	.512	.120
6072360	ULDV0625Y4CQE	5/8	.605	15/16	1.406	DL16	.512	.120
6072358	ULDV0625Y4CQC	5/8	.605	15/16	1.406	DL16	.512	.060
6072361	ULDV0750Y4CQB	3/4	.730	1 1/8	1.689	DL20	.630	.030
6072362	ULDV0750Y4CQC	3/4	.730	1 1/8	1.689	DL20	.630	.060
6072363	ULDV0750Y4CQD	3/4	.730	1 1/8	1.689	DL20	.630	.090
6072364	ULDV0750Y4CQE	3/4	.730	1 1/8	1.689	DL20	.630	.120
6072365	ULDV1000Y4CQB	1	.961	1 1/2	2.252	DL25	.827	.030
6072366	ULDV1000Y4CQC	1	.961	1 1/2	2.252	DL25	.827	.060
6072367	ULDV1000Y4CQD	1	.961	1 1/2	2.252	DL25	.827	.090
6072368	ULDV1000Y4CQE	1	.961	1 1/2	2.252	DL25	.827	.120
6072369	ULDV1000Y4CQF	1	.961	1 1/2	2.252	DL25	.827	.250
6072370	ULDV1250Y4CQD	1 1/4	1.211	1 7/8	2.803	DL32	1.102	.090
6072381	ULDV1250Y4CQF	1 1/4	1.211	1 7/8	2.803	DL32	1.102	.250

HARVI • UKDV • Asymmetrical Flute Spacing

Material Group		Side Milling (A) and Slotting (B)			short			medium			long			Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.						
		A		B	adapter reach									D1 — Diameter						
					KCPM15			KCPM15			KCPM15									
					Cutting Speed — vc SFM			Cutting Speed — vc SFM			Cutting Speed — vc SFM			frac.	3/8	1/2	5/8	3/4	1	1 1/4
		ap	ae	ap	min		max	min		max	min		max	dec.	.3750	.5000	.6250	.7500	1.0000	1.2500
P	0	1.5 x D	0.5 x D	1 x D	490	–	660	441	–	594	441	–	594	IPT	.0023	.0029	.0034	.0037	.0042	.0042
	1	1.5 x D	0.5 x D	1 x D	490	–	660	441	–	594	441	–	594	IPT	.0023	.0029	.0034	.0037	.0042	.0042
	2	1.5 x D	0.5 x D	1 x D	460	–	620	414	–	558	414	–	558	IPT	.0023	.0029	.0034	.0037	.0042	.0042
	3	1.5 x D	0.5 x D	1 x D	390	–	520	351	–	468	351	–	468	IPT	.0019	.0025	.0029	.0033	.0041	.0041
	4	1.5 x D	0.4 x D	0.75 x D	300	–	490	270	–	441	270	–	441	IPT	.0017	.0022	.0026	.0029	.0034	.0034
	5	1.5 x D	0.4 x D	1 x D	200	–	330	170	–	280.5	160	–	264	IPT	.0016	.0020	.0023	.0026	.0033	.0033
	6	1.5 x D	0.4 x D	0.75 x D	160	–	250	136	–	212.5	128	–	200	IPT	.0013	.0016	.0019	.0021	.0024	.0024
M	1	1.5 x D	0.4 x D	1 x D	300	–	380	240	–	304	210	–	266	IPT	.0019	.0025	.0029	.0033	.0041	.0041
	2	1.5 x D	0.4 x D	1 x D	200	–	260	160	–	208	140	–	182	IPT	.0016	.0020	.0023	.0026	.0033	.0033
	3	1.5 x D	0.4 x D	1 x D	200	–	230	160	–	184	140	–	161	IPT	.0013	.0016	.0019	.0021	.0024	.0024
S	1	1.5 x D	0.3 x D	0.3 x D	160	–	300	128	–	240	96	–	180	IPT	.0019	.0025	.0029	.0033	.0041	.0041
	2	1.5 x D	0.3 x D	0.3 x D	80	–	130	64	–	104	48	–	78	IPT	.0010	.0013	.0015	.0018	.0022	.0022
	3	1.5 x D	0.3 x D	0.3 x D	80	–	130	64	–	104	48	–	78	IPT	.0010	.0013	.0015	.0018	.0022	.0022
	4	1.5 x D	0.4 x D	1 x D	160	–	200	128	–	160	96	–	120	IPT	.0014	.0018	.0021	.0024	.0030	.0030

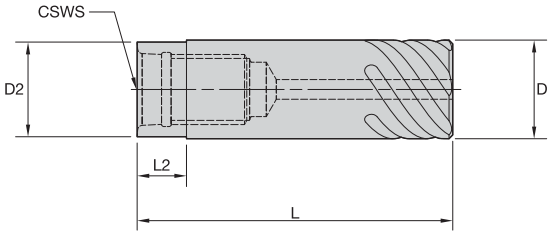
NOTE: Those guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) 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 (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.						
		A		B	adapter reach									D1 — Diameter						
					KCSM15			KCSM15			KCSM15									
					Cutting Speed — vc SFM			Cutting Speed — vc SFM			Cutting Speed — vc SFM			frac.	3/8	1/2	5/8	3/4	1	1 1/4
		ap	ae	ap	min		max	min		max	min		max	dec.	.3750	.5000	.6250	.7500	1.2500	1.2500
P	0	1.5 x D	0.5 x D	1 x D	490	–	660	441	–	594	441	–	594	IPT	.0023	.0029	.0034	.0037	.0042	.0042
	1	1.5 x D	0.5 x D	1 x D	490	–	660	441	–	594	441	–	594	IPT	.0023	.0029	.0034	.0037	.0042	.0042
	2	1.5 x D	0.5 x D	1 x D	460	–	620	414	–	558	414	–	558	IPT	.0023	.0029	.0034	.0037	.0042	.0042
	3	1.5 x D	0.5 x D	1 x D	390	–	520	351	–	468	351	–	468	IPT	.0019	.0025	.0029	.0033	.0041	.0041
	4	1.5 x D	0.4 x D	0.75 x D	300	–	490	270	–	441	270	–	441	IPT	.0017	.0022	.0026	.0029	.0034	.0034
	5	1.5 x D	0.4 x D	1 x D	200	–	330	170	–	280.5	160	–	264	IPT	.0016	.0020	.0023	.0026	.0033	.0033
	6	1.5 x D	0.4 x D	0.75 x D	160	–	250	136	–	212.5	128	–	200	IPT	.0013	.0016	.0019	.0021	.0024	.0024
M	1	1.5 x D	0.4 x D	1 x D	300	–	380	240	–	304	210	–	266	IPT	.0019	.0025	.0029	.0033	.0041	.0041
	2	1.5 x D	0.4 x D	1 x D	200	–	260	160	–	208	140	–	182	IPT	.0016	.0020	.0023	.0026	.0033	.0033
	3	1.5 x D	0.4 x D	1 x D	200	–	230	160	–	184	140	–	161	IPT	.0013	.0016	.0019	.0021	.0024	.0024
K	1	1.5 x D	0.5 x D	1 x D	390	–	490	351	–	441	351	–	441	IPT	.0023	.0029	.0034	.0037	.0042	.0042
	2	1.5 x D	0.5 x D	1 x D	360	–	460	324	–	414	324	–	414	IPT	.0019	.0025	.0029	.0033	.0041	.0041
	3	1.5 x D	0.5 x D	1 x D	360	–	430	324	–	387	324	–	387	IPT	.0016	.0020	.0023	.0026	.0033	.0033
S	1	1.5 x D	0.3 x D	0.3 x D	160	–	300	128	–	240	96	–	180	IPT	.0019	.0025	.0029	.0033	.0041	.0041
	2	1.5 x D	0.3 x D	0.3 x D	80	–	130	64	–	104	48	–	78	IPT	.0010	.0013	.0015	.0018	.0022	.0022
	3	1.5 x D	0.3 x D	0.3 x D	80	–	130	64	–	104	48	–	78	IPT	.0010	.0013	.0015	.0018	.0022	.0022
	4	1.5 x D	0.4 x D	1 x D	160	–	200	128	–	160	96	–	120	IPT	.0014	.0018	.0021	.0024	.0030	.0030
H	1	1.5 x D	0.4 x D	0.75 x D	260	–	460	208	–	368	156	–	276	IPT	.0017	.0022	.0026	.0029	.0034	.0034
	2	1.5 x D	0.2 x D	0.5 x D	230	–	390	184	–	312	138	–	234	IPT	.0013	.0016	.0019	.0021	.0024	.0024

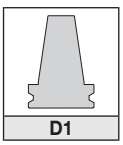
NOTE: Those guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) 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.

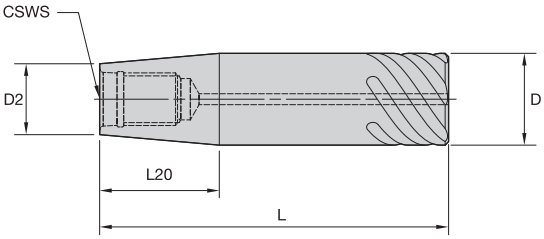


DL SS SL Cylindrical Inch

order number	catalog number	CSWS system size	D	D2	L	L2	ft. lbs.
6136800	**SS038SLDL100225**	DL10	.38	.36	2.25	.19	18.40
6136868	**SS050SLDL120250**	DL12	.50	.48	2.50	.25	22.10
6136874	**SS062SLDL160275**	DL16	.63	.61	2.75	.33	44.20
6136880	**SS075SLDL200300**	DL20	.75	.73	3.00	.39	59.00
6136884	**SS100SLDL250350**	DL25	1.00	.96	3.50	.52	73.80
6136888	**SS125SLDL320400**	DL32	1.25	1.21	4.00	.64	95.90

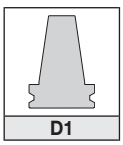
NOTE: Cylindrical shanks not recommended for full slotting.





DL SS SL Conical Inch

order number	catalog number	CSWS system size	D	D2	L	L20	ft. lbs.
6136862	**SS050SLDL100250**	DL10	.50	.36	2.50	.80	18.40
6136864	**SS062SLDL100350**	DL10	.63	.36	3.50	1.52	18.40
6136866	**SS075SLDL100450**	DL10	.75	.36	4.50	2.23	18.40
6136870	**SS062SLDL120325**	DL12	.63	.48	3.25	.82	22.10
6136872	**SS075SLDL120425**	DL12	.75	.48	4.25	1.53	22.10
6136876	**SS075SLDL160325**	DL16	.75	.61	3.25	.82	44.20
6136878	**SS100SLDL160450**	DL16	1.00	.61	4.50	2.25	44.20
6136882	**SS100SLDL200375**	DL20	1.00	.73	3.75	1.53	59.00
6136886	**SS125SLDL250425**	DL25	1.25	.96	4.25	1.64	73.80
6136890	**SS150SLDL320550**	DL32	1.50	1.21	5.50	1.64	95.90
6136892	**SS200SLDL320750**	DL32	2.00	1.21	7.50	4.50	95.90



HARVI™ I

High-Performance Solid Carbide End Mills

Primary Application

The HARVI I system offers plunging, slotting, and profiling at the highest possible feed rates for a wide range of materials. These end mills are designed to provide maximum Metal Removal Rates (MRR) and to achieve superior surface conditions. A wide range of diameters and corner configurations, such as chamfer and radii, are available from stock.

- Roughing and finishing with one tool.
- Outstanding metal removal rates increase productivity.
- KCPM15™ Beyond™ grade for long tool life.

Features and Benefits

Advanced Technology

- Four unequally spaced flutes for chatter-free machining at high feed rates.
- Center cutting design for plunging and improved ramping and helical interpolation capabilities.
- 1 x D full slotting capability in:
  - — Steel
  - — Stainless steel
  - — Titanium

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).

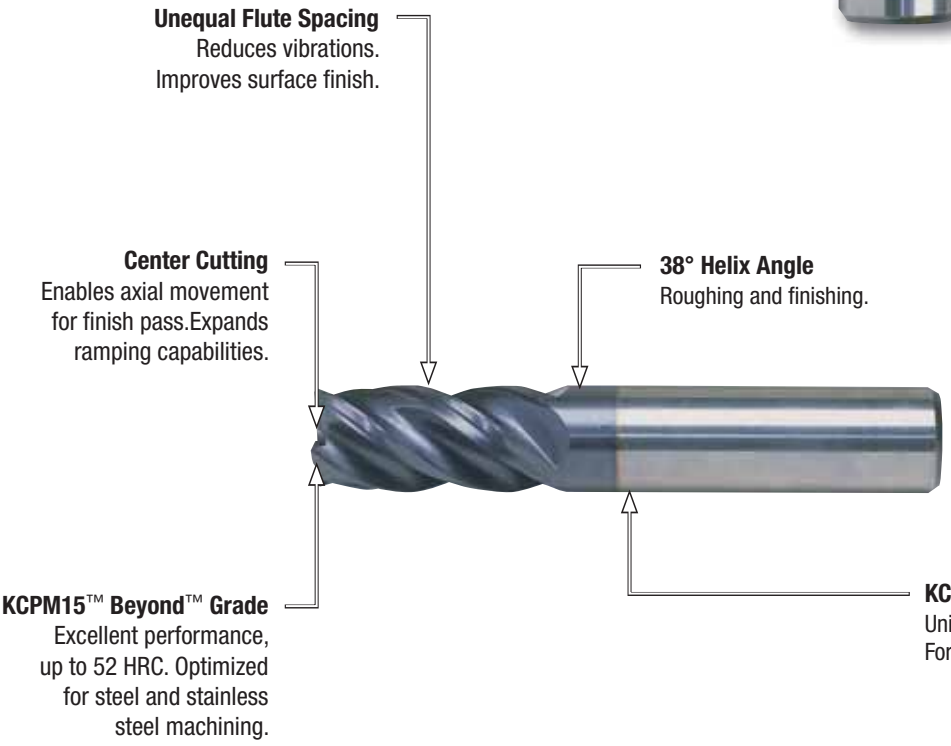
Customization

- Intermediate diameters available.
- Expanded length of tool and increased length of cut are possible.
- Chip divider geometry reduces power consumption and improves chip formation in difficult-to-cut materials.
- Internal coolant axial and radial available.
- Various shanks and non-standard coatings available.
- Multiple steps possible.

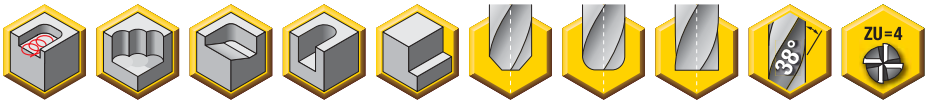
Extensive Standard Offering

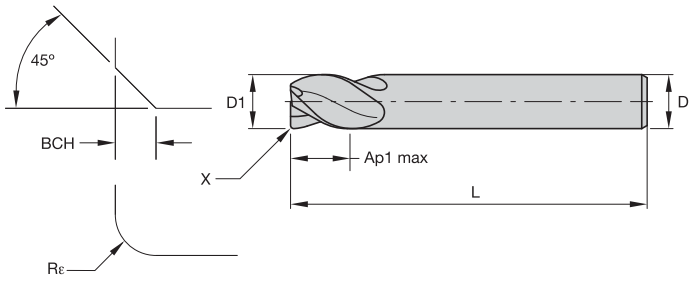
- Diameter range 1/8–1-1/4".
- Necked, corner radii, chamfer, and square-end offering.
- Ball nose with extended length of cut.

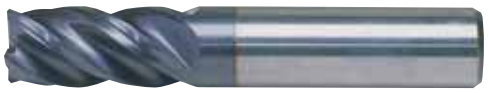
Designed for roughing and finishing with one tool in almost all materials.



- Kennametal standard dimensions.
- Center cutting.
- Unequal flute spacing minimizes chatter for smoother machining.
- Single tool for both roughing and finishing operations requiring fewer setups.



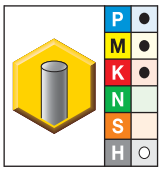




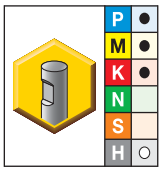
End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/- .002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1-3/16"	0/.00051"

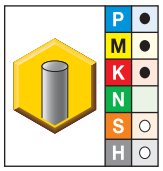
HPHV • UADE • 4 Flute • Inch



grade KCPM15



grade KCPM15



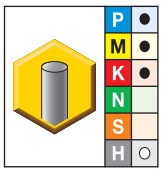
grade KC643M

● first choice
○ alternate choice

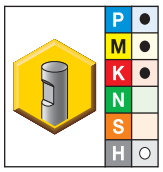
order #	catalog #	order #	catalog #	order #	catalog #	D1	D	Ap1 max	L	Rε	BCH
4047694	HPHV125S4025CH		–		–	1/8	1/8	1/4	1 1/2	–	.015
4047693	HPHV125S4025		–		–	1/8	1/8	1/4	1 1/2	–	–
4047696	HPHV125S4025LR015		–		–	1/8	1/8	1/4	2 1/2	.015	–
4047701	HPHV125S4050R015		–		–	1/8	1/8	1/2	2	.015	–
4047698	HPHV125S4050CH		–		–	1/8	1/8	1/2	2	–	.015
4047697	HPHV125S4050		–		–	1/8	1/8	1/2	2	–	–
4047699	HPHV125S4050L		–		–	1/8	1/8	1/2	2 1/2	–	–
4047703	HPHV188S4031CH		–		–	3/16	3/16	5/16	1 1/2	–	.015
4047702	HPHV188S4031		–		–	3/16	3/16	5/16	1 1/2	–	–
4047705	HPHV188S4031LR015		–		–	3/16	3/16	5/16	2 1/2	.015	–
4047704	HPHV188S4031L		–		–	3/16	3/16	5/16	2 1/2	–	–
4047711	HPHV188S4063R015		–		–	3/16	3/16	5/8	2 1/4	.015	–
4047712	HPHV188S4063R030		–		–	3/16	3/16	5/8	2 1/4	.030	–
4047707	HPHV188S4063CH		–		–	3/16	3/16	5/8	2 1/4	–	.015
4047706	HPHV188S4063		–		–	3/16	3/16	5/8	2 1/4	–	–
4047709	HPHV188S4063LR015		–		–	3/16	3/16	5/8	2 1/2	.015	–
4047710	HPHV188S4063LR030		–		–	3/16	3/16	5/8	2 1/2	.030	–
4047708	HPHV188S4063L		–		–	3/16	3/16	5/8	2 1/2	–	–
4047718	HPHV250S4038R030		–		–	1/4	1/4	3/8	2	.030	–
4047714	HPHV250S4038CH		–		–	1/4	1/4	3/8	2	–	.015
4047713	HPHV250S4038		–		–	1/4	1/4	3/8	2	–	–
4047716	HPHV250S4038LR015		–		–	1/4	1/4	3/8	2 1/2	.015	–
4047720	HPHV250S4050R015		–		–	1/4	1/4	1/2	2 1/2	.015	–
4047721	HPHV250S4050R030		–		–	1/4	1/4	1/2	2 1/2	.030	–
4047722	HPHV250S4050R060		–		–	1/4	1/4	1/2	2 1/2	.060	–
4047719	HPHV250S4050		–		–	1/4	1/4	1/2	2 1/2	–	–
4047725	HPHV250S4075R015		–		–	1/4	1/4	3/4	2 1/2	.015	–
4047726	HPHV250S4075R030		–		–	1/4	1/4	3/4	2 1/2	.030	–

(continued)

(HPHV • UADE • 4 Flute • Inch — continued)



grade KCPM15



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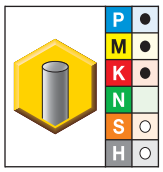


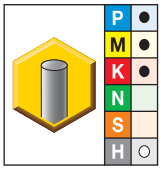
grade KC643M

● first choice
○ alternate choice

order #	catalog #	order #	catalog #	order #	catalog #	D1	D	Ap1 max	L	Rε	BCH
4047727	HPHV250S4075R060	–		4079288	UADE250J4ARC	1/4	1/4	3/4	2 1/2	.060	–
4047724	HPHV250S4075CH	–		–		1/4	1/4	3/4	2 1/2	–	.015
4047723	HPHV250S4075	–		–		1/4	1/4	3/4	2 1/2	–	–
4047729	HPHV250S4100R015	–		–		1/4	1/4	1	3	.015	–
4047728	HPHV250S4100	–		–		1/4	1/4	1	3	–	–
4047734	HPHV250S4125R030	–		–		1/4	1/4	1 1/4	3 1/4	.030	–
4047732	HPHV250S4125CH	–		–		1/4	1/4	1 1/4	3 1/4	–	.015
4047731	HPHV250S4125	–		–		1/4	1/4	1 1/4	3 1/4	–	–
4047735	HPHV250S4175R015	–		–		1/4	1/4	1 3/4	4	.015	–
4047736	HPHV250S4175R030	–		–		1/4	1/4	1 3/4	4	.030	–
4047742	HPHV312S4050R030	–		–		5/16	5/16	1/2	2	.030	–
4047738	HPHV312S4050CH	–		–		5/16	5/16	1/2	2	–	.015
4047737	HPHV312S4050	–		–		5/16	5/16	1/2	2	–	–
4047740	HPHV312S4050LR015	–		–		5/16	5/16	1/2	2 1/2	.015	–
4047739	HPHV312S4050L	–		–		5/16	5/16	1/2	2 1/2	–	–
4047745	HPHV312S4075R015	–		–		5/16	5/16	3/4	2 1/2	.015	–
4047746	HPHV312S4075R030	–		–		5/16	5/16	3/4	2 1/2	.030	–
4047747	HPHV312S4075R060	–		–		5/16	5/16	3/4	2 1/2	.060	–
4047744	HPHV312S4075CH	–		–		5/16	5/16	3/4	2 1/2	–	.015
4047743	HPHV312S4075	–		–		5/16	5/16	3/4	2 1/2	–	–
4047748	HPHV312S4125R030	–		–		5/16	5/16	1 1/4	3 1/4	.030	–
4047754	HPHV375S4050R030	–		–		3/8	3/8	1/2	2	.030	–
4047750	HPHV375S4050CH	–		–		3/8	3/8	1/2	2	–	.020
4047749	HPHV375S4050	–		–		3/8	3/8	1/2	2	–	–
4047752	HPHV375S4050LR015	–		–		3/8	3/8	1/2	2 1/2	.015	–
4047753	HPHV375S4050LR030	–		–		3/8	3/8	1/2	2 1/2	.030	–
4047751	HPHV375S4050L	–		–		3/8	3/8	1/2	2 1/2	–	–
4071840	HPHV375S4088R015	–		–		3/8	3/8	7/8	2 1/2	.015	–
4071841	HPHV375S4088R030	–		–		3/8	3/8	7/8	2 1/2	.030	–
4071842	HPHV375S4088R060	–		–		3/8	3/8	7/8	2 1/2	.060	–
4071883	HPHV375S4088R090	–		–		3/8	3/8	7/8	2 1/2	.090	–
4047756	HPHV375S4088CH	–		–		3/8	3/8	7/8	2 1/2	–	.020
4047755	HPHV375S4088	–		–		3/8	3/8	7/8	2 1/2	–	–
4047758	HPHV375S4088LR015	–		–		3/8	3/8	7/8	3	.015	–
4047759	HPHV375S4088LR030	–		–		3/8	3/8	7/8	3	.030	–
4047761	HPHV375S4088LR090	–		–		3/8	3/8	7/8	3	.090	–
4047757	HPHV375S4088L	–		–		3/8	3/8	7/8	3	–	–
4071885	HPHV375S4100R015	–		–		3/8	3/8	1	3	.015	–
4071886	HPHV375S4100R030	–		–		3/8	3/8	1	3	.030	–
4071887	HPHV375S4100R060	–		–		3/8	3/8	1	3	.060	–
4071884	HPHV375S4100	–		–		3/8	3/8	1	3	–	–
4071889	HPHV375S4125R015	–		–		3/8	3/8	1 1/4	3	.015	–
4071890	HPHV375S4125R030	–		–		3/8	3/8	1 1/4	3	.030	–
4071891	HPHV375S4125R060	–		–		3/8	3/8	1 1/4	3	.060	–
4071888	HPHV375S4125	–		–		3/8	3/8	1 1/4	3	–	–
4071893	HPHV375S4150R030	–		–		3/8	3/8	1 1/2	4	.030	–
4071894	HPHV375S4150R060	–		–		3/8	3/8	1 1/2	4	.060	–
4071892	HPHV375S4150	–		–		3/8	3/8	1 1/2	4	–	–
4071895	HPHV375S4250R030	–		–		3/8	3/8	2 1/2	4	.030	–
4071896	HPHV375S4250R060	–		–		3/8	3/8	2 1/2	4	.060	–
–		–		4079285	UADE375J4ARC	3/8	3/8	1/2	2	.060	–
–		–		4079284	UADE375J4BRA	3/8	3/8	7/8	2 1/2	.015	–

(continued)

(HPHV • UADE • 4 Flute • Inch — continued)



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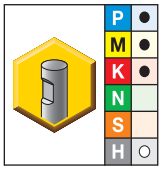
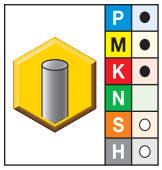


grade KCPM15



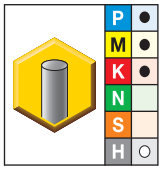
grade KC643M

● first choice
○ alternate choice

order #	catalog #	order #	catalog #	order #	catalog #	D1	D	Ap1 max	L	Rε	BCH
4071897	HPHV438S4063CH		–		–	7/16	7/16	5/8	2 1/2	–	.020
4071898	HPHV438S4088CH		–		–	7/16	7/16	7/8	2 1/2	–	.020
4071899	HPHV438S4113R015		–		–	7/16	7/16	1 1/8	3 1/2	.015	–
	–	4071906	HPHV500S4063R030		–	1/2	1/2	5/8	2 1/2	.030	–
	–	4071907	HPHV500S4063R060		–	1/2	1/2	5/8	2 1/2	.060	–
	–	4071901	HPHV500S4063CH		–	1/2	1/2	5/8	2 1/2	–	.020
	–	4071900	HPHV500S4063		–	1/2	1/2	5/8	2 1/2	–	–
	–	4071903	HPHV500S4063LR015		–	1/2	1/2	5/8	3	.015	–
	–	4071904	HPHV500S4063LR030		–	1/2	1/2	5/8	3	.030	–
	–	4071905	HPHV500S4063LR060		–	1/2	1/2	5/8	3	.060	–
	–	4071902	HPHV500S4063L		–	1/2	1/2	5/8	3	–	–
	–	4071910	HPHV500S4100R030		–	1/2	1/2	1	3	.030	–
	–	4071911	HPHV500S4100R060		–	1/2	1/2	1	3	.060	–
	–	4071909	HPHV500S4100CH		–	1/2	1/2	1	3	–	.020
	–	4071908	HPHV500S4100		–	1/2	1/2	1	3	–	–
	–	4071914	HPHV500S4125R015		–	1/2	1/2	1 1/4	3	.015	–
	–	4071915	HPHV500S4125R030	4079275	UADE500J4BRB	1/2	1/2	1 1/4	3	.030	–
	–	4071916	HPHV500S4125R060	4079274	UADE500J4BRC	1/2	1/2	1 1/4	3	.060	–
	–	4071917	HPHV500S4125R090		–	1/2	1/2	1 1/4	3	.090	–
	–	4071918	HPHV500S4125R120		–	1/2	1/2	1 1/4	3	.120	–
	–	4071913	HPHV500S4125CH		–	1/2	1/2	1 1/4	3	–	.020
	–	4071912	HPHV500S4125		–	1/2	1/2	1 1/4	3	–	–
	–	4071921	HPHV500S4150R030	4079270	UADE500J4CRB	1/2	1/2	1 1/2	4	.030	–
	–	4071922	HPHV500S4150R060	4079269	UADE500J4CRC	1/2	1/2	1 1/2	4	.060	–
	–		–	4079267	UADE500J4CRE	1/2	1/2	1 1/2	4	.120	–
	–	4071920	HPHV500S4150CH		–	1/2	1/2	1 1/2	4	–	.020
	–	4071919	HPHV500S4150		–	1/2	1/2	1 1/2	4	–	–
	–	4071924	HPHV500S4163R030		–	1/2	1/2	1 5/8	4	.030	–
	–	4071925	HPHV500S4163R060		–	1/2	1/2	1 5/8	4	.060	–
	–	4071926	HPHV500S4163R120		–	1/2	1/2	1 5/8	4	.120	–
	–	4071923	HPHV500S4163		–	1/2	1/2	1 5/8	4	–	–
	–	4071929	HPHV500S4200R030		–	1/2	1/2	2	4	.030	–
	–	4071928	HPHV500S4200CH		–	1/2	1/2	2	4	–	.020
	–	4071927	HPHV500S4200		–	1/2	1/2	2	4	–	–
	–	4071930	HPHV500S4250R030		–	1/2	1/2	2 1/2	4 1/2	.030	–
	–	4071932	HPHV500S4300R030		–	1/2	1/2	3	5	.030	–
	–	4071933	HPHV500S4300R060		–	1/2	1/2	3	5	.060	–
	–	4067253	HPHV625S4075R060		–	5/8	5/8	3/4	3	.060	–
	–	4067237	HPHV625S4075CH		–	5/8	5/8	3/4	3	–	.020
	–	4067236	HPHV625S4075		–	5/8	5/8	3/4	3	–	–
	–	4067239	HPHV625S4075LR015		–	5/8	5/8	3/4	3 1/2	.015	–
	–	4067240	HPHV625S4075LR030		–	5/8	5/8	3/4	3 1/2	.030	–
	–	4067241	HPHV625S4075LR060		–	5/8	5/8	3/4	3 1/2	.060	–
	–	4067238	HPHV625S4075L		–	5/8	5/8	3/4	3 1/2	–	–
	–	4067257	HPHV625S4125R030		–	5/8	5/8	1 1/4	3 1/2	.030	–
	–	4067258	HPHV625S4125R060		–	5/8	5/8	1 1/4	3 1/2	.060	–
	–	4067259	HPHV625S4125R090		–	5/8	5/8	1 1/4	3 1/2	.090	–
	–	4067256	HPHV625S4125CH		–	5/8	5/8	1 1/4	3 1/2	–	.020
	–	4067255	HPHV625S4125		–	5/8	5/8	1 1/4	3 1/2	–	–
	–	4067262	HPHV625S4163R030		–	5/8	5/8	1 5/8	3 1/2	.030	–
	–	4067263	HPHV625S4163R060		–	5/8	5/8	1 5/8	3 1/2	.060	–
	–	4067264	HPHV625S4163R120		–	5/8	5/8	1 5/8	3 1/2	.120	–

(continued)

(HPHV • UADE • 4 Flute • Inch — continued)



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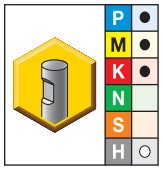
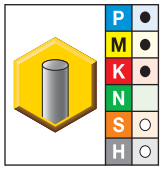


grade KCPM15

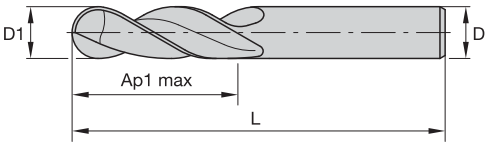


grade KC643M

● first choice
○ alternate choice

order #	catalog #	order #	catalog #	order #	catalog #	D1	D	Ap1 max	L	Rε	BCH
	—	4067261	HPHV625S4163		—	5/8	5/8	1 5/8	3 1/2	—	—
	—	4067266	HPHV625S4213R030		—	5/8	5/8	2 1/8	4	.030	—
	—	4067267	HPHV625S4213R120		—	5/8	5/8	2 1/8	4	.120	—
	—	4067265	HPHV625S4213		—	5/8	5/8	2 1/8	4	—	—
	—	4067268	HPHV625S4225R060		—	5/8	5/8	2 1/4	5	.060	—
	—	4067270	HPHV750S4088CH		—	3/4	3/4	7/8	3 1/2	—	.020
	—	4067269	HPHV750S4088		—	3/4	3/4	7/8	3 1/2	—	—
	—	4067272	HPHV750S4088LR030		—	3/4	3/4	7/8	4	.030	—
	—	4067271	HPHV750S4088L		—	3/4	3/4	7/8	4	—	—
	—	4067275	HPHV750S4150R015		—	3/4	3/4	1 1/2	4	.015	—
	—	4067276	HPHV750S4150R030		—	3/4	3/4	1 1/2	4	.030	—
	—	4067277	HPHV750S4150R060		—	3/4	3/4	1 1/2	4	.060	—
	—	4067278	HPHV750S4150R090		—	3/4	3/4	1 1/2	4	.090	—
	—	4067279	HPHV750S4150R120		—	3/4	3/4	1 1/2	4	.120	—
	—	4067274	HPHV750S4150CH		—	3/4	3/4	1 1/2	4	—	.020
	—	4067273	HPHV750S4150		—	3/4	3/4	1 1/2	4	—	—
	—	4067281	HPHV750S4163R030		—	3/4	3/4	1 5/8	4	.030	—
	—	4067282	HPHV750S4163R060		—	3/4	3/4	1 5/8	4	.060	—
	—	4067283	HPHV750S4163R120		—	3/4	3/4	1 5/8	4	.120	—
	—	4067280	HPHV750S4163CH		—	3/4	3/4	1 5/8	4	—	.020
	—	4067220	HPHV750S4225R030		—	3/4	3/4	2 1/4	5	.030	—
	—	4067221	HPHV750S4225R060		—	3/4	3/4	2 1/4	5	.060	—
	—	4067219	HPHV750S4225CH		—	3/4	3/4	2 1/4	5	—	.020
	—	5053664	HPHV750S4225		—	3/4	3/4	2 1/4	5	—	—
	—	4067303	HPHV750S4300CH		—	3/4	3/4	3	6	—	.020
	—	4067222	HPHV750S4300		—	3/4	3/4	3	6	—	—
	—	4067304	HPHV750S4400R030		—	3/4	3/4	4	6 1/4	.030	—
	—	4067305	HPHV750S4400R060		—	3/4	3/4	4	6 1/4	.060	—
	—	4067308	HPHV1000S4150R030		—	1	1	1 1/2	4	.030	—
	—	4067311	HPHV1000S4150R120		—	1	1	1 1/2	4	.120	—
	—	4067312	HPHV1000S4150R250		—	1	1	1 1/2	4	.250	—
	—	4067306	HPHV1000S4150		—	1	1	1 1/2	4	—	—
	—	4067307	HPHV1000S4150CH		—	1	1	1 1/2	4	—	.020
	—	4067314	HPHV1000S4200R030		—	1	1	2	4	.030	—
	—	4067315	HPHV1000S4200R060		—	1	1	2	4	.060	—
	—	4067316	HPHV1000S4200R120		—	1	1	2	4	.120	—
	—	4067313	HPHV1000S4200		—	1	1	2	4	—	—
	—	4067320	HPHV1000S4225R030		—	1	1	2 1/4	5	.030	—
	—	4067321	HPHV1000S4225R060		—	1	1	2 1/4	5	.060	—
	—	4067319	HPHV1000S4225CH		—	1	1	2 1/4	5	—	.020
	—	4067318	HPHV1000S4225		—	1	1	2 1/4	5	—	—
	—	4067324	HPHV1000S4263R030		—	1	1	2 5/8	5	.030	—
	—	4067322	HPHV1000S4263		—	1	1	2 5/8	5	—	—
	—	4067323	HPHV1000S4263CH		—	1	1	2 5/8	5	—	.020
	—	4067326	HPHV1000S4300R030		—	1	1	3	6	.030	—
	—	4067327	HPHV1000S4300R060		—	1	1	3	6	.060	—
	—	4067325	HPHV1000S4300CH		—	1	1	3	6	—	.020
	—	4067329	HPHV1000S4400R030		—	1	1	4	7	.030	—
	—	4067330	HPHV1000S4400R060		—	1	1	4	7	.060	—
	—	4067328	HPHV1000S4400CH		—	1	1	4	7	—	.020
	—	4067332	HPHV1250S4225R030		—	1 1/4	1 1/4	2 1/4	5	.030	—
	—	4067331	HPHV1250S4225CH		—	1 1/4	1 1/4	2 1/4	5	—	.020

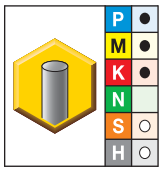
- Kennametal standard dimensions.
- Center cutting.
- Unequal flute spacing minimizes chatter for smoother machining.
- Single tool for both roughing and finishing operations requiring fewer setups.



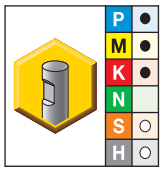
End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/- .002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

HPHVBN • 4 Flute with Extended Length-of-Cut • Ball Nose • Inch



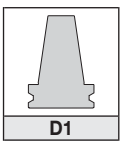
grade KCPM15



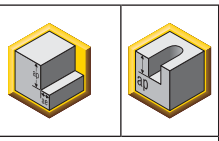
grade KCPM15

● first choice
○ alternate choice

order #	catalog #	order #	catalog #	D1	D	Ap1 max	L
4067292	HPHVBN125S4050		–	1/8	1/8	1/2	2
4067343	HPHVBN188S4063		–	3/16	3/16	5/8	2 1/4
4067344	HPHVBN250S4075		–	1/4	1/4	3/4	2 1/2
4067345	HPHVBN312S4075		–	5/16	5/16	3/4	2 1/2
4067346	HPHVBN375S4088		–	3/8	3/8	7/8	2 1/2
4067287	HPHVBN438S4088		–	7/16	7/16	7/8	2 1/2
–		4067288	HPHVBN500S4100	1/2	1/2	1	3
–		4067289	HPHVBN500S4125	1/2	1/2	1 1/4	3
–		4067290	HPHVBN625S4125	5/8	5/8	1 1/4	3 1/2
–		4067291	HPHVBN750S4150	3/4	3/4	1 1/2	4
–		4067286	HPHVBN1000S4150	1	1	1 1/2	4



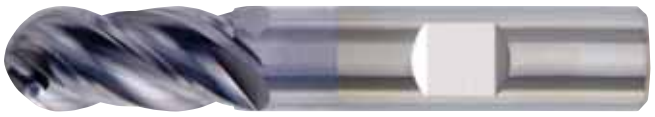
HARVI I • HPHV • UADE • Unequal Flute Spacing



Material Group		Side Milling (A) and Slotting (B)			KC643M		KCPM15		Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.												
		A		B	Cutting Speed — vc SFM					D1 — Diameter											
									frac.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1	1 1/4
		ap	ae	ap	min	max	min	max	dec.	.125	.188	.250	.313	.375	.438	.500	.625	.750	1.000	1.250
P	0	Ap max	0.5 x D	1 x D	490	660	490	660	IPT	.0009	.0013	.0018	.0023	.0027	.0031	.0034	.0039	.0044	.0049	.0049
	1	Ap max	0.5 x D	1 x D	490	660	490	660	IPT	.0009	.0013	.0018	.0023	.0027	.0031	.0034	.0039	.0044	.0049	.0049
	2	Ap max	0.5 x D	1 x D	460	620	460	620	IPT	.0009	.0013	.0018	.0023	.0027	.0031	.0034	.0039	.0044	.0049	.0049
	3	Ap max	0.5 x D	1 x D	390	520	390	520	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0039	.0045	.0048
	4	Ap max	0.5 x D	0.75 x D	300	490	300	490	IPT	.0007	.0010	.0014	.0017	.0020	.0023	.0026	.0030	.0034	.0039	.0040
	5	Ap max	0.5 x D	1 x D	200	330	200	330	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0031	.0036	.0039
	6	Ap max	0.5 x D	0.75 x D	160	250	160	250	IPT	.0005	.0008	.0010	.0013	.0015	.0017	.0019	.0022	.0025	.0028	.0029
M	1	Ap max	0.5 x D	1 x D	300	380	300	380	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0039	.0045	.0048
	2	Ap max	0.5 x D	1 x D	200	260	200	260	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0031	.0036	.0039
	3	Ap max	0.5 x D	1 x D	200	230	200	230	IPT	.0005	.0008	.0010	.0013	.0015	.0017	.0019	.0022	.0025	.0028	.0029
K	1	Ap max	0.5 x D	1 x D	390	490	390	490	IPT	.0009	.0013	.0018	.0023	.0027	.0031	.0034	.0039	.0044	.0049	.0049
	2	Ap max	0.5 x D	1 x D	360	460	360	460	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0039	.0045	.0048
	3	Ap max	0.5 x D	1 x D	360	430	360	430	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0031	.0036	.0039
S	1	Ap max	0.3 x D	0.3 x D	160	300	–	–	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0039	.0045	.0048
	2	Ap max	0.3 x D	0.3 x D	80	130	–	–	IPT	.0004	.0006	.0008	.0010	.0012	.0014	.0015	.0018	.0021	.0024	.0026
	3	Ap max	0.3 x D	0.3 x D	80	130	–	–	IPT	.0004	.0006	.0008	.0010	.0012	.0014	.0015	.0018	.0021	.0024	.0026
	4	Ap max	0.5 x D	1 x D	160	200	–	–	IPT	.0005	.0008	.0011	.0014	.0017	.0019	.0021	.0025	.0028	.0033	.0036
H	1	Ap max	0.5 x D	0.75 x D	260	460	260	460	IPT	.0007	.0010	.0014	.0017	.0020	.0023	.0026	.0030	.0034	.0039	.0040

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 >1/2" diameter.
For tools 2 x D <LOC (Ap1 max) = <3 x D Ae = 0.25 x D, for tools with LOC (Ap1 max) longer than 3 x D, Ae = 0, Ae = 0.1 x D and no slot.

HARVI I • HPHVBN • 4 Flute with Extended Length-of-Cut • Ball Nose



Material Group		Side Milling (A) and Slotting (B)			KCPM15		Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.									
		A		B	Cutting Speed — vc SFM			D1 — Diameter								
							frac.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1
		ap	ae	ap	min	max	dec.	.125	.188	.250	.313	.375	.438	.500	.625	.750	1.000
P	0	1.25 x D	0.5 x D	1 x D	490	660	IPT	.0009	.0013	.0018	.0023	.0027	.0031	.0034	.0039	.0044	.0049
	1	1.25 x D	0.5 x D	1 x D	490	660	IPT	.0009	.0013	.0018	.0023	.0027	.0031	.0034	.0039	.0044	.0049
	2	1.25 x D	0.5 x D	1 x D	460	620	IPT	.0009	.0013	.0018	.0023	.0027	.0031	.0034	.0039	.0044	.0049
	3	1.25 x D	0.5 x D	1 x D	390	520	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0039	.0045
	4	1.25 x D	0.5 x D	0.75 x D	300	490	IPT	.0007	.0010	.0014	.0017	.0020	.0023	.0026	.0030	.0034	.0039
	5	1.25 x D	0.5 x D	1 x D	200	330	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0031	.0036
	6	1.25 x D	0.5 x D	0.75 x D	160	250	IPT	.0005	.0008	.0010	.0013	.0015	.0017	.0019	.0022	.0025	.0028
M	1	1.25 x D	0.5 x D	1 x D	300	380	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0039	.0045
	2	1.25 x D	0.5 x D	1 x D	200	260	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0031	.0036
	3	1.25 x D	0.5 x D	1 x D	200	230	IPT	.0005	.0008	.0010	.0013	.0015	.0017	.0019	.0022	.0025	.0028
K	1	1.25 x D	0.5 x D	1 x D	390	490	IPT	.0009	.0013	.0018	.0023	.0027	.0031	.0034	.0039	.0044	.0049
	2	1.25 x D	0.5 x D	1 x D	360	460	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0039	.0045
	3	1.25 x D	0.5 x D	1 x D	360	430	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0031	.0036
S	1	1 x D	0.3 x D	0.3 x D	160	300	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0039	.0045
	2	1 x D	0.3 x D	0.3 x D	80	130	IPT	.0004	.0006	.0008	.0010	.0012	.0014	.0015	.0018	.0021	.0024
	3	1.25 x D	0.3 x D	0.3 x D	80	130	IPT	.0004	.0006	.0008	.0010	.0012	.0014	.0015	.0018	.0021	.0024
	4	1.25 x D	0.5 x D	1 x D	160	200	IPT	.0005	.0008	.0011	.0014	.0017	.0019	.0021	.0025	.0028	.0033
H	1	1.25 x D	0.5 x D	0.75 x D	260	460	IPT	.0007	.0010	.0014	.0017	.0020	.0023	.0026	.0030	.0034	.0039

NOTE: These 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 centers, please adjust parameters accordingly on >1/2" diameter.

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	Russia (cell phone)	Russian	+7 800 5556394	eu.techsupport@kennametal.com
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Numbers shown only serve the originating country listed.

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 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).

Customization

- 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, including Safe-Lock™ by Haimer, and non-standard coatings available.
- Multiple steps possible.

Extensive Standard Offering

- Diameter range 3/16–1".
- Corner radii and non-necked offering.

High-feed roughing and finishing with one tool at highest length of cut.

Unequal Flute Spacing
Reduces vibrations.
Improves surface finish.

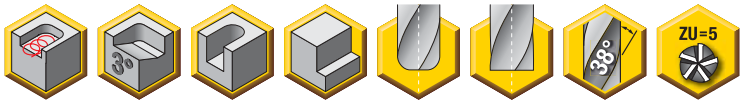
Proprietary Core Design
Improves tool stability.

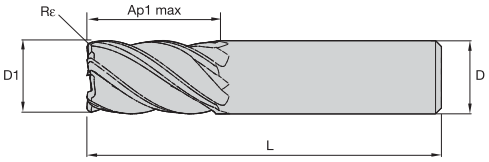
38° Helix Angle
Roughing and finishing.

KCPM15™ Beyond™ Grade
Excellent performance up to 52 HRC. Optimized for steel and stainless steel machining.

KC643M™ AlTiN Grade
Universal usage.
For highest tool life.

- Kennametal standard dimensions.
- Non-center cutting.
- Ramping up to 3°.
- Unequal flute spacing minimizes 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.

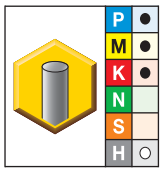




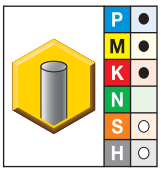
End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/- .002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

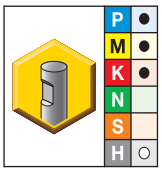
UCDE • 5 Flute • Inch



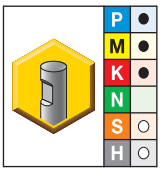
grade KCPM15



grade KC643M



grade KCPM15



grade KC643M

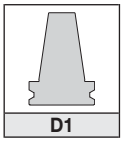
● first choice
○ alternate choice

order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1	D	Ap1 max	L	Rε
4048709	UCDE188J5BRA	3580837	UCDE188J5BRA		–		–	3/16	3/16	5/8	2 1/4	.015
4048710	UCDE188J5BRB		–		–		–	3/16	3/16	5/8	2 1/4	.030
4048711	UCDE188J5BS	3580836	UCDE188J5BS		–		–	3/16	3/16	5/8	2 1/4	–
4048712	UCDE250J5BRA	3580840	UCDE250J5BRA		–		–	1/4	1/4	3/4	2 1/2	.015
4048713	UCDE250J5BRB	3580841	UCDE250J5BRB		–		–	1/4	1/4	3/4	2 1/2	.030
4048714	UCDE250J5BS	3580839	UCDE250J5BS		–		–	1/4	1/4	3/4	2 1/2	–
	–	3899135	UCDE281J5BS		–		–	9/32	5/16	3/4	2 1/2	–
4048715	UCDE312J5BRA		–		–		–	5/16	5/16	3/4	2 1/2	.015
4048716	UCDE312J5BRB		–		–		–	5/16	5/16	3/4	2 1/2	.030
4048717	UCDE312J5BS		–		–		–	5/16	5/16	3/4	2 1/2	–
4048718	UCDE375J5BRA	3580866	UCDE375J5BRA		–		–	3/8	3/8	7/8	2 1/2	.015
4048719	UCDE375J5BRB	3580867	UCDE375J5BRB		–		–	3/8	3/8	7/8	2 1/2	.030
4048720	UCDE375J5BS	3580865	UCDE375J5BS		–		–	3/8	3/8	7/8	2 1/2	–
4048721	UCDE500J5BRA	3580869	UCDE500J5BRA	4048725	UCDE500K5BRA	3580770	UCDE500K5BRA	1/2	1/2	1 1/4	3	.015
4048722	UCDE500J5BRB	3580870	UCDE500J5BRB	4048726	UCDE500K5BRB	3580771	UCDE500K5BRB	1/2	1/2	1 1/4	3	.030
	–	3899140	UCDE500J5BRD		–		–	1/2	1/2	1 1/4	3	.060
4048723	UCDE500J5BRF	3580871	UCDE500J5BRF	4048727	UCDE500K5BRF	3580772	UCDE500K5BRF	1/2	1/2	1 1/4	3	.120
4048724	UCDE500J5BS	3580868	UCDE500J5BS	4048728	UCDE500K5BS	3580769	UCDE500K5BS	1/2	1/2	1 1/4	3	–
	–	3899194	UCDE625J5BRA		–		–	5/8	5/8	1 1/4	3 1/2	.015
4048729	UCDE625J5BRB	3580873	UCDE625J5BRB	4048731	UCDE625K5BRB	3580784	UCDE625K5BRB	5/8	5/8	1 1/4	3 1/2	.030
4048730	UCDE625J5BS		–	4048732	UCDE625K5BS		–	5/8	5/8	1 1/4	3 1/2	–
	–	3899196	UCDE750J5BRA		–		–	3/4	3/4	1 1/2	4	.015
4048733	UCDE750J5BRB		–	4048738	UCDE750K5BRB	3580786	UCDE750K5BRB	3/4	3/4	1 1/2	4	.030
4048734	UCDE750J5BRD	3580876	UCDE750J5BRD		–		–	3/4	3/4	1 1/2	4	.060
4048736	UCDE750J5BRF		–		–		–	3/4	3/4	1 1/2	4	.120
4048737	UCDE750J5BS		–	4048740	UCDE750K5BS		–	3/4	3/4	1 1/2	4	–
	–	3899202	UCDE1000J5BRA		–		–	1	1	1 3/4	4 1/2	.015
4048661	UCDE1000J5BRB		–	4048706	UCDE1000K5BRB		–	1	1	1 3/4	4 1/2	.030
4048662	UCDE1000J5BRD		–		–		–	1	1	1 3/4	4 1/2	.060
4048705	UCDE1000J5BS		–	4048708	UCDE1000K5BS		–	1	1	1 3/4	4 1/2	–

HARVI II • UCDE • Unequal Flute Spacing

Material Group		Side Milling (A) and Slotting (B)			KC643M		KCPM15		Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.						
		A		B	Cutting Speed — vc SFM					D1 — Diameter					
									frac.	1/4	3/8	1/2	5/8	3/4	1
		ap	ae	ap	min	max	min	max	dec.	.250	.375	.500	.625	.750	1.000
P	0	1.5 x D	0.5 x D	1 x D	490	660	490	660	IPT	.0018	.0027	.0034	.0039	.0044	.0049
	1	1.5 x D	0.5 x D	1 x D	490	660	490	660	IPT	.0018	.0027	.0034	.0039	.0044	.0049
	2	1.5 x D	0.5 x D	1 x D	460	620	460	620	IPT	.0018	.0027	.0034	.0039	.0044	.0049
	3	1.5 x D	0.5 x D	1 x D	390	520	390	520	IPT	.0015	.0023	.0029	.0034	.0039	.0045
	4	1.5 x D	0.5 x D	0.75 x D	300	490	300	490	IPT	.0014	.0020	.0026	.0030	.0034	.0039
	5	1.5 x D	0.5 x D	1 x D	200	330	200	330	IPT	.0012	.0018	.0023	.0027	.0031	.0036
	6	1.5 x D	0.5 x D	0.75 x D	160	250	160	250	IPT	.0010	.0015	.0019	.0022	.0025	.0028
M	1	1.5 x D	0.5 x D	1 x D	300	380	300	380	IPT	.0015	.0023	.0029	.0034	.0039	.0045
	2	1.5 x D	0.5 x D	1 x D	200	260	200	260	IPT	.0012	.0018	.0023	.0027	.0031	.0036
	3	1.5 x D	0.5 x D	1 x D	200	230	200	230	IPT	.0010	.0015	.0019	.0022	.0025	.0028
K	1	1.5 x D	0.5 x D	1 x D	390	490	390	490	IPT	.0018	.0027	.0034	.0039	.0044	.0049
	2	1.5 x D	0.5 x D	1 x D	360	460	360	460	IPT	.0015	.0023	.0029	.0034	.0039	.0045
	3	1.5 x D	0.5 x D	1 x D	360	430	360	430	IPT	.0012	.0018	.0023	.0027	.0031	.0036
S	1	1.5 x D	0.3 x D	0.3 x D	160	300	–	–	IPT	.0015	.0023	.0029	.0034	.0039	.0045
	2	1.5 x D	0.3 x D	0.3 x D	80	130	–	–	IPT	.0008	.0012	.0015	.0018	.0021	.0024
	3	1.5 x D	0.3 x D	0.3 x D	80	130	–	–	IPT	.0008	.0012	.0015	.0018	.0021	.0024
	4	1.5 x D	0.5 x D	1 x D	160	200	–	–	IPT	.0011	.0017	.0021	.0025	.0028	.0033
H	1	1.5 x D	0.5 x D	0.75 x D	260	460	260	460	IPT	.0014	.0020	.0026	.0030	.0034	.0039

NOTE: These 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 centers, please adjust parameters accordingly on >1/2" diameter.



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).

Customization

- 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, including Safe-Lock™ by Haimer, and non-standard coatings available.

Extensive Standard Offering

- Diameter range 1/4–1".
- Sharp edge and various corner radii in stock.

5 x D lengths of cut without reduced feed rates when machining corners.

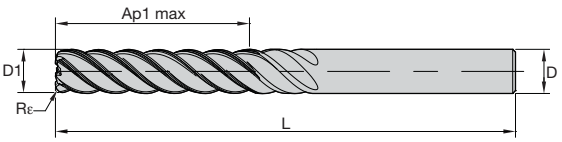
Innovative Core Design
Improves tool stability and wall straightness.

Unequal Flute Spacing
Reduces vibrations.
Improves surface finish.

KC643M™ AlTiN Grade
Universal usage.
For highest tool life.

43° Helix Angle
Improves results and machining of corners.

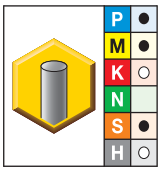
- Kennametal standard dimensions.
- Non-center cutting.
- Unequal flute spacing minimizes chatter for smoother machining.
- For finishing and semi-finishing applications.
- Optimized geometry for machining corners at deep cavities.



End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/- .002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

HARVI II • UGDE • 5 x D Lengths of Cut



grade KC643M

● first choice
○ alternate choice

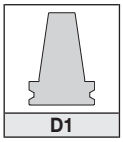
order #	catalog #	D1	D	Ap1 max	L	Rε
5059580	UGDE0250J5BRB	1/4	1/4	1 1/4	3	.030
5059458	UGDE0250J5BE	1/4	1/4	1 1/4	3	–
5059589	UGDE0312J5BRA	5/16	5/16	1 1/4	3 1/2	.015
5059620	UGDE0312J5BRB	5/16	5/16	1 1/4	3 1/2	.030
5059585	UGDE0312J5BE	5/16	5/16	1 1/4	3 1/2	–
5059627	UGDE0375J5BRA	3/8	3/8	1 7/8	4	.015
5059628	UGDE0375J5BRB	3/8	3/8	1 7/8	4	.030
5059629	UGDE0375J5BRC	3/8	3/8	1 7/8	4	.060
5059626	UGDE0375J5BE	3/8	3/8	1 7/8	4	–
5059675	UGDE0500J5BRA	1/2	1/2	2 1/2	5	.015
5059676	UGDE0500J5BRB	1/2	1/2	2 1/2	5	.030
5059677	UGDE0500J5BRC	1/2	1/2	2 1/2	5	.060
5059674	UGDE0500J5BE	1/2	1/2	2 1/2	5	–
5059707	UGDE0625J5BRA	5/8	5/8	3 1/8	6	.015
5059709	UGDE0625J5BRB	5/8	5/8	3 1/8	6	.030
5059740	UGDE0625J5BRC	5/8	5/8	3 1/8	6	.060
5059741	UGDE0625J5BRD	5/8	5/8	3 1/8	6	.120
5059706	UGDE0625J5BE	5/8	5/8	3 1/8	6	–
5059748	UGDE0750J5BRA	3/4	3/4	3 3/4	7	.015
5059749	UGDE0750J5BRB	3/4	3/4	3 3/4	7	.030
5059770	UGDE0750J5BRC	3/4	3/4	3 3/4	7	.060
5059771	UGDE0750J5BRD	3/4	3/4	3 3/4	7	.120
5059747	UGDE0750J5BE	3/4	3/4	3 3/4	7	–
5060123	UGDE1000J5BRA	1	1	5	7 1/2	.015
5060124	UGDE1000J5BRB	1	1	5	7 1/2	.030
5060126	UGDE1000J5BRC	1	1	5	7 1/2	.060
5060127	UGDE1000J5BRD	1	1	5	7 1/2	.120
5060122	UGDE1000J5BE	1	1	5	7 1/2	–

HARVI II • UGDE • Unequal Flute Spacing • 5 x D Lengths of Cut

Material Group		Side Milling (A)		KC643M		Recommended feed per tooth (IPT = inch/th) for side milling (A).						
		A		Cutting Speed — vc SFM			D1 — Diameter					
						frac.	1/4	5/16	3/8	1/2	5/8	3/4	1
		ap	ae	min	max	dec.	.2500	.3125	.3750	.5000	.6250	.7500	1.0000
P	0	Ap max	0.05 x D	980	1310	IPT	.0022	.0028	.0033	.0041	.0047	.0053	.0059
	1	Ap max	0.05 x D	980	1310	IPT	.0022	.0028	.0033	.0041	.0047	.0053	.0059
	2	Ap max	0.05 x D	920	1250	IPT	.0022	.0028	.0033	.0041	.0047	.0053	.0059
	3	Ap max	0.05 x D	790	1050	IPT	.0018	.0023	.0027	.0035	.0041	.0046	.0054
	4	Ap max	0.05 x D	590	980	IPT	.0017	.0021	.0025	.0031	.0036	.0040	.0046
	5	Ap max	0.05 x D	390	660	IPT	.0015	.0019	.0022	.0028	.0033	.0037	.0043
	6	Ap max	0.05 x D	330	490	IPT	.0012	.0016	.0018	.0023	.0027	.0030	.0034
M	1	Ap max	0.05 x D	590	750	IPT	.0018	.0023	.0027	.0035	.0041	.0046	.0054
	2	Ap max	0.05 x D	390	520	IPT	.0015	.0019	.0022	.0028	.0033	.0037	.0043
	3	Ap max	0.05 x D	390	460	IPT	.0012	.0016	.0018	.0023	.0027	.0030	.0034
K	1	Ap max	0.05 x D	790	980	IPT	.0022	.0028	.0033	.0041	.0047	.0053	.0059
	2	Ap max	0.05 x D	720	920	IPT	.0018	.0023	.0027	.0035	.0041	.0046	.0054
	3	Ap max	0.05 x D	720	850	IPT	.0015	.0019	.0022	.0028	.0033	.0037	.0043
S	1	Ap max	0.05 x D	330	590	IPT	.0018	.0023	.0027	.0035	.0041	.0046	.0054
	2	Ap max	0.05 x D	160	260	IPT	.0010	.0012	.0015	.0018	.0022	.0025	.0029
	3	Ap max	0.05 x D	160	260	IPT	.0010	.0012	.0015	.0018	.0022	.0025	.0029
	4	Ap max	0.05 x D	330	390	IPT	.0013	.0017	.0020	.0026	.0030	.0034	.0040
H	1	Ap max	0.05 x D	520	920	IPT	.0017	.0021	.0025	.0031	.0036	.0040	.0046
	2	Ap max	0.05 x D	460	790	IPT	.0012	.0016	.0018	.0023	.0027	.0030	.0034

* For the above cutting data, do not exceed an overall ae of .031".

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 machinining centers, please adjust parameters accordingly on >1/2" 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 as well as the Safe-Lock™ system by HAIMER® shanks.

- 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.
- Center 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.

Customization

- Engineered solutions, including ball nose versions, are available upon request.

Extensive Standard Offering

- Diameter ranges 3/8–1".
- Necked and corner radii offering.
- Round shank and Safe-Lock™ shank available.

Maximum metal removal rates in machining titanium and stainless steel with supreme surfaces.

Proprietary Core Design
Improves tool stability.

Center Cutting
Enables axial movement for finish pass. Expands ramping capabilities.

38° Helix Angle
Roughing and finishing.

Safe-Lock™ Shank
Prevents end mill pullout.
Enables higher feed rates.

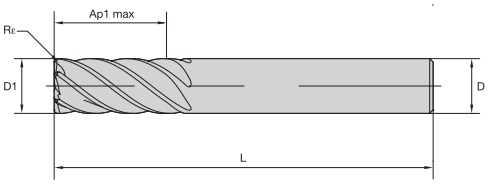
Unequal Flute Spacing
Reduces vibrations.
Improves surface finish.

Eccentric Relief Grind
Improves edge stability.
Enables higher feed rates.

KCSM15™ Beyond™ Grade
Highest tool life.
Enables higher cutting speeds.
Optimized for titanium machining.

SAFE-λOCK®
by HAIMER®

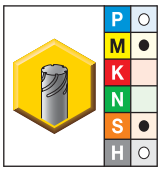
- Kennametal standard dimensions.
- Center cutting.
- Optimized geometry for titanium machining.
- Unequal flute spacing minimizes chatter for smoother machining.
- Single tool for both roughing and finishing operations requiring fewer setups.



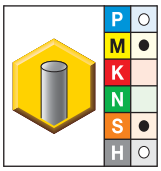
End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/- .002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1-3/16"	0/.00051"

UJDE • 6 Flute with Eccentric Relief Grind • Inch



grade KCSM15



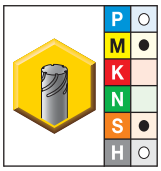
grade KCSM15

● first choice
○ alternate choice

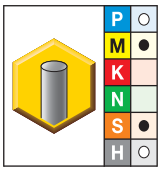
order #	catalog #	order #	catalog #	D1	D	Ap1 max	L	Rε
	–	5351811	UJDE375J6CRA	3/8	3/8	1	3	.015
	–	5351812	UJDE375J6CRB	3/8	3/8	1	3	.030
	–	5351814	UJDE375J6CRC	3/8	3/8	1	3	.060
	–	5351815	UJDE375J6CS	3/8	3/8	1	3	–
	–	5085676	UJDE0500J6ARB	1/2	1/2	1	3	.030
	–	5106643	UJDE0500J6ARC	1/2	1/2	1	3	.060
	–	5351817	UJDE500J6BRA	1/2	1/2	1 1/4	3	.015
5351824	UJDE500N6BRB	5351818	UJDE500J6BRB	1/2	1/2	1 1/4	3	.030
	–	5351819	UJDE500J6BRC	1/2	1/2	1 1/4	3	.060
	–	5351820	UJDE500J6BRE	1/2	1/2	1 1/4	3	.120
	–	5351821	UJDE500J6BS	1/2	1/2	1 1/4	3	–
	–	5120433	UJDE0500J6CRB	1/2	1/2	2	4	.030
	–	5185658	UJDE0500J6CRE	1/2	1/2	2	4	.120
	–	5101798	UJDE0625J6ARA	5/8	5/8	1	3 1/2	.015
	–	5351829	UJDE625J6BRB	5/8	5/8	1 1/4	3 1/2	.030
	–	5351830	UJDE625J6BRC	5/8	5/8	1 1/4	3 1/2	.060
	–	5351831	UJDE625J6BS	5/8	5/8	1 1/4	3 1/2	–
	–	5030114	UJDE0625J6CRB	5/8	5/8	1 5/8	3 1/2	.030
	–	5415950	UJDE0625J6CRC	5/8	5/8	1 5/8	3 1/2	.060
	–	5415951	UJDE0625J6CRD	5/8	5/8	1 5/8	3 1/2	.090
	–	5374997	UJDE0625J6CRE	5/8	5/8	1 5/8	3 1/2	.120
	–	5415954	UJDE0750J6ARB	3/4	3/4	1	3	.030
	–	5351838	UJDE750J6BRB	3/4	3/4	1 1/2	4	.030
	–	5351839	UJDE750J6BRC	3/4	3/4	1 1/2	4	.060
	–	5351891	UJDE750J6BRE	3/4	3/4	1 1/2	4	.120
	–	5367199	UJDE0750J6BRH	3/4	3/4	1 1/2	4	.190
	–	5351892	UJDE750J6BS	3/4	3/4	1 1/2	4	–
	–	5351899	UJDE750J6CRB	3/4	3/4	1 5/8	4	.030

(continued)

(UJDE • 6 Flute with Eccentric Relief Grind • Inch — continued)



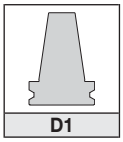
grade KCSM15



grade KCSM15

● first choice
○ alternate choice

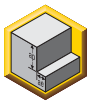
order #	catalog #	order #	catalog #	D1	D	Ap1 max	L	Rε
	–	5351900	UJDE750J6CRC	3/4	3/4	1 5/8	4	.060
5351907	UJDE750N6CRE	5351902	UJDE750J6CRE	3/4	3/4	1 5/8	4	.120
	–	5120466	UJDE1000J6ARB	1	1	1 1/2	4	.030
	–	5351930	UJDE1000J6BRC	1	1	1 3/4	4 1/2	.060
	–	5351931	UJDE1000J6BRE	1	1	1 3/4	4 1/2	.120
	–	5351932	UJDE1000J6BRF	1	1	1 3/4	4 1/2	.250
	–	5351933	UJDE1000J6BS	1	1	1 3/4	4 1/2	–
	–	5390731	UJDE1000J6CRC	1	1	2	4 1/2	.060
	–	5415971	UJDE1000J6CRE	1	1	2	4 1/2	.120
	–	5390732	UJDE1000J6CRH	1	1	2	4 1/2	.190
	–	5415936	UJDE1000J6CRF	1	1	2	4 1/2	.250
	–	5415973	UJDE1000J6CS	1	1	2	4 1/2	–
	–	5390730	UJDE1000J6DS	1	1	2 1/4	5	–



HARVI III • UJDE • Unequal Flute Spacing • Roughing

Material Group		Side Milling (A) A		KCSM15 Cutting Speed — vc SFM		Recommended feed per tooth (IPT = inch/th) for side milling (A).					
							D1 — Diameter				
						frac.	3/8	1/2	5/8	3/4	1
		ap	ae	min	max	dec.	.3750	.5000	.6250	.7500	1.0000
P	4	Ap max	0.4 x D	300	490	IPT	.0020	.0026	.0030	.0034	.0039
	5	Ap max	0.4 x D	200	330	IPT	.0018	.0023	.0027	.0031	.0036
M	1	Ap max	0.4 x D	300	380	IPT	.0023	.0029	.0034	.0039	.0045
	2	Ap max	0.4 x D	200	260	IPT	.0018	.0023	.0027	.0031	.0036
	3	Ap max	0.4 x D	200	230	IPT	.0015	.0019	.0022	.0025	.0028
S	1	Ap max	0.4 x D	160	300	IPT	.0023	.0029	.0034	.0039	.0045
	2	Ap max	0.4 x D	80	130	IPT	.0012	.0015	.0018	.0021	.0024
	3	Ap max	0.4 x D	80	130	IPT	.0012	.0015	.0018	.0021	.0024
	4	Ap max	0.4 x D	160	200	IPT	.0017	.0021	.0025	.0028	.0033
H	1	Ap max	0.4 x D	260	460	IPT	.0020	.0026	.0030	.0034	.0039

HARVI III • UJDE • Unequal Flute Spacing • Finishing



Material Group		Side Milling (A) A		KCSM15 Cutting Speed — vc SFM		Recommended feed per tooth (IPT = inch/th) for side milling (A).					
							D1 — Diameter				
						frac.	3/8	1/2	5/8	3/4	1
		ap	ae	min	max	dec.	.3750	.5000	.6250	.7500	1.0000
P	4	Ap max	0.06 x D	560	940	IPT	.0025	.0031	.0036	.0040	.0046
	5	Ap max	0.06 x D	370	620	IPT	.0022	.0028	.0033	.0037	.0043
M	1	Ap max	0.06 x D	560	720	IPT	.0027	.0035	.0041	.0046	.0054
	2	Ap max	0.06 x D	370	500	IPT	.0022	.0028	.0033	.0037	.0043
	3	Ap max	0.06 x D	370	440	IPT	.0018	.0023	.0027	.0030	.0034
S	1	Ap max	0.06 x D	310	560	IPT	.0027	.0035	.0041	.0046	.0054
	2	Ap max	0.06 x D	160	250	IPT	.0015	.0018	.0022	.0025	.0029
	3	Ap max	0.06 x D	160	250	IPT	.0015	.0018	.0022	.0025	.0029
	4	Ap max	0.06 x D	310	370	IPT	.0020	.0026	.0030	.0034	.0040
H	1	Ap max	0.06 x D	500	870	IPT	.0025	.0031	.0036	.0040	.0046

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 centers, please adjust parameters accordingly on >1/2" diameter.

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HARVI™ III Ball Nose

High-Performance Solid Carbide End Mills

Primary Application

HARVI III Ball Nose tooling takes high-performance profiling, semi-finishing, and finishing to the next level. Designed to provide maximum metal removal rates in titanium and stainless steel while achieving supreme surface conditions. A wide range of diameters and length variations are available from stock.

- Outstanding metal removal rates increase productivity.
- Highest tool life increases due to eccentric relief grind and proprietary KCSM15™ Beyond™ grade.

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 at roughing and finishing operations.

Tailored Grade

- KCSM15 Beyond grade for exceptional tool life in titanium and stainless steels.

Extensive Standard Offering

- Diameter ranges 3/8–1".
- Necked, round shank offering in two length variations.

Customization

- Engineered solutions, including shank and non-standard length versions, are available upon request.

3D profiling at highest productivity in titanium and stainless steels.

Proprietary Core Design
Improves tool stability.

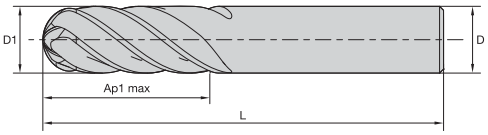
38° Helix Angle
Roughing and finishing.

Eccentric Relief Grind
Improves edge stability.
Enables higher feed rates.

Unequal Flute Spacing
Reduces vibrations.
Improves surface finish.

KCSM15™ Beyond™ grade
Optimized for titanium machining.
Highest tool life. Enables higher cutting speeds.

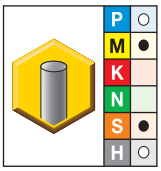
- Kennametal standard dimensions.
- Center cutting.
- Optimized geometry for titanium machining.
- Unequal flute spacing minimizes chatter for smoother machining.
- Single tool for both roughing and finishing operations requiring fewer setups.



End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/- .002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1-3/16"	0/.00051"

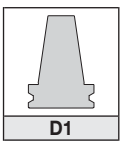
UJBE • 6-Flute Ball Nose with Eccentric Relief Grind • Inch



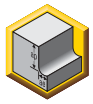
grade KCSM15

● first choice
○ alternate choice

order #	catalog #	D1	D	Ap1 max	L
5607204	UJBE0375J6B	3/8	3/8	7/8	2 1/2
5607205	UJBE0500J6B	1/2	1/2	1	3
5607206	UJBE0500J6C	1/2	1/2	1 1/4	3
5607207	UJBE0625J6B	5/8	5/8	1 1/4	3 1/2
5607208	UJBE0750J6B	3/4	3/4	1 1/2	4
5607209	UJBE1000J6B	1	1	1 1/2	4



HARVI III • UJBE • Ball Nose • Unequal Flute Spacing • Roughing



Material Group		Side Milling (A)		KCSM15			Recommended feed per tooth (IPT = inch/th) for side milling (A).					
		A		Cutting Speed — vc SFM				D1 — Diameter				
							frac.	3/8	1/2	5/8	3/4	1
		ap	ae	min		max	inch	.3750	.5000	.6250	.7500	1.0000
P	0	Ap max	0.4 x D	490	–	660	IPT	.0027	.0034	.0039	.0044	.0049
	1	Ap max	0.4 x D	490	–	660	IPT	.0027	.0034	.0039	.0044	.0049
	2	Ap max	0.4 x D	460	–	620	IPT	.0027	.0034	.0039	.0044	.0049
	3	Ap max	0.4 x D	390	–	520	IPT	.0023	.0029	.0034	.0039	.0045
	4	Ap max	0.4 x D	300	–	490	IPT	.0020	.0026	.0030	.0034	.0039
	5	Ap max	0.4 x D	200	–	330	IPT	.0018	.0023	.0027	.0031	.0036
	4	Ap max	0.4 x D	160	–	250	IPT	.0015	.0019	.0022	.0025	.0028
M	1	Ap max	0.4 x D	300	–	380	IPT	.0023	.0029	.0034	.0039	.0045
	2	Ap max	0.4 x D	200	–	260	IPT	.0018	.0023	.0027	.0031	.0036
	3	Ap max	0.4 x D	200	–	230	IPT	.0015	.0019	.0022	.0025	.0028
S	1	Ap max	0.4 x D	160	–	300	IPT	.0023	.0029	.0034	.0039	.0045
	2	Ap max	0.4 x D	80	–	130	IPT	.0012	.0015	.0018	.0021	.0024
	3	Ap max	0.4 x D	80	–	130	IPT	.0012	.0015	.0018	.0021	.0024
	4	Ap max	0.4 x D	160	–	200	IPT	.0017	.0021	.0025	.0028	.0033
H	1	Ap max	0.4 x D	260	–	460	IPT	.0020	.0026	.0030	.0034	.0039

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 >1/2" 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.
- Center cutting for plunging, ramping, profiling, high-feed slotting, and side milling.

Features and Benefits

Advanced Technology

- Up to 1 x D 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.
- Universal KC643M™ grade suitable for cutting steel, stainless, and titanium.

Customization

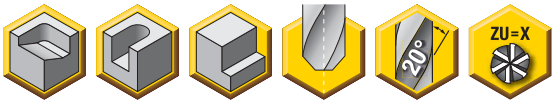
- Intermediate diameters available.
- Corner radii for near-shape roughing operations available.
- Various shank options, including the Safe-Lock™ system by HAIMER®, and non-standard coatings available.
- Internal coolant for improved chip evacuation and extended tool life.

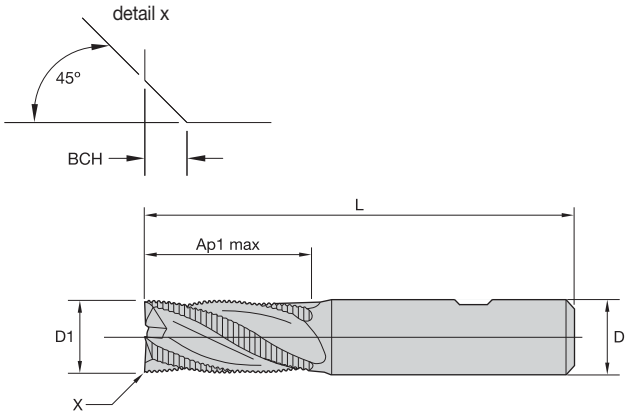
Extensive Standard Offering

- Diameter range 1/4–1".
- Weldon® shank for maximum torque transmission.

Highest metal removal rates — even on unstable machines or workpiece clamping.

- Kennametal standard dimensions.
- Center cutting.
- Cord profile.

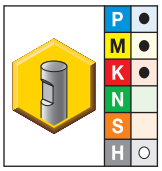




End Mill Tolerances

D1	d11	D	tolerance h6
<1/8"	-.0008/-.0031"	<1/8"	+0/-.00024"
1/8–7/32"	-.0012/-.0041"	1/8–7/32"	+0/-.00031"
1/4–3/8"	-.0016/-.0051"	1/4–3/8"	+0/-.00035"
13/32–11/16"	-.002/-.0063"	13/32–11/16"	+0/-.00043"
23/32–1-3/16"	-.0026/-.0077"	23/32–1-3/16"	+0/-.00051"

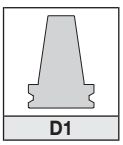
MDRHEC • Rougher • Beyond™



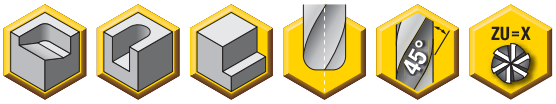
grade KCPM15

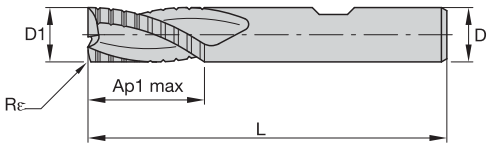
● first choice
○ alternate choice

order #	catalog #	D1	D	Ap1 max	L	BCH	Z U
6232054	MDRHEC250S3025	1/4	1/4	3/8	2	.012	3
6232055	MDRHEC250S3075	1/4	1/4	3/4	2 1/2	.012	3
4048689	MDRHEC250S4025	1/4	1/4	3/8	2	.012	3
4048690	MDRHEC250S4075	1/4	1/4	3/4	2 1/2	.012	3
4048691	MDRHEC312S4081	5/16	5/16	13/16	2 1/2	.012	4
4048692	MDRHEC375S4038	3/8	3/8	1/2	2	.020	4
4048693	MDRHEC375S4088	3/8	3/8	7/8	2 1/2	.020	4
4048694	MDRHEC500S4050	1/2	1/2	5/8	2 1/2	.020	4
4048695	MDRHEC500S4100	1/2	1/2	1	3	.020	4
4048696	MDRHEC625S4063	5/8	5/8	3/4	3	.020	4
4048697	MDRHEC625S4125	5/8	5/8	1 1/4	3 1/2	.020	4
4048698	MDRHEC750S4075	3/4	3/4	7/8	3 1/2	.020	4
4048699	MDRHEC750S4150	3/4	3/4	1 1/2	4	.020	4
4048688	MDRHEC100S5150	1	1	1 1/2	4	.020	5



- Kennametal standard dimensions.
- Center cutting.
- Shallow-pitch profile.

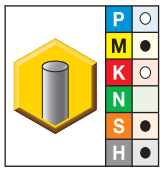




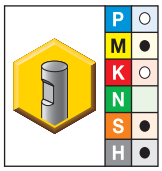
End Mill Tolerances

D1	d11	D	tolerance h6
<1/8"	-.0008/-.0031"	<1/8"	+0/-.00024"
1/8–7/32"	-.0012/-.0041"	1/8–7/32"	+0/-.00031"
1/4–3/8"	-.001/-.0051"	1/4–3/8"	+0/-.00035"
13/32–11/16"	-.002/-.0063"	13/32–11/16"	+0/-.00043"
23/32–1 3/16"	-.0026/-.0077"	23/32–1 3/16"	+0/-.00051"

HPRST



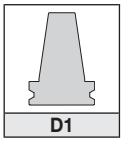
grade KC643M



grade KC643M

● first choice
○ alternate choice

order #	catalog #	order #	catalog #	D1	D	Ap1 max	L	Rε	Z U
3331481	HPRST250S4038		–	1/4	1/4	3/8	2	.030	3
3331482	HPRST250S4075		–	1/4	1/4	3/4	2 1/2	.030	4
3331483	HPRST375S4050		–	3/8	3/8	1/2	2	.030	4
3331484	HPRST375S4088		–	3/8	3/8	7/8	2 1/2	.030	4
–		3331485	HPRST500S4063	1/2	1/2	5/8	2 1/2	.040	4
–		3331486	HPRST500S4125	1/2	1/2	1 1/4	3 1/2	.040	4
–		3331487	HPRST625S4075	5/8	5/8	3/4	3	.040	4
–		3331488	HPRST625S4125	5/8	5/8	1 1/4	3 1/2	.040	4
–		3331489	HPRST625S6125	5/8	5/8	1 1/4	3 1/2	.040	6
–		3331490	HPRST750S4088	3/4	3/4	7/8	3 1/2	.050	4
–		3331491	HPRST750S4150	3/4	3/4	1 1/2	4	.050	4
–		3331492	HPRST750S6150	3/4	3/4	1 1/2	4	.050	6
–		3331493	HPRST1000S4150	1	1	1 1/2	4	.050	4
–		3331494	HPRST1000S6150	1	1	1 1/2	4	.050	6

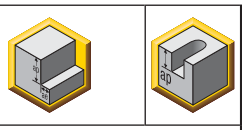


MDRHEC

Material Group		Side Milling (A) and Slotting (B)			KCPM15		Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.						
		A		B	Cutting Speed — vc SFM			D1 — Diameter					
							frac.	1/4	5/16	3/8	1/2	5/8	3/4	1
		ap	ae	ap	min	max	dec.	.250	.313	.375	.500	.625	.750	1.000
P	0	1.0 x D	0.5 x D	0.5 x D	490	660	IPT	.0016	.0020	.0023	.0029	.0034	.0037	.0042
	1	1.0 x D	0.5 x D	0.5 x D	490	660	IPT	.0016	.0020	.0023	.0029	.0034	.0037	.0042
	2	1.0 x D	0.4 x D	0.5 x D	460	620	IPT	.0016	.0020	.0023	.0029	.0034	.0037	.0042
	3	1.0 x D	0.4 x D	0.5 x D	390	520	IPT	.0013	.0017	.0019	.0025	.0029	.0033	.0038
	4	1.0 x D	0.3 x D	0.4 x D	300	490	IPT	.0012	.0015	.0017	.0022	.0026	.0029	.0033
	5	1.0 x D	0.4 x D	0.5 x D	200	330	IPT	.0010	.0013	.0016	.0020	.0023	.0026	.0031
M	1	1.0 x D	0.4 x D	0.5 x D	300	380	IPT	.0013	.0017	.0019	.0025	.0029	.0033	.0038
	2	1.0 x D	0.4 x D	0.5 x D	200	260	IPT	.0010	.0013	.0016	.0020	.0023	.0026	.0031
	3	1.0 x D	0.4 x D	0.5 x D	200	230	IPT	.0009	.0011	.0013	.0016	.0019	.0021	.0024
K	1	1.0 x D	0.5 x D	0.5 x D	390	490	IPT	.0016	.0020	.0023	.0029	.0034	.0037	.0042
	2	1.0 x D	0.4 x D	0.5 x D	360	460	IPT	.0013	.0017	.0019	.0025	.0029	.0033	.0038
	3	1.0 x D	0.4 x D	0.5 x D	360	430	IPT	.0010	.0013	.0016	.0020	.0023	.0026	.0031
S	1	1.0 x D	0.4 x D	0.5 x D	–	–	IPT	.0013	.0017	.0019	.0025	.0029	.0033	.0038
	2	1.0 x D	0.4 x D	0.5 x D	–	–	IPT	.0007	.0009	.0010	.0013	.0015	.0018	.0021
H	1	1.0 x D	0.3 x D	0.4 x D	260	460	IPT	.0012	.0015	.0017	.0022	.0026	.0029	.0033

NOTE: These 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 centers, please adjust parameters accordingly on >1/2" diameter.

HPRST



Material Group		Side Milling (A) and Slotting (B)			KC643M		Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.							
		A		B	Cutting Speed — vc SFM			D1 — Diameter						
							frac.	1/4	5/16	3/8	1/2	5/8	3/4	1
		ap	ae	ap	min	max	dec.	.250	.313	.378	.500	.625	.750	1.000
P	3	1.0 x D	0.5 x D	0.75 x D	390	520	IPT	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	4	1.0 x D	0.3 x D	0.75 x D	300	490	IPT	.0014	.0017	.0020	.0026	.0030	.0034	.0039
	5	1.0 x D	0.5 x D	0.75 x D	200	330	IPT	.0012	.0016	.0018	.0023	.0027	.0031	.0036
	6	1.0 x D	0.3 x D	0.3 x D	160	250	IPT	.0010	.0013	.0015	.0019	.0022	.0025	.0028
M	1	1.0 x D	0.5 x D	0.75 x D	300	380	IPT	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	2	1.0 x D	0.5 x D	0.75 x D	200	260	IPT	.0012	.0016	.0018	.0023	.0027	.0031	.0036
	3	1.0 x D	0.5 x D	0.75 x D	200	230	IPT	.0010	.0013	.0015	.0019	.0022	.0025	.0028
K	1	1.0 x D	0.5 x D	1 x D	390	490	IPT	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	2	1.0 x D	0.5 x D	1 x D	360	460	IPT	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	3	1.0 x D	0.5 x D	1 x D	360	430	IPT	.0012	.0016	.0018	.0023	.0027	.0031	.0036
S	1	1.0 x D	0.3 x D	0.75 x D	160	300	IPT	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	2	1.0 x D	0.3 x D	0.75 x D	80	130	IPT	.0008	.0010	.0012	.0015	.0018	.0021	.0024
	3	1.0 x D	0.3 x D	0.75 x D	80	130	IPT	.0008	.0010	.0012	.0015	.0018	.0021	.0024
	4	1.0 x D	0.4 x D	0.75 x D	160	200	IPT	.0011	.0014	.0017	.0021	.0025	.0028	.0033
H	1	1.0 x D	0.3 x D	0.3 x D	260	460	IPT	.0014	.0017	.0020	.0026	.0030	.0034	.0039
	2	1.0 x D	0.2 x D	0.2 x D	230	390	IPT	.0010	.0013	.0015	.0019	.0022	.0025	.0028
	3	1.0 x D	0.2 x D	0.2 x D	200	300	IPT	.0008	.0010	.0012	.0015	.0018	.0021	.0024

NOTE: These 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 centers, please adjust parameters accordingly on >1/2" diameter.

MaxiMet™

Primary Application

The MaxiMet system provides extraordinary metal removal rates and combines roughing and finishing operations with any aluminum 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 aluminum and other non-ferrous materials.

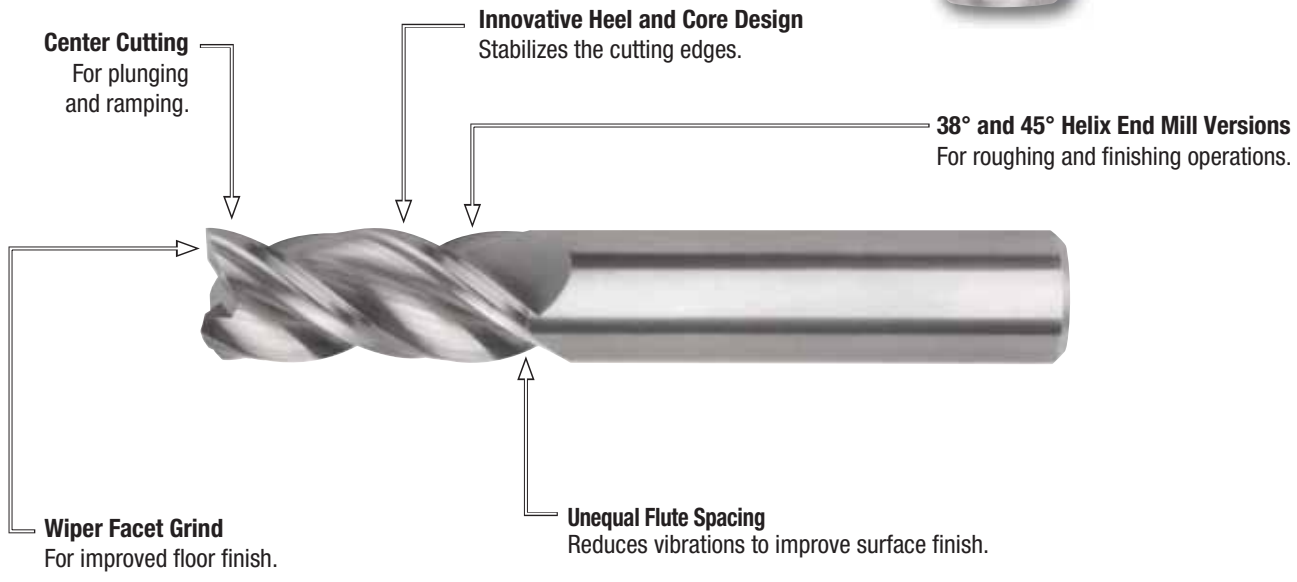
Customization

- 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.

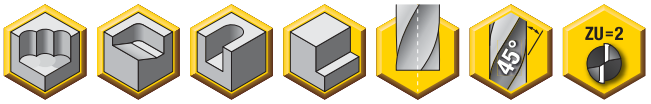
Extensive Standard Offering

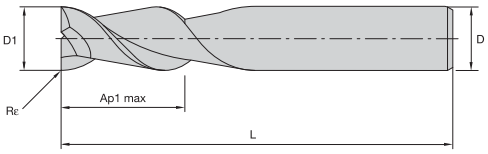
- Diameter ranges 3/16–1".
- Extended neck for long-reach applications and radii and sharp corner configurations.

Solid carbide end mills for high metal removal rates and superior surface finishes in aluminum.



- Kennametal standards dimensions.
- Center 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.

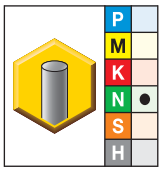




End Mill Tolerances

D1	tolerance h6	D	tolerance h6
<1/8"	+0/-.002"	<1/8"	+0/-.00024"
1/8–7/32"	+0/-.002"	1/8–7/32"	+0/-.00031"
1/4–3/8"	+0/-.00035"	1/4–3/8"	+0/-.00035"
13/32–11/16"	+0/-.00043"	13/32–11/16"	+0/-.00043"
23/32–1 3/16"	+0/-.00051"	23/32–1 3/16"	+0/-.00051"

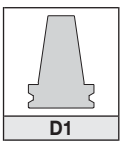
ABDF • Wiper Facet



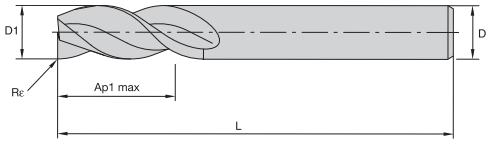
grade K600

● first choice
○ alternate choice

order #	catalog #	D1	D	Ap1 max	L	Rε
4041060	ABDF0188J2AS	3/16	3/16	3/8	2	—
3660396	ABDF0250J2AS	1/4	1/4	1/2	2 1/2	—
4041073	ABDF0312J2AS	5/16	5/16	5/8	2 1/2	—
3660399	ABDF0375J2AS	3/8	3/8	3/4	2 1/2	—
3660426	ABDF0500J2AS	1/2	1/2	1 1/4	3	—
3660432	ABDF0625J2AS	5/8	5/8	1 1/4	3 1/2	—
3660433	ABDF0750J2AS	3/4	3/4	1 1/2	4	—



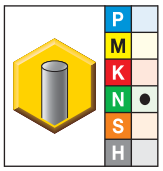
- Kennametal standards dimensions.
- Center cutting.
- Effective in thin wall applications.
- Wiper facet, special end gash, and flute geometry provide better surface finishes.
- Unique geometry delivers maximum metal removal rates.



End Mill Tolerances

D1	tolerance h6	D	tolerance h6
<1/8"	+0/-.002"	<1/8"	+0/-.00024"
1/8–7/32"	+0/-.002"	1/8–7/32"	+0/-.00031"
1/4–3/8"	+0/-.00035"	1/4–3/8"	+0/-.00035"
13/32–11/16"	+0/-.00043"	13/32–11/16"	+0/-.00043"
23/32–1 3/16"	+0/-.00051"	23/32–1 3/16"	+0/-.00051"

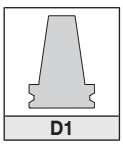
ABDE • Wiper Facet



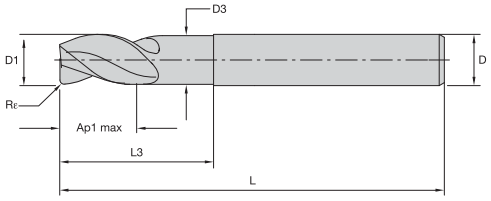
grade K600

● first choice
○ alternate choice

order #	catalog #	D1	D	Ap1 max	L	Rε
3660402	ABDE0250J3ARB	1/4	1/4	1/2	2 1/2	.030
3660401	ABDE0250J3AS	1/4	1/4	1/2	2 1/2	—
4041090	ABDE0312J3AS	5/16	5/16	5/8	2 1/2	—
3660424	ABDE0375J3AS	3/8	3/8	3/4	2 1/2	—
3660430	ABDE0500J3ARB	1/2	1/2	1 1/4	3	.030
3660431	ABDE0500J3ARC	1/2	1/2	1 1/4	3	.060
3660429	ABDE0500J3AS	1/2	1/2	1 1/4	3	—
3660441	ABDE0625J3AS	5/8	5/8	1 1/4	3 1/2	—
3660442	ABDE0750J3AS	3/4	3/4	1 1/2	4	—



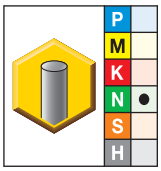
- Kennametal standard dimensions.
- Center cutting.
- Effective in thin wall applications.
- Wiper facet, special end gash, and flute geometry provide better surface finishes.
- Unique geometry delivers maximum metal removal rates.



End Mill Tolerances

D1	tolerance h6	D	tolerance h6
<1/8"	+0/-.002"	<1/8"	+0/-.00024"
1/8–7/32"	+0/-.002"	1/8–7/32"	+0/-.00031"
1/4–3/8"	+0/-.00035"	1/4–3/8"	+0/-.00035"
13/32–11/16"	+0/-.00043"	13/32–11/16"	+0/-.00043"
23/32–1 3/16"	+0/-.00051"	23/32–1 3/16"	+0/-.00051"

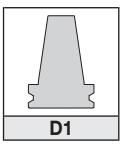
ABDE • Wiper Facet • Extended Neck



grade K600

● first choice
○ alternate choice

order #	catalog #	D1	D	D3	Ap1 max	L3	L	Rε
3755901	ABDE0375J3BQ	3/8	3/8	.351	1/2	2 1/8	4	–
3755910	ABDE0500J3BQE	1/2	1/2	.469	5/8	2 1/4	4	.120
3755906	ABDE0500J3BQ	1/2	1/2	.469	5/8	2 1/4	4	–
3755911	ABDE0500J3CQ	1/2	1/2	.469	5/8	3 3/8	6	–



ABDF...

Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600 Cutting Speed — vc SFM min	K600 Cutting Speed — vc SFM max	Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%. frac.	D1 — Diameter 3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
		ap	ae	ap	min	max	dec.	.1875	.2500	.3125	.3750	.5000	.6250	.7500	1.0000
N	1	1.5 x D	0.5 x D	1.0 x D	1640	6560	IPT	.0017	.0023	.0028	.0034	.0045	.0056	.0068	.0090
	2	1.5 x D	0.5 x D	1.0 x D	1640	4920	IPT	.0014	.0018	.0023	.0027	.0036	.0045	.0054	.0072
	3	1.5 x D	0.5 x D	1.0 x D	1640	4920	IPT	.0012	.0016	.0020	.0024	.0032	.0039	.0047	.0063
	4	1.5 x D	0.5 x D	1.0 x D	1310	2460	IPT	.0012	.0016	.0020	.0024	.0032	.0039	.0047	.0063
	5	1.5 x D	0.5 x D	1.0 x D	820	3280	IPT	.0015	.0020	.0025	.0030	.0041	.0051	.0061	.0081

ABDE...

Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600 Cutting Speed — vc SFM min	K600 Cutting Speed — vc SFM max	Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%. frac.	D1 — Diameter 3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
		ap	ae	ap	min	max	dec.	.1875	.2500	.3125	.3750	.5000	.6250	.7500	1.0000
N	1	1.5 x D	0.5 x D	1.0 x D	1640	6560	IPT	.0017	.0023	.0028	.0034	.0045	.0056	.0068	.0090
	2	1.5 x D	0.5 x D	1.0 x D	1640	4920	IPT	.0014	.0018	.0023	.0027	.0036	.0045	.0054	.0072
	3	1.5 x D	0.5 x D	1.0 x D	1640	4920	IPT	.0012	.0016	.0020	.0024	.0032	.0039	.0047	.0063
	4	1.5 x D	0.5 x D	1.0 x D	1310	2460	IPT	.0012	.0016	.0020	.0024	.0032	.0039	.0047	.0063
	5	1.5 x D	0.5 x D	1.0 x D	820	3280	IPT	.0015	.0020	.0025	.0030	.0041	.0051	.0061	.0081

ABDE... with Neck

Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600 Cutting Speed — vc SFM min	K600 Cutting Speed — vc SFM max	Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%. frac.	D1 — Diameter 1/4	5/16	3/8	1/2	5/8	3/4	1
		ap	ae	ap	min	max	dec.	.2500	.3125	.3750	.5000	.6250	.7500	1.0000
N	1	1 x D	0.5 x D	1.0 x D	1640	6560	IPT	.0025	.0031	.0038	.0050	.0063	.0075	.0100
	2	1 x D	0.5 x D	1.0 x D	1640	4920	IPT	.0020	.0025	.0030	.0040	.0050	.0060	.0080
	3	1 x D	0.5 x D	1.0 x D	1640	4920	IPT	.0018	.0022	.0026	.0035	.0044	.0053	.0070
	4	1 x D	0.5 x D	1.0 x D	1310	2460	IPT	.0018	.0022	.0026	.0035	.0044	.0053	.0070
	5	1 x D	0.5 x D	1.0 x D	820	3280	IPT	.0023	.0028	.0034	.0045	.0056	.0068	.0090

NOTE: These guidelines may require variations to achieve optimum results. For better surface finish, reduce feed per tooth.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.
For cutting aluminum with high silicon, coating is recommended.
Ap for spindle with ceramic bearings, multiply by 0.5.
For better surface finish, reduce feed per tooth.
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%.

GOmill™ GP General Purpose Solid Carbide End Mills • 2 Flute

Primary Application

GOmill 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 sharp 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).

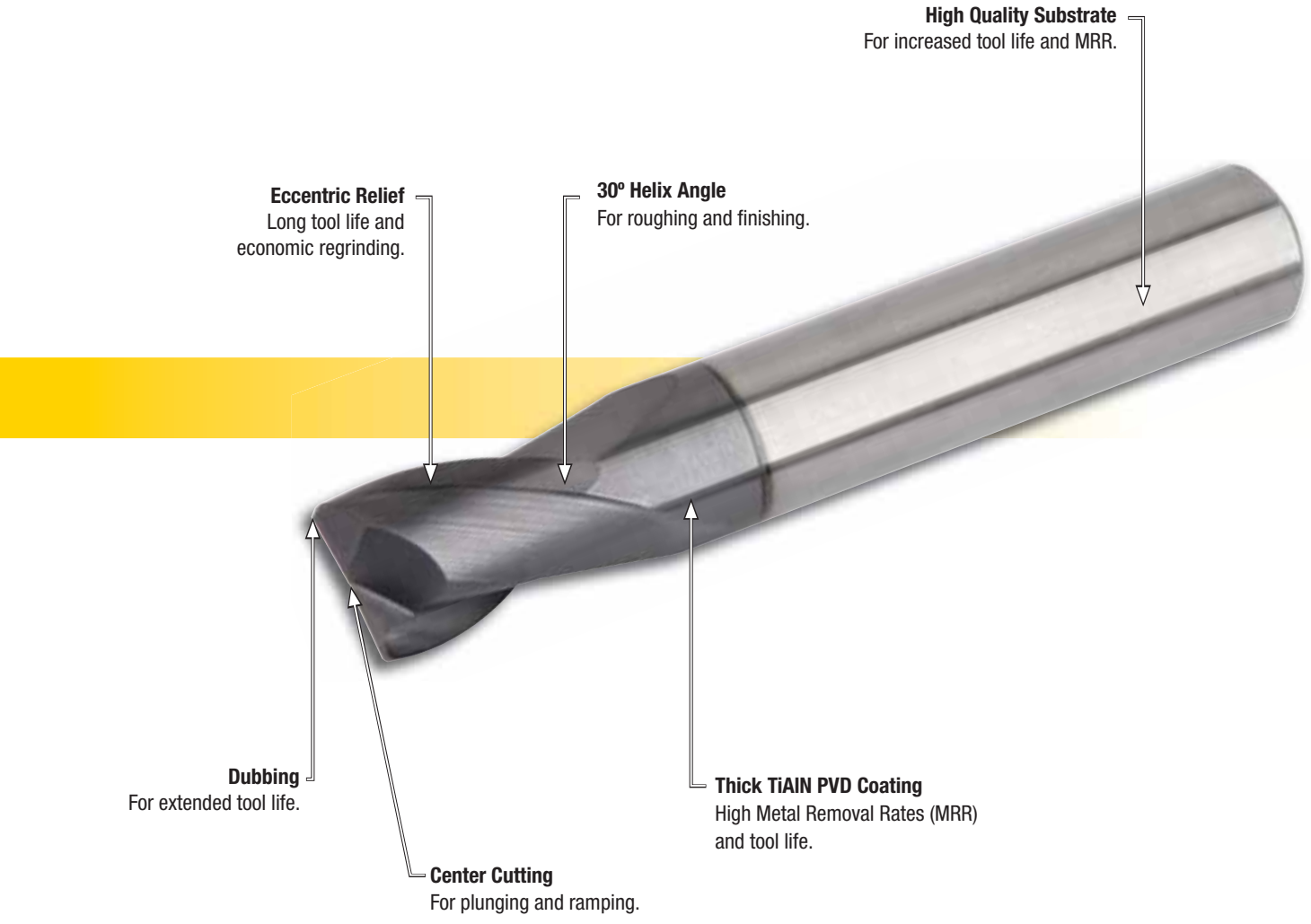
Customization

- Intermediate diameters available.

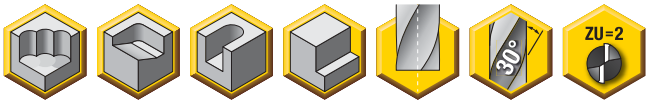
Extensive Standard Offering

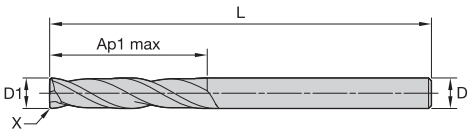
- Diameter range 1/64–1".
- Sharp edge and ball nose as standard offering.

Designed for roughing and finishing with one tool at a value price.



- Center cutting.

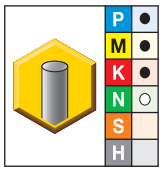




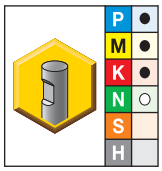
End Mill Tolerances

D1	tolerance	D	tolerance h6 + / -
All	+.000/- .002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

2SE..IS-IR-IL • 2 Flute • Inch



grade KC633M



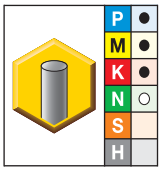
grade KC633M

● first choice
○ alternate choice

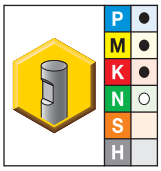
order #	catalog #	order #	catalog #	D1	D	length of cut Ap1 max	length L
6086327	2SE0016IR003A		–	1/64	1/8	1/32	1 1/2
6086328	2SE0031IR007A		–	1/32	1/8	5/64	1 1/2
6086330	2SE0062IR012A		–	1/16	1/8	1/8	1 1/2
6086329	2SE0062IL018A		–	1/16	1/8	3/16	1 1/2
6086382	2SE0078IR018A		–	5/64	1/8	3/16	1 1/2
6086383	2SE0093IR018A		–	3/32	1/8	3/16	1 1/2
6086384	2SE0093IL037A		–	3/32	1/8	3/8	1 1/2
6086386	2SE0109IR037A		–	7/64	1/8	3/8	1 1/2
6086387	2SE0125IR025A		–	1/8	1/8	1/4	1 1/2
6086388	2SE0125IL050A		–	1/8	1/8	1/2	1 1/2
6086390	2SE0140IR056A		–	9/64	3/16	9/16	2
6086391	2SE0156IR031A		–	5/32	3/16	5/16	2
6086392	2SE0156IL056A		–	5/32	3/16	9/16	2
6086393	2SE0171IR062A		–	11/64	3/16	5/8	2
6086394	2SE0187IR062A		–	3/16	3/16	5/8	2
6086395	2SE0187IL075A		–	3/16	3/16	3/4	2 1/2
6086397	2SE0218IR043A		–	7/32	1/4	7/16	2
6086398	2SE0218IL062A		–	7/32	1/4	5/8	2 1/2
6086399	2SE0250IS050A		–	1/4	1/4	1/2	2
6086400	2SE0250IR075A		–	1/4	1/4	3/4	2 1/2
6086401	2SE0250IL112A		–	1/4	1/4	1 1/2	3
6086403	2SE0281IR075A		–	9/32	5/16	3/4	2 1/2
6086404	2SE0312IS050A		–	5/16	5/16	1/2	2
6086405	2SE0312IR081A		–	5/16	5/16	13/16	2 1/2
6086406	2SE0312IL112A		–	5/16	5/16	1 1/8	3
6086408	2SE0343IR100A		–	11/32	3/8	1	2 1/2
6086409	2SE0375IS062A		–	3/8	3/8	5/8	2
6086410	2SE0375IR100A		–	3/8	3/8	1	2 1/2

(continued)

(2SE..IS-IR-IL • 2 Flute • Inch — continued)



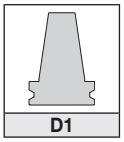
grade KC633M



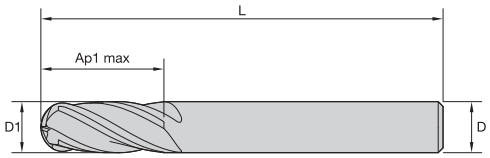
grade KC633M

● first choice
○ alternate choice

order #	catalog #	order #	catalog #	D1	D	length of cut Ap1 max	length L
6086411	2SE0375IL112A		–	3/8	3/8	1 1/2	3
6086413	2SE0406IR100A		–	13/32	7/16	1	2 3/4
6086414	2SE0437IR062A		–	7/16	7/16	5/8	2 1/2
6086415	2SE0437IL100A		–	7/16	7/16	1	2 1/2
6086417	2SE0468IR100A		–	15/32	1/2	1	3
6086418	2SE0500IS062A		–	1/2	1/2	5/8	2 1/2
6086419	2SE0500IR100A	6086460	2SE0500IR100B	1/2	1/2	1	3
6086420	2SE0500IL200A	6086461	2SE0500IL200B	1/2	1/2	2	4
6086442	2SE0562IR075A		–	9/16	9/16	3/4	3
6086443	2SE0562IL125A		–	9/16	9/16	1 1/4	3 1/2
6086445	2SE0625IR075A		–	5/8	5/8	3/4	3
6086446	2SE0625IL125A	6086465	2SE0625IL125B	5/8	5/8	1 1/4	3 1/2
6086448	2SE0687IR137A		–	11/16	3/4	1 3/8	4
6086449	2SE0750IS100A		–	3/4	3/4	1	3
6086450	2SE0750IR150A		–	3/4	3/4	1 1/2	4
6086451	2SE0750IR225A		–	3/4	3/4	2 1/4	5
6086452	2SE0750IL300A		–	3/4	3/4	3	6
6086454	2SE0875IR150A	6086471	2SE0875IR150B	7/8	7/8	1 1/2	4
6086455	2SE0875IL225A	6086472	2SE0875IL225B	7/8	7/8	2 1/4	5
6086456	2SE1000IS150A		–	1	1	1 1/2	4
6086457	2SE1000IR225A	6086473	2SE1000IR225B	1	1	2 1/4	5
6086458	2SE1000IL300A		–	1	1	3	6



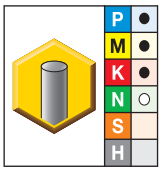
- Center cutting.



End Mill Tolerances

D1	tolerance	D	tolerance h6 + / -
All	+.000/- .002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

2BN..IS-IR-IL • 2 Flute • Ball Nose • Inch



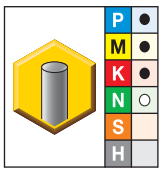
grade KC633M

● first choice
○ alternate choice

order #	catalog #	D1	D	length of cut Ap1 max	length L
5876721	2BN0031IR007A	1/32	1/8	5/64	1 1/2
5876723	2BN0047IR018A	3/64	1/8	3/16	1 1/2
5876722	2BN0063IR018A	1/16	1/8	3/16	1 1/2
5876724	2BN0094IR018A	3/32	1/8	3/16	1 1/2
5876725	2BN0094IL037A	3/32	1/8	3/8	1 1/2
5876726	2BN0109IR037A	7/64	1/8	3/8	1 1/2
5876727	2BN0125IS025A	1/8	1/8	1/4	1 1/2
5876728	2BN0125IR050A	1/8	1/8	1/2	1 1/2
5876729	2BN0125IL075A	1/8	1/8	3/4	2 1/4
5876741	2BN0156IR031A	5/32	3/16	5/16	2
5876742	2BN0156IL056A	5/32	3/16	9/16	2
5876743	2BN0187IS031A	3/16	3/16	5/16	1 1/2
5876744	2BN0187IR062A	3/16	3/16	5/8	2
5876745	2BN0187IL075A	3/16	3/16	3/4	2 1/2
5876747	2BN0219IR062A	7/32	1/4	5/8	2 1/2
5876748	2BN0250IS050A	1/4	1/4	1/2	2
5876749	2BN0250IR075A	1/4	1/4	3/4	2 1/2
5876750	2BN0250IR112A	1/4	1/4	1 1/8	3
5876751	2BN0250IL150A	1/4	1/4	1 1/2	4
5876753	2BN0312IR081A	5/16	5/16	13/16	2 1/2
5876754	2BN0312IL112A	5/16	5/16	1 1/8	3
5876756	2BN0375IS062A	3/8	3/8	5/8	2
5876757	2BN0375IR087A	3/8	3/8	7/8	2 1/2
5876758	2BN0375IL112A	3/8	3/8	1 1/8	3
5876760	2BN0406IR100A	13/32	7/16	1	2 1/2
5876761	2BN0437IR100A	7/16	7/16	1	2 1/2
5876762	2BN0500IS062A	1/2	1/2	5/8	2 1/2
5876763	2BN0500IR100A	1/2	1/2	1	3

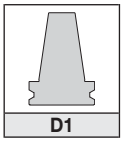
(continued)

(2BN..IS-IR-IL • 2 Flute • Ball Nose • Inch — continued)

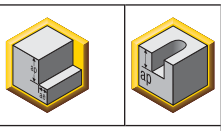


grade KC633M

order #	catalog #	D1	D	length of cut Ap1 max	length L
5876765	2BN0500IL200A	1/2	1/2	2	4
5876767	2BN0625IR125A	5/8	5/8	1 1/4	3 1/2
5876768	2BN0625IL225A	5/8	5/8	2 1/4	5
5876770	2BN0750IS100A	3/4	3/4	1	3
5876771	2BN0750IR150A	3/4	3/4	1 1/2	4
5876772	2BN0750IL200A	3/4	3/4	2	6
5876774	2BN0875IR150A	7/8	7/8	1 1/2	4
5876775	2BN1000IR150A	1	1	1 1/2	4
5876776	2BN1000IL300A	1	1	3	6



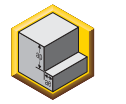
GOmill GP • 2SE..IS-IR • 2 Flute • Short • Regular



Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KC633M Cutting Speed — vc SFM min		max	Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%. D1 — Diameter inch	1/64 .0156	1/32 .0313	1/16 .0625	5/64 .0781	3/32 .0938	1/8 .1250	3/16 .1875	1/4 .2500	5/16 .3125	3/8 .3750	1/2 .5000	5/8 .6250	3/4 .7500	1 1.0000
P	0	Ap1 max	0.1 x D	0.5 x D	490	–	660	IPT	.0001	.0002	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	1	Ap1 max	0.1 x D	0.5 x D	490	–	660	IPT	.0001	.0002	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	2	Ap1 max	0.1 x D	0.5 x D	460	–	620	IPT	.0001	.0002	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	3	Ap1 max	0.1 x D	0.5 x D	390	–	520	IPT	.0001	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	4	Ap1 max	0.1 x D	0.5 x D	300	–	490	IPT	.0001	.0002	.0003	.0004	.0005	.0007	.0010	.0014	.0018	.0020	.0026	.0030	.0034	.0039
M	1	Ap1 max	0.1 x D	0.5 x D	300	–	380	IPT	.0001	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	2	Ap1 max	0.1 x D	0.5 x D	200	–	260	IPT	.0001	.0002	.0003	.0004	.0004	.0006	.0009	.0012	.0016	.0018	.0023	.0027	.0031	.0036
K	1	Ap1 max	0.1 x D	0.5 x D	390	–	490	IPT	.0001	.0002	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	2	Ap1 max	0.1 x D	0.5 x D	360	–	460	IPT	.0001	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
N	1	Ap1 max	0.1 x D	0.5 x D	820	–	3250	IPT	.0002	.0003	.0006	.0008	.0009	.0013	.0019	.0025	.0031	.0038	.0050	.0063	.0075	.0100
	2	Ap1 max	0.1 x D	0.5 x D	820	–	2450	IPT	.0001	.0003	.0005	.0006	.0008	.0010	.0015	.0020	.0025	.0030	.0040	.0050	.0060	.0080
	4	Ap1 max	0.1 x D	0.5 x D	820	–	2450	IPT	.0001	.0003	.0006	.0007	.0008	.0011	.0017	.0023	.0028	.0034	.0045	.0056	.0068	.0090

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 >1/2" diameter.

GOmill GP • 2SE..IL • 2 Flute • Long



Material Group		Side Milling (A) A ap	A ae	KC633M Cutting Speed — vc SFM min		max	Recommended feed per tooth (IPT = inch/th) for side milling (A). D1 — Diameter inch	1/16 .0156	5/64 .0781	3/32 .0938	1/8 .1250	3/16 .1875	1/4 .2500	5/16 .3125	3/8 .3750	1/2 .5000	5/8 .6250	3/4 .7500	1 1.0000
P	0	Ap1 max	0.1 x D	490	–	660	IPT	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	1	Ap1 max	0.1 x D	490	–	660	IPT	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	2	Ap1 max	0.1 x D	460	–	620	IPT	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	3	Ap1 max	0.1 x D	390	–	520	IPT	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	4	Ap1 max	0.1 x D	300	–	490	IPT	.0003	.0004	.0005	.0007	.0010	.0014	.0018	.0020	.0026	.0030	.0034	.0039
M	1	Ap1 max	0.1 x D	300	–	380	IPT	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	2	Ap1 max	0.1 x D	200	–	260	IPT	.0003	.0004	.0004	.0006	.0009	.0012	.0016	.0018	.0023	.0027	.0031	.0036
K	1	Ap1 max	0.1 x D	390	–	490	IPT	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	2	Ap1 max	0.1 x D	360	–	460	IPT	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
N	1	Ap1 max	0.1 x D	820	–	3250	IPT	.0006	.0008	.0009	.0013	.0019	.0025	.0031	.0038	.0050	.0063	.0075	.0100
	2	Ap1 max	0.1 x D	820	–	2450	IPT	.0005	.0006	.0008	.0010	.0015	.0020	.0025	.0030	.0040	.0050	.0060	.0080
	4	Ap1 max	0.1 x D	820	–	2450	IPT	.0006	.0007	.0008	.0011	.0017	.0023	.0028	.0034	.0045	.0056	.0068	.0090

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 >1/2" diameter.

GOmill GP • 2BN..IS-IR • 2 Flute • Ball Nose • Short • Regular

Material Group		Side Milling (A) and Slotting (B)			KC633M			Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.														
		A		B	Cutting Speed — vc SFM			D1 — Diameter														
		ap	ae	ap	min		max	inch	1/32 .0313	1/16 .0625	5/64 .0781	3/32 .0938	1/8 .1250	3/16 .1875	1/4 .2500	5/16 .3125	3/8 .3750	1/2 .5000	5/8 .6250	3/4 .7500	1 1.0000
P	0	Ap1 max	0.1 x D	0.5 x D	490	–	660	IPT	.0002	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	1	Ap1 max	0.1 x D	0.5 x D	490	–	660	IPT	.0002	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	2	Ap1 max	0.1 x D	0.5 x D	460	–	620	IPT	.0002	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	3	Ap1 max	0.1 x D	0.5 x D	390	–	520	IPT	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	4	Ap1 max	0.1 x D	0.5 x D	300	–	490	IPT	.0002	.0003	.0004	.0005	.0007	.0010	.0014	.0018	.0020	.0026	.0030	.0034	.0039
M	1	Ap1 max	0.1 x D	0.5 x D	300	–	380	IPT	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	2	Ap1 max	0.1 x D	0.5 x D	200	–	260	IPT	.0002	.0003	.0004	.0004	.0006	.0009	.0012	.0016	.0018	.0023	.0027	.0031	.0036
K	1	Ap1 max	0.1 x D	0.5 x D	390	–	490	IPT	.0002	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	2	Ap1 max	0.1 x D	0.5 x D	360	–	460	IPT	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
N	1	Ap1 max	0.1 x D	0.5 x D	820	–	3250	IPT	.0003	.0006	.0008	.0009	.0013	.0019	.0025	.0031	.0038	.0050	.0063	.0075	.0100
	2	Ap1 max	0.1 x D	0.5 x D	820	–	2450	IPT	.0003	.0005	.0006	.0008	.0010	.0015	.0020	.0025	.0030	.0040	.0050	.0060	.0080
	4	Ap1 max	0.1 x D	0.5 x D	820	–	2450	IPT	.0003	.0006	.0007	.0008	.0011	.0017	.0023	.0028	.0034	.0045	.0056	.0068	.0090

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 centers, please adjust parameters accordingly on >1/2" diameter.

GOmill GP • 2BN..IL • 2 Flute • Ball Nose • Long

Material Group		Side Milling (A)		KC633M			Recommended feed per tooth (IPT = inch/th) for side milling (A).									
		A		Cutting Speed — vc SFM			D1 — Diameter									
		ap	ae	min		max	inch	3/32 .0938	1/8 .1250	3/16 .1875	1/4 .2500	5/16 .3125	3/8 .3750	1/2 .5000	5/8 .6250	3/4 .7500	1 1.0000
P	0	Ap1 max	0.1 x D	490	–	660	IPT	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	1	Ap1 max	0.1 x D	490	–	660	IPT	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	2	Ap1 max	0.1 x D	460	–	620	IPT	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	3	Ap1 max	0.1 x D	390	–	520	IPT	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	4	Ap1 max	0.1 x D	300	–	490	IPT	.0005	.0007	.0010	.0014	.0018	.0020	.0026	.0030	.0034	.0039
M	1	Ap1 max	0.1 x D	300	–	380	IPT	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	2	Ap1 max	0.1 x D	200	–	260	IPT	.0004	.0006	.0009	.0012	.0016	.0018	.0023	.0027	.0031	.0036
K	1	Ap1 max	0.1 x D	390	–	490	IPT	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	2	Ap1 max	0.1 x D	360	–	460	IPT	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
N	1	Ap1 max	0.1 x D	820	–	3250	IPT	.0009	.0013	.0019	.0025	.0031	.0038	.0050	.0063	.0075	.0100
	2	Ap1 max	0.1 x D	820	–	2450	IPT	.0008	.0010	.0015	.0020	.0025	.0030	.0040	.0050	.0060	.0080
	4	Ap1 max	0.1 x D	820	–	2450	IPT	.0008	.0011	.0017	.0023	.0028	.0034	.0045	.0056	.0068	.0090

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 >1/2" diameter.

GOmill™ GP General Purpose Solid Carbide End Mills • 3 Flute

Primary Application

GOmill GP system 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).

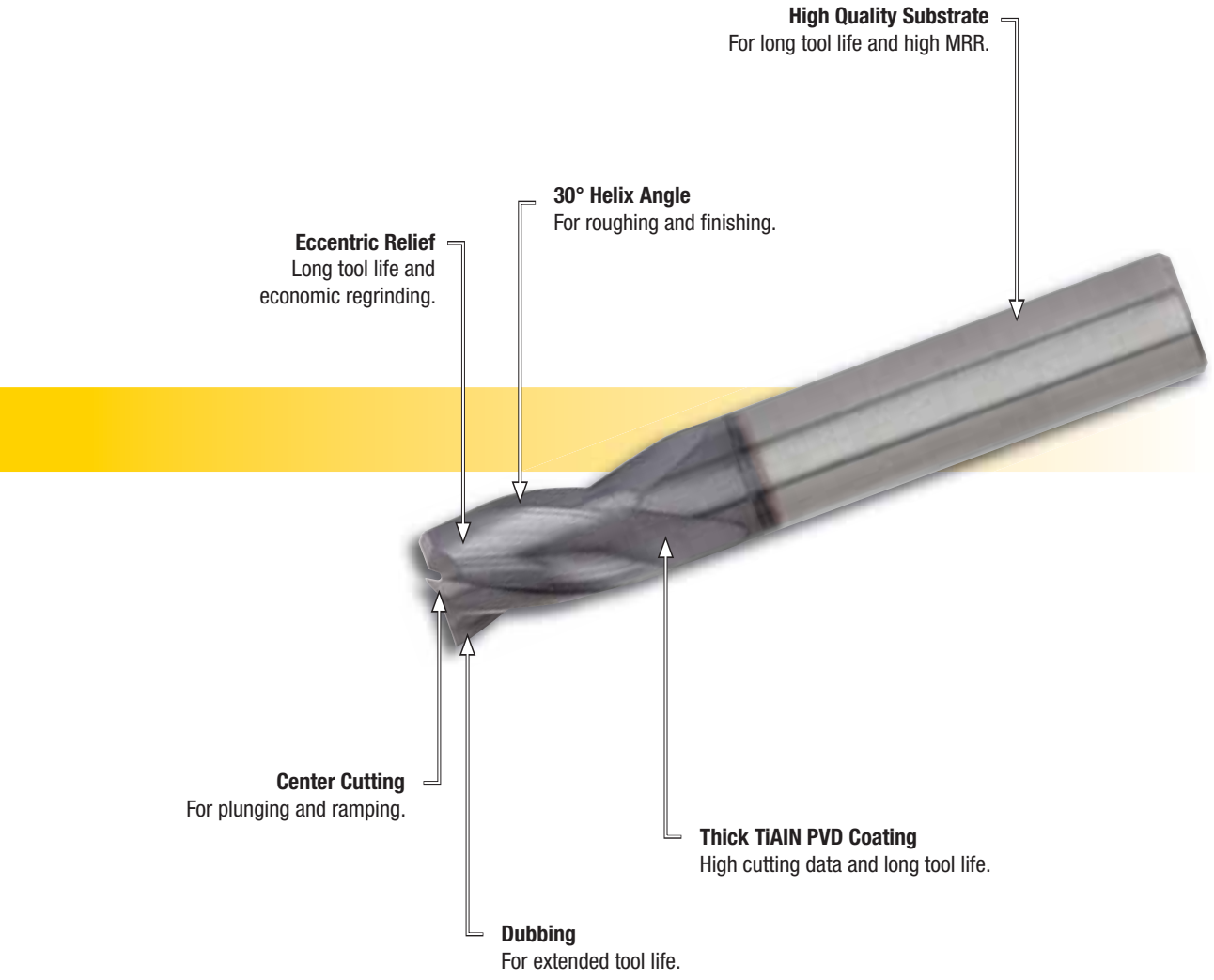
Customization

- Intermediate diameters available.

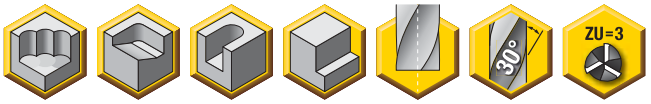
Extensive Standard Offering

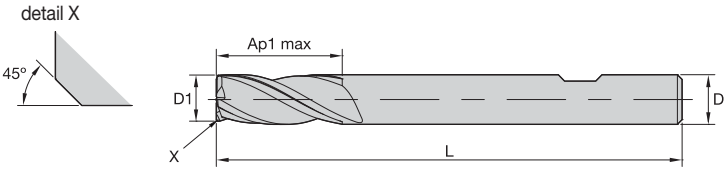
- Diameter range 1/32–1".
- Sharp edge as standard offering.
- Three different lengths as factory standards in stock.

Designed for roughing and finishing with one tool at an economical price.



• Center cutting.

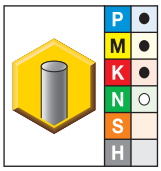




End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/- .002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

3SE..IS-IR-IL • 3 Flute • Inch

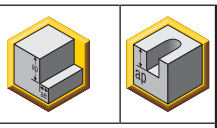


grade KC633M

● first choice
○ alternate choice

order #	catalog #	D1	D	length of cut Ap1 max	length L
6143903	3SE0031IR007A	1/32	1/8	5/64	1 1/2
6143904	3SE0047IR011A	3/64	1/8	7/64	1 1/2
6143905	3SE0062IR019A	1/16	1/8	3/16	1 1/2
6143907	3SE0094IR037A	3/32	1/8	3/8	1 1/2
6143908	3SE0109IR037A	7/64	1/8	3/8	1 1/2
6143909	3SE0125IR025A	1/8	1/8	1/4	1 1/2
6143910	3SE0125IL050A	1/8	1/8	1/2	2 1/2
6143943	3SE0156IR056A	5/32	3/16	9/16	2
6143945	3SE0188IR056A	3/16	3/16	9/16	2
6143946	3SE0188IL062A	3/16	3/16	5/8	3
6143949	3SE0219IR062A	7/32	1/4	5/8	2 1/2
6143951	3SE0250IS050A	1/4	1/4	1/2	2
6143952	3SE0250IR075A	1/4	1/4	3/4	2 1/2
6143953	3SE0250IL100A	1/4	1/4	1	3
6143957	3SE0312IR050A	5/16	5/16	1/2	2
6143958	3SE0312IL081A	5/16	5/16	13/16	2 1/2
6143962	3SE0375IS050A	3/8	3/8	1/2	2
6143963	3SE0375IR088A	3/8	3/8	7/8	2 1/2
6143964	3SE0375IL100A	3/8	3/8	1	2 1/2
6143970	3SE0500IR100A	1/2	1/2	1	3
6143971	3SE0500IL200A	1/2	1/2	2	4
6143974	3SE0625IR075A	5/8	5/8	3/4	3
6143975	3SE0625IL125A	5/8	5/8	1 1/4	3 1/2
6143976	3SE0750IR100A	3/4	3/4	1	3
6143977	3SE0750IL150A	3/4	3/4	1 1/2	4
6143979	3SE1000IR150A	1	1	1 1/2	4

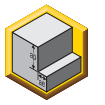
GOmill • 3SE..IS-IR • 3 Flute • Short • Regular



Material Group		Side Milling (A) and Slotting (B)			KC633M			Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.														
		A		B	Cutting Speed — vc SFM				D1 — Diameter													
								frac.	1/32	1/16	5/64	3/32	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
		ap	ae	ap	min		max	dec.	.0313	.0625	.0781	.0938	.1250	.1875	.2500	.3125	.3750	.5000	.6250	.7500	1.0000
P	0	2.0 x D	0.1 x D	0.5 x D	490	–	660	IPT	.0002	.0005	.0006	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	1	2.0 x D	0.1 x D	0.5 x D	490	–	660	IPT	.0002	.0005	.0006	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	2	2.0 x D	0.1 x D	0.5 x D	460	–	620	IPT	.0002	.0005	.0006	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	3	2.0 x D	0.1 x D	0.5 x D	390	–	520	IPT	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	4	2.0 x D	0.1 x D	0.5 x D	300	–	490	IPT	.0002	.0004	.0004	.0005	.0007	.0011	.0014	.0017	.0020	.0026	.0030	.0034	.0039
M	1	2.0 x D	0.1 x D	0.5 x D	300	–	380	IPT	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	2	2.0 x D	0.1 x D	0.5 x D	200	–	260	IPT	.0002	.0003	.0004	.0005	.0006	.0009	.0012	.0016	.0018	.0023	.0027	.0031	.0036
K	1	2.0 x D	0.1 x D	0.5 x D	390	–	490	IPT	.0002	.0005	.0006	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	2	2.0 x D	0.1 x D	0.5 x D	360	–	460	IPT	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
N	1	2.0 x D	0.1 x D	0.5 x D	820	–	3250	IPT	.0003	.0007	.0008	.0010	.0013	.0019	.0025	.0031	.0038	.0050	.0063	.0075	.0100
	2	2.0 x D	0.1 x D	0.5 x D	820	–	3250	IPT	.0003	.0005	.0006	.0008	.0010	.0015	.0020	.0025	.0030	.0040	.0050	.0060	.0080
	4	2.0 x D	0.1 x D	0.5 x D	820	–	3250	IPT	.0003	.0006	.0007	.0008	.0011	.0017	.0023	.0028	.0034	.0045	.0056	.0068	.0090

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 diameters >1/2".

GOmill • 3SE..IL • 3 Flute • Long



Material Group		Side Milling (A)		KC633M			Recommended feed per tooth (IPT = inch/th) for side milling (A).								
		A		Cutting Speed — vc SFM				D1 — Diameter							
							frac.	1/8	5/32	1/4	5/16	3/8	1/2	5/8	3/4	1
		ap	ae	min		max	dec.	.1250	.1563	.2500	.3125	.3750	.5000	.6250	.7500	1.0000
P	0	2.0 x D	0.1 x D	490	–	660	IPT	.0009	.0011	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	1	2.0 x D	0.1 x D	490	–	660	IPT	.0009	.0011	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	2	2.0 x D	0.1 x D	460	–	620	IPT	.0009	.0011	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	3	2.0 x D	0.1 x D	390	–	520	IPT	.0007	.0009	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	4	2.0 x D	0.1 x D	300	–	490	IPT	.0007	.0008	.0014	.0017	.0020	.0026	.0030	.0034	.0039
M	1	2.0 x D	0.1 x D	300	–	380	IPT	.0007	.0009	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	2	2.0 x D	0.1 x D	200	–	260	IPT	.0006	.0007	.0012	.0016	.0018	.0023	.0027	.0031	.0036
K	1	2.0 x D	0.1 x D	390	–	490	IPT	.0009	.0011	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	2	2.0 x D	0.1 x D	360	–	460	IPT	.0007	.0009	.0015	.0020	.0023	.0029	.0034	.0039	.0045
N	1	2.0 x D	0.1 x D	820	–	3250	IPT	.0013	.0016	.0025	.0031	.0038	.0050	.0063	.0075	.0100
	2	2.0 x D	0.1 x D	820	–	2450	IPT	.0010	.0013	.0020	.0025	.0030	.0040	.0050	.0060	.0080
	4	2.0 x D	0.1 x D	820	–	2450	IPT	.0011	.0014	.0023	.0028	.0034	.0045	.0056	.0068	.0090

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 diameters >1/2".

GOmill™ GP General Purpose Solid Carbide End Mills • 4 Flute

Primary Application

GOmill GP system 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 sharp 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).

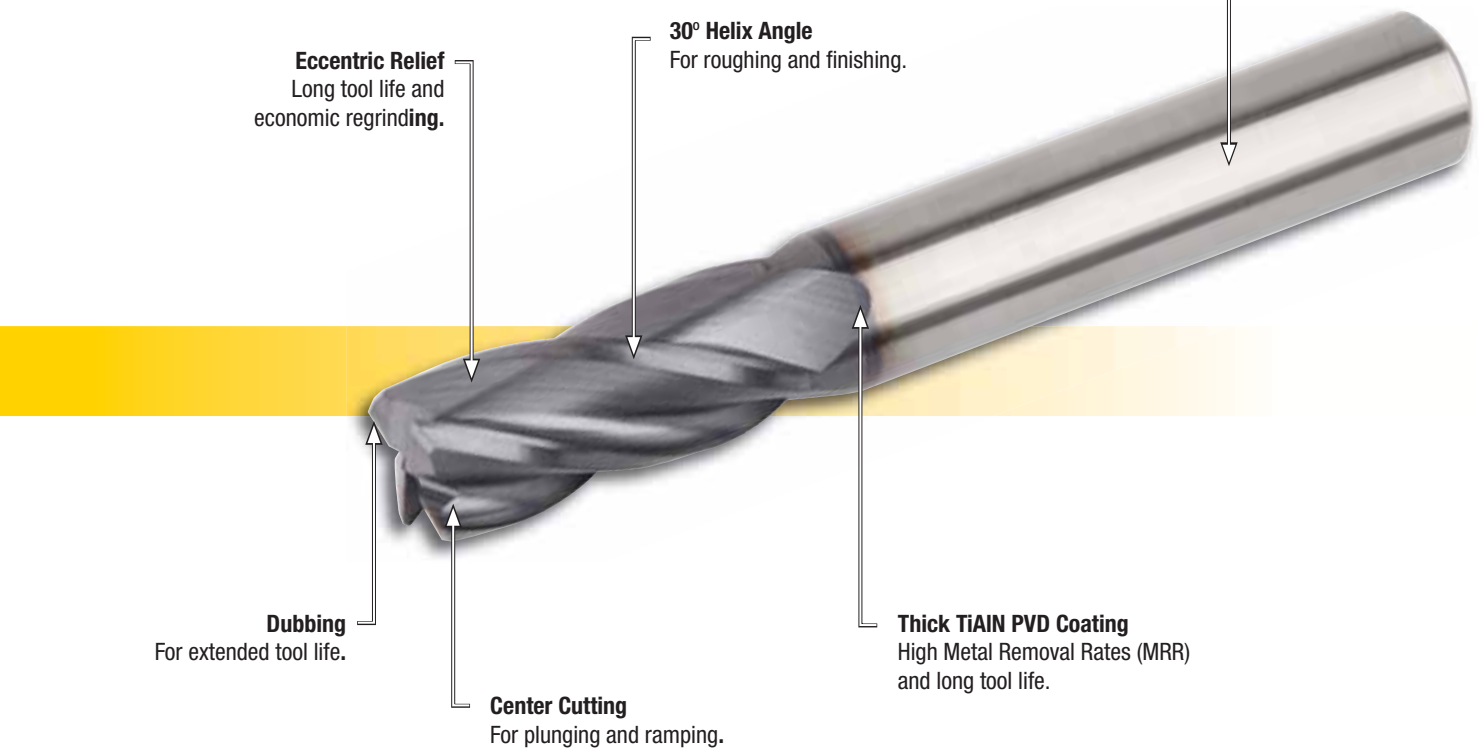
Customization

- Intermediate diameters available.

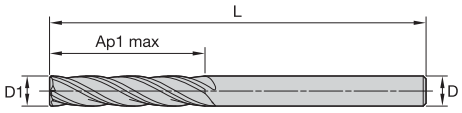
Extensive Standard Offering

- Diameter range 1/64–1".
- Sharp edge and ball nose as standard offering.

Designed for roughing and finishing with one tool at a value price.



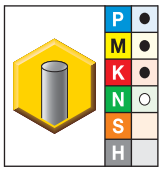
- Center cutting.



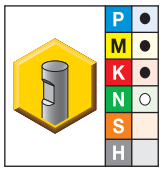
End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/- .002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

4SE..IS-IR-IL • 4 Flute • Inch



grade KC633M



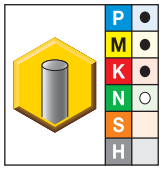
grade KC633M

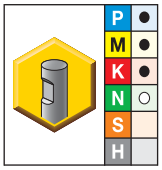
● first choice
○ alternate choice

order #	catalog #	order #	catalog #	D1	D	length of cut Ap1 max	length L	BCH
6086553	4SE0015IR003A		–	1/64	1/8	1/32	1 1/2	–
6086554	4SE0031IR008A		–	1/32	1/8	5/64	1 1/2	–
6086555	4SE0062IR010A		–	1/16	1/8	7/64	1 1/2	–
6086556	4SE0078IR018A		–	5/64	1/8	3/16	1 1/2	–
6086558	4SE0093IR037A		–	3/32	1/8	3/8	1 1/2	–
6086559	4SE0093IL062A		–	3/32	1/8	5/8	2	–
6086560	4SE0109IR037A		–	7/64	1/8	3/8	1 1/2	–
6086561	4SE0125IS025A		–	1/8	1/8	1/4	1 1/2	–
6086562	4SE0125IR050A		–	1/8	1/8	1/2	1 1/2	–
6086563	4SE0125IL075A		–	1/8	1/8	3/4	2 1/4	–
6086565	4SE0140IR056A		–	9/64	3/16	9/16	2	–
6086567	4SE0156IR056A		–	5/32	3/16	9/16	2	–
6086568	4SE0187IR062A		–	3/16	3/16	5/8	2	–
6086569	4SE0187IS075A		–	3/16	3/16	3/4	1 1/2	–
6086570	4SE0187IL075A		–	3/16	3/16	3/4	2 1/2	–
6086572	4SE0203IR062A		–	13/64	1/4	5/8	2 1/2	–
6086573	4SE0218IR043A		–	7/32	1/4	7/16	2	–
6086574	4SE0218IL062A		–	7/32	1/4	5/8	2 1/2	–
6086575	4SE0234IR075A		–	15/64	1/4	3/4	2 1/2	–
6086576	4SE0250IS050A		–	1/4	1/4	1/2	2	–
6086577	4SE0250IR075A		–	1/4	1/4	3/4	2 1/2	–
6086578	4SE0250IL112A		–	1/4	1/4	1 1/8	3	–
6086580	4SE0265IR075A		–	17/64	5/16	3/4	2 1/2	–
6086581	4SE0281IR075A		–	9/32	5/16	3/4	2 1/2	–
6086582	4SE0296IR081A		–	19/64	5/16	13/16	2 1/2	–
6086583	4SE0312IS050A		–	5/16	5/16	1/2	2	–
6086584	4SE0312IR081A		–	5/16	5/16	13/16	2 1/2	–
6086585	4SE0312IL112A		–	5/16	5/16	1 1/8	3	–

(continued)

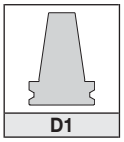
(4SE..IS-IR-IL • 4 Flute • Inch — continued)



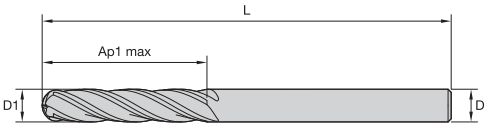


● first choice
○ alternate choice

grade KC633M		grade KC633M						
order #	catalog #	order #	catalog #	D1	D	length of cut Ap1 max	length L	BCH
6086587	4SE0328IR100A		–	21/64	3/8	1	2 1/2	–
6086588	4SE0343IR100A		–	11/32	3/8	1	2 1/2	–
6086589	4SE0359IR100A		–	23/64	3/8	1	2 1/2	–
6086590	4SE0375IS062A		–	3/8	3/8	5/8	2	–
6086591	4SE0375IR100A		–	3/8	3/8	1	2 1/2	–
6086592	4SE0375IL112A		–	3/8	3/8	1 1/8	3	–
6086594	4SE0390IR100A		–	25/64	7/16	1	2 3/4	–
6086595	4SE0406IR100A		–	13/32	7/16	1	2 3/4	–
6086596	4SE0421IR100A		–	27/64	7/16	1	2 3/4	–
6086597	4SE0437IS100A		–	7/16	7/16	1	2 1/2	–
6086598	4SE0437IR100A		–	7/16	7/16	1	2 3/4	–
6086599	4SE0437IL200A		–	7/16	7/16	2	4	–
6086601	4SE0453IR100A		–	29/64	1/2	1	3	–
6086602	4SE0468IR100A		–	15/32	1/2	1	3	–
6086603	4SE0484IR100A		–	31/64	1/2	1	3	–
6086333	4SE0500IS062A		–	1/2	1/2	5/8	2 1/2	–
6086334	4SE0500IR100A	6086527	4SE0500IR100B	1/2	1/2	1	3	–
6086335	4SE0500IL200A	6086528	4SE0500IL200B	1/2	1/2	2	4	–
6086337	4SE0562IR075A		–	9/16	9/16	3/4	3	–
6086338	4SE0562IL125A	6086529	4SE0562IL125B	9/16	9/16	1 1/4	3 1/2	–
6086340	4SE0625IS075A		–	5/8	5/8	3/4	3	–
6086511	4SE0625IR125A	6086530	4SE0625IR125B	5/8	5/8	1 1/4	3 1/2	–
6086512	4SE0625IL225A	6086541	4SE0625IL225B	5/8	5/8	2 1/4	5	–
6086514	4SE0687IR137A		–	11/16	3/4	1 3/8	4	–
6086515	4SE0750IS100A		–	3/4	3/4	1	3	–
6086516	4SE0750IR150A	6086542	4SE0750IR150B	3/4	3/4	1 1/2	4	–
6086517	4SE0750IR225A	6086543	4SE0750IR225B	3/4	3/4	2 1/4	5	–
6086518	4SE0750IL300A	6086544	4SE0750IL300B	3/4	3/4	3	6	–
6086520	4SE0875IR150A	6086545	4SE0875IR150B	7/8	7/8	1 1/2	4	–
6086521	4SE0875IL225A	6086546	4SE0875IL225B	7/8	7/8	2 1/4	5	–
6086522	4SE1000IS150A		–	1	1	1 1/2	4	–
6086523	4SE1000IR225A	6086547	4SE1000IR225B	1	1	2 1/4	5	–
6086524	4SE1000IL300A	6086548	4SE1000IL300B	1	1	3	6	–



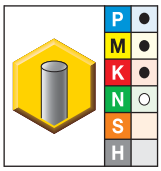
- Center cutting.



End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/- .002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

4BN..IS-IR-IL • 4 Flute • Ball Nose • Inch



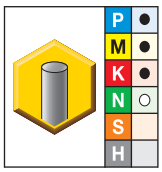
grade KC633M

● first choice
○ alternate choice

order #	catalog #	D1	D	length of cut Ap1 max	length L
5824029	4BN0031IR008A	1/32	1/8	5/64	1 1/2
5824030	4BN0047IR012A	3/64	1/8	1/8	1 1/2
5824501	4BN0062IR019A	1/16	1/8	3/16	1 1/2
5824502	4BN0078IR019A	5/64	1/8	3/16	1 1/2
5824503	4BN0094IR019A	3/32	1/8	3/16	1 1/2
5824504	4BN0094IL037A	3/32	1/8	3/8	1 1/2
5824505	4BN0109IR037A	7/64	1/8	3/8	1 1/2
5824506	4BN0125IS025A	1/8	1/8	1/4	1 1/2
5824507	4BN0125IR050A	1/8	1/8	1/2	1 1/2
5824508	4BN0125IL075A	1/8	1/8	3/4	2 1/4
5824510	4BN0141IR056A	9/64	3/16	9/16	2
5824511	4BN0156IR056A	5/32	3/16	9/16	2
5824512	4BN0172IR062A	11/64	3/16	5/8	2
5824513	4BN0187IR031A	3/16	3/16	5/16	1 1/2
5824514	4BN0187IL062A	3/16	3/16	5/8	2
5824516	4BN0203IR062A	13/64	1/4	5/8	2 1/2
5824517	4BN0219IR062A	7/32	1/4	5/8	2 1/2
5824518	4BN0234IR075A	15/64	1/4	3/4	2 1/2
5824519	4BN0250IS050A	1/4	1/4	1/2	2
5824520	4BN0250IR075A	1/4	1/4	3/4	2 1/2
5824521	4BN0250IR112A	1/4	1/4	1 1/8	3
5824522	4BN0250IL150A	1/4	1/4	1 1/2	4
5824524	4BN0281IR075A	9/32	5/16	3/4	2 1/2
5824525	4BN0312IS050A	5/16	5/16	1/2	2
5824526	4BN0312IR081A	5/16	5/16	13/16	2 1/2
5824527	4BN0312IL112A	5/16	5/16	1 1/8	3
5824529	4BN0344IR100A	11/32	3/8	1	2 1/2
5824530	4BN0375IS100A	3/8	3/8	1	2 1/2

(continued)

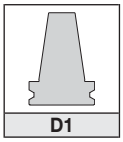
(4BN..IS-IR-IL • 4 Flute • Ball Nose • Inch — continued)



grade KC633M

● first choice
○ alternate choice

order #	catalog #	D1	D	length of cut Ap1 max	length L
5824532	4BN0375IL112A	3/8	3/8	1 1/8	3
5824531	4BN0375IR100A	3/8	3/8	1	4
5824534	4BN0437IR100A	7/16	1/2	1	2 1/2
5824535	4BN0500IS100A	1/2	1/2	1	3
5824536	4BN0500IR100A	1/2	1/2	1	4
5824538	4BN0500IR200A	1/2	1/2	2	4
5824539	4BN0500IL200A	1/2	1/2	2	4 1/2
5824551	4BN0562IR125A	9/16	9/16	1 1/4	3 1/2
5824552	4BN0625IR125A	5/8	5/8	1 1/4	3 1/2
5824553	4BN0625IL225A	5/8	5/8	2 1/4	5
5824554	4BN0750IR150A	3/4	3/4	1 1/2	4
5824555	4BN0750IL300A	3/4	3/4	3	6
5824556	4BN0875IR150A	7/8	7/8	1 1/2	4
5824557	4BN1000IR150A	1	1	1 1/2	4
5824558	4BN1000IL225A	1	1	2 1/4	5



GOmill GP • 4SE..IS-IR • 4 Flute • Short • Regular

Material Group		Side Milling (A) and Slotting (B) A ap	ae	B ap	KC633M Cutting Speed — vc SFM min		max	Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%. D1 — Diameter inch	1/64 .0156	1/32 .0313	1/16 .0625	5/64 .0781	3/32 .0938	1/8 .1250	3/16 .1875	1/4 .2500	5/16 .3125	3/8 .3750	1/2 .5000	5/8 .6250	3/4 .7500	1 1.0000
P	0	Ap1 max	0.1 x D	0.5 x D	490	–	660	IPT	.0001	.0002	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	1	Ap1 max	0.1 x D	0.5 x D	490	–	660	IPT	.0001	.0002	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	2	Ap1 max	0.1 x D	0.5 x D	460	–	620	IPT	.0001	.0002	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	3	Ap1 max	0.1 x D	0.5 x D	390	–	520	IPT	.0001	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	4	Ap1 max	0.1 x D	0.5 x D	300	–	490	IPT	.0001	.0002	.0003	.0004	.0005	.0007	.0010	.0014	.0018	.0020	.0026	.0030	.0034	.0039
M	1	Ap1 max	0.1 x D	0.5 x D	300	–	380	IPT	.0001	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	2	Ap1 max	0.1 x D	0.5 x D	200	–	260	IPT	.0001	.0002	.0003	.0004	.0004	.0006	.0009	.0012	.0016	.0018	.0023	.0027	.0031	.0036
K	1	Ap1 max	0.1 x D	0.5 x D	390	–	490	IPT	.0001	.0002	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	2	Ap1 max	0.1 x D	0.5 x D	360	–	460	IPT	.0001	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
N	1	Ap1 max	0.1 x D	0.5 x D	300	–	380	IPT	.0002	.0003	.0006	.0008	.0009	.0013	.0019	.0025	.0031	.0038	.0050	.0063	.0075	.0100
	2	Ap1 max	0.1 x D	0.5 x D	200	–	260	IPT	.0001	.0003	.0005	.0006	.0008	.0010	.0015	.0020	.0025	.0030	.0040	.0050	.0060	.0080
	4	Ap1 max	0.1 x D	0.5 x D	390	–	490	IPT	.0001	.0003	.0006	.0007	.0008	.0011	.0017	.0023	.0028	.0034	.0045	.0056	.0068	.0090

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 >1/2" diameter.

GOmill GP • 4SE..IL • 4 Flute • Long

Material Group		Side Milling (A) A ap	ae	KC633M Cutting Speed — vc SFM min		max	Recommended feed per tooth (IPT = inch/th) for side milling (A). D1 — Diameter inch	3/32 .0938	1/8 .1250	3/16 .1875	1/4 .2500	5/16 .3125	3/8 .3750	1/2 .5000	5/8 .6250	3/4 .7500	1 1.0000
P	0	Ap1 max	0.1 x D	490	–	660	IPT	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	1	Ap1 max	0.1 x D	490	–	660	IPT	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	2	Ap1 max	0.1 x D	460	–	620	IPT	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	3	Ap1 max	0.1 x D	390	–	520	IPT	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	4	Ap1 max	0.1 x D	300	–	490	IPT	.0005	.0007	.0010	.0014	.0018	.0020	.0026	.0030	.0034	.0039
M	1	Ap1 max	0.1 x D	300	–	380	IPT	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	2	Ap1 max	0.1 x D	200	–	260	IPT	.0004	.0006	.0009	.0012	.0016	.0018	.0023	.0027	.0031	.0036
K	1	Ap1 max	0.1 x D	390	–	490	IPT	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	2	Ap1 max	0.1 x D	360	–	460	IPT	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
N	1	Ap1 max	0.1 x D	820	–	3250	IPT	.0009	.0013	.0019	.0025	.0031	.0038	.0050	.0063	.0075	.0100
	2	Ap1 max	0.1 x D	820	–	2450	IPT	.0008	.0010	.0015	.0020	.0025	.0030	.0040	.0050	.0060	.0080
	4	Ap1 max	0.1 x D	820	–	2450	IPT	.0008	.0011	.0017	.0023	.0028	.0034	.0045	.0056	.0068	.0090

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
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GOmill GP • 4BN..IS-IR • 4 Flute • Ball Nose • Short • Regular

Material Group		Side Milling (A) and Slotting (B)			KC633M			Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.														
		A		B	Cutting Speed — vc SFM			D1 — Diameter														
		ap	ae	ap	min		max	inch	1/32 .0313	1/16 .0625	5/64 .0781	3/32 .0938	1/8 .1250	3/16 .1875	1/4 .2500	5/16 .3125	3/8 .3750	1/2 .5000	5/8 .6250	3/4 .7500	1 1.0000
P	0	Ap1 max	0.1 x D	0.5 x D	490	–	660	IPT	.0002	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	1	Ap1 max	0.1 x D	0.5 x D	490	–	660	IPT	.0002	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	2	Ap1 max	0.1 x D	0.5 x D	460	–	620	IPT	.0002	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	3	Ap1 max	0.1 x D	0.5 x D	390	–	520	IPT	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	4	Ap1 max	0.1 x D	0.5 x D	300	–	490	IPT	.0002	.0003	.0004	.0005	.0007	.0010	.0014	.0018	.0020	.0026	.0030	.0034	.0039
M	1	Ap1 max	0.1 x D	0.5 x D	300	–	380	IPT	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	2	Ap1 max	0.1 x D	0.5 x D	200	–	260	IPT	.0002	.0003	.0004	.0004	.0006	.0009	.0012	.0016	.0018	.0023	.0027	.0031	.0036
K	1	Ap1 max	0.1 x D	0.5 x D	390	–	490	IPT	.0002	.0004	.0005	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	2	Ap1 max	0.1 x D	0.5 x D	360	–	460	IPT	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
N	1	Ap1 max	0.1 x D	0.5 x D	820	–	3250	IPT	.0003	.0006	.0008	.0009	.0013	.0019	.0025	.0031	.0038	.0050	.0063	.0075	.0100
	2	Ap1 max	0.1 x D	0.5 x D	820	–	2450	IPT	.0003	.0005	.0006	.0008	.0010	.0015	.0020	.0025	.0030	.0040	.0050	.0060	.0080
	4	Ap1 max	0.1 x D	0.5 x D	820	–	2450	IPT	.0003	.0006	.0007	.0008	.0011	.0017	.0023	.0028	.0034	.0045	.0056	.0068	.0090

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 centers, please adjust parameters accordingly on >1/2" diameter.

GOmill GP • 4BN..IL • 4 Flute • Ball Nose • Long

Material Group		Side Milling (A)		KC633M			Recommended feed per tooth (IPT = inch/th) for side milling (A).									
		A		Cutting Speed — vc SFM			D1 — Diameter									
		ap	ae	min		max	inch	3/32 .0938	1/8 .1250	3/16 .1875	1/4 .2500	5/16 .3125	3/8 .3750	1/2 .5000	5/8 .6250	3/4 .7500	1 1.0000
P	0	Ap1 max	0.1 x D	490	–	660	IPT	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	1	Ap1 max	0.1 x D	490	–	660	IPT	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	2	Ap1 max	0.1 x D	460	–	620	IPT	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	3	Ap1 max	0.1 x D	390	–	520	IPT	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	4	Ap1 max	0.1 x D	300	–	490	IPT	.0005	.0007	.0010	.0014	.0018	.0020	.0026	.0030	.0034	.0039
M	1	Ap1 max	0.1 x D	300	–	380	IPT	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	2	Ap1 max	0.1 x D	200	–	260	IPT	.0004	.0006	.0009	.0012	.0016	.0018	.0023	.0027	.0031	.0036
K	1	Ap1 max	0.1 x D	390	–	490	IPT	.0007	.0009	.0014	.0018	.0023	.0027	.0034	.0040	.0044	.0049
	2	Ap1 max	0.1 x D	360	–	460	IPT	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
N	1	Ap1 max	0.1 x D	820	–	3250	IPT	.0009	.0013	.0019	.0025	.0031	.0038	.0050	.0063	.0075	.0100
	2	Ap1 max	0.1 x D	820	–	2450	IPT	.0008	.0010	.0015	.0020	.0025	.0030	.0040	.0050	.0060	.0080
	4	Ap1 max	0.1 x D	820	–	2450	IPT	.0008	.0011	.0017	.0023	.0028	.0034	.0045	.0056	.0068	.0090

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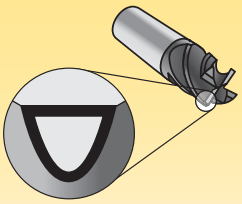

Coatings provide high-speed capability and are engineered for roughing to finishing.

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

Grades

Coating	Grade Description		wear resistance ⟷ toughness: 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 optimized 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 optimized 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.	M, 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 characterized by high hardness and wear resistance. It provides outstanding protection for solid carbide tools against cratering and abrasion.	P, M, K									

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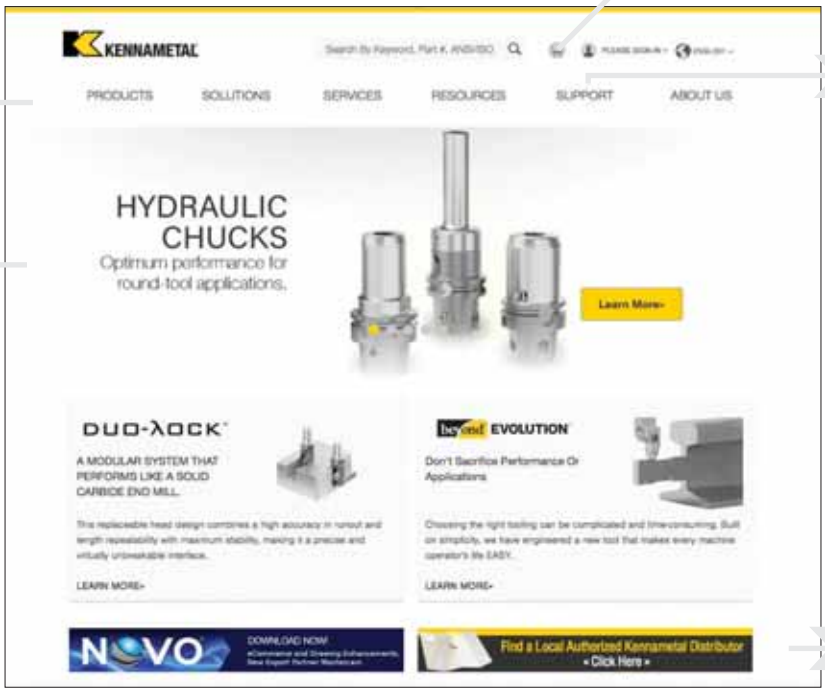

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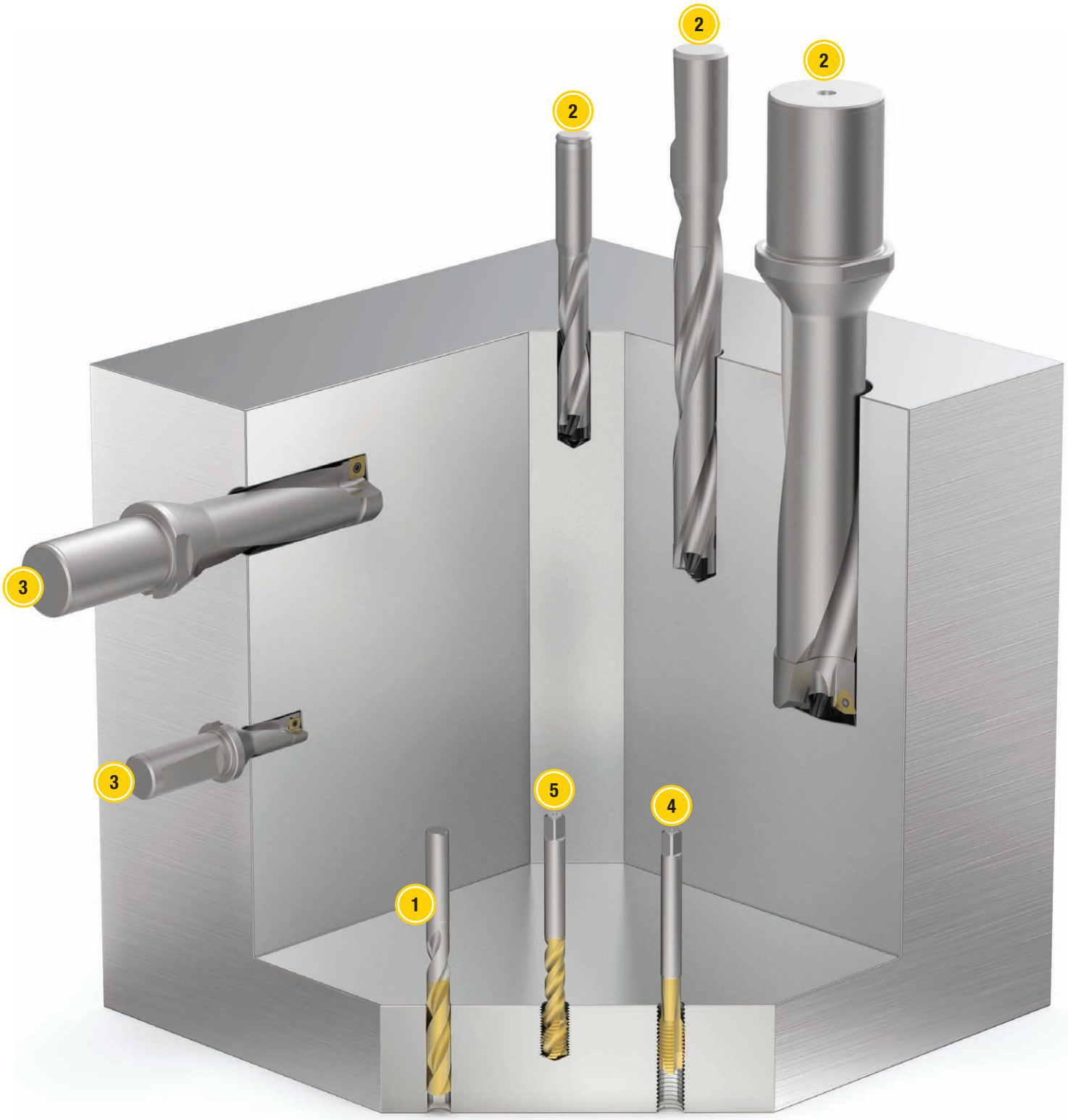
Holemaking and Tapping



Holemaking

Choosing the Correct Solution **C2**

Solid Carbide Drills **C3–C30**

Platform Selection C3

1 GOdrill — .0394–.7874" (1,0–20,0mm), 3 x D / 5 x D, Internal Coolant, External Coolant C4–C17

Kenna Universal Drills — .1181–.7874" (3,0–20,0mm), 3 x D / 5 x D / 8 x D, Internal Coolant C18–C30

Modular Drills **C33–C75**

Platform Selection C33

2 KenTIP FS — .3973–.7813" (10,0–19,845mm) C34–C42

KSEM — .4921–1.3780" (12,50–34,93mm), 3 x D–10 x D, Internal Coolant C43–C59

KSEM PLUS — 1.1250 < Ø ≤ 3.5000" (28,58–88,90mm), 3 x D–8 x D C60–C75

Indexable Drills **C76–C119**

Platform Selection C77

3 Drill Fix DFR — .4921–1.0000" (12,0–25,4mm), 2 x D / 3 x D C78–C94

Drill Fix DFSP — .5630–2.1650" (18,0–55,0mm), 2 x D / 3 x D C96–C119

Tapping

Selection System **C120–C121**

Spiral-Point Taps for Through Holes **C122–C129**

4 HSS-E-PM High-Performance Taps — M3–M18 External Coolant C124

GOtap HSS-E — M3–M24 External Coolant C125–C129

Spiral-Flute Taps for Blind Holes **C130–C142**

5 HSS-E-PM High-Performance Taps — M3–M18 External and Internal Coolant C132–C133

GOtap HSS-E — M3–M24 External Coolant C134–C142

Straight-Flute Taps Blind and Through Holes for Short-Chipping Materials **C144–C147**

4 5 HSS-E-PM High-Performance Taps — M4–M20 External and Internal Coolant C146–C147

Cutting Data Tapping **C148–C151**

Workpiece Material Cross Reference **E8–E9**

Select the Correct Holemaking Solution for Your Application

Added Value for Your Performance

Increase of Productivity and Efficiency

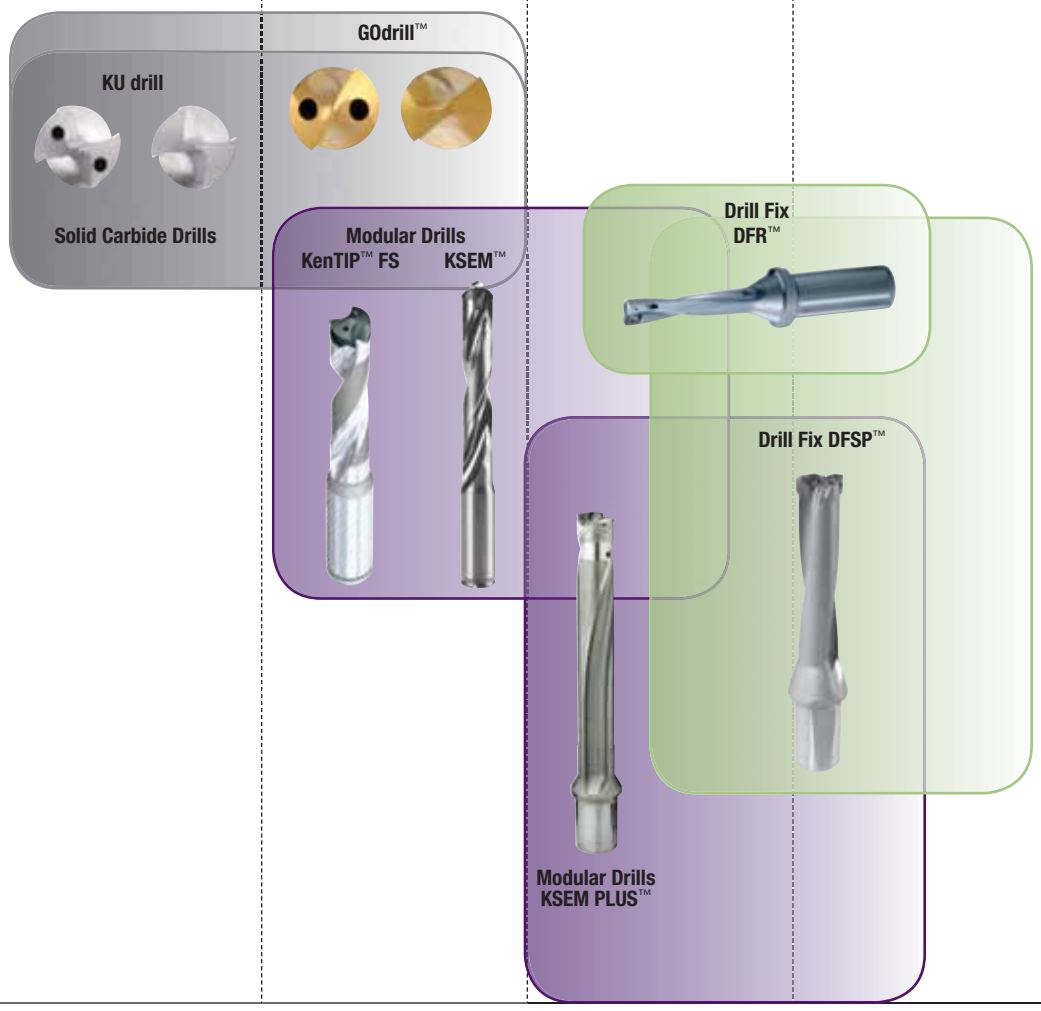
- Material and application-specific solutions.
- Maximum metal removal rates and repeatability.
- Standardized design platforms for special tools based on “proven solutions” for individual optimizations and combination tools.

Control of Total Tooling Costs

- High tool utilization 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)
		precision			
mm	inch	IT8	IT9	IT10	IT11
1,0	0.0393				
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				



Choose solid carbide drills for:

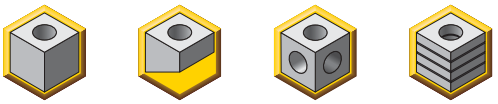
- Small to medium diameters.
- 3 x D, 5 x D, and 8 x D.
- High metal removal rates, productivity.
- High precision.
- Dry, flood, and through coolant, and MQL machining.
- If reconditioning is manageable.

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.

		GOdrill™	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 **GOdrill**™ 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 GOdrill expands the advantages of modular drills into the small diameter range, enabling the full utilization 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	fully regrindable
		Reconditioning of a GOdrill < 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 GOdrill to its original shape.	The KU Drill can be reconditioned to original shape and coating.

Tool Selection Guide

	Drill Series	grade	standard ● first choice ○ alternate choice						hole tolerance	First Choice Range diameter range D1 mm min–max	 D1 inch min–max	 drilling depth L/D1
			P	M	K	N	S	H				
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												
GOdrill™ 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												
GOdrill™ 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 size available in First Choice.

GOdrill™

For Multiple Materials

Primary Application

The GOdrill platform addresses drilling operations in a diameter range of 1–20mm (.0394–.7874") in a broad variety of materials and applications such as fuel systems or medical components. Due to its very unique design, the GOdrill platform expands the advantages of modular drills into the small diameter range: high-end grades, wear-indicator coating, and new, proprietary geometries enable full utilization of the drill's tool life capacity. The GOdrill platform qualifies as a very cost-effective, throwaway-type tool in the given diameter range.

Features and Benefits

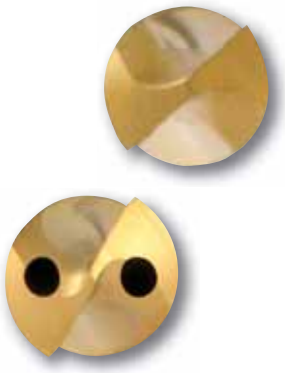
GOdrill Design

- 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 (.0394").
- Good hole quality, roundness, and cylindricity for all materials.

CPG Point

- Optimized gashing design for microdrilling ensures free flow of chips in the center of the drill.
- Excellent centering 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.

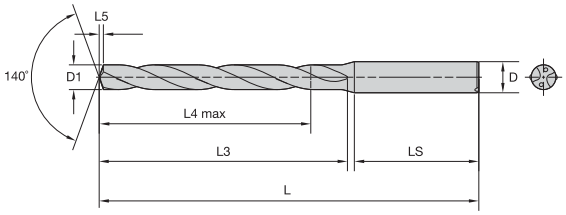


KC7325™ Grade

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 utilize the tool's full tool life capacity.

For standard line items with F-shank, please refer to the Master Catalog 2018 or to the e-catalog on kennametal.com.



B051A

B051A

B041A/B051A • ~3 x D

● first choice
○ alternate choice

grade KC7325		grade KC7325		D1 diameter									D	
order #	catalog #	order #	catalog #	mm	in	fraction	wire size	L	L3	L4 max	L5	LS	mm	in
4151623	B041A01000CPG		–	1,000	.0394	–	–	2.28	.28	.20	.006	1.10	4	.1575
4151624	B041A01016CPG		–	1,016	.0400	–	–	2.28	.28	.20	.006	1.10	4	.1575
4151626	B041A01067CPG		–	1,067	.0420	–	–	2.28	.28	.20	.006	1.10	4	.1575
4151627	B041A01092CPG		–	1,092	.0430	JS9B	–	2.28	.28	.20	.006	1.10	4	.1575
4151628	B041A01100CPG		–	1,100	.0433	–	–	2.28	.28	.20	.006	1.10	4	.1575
4151629	B041A01181CPG		–	1,181	.0465	–	–	2.28	.28	.20	.007	1.10	4	.1575
4151630	B041A01191CPG		–	1,191	.0469	3/64	–	2.28	.28	.20	.007	1.10	4	.1575
4151631	B041A01200CPG		–	1,200	.0472	–	–	2.28	.28	.20	.007	1.10	4	.1575
4151632	B041A01300CPG		–	1,300	.0512	–	–	2.28	.28	.20	.008	1.10	4	.1575
4151633	B041A01321CPG		–	1,321	.0520	–	–	2.28	.28	.20	.008	1.10	4	.1575
4151634	B041A01397CPG		–	1,397	.0550	–	–	2.28	.28	.20	.008	1.10	4	.1575
4151635	B041A01400CPG		–	1,400	.0551	–	–	2.28	.28	.20	.008	1.10	4	.1575
4151636	B041A01500CPG	4148804	B051A01500CPG	1,500	.0591	–	–	2.28	.35	.24	.009	1.10	4	.1575
4151637	B041A01600CPG	4148805	B051A01600CPG	1,600	.0630	–	–	2.28	.35	.24	.010	1.10	4	.1575
4151638	B041A01700CPG	4148806	B051A01700CPG	1,700	.0669	–	–	2.28	.35	.24	.010	1.10	4	.1575
4151639	B041A01800CPG	4148807	B051A01800CPG	1,800	.0709	–	–	2.28	.35	.24	.011	1.10	4	.1575
4151640	B041A01900CPG	4148808	B051A01900CPG	1,900	.0748	–	–	2.28	.35	.24	.012	1.10	4	.1575
4151641	B041A01984CPG	4148809	B051A01984CPG	1,984	.0781	5/64	–	2.28	.51	.39	.012	1.10	4	.1575
4151642	B041A02000CPG	4124962	B051A02000CPG	2,000	.0787	–	–	2.28	.51	.39	.012	1.10	4	.1575
4151643	B041A02100CPG	4148810	B051A02100CPG	2,100	.0827	–	–	2.28	.51	.39	.013	1.10	4	.1575
4151644	B041A02200CPG	4148811	B051A02200CPG	2,200	.0866	–	–	2.28	.51	.39	.014	1.10	4	.1575
4151645	B041A02300CPG	4148812	B051A02300CPG	2,300	.0906	–	–	2.28	.51	.39	.014	1.10	4	.1575
4151646	B041A02383CPG	4148843	B051A02383CPG	2,383	.0938	3/32	–	2.28	.67	.47	.015	1.10	4	.1575
4151647	B041A02400CPG	4148844	B051A02400CPG	2,400	.0945	–	–	2.28	.67	.47	.015	1.10	4	.1575
4151648	B041A02439CPG	4148845	B051A02439CPG	2,439	.0960	–	41	2.28	.67	.47	.015	1.10	4	.1575
4151649	B041A02489CPG	4148846	B051A02489CPG	2,489	.0980	–	40	2.28	.67	.47	.016	1.10	4	.1575
4151650	B041A02500CPG	4148847	B051A02500CPG	2,500	.0984	–	–	2.28	.67	.47	.016	1.10	4	.1575
4151651	B041A02578CPG	4148848	B051A02578CPG	2,578	.1015	–	38	2.28	.67	.47	.016	1.10	4	.1575
4151652	B041A02600CPG	4148849	B051A02600CPG	2,600	.1024	–	–	2.28	.67	.47	.017	1.10	4	.1575
4151653	B041A02642CPG	4148850	B051A02642CPG	2,642	.1040	–	37	2.28	.67	.47	.017	1.10	4	.1575
4151654	B041A02700CPG	4148851	B051A02700CPG	2,700	.1063	–	–	2.28	.67	.47	.017	1.10	4	.1575
4151655	B041A02705CPG	4148852	B051A02705CPG	2,705	.1065	–	36	2.28	.67	.47	.017	1.10	4	.1575

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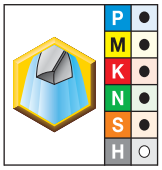

● first choice
○ alternate choice

grade KC7325		grade KC7325		D1 diameter									D	
order #	catalog #	order #	catalog #	mm	in	fraction	wire size	L	L3	L4 max	L5	LS	mm	in
4151656	B041A02779CPG	4148853	B051A02779CPG	2,779	.1094	7/64	—	2.28	.67	.47	.018	1.10	4	.1575
4151657	B041A02800CPG	4148854	B051A02800CPG	2,800	.1102	—	—	2.28	.67	.47	.018	1.10	4	.1575
4151658	B041A02820CPG	4148855	B051A02820CPG	2,820	.1110	—	34	2.28	.67	.47	.018	1.10	4	.1575
4151659	B041A02870CPG	4148856	B051A02870CPG	2,870	.1130	—	33	2.28	.67	.47	.018	1.10	4	.1575
4151660	B041A02900CPG	4148857	B051A02900CPG	2,900	.1142	—	—	2.28	.67	.47	.019	1.10	4	.1575
4151661	B041A02947CPG	4148858	B051A02947CPG	2,947	.1160	—	32	2.28	.67	.47	.019	1.10	4	.1575
4150155	B041A03000CPG	4151081	B051A03000CPG	3,000	.1181	—	—	2.44	.79	.55	.019	1.42	6	.2362
4150156	B041A03048CPG	4151082	B051A03048CPG	3,048	.1200	—	31	2.44	.79	.55	.019	1.42	6	.2362
4150157	B041A03100CPG	4151103	B051A03100CPG	3,100	.1220	—	—	2.44	.79	.55	.020	1.42	6	.2362
4150158	B041A03175CPG	4151104	B051A03175CPG	3,175	.1250	1/8	—	2.44	.79	.55	.020	1.42	6	.2362
4150159	B041A03200CPG	4121528	B051A03200CPG	3,200	.1260	—	—	2.44	.79	.55	.021	1.42	6	.2362
4150160	B041A03264CPG	4151105	B051A03264CPG	3,264	.1285	—	30	2.44	.79	.55	.021	1.42	6	.2362
4150161	B041A03300CPG	4151106	B051A03300CPG	3,300	.1299	—	—	2.44	.79	.55	.021	1.42	6	.2362
4150162	B041A03400CPG	4151107	B051A03400CPG	3,400	.1339	—	—	2.44	.79	.55	.022	1.42	6	.2362
4150183	B041A03455CPG	4151108	B051A03455CPG	3,455	.1360	—	29	2.44	.79	.55	.022	1.42	6	.2362
4150184	B041A03500CPG	4151109	B051A03500CPG	3,500	.1378	—	—	2.44	.79	.55	.022	1.42	6	.2362
4150185	B041A03571CPG	4151110	B051A03571CPG	3,571	.1406	9/64	—	2.44	.79	.55	.023	1.42	6	.2362
4150186	B041A03600CPG	4151111	B051A03600CPG	3,600	.1417	—	—	2.44	.79	.55	.023	1.42	6	.2362
4150187	B041A03658CPG	4151112	B051A03658CPG	3,658	.1440	—	27	2.44	.79	.55	.024	1.42	6	.2362
4150188	B041A03700CPG	4151113	B051A03700CPG	3,700	.1457	—	—	2.44	.79	.55	.024	1.42	6	.2362
4150189	B041A03734CPG	4151114	B051A03734CPG	3,734	.1470	—	26	2.44	.79	.55	.024	1.42	6	.2362
4150190	B041A03800CPG	4151115	B051A03800CPG	3,800	.1496	—	—	2.60	.94	.67	.024	1.42	6	.2362
4150191	B041A03900CPG	4151116	B051A03900CPG	3,900	.1535	—	—	2.60	.94	.67	.025	1.42	6	.2362
4150192	B041A03970CPG	4151117	B051A03970CPG	3,970	.1563	5/32	—	2.60	.94	.67	.026	1.42	6	.2362
4150193	B041A04000CPG	4121529	B051A04000CPG	4,000	.1575	—	—	2.60	.94	.67	.026	1.42	6	.2362
4150194	B041A04039CPG	4151118	B051A04039CPG	4,039	.1590	—	21	2.60	.94	.67	.026	1.42	6	.2362
4150195	B041A04090CPG	4151119	B051A04090CPG	4,090	.1610	—	20	2.60	.94	.67	.026	1.42	6	.2362
4150196	B041A04100CPG	4151120	B051A04100CPG	4,100	.1614	—	—	2.60	.94	.67	.026	1.42	6	.2362
4150197	B041A04200CPG	4151121	B051A04200CPG	4,200	.1654	—	—	2.60	.94	.67	.027	1.42	6	.2362
4150198	B041A04217CPG	4151122	B051A04217CPG	4,217	.1660	—	19	2.60	.94	.67	.027	1.42	6	.2362
4150199	B041A04300CPG	4151123	B051A04300CPG	4,300	.1693	—	—	2.60	.94	.67	.028	1.42	6	.2362
4150200	B041A04366CPG	4151124	B051A04366CPG	4,366	.1719	11/64	—	2.60	.94	.67	.028	1.42	6	.2362
4150201	B041A04400CPG	4151125	B051A04400CPG	4,400	.1732	—	—	2.60	.94	.67	.029	1.42	6	.2362
4150202	B041A04500CPG	4151126	B051A04500CPG	4,500	.1772	—	—	2.60	.94	.67	.029	1.42	6	.2362
4150203	B041A04600CPG	4151127	B051A04600CPG	4,600	.1811	—	—	2.60	.94	.67	.030	1.42	6	.2362
4150204	B041A04623CPG	4151128	B051A04623CPG	4,623	.1820	—	14	2.60	.94	.67	.030	1.42	6	.2362
4150205	B041A04700CPG	4151129	B051A04700CPG	4,700	.1850	—	13	2.60	.94	.67	.031	1.42	6	.2362
4150206	B041A04763CPG	4151130	B051A04763CPG	4,763	.1875	3/16	—	2.60	1.10	.79	.031	1.42	6	.2362
4150207	B041A04800CPG	4151131	B051A04800CPG	4,800	.1890	—	12	2.60	1.10	.79	.032	1.42	6	.2362
4150208	B041A04852CPG	4151132	B051A04852CPG	4,852	.1910	—	11	2.60	1.10	.79	.032	1.42	6	.2362
4150209	B041A04900CPG	4151133	B051A04900CPG	4,900	.1929	—	—	2.60	1.10	.79	.032	1.42	6	.2362
4150210	B041A05000CPG	4151134	B051A05000CPG	5,000	.1969	—	—	2.60	1.10	.79	.033	1.42	6	.2362
4150211	B041A05100CPG	4151135	B051A05100CPG	5,100	.2008	—	—	2.60	1.10	.79	.034	1.42	6	.2362
4150212	B041A05106CPG	4151136	B051A05106CPG	5,106	.2010	—	7	2.60	1.10	.79	.034	1.42	6	.2362
4150213	B041A05159CPG	4151137	B051A05159CPG	5,159	.2031	13/64	—	2.60	1.10	.79	.034	1.42	6	.2362
4150214	B041A05200CPG	4151138	B051A05200CPG	5,200	.2047	—	—	2.60	1.10	.79	.034	1.42	6	.2362
4150215	B041A05300CPG	4151139	B051A05300CPG	5,300	.2087	—	—	2.60	1.10	.79	.035	1.42	6	.2362
4150216	B041A05400CPG	4151140	B051A05400CPG	5,400	.2126	—	—	2.60	1.10	.79	.035	1.42	6	.2362

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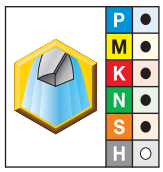
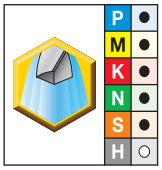


● first choice
○ alternate choice

grade KC7325		grade KC7325		D1 diameter									D	
order #	catalog #	order #	catalog #	mm	in	fraction	wire size	L	L3	L4 max	L5	LS	mm	in
4150217	B041A05410CPG	4151141	B051A05410CPG	5,410	.2130	–	3	2.60	1.10	.79	.035	1.42	6	.2362
4150218	B041A05500CPG	4151142	B051A05500CPG	5,500	.2165	–	–	2.60	1.10	.79	.036	1.42	6	.2362
4150219	B041A05558CPG	4151143	B051A05558CPG	5,558	.2188	7/32	–	2.60	1.10	.79	.037	1.42	6	.2362
4150220	B041A05600CPG	4151144	B051A05600CPG	5,600	.2205	–	–	2.60	1.10	.79	.037	1.42	6	.2362
4150221	B041A05616CPG	4151145	B051A05616CPG	5,616	.2211	–	2	2.60	1.10	.79	.037	1.42	6	.2362
4150222	B041A05700CPG	4151146	B051A05700CPG	5,700	.2244	–	–	2.60	1.10	.79	.037	1.42	6	.2362
4150223	B041A05800CPG	4151147	B051A05800CPG	5,800	.2283	–	–	2.60	1.10	.79	.038	1.42	6	.2362
4150224	B041A05900CPG	4121532	B051A05900CPG	5,900	.2323	–	–	2.60	1.10	.79	.039	1.42	6	.2362
4150225	B041A05954CPG	4151148	B051A05954CPG	5,954	.2344	15/64	–	2.60	1.10	.79	.039	1.42	6	.2362
4150226	B041A06000CPG	4121534	B051A06000CPG	6,000	.2362	–	–	2.60	1.10	.79	.039	1.42	6	.2362
4150227	B041A06100CPG	4151149	B051A06100CPG	6,100	.2402	–	–	3.11	1.34	.94	.040	1.42	8	.3150
4150228	B041A06200CPG	4151150	B051A06200CPG	6,200	.2441	–	–	3.11	1.34	.94	.041	1.42	8	.3150
4150229	B041A06300CPG	4151151	B051A06300CPG	6,300	.2480	–	–	3.11	1.34	.94	.042	1.42	8	.3150
4150230	B041A06350CPG	4151152	B051A06350CPG	6,350	.2500	1/4	E	3.11	1.34	.94	.042	1.42	8	.3150
4150231	B041A06400CPG	4151153	B051A06400CPG	6,400	.2520	–	–	3.11	1.34	.94	.042	1.42	8	.3150
4150232	B041A06500CPG	4151154	B051A06500CPG	6,500	.2559	–	–	3.11	1.34	.94	.043	1.42	8	.3150
4150233	B041A06528CPG	4151155	B051A06528CPG	6,528	.2570	–	F	3.11	1.34	.94	.043	1.42	8	.3150
4150234	B041A06600CPG	4151156	B051A06600CPG	6,600	.2598	–	–	3.11	1.34	.94	.044	1.42	8	.3150
4150235	B041A06630CPG	4151157	B051A06630CPG	6,630	.2610	–	G	3.11	1.34	.94	.044	1.42	8	.3150
4150236	B041A06700CPG	4151158	B051A06700CPG	6,700	.2638	–	–	3.11	1.34	.94	.045	1.42	8	.3150
4150237	B041A06746CPG	4151159	B051A06746CPG	6,746	.2656	17/64	–	3.11	1.34	.94	.045	1.42	8	.3150
4150238	B041A06800CPG	4151160	B051A06800CPG	6,800	.2677	–	–	3.11	1.34	.94	.045	1.42	8	.3150
4150239	B041A06900CPG	4151161	B051A06900CPG	6,900	.2717	–	–	3.11	1.34	.94	.046	1.42	8	.3150
4150240	B041A07000CPG	4151162	B051A07000CPG	7,000	.2756	–	–	3.11	1.34	.94	.047	1.42	8	.3150
4150241	B041A07100CPG	4151163	B051A07100CPG	7,100	.2795	–	–	3.11	1.61	1.14	.047	1.42	8	.3150
4150242	B041A07145CPG	4151164	B051A07145CPG	7,145	.2813	9/32	–	3.11	1.61	1.14	.047	1.42	8	.3150
4150243	B041A07200CPG	4151165	B051A07200CPG	7,200	.2835	–	–	3.11	1.61	1.14	.048	1.42	8	.3150
4150244	B041A07300CPG	4151166	B051A07300CPG	7,300	.2874	–	–	3.11	1.61	1.14	.048	1.42	8	.3150
4150245	B041A07400CPG	4151167	B051A07400CPG	7,400	.2913	–	–	3.11	1.61	1.14	.049	1.42	8	.3150
4150246	B041A07500CPG	4151168	B051A07500CPG	7,500	.2953	–	–	3.11	1.61	1.14	.050	1.42	8	.3150
4150247	B041A07541CPG	4151169	B051A07541CPG	7,541	.2969	19/64	–	3.11	1.61	1.14	.050	1.42	8	.3150
4150248	B041A07600CPG	4151170	B051A07600CPG	7,600	.2992	–	–	3.11	1.61	1.14	.050	1.42	8	.3150
4150249	B041A07700CPG	4151171	B051A07700CPG	7,700	.3031	–	–	3.11	1.61	1.14	.051	1.42	8	.3150
4150250	B041A07800CPG	4151172	B051A07800CPG	7,800	.3071	–	–	3.11	1.61	1.14	.052	1.42	8	.3150
4150251	B041A07900CPG	4151173	B051A07900CPG	7,900	.3110	–	–	3.11	1.61	1.14	.053	1.42	8	.3150
4150252	B041A07938CPG	4151174	B051A07938CPG	7,938	.3125	5/16	–	3.11	1.61	1.14	.053	1.42	8	.3150
4150253	B041A08000CPG	4151175	B051A08000CPG	8,000	.3150	–	–	3.11	1.61	1.14	.053	1.42	8	.3150
4150254	B041A08100CPG	4151176	B051A08100CPG	8,100	.3189	–	–	3.50	1.85	1.38	.054	1.57	10	.3937
4150255	B041A08200CPG	4151177	B051A08200CPG	8,200	.3228	–	–	3.50	1.85	1.38	.055	1.57	10	.3937
4150256	B041A08300CPG	4151178	B051A08300CPG	8,300	.3268	–	–	3.50	1.85	1.38	.056	1.57	10	.3937
4150257	B041A08334CPG	4151179	B051A08334CPG	8,334	.3281	21/64	–	3.50	1.85	1.38	.056	1.57	10	.3937
4150258	B041A08400CPG	4151180	B051A08400CPG	8,400	.3307	–	–	3.50	1.85	1.38	.056	1.57	10	.3937
4150259	B041A08433CPG	4151181	B051A08433CPG	8,433	.3320	–	Q	3.50	1.85	1.38	.056	1.57	10	.3937
4150260	B041A08500CPG	4151182	B051A08500CPG	8,500	.3346	–	–	3.50	1.85	1.38	.057	1.57	10	.3937
4150261	B041A08600CPG	4151183	B051A08600CPG	8,600	.3386	–	–	3.50	1.85	1.38	.058	1.57	10	.3937
4150262	B041A08700CPG	4151184	B051A08700CPG	8,700	.3425	–	–	3.50	1.85	1.38	.058	1.57	10	.3937
4150263	B041A08733CPG	4151185	B051A08733CPG	8,733	.3438	11/32	–	3.50	1.85	1.38	.058	1.57	10	.3937
4150264	B041A08800CPG	4151186	B051A08800CPG	8,800	.3465	–	–	3.50	1.85	1.38	.059	1.57	10	.3937

(continued)

(B041A/B051A • ~3 x D — continued)

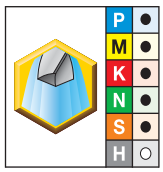


● first choice
○ alternate choice

grade KC7325		grade KC7325		D1 diameter									D	
order #	catalog #	order #	catalog #	mm	in	fraction	wire size	L	L3	L4 max	L5	LS	mm	in
4150265	B041A08900CPG	4151187	B051A08900CPG	8,900	.3504	–	–	3.50	1.85	1.38	.059	1.57	10	.3937
4150266	B041A09000CPG	4151188	B051A09000CPG	9,000	.3543	–	–	3.50	1.85	1.38	.060	1.57	10	.3937
4150267	B041A09100CPG	4151189	B051A09100CPG	9,100	.3583	–	–	3.50	1.85	1.38	.061	1.57	10	.3937
4150268	B041A09129CPG	4151190	B051A09129CPG	9,129	.3594	23/64	–	3.50	1.85	1.38	.061	1.57	10	.3937
4150269	B041A09200CPG	4151191	B051A09200CPG	9,200	.3622	–	–	3.50	1.85	1.38	.062	1.57	10	.3937
4150270	B041A09300CPG	4151192	B051A09300CPG	9,300	.3661	–	–	3.50	1.85	1.38	.062	1.57	10	.3937
4150271	B041A09347CPG	4151193	B051A09347CPG	9,347	.3680	–	U	3.50	1.85	1.38	.063	1.57	10	.3937
4150272	B041A09400CPG	4151194	B051A09400CPG	9,400	.3701	–	–	3.50	1.85	1.38	.063	1.57	10	.3937
4150273	B041A09500CPG	4151195	B051A09500CPG	9,500	.3740	–	–	3.50	1.85	1.38	.064	1.57	10	.3937
4150274	B041A09525CPG	4151196	B051A09525CPG	9,525	.3750	3/8	–	3.50	1.85	1.38	.064	1.57	10	.3937
4150275	B041A09600CPG	4151197	B051A09600CPG	9,600	.3780	–	–	3.50	1.85	1.38	.065	1.57	10	.3937
4150276	B041A09700CPG	4151198	B051A09700CPG	9,700	.3819	–	–	3.50	1.85	1.38	.065	1.57	10	.3937
4150277	B041A09800CPG	4151199	B051A09800CPG	9,800	.3858	–	–	3.50	1.85	1.38	.066	1.57	10	.3937
4150278	B041A09900CPG	4151200	B051A09900CPG	9,900	.3898	–	–	3.50	1.85	1.38	.067	1.57	10	.3937
4150279	B041A09921CPG	4151201	B051A09921CPG	9,921	.3906	25/64	–	3.50	1.85	1.38	.067	1.57	10	.3937
4150176	B041A10000CPG	4151202	B051A10000CPG	10,000	.3937	–	–	3.50	1.85	1.38	.067	1.57	10	.3937
4150177	B041A10100CPG	4151203	B051A10100CPG	10,100	.3976	–	–	4.02	2.17	1.57	.068	1.77	12	.4724
4150178	B041A10200CPG	4150456	B051A10200CPG	10,200	.4016	–	–	4.02	2.17	1.57	.069	1.77	12	.4724
4150179	B041A10300CPG	4150457	B051A10300CPG	10,300	.4055	–	–	4.02	2.17	1.57	.069	1.77	12	.4724
4150180	B041A10320CPG	4150458	B051A10320CPG	10,320	.4063	13/32	–	4.02	2.17	1.57	.069	1.77	12	.4724
4150181	B041A10400CPG		–	10,400	.4094	–	–	4.02	2.17	1.57	.070	1.77	12	.4724
4150182	B041A10500CPG	4150460	B051A10500CPG	10,500	.4134	–	–	4.02	2.17	1.57	.071	1.77	12	.4724
4150293	B041A10600CPG	4150461	B051A10600CPG	10,600	.4173	–	–	4.02	2.17	1.57	.071	1.77	12	.4724
4150294	B041A10700CPG	4150462	B051A10700CPG	10,700	.4213	–	–	4.02	2.17	1.57	.072	1.77	12	.4724
4150295	B041A10716CPG	4151213	B051A10716CPG	10,716	.4219	27/64	–	4.02	2.17	1.57	.072	1.77	12	.4724
4150296	B041A10800CPG	4151214	B051A10800CPG	10,800	.4252	–	–	4.02	2.17	1.57	.073	1.77	12	.4724
4150297	B041A10900CPG	4151215	B051A10900CPG	10,900	.4291	–	–	4.02	2.17	1.57	.074	1.77	12	.4724
4150298	B041A11000CPG	4151216	B051A11000CPG	11,000	.4331	–	–	4.02	2.17	1.57	.074	1.77	12	.4724
4150299	B041A11100CPG	4151217	B051A11100CPG	11,100	.4370	–	–	4.02	2.17	1.57	.075	1.77	12	.4724
4150300	B041A11113CPG	4151218	B051A11113CPG	11,113	.4375	7/16	–	4.02	2.17	1.57	.075	1.77	12	.4724
4150301	B041A11200CPG	4151219	B051A11200CPG	11,200	.4409	–	–	4.02	2.17	1.57	.076	1.77	12	.4724
4150302	B041A11300CPG		–	11,300	.4449	–	–	4.02	2.17	1.57	.076	1.77	12	.4724
4150303	B041A11400CPG	4151221	B051A11400CPG	11,400	.4488	–	–	4.02	2.17	1.57	.077	1.77	12	.4724
4150304	B041A11500CPG	4151222	B051A11500CPG	11,500	.4528	–	–	4.02	2.17	1.57	.078	1.77	12	.4724
4150305	B041A11509CPG	4151223	B051A11509CPG	11,509	.4531	29/64	–	4.02	2.17	1.57	.078	1.77	12	.4724
4150306	B041A11600CPG	4151224	B051A11600CPG	11,600	.4567	–	–	4.02	2.17	1.57	.078	1.77	12	.4724
4150307	B041A11700CPG	4151225	B051A11700CPG	11,700	.4606	–	–	4.02	2.17	1.57	.079	1.77	12	.4724
4150308	B041A11800CPG	4151226	B051A11800CPG	11,800	.4646	–	–	4.02	2.17	1.57	.080	1.77	12	.4724
	–	4151227	B051A11900CPG	11,900	.4685	–	–	4.02	2.17	1.57	.080	1.77	12	.4724
4150310	B041A11908CPG	4151228	B051A11908CPG	11,908	.4688	15/32	–	4.02	2.17	1.57	.080	1.77	12	.4724
4150311	B041A12000CPG	4151229	B051A12000CPG	12,000	.4724	–	–	4.02	2.17	1.57	.081	1.77	12	.4724
4150312	B041A12100CPG	4151230	B051A12100CPG	12,100	.4764	–	–	4.21	2.36	1.69	.082	1.77	14	.5512
	–	4151231	B051A12200CPG	12,200	.4803	–	–	4.21	2.36	1.69	.083	1.77	14	.5512
	–	4151232	B051A12300CPG	12,300	.4843	–	–	4.21	2.36	1.69	.083	1.77	14	.5512
4150315	B041A12304CPG	4151233	B051A12304CPG	12,304	.4844	31/64	–	4.21	2.36	1.69	.083	1.77	14	.5512
4150317	B041A12500CPG	4151235	B051A12500CPG	12,500	.4921	–	–	4.21	2.36	1.69	.085	1.77	14	.5512
4150318	B041A12600CPG	4151236	B051A12600CPG	12,600	.4961	–	–	4.21	2.36	1.69	.085	1.77	14	.5512
4150319	B041A12700CPG	4151237	B051A12700CPG	12,700	.5000	1/2	–	4.21	2.36	1.69	.086	1.77	14	.5512

(continued)

(B041A/B051A • ~3 x D — continued)



● first choice
○ alternate choice

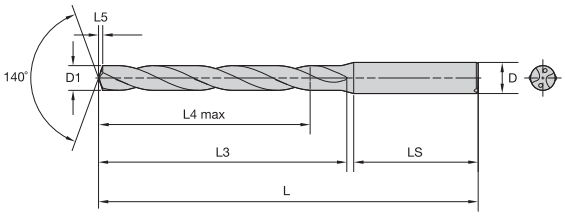
grade KC7325		grade KC7325		D1 diameter									D	
order #	catalog #	order #	catalog #	mm	in	fraction	wire size	L	L3	L4 max	L5	LS	mm	in
4150320	B041A12800CPG	4151238	B051A12800CPG	12,800	.5039	–	–	4.21	2.36	1.69	.087	1.77	14	.5512
4150321	B041A12900CPG		–	12,900	.5079	–	–	4.21	2.36	1.69	.087	1.77	14	.5512
4150322	B041A13000CPG	4151240	B051A13000CPG	13,000	.5118	–	–	4.21	2.36	1.69	.088	1.77	14	.5512
4150323	B041A13096CPG	4151241	B051A13096CPG	13,096	.5156	33/64	–	4.21	2.36	1.69	.089	1.77	14	.5512
4150324	B041A13100CPG		–	13,100	.5157	–	–	4.21	2.36	1.69	.089	1.77	14	.5512
4150328	B041A13500CPG	4151246	B051A13500CPG	13,500	.5315	–	–	4.21	2.36	1.69	.092	1.77	14	.5512
4150329	B041A13600CPG	4151247	B051A13600CPG	13,600	.5354	–	–	4.21	2.36	1.69	.092	1.77	14	.5512
4150332	B041A13891CPG		–	13,891	.5469	35/64	–	4.21	2.36	1.69	.094	1.77	14	.5512
4150334	B041A14000CPG	4121491	B051A14000CPG	14,000	.5512	–	–	4.21	2.36	1.69	.095	1.77	14	.5512
4150335	B041A14100CPG	4151252	B051A14100CPG	14,100	.5551	–	–	4.53	2.56	1.77	.096	1.89	16	.6299
4150337	B041A14288CPG	4151254	B051A14288CPG	14,288	.5625	9/16	–	4.53	2.56	1.77	.097	1.89	16	.6299
4150340	B041A14500CPG		–	14,500	.5709	–	–	4.53	2.56	1.77	.098	1.89	16	.6299
4150342	B041A14684CPG	4151259	B051A14684CPG	14,684	.5781	37/64	–	4.53	2.56	1.77	.100	1.89	16	.6299
4150347	B041A15083CPG		–	15,083	.5938	19/32	–	4.53	2.56	1.77	.103	1.89	16	.6299
4150349	B041A15200CPG		–	15,200	.5984	–	–	4.53	2.56	1.77	.104	1.89	16	.6299
4150352	B041A15479CPG		–	15,479	.6094	39/64	–	4.53	2.56	1.77	.106	1.89	16	.6299
4150353	B041A15500CPG		–	15,500	.6102	–	–	4.53	2.56	1.77	.106	1.89	16	.6299
4150357	B041A15875CPG	4151274	B051A15875CPG	15,875	.6250	5/8	–	4.53	2.56	1.77	.108	1.89	16	.6299
4150359	B041A16000CPG	4151276	B051A16000CPG	16,000	.6299	–	–	4.53	2.56	1.77	.109	1.89	16	.6299
4150362	B041A16271CPG		–	16,271	.6406	41/64	–	4.84	2.87	2.01	.111	1.89	18	.7087
	–	4151280	B051A16300CPG	16,300	.6417	–	–	4.84	2.87	2.01	.111	1.89	18	.7087
4150365	B041A16500CPG	4151282	B051A16500CPG	16,500	.6496	–	–	4.84	2.87	2.01	.113	1.89	18	.7087
	–	4151283	B051A16600CPG	16,600	.6535	–	–	4.84	2.87	2.01	.113	1.89	18	.7087
4150367	B041A16670CPG	4151284	B051A16670CPG	16,670	.6563	21/32	–	4.84	2.87	2.01	.114	1.89	18	.7087
4150369	B041A16800CPG		–	16,800	.6614	–	–	4.84	2.87	2.01	.115	1.89	18	.7087
4150371	B041A17000CPG		–	17,000	.6693	–	–	4.84	2.87	2.01	.116	1.89	18	.7087
4150376	B041A17463CPG		–	17,463	.6875	11/16	–	4.84	2.87	2.01	.119	1.89	18	.7087
	–	4151294	B051A17500CPG	17,500	.6890	–	–	4.84	2.87	2.01	.120	1.89	18	.7087
	–	4148475	B051A18000CPG	18,000	.7087	–	–	4.84	2.87	2.01	.123	1.89	18	.7087
	–	4148476	B051A18100CPG	18,100	.7126	–	–	5.16	3.11	2.17	.124	1.97	20	.7874
4150406	B041A18258CPG		–	18,258	.7188	23/32	–	5.16	3.11	2.17	.125	1.97	20	.7874
	–	4148481	B051A18500CPG	18,500	.7283	–	–	5.16	3.11	2.17	.126	1.97	20	.7874
4150416	B041A19050CPG	4148588	B051A19050CPG	19,050	.7500	3/4	–	5.16	3.11	2.17	.130	1.97	20	.7874

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

Tolerance • Inch

nominal size range	D1 tolerance	D tolerance h6
.0394–.1181	.0000/-.0006 (h8)	.0000/-.0002
>.1181–.2362	.0000/-.0005 (h7)	.0000/-.0003
>.2362–.3937	.0000/-.0006 (h7)	.0000/-.0004
>.3937–.7087	.0000/-.0007 (h7)	.0000/-.0004
>.7087–.7874	.0000/-.0008 (h7)	.0000/-.0005



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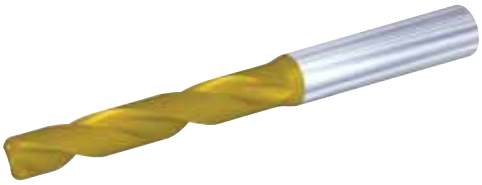
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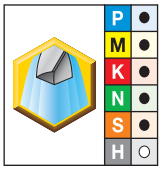
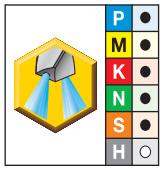
B042A/B042A • ~5 x D





● first choice
○ alternate choice

grade KC7325		grade KC7325		D1 diameter									D	
order #	catalog #	order #	catalog #	mm	in	fraction	wire size	L	L3	L4 max	L5	LS	mm	in
4151774	B042A01000CPG		–	1,000	.0394	–	–	2.28	.35	.24	.006	1.10	4	.1575
4151776	B042A01016CPG		–	1,016	.0400	–	–	2.28	.35	.24	.006	1.10	4	.1575
4151778	B042A01067CPG		–	1,067	.0420	–	–	2.28	.35	.24	.006	1.10	4	.1575
4151780	B042A01100CPG		–	1,100	.0433	–	–	2.28	.35	.24	.006	1.10	4	.1575
4151781	B042A01181CPG		–	1,181	.0465	–	–	2.28	.35	.24	.007	1.10	4	.1575
4151782	B042A01191CPG		–	1,191	.0469	3/64	–	2.28	.35	.24	.007	1.10	4	.1575
4151783	B042A01200CPG		–	1,200	.0472	–	–	2.28	.35	.24	.007	1.10	4	.1575
4151784	B042A01300CPG		–	1,300	.0512	–	–	2.28	.35	.24	.008	1.10	4	.1575
4151785	B042A01321CPG		–	1,321	.0520	–	–	2.28	.35	.24	.008	1.10	4	.1575
4151786	B042A01397CPG		–	1,397	.0550	–	–	2.28	.35	.24	.008	1.10	4	.1575
4151787	B042A01400CPG		–	1,400	.0551	–	–	2.28	.35	.24	.008	1.10	4	.1575
4151788	B042A01500CPG	4149143	B052A01500CPG	1,500	.0591	–	–	2.28	.47	.35	.009	1.10	4	.1575
4151789	B042A01600CPG	4149144	B052A01600CPG	1,600	.0630	–	–	2.28	.47	.35	.010	1.10	4	.1575
4151790	B042A01700CPG	4149145	B052A01700CPG	1,700	.0669	–	–	2.28	.47	.35	.010	1.10	4	.1575
4151791	B042A01800CPG	4149146	B052A01800CPG	1,800	.0709	–	–	2.28	.47	.35	.011	1.10	4	.1575
4151792	B042A01900CPG	4149147	B052A01900CPG	1,900	.0748	–	–	2.28	.47	.35	.012	1.10	4	.1575
4151793	B042A01984CPG	4149148	B052A01984CPG	1,984	.0781	5/64	–	2.28	.71	.55	.012	1.10	4	.1575
4151794	B042A02000CPG	4149149	B052A02000CPG	2,000	.0787	–	–	2.28	.71	.55	.012	1.10	4	.1575
4151795	B042A02100CPG	4149150	B052A02100CPG	2,100	.0827	–	–	2.28	.71	.55	.013	1.10	4	.1575
4151796	B042A02200CPG	4149151	B052A02200CPG	2,200	.0866	–	–	2.28	.71	.55	.014	1.10	4	.1575
4151797	B042A02300CPG	4149152	B052A02300CPG	2,300	.0906	–	–	2.28	.71	.55	.014	1.10	4	.1575
4151798	B042A02383CPG	4149153	B052A02383CPG	2,383	.0938	3/32	–	2.28	.87	.67	.015	1.10	4	.1575
4151799	B042A02400CPG	4149154	B052A02400CPG	2,400	.0945	–	–	2.28	.87	.67	.015	1.10	4	.1575
4151800	B042A02439CPG	4149155	B052A02439CPG	2,439	.0960	–	41	2.28	.87	.67	.015	1.10	4	.1575
4151801	B042A02489CPG	4149156	B052A02489CPG	2,489	.0980	–	40	2.28	.87	.67	.016	1.10	4	.1575
4151802	B042A02500CPG	4149157	B052A02500CPG	2,500	.0984	–	–	2.28	.87	.67	.016	1.10	4	.1575
4151803	B042A02578CPG	4149158	B052A02578CPG	2,578	.1015	–	38	2.28	.87	.67	.016	1.10	4	.1575
4151804	B042A02600CPG	4149159	B052A02600CPG	2,600	.1024	–	–	2.28	.87	.67	.017	1.10	4	.1575
4151805	B042A02642CPG	4149160	B052A02642CPG	2,642	.1040	–	37	2.28	.87	.67	.017	1.10	4	.1575
4151806	B042A02700CPG	4149161	B052A02700CPG	2,700	.1063	–	–	2.28	.87	.67	.017	1.10	4	.1575
4151807	B042A02705CPG	4149162	B052A02705CPG	2,705	.1065	–	36	2.28	.87	.67	.017	1.10	4	.1575
4151808	B042A02779CPG	4149163	B052A02779CPG	2,779	.1094	7/64	–	2.28	.87	.67	.018	1.10	4	.1575

(continued)

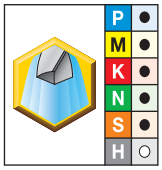
(B042A/B052A • ~5 x D — continued)

● first choice
○ alternate choice

grade KC7325		grade KC7325		D1 diameter									D	
order #	catalog #	order #	catalog #	mm	in	fraction	wire size	L	L3	L4 max	L5	LS	mm	in
4151809	B042A02800CPG	4149164	B052A02800CPG	2,800	.1102	–	–	2.28	.87	.67	.018	1.10	4	.1575
4151810	B042A02820CPG	4149165	B052A02820CPG	2,820	.1110	–	34	2.28	.87	.67	.018	1.10	4	.1575
4151811	B042A02870CPG	4149166	B052A02870CPG	2,870	.1130	–	33	2.28	.87	.67	.018	1.10	4	.1575
4151812	B042A02900CPG	4149167	B052A02900CPG	2,900	.1142	–	–	2.28	.87	.67	.019	1.10	4	.1575
4151813	B042A02947CPG	4149168	B052A02947CPG	2,947	.1160	–	32	2.28	.87	.67	.019	1.10	4	.1575
4150602	B042A03000CPG	4149125	B052A03000CPG	3,000	.1181	–	–	2.60	1.10	.91	.019	1.42	6	.2362
4150633	B042A03048CPG	4149126	B052A03048CPG	3,048	.1200	–	31	2.60	1.10	.91	.019	1.42	6	.2362
4150634	B042A03100CPG	4149128	B052A03100CPG	3,100	.1220	–	–	2.60	1.10	.91	.020	1.42	6	.2362
4150635	B042A03175CPG	4149129	B052A03175CPG	3,175	.1250	1/8	–	2.60	1.10	.91	.020	1.42	6	.2362
4150636	B042A03200CPG	4149130	B052A03200CPG	3,200	.1260	–	–	2.60	1.10	.91	.021	1.42	6	.2362
4150637	B042A03264CPG	4149131	B052A03264CPG	3,264	.1285	–	30	2.60	1.10	.91	.021	1.42	6	.2362
4150638	B042A03300CPG	4121505	B052A03300CPG	3,300	.1299	–	–	2.60	1.10	.91	.021	1.42	6	.2362
4150639	B042A03400CPG	4149132	B052A03400CPG	3,400	.1339	–	–	2.60	1.10	.91	.022	1.42	6	.2362
4150640	B042A03455CPG	4149183	B052A03455CPG	3,455	.1360	–	29	2.60	1.10	.91	.022	1.42	6	.2362
4150641	B042A03500CPG	4149184	B052A03500CPG	3,500	.1378	–	–	2.60	1.10	.91	.022	1.42	6	.2362
4150642	B042A03571CPG	4149185	B052A03571CPG	3,571	.1406	9/64	–	2.60	1.10	.91	.023	1.42	6	.2362
4150643	B042A03600CPG	4149186	B052A03600CPG	3,600	.1417	–	–	2.60	1.10	.91	.023	1.42	6	.2362
4150644	B042A03658CPG	4149187	B052A03658CPG	3,658	.1440	–	27	2.60	1.10	.91	.024	1.42	6	.2362
4150645	B042A03700CPG	4149188	B052A03700CPG	3,700	.1457	–	–	2.60	1.10	.91	.024	1.42	6	.2362
4150646	B042A03734CPG	4149189	B052A03734CPG	3,734	.1470	–	26	2.60	1.10	.91	.024	1.42	6	.2362
4150647	B042A03800CPG	4149190	B052A03800CPG	3,800	.1496	–	–	2.91	1.42	1.14	.024	1.42	6	.2362
4150648	B042A03900CPG	4149191	B052A03900CPG	3,900	.1535	–	–	2.91	1.42	1.14	.025	1.42	6	.2362
4150649	B042A03970CPG	4149192	B052A03970CPG	3,970	.1563	5/32	–	2.91	1.42	1.14	.026	1.42	6	.2362
4150650	B042A04000CPG	4149193	B052A04000CPG	4,000	.1575	–	–	2.91	1.42	1.14	.026	1.42	6	.2362
4150651	B042A04039CPG	4149194	B052A04039CPG	4,039	.1590	–	21	2.91	1.42	1.14	.026	1.42	6	.2362
4150652	B042A04090CPG	4149195	B052A04090CPG	4,090	.1610	–	20	2.91	1.42	1.14	.026	1.42	6	.2362
4150653	B042A04100CPG	4149196	B052A04100CPG	4,100	.1614	–	–	2.91	1.42	1.14	.026	1.42	6	.2362
4150654	B042A04200CPG	4149197	B052A04200CPG	4,200	.1654	–	–	2.91	1.42	1.14	.027	1.42	6	.2362
4150655	B042A04217CPG	4149198	B052A04217CPG	4,217	.1660	–	19	2.91	1.42	1.14	.027	1.42	6	.2362
4150656	B042A04300CPG	4149199	B052A04300CPG	4,300	.1693	–	–	2.91	1.42	1.14	.028	1.42	6	.2362
4150657	B042A04366CPG	4149200	B052A04366CPG	4,366	.1719	11/64	–	2.91	1.42	1.14	.028	1.42	6	.2362
4150658	B042A04400CPG	4149201	B052A04400CPG	4,400	.1732	–	–	2.91	1.42	1.14	.029	1.42	6	.2362
4150659	B042A04500CPG	4149202	B052A04500CPG	4,500	.1772	–	–	2.91	1.42	1.14	.029	1.42	6	.2362
4150660	B042A04600CPG	4149203	B052A04600CPG	4,600	.1811	–	–	2.91	1.42	1.14	.030	1.42	6	.2362
4150661	B042A04623CPG	4149204	B052A04623CPG	4,623	.1820	–	14	2.91	1.42	1.14	.030	1.42	6	.2362
4150662	B042A04700CPG	4149205	B052A04700CPG	4,700	.1850	–	13	2.91	1.42	1.14	.031	1.42	6	.2362
4150663	B042A04763CPG	4149206	B052A04763CPG	4,763	.1875	3/16	–	3.23	1.73	1.38	.031	1.42	6	.2362
4150664	B042A04800CPG	4149207	B052A04800CPG	4,800	.1890	–	12	3.23	1.73	1.38	.032	1.42	6	.2362
4150665	B042A04852CPG	4149208	B052A04852CPG	4,852	.1910	–	11	3.23	1.73	1.38	.032	1.42	6	.2362
4150666	B042A04900CPG	4149209	B052A04900CPG	4,900	.1929	–	–	3.23	1.73	1.38	.032	1.42	6	.2362
4150667	B042A05000CPG	4149210	B052A05000CPG	5,000	.1969	–	–	3.23	1.73	1.38	.033	1.42	6	.2362
4150668	B042A05100CPG	4149211	B052A05100CPG	5,100	.2008	–	–	3.23	1.73	1.38	.034	1.42	6	.2362
4150669	B042A05106CPG	4149212	B052A05106CPG	5,106	.2010	–	7	3.23	1.73	1.38	.034	1.42	6	.2362
4150670	B042A05159CPG	4149213	B052A05159CPG	5,159	.2031	13/64	–	3.23	1.73	1.38	.034	1.42	6	.2362
4150671	B042A05200CPG	4149214	B052A05200CPG	5,200	.2047	–	–	3.23	1.73	1.38	.034	1.42	6	.2362
4150672	B042A05300CPG	4149215	B052A05300CPG	5,300	.2087	–	–	3.23	1.73	1.38	.035	1.42	6	.2362
4150673	B042A05400CPG	4149216	B052A05400CPG	5,400	.2126	–	–	3.23	1.73	1.38	.035	1.42	6	.2362
4150674	B042A05410CPG	4149217	B052A05410CPG	5,410	.2130	–	3	3.23	1.73	1.38	.035	1.42	6	.2362

(continued)

(B042A/B052A • ~5 x D — continued)



● first choice
○ alternate choice

grade KC7325		grade KC7325		D1 diameter									D	
order #	catalog #	order #	catalog #	mm	in	fraction	wire size	L	L3	L4 max	L5	LS	mm	in
4150675	B042A05500CPG	4149218	B052A05500CPG	5,500	.2165	–	–	3.23	1.73	1.38	.036	1.42	6	.2362
4150676	B042A05558CPG	4149219	B052A05558CPG	5,558	.2188	7/32	–	3.23	1.73	1.38	.037	1.42	6	.2362
4150677	B042A05600CPG	4149220	B052A05600CPG	5,600	.2205	–	–	3.23	1.73	1.38	.037	1.42	6	.2362
4150678	B042A05616CPG	4149221	B052A05616CPG	5,616	.2211	–	2	3.23	1.73	1.38	.037	1.42	6	.2362
4150679	B042A05700CPG	4149222	B052A05700CPG	5,700	.2244	–	–	3.23	1.73	1.38	.037	1.42	6	.2362
4150680	B042A05800CPG	4149223	B052A05800CPG	5,800	.2283	–	–	3.23	1.73	1.38	.038	1.42	6	.2362
4150681	B042A05900CPG	4149224	B052A05900CPG	5,900	.2323	–	–	3.23	1.73	1.38	.039	1.42	6	.2362
4150682	B042A05954CPG	4149225	B052A05954CPG	5,954	.2344	15/64	–	3.23	1.73	1.38	.039	1.42	6	.2362
4150683	B042A06000CPG	4149226	B052A06000CPG	6,000	.2362	–	–	3.23	1.73	1.38	.039	1.42	6	.2362
4150684	B042A06100CPG	4149227	B052A06100CPG	6,100	.2402	–	–	3.58	2.09	1.69	.040	1.42	8	.3150
4150685	B042A06200CPG	4149228	B052A06200CPG	6,200	.2441	–	–	3.58	2.09	1.69	.041	1.42	8	.3150
4150686	B042A06300CPG	4149229	B052A06300CPG	6,300	.2480	–	–	3.58	2.09	1.69	.042	1.42	8	.3150
4150688	B042A06350CPG	4149230	B052A06350CPG	6,350	.2500	1/4	E	3.58	2.09	1.69	.042	1.42	8	.3150
4150689	B042A06400CPG	4149231	B052A06400CPG	6,400	.2520	–	–	3.58	2.09	1.69	.042	1.42	8	.3150
4150690	B042A06500CPG	4149232	B052A06500CPG	6,500	.2559	–	–	3.58	2.09	1.69	.043	1.42	8	.3150
4150691	B042A06528CPG	4149233	B052A06528CPG	6,528	.2570	–	F	3.58	2.09	1.69	.043	1.42	8	.3150
4150692	B042A06600CPG	4149234	B052A06600CPG	6,600	.2598	–	–	3.58	2.09	1.69	.044	1.42	8	.3150
4150693	B042A06630CPG	4149235	B052A06630CPG	6,630	.2610	–	G	3.58	2.09	1.69	.044	1.42	8	.3150
4150694	B042A06700CPG	4149236	B052A06700CPG	6,700	.2638	–	–	3.58	2.09	1.69	.045	1.42	8	.3150
4150695	B042A06746CPG	4149237	B052A06746CPG	6,746	.2656	17/64	–	3.58	2.09	1.69	.045	1.42	8	.3150
4150696	B042A06800CPG	4149238	B052A06800CPG	6,800	.2677	–	–	3.58	2.09	1.69	.045	1.42	8	.3150
4150697	B042A06900CPG	4149239	B052A06900CPG	6,900	.2717	–	–	3.58	2.09	1.69	.046	1.42	8	.3150
4150698	B042A07000CPG	4149240	B052A07000CPG	7,000	.2756	–	–	3.58	2.09	1.69	.047	1.42	8	.3150
4150699	B042A07100CPG	4149241	B052A07100CPG	7,100	.2795	–	–	3.58	2.09	1.69	.047	1.42	8	.3150
4150700	B042A07145CPG	4149242	B052A07145CPG	7,145	.2813	9/32	–	3.58	2.09	1.69	.047	1.42	8	.3150
4150701	B042A07200CPG	4149243	B052A07200CPG	7,200	.2835	–	–	3.58	2.09	1.69	.048	1.42	8	.3150
4150702	B042A07300CPG	4149244	B052A07300CPG	7,300	.2874	–	–	3.58	2.09	1.69	.048	1.42	8	.3150
4150703	B042A07400CPG	4149245	B052A07400CPG	7,400	.2913	–	–	3.58	2.09	1.69	.049	1.42	8	.3150
4150704	B042A07500CPG	4149246	B052A07500CPG	7,500	.2953	–	–	3.58	2.09	1.69	.050	1.42	8	.3150
4150705	B042A07541CPG	4149247	B052A07541CPG	7,541	.2969	19/64	–	3.58	2.09	1.69	.050	1.42	8	.3150
4150706	B042A07600CPG	4149248	B052A07600CPG	7,600	.2992	–	–	3.58	2.09	1.69	.050	1.42	8	.3150
4150707	B042A07700CPG	4149249	B052A07700CPG	7,700	.3031	–	–	3.58	2.09	1.69	.051	1.42	8	.3150
4150708	B042A07800CPG	4149250	B052A07800CPG	7,800	.3071	–	–	3.58	2.09	1.69	.052	1.42	8	.3150
4150709	B042A07900CPG	4149251	B052A07900CPG	7,900	.3110	–	–	3.58	2.09	1.69	.053	1.42	8	.3150
4150710	B042A07938CPG	4149252	B052A07938CPG	7,938	.3125	5/16	–	3.58	2.09	1.69	.053	1.42	8	.3150
4150711	B042A08000CPG	4149253	B052A08000CPG	8,000	.3150	–	–	3.58	2.09	1.69	.053	1.42	8	.3150
4150712	B042A08100CPG	4149254	B052A08100CPG	8,100	.3189	–	–	4.06	2.40	1.93	.054	1.57	10	.3937
4150713	B042A08200CPG	4149255	B052A08200CPG	8,200	.3228	–	–	4.06	2.40	1.93	.055	1.57	10	.3937
	–	4149256	B052A08300CPG	8,300	.3268	–	–	4.06	2.40	1.93	.056	1.57	10	.3937
4150715	B042A08334CPG	4149257	B052A08334CPG	8,334	.3281	21/64	–	4.06	2.40	1.93	.056	1.57	10	.3937
4150716	B042A08400CPG	4149258	B052A08400CPG	8,400	.3307	–	–	4.06	2.40	1.93	.056	1.57	10	.3937
4150717	B042A08433CPG	4149259	B052A08433CPG	8,433	.3320	–	Q	4.06	2.40	1.93	.056	1.57	10	.3937
4150718	B042A08500CPG	4149260	B052A08500CPG	8,500	.3346	–	–	4.06	2.40	1.93	.057	1.57	10	.3937
4150719	B042A08600CPG	4149261	B052A08600CPG	8,600	.3386	–	–	4.06	2.40	1.93	.058	1.57	10	.3937
4150720	B042A08700CPG	4149262	B052A08700CPG	8,700	.3425	–	–	4.06	2.40	1.93	.058	1.57	10	.3937
4150721	B042A08733CPG	4149263	B052A08733CPG	8,733	.3438	11/32	–	4.06	2.40	1.93	.058	1.57	10	.3937
4150722	B042A08800CPG	4149264	B052A08800CPG	8,800	.3465	–	–	4.06	2.40	1.93	.059	1.57	10	.3937
4150723	B042A08900CPG	4149265	B052A08900CPG	8,900	.3504	–	–	4.06	2.40	1.93	.059	1.57	10	.3937

(continued)

(B042A/B052A • ~5 x D — continued)

● first choice
○ alternate choice

grade KC7325		grade KC7325		D1 diameter									D	
order #	catalog #	order #	catalog #	mm	in	fraction	wire size	L	L3	L4 max	L5	LS	mm	in
4150724	B042A09000CPG	4149266	B052A09000CPG	9,000	.3543	–	–	4.06	2.40	1.93	.060	1.57	10	.3937
	–	4149267	B052A09100CPG	9,100	.3583	–	–	4.06	2.40	1.93	.061	1.57	10	.3937
4150726	B042A09129CPG	4149268	B052A09129CPG	9,129	.3594	23/64	–	4.06	2.40	1.93	.061	1.57	10	.3937
4150727	B042A09200CPG	4149269	B052A09200CPG	9,200	.3622	–	–	4.06	2.40	1.93	.062	1.57	10	.3937
4150728	B042A09300CPG	4149270	B052A09300CPG	9,300	.3661	–	–	4.06	2.40	1.93	.062	1.57	10	.3937
4150729	B042A09347CPG	4149271	B052A09347CPG	9,347	.3680	–	U	4.06	2.40	1.93	.063	1.57	10	.3937
	–	4149272	B052A09400CPG	9,400	.3701	–	–	4.06	2.40	1.93	.063	1.57	10	.3937
4150731	B042A09500CPG	4149273	B052A09500CPG	9,500	.3740	–	–	4.06	2.40	1.93	.064	1.57	10	.3937
4150732	B042A09525CPG	4149274	B052A09525CPG	9,525	.3750	3/8	–	4.06	2.40	1.93	.064	1.57	10	.3937
4150733	B042A09600CPG	4149275	B052A09600CPG	9,600	.3780	–	–	4.06	2.40	1.93	.065	1.57	10	.3937
4150734	B042A09700CPG	4149276	B052A09700CPG	9,700	.3819	–	–	4.06	2.40	1.93	.065	1.57	10	.3937
4150735	B042A09800CPG	4149277	B052A09800CPG	9,800	.3858	–	–	4.06	2.40	1.93	.066	1.57	10	.3937
4150736	B042A09900CPG	4149278	B052A09900CPG	9,900	.3898	–	–	4.06	2.40	1.93	.067	1.57	10	.3937
4150737	B042A09921CPG	4149279	B052A09921CPG	9,921	.3906	25/64	–	4.06	2.40	1.93	.067	1.57	10	.3937
4150739	B042A10000CPG	4149110	B052A10000CPG	10,000	.3937	–	–	4.06	2.40	1.93	.067	1.57	10	.3937
4150740	B042A10100CPG	4149111	B052A10100CPG	10,100	.3976	–	–	4.65	2.80	2.20	.068	1.77	12	.4724
4150741	B042A10200CPG	4149112	B052A10200CPG	10,200	.4016	–	–	4.65	2.80	2.20	.069	1.77	12	.4724
4150742	B042A10300CPG	4149293	B052A10300CPG	10,300	.4055	–	–	4.65	2.80	2.20	.069	1.77	12	.4724
4150743	B042A10320CPG	4149294	B052A10320CPG	10,320	.4063	13/32	–	4.65	2.80	2.20	.069	1.77	12	.4724
4150744	B042A10400CPG	4149295	B052A10400CPG	10,400	.4094	–	–	4.65	2.80	2.20	.070	1.77	12	.4724
4150745	B042A10500CPG	4149296	B052A10500CPG	10,500	.4134	–	–	4.65	2.80	2.20	.071	1.77	12	.4724
4150746	B042A10600CPG	4149297	B052A10600CPG	10,600	.4173	–	–	4.65	2.80	2.20	.071	1.77	12	.4724
4150747	B042A10700CPG	4149298	B052A10700CPG	10,700	.4213	–	–	4.65	2.80	2.20	.072	1.77	12	.4724
4150748	B042A10716CPG	4149299	B052A10716CPG	10,716	.4219	27/64	–	4.65	2.80	2.20	.072	1.77	12	.4724
4150749	B042A10800CPG	4149300	B052A10800CPG	10,800	.4252	–	–	4.65	2.80	2.20	.073	1.77	12	.4724
	–	4149301	B052A10900CPG	10,900	.4291	–	–	4.65	2.80	2.20	.074	1.77	12	.4724
4150751	B042A11000CPG	4149302	B052A11000CPG	11,000	.4331	–	–	4.65	2.80	2.20	.074	1.77	12	.4724
4150752	B042A11100CPG	4149303	B052A11100CPG	11,100	.4370	–	–	4.65	2.80	2.20	.075	1.77	12	.4724
4150753	B042A11113CPG	4149304	B052A11113CPG	11,113	.4375	7/16	–	4.65	2.80	2.20	.075	1.77	12	.4724
4150754	B042A11200CPG	4149305	B052A11200CPG	11,200	.4409	–	–	4.65	2.80	2.20	.076	1.77	12	.4724
4150755	B042A11300CPG	4149306	B052A11300CPG	11,300	.4449	–	–	4.65	2.80	2.20	.076	1.77	12	.4724
	–	4149307	B052A11400CPG	11,400	.4488	–	–	4.65	2.80	2.20	.077	1.77	12	.4724
4150757	B042A11500CPG	4149308	B052A11500CPG	11,500	.4528	–	–	4.65	2.80	2.20	.078	1.77	12	.4724
4150758	B042A11509CPG	4149309	B052A11509CPG	11,509	.4531	29/64	–	4.65	2.80	2.20	.078	1.77	12	.4724
	–	4149310	B052A11600CPG	11,600	.4567	–	–	4.65	2.80	2.20	.078	1.77	12	.4724
4150760	B042A11700CPG	4149311	B052A11700CPG	11,700	.4606	–	–	4.65	2.80	2.20	.079	1.77	12	.4724
4150761	B042A11800CPG	4149312	B052A11800CPG	11,800	.4646	–	–	4.65	2.80	2.20	.080	1.77	12	.4724
4150762	B042A11900CPG	4149313	B052A11900CPG	11,900	.4685	–	–	4.65	2.80	2.20	.080	1.77	12	.4724
4150763	B042A11908CPG	4149314	B052A11908CPG	11,908	.4688	15/32	–	4.65	2.80	2.20	.080	1.77	12	.4724
4150764	B042A12000CPG	4149315	B052A12000CPG	12,000	.4724	–	–	4.65	2.80	2.20	.081	1.77	12	.4724
4150765	B042A12100CPG	4149316	B052A12100CPG	12,100	.4764	–	–	4.88	3.03	2.36	.082	1.77	14	.5512
4150766	B042A12200CPG	4149317	B052A12200CPG	12,200	.4803	–	–	4.88	3.03	2.36	.083	1.77	14	.5512
	–	4149318	B052A12300CPG	12,300	.4843	–	–	4.88	3.03	2.36	.083	1.77	14	.5512
4150768	B042A12304CPG	4149319	B052A12304CPG	12,304	.4844	31/64	–	4.88	3.03	2.36	.083	1.77	14	.5512
	–	4149320	B052A12400CPG	12,400	.4882	–	–	4.88	3.03	2.36	.084	1.77	14	.5512
4150770	B042A12500CPG	4149321	B052A12500CPG	12,500	.4921	–	–	4.88	3.03	2.36	.085	1.77	14	.5512
4150771	B042A12600CPG	4149322	B052A12600CPG	12,600	.4961	–	–	4.88	3.03	2.36	.085	1.77	14	.5512
4150772	B042A12700CPG	4149323	B052A12700CPG	12,700	.5000	1/2	–	4.88	3.03	2.36	.086	1.77	14	.5512

(continued)

(B042A/B052A • ~5 x D — continued)

● first choice
○ alternate choice

grade KC7325		grade KC7325		D1 diameter									D	
order #	catalog #	order #	catalog #	mm	in	fraction	wire size	L	L3	L4 max	L5	LS	mm	in
4150773	B042A12800CPG	4149324	B052A12800CPG	12,800	.5039	–	–	4.88	3.03	2.36	.087	1.77	14	.5512
4150774	B042A12900CPG		–	12,900	.5079	–	–	4.88	3.03	2.36	.087	1.77	14	.5512
4150775	B042A13000CPG	4149326	B052A13000CPG	13,000	.5118	–	–	4.88	3.03	2.36	.088	1.77	14	.5512
4150776	B042A13096CPG	4149327	B052A13096CPG	13,096	.5156	33/64	–	4.88	3.03	2.36	.089	1.77	14	.5512
	–	4149329	B052A13200CPG	13,200	.5197	–	–	4.88	3.03	2.36	.089	1.77	14	.5512
	–	4149331	B052A13400CPG	13,400	.5276	–	–	4.88	3.03	2.36	.091	1.77	14	.5512
4150781	B042A13500CPG	4149332	B052A13500CPG	13,500	.5315	–	–	4.88	3.03	2.36	.092	1.77	14	.5512
4150785	B042A13891CPG	4149336	B052A13891CPG	13,891	.5469	35/64	–	4.88	3.03	2.36	.094	1.77	14	.5512
4150787	B042A14000CPG	4149338	B052A14000CPG	14,000	.5512	–	–	4.88	3.03	2.36	.095	1.77	14	.5512
4150789	B042A14200CPG	4149340	B052A14200CPG	14,200	.5591	–	–	5.24	3.27	2.48	.097	1.89	16	.6299
4150790	B042A14288CPG	4149341	B052A14288CPG	14,288	.5625	9/16	–	5.24	3.27	2.48	.097	1.89	16	.6299
4150791	B042A14300CPG		–	14,300	.5630	–	–	5.24	3.27	2.48	.097	1.89	16	.6299
4150793	B042A14500CPG	4149344	B052A14500CPG	14,500	.5709	–	–	5.24	3.27	2.48	.098	1.89	16	.6299
4150795	B042A14684CPG	4149346	B052A14684CPG	14,684	.5781	37/64	–	5.24	3.27	2.48	.100	1.89	16	.6299
	–	4149348	B052A14800CPG	14,800	.5827	–	–	5.24	3.27	2.48	.101	1.89	16	.6299
4150799	B042A15000CPG	4149350	B052A15000CPG	15,000	.5906	–	–	5.24	3.27	2.48	.102	1.89	16	.6299
4150800	B042A15083CPG	4149351	B052A15083CPG	15,083	.5938	19/32	–	5.24	3.27	2.48	.103	1.89	16	.6299
	–	4149352	B052A15100CPG	15,100	.5945	–	–	5.24	3.27	2.48	.103	1.89	16	.6299
	–	4149353	B052A15200CPG	15,200	.5984	–	–	5.24	3.27	2.48	.104	1.89	16	.6299
	–	4149354	B052A15300CPG	15,300	.6024	–	–	5.24	3.27	2.48	.104	1.89	16	.6299
4150805	B042A15479CPG	4149356	B052A15479CPG	15,479	.6094	39/64	–	5.24	3.27	2.48	.106	1.89	16	.6299
4150806	B042A15500CPG	4149357	B052A15500CPG	15,500	.6102	–	–	5.24	3.27	2.48	.106	1.89	16	.6299
4150810	B042A15875CPG	4149361	B052A15875CPG	15,875	.6250	5/8	–	5.24	3.27	2.48	.108	1.89	16	.6299
4150812	B042A16000CPG	4149363	B052A16000CPG	16,000	.6299	–	–	5.24	3.27	2.48	.109	1.89	16	.6299
	–	4149366	B052A16271CPG	16,271	.6406	41/64	–	5.63	3.66	2.80	.111	1.89	18	.7087
	–	4149367	B052A16300CPG	16,300	.6417	–	–	5.63	3.66	2.80	.111	1.89	18	.7087
4150817	B042A16400CPG		–	16,400	.6457	–	–	5.63	3.66	2.80	.112	1.89	18	.7087
4150818	B042A16500CPG		–	16,500	.6496	–	–	5.63	3.66	2.80	.113	1.89	18	.7087
4150820	B042A16670CPG	4149371	B052A16670CPG	16,670	.6563	21/32	–	5.63	3.66	2.80	.114	1.89	18	.7087
	–	4149375	B052A17000CPG	17,000	.6693	–	–	5.63	3.66	2.80	.116	1.89	18	.7087
	–	4149377	B052A17200CPG	17,200	.6772	–	–	5.63	3.66	2.80	.117	1.89	18	.7087
4150829	B042A17463CPG	4149380	B052A17463CPG	17,463	.6875	11/16	–	5.63	3.66	2.80	.119	1.89	18	.7087
	–	4149381	B052A17500CPG	17,500	.6890	–	–	5.63	3.66	2.80	.120	1.89	18	.7087
	–	4149385	B052A17859CPG	17,859	.7031	45/64	–	5.63	3.66	2.80	.122	1.89	18	.7087
	–	4149178	B052A18000CPG	18,000	.7087	–	–	5.63	3.66	2.80	.123	1.89	18	.7087
	–	4149403	B052A18400CPG	18,400	.7244	–	–	6.02	3.98	3.03	.126	1.97	20	.7874
4150874	B042A18654CPG	4149406	B052A18654CPG	18,654	.7344	47/64	–	6.02	3.98	3.03	.128	1.97	20	.7874
4150879	B042A19050CPG	4149411	B052A19050CPG	19,050	.7500	3/4	–	6.02	3.98	3.03	.130	1.97	20	.7874
4150881	B042A19200CPG		–	19,200	.7559	–	–	6.02	3.98	3.03	.132	1.97	20	.7874
	–	4149421	B052A20000CPG	20,000	.7874	–	–	6.02	3.98	3.03	.137	1.97	20	.7874

GOdrill™ • B04_CPG Series • Grade KC7325™ • Flood Coolant • Drill Diameters 1–20mm (.0394–.7874")

Material Group		Cutting Speed — vc Range — m/min min	Starting Value	max		Metric Recommended Feed Rate (f) by Diameter 1,0	2,0	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
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
	6	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

Material Group		Cutting Speed — vc Range — SFM min	Starting Value	max		Inch Recommended Feed Rate (f) by Diameter 3/64 .047	5/64 .078	1/8 .125	3/16 .188	1/4 .250	5/16 .313	3/8 .375	1/2 .500	5/8 .625	3/4 .750
P	0	200	**230**	330	IPR	.001–.003	.002–.004	.002–.004	.003–.005	.004–.007	.004–.009	.005–.010	.006–.012	.007–.014	.009–.018
	1	200	**230**	330	IPR	.002–.004	.002–.004	.002–.005	.004–.006	.004–.009	.005–.010	.006–.012	.007–.014	.009–.017	.011–.021
	2	260	**300**	330	IPR	.002–.004	.002–.004	.002–.005	.003–.006	.005–.009	.006–.010	.007–.012	.008–.014	.009–.017	.012–.021
	3	160	**230**	300	IPR	.002–.004	.002–.005	.003–.006	.004–.007	.005–.009	.006–.011	.008–.013	.009–.015	.010–.019	.013–.023
	4	160	**230**	330	IPR	.002–.005	.002–.005	.002–.006	.003–.007	.005–.009	.006–.011	.007–.013	.008–.015	.009–.019	.011–.023
	5	100	**130**	200	IPR	.001–.002	.002–.002	.002–.003	.002–.004	.003–.006	.004–.007	.005–.009	.006–.009	.007–.013	.009–.016
	6	100	**130**	200	IPR	.001–.002	.002–.002	.002–.003	.002–.004	.003–.006	.004–.007	.005–.009	.006–.009	.007–.013	.009–.016
M	1	70	**100**	130	IPR	.001–.002	.001–.002	.002–.003	.002–.004	.003–.004	.004–.005	.004–.006	.005–.006	.006–.007	.006–.008
	2	100	**130**	160	IPR	.001–.002	.001–.003	.002–.003	.002–.004	.003–.005	.004–.006	.004–.006	.005–.007	.006–.008	.006–.009
	3	70	**100**	130	IPR	.001–.002	.001–.002	.002–.003	.002–.004	.003–.004	.004–.005	.004–.006	.005–.006	.006–.007	.006–.008
K	1	260	**430**	560	IPR	.004–.007	.004–.008	.004–.009	.005–.009	.006–.012	.008–.015	.009–.017	.010–.019	.012–.024	.015–.029
	2	300	**360**	390	IPR	.002–.005	.003–.006	.004–.007	.005–.008	.006–.010	.008–.012	.009–.014	.010–.016	.012–.019	.015–.024
	3	260	**360**	430	IPR	.002–.004	.002–.005	.003–.006	.004–.008	.005–.010	.006–.012	.007–.014	.008–.016	.010–.019	.012–.024
N	1	300	**750**	890	IPR	.002–.005	.002–.005	.003–.006	.004–.006	.005–.008	.006–.009	.008–.011	.009–.013	.011–.016	.013–.019
	2	300	**720**	890	IPR	.002–.003	.002–.005	.003–.006	.004–.008	.005–.009	.006–.011	.008–.013	.009–.014	.011–.017	.013–.021
	3	300	**590**	740	IPR	.004–.005	.004–.006	.005–.006	.005–.006	.006–.008	.006–.009	.008–.011	.009–.013	.011–.016	.013–.017
	4	300	**430**	890	IPR	.002–.003	.002–.005	.003–.006	.004–.008	.005–.009	.006–.011	.008–.013	.009–.014	.011–.016	.013–.019
S	1	70	**80**	100	IPR	.000–.002	.001–.002	.001–.002	.002–.003	.002–.004	.003–.005	.004–.005	.004–.006	.005–.006	.006–.007
	2	30	**70**	100	IPR	.000–.001	.001–.001	.001–.002	.001–.002	.002–.003	.003–.004	.003–.004	.004–.005	.004–.006	.004–.006
	3	70	**80**	130	IPR	.000–.001	.001–.001	.001–.002	.001–.002	.002–.003	.002–.004	.003–.004	.003–.004	.004–.005	.004–.006
	4	70	**80**	160	IPR	.000–.001	.001–.001	.001–.002	.001–.002	.002–.003	.003–.004	.003–.004	.004–.005	.004–.006	.004–.006
H	1	30	**50**	100	IPR	.000–.001	.001–.001	.001–.002	.001–.002	.002–.003	.003–.004	.003–.004	.004–.005	.004–.006	.004–.006
	2	30	**30**	100	IPR	.000–.001	.001–.001	.001–.002	.001–.002	.002–.003	.002–.004	.003–.004	.003–.004	.004–.005	.004–.006

GOdrill™ • B05_CPG Series • Grade KC7325™ • Through Coolant • Drill Diameters 1–20mm (.0394–.7874")

Material Group		Cutting Speed — vc Range — m/min min	Starting Value	max	Metric Recommended Feed Rate (f) by Diameter		1,0	2,0	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
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	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
	2	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
	3	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
	4	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
	5	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
	6	40	50	70	mm/r		0,03–0,05	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	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

Material Group		Cutting Speed — vc Range — SFM min	Starting Value	max	Inch Recommended Feed Rate (f) by Diameter		3/64 .047	5/64 .078	1/8 .125	3/16 .188	1/4 .250	5/16 .313	3/8 .375	1/2 .500	5/8 .625	3/4 .750
P	0	230	260	380	IPR		.001–.003	.002–.004	.002–.004	.003–.005	.004–.007	.004–.009	.005–.010	.006–.012	.007–.014	.009–.018
	1	230	330	460	IPR		.002–.004	.002–.005	.003–.006	.003–.006	.004–.009	.005–.010	.006–.012	.007–.014	.009–.017	.011–.021
	2	300	390	460	IPR		.002–.004	.002–.005	.003–.006	.003–.006	.005–.009	.006–.010	.007–.012	.008–.014	.009–.017	.012–.021
	3	200	260	330	IPR		.002–.004	.002–.005	.003–.006	.004–.007	.005–.009	.006–.011	.008–.013	.009–.015	.010–.019	.013–.023
	4	160	260	330	IPR		.002–.004	.002–.005	.003–.006	.003–.007	.005–.009	.006–.011	.007–.013	.008–.015	.009–.019	.011–.023
	5	130	160	230	IPR		.001–.002	.002–.002	.002–.003	.002–.004	.003–.006	.004–.007	.005–.009	.006–.009	.007–.013	.009–.016
	6	130	160	230	IPR		.001–.002	.002–.002	.002–.003	.002–.004	.003–.006	.004–.007	.005–.009	.006–.009	.007–.013	.009–.016
M	1	70	100	130	IPR		.001–.002	.001–.002	.002–.003	.002–.004	.003–.004	.004–.005	.004–.006	.005–.006	.006–.007	.006–.008
	2	100	130	160	IPR		.001–.002	.001–.003	.002–.003	.002–.004	.003–.005	.004–.006	.004–.006	.005–.007	.006–.008	.006–.009
	3	70	100	130	IPR		.001–.002	.001–.002	.002–.003	.002–.004	.003–.004	.004–.005	.004–.006	.005–.006	.006–.007	.006–.008
K	1	260	390	560	IPR		.003–.006	.004–.007	.004–.009	.005–.009	.006–.012	.008–.015	.009–.017	.010–.019	.012–.024	.015–.029
	2	260	360	460	IPR		.004–.006	.004–.006	.005–.006	.005–.008	.006–.010	.008–.012	.009–.014	.010–.016	.012–.019	.015–.024
	3	260	330	430	IPR		.002–.005	.003–.006	.003–.007	.004–.008	.005–.010	.006–.012	.007–.014	.008–.016	.009–.019	.012–.024
N	1	300	750	1030	IPR		.002–.005	.002–.005	.003–.006	.004–.006	.005–.008	.006–.009	.008–.011	.009–.013	.011–.016	.013–.019
	2	300	740	890	IPR		.002–.003	.002–.005	.003–.006	.004–.008	.005–.009	.006–.011	.008–.013	.009–.014	.011–.017	.013–.021
	3	300	590	890	IPR		.004–.005	.004–.006	.005–.006	.005–.006	.006–.008	.006–.009	.008–.011	.009–.013	.011–.016	.013–.017
	4	300	440	590	IPR		.002–.003	.002–.005	.003–.006	.004–.008	.005–.009	.006–.011	.008–.013	.009–.014	.011–.016	.013–.019
S	1	30	80	100	IPR		.000–.002	.001–.002	.001–.002	.002–.003	.002–.004	.003–.005	.004–.005	.004–.006	.005–.006	.006–.007
	2	30	70	80	IPR		.000–.001	.001–.001	.001–.002	.001–.002	.002–.003	.003–.004	.003–.004	.004–.005	.004–.006	.004–.006
	3	30	80	100	IPR		.000–.001	.001–.001	.001–.002	.001–.002	.002–.003	.002–.004	.003–.004	.003–.004	.004–.005	.004–.006
	4	30	80	130	IPR		.000–.001	.001–.001	.001–.002	.001–.002	.002–.003	.003–.004	.003–.004	.004–.005	.004–.006	.004–.006
H	1	30	50	100	IPR		.000–.001	.001–.001	.001–.002	.001–.002	.002–.003	.003–.004	.003–.004	.004–.005	.004–.006	.004–.006
	2	30	30	100	IPR		.000–.001	.001–.001	.001–.002	.001–.002	.002–.003	.002–.004	.003–.004	.003–.004	.004–.005	.004–.006

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 (.0984–.1181") 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 centering 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

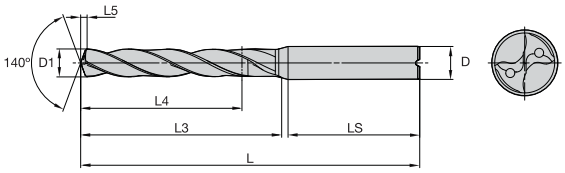
- A multilayer, TiAlN-based coating with high hot hardness enables 30% higher cutting speeds and constant tool life.
- Surface finish ensures chip evacuation when drilling deep holes.

Universal application profile, problem solver, and pilot drill.

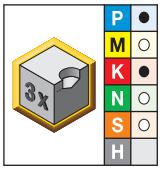
Customization

- 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 Catalog 2018 or to the e-catalog on kennametal.com.



B976A • ~3 x D



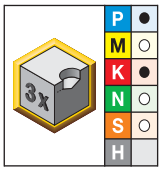
grade KC7315

● first choice
○ alternate choice

order #	catalog #	D1 diameter mm	in	fraction	wire size	L	L3	L4 max	L5	LS	D mm	in
4042538	B976Z02383	2,383	.0938	3/32	—	1.97	.63	.43	.015	1.10	3	.1181
4042540	B976Z02439	2,439	.0960	—	41	1.97	.63	.43	.015	1.10	3	.1181
4042541	B976Z02489	2,489	.0980	—	40	1.97	.63	.43	.016	1.10	3	.1181
4042542	B976Z02500	2,500	.0984	—	—	1.97	.63	.43	.016	1.10	3	.1181
4042543	B976Z02578	2,578	.1015	—	38	1.97	.63	.43	.016	1.10	3	.1181
4042544	B976Z02600	2,600	.1024	—	—	1.97	.63	.43	.016	1.10	3	.1181
4042545	B976Z02642	2,642	.1040	—	37	1.97	.63	.43	.017	1.10	3	.1181
4042546	B976Z02705	2,705	.1065	—	36	1.97	.63	.43	.017	1.10	3	.1181
4042547	B976Z02779	2,779	.1094	7/64	—	1.97	.63	.43	.018	1.10	3	.1181
4042549	B976Z02820	2,820	.1110	—	34	1.97	.63	.43	.018	1.10	3	.1181
4042550	B976Z02870	2,870	.1130	—	33	1.97	.63	.43	.018	1.10	3	.1181
4042551	B976Z02900	2,900	.1142	—	—	1.97	.63	.43	.018	1.10	3	.1181
2878592	B976A03000	3,000	.1181	—	—	2.44	.79	.55	.019	1.42	6	.2362
3005956	B976A03100	3,100	.1220	—	—	2.44	.79	.55	.020	1.42	6	.2362
4054494	B976A03175	3,175	.1250	1/8	—	2.44	.79	.55	.020	1.42	6	.2362
3528124	B976A03180	3,180	.1252	—	—	2.44	.79	.55	.020	1.42	6	.2362
3110522	B976A03200	3,200	.1260	—	—	2.44	.79	.55	.020	1.42	6	.2362
2878591	B976A03300	3,300	.1299	—	—	2.44	.79	.55	.021	1.42	6	.2362
4054495	B976A03454	3,454	.1360	—	29	2.44	.79	.55	.022	1.42	6	.2362
3528125	B976A03500	3,500	.1378	—	—	2.44	.79	.55	.022	1.42	6	.2362
3110544	B976A03600	3,600	.1417	—	—	2.44	.79	.55	.023	1.42	6	.2362
4054497	B976A03797	3,797	.1495	—	25	2.60	.94	.67	.025	1.42	6	.2362
2649363	B976A03970	3,970	.1563	5/32	—	2.60	.94	.67	.026	1.42	6	.2362
1913515	B976A04000	4,000	.1575	—	—	2.60	.94	.67	.026	1.42	6	.2362
4054498	B976A04039	4,039	.1590	—	21	2.60	.94	.67	.026	1.42	6	.2362
1913516	B976A04200	4,200	.1654	—	—	2.60	.94	.67	.027	1.42	6	.2362
4054500	B976A04496	4,496	.1770	—	16	2.60	.94	.67	.029	1.42	6	.2362
1913517	B976A04500	4,500	.1772	—	—	2.60	.94	.67	.029	1.42	6	.2362
1913518	B976A04600	4,600	.1811	—	—	2.60	.94	.67	.030	1.42	6	.2362
3528126	B976A04620	4,620	.1819	—	—	2.60	.94	.67	.030	1.42	6	.2362
2649364	B976A04763	4,763	.1875	3/16	—	2.60	1.10	.79	.031	1.42	6	.2362
1913519	B976A04800	4,800	.1890	—	12	2.60	1.10	.79	.031	1.42	6	.2362

(continued)

(B976A • ~3 x D — continued)



● first choice
○ alternate choice

grade KC7315		D1 diameter									D	
order #	catalog #	mm	in	fraction	wire size	L	L3	L4 max	L5	LS	mm	in
2397687	B976A04900	4,900	.1929	—	—	2.60	1.10	.79	.032	1.42	6	.2362
1913520	B976A05000	5,000	.1969	—	—	2.60	1.10	.79	.033	1.42	6	.2362
2385356	B976A05100	5,100	.2008	—	—	2.60	1.10	.79	.033	1.42	6	.2362
4054502	B976A05106	5,106	.2010	—	7	2.60	1.10	.79	.033	1.42	6	.2362
1984183	B976A05200	5,200	.2047	—	—	2.60	1.10	.79	.034	1.42	6	.2362
3528127	B976A05250	5,250	.2067	—	—	2.60	1.10	.79	.034	1.42	6	.2362
1988932	B976A05300	5,300	.2087	—	—	2.60	1.10	.79	.035	1.42	6	.2362
4054503	B976A05410	5,410	.2130	—	3	2.60	1.10	.79	.036	1.42	6	.2362
1913521	B976A05500	5,500	.2165	—	—	2.60	1.10	.79	.036	1.42	6	.2362
4086429	B976A05558	5,558	.2188	7/32	—	2.60	1.10	.79	.037	1.42	6	.2362
2649365	B976A05575	5,575	.2195	—	—	2.60	1.10	.79	.037	1.42	6	.2362
2224587	B976A05600	5,600	.2205	—	—	2.60	1.10	.79	.037	1.42	6	.2362
1913522	B976A05700	5,700	.2244	—	—	2.60	1.10	.79	.038	1.42	6	.2362
4054504	B976A05791	5,791	.2280	—	1	2.60	1.10	.79	.038	1.42	6	.2362
1913523	B976A05800	5,800	.2283	—	—	2.60	1.10	.79	.038	1.42	6	.2362
4054505	B976A05944	5,944	.2340	—	A	2.60	1.10	.79	.039	1.42	6	.2362
1913524	B976A06000	6,000	.2362	—	—	2.60	1.10	.79	.040	1.42	6	.2362
1986773	B976A06200	6,200	.2441	—	—	3.11	1.34	.94	.041	1.42	8	.3150
2649366	B976A06350	6,350	.2500	1/4	E	3.11	1.34	.94	.042	1.42	8	.3150
1913525	B976A06500	6,500	.2559	—	—	3.11	1.34	.94	.043	1.42	8	.3150
4054506	B976A06528	6,528	.2570	—	F	3.11	1.34	.94	.043	1.42	8	.3150
3528128	B976A06530	6,530	.2571	—	—	3.11	1.34	.94	.043	1.42	8	.3150
2231776	B976A06600	6,600	.2598	—	—	3.11	1.34	.94	.044	1.42	8	.3150
3121287	B976A06700	6,700	.2638	—	—	3.11	1.34	.94	.044	1.42	8	.3150
2649367	B976A06746	6,746	.2656	17/64	—	3.11	1.34	.94	.045	1.42	8	.3150
3528129	B976A06750	6,750	.2657	—	—	3.11	1.34	.94	.045	1.42	8	.3150
1913526	B976A06800	6,800	.2677	—	—	3.11	1.34	.94	.045	1.42	8	.3150
4054507	B976A06909	6,909	.2720	—	I	3.11	1.34	.94	.046	1.42	8	.3150
1913527	B976A07000	7,000	.2756	—	—	3.11	1.34	.94	.046	1.42	8	.3150
2649368	B976A07145	7,145	.2813	9/32	—	3.11	1.61	1.14	.047	1.42	8	.3150
4054508	B976A07366	7,366	.2900	—	L	3.11	1.61	1.14	.049	1.42	8	.3150
1913528	B976A07400	7,400	.2913	—	—	3.11	1.61	1.14	.049	1.42	8	.3150
1913529	B976A07500	7,500	.2953	—	—	3.11	1.61	1.14	.050	1.42	8	.3150
2649369	B976A07541	7,541	.2969	19/64	—	3.11	1.61	1.14	.050	1.42	8	.3150
1913530	B976A07800	7,800	.3071	—	—	3.11	1.61	1.14	.052	1.42	8	.3150
2397689	B976A07900	7,900	.3110	—	—	3.11	1.61	1.14	.053	1.42	8	.3150
2649370	B976A07938	7,938	.3125	5/16	—	3.11	1.61	1.14	.053	1.42	8	.3150
1913531	B976A08000	8,000	.3150	—	—	3.11	1.61	1.14	.053	1.42	8	.3150
3830321	B976A08020	8,020	.3157	—	—	3.50	1.85	1.38	.054	1.57	10	.3937
2036154	B976A08100	8,100	.3189	—	—	3.50	1.85	1.38	.054	1.57	10	.3937
2390961	B976A08200	8,200	.3228	—	—	3.50	1.85	1.38	.055	1.57	10	.3937
2649371	B976A08334	8,334	.3281	21/64	—	3.50	1.85	1.38	.056	1.57	10	.3937
4054509	B976A08433	8,433	.3320	—	Q	3.50	1.85	1.38	.056	1.57	10	.3937
1913532	B976A08500	8,500	.3346	—	—	3.50	1.85	1.38	.057	1.57	10	.3937
2222651	B976A08600	8,600	.3386	—	—	3.50	1.85	1.38	.058	1.57	10	.3937
1988983	B976A08700	8,700	.3425	—	—	3.50	1.85	1.38	.058	1.57	10	.3937
2649372	B976A08733	8,733	.3438	11/32	—	3.50	1.85	1.38	.058	1.57	10	.3937
1913533	B976A08800	8,800	.3465	—	—	3.50	1.85	1.38	.059	1.57	10	.3937

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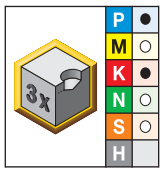
(B976A • ~3 x D — continued)



● first choice
○ alternate choice

grade KC7315

order #	catalog #	D1 diameter mm	D1 diameter in	D1 diameter fraction	D1 diameter wire size	L	L3	L4 max	L5	LS	D mm	D in
4054510	B976A08839	8,839	.3480	—	S	3.50	1.85	1.38	.059	1.57	10	.3937
1913534	B976A09000	9,000	.3543	—	—	3.50	1.85	1.38	.060	1.57	10	.3937
4054511	B976A09093	9,093	.3580	—	T	3.50	1.85	1.38	.061	1.57	10	.3937
2408308	B976A09200	9,200	.3622	—	—	3.50	1.85	1.38	.062	1.57	10	.3937
1913535	B976A09300	9,300	.3661	—	—	3.50	1.85	1.38	.062	1.57	10	.3937
3615883	B976A09400	9,400	.3701	—	—	3.50	1.85	1.38	.063	1.57	10	.3937
1913536	B976A09500	9,500	.3740	—	—	3.50	1.85	1.38	.064	1.57	10	.3937
2649374	B976A09525	9,525	.3750	3/8	—	3.50	1.85	1.38	.064	1.57	10	.3937
2231778	B976A09600	9,600	.3780	—	—	3.50	1.85	1.38	.064	1.57	10	.3937
3528132	B976A09750	9,750	.3839	—	—	3.50	1.85	1.38	.066	1.57	10	.3937
2649375	B976A09921	9,921	.3906	25/64	—	3.50	1.85	1.38	.067	1.57	10	.3937
1913538	B976A10000	10,000	.3937	—	—	3.50	1.85	1.38	.067	1.57	10	.3937
1913539	B976A10200	10,200	.4016	—	—	4.02	2.17	1.57	.069	1.77	12	.4724
4054512	B976A10262	10,262	.4040	—	Y	4.02	2.17	1.57	.069	1.77	12	.4724
2649376	B976A10320	10,320	.4063	13/32	—	4.02	2.17	1.57	.069	1.77	12	.4724
1913540	B976A10500	10,500	.4134	—	—	4.02	2.17	1.57	.071	1.77	12	.4724
1913541	B976A10700	10,700	.4213	—	—	4.02	2.17	1.57	.072	1.77	12	.4724
2649377	B976A10716	10,716	.4219	27/64	—	4.02	2.17	1.57	.072	1.77	12	.4724
2388784	B976A10800	10,800	.4252	—	—	4.02	2.17	1.57	.073	1.77	12	.4724
1913542	B976A11000	11,000	.4331	—	—	4.02	2.17	1.57	.074	1.77	12	.4724
2649378	B976A11113	11,113	.4375	7/16	—	4.02	2.17	1.57	.075	1.77	12	.4724
1913543	B976A11200	11,200	.4409	—	—	4.02	2.17	1.57	.076	1.77	12	.4724
1913544	B976A11500	11,500	.4528	—	—	4.02	2.17	1.57	.078	1.77	12	.4724
2649379	B976A11509	11,509	.4531	29/64	—	4.02	2.17	1.57	.078	1.77	12	.4724
2649380	B976A11908	11,908	.4688	15/32	—	4.02	2.17	1.57	.081	1.77	12	.4724
1913546	B976A12000	12,000	.4724	—	—	4.02	2.17	1.57	.081	1.77	12	.4724
2649381	B976A12304	12,304	.4844	31/64	—	4.21	2.36	1.69	.083	1.77	14	.5512
1913548	B976A12700	12,700	.5000	1/2	—	4.21	2.36	1.69	.086	1.77	14	.5512
1913549	B976A13000	13,000	.5118	—	—	4.21	2.36	1.69	.088	1.77	14	.5512
4054513	B976A13495	13,495	.5313	17/32	—	4.21	2.36	1.69	.092	1.77	14	.5512
1913550	B976A13500	13,500	.5315	—	—	4.21	2.36	1.69	.092	1.77	14	.5512
1913552	B976A14000	14,000	.5512	—	—	4.21	2.36	1.69	.095	1.77	14	.5512
2649382	B976A14288	14,288	.5625	9/16	—	4.53	2.56	1.77	.097	1.89	16	.6299
1913553	B976A14500	14,500	.5709	—	—	4.53	2.56	1.77	.099	1.89	16	.6299
1913554	B976A14700	14,700	.5787	—	—	4.53	2.56	1.77	.100	1.89	16	.6299
1913555	B976A15000	15,000	.5906	—	—	4.53	2.56	1.77	.102	1.89	16	.6299

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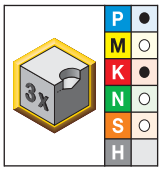
(B976A • ~3 x D — continued)



● first choice
○ alternate choice

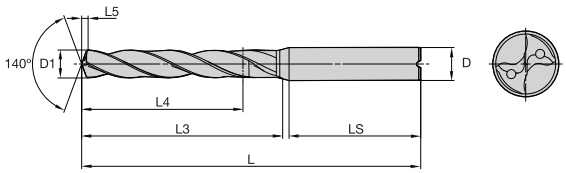
grade KC7315		D1 diameter									D	
order #	catalog #	mm	in	fraction	wire size	L	L3	L4 max	L5	LS	mm	in
1913556	**B976A15500**	15,500	.6102	—	—	4.53	2.56	1.77	.106	1.89	16	.6299
2649383	**B976A15875**	15,875	.6250	5/8	—	4.53	2.56	1.77	.108	1.89	16	.6299
2882164	**B976A16200**	16,200	.6378	—	—	4.84	2.87	2.01	.110	1.89	18	.7087
4054514	**B976A16670**	16,670	.6563	21/32	—	4.84	2.87	2.01	.114	1.89	18	.7087
2045867	**B976A16800**	16,800	.6614	—	—	4.84	2.87	2.01	.115	1.89	18	.7087
1913560	**B976A17000**	17,000	.6693	—	—	4.84	2.87	2.01	.116	1.89	18	.7087
2397289	**B976A17100**	17,100	.6732	—	—	4.84	2.87	2.01	.117	1.89	18	.7087
2649384	**B976A17463**	17,463	.6875	11/16	—	4.84	2.87	2.01	.119	1.89	18	.7087
1913565	**B976A19500**	19,500	.7677	—	—	5.16	3.11	2.17	.134	1.97	20	.7874

Tolerance • Metric

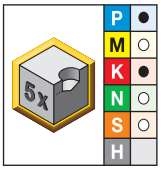
nominal size range	D1 tolerance m7	D tolerance h6
>3–6	0,004/0,016	0,000/-0,008
>6–10	0,006/0,021	0,000/-0,009
>10–18	0,007/0,025	0,000/-0,011
>18–25,4	0,008/0,029	0,000/-0,013

Tolerance • Inch

nominal size range	D1 tolerance m7	D tolerance h6
>.1181–.2362	.0002/.0006	.0000/-.0003
>.2362–.3937	.0002/.0008	.0000/-.0004
>.3937–.7087	.0003/.0010	.0000/-.0004
>.7087–1.0000	.0003/.0011	.0000/-.0005



B977A • ~5 x D



grade KC7315

● first choice
○ alternate choice

order #	catalog #	D1 diameter mm	D1 diameter in	D1 diameter fraction	D1 diameter wire size	L	L3	L4 max	L5	LS	D mm	D in
2425285	B977A03000	3,000	.1181	–	–	2.60	1.10	.91	.019	1.42	6	.2362
2425288	B977A03100	3,100	.1220	–	–	2.60	1.10	.91	.020	1.42	6	.2362
4054515	B977A03175	3,175	.1250	1/8	–	2.60	1.10	.91	.020	1.42	6	.2362
2425290	B977A03200	3,200	.1260	–	–	2.60	1.10	.91	.020	1.42	6	.2362
3480435	B977A03250	3,250	.1280	–	–	2.60	1.10	.91	.021	1.42	6	.2362
1959665	B977A03300	3,300	.1299	–	–	2.60	1.10	.91	.021	1.42	6	.2362
2425292	B977A03400	3,400	.1339	–	–	2.60	1.10	.91	.022	1.42	6	.2362
4086430	B977A03454	3,454	.1360	–	29	2.60	1.10	.91	.022	1.42	6	.2362
2425303	B977A03500	3,500	.1378	–	–	2.60	1.10	.91	.022	1.42	6	.2362
2425304	B977A03600	3,600	.1417	–	–	2.60	1.10	.91	.023	1.42	6	.2362
2425305	B977A03700	3,700	.1457	–	–	2.60	1.10	.91	.024	1.42	6	.2362
4054517	B977A03797	3,797	.1495	–	25	2.91	1.42	1.14	.025	1.42	6	.2362
2425306	B977A03800	3,800	.1496	–	–	2.91	1.42	1.14	.025	1.42	6	.2362
2203489	B977A03900	3,900	.1535	–	–	2.91	1.42	1.14	.025	1.42	6	.2362
2649386	B977A03970	3,970	.1563	5/32	–	2.91	1.42	1.14	.026	1.42	6	.2362
1913567	B977A04000	4,000	.1575	–	–	2.91	1.42	1.14	.026	1.42	6	.2362
4054518	B977A04039	4,039	.1590	–	21	2.91	1.42	1.14	.026	1.42	6	.2362
2416279	B977A04100	4,100	.1614	–	–	2.91	1.42	1.14	.027	1.42	6	.2362
1913568	B977A04200	4,200	.1654	–	–	2.91	1.42	1.14	.027	1.42	6	.2362
2040680	B977A04300	4,300	.1693	–	–	2.91	1.42	1.14	.028	1.42	6	.2362
4054519	B977A04366	4,366	.1719	11/64	–	2.91	1.42	1.14	.028	1.42	6	.2362
2425309	B977A04400	4,400	.1732	–	–	2.91	1.42	1.14	.029	1.42	6	.2362
4054520	B977A04496	4,496	.1770	–	16	2.91	1.42	1.14	.029	1.42	6	.2362
1913569	B977A04500	4,500	.1772	–	–	2.91	1.42	1.14	.029	1.42	6	.2362
2649387	B977A04580	4,580	.1803	–	15	2.91	1.42	1.14	.030	1.42	6	.2362
1913570	B977A04600	4,600	.1811	–	–	2.91	1.42	1.14	.030	1.42	6	.2362
2649388	B977A04623	4,623	.1820	–	14	2.91	1.42	1.14	.030	1.42	6	.2362
2965409	B977A04650	4,650	.1831	–	–	2.91	1.42	1.14	.030	1.42	6	.2362
2425310	B977A04700	4,700	.1850	–	13	2.91	1.42	1.14	.031	1.42	6	.2362
2649389	B977A04763	4,763	.1875	3/16	–	3.23	1.73	1.38	.031	1.42	6	.2362
1913571	B977A04800	4,800	.1890	–	12	3.23	1.73	1.38	.031	1.42	6	.2362
2396971	B977A04900	4,900	.1929	–	–	3.23	1.73	1.38	.032	1.42	6	.2362

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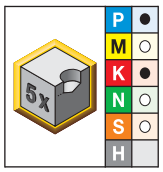


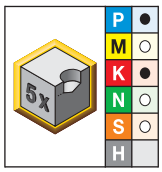
● first choice
○ alternate choice

grade KC7315

order #	catalog #	D1 diameter mm	D1 diameter in	D1 diameter fraction	D1 diameter wire size	L	L3	L4 max	L5	LS	D mm	D in
1913572	B977A05000	5,000	.1969	—	—	3.23	1.73	1.38	.033	1.42	6	.2362
2049487	B977A05100	5,100	.2008	—	—	3.23	1.73	1.38	.033	1.42	6	.2362
4054521	B977A05106	5,106	.2010	—	7	3.23	1.73	1.38	.033	1.42	6	.2362
1975006	B977A05200	5,200	.2047	—	—	3.23	1.73	1.38	.034	1.42	6	.2362
2202510	B977A05300	5,300	.2087	—	—	3.23	1.73	1.38	.035	1.42	6	.2362
2425311	B977A05400	5,400	.2126	—	—	3.23	1.73	1.38	.035	1.42	6	.2362
2649390	B977A05410	5,410	.2130	—	3	3.23	1.73	1.38	.036	1.42	6	.2362
1913573	B977A05500	5,500	.2165	—	—	3.23	1.73	1.38	.036	1.42	6	.2362
2649391	B977A05558	5,558	.2188	7/32	—	3.23	1.73	1.38	.037	1.42	6	.2362
1959664	B977A05600	5,600	.2205	—	—	3.23	1.73	1.38	.037	1.42	6	.2362
1988931	B977A05700	5,700	.2244	—	—	3.23	1.73	1.38	.038	1.42	6	.2362
4054522	B977A05791	5,791	.2280	—	1	3.23	1.73	1.38	.038	1.42	6	.2362
1913574	B977A05800	5,800	.2283	—	—	3.23	1.73	1.38	.038	1.42	6	.2362
2228362	B977A05900	5,900	.2323	—	—	3.23	1.73	1.38	.039	1.42	6	.2362
4054523	B977A05944	5,944	.2340	—	A	3.23	1.73	1.38	.039	1.42	6	.2362
1913575	B977A06000	6,000	.2362	—	—	3.23	1.73	1.38	.040	1.42	6	.2362
2043779	B977A06100	6,100	.2402	—	—	3.58	2.09	1.69	.040	1.42	8	.3150
4132877	B977A06150	6,150	.2421	—	—	3.58	2.09	1.69	.041	1.42	8	.3150
2425323	B977A06200	6,200	.2441	—	—	3.58	2.09	1.69	.041	1.42	8	.3150
2425324	B977A06300	6,300	.2480	—	—	3.58	2.09	1.69	.042	1.42	8	.3150
2383552	B977A06350	6,350	.2500	1/4	E	3.58	2.09	1.69	.042	1.42	8	.3150
2383778	B977A06400	6,400	.2520	—	—	3.58	2.09	1.69	.042	1.42	8	.3150
1913576	B977A06500	6,500	.2559	—	—	3.58	2.09	1.69	.043	1.42	8	.3150
2658213	B977A06528	6,528	.2570	—	F	3.58	2.09	1.69	.043	1.42	8	.3150
2425325	B977A06600	6,600	.2598	—	—	3.58	2.09	1.69	.044	1.42	8	.3150
2230539	B977A06700	6,700	.2638	—	—	3.58	2.09	1.69	.044	1.42	8	.3150
1913577	B977A06800	6,800	.2677	—	—	3.58	2.09	1.69	.045	1.42	8	.3150
1959666	B977A06900	6,900	.2717	—	—	3.58	2.09	1.69	.046	1.42	8	.3150
2658215	B977A06909	6,909	.2720	—	I	3.58	2.09	1.69	.046	1.42	8	.3150
1913578	B977A07000	7,000	.2756	—	—	3.58	2.09	1.69	.046	1.42	8	.3150
2203579	B977A07100	7,100	.2795	—	—	3.58	2.09	1.69	.047	1.42	8	.3150
2658216	B977A07145	7,145	.2813	9/32	—	3.58	2.09	1.69	.047	1.42	8	.3150
2264019	B977A07200	7,200	.2835	—	—	3.58	2.09	1.69	.048	1.42	8	.3150
2425326	B977A07300	7,300	.2874	—	—	3.58	2.09	1.69	.049	1.42	8	.3150
4054524	B977A07366	7,366	.2900	—	L	3.58	2.09	1.69	.049	1.42	8	.3150
1913579	B977A07400	7,400	.2913	—	—	3.58	2.09	1.69	.049	1.42	8	.3150
1913580	B977A07500	7,500	.2953	—	—	3.58	2.09	1.69	.050	1.42	8	.3150
2658217	B977A07541	7,541	.2969	19/64	—	3.58	2.09	1.69	.050	1.42	8	.3150
2425330	B977A07600	7,600	.2992	—	—	3.58	2.09	1.69	.051	1.42	8	.3150
1992230	B977A07700	7,700	.3031	—	—	3.58	2.09	1.69	.051	1.42	8	.3150
1913581	B977A07800	7,800	.3071	—	—	3.58	2.09	1.69	.052	1.42	8	.3150
2658218	B977A07938	7,938	.3125	5/16	—	3.58	2.09	1.69	.053	1.42	8	.3150
1913582	B977A08000	8,000	.3150	—	—	3.58	2.09	1.69	.053	1.42	8	.3150
2244229	B977A08100	8,100	.3189	—	—	4.06	2.40	1.93	.054	1.57	10	.3937
1986652	B977A08200	8,200	.3228	—	—	4.06	2.40	1.93	.055	1.57	10	.3937
2658219	B977A08334	8,334	.3281	21/64	—	4.06	2.40	1.93	.056	1.57	10	.3937
2236065	B977A08400	8,400	.3307	—	—	4.06	2.40	1.93	.056	1.57	10	.3937
2658220	B977A08433	8,433	.3320	—	Q	4.06	2.40	1.93	.056	1.57	10	.3937

(continued)

(B977A • ~5 x D — continued)



● first choice
○ alternate choice

grade KC7315

order #	catalog #	D1 diameter mm	D1 diameter in	D1 diameter fraction	D1 diameter wire size	L	L3	L4 max	L5	LS	D mm	D in
1913583	B977A08500	8,500	.3346	–	–	4.06	2.40	1.93	.057	1.57	10	.3937
2425331	B977A08600	8,600	.3386	–	–	4.06	2.40	1.93	.058	1.57	10	.3937
2203834	B977A08700	8,700	.3425	–	–	4.06	2.40	1.93	.058	1.57	10	.3937
2658221	B977A08733	8,733	.3438	11/32	–	4.06	2.40	1.93	.058	1.57	10	.3937
1913584	B977A08800	8,800	.3465	–	–	4.06	2.40	1.93	.059	1.57	10	.3937
4054525	B977A08839	8,839	.3480	–	S	4.06	2.40	1.93	.059	1.57	10	.3937
1971763	B977A08900	8,900	.3504	–	–	4.06	2.40	1.93	.060	1.57	10	.3937
1913585	B977A09000	9,000	.3543	–	–	4.06	2.40	1.93	.060	1.57	10	.3937
2425332	B977A09100	9,100	.3583	–	–	4.06	2.40	1.93	.061	1.57	10	.3937
2658222	B977A09129	9,129	.3594	23/64	–	4.06	2.40	1.93	.061	1.57	10	.3937
2218492	B977A09200	9,200	.3622	–	–	4.06	2.40	1.93	.062	1.57	10	.3937
1913586	B977A09300	9,300	.3661	–	–	4.06	2.40	1.93	.062	1.57	10	.3937
2658223	B977A09347	9,347	.3680	–	U	4.06	2.40	1.93	.063	1.57	10	.3937
2408209	B977A09400	9,400	.3701	–	–	4.06	2.40	1.93	.063	1.57	10	.3937
1913587	B977A09500	9,500	.3740	–	–	4.06	2.40	1.93	.064	1.57	10	.3937
2658224	B977A09525	9,525	.3750	3/8	–	4.06	2.40	1.93	.064	1.57	10	.3937
2425344	B977A09600	9,600	.3780	–	–	4.06	2.40	1.93	.064	1.57	10	.3937
1939528	B977A09700	9,700	.3819	–	–	4.06	2.40	1.93	.065	1.57	10	.3937
1913588	B977A09800	9,800	.3858	–	–	4.06	2.40	1.93	.066	1.57	10	.3937
2658226	B977A09921	9,921	.3906	25/64	–	4.06	2.40	1.93	.067	1.57	10	.3937
1913589	B977A10000	10,000	.3937	–	–	4.06	2.40	1.93	.067	1.57	10	.3937
2407294	B977A10100	10,100	.3976	–	–	4.65	2.80	2.20	.068	1.77	12	.4724
1913590	B977A10200	10,200	.4016	–	–	4.65	2.80	2.20	.069	1.77	12	.4724
4054527	B977A10262	10,262	.4040	–	Y	4.65	2.80	2.20	.069	1.77	12	.4724
2240351	B977A10300	10,300	.4055	–	–	4.65	2.80	2.20	.069	1.77	12	.4724
2658227	B977A10320	10,320	.4063	13/32	–	4.65	2.80	2.20	.069	1.77	12	.4724
1913591	B977A10500	10,500	.4134	–	–	4.65	2.80	2.20	.071	1.77	12	.4724
1913592	B977A10700	10,700	.4213	–	–	4.65	2.80	2.20	.072	1.77	12	.4724
2658228	B977A10716	10,716	.4219	27/64	–	4.65	2.80	2.20	.072	1.77	12	.4724
2256918	B977A10800	10,800	.4252	–	–	4.65	2.80	2.20	.073	1.77	12	.4724
1913593	B977A11000	11,000	.4331	–	–	4.65	2.80	2.20	.074	1.77	12	.4724
2264020	B977A11100	11,100	.4370	–	–	4.65	2.80	2.20	.075	1.77	12	.4724
2658229	B977A11113	11,113	.4375	7/16	–	4.65	2.80	2.20	.075	1.77	12	.4724
1913594	B977A11200	11,200	.4409	–	–	4.65	2.80	2.20	.076	1.77	12	.4724
2425456	B977A11300	11,300	.4449	–	–	4.65	2.80	2.20	.076	1.77	12	.4724
1913595	B977A11500	11,500	.4528	–	–	4.65	2.80	2.20	.078	1.77	12	.4724
2658230	B977A11509	11,509	.4531	29/64	–	4.65	2.80	2.20	.078	1.77	12	.4724
2045822	B977A11600	11,600	.4567	–	–	4.65	2.80	2.20	.078	1.77	12	.4724
1913596	B977A11700	11,700	.4606	–	–	4.65	2.80	2.20	.079	1.77	12	.4724
2049488	B977A11800	11,800	.4646	–	–	4.65	2.80	2.20	.080	1.77	12	.4724
2272493	B977A11900	11,900	.4685	–	–	4.65	2.80	2.20	.080	1.77	12	.4724
2658231	B977A11908	11,908	.4688	15/32	–	4.65	2.80	2.20	.081	1.77	12	.4724
1913597	B977A12000	12,000	.4724	–	–	4.65	2.80	2.20	.081	1.77	12	.4724
2384430	B977A12100	12,100	.4764	–	–	4.88	3.03	2.36	.082	1.77	14	.5512
2049489	B977A12200	12,200	.4803	–	–	4.88	3.03	2.36	.083	1.77	14	.5512
2658232	B977A12304	12,304	.4844	31/64	–	4.88	3.03	2.36	.083	1.77	14	.5512
2425380	B977A12400	12,400	.4882	–	–	4.88	3.03	2.36	.084	1.77	14	.5512
1913598	B977A12500	12,500	.4921	–	–	4.88	3.03	2.36	.085	1.77	14	.5512

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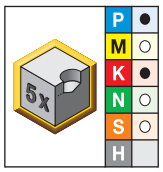
(B977A • ~5 x D — continued)



● first choice
○ alternate choice

grade KC7315

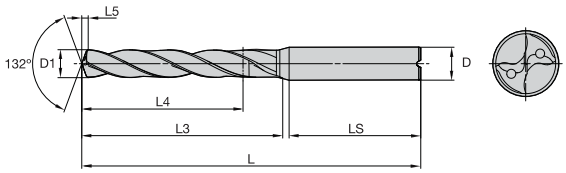
order #	catalog #	D1 diameter mm	D1 diameter in	D1 diameter fraction	D1 diameter wire size	L	L3	L4 max	L5	LS	D mm	D in
1913599	B977A12700	12,700	.5000	1/2	–	4.88	3.03	2.36	.086	1.77	14	.5512
1941189	B977A12800	12,800	.5039	–	–	4.88	3.03	2.36	.087	1.77	14	.5512
1913600	B977A13000	13,000	.5118	–	–	4.88	3.03	2.36	.088	1.77	14	.5512
2658234	B977A13096	13,096	.5156	33/64	–	4.88	3.03	2.36	.089	1.77	14	.5512
2401853	B977A13100	13,100	.5157	–	–	4.88	3.03	2.36	.089	1.77	14	.5512
4054528	B977A13495	13,495	.5313	17/32	–	4.88	3.03	2.36	.092	1.77	14	.5512
1913601	B977A13500	13,500	.5315	–	–	4.88	3.03	2.36	.092	1.77	14	.5512
2251639	B977A13800	13,800	.5433	–	–	4.88	3.03	2.36	.094	1.77	14	.5512
1913603	B977A14000	14,000	.5512	–	–	4.88	3.03	2.36	.095	1.77	14	.5512
2230406	B977A14200	14,200	.5591	–	–	5.24	3.27	2.48	.096	1.89	16	.6299
2658235	B977A14288	14,288	.5625	9/16	–	5.24	3.27	2.48	.097	1.89	16	.6299
1913604	B977A14500	14,500	.5709	–	–	5.24	3.27	2.48	.099	1.89	16	.6299
1913605	B977A14700	14,700	.5787	–	–	5.24	3.27	2.48	.100	1.89	16	.6299
1960078	B977A14900	14,900	.5866	–	–	5.24	3.27	2.48	.101	1.89	16	.6299
1913606	B977A15000	15,000	.5906	–	–	5.24	3.27	2.48	.102	1.89	16	.6299
1960079	B977A15100	15,100	.5945	–	–	5.24	3.27	2.48	.103	1.89	16	.6299
1913607	B977A15500	15,500	.6102	–	–	5.24	3.27	2.48	.106	1.89	16	.6299
1913608	B977A15700	15,700	.6181	–	–	5.24	3.27	2.48	.107	1.89	16	.6299
2658236	B977A15875	15,875	.6250	5/8	–	5.24	3.27	2.48	.108	1.89	16	.6299
1913609	B977A16000	16,000	.6299	–	–	5.24	3.27	2.48	.109	1.89	16	.6299
2658237	B977A16078	16,078	.6330	–	–	5.63	3.66	2.80	.110	1.89	18	.7087
1913610	B977A16500	16,500	.6496	–	–	5.63	3.66	2.80	.113	1.89	18	.7087
2233364	B977A16600	16,600	.6535	–	–	5.63	3.66	2.80	.113	1.89	18	.7087
4086431	B977A16670	16,670	.6563	21/32	–	5.63	3.66	2.80	.114	1.89	18	.7087
1913611	B977A17000	17,000	.6693	–	–	5.63	3.66	2.80	.116	1.89	18	.7087
2658239	B977A17463	17,463	.6875	11/16	–	5.63	3.66	2.80	.119	1.89	18	.7087
1913612	B977A17500	17,500	.6890	–	–	5.63	3.66	2.80	.120	1.89	18	.7087
2391872	B977A17700	17,700	.6969	–	–	5.63	3.66	2.80	.121	1.89	18	.7087
1913613	B977A18000	18,000	.7087	–	–	5.63	3.66	2.80	.123	1.89	18	.7087
2276090	B977A18400	18,400	.7244	–	–	6.02	3.98	3.03	.126	1.97	20	.7874
1913614	B977A18500	18,500	.7283	–	–	6.02	3.98	3.03	.127	1.97	20	.7874
2244276	B977A18800	18,800	.7402	–	–	6.02	3.98	3.03	.129	1.97	20	.7874
2658240	B977A19050	19,050	.7500	3/4	–	6.02	3.98	3.03	.130	1.97	20	.7874
2658241	B977A19253	19,253	.7580	–	–	6.02	3.98	3.03	.132	1.97	20	.7874
2658242	B977A19446	19,446	.7656	49/64	–	6.02	3.98	3.03	.133	1.97	20	.7874
1913616	B977A19500	19,500	.7677	–	–	6.02	3.98	3.03	.134	1.97	20	.7874

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

Tolerance • Inch

nominal size range	D1 tolerance m7	D tolerance h6
>.1181–.2362	.0002/.0006	.0000/-.0003
>.2362–.3937	.0002/.0008	.0000/-.0004
>.3937–.7087	.0003/.0010	.0000/-.0004
>.7087–1.0000	.0003/.0011	.0000/-.0005



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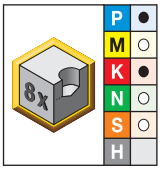


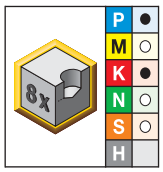
grade KC7315

● first choice
○ alternate choice

order #	catalog #	D1 diameter mm	D1 diameter in	D1 diameter fraction	D1 diameter wire size	L	L3	L4 max	L5	LS	D mm	D in
3782458	B978A03000	3,000	.1181	–	–	3.07	1.57	1.30	.024	1.42	6	.2362
5132051	B978A03600	3,600	.1417	–	–	3.07	1.57	1.30	.029	1.42	6	.2362
2658393	B978A03970	3,970	.1563	5/32	–	3.43	1.93	1.61	.032	1.42	6	.2362
2888306	B978A04000	4,000	.1575	–	–	3.43	1.93	1.61	.032	1.42	6	.2362
3858210	B978A04200	4,200	.1654	–	–	3.43	1.93	1.61	.034	1.42	6	.2362
3593089	B978A04500	4,500	.1772	–	–	3.43	1.93	1.61	.037	1.42	6	.2362
2658394	B978A04763	4,763	.1875	3/16	–	3.70	2.20	1.89	.039	1.42	6	.2362
4025911	B978A04800	4,800	.1890	–	12	3.70	2.20	1.89	.039	1.42	6	.2362
1913618	B978A05000	5,000	.1969	–	–	3.70	2.20	1.89	.041	1.42	6	.2362
2264933	B978A05100	5,100	.2008	–	–	3.70	2.20	1.89	.042	1.42	6	.2362
2264934	B978A05200	5,200	.2047	–	–	3.70	2.20	1.89	.042	1.42	6	.2362
2264889	B978A05300	5,300	.2087	–	–	3.70	2.20	1.89	.043	1.42	6	.2362
1913619	B978A05500	5,500	.2165	–	–	3.70	2.20	1.89	.045	1.42	6	.2362
2658395	B978A05558	5,558	.2188	7/32	–	3.70	2.20	1.89	.045	1.42	6	.2362
2043415	B978A05700	5,700	.2244	–	–	3.70	2.20	1.89	.047	1.42	6	.2362
1913620	B978A06000	6,000	.2362	–	–	3.70	2.20	1.89	.049	1.42	6	.2362
2261701	B978A06100	6,100	.2402	–	–	4.13	2.64	2.24	.050	1.42	8	.3150
2264928	B978A06200	6,200	.2441	–	–	4.13	2.64	2.24	.051	1.42	8	.3150
2264970	B978A06300	6,300	.2480	–	–	4.13	2.64	2.24	.052	1.42	8	.3150
2658396	B978A06350	6,350	.2500	1/4	E	4.13	2.64	2.24	.052	1.42	8	.3150
2264971	B978A06400	6,400	.2520	–	–	4.13	2.64	2.24	.053	1.42	8	.3150
1913621	B978A06500	6,500	.2559	–	–	4.13	2.64	2.24	.053	1.42	8	.3150
2242780	B978A06600	6,600	.2598	–	–	4.13	2.64	2.24	.054	1.42	8	.3150
2264972	B978A06700	6,700	.2638	–	–	4.13	2.64	2.24	.055	1.42	8	.3150
2658397	B978A06746	6,746	.2656	17/64	–	4.13	2.64	2.24	.056	1.42	8	.3150
1913622	B978A06800	6,800	.2677	–	–	4.13	2.64	2.24	.056	1.42	8	.3150
1913623	B978A07000	7,000	.2756	–	–	4.13	2.64	2.24	.058	1.42	8	.3150
2658398	B978A07145	7,145	.2813	9/32	–	4.33	2.83	2.40	.059	1.42	8	.3150
1913624	B978A07500	7,500	.2953	–	–	4.33	2.83	2.40	.062	1.42	8	.3150
2658399	B978A07541	7,541	.2969	19/64	–	4.33	2.83	2.40	.062	1.42	8	.3150
2658400	B978A07938	7,938	.3125	5/16	–	4.33	2.83	2.40	.066	1.42	8	.3150
1913626	B978A08000	8,000	.3150	–	–	4.33	2.83	2.40	.066	1.42	8	.3150

(continued)

(B978A • ~8 x D — continued)



● first choice
○ alternate choice

grade KC7315

order #	catalog #	D1 diameter mm	D1 diameter in	D1 diameter fraction	D1 diameter wire size	L	L3	L4 max	L5	LS	D mm	D in
2264953	B978A08100	8,100	.3189	–	–	4.80	3.15	2.68	.067	1.57	10	.3937
2658401	B978A08334	8,334	.3281	21/64	–	4.80	3.15	2.68	.069	1.57	10	.3937
1913627	B978A08500	8,500	.3346	–	–	4.80	3.15	2.68	.070	1.57	10	.3937
2264955	B978A08700	8,700	.3425	–	–	4.80	3.15	2.68	.072	1.57	10	.3937
2658402	B978A08733	8,733	.3438	11/32	–	4.80	3.15	2.68	.072	1.57	10	.3937
2255896	B978A08800	8,800	.3465	–	–	4.80	3.15	2.68	.073	1.57	10	.3937
1913628	B978A09000	9,000	.3543	–	–	4.80	3.15	2.68	.075	1.57	10	.3937
2658403	B978A09129	9,129	.3594	23/64	–	4.80	3.15	2.68	.076	1.57	10	.3937
1913629	B978A09500	9,500	.3740	–	–	4.80	3.15	2.68	.079	1.57	10	.3937
2658404	B978A09525	9,525	.3750	3/8	–	4.80	3.15	2.68	.079	1.57	10	.3937
2249180	B978A09700	9,700	.3819	–	–	4.80	3.15	2.68	.081	1.57	10	.3937
2050230	B978A09800	9,800	.3858	–	–	4.80	3.15	2.68	.082	1.57	10	.3937
2264956	B978A09900	9,900	.3898	–	–	4.80	3.15	2.68	.082	1.57	10	.3937
2658405	B978A09921	9,921	.3906	25/64	–	4.80	3.15	2.68	.083	1.57	10	.3937
1913630	B978A10000	10,000	.3937	–	–	4.80	3.15	2.68	.083	1.57	10	.3937
2658406	B978A10320	10,320	.4063	13/32	–	5.55	3.70	3.11	.086	1.77	12	.4724
1913632	B978A10500	10,500	.4134	–	–	5.55	3.70	3.11	.088	1.77	12	.4724
2658407	B978A10716	10,716	.4219	27/64	–	5.55	3.70	3.11	.089	1.77	12	.4724
1985985	B978A10800	10,800	.4252	–	–	5.55	3.70	3.11	.090	1.77	12	.4724
1913633	B978A11000	11,000	.4331	–	–	5.55	3.70	3.11	.092	1.77	12	.4724
2658408	B978A11113	11,113	.4375	7/16	–	5.55	3.70	3.11	.093	1.77	12	.4724
1984545	B978A11200	11,200	.4409	–	–	5.55	3.70	3.11	.094	1.77	12	.4724
2436719	B978A11300	11,300	.4449	–	–	5.55	3.70	3.11	.094	1.77	12	.4724
1913634	B978A11500	11,500	.4528	–	–	5.55	3.70	3.11	.096	1.77	12	.4724
2658409	B978A11509	11,509	.4531	29/64	–	5.55	3.70	3.11	.096	1.77	12	.4724
2044606	B978A11800	11,800	.4646	–	–	5.55	3.70	3.11	.099	1.77	12	.4724
2658410	B978A11908	11,908	.4688	15/32	–	5.55	3.70	3.11	.100	1.77	12	.4724
1913635	B978A12000	12,000	.4724	–	–	5.55	3.70	3.11	.100	1.77	12	.4724
2658412	B978A12700	12,700	.5000	1/2	–	6.10	4.25	3.58	.106	1.77	14	.5512
1913637	B978A13000	13,000	.5118	–	–	6.10	4.25	3.58	.109	1.77	14	.5512
1913638	B978A13500	13,500	.5315	–	–	6.10	4.25	3.58	.113	1.77	14	.5512
1913639	B978A14000	14,000	.5512	–	–	6.10	4.25	3.58	.117	1.77	14	.5512
2658413	B978A14288	14,288	.5625	9/16	–	6.73	4.76	3.98	.120	1.89	16	.6299
1913641	B978A15000	15,000	.5906	–	–	6.73	4.76	3.98	.126	1.89	16	.6299
1913642	B978A15500	15,500	.6102	–	–	6.73	4.76	3.98	.130	1.89	16	.6299
2658414	B978A15875	15,875	.6250	5/8	–	6.73	4.76	3.98	.134	1.89	16	.6299
1913643	B978A16000	16,000	.6299	–	–	6.73	4.76	3.98	.135	1.89	16	.6299
2436798	B978A16200	16,200	.6378	–	–	7.28	5.32	4.45	.136	1.89	18	.7087
1913645	B978A17000	17,000	.6693	–	–	7.28	5.32	4.45	.143	1.89	18	.7087
1913646	B978A17500	17,500	.6890	–	–	7.28	5.32	4.45	.148	1.89	18	.7087
1913651	B978A20000	20,000	.7874	–	–	7.87	5.83	4.88	.169	1.97	20	.7874

NOTE: The point angle on B978 series is 132°.

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

Tolerance • Inch

nominal size range	D1 tolerance m7	D tolerance h6
>.1181–.2362	.0002/.0006	.0000/-.0003
>.2362–.3937	.0002/.0008	.0000/-.0004
>.3937–.7087	.0003/.0010	.0000/-.0004
>.7087–1.0000	.0003/.0011	.0000/-.0005

Kenna Universal™ Drills • B97_Series • Grade KC7315™ • Through Coolant • Drill Diameters 2–20mm (.0787-.7874")

Material Group		Cutting Speed — vc Range — m/min min	Starting Value	max	Metric Recommended Feed Rate (f) by Diameter		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

Material Group		Cutting Speed — vc Range — SFM min	Starting Value	max	Inch Recommended Feed Rate (f) by Diameter		5/64 .078	1/8 .125	3/16 .188	1/4 .250	5/16 .313	3/8 .375	1/2 .500	5/8 .625	3/4 .750
P	0	260	**390**	520	IPR		.002-.004	.002-.005	.003-.005	.004-.007	.004-.009	.005-.010	.006-.012	.007-.014	.009-.018
	1	230	**330**	460	IPR		.002-.005	.003-.006	.003-.006	.004-.009	.005-.010	.006-.012	.007-.014	.009-.017	.011-.022
	2	300	**390**	460	IPR		.002-.005	.003-.006	.003-.006	.005-.009	.006-.010	.007-.012	.008-.014	.009-.017	.012-.021
	3	200	**260**	330	IPR		.002-.005	.003-.006	.004-.007	.005-.009	.006-.011	.008-.013	.009-.015	.010-.019	.013-.023
	4	160	**260**	330	IPR		.002-.005	.003-.006	.003-.007	.005-.009	.006-.011	.007-.013	.008-.015	.009-.019	.011-.023
	5	160	**200**	260	IPR		.002-.005	.003-.005	.004-.006	.005-.008	.006-.009	.008-.011	.009-.012	.011-.015	.013-.017
	6	130	**160**	230	IPR		.002-.002	.002-.003	.002-.004	.003-.006	.004-.007	.005-.009	.006-.009	.007-.013	.009-.016
M	1	100	**130**	160	IPR		.001-.002	.002-.003	.002-.004	.003-.004	.004-.005	.004-.006	.005-.006	.006-.007	.006-.008
	2	130	**160**	200	IPR		.001-.003	.002-.003	.002-.004	.003-.005	.004-.006	.004-.006	.005-.007	.006-.008	.006-.009
	3	100	**130**	160	IPR		.001-.002	.002-.003	.002-.004	.003-.004	.004-.005	.004-.006	.005-.006	.006-.007	.006-.008
K	1	260	**390**	560	IPR		.004-.007	.004-.009	.005-.009	.006-.012	.008-.015	.009-.017	.010-.019	.012-.024	.015-.029
	2	260	**360**	460	IPR		.004-.006	.005-.006	.005-.008	.006-.010	.008-.012	.009-.014	.010-.016	.012-.019	.015-.024
	3	260	**330**	430	IPR		.003-.006	.003-.007	.004-.008	.005-.010	.006-.012	.007-.014	.008-.016	.009-.019	.012-.024
N	1	300	**750**	1030	IPR		.002-.005	.003-.006	.004-.006	.005-.008	.006-.009	.008-.011	.009-.013	.011-.016	.013-.019
	2	300	**740**	890	IPR		.002-.005	.003-.006	.004-.008	.005-.009	.006-.011	.008-.013	.009-.014	.011-.017	.013-.021
	3	300	**590**	890	IPR		.004-.006	.005-.006	.005-.006	.006-.008	.006-.009	.008-.011	.009-.013	.011-.016	.013-.017
	4	300	**440**	590	IPR		.002-.005	.003-.006	.000-.008	.005-.009	.006-.011	.008-.013	.009-.014	.011-.016	.013-.019
S	1	30	**80**	100	IPR		.001-.002	.001-.002	.002-.003	.002-.004	.003-.005	.004-.005	.004-.006	.005-.006	.006-.007
	2	30	**70**	80	IPR		.001-.002	.001-.002	.001-.002	.002-.003	.003-.004	.003-.004	.004-.005	.004-.006	.004-.006
	3	30	**80**	100	IPR		.001-.001	.001-.002	.001-.002	.002-.003	.002-.004	.003-.004	.003-.004	.004-.005	.004-.006
	4	30	**80**	130	IPR		.001-.001	.001-.002	.001-.002	.002-.003	.003-.004	.003-.004	.004-.005	.004-.006	.004-.006

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		Drill/Insert/ Body Series	grade	standard ● first choice ○ alternate choice P	M	K	N	S	H	hole tolerance	First Choice Range: diameter range D1 mm min–max	D1 inch min–max	drilling depth L/D1
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	10,0–19,845	.3973–.7813	—
		HPL	KCMS15		●								
	KenTIP FS bodies	SS (Metric)	–								10,0 ≤ Ø < 19,999	.3973 ≤ Ø < .7873	3 x D– 5 x D
		SS (Inch)	–										
KSEM™ — For medium to larger diameters. Very robust pocket and regrindable inserts													
	KSEM inserts	HPG	KC7315	●		○				IT9–IT11	12,50–34,93	.4921–1.3780	—
		HPG	KCPM45	●	○						12,70–33,34	.5000–1.313	
		HPL	KC7320		●						14,29–32,00	.5630–1.2598	
	KSEM bodies	WN (Metric)									12,50 ≤ Ø < 27,00	.4921 ≤ Ø < 1.0827	3 x D to 10 x D selected diameters only
		SS (Inch)									12,70 ≤ Ø < 30,663	.5000 ≤ Ø < 1.2072	
		SSF (Inch)									20,638 ≤ Ø ≤ 30,663	.8125 ≤ Ø ≤ 1.2072	3 x D, 5 x D selected diameters only
KSEM PLUS™ — High-performance drilling for the largest diameters													
	KSEM PLUS heads	A1 style								IT9–IT11	33,00 < Ø ≤ 82,55	1.2992 < Ø ≤ 3.2500	selected diameters only
		B1 style									28,58 < Ø ≤ 88,90	1.1250 < Ø ≤ 3.5000	
	KSEM PLUS center inserts	HPG	KC7315	●	●	○	○	○			13,00–40,00 mm 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	
		DFC DS	KCU40	●	○		○	○					
		DFT MD	KC7140	●	●	○	○	○					
	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	KCU40	●	○		○	○					
		DFC MD	KC7140	●	●	○	○	○					
	DPA guide pads (B1 Heads)	DPA	KCU40	●	●	●	●	●			Available for all standard B1 Head Diameters		
	KSEM PLUS bodies	WD (Metric)									31.75 < Ø ≤ 44,45	1.2500 < Ø ≤ 1.7500	3–8 x D selected diameters only
		SSF (Inch)									28,00 < Ø ≤ 70,0	1.1020 < Ø ≤ 2.7560	

*Not all intermediate size 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.

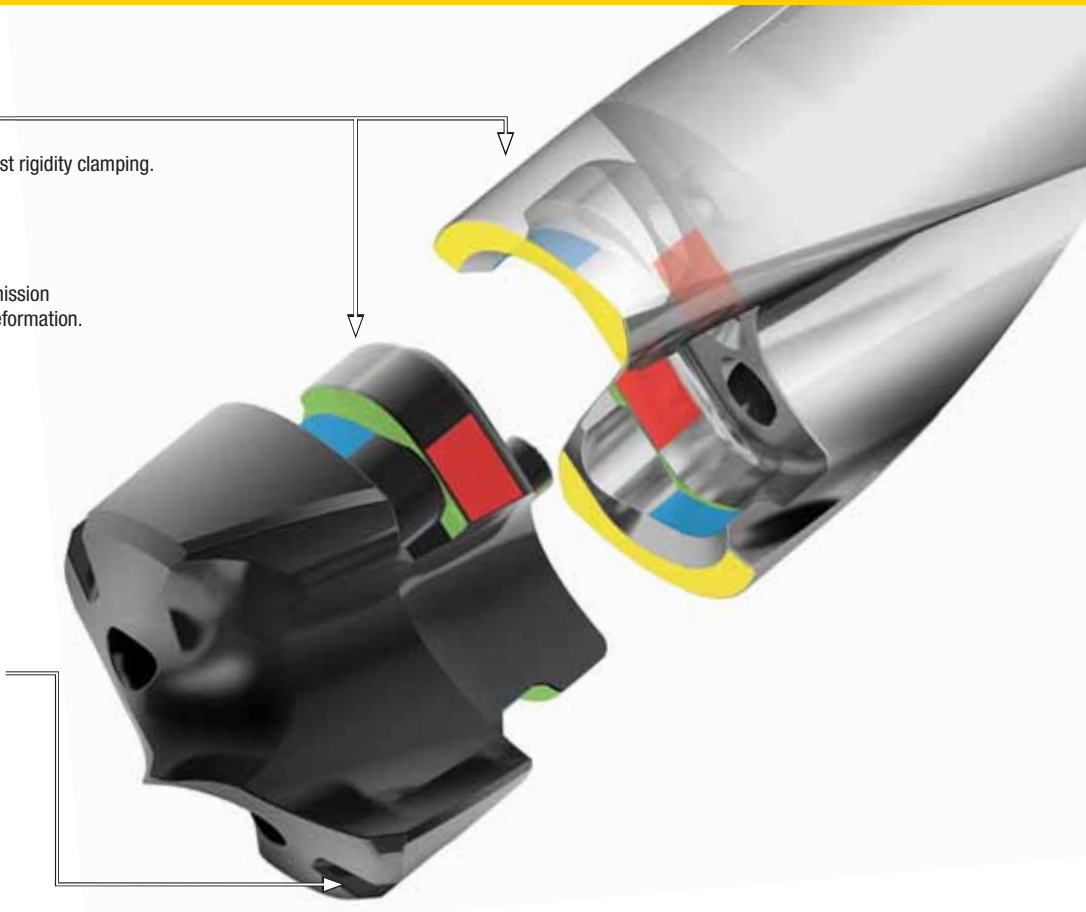
2-point geometries, 2 high-performance grades, 1 shank style.
3 x D and 5 x D drilling depths.
Applicable in steel and stainless steel.

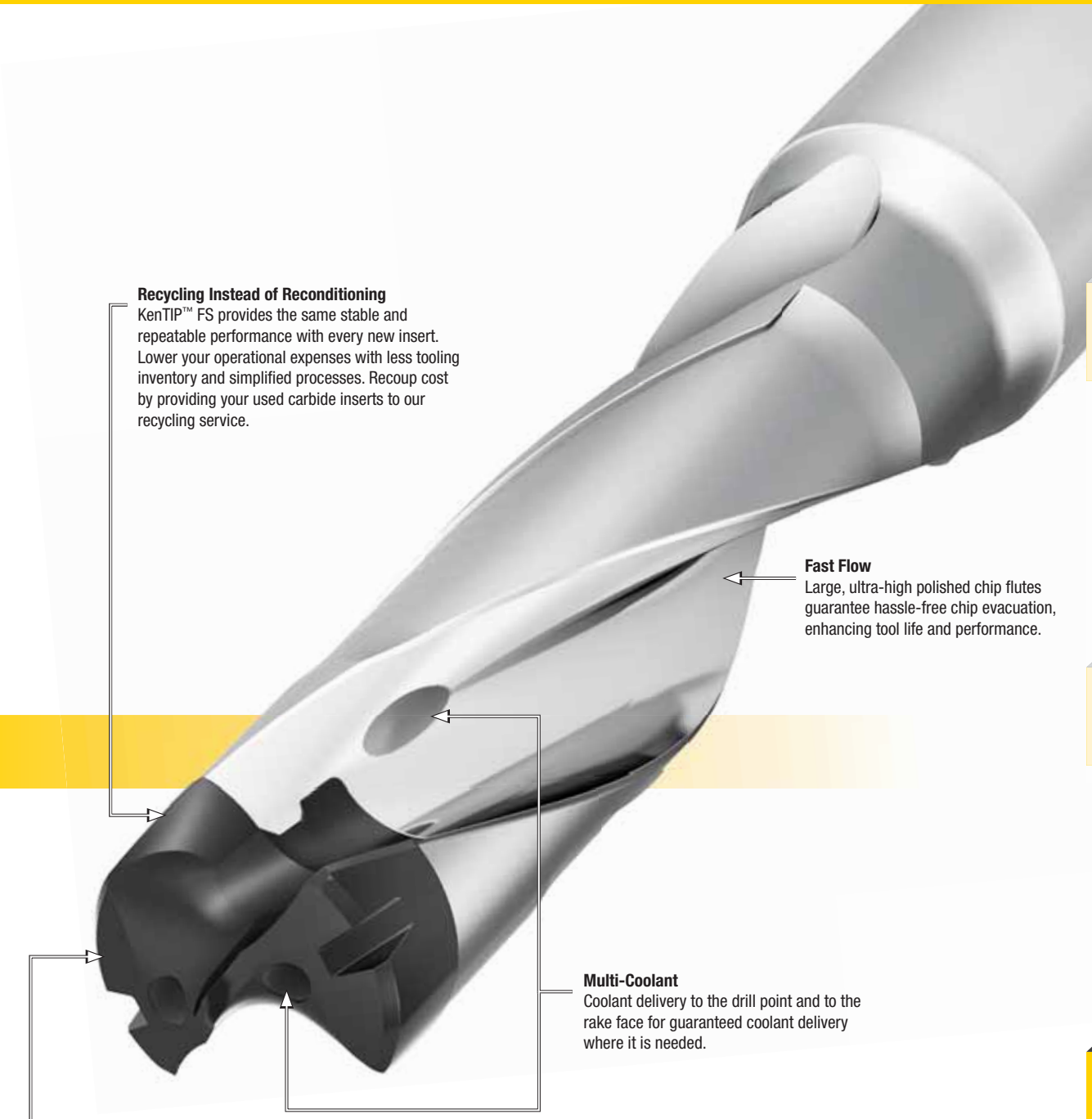
Intelligent Interface

- 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.

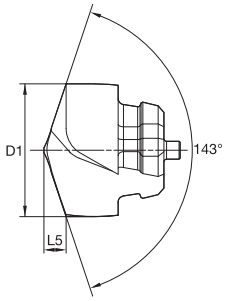
Fast Flow
Large, ultra-high polished chip flutes guarantee hassle-free chip evacuation, enhancing tool life and performance.

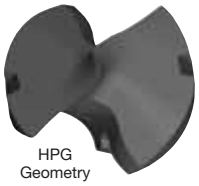
Multi-Coolant
Coolant delivery to the drill point and to the rake face for guaranteed coolant delivery where it is needed.

Unique Point Geometries
2 material-specific, self-centering point designs enable excellent hole quality and optimum tool performance.

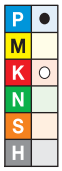
Full Solid Carbide Front
KenTIP FS inserts cover the entire front part of the drill. The coupling is completely protected from chip flow and contact with workpiece.

- HPG-point geometry for steels.
- Great positioning and centering capabilities for drilling without precentering, even in deeper holes.
- KCP15A™ is an AlTiN PVD monolayer coating.
- Enhanced thermal stability.
- Excellent balance between toughness and wear resistance.
- Without internal coolant.



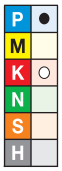

HPG Geometry

KenTIP FS Inserts • HPG KCP15A • No Internal Coolant Channels



● first choice
○ alternate choice

grade KCP15A		D1		L5		
order #	catalog #	mm	in	mm	in	SSC
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
6388684	KTFSS10320HPGM	10,320	.4063	2,270	.0894	J
6388686	KTFSS10400HPGM	10,400	.4094	2,290	.0902	J
6388690	KTFSS10500HPGM	10,500	.4134	2,310	.0909	K
6388692	KTFSS10600HPGM	10,600	.4173	2,330	.0917	K
6388696	KTFSS10716HPGM	10,716	.4219	2,350	.0925	K
6388698	KTFSS10800HPGM	10,800	.4252	2,360	.0929	K
6388702	KTFSS11000HPGM	11,000	.4331	2,430	.0957	L
6388704	KTFSS11100HPGM	11,100	.4370	2,450	.0965	L
6388708	KTFSS11200HPGM	11,200	.4409	2,460	.0969	L
6388710	KTFSS11300HPGM	11,300	.4449	2,480	.0976	L
6388714	KTFSS11500HPGM	11,500	.4528	2,520	.0992	M
6388718	KTFSS11600HPGM	11,600	.4567	2,540	.1000	M
6388726	KTFSS11908HPGM	11,908	.4688	2,590	.1020	M
6388728	KTFSS12000HPGM	12,000	.4724	2,640	.1039	N
6388734	KTFSS12304HPGM	12,304	.4844	2,690	.1059	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
6388749	KTFSS12900HPGM	12,900	.5079	2,790	.1098	O
6388751	KTFSS13000HPGM	13,000	.5118	2,850	.1122	P
6388753	KTFSS13096HPGM	13,096	.5156	2,860	.1126	P
6388765	KTFSS13492HPGM	13,492	.5312	2,930	.1154	P
6388767	KTFSS13500HPGM	13,500	.5315	2,930	.1154	Q
6388771	KTFSS13700HPGM	13,700	.5394	2,970	.1169	Q



grade KCP15A		D1		L5		
order #	catalog #	mm	in	mm	in	SSC
6388781	KTFSS14000HPGM	14,000	.5512	3,050	.1201	R
6388787	KTFSS14288HPGM	14,288	.5625	3,100	.1220	R
6388792	KTFSS14500HPGM	14,500	.5709	3,140	.1236	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
6388826	KTFSS15400HPGM	15,400	.6063	3,330	.1311	T
6388828	KTFSS15479HPGM	15,479	.6094	3,340	.1315	T
6388829	KTFSS15500HPGM	15,500	.6102	3,340	.1315	T
6388833	KTFSS15875HPGM	15,875	.6250	3,410	.1343	T
6388420	KTFSS16000HPGM	16,000	.6299	3,480	.1370	U
6388536	KTFSS16271HPGM	16,271	.6406	3,530	.1390	U
6388540	KTFSS16500HPGM	16,500	.6496	3,570	.1406	U
6388542	KTFSS16600HPGM	16,600	.6535	3,580	.1409	U
6388544	KTFSS16670HPGM	16,670	.6563	3,590	.1413	U
6388548	KTFSS16800HPGM	16,800	.6614	3,620	.1425	U
6388552	KTFSS17000HPGM	17,000	.6693	3,660	.1441	V
6388564	KTFSS17463HPGM	17,462	.6875	3,740	.1472	V
6388568	KTFSS17500HPGM	17,500	.6890	3,740	.1472	V
6388579	KTFSS18000HPGM	18,000	.7087	3,890	.1531	W
6388591	KTFSS18500HPGM	18,500	.7283	3,980	.1567	W
6388595	KTFSS18654HPGM	18,654	.7344	4,000	.1575	W
6388603	KTFSS19000HPGM	19,000	.7480	4,070	.1602	X
6388605	KTFSS19050HPGM	19,050	.7500	4,080	.1606	X
6388612	KTFSS19228HPGM	19,228	.7570	4,110	.1618	X
6388616	KTFSS19279HPGM	19,279	.7590	4,120	.1622	X
6388623	KTFSS19446HPGM	19,446	.7656	4,140	.1630	X
6388625	KTFSS19460HPGM	19,460	.7661	4,150	.1634	X
6388627	KTFSS19500HPGM	19,500	.7677	4,150	.1634	X
6388645	KTFSS19845HPGM	19,845	.7813	4,210	.1657	X

SSC = Pocket Seat Reference. To correspond with the SSC on the toolholder.

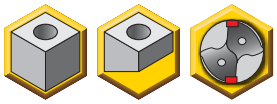
KenTIP FS HPG Geometry
Tolerance

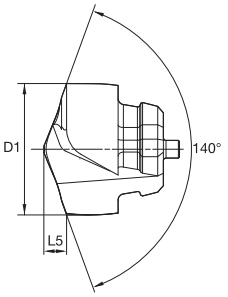
D1 metric	tolerance k8
6	0,000/+0,018
>6–10	0,000/+0,022
>10–18	0,000/+0,027
>18–26	0,000/+0,033

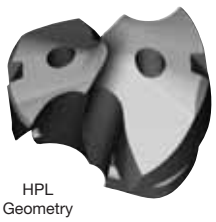
KenTIP FS HPG Geometry
Tolerance

D1 inch	tolerance k8
.2362	.000/+.0007
>.2362–.3937	.000/+.0009
>.3937–.7087	.000/+.0011
>.7087–1.0236	.000/+.0013

- 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.

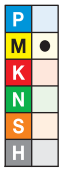




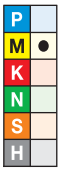


HPL Geometry

KenTIP FS Inserts • HPL KCMS15 • With Internal Coolant Channels



grade KCMS15		D1		L5		
order #	catalog #	mm	in	mm	in	SSC
6371045	KTFST10000HPLM	10,000	.3937	2,130	.0839	J
6371046	KTFST10100HPLM	10,100	.3976	2,150	.0846	J
6371049	KTFST10320HPLM	10,320	.4063	2,190	.0862	J
6371051	KTFST10500HPLM	10,500	.4134	2,230	.0878	K
6371056	KTFST11000HPLM	11,000	.4331	2,340	.0921	L
6371058	KTFST11113HPLM	11,112	.4375	2,360	.0929	L
6371065	KTFST12000HPLM	12,000	.4724	2,540	.1000	N
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
6371083	KTFST14288HPLM	14,288	.5625	3,000	.1181	R
6371089	KTFST15000HPLM	15,000	.5906	3,150	.1240	T
6371113	KTFST15875HPLM	15,875	.6250	3,310	.1303	T
6370906	KTFST16000HPLM	16,000	.6299	3,350	.1319	U
6370913	KTFST16271HPLM	16,271	.6406	3,400	.1339	U



● first choice
○ alternate choice

grade KCMS15		D1		L5		
order #	catalog #	mm	in	mm	in	SSC
6370918	KTFST16670HPLM	16,670	.6563	3,480	.1370	U
6370920	KTFST17000HPLM	17,000	.6693	3,550	.1398	V
6370922	KTFST17463HPLM	17,462	.6875	3,640	.1433	V
6370929	KTFST18000HPLM	18,000	.7087	3,760	.1480	W
6370931	KTFST18258HPLM	18,258	.7188	3,800	.1496	W
6370939	KTFST19050HPLM	19,050	.7500	3,970	.1563	X
6370942	KTFST19228HPLM	19,228	.7570	4,000	.1575	X
6370944	KTFST19253HPLM	19,253	.7580	4,000	.1575	X
6370947	KTFST19279HPLM	19,279	.7590	4,010	.1579	X
6370951	KTFST19446HPLM	19,446	.7656	4,040	.1591	X
6370955	KTFST19500HPLM	19,500	.7677	4,050	.1594	X
6370957	KTFST19845HPLM	19,845	.7813	4,120	.1622	X

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

KenTIP FS HPL Geometry
Tolerance

D1 inch	tolerance k8
.2362	.000/+.0007
>.2362–.3937	.000/+.0009
>.3937–.7087	.000/+.0011
>.7087–1.0236	.000/+.0013

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 Range — m/min			Metric						
					Recommended Feed Rate per Rev						
		min	Starting Value	max		8,0	10,0	12,0	14,0	16,0	20,0
P	1	90	**130**	170	mm/r	0,11–0,22	0,13–0,28	0,14–0,34	0,17–0,43	0,19–0,50	0,25–0,53
	2	100	**140**	180	mm/r	0,11–0,26	0,13–0,32	0,14–0,36	0,17–0,40	0,19–0,50	0,25–0,53
	3	60	**100**	130	mm/r	0,11–0,31	0,12–0,39	0,16–0,41	0,21–0,51	0,23–0,51	0,30–0,56
	4	60	**100**	130	mm/r	0,11–0,31	0,12–0,39	0,16–0,41	0,17–0,51	0,18–0,51	0,23–0,51
	5	60	**70**	100	mm/r	0,10–0,22	0,10–0,25	0,10–0,28	0,14–0,32	0,16–0,35	0,20–0,46
	6	60	**70**	70	mm/r	0,10–0,22	0,10–0,25	0,10–0,28	0,14–0,32	0,16–0,35	0,20–0,46
K	1	80	**120**	170	mm/r	0,15–0,32	0,16–0,35	0,17–0,39	0,21–0,46	0,25–0,53	0,31–0,65
	2	80	**110**	120	mm/r	0,15–0,32	0,16–0,33	0,17–0,36	0,21–0,45	0,25–0,53	0,31–0,65
	3	50	**80**	100	mm/r	0,16–0,33	0,17–0,36	0,18–0,40	0,20–0,45	0,21–0,48	0,23–0,53

Modular Drill Carbide Insert Blades • KenTIP FS • HPG Geometry • Grade KCP15A™ • No Internal Coolant Channels on the Insert • Through Coolant on the Body • Inch

Material Group		Cutting Speed — vc Range — SFM			Inch						
					Recommended Feed Rate per Rev						
		min	Starting Value	max		0.315	0.394	0.472	0.551	0,630	0.787
P	1	300	**430**	560	IPR	0.004–0.009	0.005–0.011	0.006–0.013	0.007–0.017	0.007–0.020	0.010–0.021
	2	330	**460**	590	IPR	0.004–0.010	0.005–0.013	0.006–0.014	0.007–0.016	0.007–0.020	0.010–0.021
	3	200	**330**	430	IPR	0.004–0.012	0.005–0.015	0.006–0.016	0.008–0.020	0.009–0.020	0.012–0.022
	4	200	**330**	430	IPR	0.004–0.012	0.005–0.015	0.006–0.016	0.007–0.020	0.007–0.020	0.009–0.020
	5	200	**230**	330	IPR	0.004–0.009	0.004–0.010	0.004–0.011	0.006–0.013	0.006–0.014	0.008–0.018
	6	200	**230**	230	IPR	0.004–0.009	0.004–0.010	0.004–0.011	0.006–0.013	0.006–0.014	0.008–0.018
K	1	260	**390**	560	IPR	0.006–0.013	0.006–0.014	0.007–0.015	0.008–0.018	0.010–0.021	0.012–0.026
	2	260	**360**	390	IPR	0.006–0.013	0.006–0.013	0.007–0.014	0.008–0.018	0.010–0.021	0.012–0.026
	3	160	**260**	330	IPR	0.006–0.013	0.007–0.014	0.007–0.016	0.008–0.018	0.008–0.019	0.009–0.021

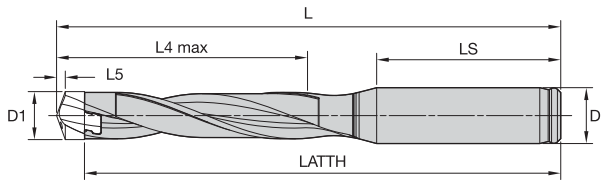
Modular Drill Carbide Insert Blades • KenTIP™ FS • HPL Geometry • Grade KCMS15™ • Through Coolant • Metric

Material Group		Cutting Speed — vc Range — m/min			Metric						
					Recommended Feed Rate per Rev						
		min	Starting Value	max		8,0	10,0	12,0	14,0	16,0	20,0
M	1	50	**60**	90	mm/r	0,08–0,15	0,09–0,18	0,11–0,20	0,12–0,22	0,13–0,24	0,16–0,28
	2	30	**60**	90	mm/r	0,08–0,15	0,09–0,18	0,11–0,20	0,12–0,22	0,13–0,24	0,16–0,28
	3	20	**50**	60	mm/r	0,08–0,15	0,09–0,18	0,11–0,20	0,12–0,22	0,13–0,24	0,16–0,28

Modular Drill Carbide Insert Blades • KenTIP™ FS • HPL Geometry • Grade KCMS15™ • Through Coolant • Inch

Material Group		Cutting Speed — vc Range — SFM			Inch						
					Recommended Feed Rate per Rev						
		min	Starting Value	max		.315	.394	.472	.551	.630	.787
M	1	160	**200**	300	IPR	0.003–0.006	0.004–0.007	0.004–0.008	0.005–0.009	0.005–0.009	0.006–0.011
	2	100	**200**	300	IPR	0.003–0.006	0.004–0.007	0.004–0.008	0.005–0.009	0.005–0.009	0.006–0.011
	3	70	**160**	200	IPR	0.003–0.006	0.004–0.007	0.004–0.008	0.005–0.009	0.005–0.009	0.006–0.011

- KenTIP FS toolholder with straight cylindrical round shank. Inch shank <20mm nominal drilling diameter.
- Multi-coolant provides an advanced coolant channel layout with four coolant exits in each holder.
- Each tool body is shipped with related insert wrench.



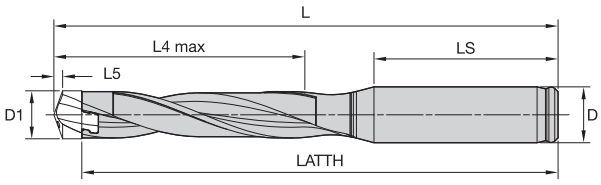
Straight Round Shank (SS Shank)

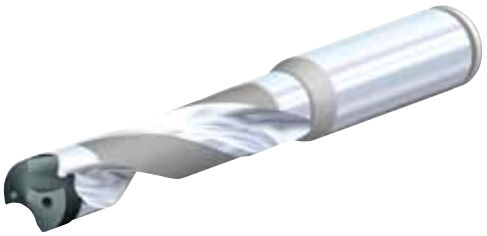
KenTIP FS Round Shank • 3 x D • Inch

3 x D		D1		D1 max								
order #	catalog #	mm	in	mm	in	LATTH	L	L4 max	LS	D	SSC	KenTIP wrench
6372000	**KTFS0394R03SS044**	10,000	.3937	10,499	.4133	3.32	3.54	1.26	1.67	.438	J	**170.307**
6372011	**KTFS0414R03SS044**	10,500	.4134	10,999	.4330	3.34	3.58	1.30	1.67	.438	K	**170.307**
6372012	**KTFS0434R03SS044**	11,000	.4331	11,499	.4527	3.41	3.66	1.38	1.67	.438	L	**170.307**
6372013	**KTFS0453R03SS050**	11,500	.4528	11,999	.4724	3.59	3.86	1.42	1.79	.500	M	**170.307**
6372014	**KTFS0473R03SS050**	12,000	.4725	12,499	.4921	3.66	3.94	1.50	1.79	.500	N	**170.308**
6372015	**KTFS0493R03SS050**	12,500	.4922	12,999	.5117	3.69	3.98	1.54	1.79	.500	O	**170.308**
6372016	**KTFS0512R03SS056**	13,000	.5118	13,499	.5314	3.80	4.09	1.61	1.79	.563	P	**170.308**
6372017	**KTFS0532R03SS056**	13,500	.5315	13,999	.5511	3.83	4.13	1.65	1.79	.563	Q	**170.308**
6372018	**KTFS0552R03SS056**	14,000	.5512	14,499	.5708	3.89	4.21	1.73	1.79	.563	R	**170.309**
6372019	**KTFS0571R03SS063**	14,500	.5709	14,999	.5905	4.12	4.45	1.77	1.91	.625	S	**170.309**
6372020	**KTFS0591R03SS063**	15,000	.5906	15,999	.6299	4.22	4.57	1.89	1.91	.625	T	**170.309**
6372021	**KTFS0630R03SS063**	16,000	.6300	16,999	.6692	4.28	4.65	2.01	1.91	.625	U	**170.309**
6372022	**KTFS0670R03SS075**	17,000	.6693	17,999	.7086	4.57	4.96	2.13	2.00	.750	V	**170.314**
6389273	**KTFS0709R03SS075**	18,000	.7087	18,999	.7480	4.67	5.08	2.24	2.00	.750	W	**170.314**
6389274	**KTFS0749R03SS075**	19,000	.7481	19,999	.7873	4.76	5.20	2.36	2.00	.750	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 toolholder with straight cylindrical round shank. Inch shank <20mm nominal drilling diameter.
- 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)

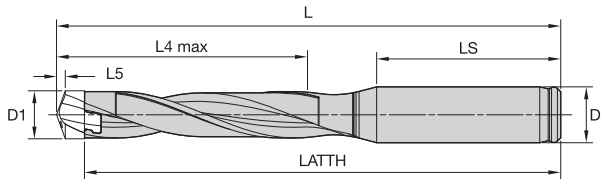
KenTIP FS Round Shank • 5 x D • Inch

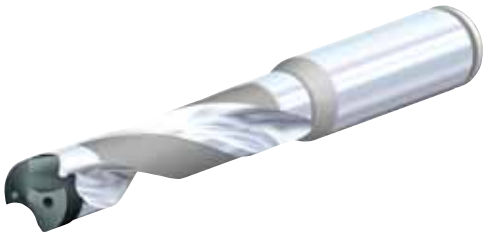
5 x D		D1		D1 max								
order #	catalog #	mm	in	mm	in	LATTH	L	L4 max	LS	D	SSC	KenTIP wrench
6372023	KTFS0394R05SS044	10,000	.3937	10,499	.4133	4.14	4.37	2.09	1.67	.438	J	170.307
6372024	KTFS0414R05SS044	10,500	.4134	10,999	.4330	4.21	4.45	2.17	1.67	.438	K	170.307
6372025	KTFS0434R05SS044	11,000	.4331	11,499	.4527	4.32	4.57	2.28	1.67	.438	L	170.307
6372026	KTFS0453R05SS050	11,500	.4528	11,999	.4724	4.54	4.80	2.36	1.79	.500	M	170.307
6372027	KTFS0473R05SS050	12,000	.4725	12,499	.4921	4.65	4.92	2.48	1.79	.500	N	170.308
6372028	KTFS0493R05SS050	12,500	.4922	12,999	.5117	4.72	5.00	2.56	1.79	.500	O	170.308
6372029	KTFS0512R05SS056	13,000	.5118	13,499	.5314	4.86	5.16	2.68	1.79	.563	P	170.308
6372030	KTFS0532R05SS056	13,500	.5315	13,999	.5511	4.93	5.24	2.76	1.79	.563	Q	170.308
6372051	KTFS0552R05SS056	14,000	.5512	14,499	.5708	5.04	5.35	2.87	1.79	.563	R	170.309
6372052	KTFS0571R05SS063	14,500	.5709	14,999	.5905	5.30	5.63	2.95	1.91	.625	S	170.309
6372053	KTFS0591R05SS063	15,000	.5906	15,999	.6299	5.48	5.83	3.15	1.91	.625	T	170.309
6372054	KTFS0630R05SS063	16,000	.6300	16,999	.6692	5.62	5.98	3.35	1.91	.625	U	170.309
6372055	KTFS0670R05SS075	17,000	.6693	17,999	.7086	5.99	6.38	3.54	2.00	.750	V	170.314
6389275	KTFS0709R05SS075	18,000	.7087	18,999	.7480	6.17	6.57	3.74	2.00	.750	W	170.314
6389276	KTFS0749R05SS075	19,000	.7481	19,999	.7873	6.34	6.77	3.94	2.00	.750	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 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.





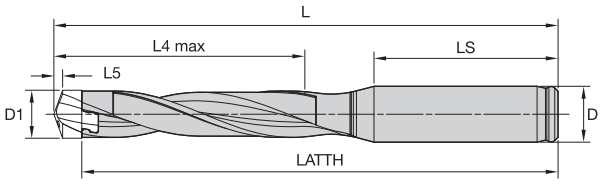
Straight Round Shank (SS Shank)

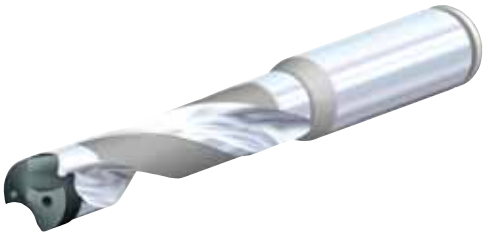
KenTIP FS Round Shank • 3 x D • Metric

3 x D		D1		D1 max								
order #	catalog #	mm	in	mm	in	LATTH	L	L4 max	LS	D	SSC	KenTIP wrench
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 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 • 5 x D • Metric

5 x D		D1		D1 max								
order #	catalog #	mm	in	mm	in	LATTH	L	L4 max	LS	D	SSC	KenTIP wrench
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.

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 centering 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.

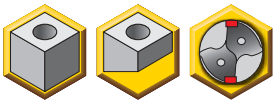
Tailored Grades

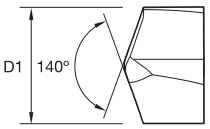
- KC7315™ grade TiAlN-based PVD multilayer coating for high cutting speeds, primarily in steel applications.
- KCPM45™ grade multilayer TiAlN coated, very tough carbide substrate. Improved chipping resistance in demanding machining conditions.
- KC7320™ grade AlTiN-based PVD coating for the demands of 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 program.

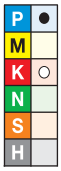
- KSEM KC7315™ HPG cutting edges enable high metal removal rates and superior tool life for steel applications.
- HPG geometry works with low cutting and feed forces and provides very good centering. Reinforced cutting edges and good chip forming improve tool life due to high wear and edge chipping resistance.
- 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.





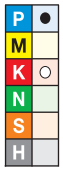
HPG

KSEM Inserts • HPG KC7315



grade KC7315

order #	catalog #	D1 mm	D1 in	SSC
2449924	KSEM1250HPGM	12,500	.4921	C
2499607	KSEM1270HPGM	12,700	.5000	C
2499730	KSEM1350HPGM	13,500	.5310	C
2499735	KSEM1400HPGM	14,000	.5512	B
2499611	KSEM1429HPGM	14,290	.5630	B
2499844	KSEM1548HPGM	15,480	.6090	A
2499748	KSEM1550HPGM	15,500	.6102	A
2499751	KSEM1580HPGM	15,800	.6220	A
2499845	KSEM1588HPGM	15,880	.6250	1
2499753	KSEM1600HPGM	16,000	.6299	1
2499848	KSEM1667HPGM	16,670	.6560	1
2499759	KSEM1700HPGM	17,000	.6693	1
2499850	KSEM1746HPGM	17,460	.6875	1
2487433	KSEM1750HPGM	17,500	.6890	1
2499763	KSEM1800HPGM	18,000	.7087	1
2499852	KSEM1826HPGM	18,260	.7189	2
2499854	KSEM1905HPGM	19,050	.7500	2
2653917	KSEM1925HPGM	19,250	.7579	2
2499855	KSEM1927HPGM	19,270	.7590	2
2499856	KSEM1945HPGM	19,450	.7657	2
2499771	KSEM1950HPGM	19,500	.7677	2
2499857	KSEM1984HPGM	19,840	.7810	2
2465988	KSEM2050HPGM	20,500	.8071	3
2499859	KSEM2064HPGM	20,640	.8125	3



grade KC7315

● first choice
○ alternate choice

order #	catalog #	D1 mm	D1 in	SSC
2499775	KSEM2100HPGM	21,000	.8268	3
2499861	KSEM2183HPGM	21,830	.8590	3
2499779	KSEM2200HPGM	22,000	.8661	3
2499862	KSEM2223HPGM	22,230	.8752	4
2449518	KSEM2300HPGM	23,000	.9055	4
2499865	KSEM2381HPGM	23,810	.9375	4
2499786	KSEM2400HPGM	24,000	.9449	4
2499787	KSEM2450HPGM	24,500	.9646	5
2499866	KSEM2461HPGM	24,610	.9690	5
2499789	KSEM2500HPGM	25,000	.9843	5
2499867	KSEM2540HPGM	25,400	1.0000	5
3058199	KSEM2560HPGM	25,600	1.0080	5
2499868	KSEM2567HPGM	25,670	1.0106	5
2449473	KSEM2600HPGM	26,000	1.0236	5
2499869	KSEM2619HPGM	26,190	1.0310	6
2499795	KSEM2700HPGM	27,000	1.0630	6
2499798	KSEM2800HPGM	28,000	1.1024	6
2499873	KSEM2858HPGM	28,580	1.1250	7
2499876	KSEM3016HPGM	30,160	1.1875	8
2499879	KSEM3175HPGM	31,750	1.2500	8
2499813	KSEM3200HPGM	32,000	1.2598	8
2494501	KSEM3300HPGM	33,000	1.2992	9
2499882	KSEM3334HPGM	33,340	1.3130	9
2499885	KSEM3493HPGM	34,930	1.3750	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

Tolerance HPG • Inch

D1 inch	tolerance h8
.500–.709	+.000/-.0010
>.709–1.181	+.000/-.0013
>1.181–1.575	+.000/-.0015

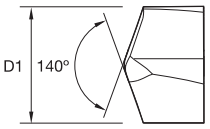
Modular Drill Carbide Insert Blades • KSEM™ • HPG Geometry • Grade KC7315™ • Through Coolant • Metric

Material Group		Cutting Speed — vc Range — m/min			Metric						
					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

Modular Drill Carbide Insert Blades • KSEM • HPG Geometry • Grade KC7315 • Through Coolant • Inch

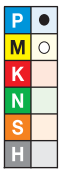
Material Group		Cutting Speed — vc Range — SFM			Inch						
					Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		0.462	0.630	0.787	1.000	1.260	1.575
P	1	250	**360**	460	IPR	.006–.013	.007–.016	.007–.018	.010–.023	.011–.026	.013–.030
	2	300	**390**	490	IPR	.006–.013	.007–.016	.007–.018	.010–.023	.011–.026	.013–.030
	3	160	**250**	330	IPR	.006–.011	.007–.013	.007–.016	.010–.020	.011–.023	.013–.026
	4	160	**210**	260	IPR	.005–.012	.006–.011	.006–.016	.008–.020	.009–.023	.010–.026
	5	160	**210**	260	IPR	.004–.007	.004–.008	.005–.009	.006–.011	.007–.013	.008–.014
	6	160	**210**	260	IPR	.005–.010	.006–.011	.006–.013	.008–.017	.009–.019	.010–.021
K	1	300	**440**	570	IPR	.007–.014	.008–.017	.010–.019	.012–.023	.015–.028	.017–.032
	2	300	**360**	410	IPR	.007–.013	.008–.016	.010–.019	.012–.023	.015–.028	.017–.032
	3	130	**310**	410	IPR	.007–.014	.008–.016	.008–.017	.009–.019	.010–.021	.011–.022

- 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 centering. 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.

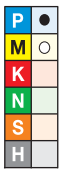


HPG

KSEM Inserts • HPG KCPM45



grade KCPM45		D1		
order #	catalog #	mm	in	SSC
5397385	KSEM1270HPGM	12,700	.5000	C
5397387	KSEM1400HPGM	14,000	.5512	B
5397388	KSEM1429HPGM	14,290	.5630	B
5626703	KSEM1500HPGM	15,000	.5906	A
5626707	KSEM1588HPGM	15,880	.6250	1
5397471	KSEM1667HPGM	16,670	.6560	1
5626712	KSEM1707HPGM	17,070	.6720	1
5397473	KSEM1746HPGM	17,460	.6875	1
5626713	KSEM1750HPGM	17,500	.6890	1
5397478	KSEM1905HPGM	19,050	.7500	2
5397479	KSEM1925HPGM	19,250	.7579	2
5397480	KSEM1927HPGM	19,270	.7590	2
5626718	KSEM1945HPGM	19,450	.7657	2
5397481	KSEM1950HPGM	19,500	.7677	2
5397482	KSEM1984HPGM	19,840	.7810	2
5397484	KSEM2064HPGM	20,640	.8125	3
5397485	KSEM2100HPGM	21,000	.8268	3
5397486	KSEM2200HPGM	22,000	.8661	3
5397487	KSEM2223HPGM	22,230	.8752	4
5397489	KSEM2381HPGM	23,810	.9375	4



● first choice
○ alternate choice

grade KCPM45		D1		
order #	catalog #	mm	in	SSC
5397490	KSEM2400HPGM	24,000	.9449	4
5397492	KSEM2540HPGM	25,400	1.0000	5
5397493	KSEM2560HPGM	25,600	1.0080	5
5397495	KSEM2567HPGM	25,670	1.0106	5
5397496	KSEM2581HPGM	25,810	1.0161	5
5397498	KSEM2619HPGM	26,190	1.0310	6
5397499	KSEM2700HPGM	27,000	1.0630	6
5626733	KSEM2750HPGM	27,500	1.0827	6
5397501	KSEM2858HPGM	28,580	1.1250	7
5397503	KSEM3016HPGM	30,160	1.1875	8
5626742	KSEM3100HPGM	31,000	1.2205	8
5397504	KSEM3175HPGM	31,750	1.2500	8
5397505	KSEM3200HPGM	32,000	1.2598	8
5397507	KSEM3334HPGM	33,340	1.3130	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

Tolerance HPG • Inch

D1 inch	tolerance h8
.500–.709	+.000/-.0010
>.709–1.181	+.000/-.0013
>1.181–1.575	+.000/-.0015

Modular Drill Carbide Insert Blades • KSEM™ • HPG Geometry • Grade KCPM45™ • Through Coolant • Metric

Material Group		Cutting Speed — vc Range — m/min			Metric						
					Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		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						
					Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		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.

Modular Drill Carbide Insert Blades • KSEM • HPG Geometry • Grade KCPM45 • Through Coolant • Inch

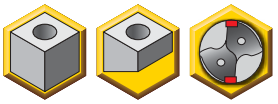
Material Group		Cutting Speed — vc Range — SFM			Inch						
					Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		.462	.630	.787	1.000	1.260	1.575
P	1	330	**360**	390	IPR	.006–.012	.007–.014	.007–.016	.010–.021	.011–.024	.013–.027
	2	260	**310**	360	IPR	.006–.012	.007–.014	.007–.016	.010–.021	.011–.024	.013–.027
	3	210	**230**	260	IPR	.006–.012	.007–.014	.007–.016	.010–.021	.011–.024	.013–.027
M	1	100	**200**	300	IPR	.004–.006	.004–.007	.005–.008	.006–.010	.007–.011	.008–.012
	2	100	**160**	300	IPR	.004–.006	.004–.007	.005–.008	.006–.010	.007–.011	.008–.012
	3	70	**130**	200	IPR	.004–.006	.004–.007	.005–.008	.006–.010	.007–.011	.008–.012

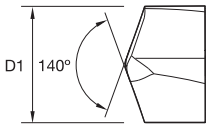
Modular Drill Carbide Insert Blades • KSEM • HPG Geometry • Grade KCPM45 • MQL* • Inch

Material Group		Cutting Speed — vc Range — SFM			Inch						
					Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		.462	.630	.787	1.000	1.260	1.575
P	1	200	**230**	260	IPR	.006–.012	.007–.014	.007–.016	.010–.021	.011–.024	.013–.027
	2	160	**200**	230	IPR	.006–.012	.007–.014	.007–.016	.010–.021	.011–.024	.013–.027
	3	210	**150**	260	IPR	.006–.012	.007–.014	.007–.016	.010–.021	.011–.024	.013–.027
M	1	100	**130**	160	IPR	.004–.006	.004–.007	.005–.008	.006–.010	.007–.011	.008–.012
	2	80	**100**	110	IPR	.004–.006	.004–.007	.005–.008	.006–.010	.007–.011	.008–.012
	3	70	**80**	100	IPR	.004–.006	.004–.007	.005–.008	.006–.010	.007–.011	.008–.012

*Recommended for drilling depths ≤1.5 x D.

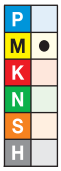
- KSEM KC7320™ HPL cutting edges provide perfect results and very high productivity in stainless steel.
- HPL geometry forms two chips per cutting edge for an uninterrupted, smooth chip flow. Very high metal removal rates and a reliable drilling process up to 10 x D makes HPL the superior solution for drilling in stainless steels.
- Grade KC7320 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.





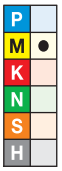
HPL

KSEM Inserts • HPL KC7320



grade KC7320

order #	catalog #	D1 mm	D1 in	SSC
3381112	KSEM1429HPLM	14,290	.5630	B
3381122	KSEM1588HPLM	15,880	.6250	1
3381124	KSEM1609HPLM	16,090	.6340	1
3381128	KSEM1627HPLM	16,270	.6410	1
3381130	KSEM1667HPLM	16,670	.6560	1
3381133	KSEM1746HPLM	17,460	.6875	1
3381147	KSEM1905HPLM	19,050	.7500	2
3381149	KSEM1923HPLM	19,228	.7570	2
3381150	KSEM1925HPLM	19,250	.7579	2
3381151	KSEM1927HPLM	19,270	.7590	2
3381154	KSEM1945HPLM	19,450	.7660	2
3381155	KSEM1950HPLM	19,500	.7677	2
3381156	KSEM1984HPLM	19,840	.7810	2
3381162	KSEM2064HPLM	20,640	.8125	3
3381175	KSEM2223HPLM	22,230	.8750	4
3381620	KSEM2540HPLM	25,400	1.0000	5



grade KC7320

● first choice
○ alternate choice

order #	catalog #	D1 mm	D1 in	SSC
3381624	KSEM2560HPLM	25,600	1.0080	5
3381626	KSEM2565HPLM	25,650	1.0098	5
3381628	KSEM2567HPLM	25,670	1.0106	5
3381632	KSEM2581HPLM	25,810	1.0161	5
3381633	KSEM2619HPLM	26,190	1.0310	6
3381638	KSEM2670HPLM	26,700	1.0512	6
3381170	KSEM2858HPLM	28,580	1.1250	7
3381190	KSEM3175HPLM	31,750	1.2500	8
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

Tolerance HPL • Inch

D1 inch	tolerance h8
.500–.709	+.000/-.0010
>.709–1.181	+.000/-.0013
>1.181–1.575	+.000/-.0015

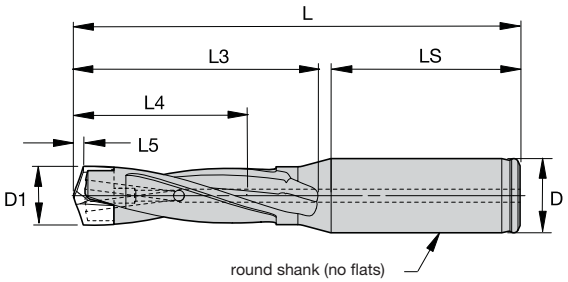
Modular Drill Carbide Insert Blades • KSEM™ • HPL Geometry • Grade KC7320™ • Through Coolant • Metric

Material Group		Cutting Speed — vc Range — m/min			Metric					
					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

Modular Drill Carbide Insert Blades • KSEM • HPL Geometry • Grade KC7320 • Through Coolant • Inch

Material Group		Cutting Speed — vc Range — SFM			Inch					
					Recommended Feed Rate (f) by Diameter					
		min	Starting Value	max		0.462	0.630	0.787	1.000	1.260
M	1	100	**200**	300	IPR	.004–.006	.004–.007	.005–.008	.006–.010	.007–.011
	2	100	**160**	300	IPR	.004–.006	.004–.007	.005–.008	.006–.010	.007–.011
	3	70	**130**	200	IPR	.004–.006	.004–.007	.005–.008	.006–.010	.007–.011

- Use designated insert blade with each drill body.
- Drill shipped with central lock screw and wrench.



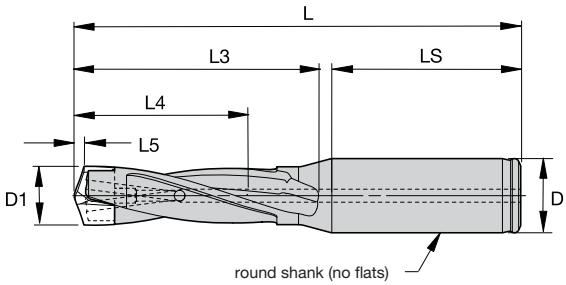
KSEM Round Shank • 3 x D • Inch

3 x D

order #	catalog #	D1 mm	D1 in	D1 max mm	D1 max in	L	L3	L4 max	L5	LS	D	SSC	central lock screw
2238532	**KSEM0656R3SS075**	16,670	.6563	17,170	.6760	4.75	2.59	1.97	.104	2.00	.7500	1	**364.010**
2238534	**KSEM0688R3SS075**	17,463	.6875	17,963	.7072	4.88	2.72	2.06	.109	2.00	.7500	1	**364.010**
2238536	**KSEM0719R3SS075**	18,256	.7187	18,756	.7384	5.00	2.84	2.16	.114	2.00	.7500	2	**364.010**
2238538	**KSEM0750R3SS075**	19,050	.7500	19,550	.7697	5.13	2.97	2.25	.119	2.00	.7500	2	**364.010**
2238540	**KSEM0759R3SS075**	19,279	.7590	19,779	.7787	5.25	3.09	2.28	.121	2.00	.7500	2	**364.010**
2238544	**KSEM0813R3SS100**	20,638	.8125	21,138	.8322	6.38	3.22	2.44	.129	3.00	1.0000	3	**364.011**
2238547	**KSEM0875R3SS100**	22,225	.8750	22,725	.8947	6.63	3.47	2.63	.139	3.00	1.0000	4	**364.011**
2238552	**KSEM0938R3SS100**	23,813	.9375	24,000	.9448	6.88	3.72	2.81	.149	3.00	1.0000	4	**364.011**
2238555	**KSEM1000R3SS100**	25,400	1.0000	25,900	1.0197	7.13	3.97	3.00	.154	3.00	1.0000	5	**364.012**
2238558	**KSEM1031R3SS125**	26,195	1.0313	26,695	1.0510	7.50	4.09	3.09	.159	3.25	1.2500	6	**364.012**
2238563	**KSEM1125R3SS125**	28,575	1.1250	29,075	1.1447	7.88	4.47	3.38	.173	3.25	1.2500	7	**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.



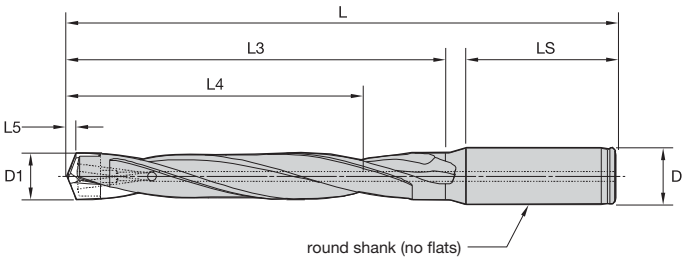
KSEM Round Shank • 5 x D • Inch

5 x D

order #	catalog #	D1 mm	D1 in	D1 max mm	D1 max in	L	L3	L4 max	L5	LS	D	SSC	central lock screw
1786056	**KSEM0500R5SS075**	12,700	.5000	13,200	.5197	5.13	3.01	2.50	.079	2.00	.7500	C	**364.017**
1786060	**KSEM0531R5SS075**	13,494	.5313	13,500	.5314	5.38	3.26	2.66	.084	2.00	.7500	C	**364.017**
1786062	**KSEM0563R5SS075**	14,300	.5630	14,500	.5708	5.50	3.38	2.81	.089	2.00	.7500	B	**364.016**
1330471	**KSEM0625R5SS075**	15,875	.6250	16,375	.6447	6.00	3.84	3.15	.099	2.00	.7500	1	**364.010**
1533938	**KSEM0634R5SS075**	16,104	.6340	16,604	.6537	6.50	4.34	3.54	.101	2.00	.7500	1	**364.010**
1606881	**KSEM0641R5SS075**	16,281	.6410	16,781	.6607	6.50	4.34	3.54	.102	2.00	.7500	1	**364.010**
1329737	**KSEM0656R5SS075**	16,670	.6563	17,170	.6760	6.50	4.34	3.54	.104	2.00	.7500	1	**364.010**
1503488	**KSEM0688R5SS075**	17,463	.6875	17,963	.7072	6.50	4.34	3.54	.109	2.00	.7500	1	**364.010**
1329735	**KSEM0719R5SS075**	18,256	.7187	18,756	.7384	7.25	5.09	3.94	.114	2.00	.7500	2	**364.010**
1329703	**KSEM0750R5SS075**	19,050	.7500	19,550	.7697	7.25	5.09	3.94	.119	2.00	.7500	2	**364.010**
1329734	**KSEM0750R5SS100**	19,050	.7500	19,550	.7697	8.25	5.09	3.94	.119	3.00	1.0000	2	**364.010**
1533939	**KSEM0759R5SS075**	19,279	.7590	19,779	.7787	7.25	5.09	3.94	.121	2.00	.7500	2	**364.010**
1606885	**KSEM0766R5SS100**	19,456	.7660	19,956	.7857	8.25	5.09	3.94	.122	3.00	1.0000	2	**364.010**
1329733	**KSEM0781R5SS100**	19,844	.7813	19,999	.7873	8.13	4.97	3.94	.124	3.00	1.0000	2	**364.010**
1329732	**KSEM0813R5SS100**	20,638	.8125	21,138	.8322	8.50	5.34	4.33	.129	3.00	1.0000	3	**364.011**
1329710	**KSEM0875R5SS100**	22,225	.8750	22,725	.8947	9.00	5.84	4.72	.139	3.00	1.0000	4	**364.011**
1329709	**KSEM0938R5SS100**	23,813	.9375	24,000	.9448	9.00	5.84	4.72	.149	3.00	1.0000	4	**364.011**
1329707	**KSEM1000R5SS100**	25,400	1.0000	25,900	1.0197	9.50	6.34	5.12	.154	3.00	1.0000	5	**364.012**
1533981	**KSEM1011R5SS125**	25,679	1.0110	26,000	1.0236	10.00	6.59	5.06	.156	3.25	1.2500	5	**364.012**
1329704	**KSEM1031R5SS125**	26,195	1.0313	26,695	1.0510	10.25	6.84	5.51	.159	3.25	1.2500	6	**364.012**
1330472	**KSEM1063R5SS125**	26,988	1.0625	27,488	1.0822	10.25	6.84	5.51	.164	3.25	1.2500	6	**364.012**
1329937	**KSEM1125R5SS125**	28,575	1.1250	29,075	1.1447	10.75	7.34	5.91	.173	3.25	1.2500	7	**364.013**
1606908	**KSEM1375R5SS150**	34,925	1.3750	35,925	1.4144	13.00	9.09	6.87	.212	3.75	1.5000	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.



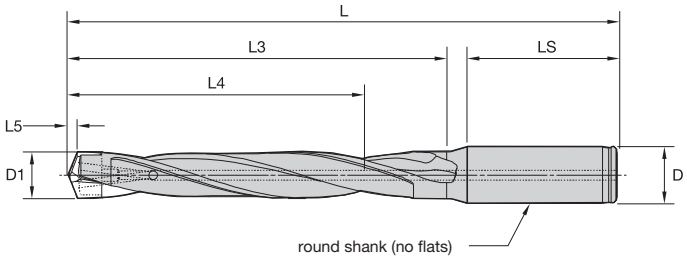
KSEM Round Shank • 7 x D • Inch

7 x D

order #	catalog #	D1 mm	D1 in	D1 max mm	D1 max in	L	L3	L4 max	L5	LS	D	SSC	central lock screw
1798189	**KSEM0500R7SS050**	12,700	.5000	13,200	.5197	5.63	4.01	3.50	.079	1.50	.5000	C	**364.017**
1798205	**KSEM0563R7SS075**	14,288	.5625	14,500	.5708	6.63	4.51	3.94	.089	2.00	.7500	B	**364.016**
1519229	**KSEM0656R7SS075**	16,670	.6563	17,170	.6760	8.00	5.84	4.96	.104	2.00	.7500	1	**364.010**
1519230	**KSEM0688R7SS075**	17,463	.6875	17,963	.7072	8.00	5.84	4.96	.109	2.00	.7500	1	**364.010**
1533937	**KSEM0759R7SS075**	19,279	.7590	19,779	.7787	8.88	6.72	5.51	.121	2.00	.7500	2	**364.010**
1519265	**KSEM0781R7SS100**	19,844	.7813	19,999	.7873	9.88	6.72	5.51	.124	3.00	1.0000	2	**364.010**
1519282	**KSEM1031R7SS125**	26,195	1.0313	26,695	1.0510	12.50	9.09	7.72	.159	3.25	1.2500	6	**364.012**

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.



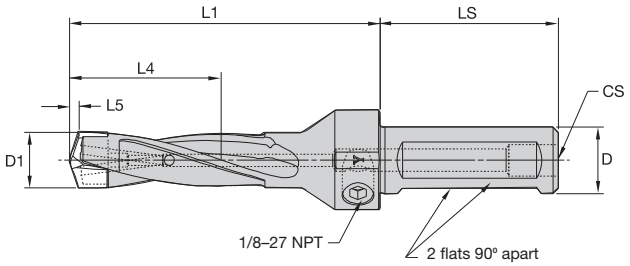
KSEM Round Shank • 10 x D • Inch

10 x D

order #	catalog #	D1 mm	D1 in	D1 max mm	D1 max in	L	L3	L4 max	L5	LS	D	SSC	central lock screw
1798211	**KSEM0500R10SS075**	12,700	.5000	13,200	.5197	7.75	5.63	5.00	.079	2.00	.7500	C	**364.017**
1798231	**KSEM0531R10SS075**	13,494	.5313	13,500	.5314	8.13	6.01	5.31	.084	2.00	.7500	C	**364.017**
1798244	**KSEM0563R10SS075**	14,288	.5625	14,500	.5708	8.38	6.26	5.63	.089	2.00	.7500	B	**364.016**
1729876	**KSEM0656R10SS075**	16,670	.6563	17,170	.6760	9.38	7.22	6.56	.104	2.00	.7500	1	**364.010**
1729877	**KSEM0688R10SS075**	17,463	.6875	17,963	.7072	9.75	7.59	6.88	.109	2.00	.7500	1	**364.010**
1729878	**KSEM0719R10SS075**	18,256	.7187	18,756	.7384	10.25	8.09	7.19	.114	2.00	.7500	2	**364.010**
1729921	**KSEM0759R10SS100**	19,279	.7590	19,779	.7787	11.50	8.34	7.59	.121	3.00	1.0000	2	**364.010**
1730118	**KSEM1156R10SS125**	29,370	1.1563	29,870	1.1760	16.13	12.72	11.56	.178	3.25	1.2500	7	**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, wrench, and side pipe plug.



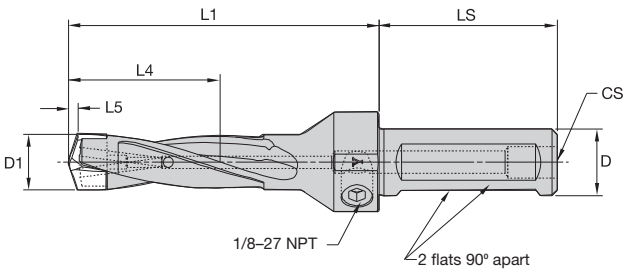
KSEM Flanged Shank • 3 x D • Inch

3 x D

order #	catalog #	D1 mm	D1 in	D1 max mm	D1 max in	L	L1	L4 max	L5	LS	D	SSC	CS	central lock screw
1785250	**KSEM0563R3SSF075**	14,300	.5630	14,500	.5708	5.06	3.06	1.69	.09	2.00	.750	B	1/8-27 NPT	**364.016**
1505110	**KSEM0625R3SSF075**	15,875	.6250	16,375	.6447	5.50	3.50	1.89	.10	2.00	.750	1	1/8-27 NPT	**364.010**
1505111	**KSEM0688R3SSF075**	17,463	.6875	17,963	.7072	5.75	3.75	2.13	.11	2.00	.750	1	1/8-27 NPT	**364.010**
1505115	**KSEM0813R3SSF100**	20,650	.8130	22,000	.8650	7.50	4.50	2.60	.14	3.00	1.000	3	1/4-18 NPT	**364.011**
1505119	**KSEM0938R3SSF100**	23,825	.9380	24,000	.9440	7.75	4.75	2.83	.16	3.00	1.000	4	1/4-18 NPT	**364.011**
1505125	**KSEM1063R3SSF125**	26,988	1.0625	27,488	1.0822	8.75	5.50	3.31	.16	3.25	1.250	6	1/4-18 NPT	**364.012**
1616100	**KSEM1313R3SSF150**	33,340	1.3126	36,000	1.4173	10.88	7.13	4.02	.23	3.75	1.500	9	1/4-18 NPT	**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, wrench, and side pipe plug.



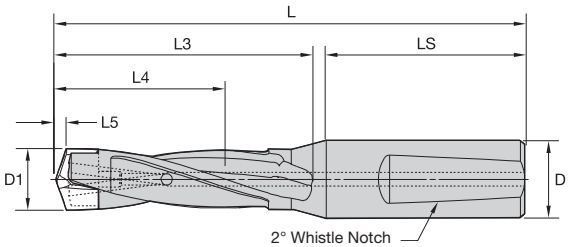
KSEM Flanged Shank • 5 x D • Inch

5 x D

order #	catalog #	D1 mm	D1 in	D1 max mm	D1 max in	L	L1	L4 max	L5	LS	D	SSC	CS	central lock screw
1785284	**KSEM0500R5SSF075**	12,700	.5000	13,500	.5310	5.94	3.94	2.50	.09	2.00	.750	C	1/8-27 NPT	**364.017**
1785289	**KSEM0563R5SSF075**	14,300	.5630	14,500	.5708	6.25	4.25	2.81	.10	2.00	.750	B	1/8-27 NPT	**364.016**
1505138	**KSEM0625R5SSF075**	15,875	.6250	16,375	.6447	6.75	4.75	3.15	.10	2.00	.750	1	1/8-27 NPT	**364.010**
1505171	**KSEM0688R5SSF075**	17,463	.6875	17,963	.7072	7.25	5.25	3.54	.11	2.00	.750	1	1/8-27 NPT	**364.010**
1505179	**KSEM0813R5SSF100**	20,650	.8130	22,000	.8650	9.25	6.25	4.33	.14	3.00	1.000	3	1/4-18 NPT	**364.011**
1505180	**KSEM0875R5SSF100**	22,225	.8750	22,725	.8947	9.63	6.63	4.72	.14	3.00	1.000	4	1/4-18 NPT	**364.011**
1505183	**KSEM0938R5SSF100**	23,813	.9375	24,000	.9448	9.63	6.63	4.72	.15	3.00	1.000	4	1/4-18 NPT	**364.011**
1505190	**KSEM1063R5SSF125**	26,988	1.0625	27,488	1.0822	10.88	7.63	5.51	.16	3.25	1.250	6	1/4-18 NPT	**364.012**
1505194	**KSEM1188R5SSF125**	30,163	1.1875	30,663	1.2072	11.75	8.50	6.30	.18	3.25	1.250	8	1/4-18 NPT	**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.



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

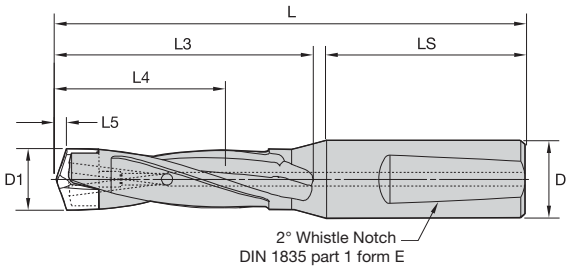
KSEM WN50 Shank • 3 x D • Metric

3 x D

order #	catalog #	D1 mm	D1 in	D1 max mm	D1 max in	L	L3	L4 max	L5	LS	D	SSC	central lock screw
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**
1245999	**KSEM180R3WN20M**	18,000	.7087	18,000	.7086	130	75	54	2,9	50	20	1	**364.010**
1246007	**KSEM190R3WN25M**	19,000	.7480	19,500	.7677	144	83	60	3,0	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**
1246046	**KSEM240R3WN25M**	24,000	.9449	24,000	.9448	161	100	72	3,8	56	25	4	**364.011**
1246071	**KSEM270R3WN32M**	27,000	1.0630	27,500	1.0827	182	117	84	4,2	60	32	6	**364.012**

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 diameters < 16mm, DIN 6535 - HE
for diameters > 16mm, DIN 1835 part 1 form E

Whistle Notch shank D1 ≤ 32mm

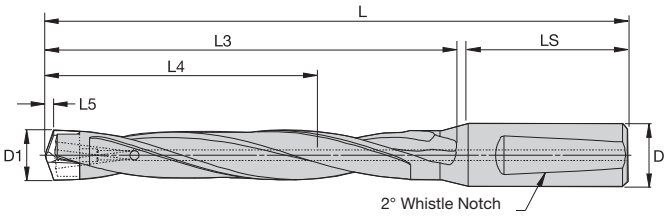
KSEM WN50 Shank • 5 x D • Metric

5 x D

order #	catalog #	D1 mm	D1 in	D1 max mm	D1 max in	L	L3	L4 max	L5	LS	D	SSC	central lock screw
1772747	KSEM125R5WN16M	12,500	.4921	13,000	.5118	139	87	70	2,0	48	16	C	364.017
1772748	KSEM140R5WN16M	14,000	.5512	14,500	.5708	139	87	70	2,2	48	16	B	364.016
1245997	KSEM175R5WN20M	15,875	.6250	18,000	.7086	115	112	115	2,8	51	20	1	364.010
1245983	KSEM160R5WN20M	16,000	.6299	16,500	.6496	154	99	80	2,5	50	20	1	364.010
1245993	KSEM170R5WN20M	17,000	.6693	17,500	.6890	166	111	90	2,7	50	20	1	364.010
1246001	KSEM180R5WN20M	18,000	.7087	18,000	.7086	166	111	90	2,9	50	20	1	364.010
1246008	KSEM190R5WN25M	19,000	.7490	19,999	.7874	184	124	100	3,1	56	25	2	364.010
1246021	KSEM205R5WN25M	20,500	.8071	21,000	.8268	197	136	110	3,3	56	25	3	364.011
1246024	KSEM210R5WN25M	21,000	.8268	21,500	.8465	197	136	110	3,3	56	25	3	364.011
1246032	KSEM220R5WN25M	22,000	.8661	22,000	.8661	197	136	110	3,5	56	25	3	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
1592468	KSEM261R5WN32M	26,010	1.0240	26,500	1.0433	238	173	140	4,0	60	32	6	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

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

Whistle Notch shank D1 ≤ 32mm

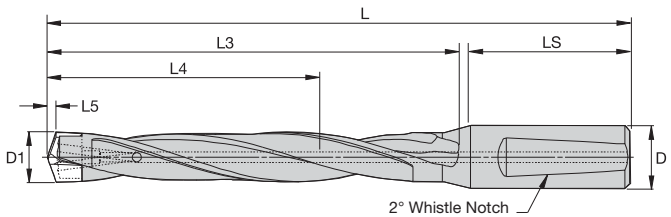
KSEM WN Shank • 7 x D • Metric

7 x D

order #	catalog #	D1 mm	D1 in	D1 max mm	D1 max in	L	L3	L4 max	L5	LS	D	SSC	central lock screw
1797161	**KSEM140R7WN16M**	14,000	.5512	14,500	.5708	167	115	98	2,2	48	16	B	**364.016**
1311193	**KSEM160R7WN20M**	16,000	.6299	16,500	.6496	186	131	112	2,5	50	20	1	**364.010**
1279864	**KSEM190R7WN25M**	19,000	.7480	19,500	.7677	224	163	140	3,0	56	25	2	**364.010**
1279866	**KSEM195R7WN25M**	19,500	.7677	19,999	.7873	224	163	140	3,1	56	25	2	**364.010**
1279868	**KSEM205R7WN25M**	20,500	.8071	21,000	.8268	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**
1279892	**KSEM255R7WN32M**	25,500	1.0039	26,000	1.0236	278	213	182	3,9	60	32	5	**364.012**

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

Whistle Notch shank D1 ≤ 32mm

KSEM WN Shank • 10 x D • Metric

10 x D

order #	catalog #	D1 mm	D1 in	D1 max mm	D1 max in	L	L3	L4 max	L5	LS	D	SSC	central lock screw
1797206	**KSEM125R10WN16M**	12,500	.4921	13,000	.5118	195	143	125	2,0	48	16	C	**364.017**
1797210	**KSEM140R10WN16M**	14,000	.5512	14,500	.5708	210	158	140	2,2	48	16	B	**364.016**
1551831	**KSEM170R10WN20M**	17,000	.6693	17,500	.6890	246	191	170	2,7	50	20	1	**364.010**
1551836	**KSEM190R10WN25M**	19,000	.7480	19,500	.7677	274	213	190	3,0	56	25	2	**364.010**

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 15º.

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 center inserts and modular heads due to better chip flow.
- No precentering 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

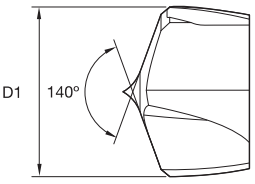
Center Inserts

- KC7315™ grade — TiAlN-based PVD grade for superior performance in steel and stainless steel applications.

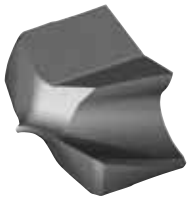
Drill Fix™ Lateral Inserts

- 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.

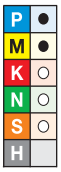
- To ensure 100% system stability, KSEM™ inserts used for KSEM PLUS should not be reground.
- The callout D1 (mm) = PDD. PDD is used in reference to the KSEM PLUS heads.



D1 (mm) = PDD


HPGM

KSEM PLUS Center Inserts



grade KC7315

● first choice
○ alternate choice

order #	catalog #	D1 mm	D1 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.

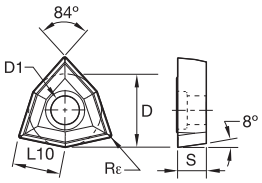
Tolerance KSEMP HPG • KSEM HPCCL • Metric

D1	tolerance h8
12,5–18	+0,000/-0,027
>18–30	+0,000/-0,033
>30–40	+0,000/-0,039

Tolerance KSEMP HPG • KSEM HPCCL • Inch

D1	tolerance h8
.500–.709	+.000/-.0010
>.709–1.181	+.000/-.0013
>1.181–1.575	+.000/-.0015

- Use HP geometry for efficient drilling in normal chipping steel applications, as well as for ductile irons and high-temp alloys.



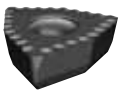
● first choice
○ alternate choice

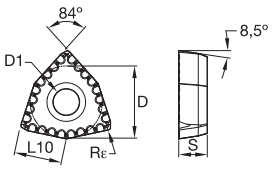
P		●	●
M		○	○
K		●	○
N		○	○
S		○	●
H			

DFT-HP

	L10		D		D1		S		Rε			
catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	KCU25	KCU40
DFT05T308D32HP	5,29	.208	8,00	.315	3,40	.134	3,75	.148	0,80	.031	**5067487**	**5066193**
DFT05T308D33HP	5,29	.208	8,00	.315	3,40	.134	3,75	.148	0,80	.031	**5067488**	**5066195**
DFT06T308D36HP	6,62	.260	10,00	.395	4,40	.173	3,75	.148	0,80	.031	**5067489**	**5066196**
DFT06T308D39HP	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	**5067520**	**5066197**
DFT06T308D44HP	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	**5067522**	**5066198**
DFT070408D45HP	7,94	.313	12,00	.472	4,40	.173	4,75	.187	0,80	.031	**5067523**	**5066199**
DFT070408D50HP	7,94	.313	12,00	.472	4,40	.173	4,75	.187	0,80	.031	**5067524**	**5066220**
DFT090508D56HP	9,92	.391	15,00	.591	5,50	.217	5,25	.207	0,80	.031	**5067526**	**5066221**
DFT090508D63HP	9,92	.391	15,00	.591	5,50	.217	5,25	.207	0,80	.031	**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.





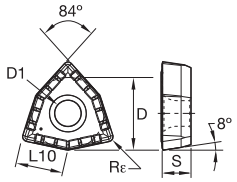
● first choice
○ alternate choice

P		●
M		○
K		
N		○
S		○
H		

DFT • DS

	L10		D		D1		S		Rε		
catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	KCU40
DFT05T308D32DS	5,29	.208	8,00	.315	3,40	.134	3,75	.148	0,80	.031	**6025825**
DFT05T308D33DS	5,29	.208	8,00	.315	3,40	.134	3,75	.148	0,80	.031	**6025826**
DFT06T308D36DS	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	**6025827**
DFT06T308D39DS	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	**6025828**
DFT06T308D44DS	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	**6025829**
DFT070408D45DS	7,94	.313	12,00	.472	4,40	.173	4,75	.187	0,80	.031	**6025830**
DFT070408D50DS	7,94	.313	12,00	.472	4,40	.173	4,75	.187	0,80	.031	**6025891**
DFT090508D56DS	9,92	.391	15,00	.591	5,50	.217	5,25	.207	0,80	.031	**6025892**
DFT090508D63DS	9,92	.391	15,00	.591	5,50	.217	5,25	.207	0,80	.031	**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.



● first choice
○ alternate choice

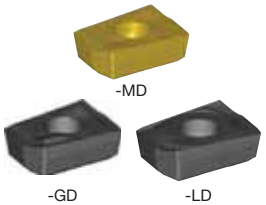
P	●
M	●
K	○
N	○
S	○
H	

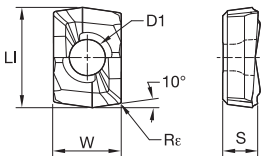
DFT-MD

	L10		D		D1		S		Rε		
catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	KC7140
DFT05T308D32MD	5,29	.208	8,00	.315	3,40	.134	3,75	.148	0,80	.031	**3648430**
DFT05T308D33MD	5,29	.208	8,00	.315	3,40	.134	3,75	.148	0,80	.031	**3669000**
DFT06T308D36MD	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	**3648428**
DFT06T308D39MD	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	**3669001**
DFT06T308D44MD	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	**3669002**
DFT070408D45MD	7,94	.313	12,00	.472	4,40	.173	4,75	.187	0,80	.031	**3648474**
DFT070408D50MD	7,94	.313	12,00	.472	4,40	.173	4,75	.187	0,80	.031	**3669083**
DFT090508D56MD	9,92	.391	15,00	.591	5,50	.217	5,25	.207	0,80	.031	**3648478**
DFT090508D63MD	9,92	.391	15,00	.591	5,50	.217	5,25	.207	0,80	.031	**3669084**

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.





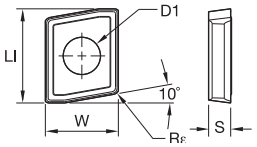
● first choice
○ alternate choice

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

DFR

	LI		W		D1		S		Rε					
catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	KC7140	KC7225	KCU25	KCU40
DFR040304D28LD	10,76	.424	7,26	.286	2,85	.112	3,78	.149	0,40	.016	–	**4054681**	–	–
DFR040304D28GD	10,76	.424	7,26	.286	2,85	.112	3,79	.149	0,40	.016	–	–	**5067486**	**5066192**
DFR040304D28MD	10,76	.424	7,26	.286	2,85	.112	3,79	.149	0,40	.016	**4054680**	–	–	–

- Use HP geometry for efficient drilling in normal chipping steel applications, as well as for ductile irons and high-temp alloys.



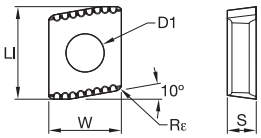
● first choice
○ alternate choice

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

DFC-HP

	LI		W		D1		S		Rε			
catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	KCU25	KCU40
DFC040310D28HP	10,00	.394	7,60	.299	2,85	.112	3,18	.125	1,00	.039	**5118327**	**5118452**
DFC05T312D32HP	12,00	.472	9,40	.370	3,40	.134	3,75	.148	1,20	.047	**5118328**	**5118453**
DFC06T312D36HP	16,00	.630	12,40	.488	4,40	.173	3,75	.148	1,20	.047	**5118329**	**5118454**
DFC070416D45HP	18,00	.709	14,50	.571	4,40	.173	4,75	.187	1,60	.063	**5118450**	**5118455**
DFC090520D56HP	24,00	.945	19,00	.748	5,50	.217	5,25	.207	2,00	.079	**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.



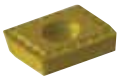
● first choice
○ alternate choice

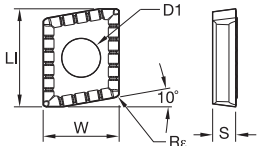
P		●
M		○
K		
N		○
S		○
H		

DFC-DS

	LI		W		D1		S		Rε		
catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	KCU40
DFC040310D28DS	10,00	.394	7,60	.299	2,85	.112	3,18	.125	1,00	.039	**6025895**
DFC05T312D32DS	12,00	.472	9,40	.370	3,40	.134	3,75	.148	1,20	.047	**6025896**
DFC06T312D36DS	16,00	.630	12,40	.488	4,40	.173	3,75	.148	1,20	.047	**6025897**
DFC070416D45DS	18,00	.709	14,50	.571	4,40	.173	4,75	.187	1,60	.063	**6025898**
DFC090520D56DS	24,00	.945	19,00	.748	5,50	.217	5,25	.207	2,00	.079	**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.





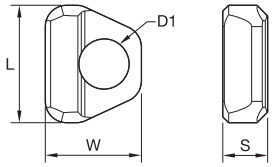
● first choice
○ alternate choice

P		●
M		●
K		○
N		○
S		○
H		

DFC-MD

	LI		W		D1		S		Rε		
catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	KC7140
DFC040310D28MD	10,00	.394	7,60	.299	2,85	.112	3,18	.125	1,00	.039	5118457
DFC05T312D32MD	12,00	.472	9,40	.370	3,40	.134	3,75	.148	1,20	.047	5118458
DFC06T312D36MD	16,00	.630	12,40	.488	4,40	.173	3,75	.148	1,20	.047	5118459
DFC070416D45MD	18,00	.709	14,50	.571	4,40	.173	4,75	.187	1,60	.063	5118460
DFC090520D56MD	24,00	.945	19,00	.748	5,50	.217	5,25	.207	2,00	.079	5118461

- Carbide guide pads for use with KSEM PLUS™ B1 style heads.



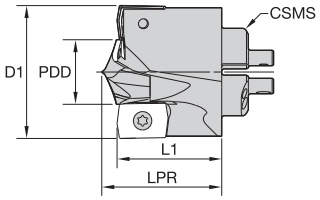
● first choice
○ alternate choice

P		●
M		●
K		●
N		●
S		●
H		

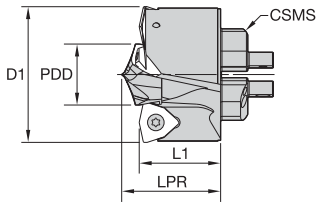
DPA Guiding Pads

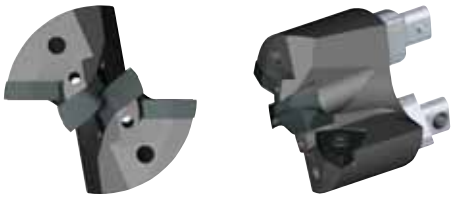
	L		W		D1		S		
catalog number	mm	in	mm	in	mm	in	mm	in	KCU40
DPA07T3D25	8,60	.339	7,00	.276	2,85	.112	3,50	.138	5118324
DPA09T4D32	11,00	.433	9,00	.354	3,40	.134	4,20	.165	5118325
DPA13T5D50	16,00	.630	13,00	.512	4,40	.173	5,20	.205	5118326

- 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.

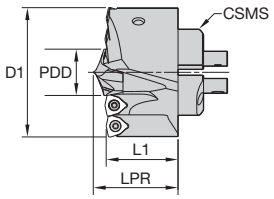


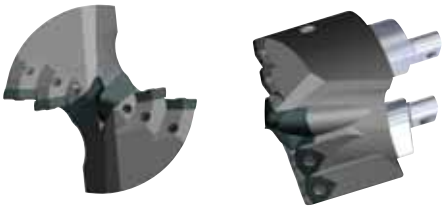
2 x DFR
diameter: 28–<31,75mm





2 x DFT
diameter: 31,75–70,34mm





4 x DFT
diameter: 70,35–93,34mm

KSEM PLUS A1 Heads

order number	ISO catalog number	ANSI catalog number	D1 mm	D1 in	PDD mm	PDD in	LPR mm	LPR in	L1 mm	L1 in	CSMS system size	outboard insert
3742210	**KSEMP3300FDS32A1M**	**KSEMP3300FDS32A1M**	33,00	1.299	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..
3794918	**KSEMP3493FDS32A1M**	**KSEMP1375FDS32A1**	34,93	1.375	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..
3794919	**KSEMP3651FDS36A1M**	**KSEMP1438FDS36A1**	36,53	1.438	14,00	.5512	22,9	.900	20,0	.787	FDS36	DFT06T308D36..
3794920	**KSEMP3810FDS36A1M**	**KSEMP1500FDS36A1**	38,10	1.500	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..
3794921	**KSEMP3970FDS36A1M**	**KSEMP1563FDS36A1**	39,70	1.563	17,00	.6693	23,4	.920	20,0	.787	FDS36	DFT06T308D39..
3794922	**KSEMP4128FDS40A1M**	**KSEMP1625FDS40A1**	41,28	1.625	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..
3794933	**KSEMP4445FDS40A1M**	**KSEMP1750FDS40A1**	44,45	1.750	22,00	.8661	29,5	1.160	25,0	.984	FDS40	DFT06T308D44..
3794404	**KSEMP4600FDS45A1M**	**KSEMP4600FDS45A1M**	46,00	1.811	19,00	.7480	28,9	1.139	25,0	.984	FDS45	DFT070408D45..

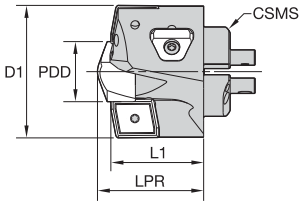
(continued)

(KSEM PLUS A1 Heads — continued)

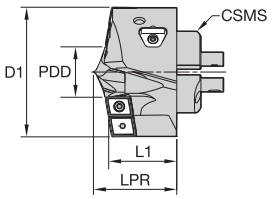
order number	ISO catalog number	ANSI catalog number	D1 mm	D1 in	PDD mm	PDD in	LPR mm	LPR in	L1 mm	L1 in	CSMS system size	outboard insert
3794934	**KSEMP4763FDS45A1M**	**KSEMP1875FDS45A1**	47,63	1.875	21,00	.8268	29,3	1.153	25,0	.984	FDS45	DFT070408D45..
3794935	**KSEMP5080FDS50A1M**	**KSEMP2000FDS50A1**	50,80	2.000	24,00	.9449	35,0	1.379	30,0	1.181	FDS50	DFT070408D50..
3794936	**KSEMP5398FDS50A1M**	**KSEMP2125FDS50A1**	53,98	2.125	27,00	1.0630	35,6	1.399	30,0	1.181	FDS50	DFT070408D50..
3794937	**KSEMP5715FDS56A1M**	**KSEMP2250FDS56A1**	57,15	2.250	21,00	.8268	34,5	1.358	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..
3794416	**KSEMP5900FDS56A1M**	**KSEMP5900FDS56A1M**	59,00	2.323	23,00	.9055	34,8	1.372	30,0	1.181	FDS56	DFT090508D56..
3794938	**KSEMP6033FDS56A1M**	**KSEMP2375FDS56A1**	60,33	2.375	24,00	.9449	35,0	1.379	30,0	1.181	FDS56	DFT090508D56..
3794939	**KSEMP6350FDS63A1M**	**KSEMP2500FDS63A1**	63,50	2.500	28,00	1.1024	41,9	1.650	36,0	1.417	FDS63	DFT090508D63..
3794940	**KSEMP6668FDS63A1M**	**KSEMP2625FDS63A1**	66,68	2.625	31,00	1.2205	42,5	1.671	36,0	1.417	FDS63	DFT090508D63..
3794941	**KSEMP6985FDS63A1M**	**KSEMP2750FDS63A1**	69,85	2.750	34,00	1.3386	43,0	1.692	36,0	1.417	FDS63	DFT090508D63..
5397516	**KSEMP7620FDS71A1M**	**KSEMP3000FDS71A1**	76,20	3.000	31,00	1.2200	47,7	1.876	47,7	1.876	FDS71	DFT06T308D44
5397550	**KSEMP8255FDS80A1M**	**KSEMP3250FDS80A1**	82,55	3.250	34,00	1.3386	53,3	2.098	53,3	2.098	FDS80	DFT070408D50

NOTE: Find the complete KSEM PLUS A1 product overview and assembly pages in the current Kennametal Master Catalog.

- 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



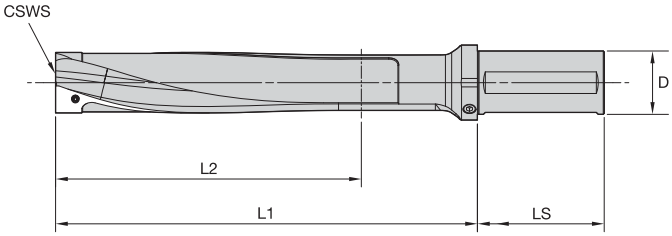
4 x DFC
diameter: 70,35–93,34mm

KSEM PLUS B1 Heads

order number	ISO catalog number	ANSI catalog number	D1 mm	D1 in	PDD mm	PDD in	LPR mm	LPR in	L1 mm	L1 in	CSMS system size	outboard insert
5115737	**KSEMP2858FDS28B1M**	**KSEMP1125FDS28B1**	28,58	1.125	15,00	.5906	28,2	1.110	25,0	.984	FDS28	DFC040310D28
5116014	**KSEMP3175FDS32B1M**	**KSEMP1250FDS32B1**	31,75	1.250	15,00	.5906	28,2	1.111	25,0	.984	FDS32	DFC05T312D32
5116018	**KSEMP3334FDS32B1M**	**KSEMP1313FDS32B1**	33,35	1.313	17,00	.6693	28,6	1.125	25,0	.984	FDS32	DFC05T312D32
5116019	**KSEMP3400FDS32B1M**	**KSEMP3400FDS32B1M**	34,00	1.339	17,00	.6693	28,6	1.125	25,0	.984	FDS32	DFC05T312D32
5116037	**KSEMP3810FDS36B1M**	**KSEMP1500FDS36B1**	38,10	1.500	15,00	.5906	28,2	1.111	25,0	.984	FDS36	DFC06T312D36
5116040	**KSEMP3970FDS36B1M**	**KSEMP1563FDS36B1**	39,70	1.563	17,00	.6693	28,6	1.125	25,0	.984	FDS36	DFC06T312D36
5116043	**KSEMP4128FDS40B1M**	**KSEMP1625FDS40B1**	41,28	1.625	18,00	.7087	34,0	1.337	30,0	1.181	FDS40	DFC06T312D36
5116047	**KSEMP4445FDS40B1M**	**KSEMP1750FDS40B1**	44,45	1.750	22,00	.8661	34,7	1.365	30,0	1.181	FDS40	DFC06T312D36
5116099	**KSEMP4600FDS45B1M**	**KSEMP4600FDS45B1M**	46,00	1.811	19,00	.7480	34,1	1.344	30,0	1.181	FDS45	DFC070416D45
5116111	**KSEMP4763FDS45B1M**	**KSEMP1875FDS45B1**	47,63	1.875	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
5116115	**KSEMP5080FDS50B1M**	**KSEMP2000FDS50B1**	50,80	2.000	24,00	.9449	40,2	1.584	35,0	1.378	FDS50	DFC070416D45
5116124	**KSEMP5715FDS56B1M**	**KSEMP2250FDS56B1**	57,15	2.250	21,00	.8268	39,7	1.563	35,0	1.378	FDS56	DFC090520D56
5116132	**KSEMP6350FDS63B1M**	**KSEMP2500FDS63B1**	63,50	2.500	28,00	1.1024	46,1	1.816	40,0	1.575	FDS63	DFC090520D56
5116140	**KSEMP6985FDS63B1M**	**KSEMP2750FDS63B1**	69,85	2.750	34,00	1.3386	47,2	1.858	40,0	1.575	FDS63	DFC090520D56
5397562	**KSEMP7620FDS71B1M**	**KSEMP3000FDS71B1**	76,20	3.000	31,00	1.2200	48,8	1.919	48,8	1.919	FDS71	DFC06T312D36
5397564	**KSEMP8890FDS80B1M**	**KSEMP3500FDS80B1**	88,90	3.500	40,00	1.5748	55,6	2.190	55,6	2.190	FDS80	DFC070416D45

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 the complete KSEM PLUS B1 product overview and assembly pages in the current Kennametal Master Catalog.

- 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 SSF Shanks • 3 x D • Inch

3 x D

order #	catalog #	CSWS system size	D	L1	L2	LS	clamp screw	pipe plug
3952343	SSF150FDS360652	FDS36	1.5000	6.54	3.82	3.75	193.524	HSFS0125
3952344	SSF200FDS400721	FDS40	2.0000	7.20	4.21	3.75	193.524	HSFS0125
3952345	SSF200FDS450809	FDS45	2.0000	8.11	4.80	4.00	193.525	HSFS0125
3952346	SSF200FDS500896	FDS50	2.0000	8.98	5.32	4.00	193.525	HSFS0125

KSEM PLUS SSF Shanks • 5 x D • Inch

5 x D

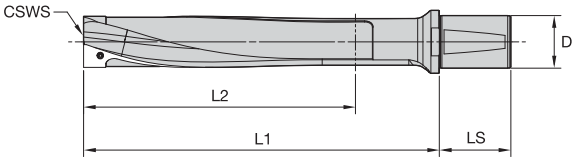
order #	catalog #	CSWS system size	D	L1	L2	LS	clamp screw	pipe plug
4051139	SSF150FDS280746	FDS28	1.5000	7.48	5.24	3.75	193.537	HSFS0125
3794835	SSF150FDS320850	FDS32	1.5000	8.50	6.10	3.75	193.523	HSFS0125
3794838	SSF150FDS360960	FDS36	1.5000	9.61	6.89	3.75	193.524	HSFS0125
3794841	SSF200FDS401066	FDS40	2.0000	10.67	7.68	4.00	193.524	HSFS0125
3794904	SSF200FDS451196	FDS45	2.0000	11.97	8.66	4.00	193.525	HSFS0125
3794907	SSF200FDS501330	FDS50	2.0000	13.31	9.65	4.00	193.525	HSFS0125
3794910	SSF200FDS561507	FDS56	2.0000	15.08	11.02	4.00	193.526	HSFS0125
3794913	SSF200FDS631688	FDS63	2.0000	16.89	12.36	4.00	193.526	HSFS0125

KSEM PLUS SSF Shanks • 8 x D • Inch

8 x D

order #	catalog #	CSWS system size	D	L1	L2	LS	clamp screw	pipe plug
3794836	SSF150FDS321263	FDS32	1.5000	12.64	10.24	3.75	193.523	HSFS0125
3794839	SSF150FDS361421	FDS36	1.5000	14.21	11.50	3.75	193.524	HSFS0125
3794842	SSF200FDS401586	FDS40	2.0000	15.87	12.87	4.00	193.524	HSFS0125

- 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

order #	catalog #	CSWS system size	D	L1	L2	LS	clamp screw
		3 x D					
3872075	WD50FDS40183M	FDS40	50	183	107	68	193.524

KSEM PLUS WD Shanks • 5 x D • Metric

order #	catalog #	CSWS system size	D	L1	L2	LS	clamp screw
		5 x D					
3794430	WD32FDS36244M	FDS36	32	244	175	58	193.524

KSEM PLUS WD Shanks • 8 x D • Metric

order #	catalog #	CSWS system size	D	L1	L2	LS	clamp screw
		8 x D					
3742293	WD32FDS32321M	FDS32	32	321	260	58	193.523
3794431	WD32FDS36361M	FDS36	32	361	292	58	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		
		DFC-/DFT-DS	KCU40	Reduce feed rate by 10% to further improve chip formation in long-chipping steels and low carbon steel.
	I	KSEMP-HPG	KC7315	Must use KSEMP center inserts in P-materials to avoid excessive wear on head & inserts.
M	O	DFR-MD	KC7140	Recommended outboard insert style for working in all M-materials.
		DFC-/DFT-MD		
		DFC-/DFT-DS	KCU40	Reduce feed rate by 20% to further improve chip formation and/or run with lower power consumption.
	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

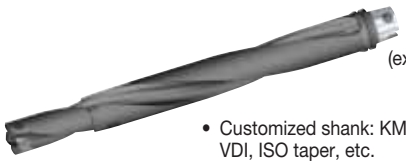
Modular Drill • KSEM PLUS™ • Inch • A1 and B1 Style

Inch											
Material Group		Condition	Cutting Speed — vc Range — SFM			Recommended Feed Rate (fz) by Diameter					
			min	Starting Value	max	Ø	KSEM 14....17 DFR/DFC04... 1.102–1.249	KSEM 15....18 DFT/DFC05... 1.250–1.416	KSEM 13....22 DFT/DFC06... 1.417–1.771	KSEM 18....28 DFT/DFC07... 1.772–2.204	KSEM 20....34 DFT/DFC09... 2.205–4.0295
P	1	S	370	**775**	944	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
		U	290	**532**	698	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
		I	205	**327**	451	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
	2	S	295	**623**	755	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016	0.008–0.018
		U	233	**427**	558	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016	0.008–0.018
		I	164	**262**	361	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016	0.008–0.018
	3	S	295	**591**	755	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016	0.008–0.018
		U	230	**394**	558	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016	0.008–0.018
		I	164	**230**	361	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016	0.008–0.018
	4	S	295	**459**	722	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016	0.008–0.018
		U	230	**361**	525	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016	0.008–0.018
		I	264	**262**	361	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016	0.008–0.018
	5	S	295	**427**	689	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016	0.008–0.018
		U	230	**328**	689	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016	0.008–0.018
		I	164	**230**	492	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016	0.008–0.018
	6	S	230	**295**	591	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016	0.008–0.018
		U	164	**246**	394	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016	0.008–0.018
		I	131	**197**	328	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016	0.008–0.018
M	1	S	197	**361**	443	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
		U	131	**230**	295	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
		I	98	**164**	213	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
	2	S	197	**328**	443	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
		U	131	**197**	295	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
		I	98	**164**	213	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
	3	S	164	**295**	443	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
		U	131	**197**	295	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
		I	82	**131**	213	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
K	1	S	295	**558**	755	IPR	0.007–0.012	0.007–0.012	0.009–0.014	0.009–0.017	0.012–0.019
		U	197	**394**	525	IPR	0.007–0.012	0.007–0.012	0.009–0.014	0.009–0.017	0.012–0.019
		I	131	**230**	295	IPR	0.007–0.012	0.007–0.012	0.009–0.014	0.009–0.017	0.012–0.019
	2	S	295	**525**	722	IPR	0.007–0.012	0.007–0.012	0.009–0.014	0.009–0.017	0.012–0.019
		U	197	**361**	525	IPR	0.007–0.012	0.007–0.012	0.009–0.014	0.009–0.017	0.012–0.019
		I	131	**230**	328	IPR	0.007–0.012	0.007–0.012	0.009–0.014	0.009–0.017	0.012–0.019
	3	S	295	**492**	689	IPR	0.007–0.012	0.007–0.012	0.009–0.014	0.009–0.017	0.012–0.019
		U	197	**328**	492	IPR	0.007–0.012	0.007–0.012	0.009–0.014	0.009–0.017	0.012–0.019
		I	115	**197**	295	IPR	0.007–0.012	0.007–0.012	0.009–0.014	0.009–0.017	0.012–0.019
N	1	S	492	**787**	1181	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
		U	328	**525**	787	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
		I	197	**328**	525	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
	2	S	492	**722**	1181	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
		U	328	**492**	787	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
		I	197	**328**	525	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
	3	S	492	**722**	1181	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
		U	328	**492**	787	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
		I	197	**328**	525	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
	4	S	492	**722**	1181	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
		U	328	**492**	787	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
		I	197	**328**	525	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
	5	S	492	**722**	1181	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
		U	328	**492**	787	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
		I	197	**328**	525	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
	6	S	492	**656**	1181	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
		U	328	**459**	787	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
		I	197	**295**	525	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
	7	S	361	**722**	853	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
		U	230	**459**	558	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
		I	148	**295**	361	IPR	0.005–0.008	0.005–0.008	0.006–0.011	0.006–0.013	0.008–0.016
S	1	S	82	**164**	246	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
		U	66	**131**	197	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
		I	49	**98**	164	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
	2	S	66	**131**	197	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
		U	49	**98**	148	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
		I	39	**82**	115	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
	3	S	66	**131**	197	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
		U	49	**98**	148	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
		I	39	**82**	131	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
	4	S	66	**131**	197	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
		U	49	**98**	148	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014
		I	39	**82**	131	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013	0.008–0.014

Application	Workpiece Shape	A1 Head	B1 Head
Flat Face		✓	✓
Cored Hole		✗	✓
Stacked Plates		✗	✓
Angled Exit (exit only!)		✓ <3°	✓ max 15°
Angled Entrance		✓ <3°	✓ <3°
Cross Holes		✗	✓ max 50% of D1

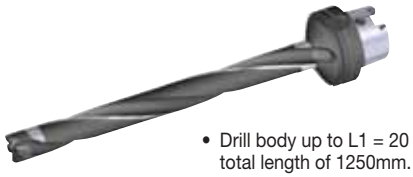
KSEM PLUS Customized Solution Capabilities:

- Intermediate head Ø.
- Custom head to use reground KSEM™ inserts.
- Heads for cross holes Ø = d1.



(example)

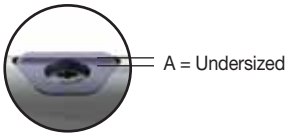
- Customized shank: KM™, HSK, VDI, ISO taper, etc.
- Customized flute helix.
- Step drill.



- Drill body up to L1 = 20 x D and total length of 1250mm.

Mounting DPA Guiding Pads on B1 Heads

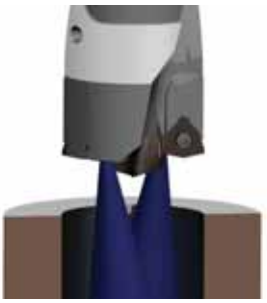
All B1 heads are delivered with preset guiding pads.



Measure radial undersize “A” of pad to cutting edge for both sides and adjust using shim set that comes with each head.

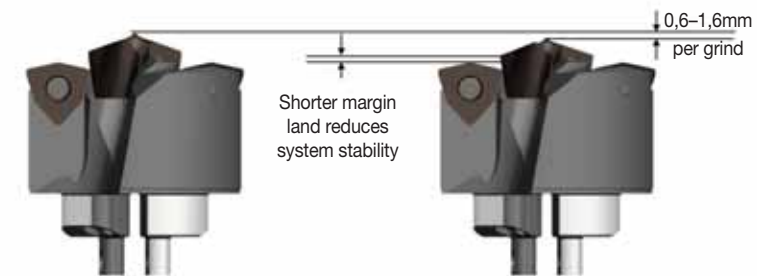
NOTE: For best results with slanted exits and in cross hole drilling, we recommend guiding pads adjustment results in an undersize of A = 30 µm (edge of guiding pads to cutting edges).

Coolant Recommendations



Internal coolant is recommended for optimum chip flow and tool life.

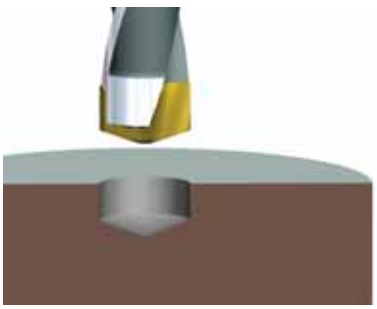
KSEM PLUS Piloting Insert SHOULD NOT Be Reground:



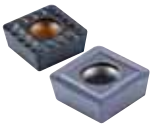
Only new KSEM PLUS inserts will provide consistency and process security on a KSEM PLUS modular drill system. If you want to regrind, refer to our custom solution A1 and B1 heads.

NOTE: Reground KSEM PLUS inserts can be used in KSEM™ drills.

Piloting Instructions:



1. KSEM….PC Pilot drill Ø equal KSEMP Ø PDD
2. Drill 1mm deep from full diameter

	Drill/Insert/Body Series	grade	standard ● first choice ○ alternate choice						hole tolerance	First Choice Range: diameter range D1 mm min–max	First Choice Range: diameter range D1 inch min–max	First Choice Range: drilling depth L/D1
			P	M	K	N	S	H				
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	12,5–18,5	.4921–.7283	2 x D, 3 x D selected diameters only
		SSF (inch)								12,7–25,4	.5000–1.000	2 x D 3 x D
	DFR Inserts	**DFR LD**	**KC7140**	●	●	○	○	○				
		DFR GD	**KCU25**	●	○	●						
		DFR GD	**KCU40**	●	○	○	○	●	○	12,5–25,4	.4921–1.0000	—
		DFR MD		●	●	○	○	○				
		DFR LD		○	●	●	●	●	○			
DFSP™ Indexable Drill — Most econamically using square inserts for a wide range of diameters												
	DFSP™ Indexable Drill Body	**WD** (metric)							IT9–IT11	18,0–50	.7100–1.9690	2 x D, 3 x D selected diameters only
		SSF (inch)								14,3–55,0	.5630–2.1650	2 x D 3 x D
	**DFSP** Outboard Inserts	**SP X (R)HP**	**KC7140**	●	●	○	○	○				
		SP X MD		●	●	○	○	○				
		SP X (R)HP	**KCU40**	●	●	●	○	●				
		SP X MD		●	●	●	○	●				
		SP X FP		●	●	●	○	●		14,0–55,0	.5630–2.165	—
		SP X LP		●	○		○	○				
		SP X (R)HP	**KCU25**	●	○	●	○	○				
		SP X MD		●	○	●	○	○				
		SP X FP		●	○	●	○	○				
	DFT™ Inboard Inserts for DFSP	**DFT HP**	**KC7140**	●	●	○	○	○		14,0–55,0	.5630–2.1650	—
		DFT MD		●	●	○	○	○				
		DFT DS	**KCU40**	●	○		○	○				
		DFT HP	**KMF**				●			18,0–55,0	.7100–2.1650	

*Not all intermediate size 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 centers to reach tolerance optimization.
- Same insert size is used in each pocket, reducing inventory costs.

Versatility

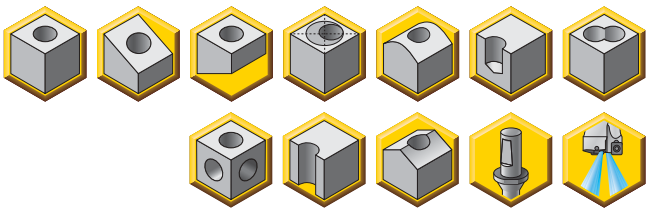
- Diameter range covering 12,5–24mm (.500–1.000").
- 2 x D and 3 x D ratios as standard.
- Multiple insert grades and geometries available.
- Use where feed rates are the limiting factor.
- Apply in straight holes, inclined entries and exits, interrupted cuts, and rough or welded entry surfaces.
- Eccentric chuck available as standard.

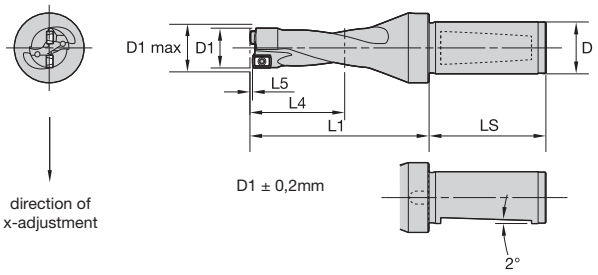
Low cutting forces provide long tool body life and high stability at the smallest diameters.

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.





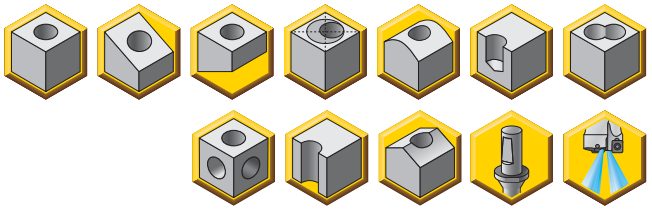
WD Shank • 2 x D • Metric

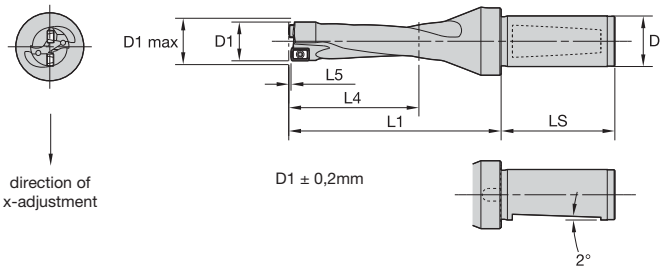
D				D1							
20		32									
order #	catalog #	order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	gage insert
1608366	**DFR135R2WD20M**		**–**	13,50	.532	14,50	49,4	27,0	0,5	45	DFR0202..
1608367	**DFR140R2WD20M**		**–**	14,00	.551	15,00	50,4	28,0	0,5	45	DFR0202..
	–	**1810337**	**DFR185R2WD32M**	18,50	.728	19,50	66,4	37,0	0,6	58	DFR0302..

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

- Drill shipped with insert screws and Torx wrench.





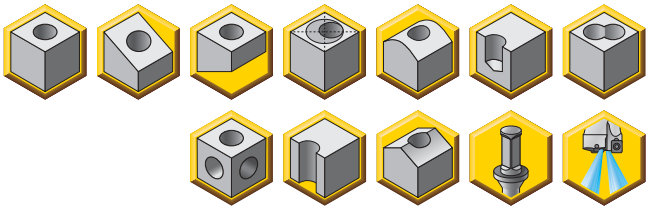
WD Shank • 3 x D • Metric

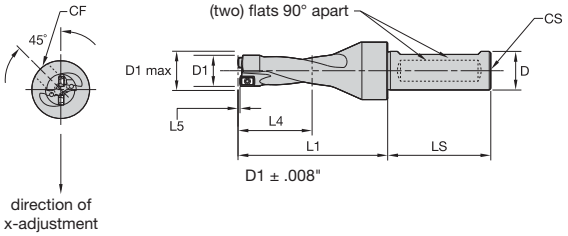
D		D1							
20									
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	gage insert
1608392	DFR125R3WD20M	12,50	.492	13,50	59,9	37,5	0,5	45	DFR0202..
1608399	DFR155R3WD20M	15,50	.610	16,50	70,9	46,5	0,5	45	DFR0202..

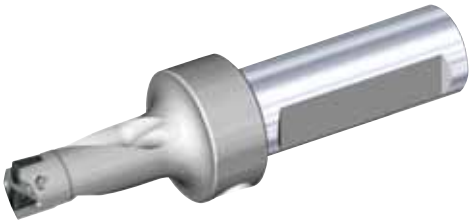
WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

gage insert	insert screw	Torx wrench	Torx size
DFR0202..	**193.281**	**170.027**	6

- Drill shipped with insert screws, side pipe plug, and Torx wrench.







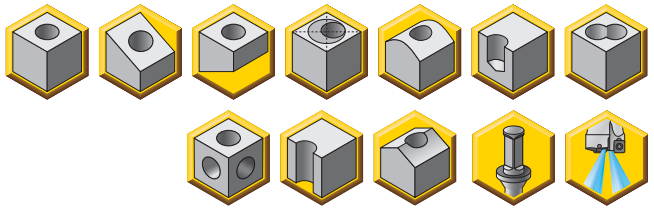
Flange Shank • 2 x D • Inch

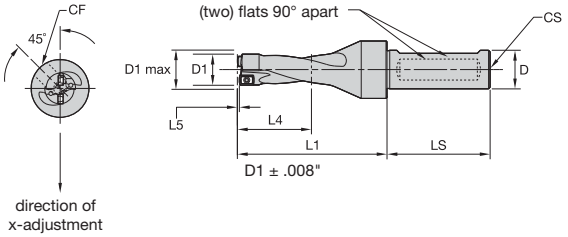
D		D1									
0.750											
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CF	CS	gage insert
2036655	DFR0500R2SSF075	12,70	.500	.578	1.95	1.00	.02	2.00	1/8-27 NPT	1/8-27 NPT	DFR0202..
2036656	DFR0563R2SSF075	14,30	.563	.602	2.08	1.13	.02	2.00	1/8-27 NPT	1/8-27 NPT	DFR0202..
2036657	DFR0625R2SSF075	15,88	.625	.664	2.20	1.25	.02	2.00	1/8-27 NPT	1/8-27 NPT	DFR0202..
2036658	DFR0688R2SSF075	17,48	.688	.727	2.33	1.38	.02	2.00	1/8-27 NPT	1/8-27 NPT	DFR0302..

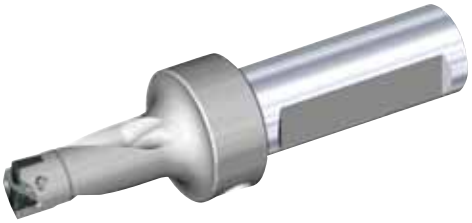
WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

gage insert	insert screw	Torx wrench	Torx size	pipe plug
DFR0202..	**193.281**	**170.027**	6	**HSFS0125**
DFR0302..	**192.416**	**170.023**	7	**HSFS0125**
DFR0403..	**192.432**	**170.028**	8	**HSFS0125**

- Drill shipped with insert screws, side pipe plug, and Torx wrench.







Flange Shank • 2 x D • Inch

D 1.000		D1									gage insert
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CF	CS	
2036659	DFR0750R2SSF100	19,05	.750	.789	2.52	1.50	.02	3.00	1/8-27 NPT	1/4-18 NPT	DFR0302..
2036660	DFR0813R2SSF100	20,65	.813	.852	2.65	1.63	.03	3.00	1/8-27 NPT	1/4-18 NPT	DFR0403..
2036661	DFR0875R2SSF100	22,23	.875	.914	2.87	1.75	.03	3.00	1/8-27 NPT	1/4-18 NPT	DFR0403..
2036662	DFR0938R2SSF100	23,83	.938	.977	2.99	1.88	.03	3.00	1/8-27 NPT	1/4-18 NPT	DFR0403..
2036663	DFR1000R2SSF100	25,40	1.000	1.039	3.12	2.00	.03	3.00	1/8-27 NPT	1/4-18 NPT	DFR0403..

WARNING
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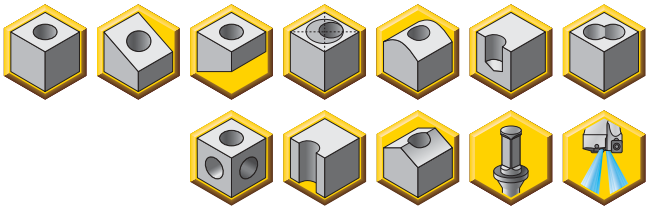
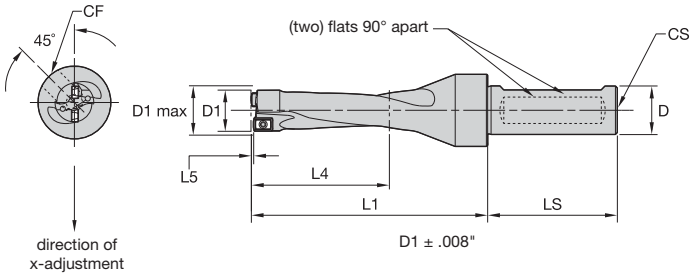
gage insert	insert screw	Torx wrench	Torx size	pipe plug
DFR0302..	**192.416**	**170.023**	7	**HSFS0125**
DFR0403..	**192.432**	**170.028**	8	**HSFS0125**

- Drill shipped with insert screws, side pipe plug, and Torx wrench.





Flange Shank • 3 x D • Inch

D 0.750		D1									
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CF	CS	gage insert
1715069	DFR0500R3SSF075	12,70	.500	.539	2.44	1.59	.02	2.00	1/8-27 NPT	1/8-27 NPT	DFR0202..
1715070	DFR0531R3SSF075	13,49	.531	.570	2.50	1.69	.02	2.00	1/8-27 NPT	1/8-27 NPT	DFR0202..
1715091	DFR0563R3SSF075	14,30	.563	.602	2.64	1.69	.02	2.00	1/8-27 NPT	1/8-27 NPT	DFR0202..
1715092	DFR0594R3SSF075	15,09	.594	.633	2.70	1.78	.02	2.00	1/8-27 NPT	1/8-27 NPT	DFR0202..
1715093	DFR0625R3SSF075	15,88	.625	.664	2.83	1.88	.02	2.00	1/8-27 NPT	1/8-27 NPT	DFR0202..
2036592	DFR0656R3SSF075	16,66	.656	.695	2.92	1.97	.02	2.00	1/8-27 NPT	1/8-27 NPT	DFR0302..
2036643	DFR0688R3SSF075	17,48	.688	.727	3.02	2.06	.02	2.00	1/8-27 NPT	1/8-27 NPT	DFR0302..
2036644	DFR0703R3SSF075	17,86	.703	.742	3.13	2.11	.02	2.00	1/8-27 NPT	1/8-27 NPT	DFR0302..
2036645	DFR0734R3SSF075	18,64	.734	.773	3.22	2.20	.02	2.00	1/8-27 NPT	1/8-27 NPT	DFR0302..
2036670	DFR0750R3SSF075	19,05	.750	.789	3.27	2.25	.02	2.00	1/8-27 NPT	1/8-27 NPT	DFR0302..
2036671	DFR0781R3SSF075	19,84	.781	.820	3.36	2.34	.02	2.00	1/8-27 NPT	1/8-27 NPT	DFR0302..
2036672	DFR0813R3SSF075	20,65	.813	.852	3.46	2.44	.03	2.00	1/8-27 NPT	1/8-27 NPT	DFR0403..
2036673	DFR0844R3SSF075	21,44	.844	.883	3.65	2.53	.03	2.00	1/8-27 NPT	1/8-27 NPT	DFR0403..
2036674	DFR0875R3SSF075	22,23	.875	.914	3.74	2.63	.03	2.00	1/8-27 NPT	1/8-27 NPT	DFR0403..

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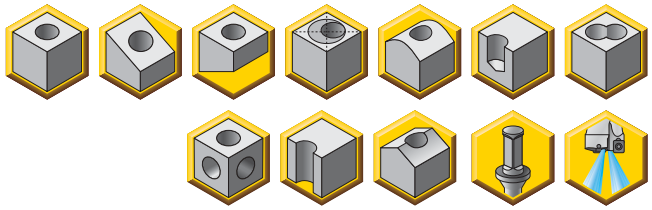
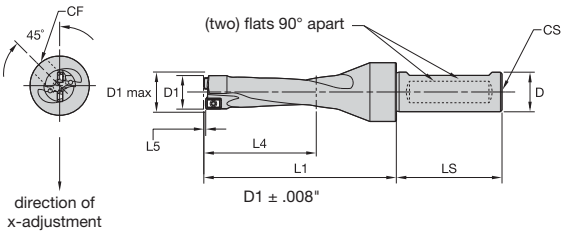
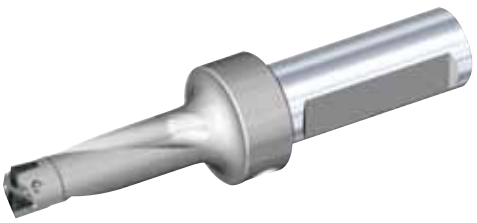
gage insert	insert screw	Torx wrench	Torx size	pipe plug
DFR0202..	**193.281**	**170.027**	6	**HSFS0125**
DFR0302..	**192.416**	**170.023**	7	**HSFS0125**
DFR0403..	**192.432**	**170.028**	8	**HSFS0125**

- Drill shipped with insert screws, side pipe plug, and Torx wrench.







Flange Shank • 3 x D • Inch

D 1.000		D1									
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CF	CS	gage insert
2036664	DFR0625R3SSF100	15,88	.625	.664	2.83	1.88	.02	3.00	1/8-27 NPT	1/4-18 NPT	DFR0202..
2036665	DFR0656R3SSF100	16,66	.656	.695	2.92	1.97	.02	3.00	1/8-27 NPT	1/4-18 NPT	DFR0302..
2036666	DFR0688R3SSF100	17,48	.688	.727	3.02	2.06	.02	3.00	1/8-27 NPT	1/4-18 NPT	DFR0302..
2036667	DFR0703R3SSF100	17,86	.703	.742	3.13	2.11	.02	3.00	1/8-27 NPT	1/4-18 NPT	DFR0302..
2036668	DFR0734R3SSF100	18,64	.734	.773	3.22	2.20	.02	3.00	1/8-27 NPT	1/4-18 NPT	DFR0302..
2036646	DFR0750R3SSF100	19,05	.750	.789	3.27	2.25	.02	3.00	1/8-27 NPT	1/4-18 NPT	DFR0302..
2036695	DFR0781R3SSF100	19,84	.781	.820	3.36	2.34	.02	3.00	1/8-27 NPT	1/4-18 NPT	DFR0302..
2036647	DFR0813R3SSF100	20,65	.813	.852	3.46	2.44	.03	3.00	1/8-27 NPT	1/4-18 NPT	DFR0403..
2036648	DFR0844R3SSF100	21,44	.844	.883	3.65	2.53	.03	3.00	1/8-27 NPT	1/4-18 NPT	DFR0403..
2036649	DFR0875R3SSF100	22,23	.875	.914	3.74	2.63	.03	3.00	1/8-27 NPT	1/4-18 NPT	DFR0403..
2036650	DFR0906R3SSF100	23,01	.906	.945	3.83	2.72	.03	3.00	1/8-27 NPT	1/4-18 NPT	DFR0403..
2036651	DFR0938R3SSF100	23,83	.938	.977	3.93	2.81	.03	3.00	1/8-27 NPT	1/4-18 NPT	DFR0403..
2036652	DFR0969R3SSF100	24,61	.969	1.008	4.02	2.91	.03	3.00	1/8-27 NPT	1/4-18 NPT	DFR0403..
2036653	DFR0984R3SSF100	24,99	.984	1.023	4.07	2.95	.03	3.00	1/8-27 NPT	1/4-18 NPT	DFR0403..
2036654	DFR1000R3SSF100	25,40	1.000	1.039	4.12	3.00	.03	3.00	1/8-27 NPT	1/4-18 NPT	DFR0403..

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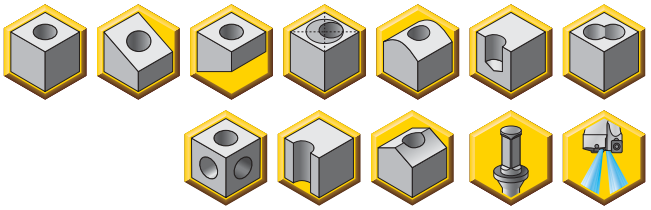
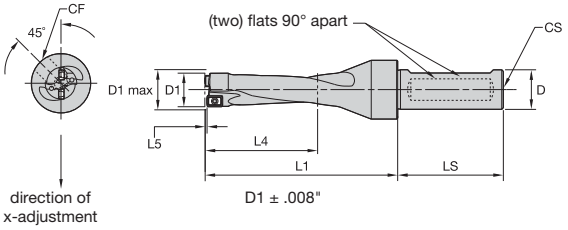
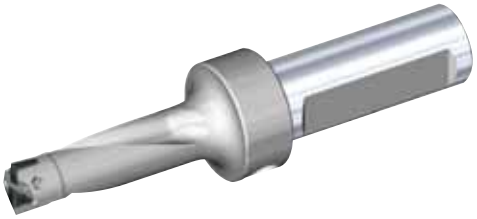
gage insert	insert screw	Torx wrench	Torx size	pipe plug
DFR0202..	**193.281**	**170.027**	6	**HSFS0125**
DFR0302..	**192.416**	**170.023**	7	**HSFS0125**
DFR0403..	**192.432**	**170.028**	8	**HSFS0125**

- Drill shipped with insert screws, side pipe plug, and Torx wrench.







Flange Shank • 3 x D • Inch

D		D1									
1.250											
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CF	CS	gage insert
2036675	**DFR1000R3SSF125**	25,40	1.000	1.039	4.12	3.00	.03	3.25	1/8-27 NPT	1/4-18 NPT	DFR0403..

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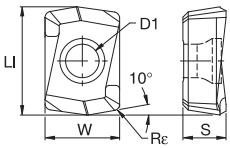
gage insert	insert screw	Torx wrench	Torx size	pipe plug
DFR0202..	**193.281**	**170.027**	6	**HSFS0125**
DFR0302..	**192.416**	**170.023**	7	**HSFS0125**
DFR0403..	**192.432**	**170.028**	8	**HSFS0125**

- General purpose chipbreaker geometry preferred on ductile and normal chipping materials.
- Preferred on outboard position.



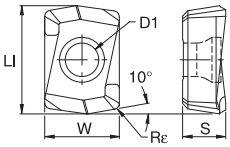
● first choice
○ alternate choice

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

DFR-GD

	LI		W		D1		S		Rε			
catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	KCU25	KCU40
DFR020204GD	7,12	.280	4,90	.193	2,30	.091	2,79	.110	0,40	.016	**5066798**	**5065554**
DFR030204GD	8,71	.343	6,00	.236	2,50	.098	2,88	.113	0,40	.016	**5067312**	**5065558**
DFR040304GD	10,76	.424	7,38	.291	2,85	.112	3,79	.149	0,40	.016	**5067314**	**5065661**

- Positive chipbreaker geometry preferred for unstable cutting on longer chipping materials at high feed rates.



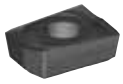
● first choice
○ alternate choice

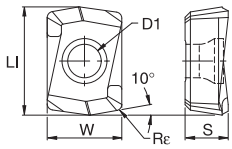
P		●
M		●
K		○
N		○
S		●
H		

DFR-MD

	LI		W		D1		S		Rε		
catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	KCU40
DFR020204MD	7,12	.280	4,90	.193	2,30	.091	2,79	.110	0,40	.016	**5065556**
DFR030204MD	8,71	.343	6,00	.236	2,50	.098	2,88	.113	0,40	.016	**5065559**
DFR040304MD	10,76	.424	7,38	.291	2,85	.112	3,79	.149	0,40	.016	**5065662**

- High positive chipbreaker geometry preferred on ductile and normal chipping materials at medium feed rates.
- Preferred on inboard position.





DFR-LD

● first choice
○ alternate choice

P	○	●
M	●	●
K	●	○
N	●	○
S	●	○
H	○	

	LI		W		D1		S		Rε			
catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	KCU40	KC7140
DFR020204LD	7,12	.280	4,90	.193	2,30	.091	2,79	.110	0,40	.016	**5065552**	**1730321**
DFR030204LD	8,71	.343	6,00	.236	2,50	.098	2,86	.113	0,40	.016	**5065557**	**5533632**
DFR040304LD	10,76	.424	7,38	.291	2,85	.112	3,76	.148	0,40	.016	**5065660**	**5533633**

Drill Fix™ DFR™ • Metric

Metric												
Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			Recommended Feed Rate (fz) by Diameter			
						min	Starting Value	max	Ø	DFR02... 12,50–16,00mm	DFR03... 16,50–20,00mm	DFR04... 20,50–24,00mm
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							

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Pocket seat: I = Inboard insert;
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Drill Fix™ DFR™ • Metric

Metric												
Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			Recommended Feed Rate (fz) by Diameter			
						min	Starting Value	max	Ø	DFR02... 12,50–16,00mm	DFR03... 16,50–20,00mm	DFR04... 20,50–24,00mm
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							
		I	O	GD	KCU40	80	**100**	125	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
			I	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							
		I	O	GD	KCU40	80	**100**	120	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
			I	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							
		I	O	GD	KCU40	80	**100**	120	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							
		I	O	LD	KCU40	200	**300**	400	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
			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							
		I	O	LD	KCU40	175	**250**	325	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	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							
		I	O	LD	KCU40	150	**250**	350	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							
		I	O	LD	KCU40	200	**300**	400	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							
		I	O	LD	KCU40	200	**300**	400	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 Range — m/min			Recommended Feed Rate (fz) by Diameter			
						min	Starting Value	max	Ø	DFR02... 12,50–16,00mm	DFR03... 16,50–20,00mm	DFR04... 20,50–24,00mm
S	1	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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Drill Fix™ DFR™ • Inch

Inch												
Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — SFM			Recommended Feed Rate (fz) by Diameter			
						min	Starting Value	max	Ø	DFR02... .500–.625"	DFR03... .688–.750"	DFR04... .813–1.00"
P	1	S	O	MD	KCU25	1017	**1066**	1181	SFM	.004–.006	.004–.007	.006–.010
			I	MD	KC7140							
		U	O	MD	KCU40	656	**705**	754	SFM	.004–.006	.004–.007	.006–.010
			I	MD	KC7140							
		I	O	MD	KC7140	426	**443**	492	SFM	.004–.006	.004–.007	.006–.010
			I	MD	KC7140							
	2	S	O	GD	KCPK10	1017	**1066**	1181	SFM	.004–.006	.004–.007	.006–.010
			I	LD	KC7140							
		U	O	GD	KCU40	656	**705**	754	SFM	.004–.006	.004–.007	.006–.010
			I	LD	KC7140							
		I	O	MD	KC7140	426	**443**	492	SFM	.004–.006	.004–.007	.006–.010
			I	LD	KC7140							
	3	S	O	GD	KCPK10	853	**935**	1050	SFM	.004–.006	.004–.007	.006–.010
			I	LD	KC7140							
		U	O	GD	KCU40	590	**640**	722	SFM	.004–.006	.004–.007	.006–.010
			I	LD	KC7140							
		I	O	GD	KC7140	361	**394**	459	SFM	.004–.006	.004–.007	.006–.010
			I	LD	KC7140							
	4	S	O	GD	KCU25	722	**820**	984	SFM	.004–.006	.004–.007	.006–.010
			I	LD	KC7140							
		U	O	GD	KCU40	492	**590**	722	SFM	.004–.006	.004–.007	.006–.010
			I	LD	KC7140							
		I	O	GD	KC7140	295	**361**	459	SFM	.004–.006	.004–.007	.006–.010
			I	LD	KC7140							
	5	S	O	GD	KCU25	590	**656**	722	SFM	.003–.005	.004–.006	.004–.007
			I	LD	KC7140							
		U	O	GD	KCU40	394	**443**	492	SFM	.003–.005	.004–.006	.004–.007
			I	LD	KC7140							
		I	O	GD	KC7140	230	**279**	328	SFM	.003–.005	.004–.006	.004–.007
			I	LD	KC7140							
	6	S	O	GD	KCU25	590	**656**	722	SFM	.004–.006	.004–.007	.006–.010
			I	LD	KC7140							
		U	O	GD	KCU40	394	**443**	492	SFM	.004–.006	.004–.007	.006–.010
			I	LD	KC7140							
		I	O	GD	KC7140	230	**279**	328	SFM	.004–.006	.004–.007	.006–.010
			I	LD	KC7140							
M	1	S	O	MD	KC7140	492	**623**	754	SFM	.003–.005	.003–.006	.004–.007
			I	MD	KC7140							
		U	O	MD	KC7140	328	**426**	525	SFM	.003–.005	.003–.006	.004–.007
			I	MD	KC7140							
		I	O	MD	KC7140	197	**262**	328	SFM	.003–.005	.003–.006	.004–.007
			I	MD	KC7140							
	2	S	O	MD	KC7140	492	**590**	689	SFM	.003–.005	.003–.006	.004–.007
			I	MD	KC7140							
		U	O	MD	KC7140	328	**426**	525	SFM	.003–.005	.003–.006	.004–.007
			I	MD	KC7140							
		I	O	MD	KC7140	197	**262**	328	SFM	.003–.005	.003–.006	.004–.007
			I	MD	KC7140							
	3	S	O	MD	KC7140	328	**426**	525	SFM	.003–.005	.003–.006	.004–.007
			I	MD	KC7140							
		U	O	MD	KC7140	262	**361**	459	SFM	.003–.005	.003–.006	.004–.007
			I	MD	KC7140							
		I	O	MD	KC7140	164	**230**	295	SFM	.003–.005	.003–.006	.004–.007
			I	MD	KC7140							

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Drill Fix™ DFR™ • Inch

Inch												
Material Group		Pocket Seat	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — SFM			Recommended Feed Rate (fz) by Diameter			
						min	Starting Value	max	Ø	DFR02... .500–.625"	DFR03... .688–.750"	DFR04... .813–1.00"
K	1	S	O	GD	KCPK10	656	**787**	984	SFM	.004–.007	.005–.008	.006–.009
			I	LD	KCU40							
		U	O	GD	KCU25	394	**508**	656	SFM	.004–.007	.005–.008	.006–.009
			I	LD	KC7140							
		I	O	GD	KCU40	262	**328**	410	SFM	.004–.007	.005–.008	.005–.009
			I	LD	KC7140							
	2	S	O	GD	KCPK10	590	**722**	853	SFM	.004–.007	.005–.008	.006–.009
			I	LD	KCU40							
		U	O	GD	KCU25	361	**459**	558	SFM	.004–.007	.005–.008	.005–.009
			I	LD	KC7140							
		I	O	GD	KCU40	262	**328**	394	SFM	.004–.007	.005–.008	.006–.009
			I	LD	KC7140							
	3	S	O	GD	KCPK10	590	**722**	853	SFM	.004–.007	.005–.008	.005–.009
			I	LD	KCU40							
		U	O	GD	KCU25	361	**459**	558	SFM	.004–.007	.005–.008	.006–.009
			I	LD	KC7140							
		I	O	GD	KCU40	262	**328**	394	SFM	.004–.007	.005–.008	.005–.009
			I	LD	KC7140							
N	1	S	O	ST	KD1425	1312	**1968**	2624	SFM	.003–.004	.004–.006	.005–.006
			I	ST	KD1425							
		U	O	LD	KCU40	984	**1312**	1640	SFM	.003–.004	.004–.006	.005–.006
			I	LD	KCU40							
		I	O	LD	KCU40	656	**984**	1312	SFM	.003–.004	.004–.006	.005–.006
			I	LD	KCU40							
	2	S	O	ST	KD1425	1230	**1804**	2542	SFM	.003–.004	.004–.006	.005–.006
			I	ST	KD1425							
		U	O	LD	KCU40	820	**1148**	1476	SFM	.003–.004	.004–.006	.005–.006
			I	LD	KCU40							
		I	O	LD	KCU40	574	**820**	1066	SFM	.003–.004	.004–.006	.005–.006
			I	LD	KCU40							
	3	S	O	ST	KD1425	1148	**1640**	2132	SFM	.003–.004	.004–.006	.005–.006
			I	ST	KD1425							
		U	O	LD	KCU40	820	**1148**	1476	SFM	.003–.004	.004–.006	.005–.006
			I	LD	KCU40							
		I	O	LD	KCU40	492	**820**	1148	SFM	.003–.004	.004–.006	.005–.006
			I	LD	KCU40							
	4	S	O	ST	KD1425	1312	**1968**	2624	SFM	.003–.004	.004–.006	.005–.006
			I	ST	KD1425							
		U	O	LD	KCU40	820	**1148**	1486	SFM	.003–.004	.004–.006	.005–.006
			I	LD	KCU40							
		I	O	LD	KCU40	656	**984**	1312	SFM	.003–.004	.004–.006	.005–.006
			I	LD	KCU40							
	5	S	O	HP	KD1425	1312	**1968**	2624	SFM	.003–.004	.004–.006	.005–.006
			I	HP	KD1425							
		U	O	HP	KCU40	820	**1148**	1476	SFM	.003–.004	.004–.006	.005–.006
			I	HP	KCU40							
		I	O	HP	KCU40	656	**984**	1312	SFM	.003–.004	.004–.006	.005–.006
			I	HP	KCU40							
	6	S	O	ST	KD1425	1312	**1968**	2624	SFM	.003–.004	.004–.006	.005–.006
			I	ST	KD1425							
		U	O	GD	KCU40	820	**1148**	1476	SFM	.003–.004	.004–.006	.005–.006
			I	GD	KCU40							
		I	O	GD	KMF	656	**984**	1312	SFM	.003–.004	.004–.006	.005–.006
			I	GD	KMF							

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Drill Fix™ DFR™ • Inch

Inch												
Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — SFM			Recommended Feed Rate (fz) by Diameter			
						min	Starting Value	max	Ø	DFR02... .500–.625"	DFR03... .688–.750"	DFR04... .813–1.00"
S	1	S	O	GD	KCU40	197	**230**	246	SFM	.002–.002	.002–.003	.002–.004
			I	LD	KCU40							
		U	O	GD	KCU40	131	**164**	197	SFM	.002–.002	.002–.003	.002–.004
			I	LD	KC7140							
		I	O	MD	KC7140	82	**98**	131	SFM	.002–.002	.002–.003	.002–.004
			I	MD	KC7140							
	2	S	O	GD	KCU40	164	**197**	230	SFM	.002–.002	.002–.003	.002–.004
			I	LD	KCU40							
		U	O	GD	KCU40	98	**131**	164	SFM	.002–.002	.002–.003	.002–.004
			I	LD	KC7140							
		I	O	MD	KC7140	82	**98**	131	SFM	.002–.002	.002–.003	.002–.004
			I	MD	KC7140							
	3	S	O	GD	KCU40	230	**262**	295	SFM	.002–.004	.002–.003	.002–.004
			I	LD	KCU40							
		U	O	GD	KCU40	164	**197**	230	SFM	.002–.003	.002–.004	.002–.004
			I	LD	KC7140							
		I	O	MD	KC7140	98	**131**	164	SFM	.002–.003	.002–.004	.002–.004
			I	MD	KC7140							
	4	S	O	GD	KCU40	230	**262**	295	SFM	.002–.003	.002–.004	.002–.004
			I	LD	KCU40							
		U	O	GD	KCU40	164	**197**	230	SFM	.002–.003	.002–.004	.002–.004
			I	LD	KC7140							
		I	O	MD	KC7140	98	**131**	164	SFM	.002–.003	.002–.004	.002–.004
			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 Catalog for the complete offering.

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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

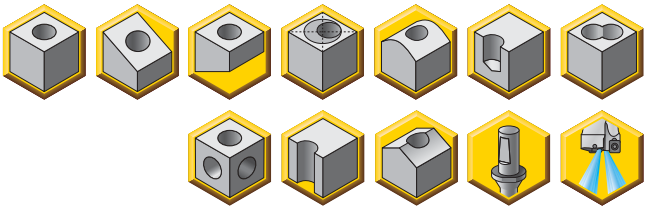
- Use where speed and economy are prime considerations.
- Use DFSP drills in straight holes, inclined entries and exits, interrupted cuts, and rough or welded entry surfaces.
- Use X-offset on turning machines to adjust the drill diameter and eliminate the need for specials in many applications, and 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.

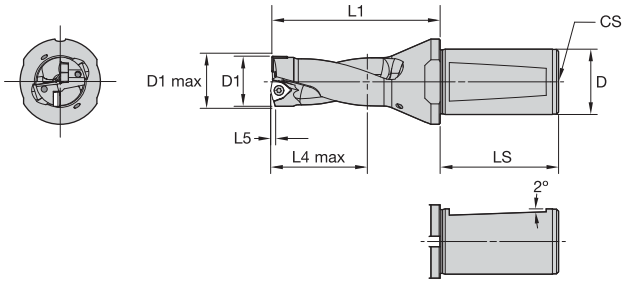
Boost your productivity even further with the latest Beyond™ insert grades.

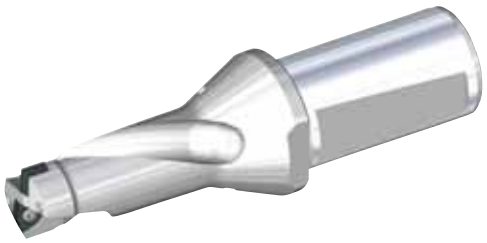
Reliability

- 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 centering capabilities of the trigon inboard insert.
- Drill shipped with insert screws and Torx wrench.







WD Shank • 2 x D • Metric

D		D1									
32											
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CS	gage insert outside	gage insert inside
5689550	**DFSP180R2WD32M**	18,00	.710	19,00	65,0	36,0	0,5	58	—	SPGX0603..	DFT0303..
5689555	**DFSP210R2WD32M**	21,00	.830	22,00	74,0	42,0	0,7	58	—	SPGX0603..	DFT0303..
5692320	**DFSP250R2WD32M**	25,00	.984	26,00	83,0	50,0	0,7	58	R1/4	SPGX0703..	DFT05T3..
5692323	**DFSP270R2WD32M**	27,00	1.063	28,00	89,0	54,0	0,8	58	R1/4	SPPX09T3..	DFT05T3..
5692325	**DFSP290R2WD32M**	29,00	1.142	30,00	94,0	58,0	0,9	58	R1/4	SPPX09T3..	DFT05T3..
5692327	**DFSP310R2WD32M**	31,00	1.221	32,00	100,0	62,0	0,9	58	R1/4	SPPX09T3..	DFT05T3..

NOTE for D1 max: Diameter can be adjusted. It is highly recommended to not adjust the diameter more than +.039" (+1mm).

Spare Parts

diameter range	gage insert inside	inboard insert screw	tightening torque Nm	tightening torque ft. lbs	gage insert outside	outboard insert screw	tightening torque Nm	tightening torque ft. lbs	Torx driver	Torx size
17.50–21.00	DFT0303..	**MS1152**	0,9	.66	SPGX0603..	**MS1152**	0,9	.66	**170.023**	T7
22.00–25.00	DFT05T3..	**193.491**	2,1	1.55	SPGX0703..	**192.432**	1,3	.96	**170.028**	T8
26.00–32.00	DFT05T3..	**191.924**	2,1	1.55	SPPX09T3..	**191.924**	2,1	1.55	**170.024**	T9

NOTE: To ensure proper clamping, two different screws for DFT™ inserts with different threads for diameter ranges .875–1.000" (22–25,5mm) and 1.750–1.875" (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.

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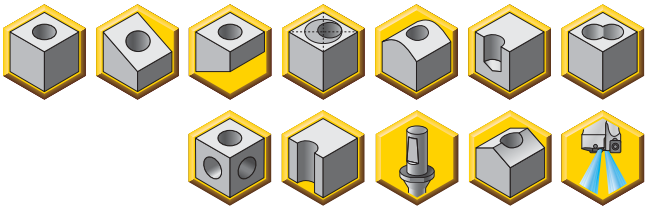
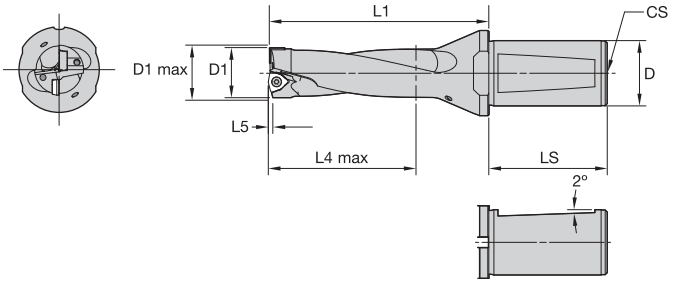
- Drill shipped with insert screws and Torx wrench.





WD Shank • 3 x D • Metric

D				D1									
32		40											
order #	catalog #	order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CS	gage insert outside	gage insert inside
5691867	**DFSP290R3WD32M**		–	29,00	1.142	30,00	123,0	87,0	0,9	58	R1/4	SPPX09T3..	DFT05T3..
5691868	**DFSP300R3WD32M**		–	30,00	1.181	31,00	127,0	90,0	0,9	58	R1/4	SPPX09T3..	DFT05T3..
–		**5691889**	**DFSP500R3WD40M**	50,00	1.969	51,00	198,0	150,0	1,5	68	R1/4	SPPX15T5..	DFT0905..

NOTE for D1 max: Diameter can be adjusted. It is highly recommended to not adjust the diameter more than +.039" (+1mm).

Spare Parts

diameter range	gage insert inside	inboard insert screw	tightening torque Nm	tightening torque ft. lbs	gage insert outside	outboard insert screw	tightening torque Nm	tightening torque ft. lbs	Torx driver	Torx size
26.00–32.00	DFT05T3..	**191.924**	2,1	1.55	SPPX09T3..	**191.924**	2,1	1.55	**170.024**	T9
49.00–55.00	DFT0905..	**192.433**	3	4.43	SPPX15T5..	**192.433**	3	4.43	**170.025**	T15

NOTE: To ensure proper clamping, two different screws for DFT™ inserts with different threads for diameter ranges .875–1.000" (22–25,5mm) and 1.750–1.875" (41–48mm) are necessary. Both screws have the same Torx size.

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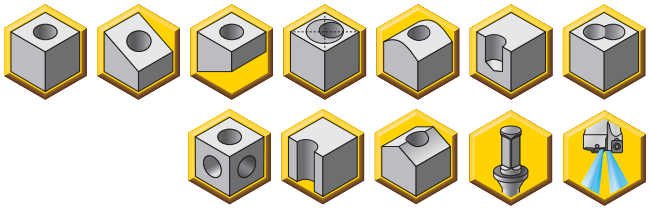

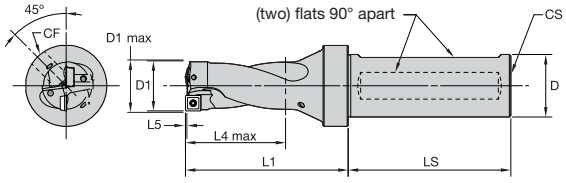

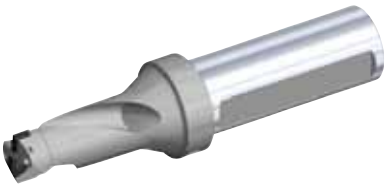

Flange Shank • 2 x D • Inch

D 0.750		D1										
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CF	CS	gage insert outside	gage insert inside
5689602	DFSP0563R2SSF075	14,30	.563	.602	2.06	1.13	.01	2.00	1/8 - 27 NPT	1/8 - 27 NPT	SPGX0502..	DFTX202..
5689603	DFSP0594R2SSF075	15,09	.594	.633	2.13	1.19	.02	2.00	1/8 - 27 NPT	1/8 - 27 NPT	SPGX0502..	DFTX202..
5689604	DFSP0625R2SSF075	15,88	.625	.664	2.19	1.25	.02	2.00	1/8 - 27 NPT	1/8 - 27 NPT	SPGX0502..	DFTX202..
5689605	DFSP0656R2SSF075	16,66	.656	.695	2.25	1.31	.02	2.00	1/8 - 27 NPT	1/8 - 27 NPT	SPGX0502..	DFTX202..
5689606	DFSP0688R2SSF075	17,48	.688	.727	2.31	1.38	.02	2.00	1/8 - 27 NPT	1/8 - 27 NPT	SPGX0502..	DFTX202..
5689607	DFSP0703R2SSF075	17,86	.703	.742	2.34	1.41	.02	2.00	1/8 - 27 NPT	1/8 - 27 NPT	SPGX0603..	DFT0303..
5689608	DFSP0734R2SSF075	18,64	.734	.773	2.42	1.47	.02	2.00	1/8 - 27 NPT	1/8 - 27 NPT	SPGX0603..	DFT0303..

NOTE for D1 max: Diameter can be adjusted. It is highly recommended to not adjust the diameter more than +.039" (+1mm).

Spare Parts

diameter range	gage insert inside	inboard insert screw	tightening torque Nm	tightening torque ft. lbs	gage insert outside	outboard insert screw	tightening torque Nm	tightening torque ft. lbs	Torx driver	Torx size	pipe plug
.563–.688	DFTX202..	**193.281**	0,6	.44	SPGX0502..	**193.281**	0,6	.44	**170.370**	T6	**1025612**
.703–.844	DFT0303..	**MS1152**	0,9	.66	SPGX0603..	**MS1152**	0,9	.66	**170.023**	T7	**1025612**

NOTE: To ensure proper clamping, two different screws for DFT™ inserts with different threads for diameter ranges .875–1.000" (22–25,5mm) and 1.750–1.875" (41–48mm) are necessary. Both screws have the same Torx size.

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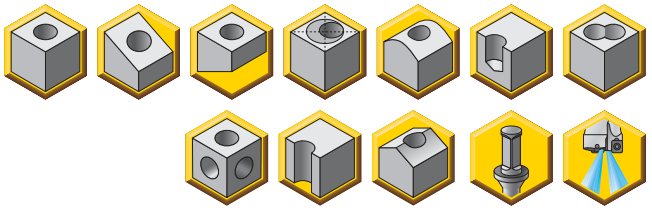

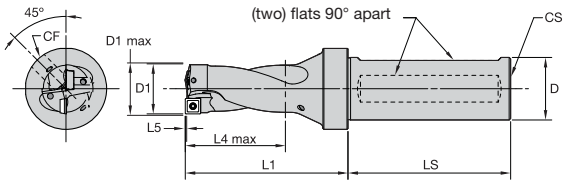

Flange Shank • 2 x D • Inch

D 1.000		D1									gage insert	gage insert
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CF	CS	outside	inside
5689609	**DFSP0750R2SSF100**	19,05	.750	.789	2.46	1.50	.02	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0603..	DFT0303..
5689620	**DFSP0781R2SSF100**	19,84	.781	.820	2.54	1.56	.02	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0603..	DFT0303..
5689621	**DFSP0813R2SSF100**	20,65	.813	.852	2.62	1.63	.03	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0603..	DFT0303..
5689622	**DFSP0844R2SSF100**	21,44	.844	.883	2.70	1.69	.03	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0603..	DFT0303..
5689623	**DFSP0875R2SSF100**	22,23	.875	.914	2.77	1.75	.02	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0703..	DFT05T3..
5689624	**DFSP0906R2SSF100**	23,01	.906	.945	2.84	1.81	.02	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0703..	DFT05T3..
5689625	**DFSP0938R2SSF100**	23,83	.938	.977	2.93	1.88	.02	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0703..	DFT05T3..
5689626	**DFSP0969R2SSF100**	24,61	.969	1.008	3.01	1.94	.03	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0703..	DFT05T3..
5689627	**DFSP0984R2SSF100**	24,99	.984	1.023	3.04	1.97	.03	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0703..	DFT05T3..
5691818	**DFSP1000R2SSF100**	25,40	1.000	1.040	3.25	2.00	.03	3.00	1/8 - 27 NPT	1/4 -18 NPT	SPGX0703..	DFT05T3..

NOTE for D1 max: Diameter can be adjusted. It is highly recommended to not adjust the diameter more than +.039" (+1mm).

Spare Parts

diameter range	gage insert inside	inboard insert screw	tightening torque Nm	tightening torque ft. lbs	gage insert outside	outboard insert screw	tightening torque Nm	tightening torque ft. lbs	Torx driver	Torx size	pipe plug
.703–.844	DFT0303..	**MS1152**	0,9	.66	SPGX0603..	**MS1152**	0,9	.66	**170.023**	T7	**1025612**
.875–1.000	DFT05T3..	**193.491**	2,1	1.55	SPGX0703..	**192.432**	1,3	.96	**170.028**	T8	**1025612**

NOTE: To ensure proper clamping, two different screws for DFT™ inserts with different threads for diameter ranges .875–1.000" (22–25,5mm) and 1.750–1.875" (41–48mm) are necessary. Both screws have the same Torx size.

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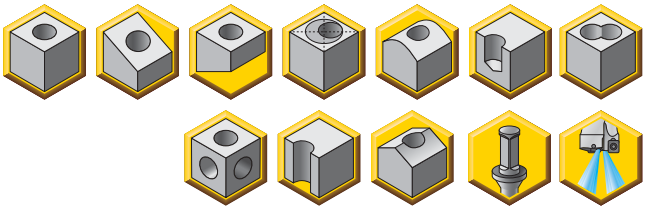

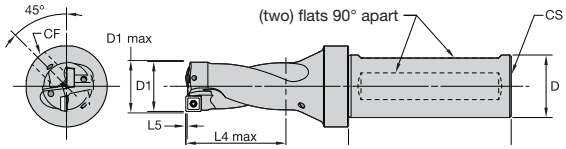

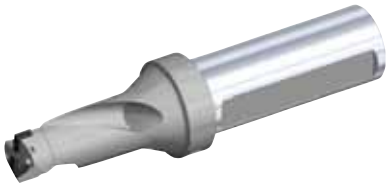

Flange Shank • 2 x D • Inch

D 1.250		D1									gage insert	gage insert
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CF	CS	outside	inside
5691819	**DFSP1000R2SSF125**	25,40	1.000	1.040	3.25	2.00	.03	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPGX0703..	DFT05T3..
5691831	**DFSP1031R2SSF125**	26,19	1.031	1.071	3.44	2.06	.03	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691832	**DFSP1063R2SSF125**	27,00	1.063	1.103	3.50	2.13	.03	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691833	**DFSP1094R2SSF125**	27,79	1.094	1.134	3.56	2.19	.03	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691834	**DFSP1125R2SSF125**	28,58	1.125	1.165	3.75	2.25	.03	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691835	**DFSP1156R2SSF125**	29,36	1.156	1.196	3.81	2.31	.03	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691836	**DFSP1188R2SSF125**	30,18	1.188	1.228	3.88	2.38	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691837	**DFSP1219R2SSF125**	30,96	1.219	1.259	4.06	2.44	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691838	**DFSP1250R2SSF125**	31,75	1.250	1.290	4.12	2.50	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691839	**DFSP1313R2SSF125**	33,35	1.313	1.353	4.25	2.63	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691841	**DFSP1375R2SSF125**	34,93	1.375	1.415	4.37	2.75	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691843	**DFSP1438R2SSF125**	36,53	1.438	1.478	4.63	2.88	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691844	**DFSP1469R2SSF125**	37,31	1.469	1.509	4.69	2.94	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691845	**DFSP1500R2SSF125**	38,10	1.500	1.540	4.75	3.00	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691847	**DFSP1563R2SSF125**	39,70	1.563	1.603	4.88	3.13	.05	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691849	**DFSP1625R2SSF125**	41,28	1.625	1.665	5.00	3.25	.05	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT0704..

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Spare Parts

diameter range	gage insert inside	inboard insert screw	tightening torque Nm	tightening torque ft. lbs	gage insert outside	outboard insert screw	tightening torque Nm	tightening torque ft. lbs	Torx driver	Torx size	pipe plug
.875–1.000	DFT05T3..	**193.491**	2,1	1.55	SPGX0703..	**192.432**	1,3	.96	**170.028**	T8	**1025612**
1.031–1.250	DFT05T3..	**191.924**	2,1	1.55	SPPX09T3..	**191.924**	2,1	1.55	**170.024**	T9	**1025612**
1.313–1.563	DFT06T3..	**191.916**	4	2.95	SPPX1204..	**191.916**	4	2.95	**170.025**	T15	**1025612**
1.625–1.688	DFT0704..	**191.916**	4	2.95	SPPX1204..	**191.916**	4	2.95	**170.025**	T15	**1025612**

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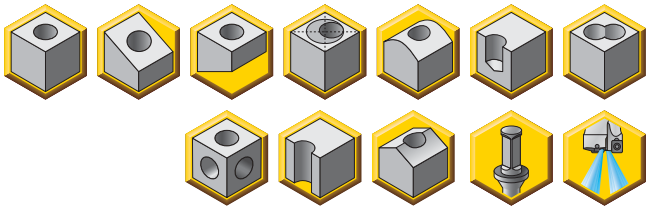
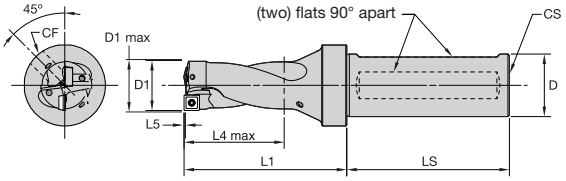
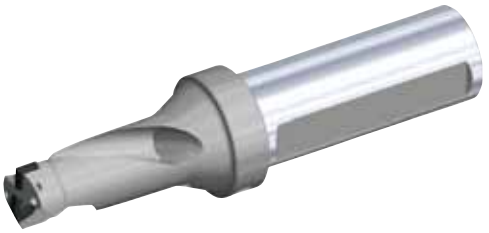
- DFSP combines the economical squared outboard insert with the superior centering capabilities of the trigon inboard insert.
- Drill shipped with insert screws, side pipe plug, and Torx wrench.







Flange Shank • 2 x D • Inch

D 1.500		D1										
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CF	CS	gage insert outside	gage insert inside
5691830	**DFSP1000R2SSF150**	25,40	1.000	1.039	3.25	2.00	.03	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPGX0703..	DFT05T3..
5691840	**DFSP1313R2SSF150**	33,35	1.313	1.353	4.25	2.63	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691842	**DFSP1375R2SSF150**	34,93	1.375	1.415	4.37	2.75	.04	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691846	**DFSP1500R2SSF150**	38,10	1.500	1.540	4.75	3.00	.04	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691848	**DFSP1563R2SSF150**	39,70	1.563	1.603	4.88	3.13	.05	3.63	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691850	**DFSP1625R2SSF150**	41,28	1.625	1.665	5.00	3.25	.05	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT0704..
5691851	**DFSP1656R2SSF150**	42,06	1.656	1.696	5.06	3.31	.05	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT0704..
5691852	**DFSP1688R2SSF150**	42,88	1.688	1.728	5.13	3.38	.05	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT0704..
5691853	**DFSP1750R2SSF150**	44,45	1.750	1.790	5.25	3.50	.05	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX15T5..	DFT0704..
5691854	**DFSP1813R2SSF150**	46,05	1.813	1.853	5.50	3.63	.06	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX15T5..	DFT0704..
5691855	**DFSP1875R2SSF150**	47,63	1.875	1.915	5.63	3.75	.06	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX15T5..	DFT0704..
5691856	**DFSP1938R2SSF150**	49,23	1.938	1.978	5.88	3.88	.06	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX15T5..	DFT0905..
5691857	**DFSP2000R2SSF150**	50,80	2.000	2.040	6.00	4.00	.06	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX15T5..	DFT0905..
5691859	**DFSP2125R2SSF150**	53,98	2.125	2.165	6.37	4.25	.07	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX15T5..	DFT0905..

NOTE for D1 max: Diameter can be adjusted. It is highly recommended to not adjust the diameter more than +.039" (+1mm).

Spare Parts

diameter range	gage insert inside	inboard insert screw	tightening torque Nm	tightening torque ft. lbs	gage insert outside	outboard insert screw	tightening torque Nm	tightening torque ft. lbs	Torx driver	Torx size	pipe plug
.875–1.000	DFT05T3..	**193.491**	2,1	1.55	SPGX0703..	**192.432**	1,3	.96	**170.028**	T8	**1025612**
1.313–1.563	DFT06T3..	**191.916**	4	2.95	SPPX1204..	**191.916**	4	2.95	**170.025**	T15	**1025612**
1.625–1.688	DFT0704..	**191.916**	4	2.95	SPPX1204..	**191.916**	4	2.95	**170.025**	T15	**1025612**
1.750–1.875	DFT0704..	**191.698**	6	4.43	SPPX15T5..	**191.698**	3	2.21	**170.025**	T15	**1025612**
1.938–2.125	DFT0905..	**192.433**	6	4.43	SPPX15T5..	**192.433**	6	4.43	**170.025**	T15	**1025612**

NOTE: To ensure proper clamping, two different screws for DFT™ inserts with different threads for diameter ranges .875–1.000" (22–25,5mm) and 1.750–1.875" (41–48mm) are necessary. Both screws have the same Torx size.

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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.

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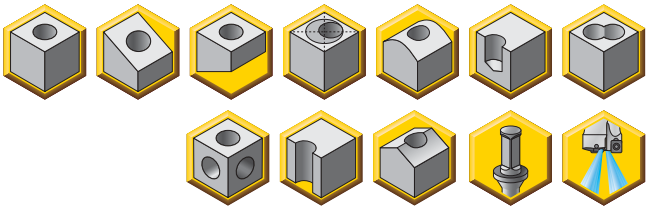

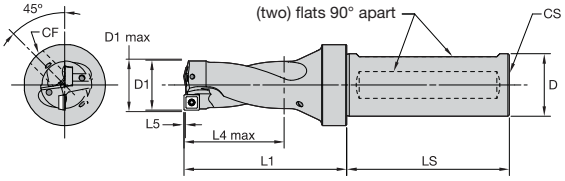

Flange Shank • 2 x D • Inch

D 2.000		D1									gage insert	gage insert
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CF	CS	outside	inside
5691858	**DFSP2000R2SSF200**	50,80	2.000	2.040	6.00	4.00	.06	4.00	1/8 - 27 NPT	1/4 -18 NPT	SPPX15T5..	DFT0905..
5691860	**DFSP2125R2SSF200**	53,98	2.125	2.165	6.37	4.25	.07	4.00	1/8 - 27 NPT	1/4 -18 NPT	SPPX15T5..	DFT0905..

NOTE for D1 max: Diameter can be adjusted. It is highly recommended to not adjust the diameter more than +.039" (+1mm).

Spare Parts

diameter range	gage insert inside	inboard insert screw	tightening torque Nm	tightening torque ft. lbs	gage insert outside	outboard insert screw	tightening torque Nm	tightening torque ft. lbs	Torx driver	Torx size	pipe plug
1.938–2.125	DFT0905..	**192.433**	6	4.43	SPPX15T5..	**192.433**	6	4.43	**170.025**	T15	**1025612**

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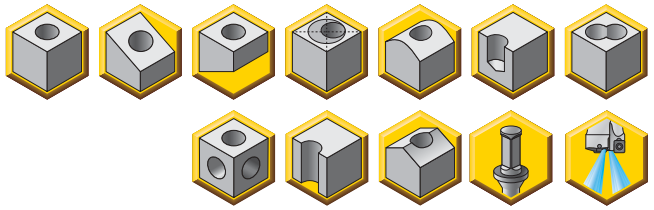

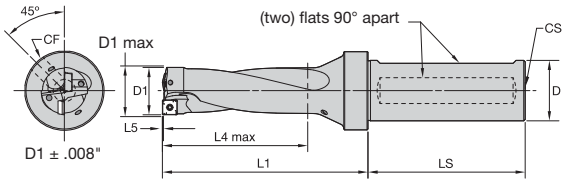

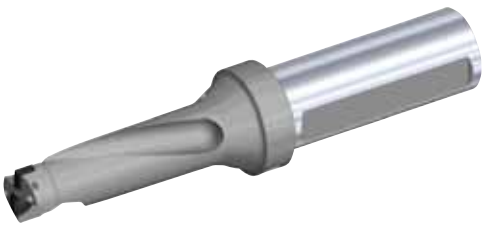

Flange Shank • 3 x D • Inch

D 0.750		D1										
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CF	CS	gage insert outside	gage insert inside
5689646	**DFSP0563R3SSF075**	14,30	.563	.602	2.62	1.69	.01	2.00	1/8 - 27 NPT	1/8 - 27 NPT	SPGX0502..	DFTX202..
5689647	**DFSP0594R3SSF075**	15,09	.594	.633	2.72	1.78	.02	2.00	1/8 - 27 NPT	1/8 - 27 NPT	SPGX0502..	DFTX202..
5689648	**DFSP0625R3SSF075**	15,88	.625	.664	2.81	1.88	.02	2.00	1/8 - 27 NPT	1/8 - 27 NPT	SPGX0502..	DFTX202..
5689649	**DFSP0656R3SSF075**	16,66	.656	.695	2.91	1.97	.02	2.00	1/8 - 27 NPT	1/8 - 27 NPT	SPGX0502..	DFTX202..
5689670	**DFSP0688R3SSF075**	17,48	.688	.727	3.00	2.06	.02	2.00	1/8 - 27 NPT	1/8 - 27 NPT	SPGX0502..	DFTX202..
5689671	**DFSP0703R3SSF075**	17,86	.703	.742	3.05	2.11	.02	2.00	1/8 - 27 NPT	1/8 - 27 NPT	SPGX0603..	DFT0303..
5689672	**DFSP0734R3SSF075**	18,64	.734	.773	3.18	2.20	.02	2.00	1/8 - 27 NPT	1/8 - 27 NPT	SPGX0603..	DFT0303..

NOTE for D1 max: Diameter can be adjusted. It is highly recommended to not adjust the diameter more than +.039" (+1mm).

Spare Parts

diameter range	gage insert inside	inboard insert screw	tightening torque Nm	tightening torque ft. lbs	gage insert outside	outboard insert screw	tightening torque Nm	tightening torque ft. lbs	Torx driver	Torx size	pipe plug
.563–.688	DFTX202..	**193.281**	0,6	.44	SPGX0502..	**193.281**	0,6	.44	**170.370**	T6	**1025612**
.703–.844	DFT0303..	**MS1152**	0,9	.66	SPGX0603..	**MS1152**	0,9	.66	**170.023**	T7	**1025612**

NOTE: To ensure proper clamping, two different screws for DFT™ inserts with different threads for diameter ranges .875–1.000" (22–25,5mm) and 1.750–1.875" (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.

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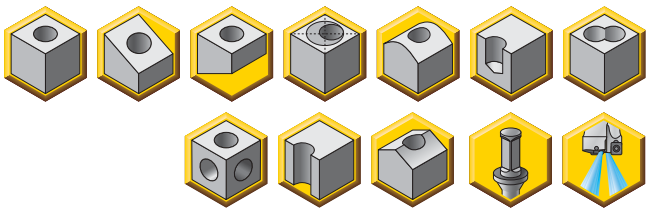

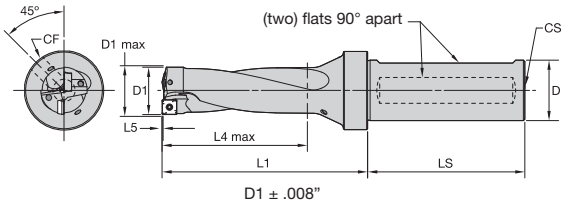

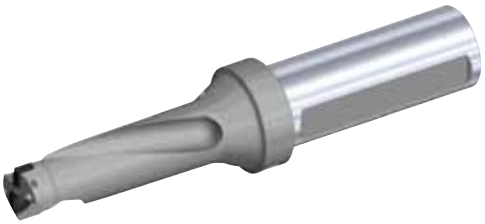

Flange Shank • 3 x D • Inch

D 1.000		D1									gage insert	gage insert
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CF	CS	outside	inside
5689673	**DFSP0750R3SSF100**	19,05	.750	.789	3.21	2.25	.02	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0603..	DFT0303..
5689674	**DFSP0781R3SSF100**	19,84	.781	.820	3.32	2.34	.02	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0603..	DFT0303..
5689675	**DFSP0813R3SSF100**	20,65	.813	.852	3.43	2.44	.03	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0603..	DFT0303..
5689676	**DFSP0844R3SSF100**	21,44	.844	.883	3.53	2.53	.03	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0603..	DFT0303..
5689677	**DFSP0875R3SSF100**	22,23	.875	.914	3.65	2.63	.02	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0703..	DFT05T3..
5689678	**DFSP0906R3SSF100**	23,01	.906	.945	3.75	2.72	.02	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0703..	DFT05T3..
5689679	**DFSP0938R3SSF100**	23,83	.938	.977	3.86	2.81	.02	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0703..	DFT05T3..
5689680	**DFSP0969R3SSF100**	24,61	.969	1.008	3.98	2.91	.03	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0703..	DFT05T3..
5689681	**DFSP0984R3SSF100**	24,99	.984	1.023	4.03	2.95	.03	3.00	1/8 - 27 NPT	1/4 - 18 NPT	SPGX0703..	DFT05T3..
5691735	**DFSP1000R3SSF100**	25,40	1.000	1.040	4.25	3.00	.03	3.00	1/8 - 27 NPT	1/4 -18 NPT	SPGX0703..	DFT05T3..

NOTE for D1 max: Diameter can be adjusted. It is highly recommended to not adjust the diameter more than +.039" (+1mm).

Spare Parts

diameter range	gage insert inside	inboard insert screw	tightening torque Nm	tightening torque ft. lbs	gage insert outside	outboard insert screw	tightening torque Nm	tightening torque ft. lbs	Torx driver	Torx size	pipe plug
.703–.844	DFT0303..	**MS1152**	0,9	.66	SPGX0603..	**MS1152**	0,9	.66	**170.023**	T7	**1025612**
.875–1.000	DFT05T3..	**193.491**	2,1	1.55	SPGX0703..	**192.432**	1,3	.96	**170.028**	T8	**1025612**

NOTE: To ensure proper clamping, two different screws for DFT™ inserts with different threads for diameter ranges .875–1.000" (22–25,5mm) and 1.750–1.875" (41–48mm) are necessary. Both screws have the same Torx size.

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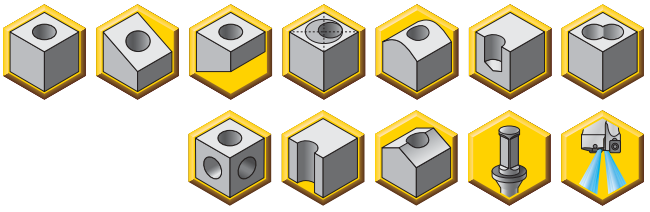

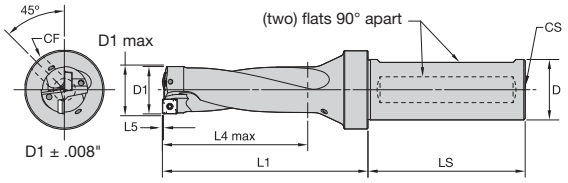

Flange Shank • 3 x D • Inch

D 1.250		D1										
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CF	CS	gage insert outside	gage insert inside
5691736	DFSP1000R3SSF125	25,40	1.000	1.040	4.25	3.00	.03	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPGX0703..	DFT05T3..
5691738	DFSP1031R3SSF125	26,19	1.031	1.071	4.47	3.09	.03	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691739	DFSP1063R3SSF125	27,00	1.063	1.103	4.56	3.19	.03	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691790	DFSP1094R3SSF125	27,79	1.094	1.134	4.66	3.28	.03	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691791	DFSP1125R3SSF125	28,58	1.125	1.165	4.87	3.38	.03	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691792	DFSP1156R3SSF125	29,36	1.156	1.196	4.97	3.47	.03	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691793	DFSP1188R3SSF125	30,18	1.188	1.228	5.06	3.56	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691794	DFSP1219R3SSF125	30,96	1.219	1.259	5.28	3.66	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691795	DFSP1250R3SSF125	31,75	1.250	1.290	5.37	3.75	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691796	DFSP1281R3SSF125	32,54	1.281	1.321	5.47	3.84	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX09T3..	DFT05T3..
5691797	DFSP1313R3SSF125	33,35	1.313	1.353	5.56	3.94	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691799	DFSP1375R3SSF125	34,93	1.375	1.415	5.75	4.13	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691801	DFSP1438R3SSF125	36,53	1.438	1.478	6.06	4.31	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691802	DFSP1469R3SSF125	37,31	1.509	1.509	6.16	4.41	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691803	DFSP1500R3SSF125	38,10	1.500	1.540	6.25	4.50	.04	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691806	DFSP1625R3SSF125	41,28	1.625	1.664	6.62	4.88	.05	3.25	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT0704..

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Spare Parts

diameter range	gage insert inside	inboard insert screw	tightening torque Nm	tightening torque ft. lbs	gage insert outside	outboard insert screw	tightening torque Nm	tightening torque ft. lbs	Torx driver	Torx size	pipe plug
.875–1.000	DFT05T3..	**193.491**	2,1	1.55	SPGX0703..	**192.432**	1,3	.96	**170.028**	T8	**1025612**
1.031–1.281	DFT05T3..	**191.924**	2,1	1.55	SPPX09T3..	**191.924**	2,1	1.55	**170.024**	T9	**1025612**
1.313–1.563	DFT06T3..	**191.916**	4	2.95	SPPX1204..	**191.916**	4	2.95	**170.025**	T15	**1025612**
1.625–1.688	DFT0704..	**191.916**	4	2.95	SPPX1204..	**191.916**	3	2.21	**170.025**	T15	**1025612**

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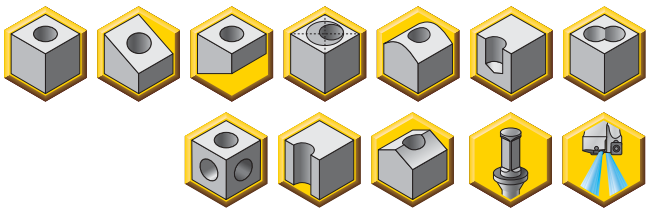
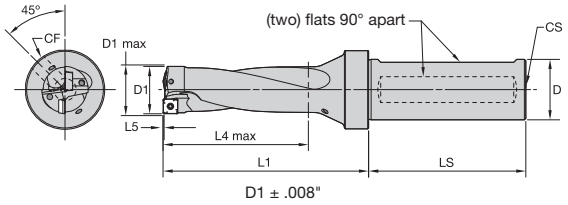
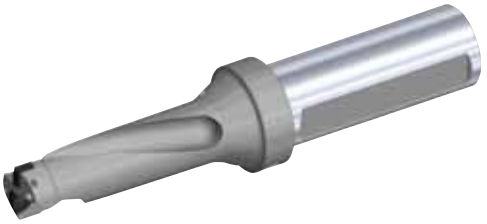
- Drill shipped with insert screws, side pipe plug, and Torx wrench.







Flange Shank • 3 x D • Inch

D 1.500		D1									gage insert	gage insert
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CF	CS	outside	inside
5691737	**DFSP1000R3SSF150**	25,40	1.000	1.040	4.25	3.00	.03	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPGX0703..	DFT05T3..
5691798	**DFSP1313R3SSF150**	33,35	1.313	1.353	5.56	3.94	.04	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691800	**DFSP1375R3SSF150**	34,93	1.375	1.415	5.75	4.13	.04	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691804	**DFSP1500R3SSF150**	38,10	1.500	1.540	6.25	4.50	.04	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691805	**DFSP1563R3SSF150**	39,70	1.563	1.603	6.44	4.69	.05	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT06T3..
5691807	**DFSP1625R3SSF150**	41,28	1.625	1.664	6.62	4.88	.05	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT0704..
5691808	**DFSP1656R3SSF150**	42,06	1.656	1.695	6.70	4.97	.05	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT0704..
5691809	**DFSP1688R3SSF150**	42,88	1.688	1.727	6.81	5.06	.05	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX1204..	DFT0704..
5691810	**DFSP1750R3SSF150**	44,45	1.750	1.789	7.00	5.25	.05	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX15T5..	DFT0704..
5691811	**DFSP1813R3SSF150**	46,05	1.813	1.852	7.31	5.44	.06	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX15T5..	DFT0704..
5691812	**DFSP1875R3SSF150**	47,63	1.875	1.914	7.50	5.63	.06	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX15T5..	DFT0704..
5691813	**DFSP1938R3SSF150**	49,23	1.938	1.977	7.81	5.81	.06	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX15T5..	DFT0905..
5691814	**DFSP2000R3SSF150**	50,80	2.000	2.039	8.00	6.00	.06	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX15T5..	DFT0905..
5691816	**DFSP2125R3SSF150**	53,98	2.125	2.164	8.50	6.38	.07	3.75	1/8 - 27 NPT	1/4 -18 NPT	SPPX15T5..	DFT0905..

NOTE for D1 max: Diameter can be adjusted. It is highly recommended to not adjust the diameter more than +.039" (+1mm).

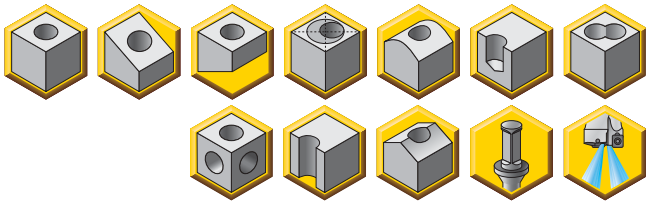
Spare Parts

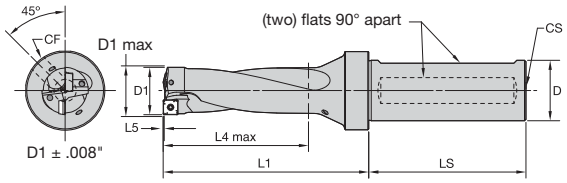
diameter range	gage insert inside	inboard insert screw	tightening torque Nm	tightening torque ft. lbs	gage insert outside	outboard insert screw	tightening torque Nm	tightening torque ft. lbs	Torx driver	Torx size	pipe plug
.875–1.000	DFT05T3..	**193.491**	2,1	1.55	SPGX0703..	**192.432**	1,3	.96	**170.028**	T8	**1025612**
1.313–1.563	DFT06T3..	**191.916**	4	2.95	SPPX1204..	**191.916**	4	2.95	**170.025**	T15	**1025612**
1.625–1.688	DFT0704..	**191.916**	4	2.95	SPPX1204..	**191.916**	3	2.21	**170.025**	T15	**1025612**
1.750–1.875	DFT0704..	**191.698**	6	4.43	SPPX15T5..	**191.698**	3	2.21	**170.025**	T15	**1025612**
1.938–2.125	DFT0905..	**192.433**	6	4.43	SPPX15T5..	**192.433**	6	4.43	**170.025**	T15	**1025612**

NOTE: To ensure proper clamping, two different screws for DFT™ inserts with different threads for diameter ranges .875–1.000" (22–25,5mm) and 1.750–1.875" (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 centering capabilities of the trigon inboard insert.
- Drill shipped with insert screws, side pipe plug, and Torx wrench.





Flange Shank • 3 x D • Inch

D		D1										
2.000												
order #	catalog #	mm	in	D1 max	L1	L4 max	L5	LS	CF	CS	gage insert outside	gage insert inside
5691815	**DFSP2000R3SSF200**	50,80	2.000	2.039	8.00	6.00	.06	4.00	1/8 - 27 NPT	1/4 -18 NPT	SPPX15T5..	DFT0905..
5691817	**DFSP2125R3SSF200**	53,98	2.125	2.164	8.50	6.38	.07	4.00	1/8 - 27 NPT	1/4 -18 NPT	SPPX15T5..	DFT0905..

NOTE for D1 max: Diameter can be adjusted. It is highly recommended to not adjust the diameter more than +.039" (+1mm).

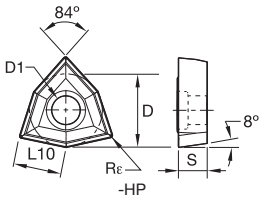
Spare Parts

diameter range	gage insert inside	inboard insert screw	tightening torque Nm	tightening torque ft. lbs	gage insert outside	outboard insert screw	tightening torque Nm	tightening torque ft. lbs	Torx driver	Torx size	pipe plug
1.938–2.125	DFT0905..	**192.433**	6	4.43	SPPX15T5..	**192.433**	6	4.43	**170.025**	T15	**1025612**

NOTE: To ensure proper clamping, two different screws for DFT™ inserts with different threads for diameter ranges .875–1.000" (22–25,5mm) and 1.750–1.875" (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.



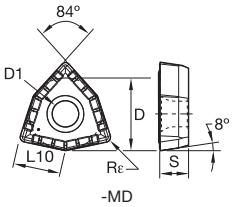
DFT-HP

● first choice
○ alternate choice

P	●
M	●
K	○
N	○
S	○
H	

	L10		D		D1		S		Rε			
catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	KC7140	KMF
DFTX20204HP	3,31	.130	5,00	.197	2,25	.089	2,45	.097	0,40	.015	**5692807**	–
DFT030204HP	3,97	.156	6,00	.236	2,25	.089	2,45	.096	0,40	.016	**2045293**	**1982315**
DFT030304HP	3,97	.156	6,00	.236	2,65	.104	2,95	.116	0,40	.016	**2045294**	**1982316**
DFT05T308HP	5,29	.208	8,00	.315	3,50	.137	3,75	.148	0,80	.031	**1804829**	**1804784**
DFT06T308HP	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	**1804830**	**1804785**
DFT070408HP	7,94	.313	12,00	.472	4,40	.173	4,75	.187	0,80	.031	**1804832**	**1804790**
DFT090508HP	9,92	.391	15,00	.591	5,50	.217	5,25	.207	0,85	.033	**1805013**	**1804791**
DFT110508HP	11,64	.458	17,60	.693	5,85	.230	4,88	.192	0,80	.031	**5588935**	–

- Positive chipbreaker geometry preferred for unstable cutting on longer chipping materials at high feed rates.



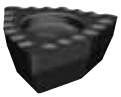
DFT-MD

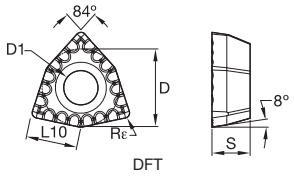
● first choice
○ alternate choice

P	●
M	●
K	○
N	○
S	○
H	

	L10		D		D1		S		Rε		
catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	KC7140
DFTX20204MD	3,31	.130	5,00	.197	2,25	.089	2,45	.097	0,40	.015	**5692808**
DFT030204MD	3,97	.156	6,00	.236	2,25	.089	2,45	.096	0,40	.016	**1713517**
DFT030304MD	3,97	.156	6,00	.236	2,65	.104	2,95	.116	0,40	.016	**1713515**
DFT05T308MD	5,29	.208	8,00	.315	3,40	.134	3,75	.148	0,80	.031	**1713513**
DFT06T308MD	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	**1713512**
DFT070408MD	7,94	.313	12,00	.472	4,40	.173	4,75	.187	0,80	.031	**1713440**
DFT090508MD	9,92	.391	15,00	.591	5,50	.217	5,25	.207	0,80	.031	**1713203**
DFT110508MD	11,64	.458	17,60	.693	5,85	.230	4,88	.192	0,80	.031	**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.





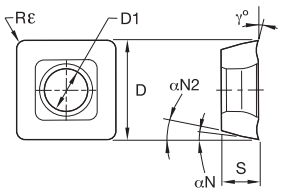
DFT-DS

● first choice
○ alternate choice

P	●
M	○
K	
N	○
S	○
H	

	L10		D		D1		S		Rε		
catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	KCU40
DFTX20204DS	3,31	.130	5,00	.197	2,25	.089	2,45	.097	0,40	.016	**6025821**
DFT030304DS	3,97	.156	6,00	.236	2,65	.104	2,95	.116	0,40	.016	**6025669**
DFT05T308DS	5,29	.208	8,00	.315	3,40	.134	3,75	.148	0,80	.031	**6025823**
DFT06T308DS	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	**6026363**
DFT070408DS	7,94	.313	12,00	.472	4,40	.173	4,75	.187	0,80	.031	**6025665**
DFT090508DS	9,92	.391	15,00	.591	5,50	.217	5,25	.207	0,80	.031	**6025894**

- 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.



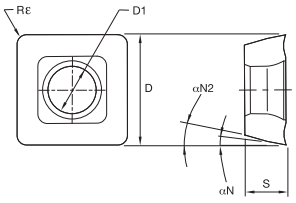
SP..X..(R)HP

● first choice
○ alternate choice

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

	D		D1		S		Rε							
catalog number	mm	in	mm	in	mm	in	mm	in	γ°	αN	αN2	KCU25	KCU40	KC7140
SPGX050204HP	5,56	.219	2,25	.089	2,38	.094	0,40	.016	10	7	11	**5692727**	**5692729**	**5692801**
SPGX060304RHP	6,35	.250	2,65	.104	3,18	.125	0,40	.016	10	7	11	**5534253**	**5534148**	**1848593**
SPGX070304RHP	7,94	.313	2,85	.112	3,18	.125	0,40	.016	10	7	11	**5534256**	**5534231**	**1848597**
SPGX070308HP	7,94	.313	2,85	.112	3,18	.125	0,80	.031	10	7	11	**4040135**	**4042935**	**–**
SPPX09T308RHP	9,53	.375	3,60	.142	3,97	.156	0,80	.031	10	7	11	**5534259**	**5534234**	**1848601**
SPPX09T310HP	9,53	.375	3,60	.142	3,97	.156	1,00	.039	10	7	11	**4042842**	**4042938**	**–**
SPPX120408RHP	12,70	.500	4,60	.181	4,76	.188	0,80	.031	10	7	11	**5534262**	**5534237**	**1848605**
SPPX120412HP	12,70	.500	4,60	.181	4,76	.188	1,20	.047	10	7	11	**4040141**	**4042941**	**–**
SPPX15T508RHP	15,73	.625	5,50	.234	5,95	.234	0,80	.031	10	7	11	**5534265**	**5534250**	**3774906**
SPPX15T512HP	15,73	.625	5,50	.217	5,95	.234	1,20	.047	10	7	11	**4042915**	**4042944**	**–**

- Four cutting edge insert.



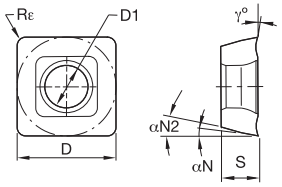
SP..X..MD

● first choice
○ alternate choice

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

	D		D1		S		Rε							
catalog number	mm	in	mm	in	mm	in	mm	in	γ°	αN	αN2	KCU25	KCU40	KC7140
SPGX050204MD	5,56	.219	2,25	.089	2,38	.094	0,40	.016	16	7	11	**5692728**	**5692800**	**5692802**
SPGX060304MD	6,35	.250	2,65	.104	3,18	.125	0,40	.016	20	7	11	**5534254**	**5534149**	**4047829**
SPGX070304MD	7,94	.313	2,85	.112	3,18	.125	0,40	.016	16	7	11	**5534257**	**5534232**	**4047830**
SPGX070308MD	7,94	.313	2,85	.112	3,18	.125	0,80	.031	16	7	11	**4040133**	**4042934**	**–**
SPPX09T308MD	9,53	.375	3,60	.142	3,97	.156	0,80	.031	16	7	11	**5534260**	**5534235**	**–**
SPPX09T310MD	9,53	.375	3,60	.142	3,97	.156	1,00	.039	16	7	11	**4040138**	**4042937**	**–**
SPPX120408MD	12,70	.500	4,60	.181	4,76	.188	0,80	.031	16	7	11	**5534263**	**5534238**	**4047832**
SPPX120412MD	12,70	.500	4,60	.181	4,76	.188	1,20	.047	16	7	11	**4040139**	**4042940**	**–**
SPPX15T508MD	15,73	.625	5,50	.234	5,95	.234	0,80	.031	16	7	11	**5534266**	**5534251**	**4047843**
SPPX15T512MD	15,73	.625	5,50	.217	5,95	.234	1,20	.047	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.



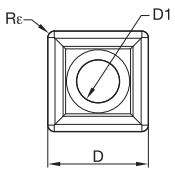
SP..X..FP

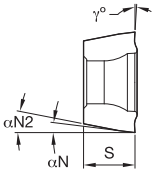
● first choice
○ alternate choice

P	●	●
M	○	●
K	●	●
N	○	○
S	○	●
H		

	D		D1		S		Rε						
catalog number	mm	in	mm	in	mm	in	mm	in	γ°	αN	αN2	KCU25	KCU40
SPGX060304FP	6,35	.250	2,65	.104	3,18	.125	0,40	.016	6	7	11	**5534252**	**5534147**
SPGX070304FP	7,94	.313	2,85	.112	3,18	.125	0,40	.016	6	7	11	**5534255**	**5534230**
SPGX070308FP	7,94	.313	2,85	.112	3,18	.125	0,80	.031	6	7	11	**4042840**	**4042933**
SPPX09T308FP	9,53	.375	3,60	.142	3,97	.156	0,80	.031	6	7	11	**5534258**	**5534233**
SPPX09T310FP	9,53	.375	3,60	.142	3,97	.156	1,00	.039	6	7	11	**4042841**	**4042936**
SPPX120408FP	12,70	.500	4,60	.181	4,76	.188	0,80	.031	6	7	11	**5534261**	**5534236**
SPPX120412FP	12,70	.500	4,60	.181	4,76	.188	1,20	.047	6	7	11	**4042913**	**4042939**
SPPX15T508FP	15,73	.625	5,50	.234	5,95	.234	0,80	.031	6	7	11	**5534264**	**5534239**
SPPX15T512FP	15,73	.625	5,50	.217	5,95	.234	1,20	.047	6	7	11	**4042914**	**4042942**

- 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

P	●
M	○
K	
N	○
S	○
H	

SP..X..LP

catalog number	D mm	D in	D1 mm	D1 in	S mm	S in	Rε mm	Rε in	γ°	αN	αN2	KCU40
SPGX050204LP	5,42	.213	2,25	.089	2,38	.094	0,40	.016	4	7	11	**6025822**
SPGX060304LP	6,35	.250	2,65	.104	3,18	.125	0,40	.016	4	7	11	**6026364**
SPPX070304LP	7,80	.307	2,85	.112	3,18	.125	0,40	.016	4	7	11	**6025670**
SPPX09T308LP	9,38	.369	3,60	.142	3,97	.156	0,80	.031	4	7	11	**6025824**
SPPX120408LP	12,56	.494	4,60	.181	4,76	.187	0,80	.031	4	7	11	**6025666**
SPPX15T508LP	15,73	.619	5,50	.217	5,95	.234	0,80	.031	4	7	11	**6025667**

Drill Fix™ DFSP™ • Metric

Metric															
Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			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
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
			I	HP	KCU40										
		I	O	HP	KCU40	130	**135**	150	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
			I	HP	KCU40										
	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
			I	HP	KC7140										
		I	O	HP	KCU40	130	**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
			I	HP	KC7140										
	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
			I	HP	KC7140										
		I	O	HP	KCU40	130	**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
			I	HP	KC7140										
	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	KCU25	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
			I	HP	KC7140										
		I	O	HP	KCU40	110	**120**	140	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
			I	HP	KC7140										
	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	KCU25	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
			I	HP	KC7140										
		I	O	HP	KCU40	90	**110**	140	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
			I	HP	KC7140										
	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
			I	HP	KC7140										
		I	O	HP	KC7140	70	**85**	100	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
			I	HP	KC7140										
	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
			I	HP	KC7140										
		I	O	HP	KC7140	70	**85**	100	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
			I	HP	KC7140										
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
			I	DS	KCU40										
		I	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										
	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	KCU40	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
			I	MD	KC7140										
		I	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										
	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
			I	HP	KC7140										
		I	O	MD	KC7140	50	**70**	90	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										

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

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Drill Fix™ DFSP™ • Metric

Metric														
Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			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	KCU40										
		U	O	FP	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
			I	HP	KC7140										
		I	O	FP	KC7140	80	**100**	125	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
			I	HP	KC7140										
	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	KCU40										
		U	O	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
			I	HP	KC7140										
		I	O	HP	KC7140	80	**100**	120	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
			I	HP	KC7140										
	3	S	O	HP	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	KCU40										
		U	O	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
			I	HP	KC7140										
		I	O	HP	KC7140	80	**100**	120	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
			I	HP	KC7140										
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										
		U	O	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
			I	HP	KMF										
		I	O	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
			I	HP	KMF										
	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										
		U	O	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										
		I	O	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
			I	HP	KMF										
	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										
		U	O	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										
		I	O	HP	KCU40	150	**250**	350	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
			I	HP	KMF										
	4	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	KC7140										
		U	O	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	KC7140										
		I	O	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
			I	HP	KC7140										
	5	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	KC7140										
		U	O	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	KC7140										
		I	O	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
			I	HP	KC7140										
	6	S	O	HP	KCU40	400	**450**	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										
		U	O	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										
		I	O	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
			I	HP	KMF										

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O = Outboard insert

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Drill Fix™ DFSP™ • Metric

Metric															
Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			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
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										

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Drill Fix™ DFSP™ • Inch

Inch															
Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — SFM min	Cutting Speed — vc Range — SFM Starting Value	Cutting Speed — vc Range — SFM max	Recommended Feed Rate (fz) by Diameter Ø	SPGX05 DFTX2 .551–.708"	SPGX06 DFT03 .709–.865"	SPGX07 DFT05 .866–1.023"	SPGX09 DFT05 1.024–1.299"	SPGX12 DFT06/..07 1.300–1.732"	SPGX15 DFT07/..09 1.733–2.165"
P	0	S	O	LP	KCU40	1017	**1066**	1181	SFM	0.0024–0.0039	0.0024–0.0043	0.0031–0.0055	0.0047–0.0083	0.0055–0.0102	0.0063–0.0102
			I	DS	KCU40										
		U	O	LP	KCU40	656	**705**	754	SFM	0.0020–0.00284	0.0024–0.0031	0.0028–0.0039	0.0028–0.0047	0.0035–0.0059	0.0043–0.0081
			I	HP	KCU40										
		I	O	HP	KCU40	426	**443**	492	SFM	0.0020–0.00284	0.0024–0.0031	0.0028–0.0039	0.0028–0.0047	0.0035–0.0059	0.0043–0.0081
			I	HP	KCU40										
	1	S	O	FP	KCPK10	1017	**1066**	1181	SFM	0.0024–0.0043	0.0031–0.0055	0.0039–0.0071	0.0055–0.0098	0.0063–0.0118	0.0071–0.0118
			I	HP	KC7140										
		U	O	FP	KCU25	656	**705**	754	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KC7140										
		I	O	HP	KCU40	426	**443**	492	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KC7140										
	2	S	O	FP	KCPK10	1017	**1066**	1181	SFM	0.0024–0.0043	0.0031–0.0055	0.0039–0.0071	0.0055–0.0098	0.0063–0.0118	0.0071–0.0118
			I	HP	KC7140										
		U	O	FP	KCU25	656	**705**	754	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KC7140										
		I	O	HP	KCU40	426	**443**	492	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KC7140										
	3	S	O	FP	KCPK10	853	**935**	1050	SFM	0.0024–0.0043	0.0031–0.0055	0.0039–0.0071	0.0055–0.0098	0.0063–0.0118	0.0071–0.0118
			I	HP	KC7140										
		U	O	HP	KCU25	590	**640**	722	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KC7140										
		I	O	HP	KCU40	361	**394**	459	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KC7140										
	4	S	O	FP	KCPK10	722	**820**	984	SFM	0.0024–0.0043	0.0031–0.0055	0.0039–0.0071	0.0055–0.0098	0.0063–0.0118	0.0071–0.0118
			I	HP	KC7140										
		U	O	HP	KCU25	492	**590**	722	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KC7140										
		I	O	HP	KCU40	295	**361**	459	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KC7140										
	5	S	O	HP	KCU25	590	**656**	722	SFM	0.0024–0.0043	0.0031–0.0055	0.0039–0.0071	0.0055–0.0098	0.0063–0.0118	0.0071–0.0118
			I	HP	KC7140										
		U	O	HP	KCU40	394	**443**	492	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KC7140										
		I	O	HP	KC7140	230	**279**	328	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KC7140										
	6	S	O	HP	KCU25	590	**656**	722	SFM	0.0024–0.0043	0.0031–0.0055	0.0039–0.0071	0.0055–0.0098	0.0063–0.0118	0.0071–0.0118
			I	HP	KC7140										
		U	O	HP	KCU40	394	**443**	492	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KC7140										
		I	O	HP	KC7140	230	**279**	328	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KC7140										
M	1	S	O	LP	KCU40	492	**623**	754	SFM	0.0020–0.0031	0.0024–0.0039	0.0028–0.0047	0.0039–0.0063	0.0047–0.0083	0.0055–0.0094
			I	DS	KCU40										
		U	O	LP	KCU40	328	**426**	525	SFM	0.0020–0.0028	0.0024–0.0031	0.0028–0.0039	0.0020–0.0039	0.0024–0.0051	0.0031–0.0063
			I	DS	KCU40										
		I	O	MD	KC7140	197	**262**	328	SFM	0.0012–0.0020	0.0016–0.0028	0.0020–0.0035	0.0028–0.0051	0.0031–0.0063	0.0039–0.0071
			I	MD	KC7140										
	2	S	O	LP	KCU40	492	**590**	689	SFM	0.0020–0.0031	0.0024–0.0039	0.0028–0.0047	0.0039–0.0063	0.0047–0.0083	0.0055–0.0094
			I	DS	KCU40										
		U	O	MD	KCU40	328	**426**	525	SFM	0.0012–0.0020	0.0016–0.0028	0.0020–0.0035	0.0028–0.0051	0.0031–0.0063	0.0039–0.0079
			I	MD	KC7140										
		I	O	MD	KC7140	197	**262**	328	SFM	0.0012–0.0020	0.0016–0.0028	0.0020–0.0035	0.0028–0.0051	0.0031–0.0063	0.0039–0.0071
			I	MD	KC7140										
	3	S	O	LP	KCU40	328	**426**	525	SFM	0.0020–0.0028	0.0024–0.0031	0.0028–0.0039	0.0020–0.0039	0.0024–0.0051	0.0031–0.0063
			I	DS	KCU40										
		U	O	HP	KCU40	262	**361**	459	SFM	0.0012–0.0020	0.0016–0.0028	0.0020–0.0035	0.0028–0.0051	0.0031–0.0063	0.0039–0.0079
			I	HP	KC7140										
		I	O	MD	KC7140	164	**230**	295	SFM	0.0012–0.0020	0.0016–0.0028	0.0020–0.0035	0.0028–0.0051	0.0031–0.0063	0.0039–0.0071
			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 Catalog for the complete offering.

Drill Fix™ DFSP™ • Inch

Inch															
Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — SFM			Recommended Feed Rate (fz) by Diameter						
						min	Starting Value	max	Ø	SPGX05 DFTX2 .551–.708"	SPGX06 DFT03 .709–.865"	SPGX07 DFT05 .866–1.023"	SPGX09 DFT05 1.024–1.299"	SPGX12 DFT06/..07 1.300–1.732"	SPGX15 DFT07/..09 1.733–2.165"
K	1	S	O	FP	KCPK10	656	**787**	984	SFM	0.0028–0.0047	0.0039–0.0063	0.0047–0.0079	0.0063–0.0110	0.0071–0.0126	0.0079–0.0134
			I	HP	KCU40										
		U	O	FP	KCU25	394	**508**	656	SFM	0.0020–0.0035	0.0024–0.0047	0.0031–0.0059	0.0047–0.0079	0.0055–0.0098	0.0063–0.0110
			I	HP	KC7140										
		I	O	FP	KC7140	262	**328**	410	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KC7140										
	2	S	O	FP	KCPK10	590	**722**	853	SFM	0.0028–0.0047	0.0039–0.0063	0.0047–0.0079	0.0063–0.0110	0.0071–0.0126	0.0079–0.0134
			I	HP	KCU40										
		U	O	HP	KCU25	361	**459**	558	SFM	0.0020–0.0035	0.0024–0.0047	0.0031–0.0059	0.0047–0.0079	0.0055–0.0098	0.0063–0.0110
			I	HP	KC7140										
		I	O	HP	KC7140	262	**328**	394	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KC7140										
	3	S	O	HP	KCPK10	590	**722**	853	SFM	0.0028–0.0047	0.0039–0.0063	0.0047–0.0079	0.0063–0.0110	0.0071–0.0126	0.0079–0.0134
			I	HP	KCU40										
		U	O	HP	KCU25	361	**459**	558	SFM	0.0020–0.0035	0.0024–0.0047	0.0031–0.0059	0.0047–0.0079	0.0055–0.0098	0.0063–0.0110
			I	HP	KC7140										
		I	O	HP	KC7140	262	**328**	394	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KC7140										
N	1	S	O	HP	KCPK10	1148	**1640**	2132	SFM	0.0028–0.0047	0.0039–0.0063	0.0047–0.0079	0.0063–0.0110	0.0071–0.0126	0.0079–0.0134
			I	HP	KMF										
		U	O	HP	KCU40	984	**1312**	1640	SFM	0.0020–0.0035	0.0024–0.0047	0.0031–0.0059	0.0047–0.0079	0.0055–0.0098	0.0063–0.0110
			I	HP	KMF										
		I	O	HP	KCU40	656	**984**	1312	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KMF										
	2	S	O	HP	KCPK10	984	**1312**	1640	SFM	0.0028–0.0047	0.0039–0.0063	0.0047–0.0079	0.0063–0.0110	0.0071–0.0126	0.0079–0.0134
			I	HP	KMF										
		U	O	HP	KCU40	820	**1148**	1476	SFM	0.0020–0.0035	0.0024–0.0047	0.0031–0.0059	0.0047–0.0079	0.0055–0.0098	0.0063–0.0110
			I	HP	KMF										
		I	O	HP	KCU40	574	**820**	1066	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KMF										
	3	S	O	HP	KCPK10	984	**1312**	1640	SFM	0.0028–0.0047	0.0039–0.0063	0.0047–0.0079	0.0063–0.0110	0.0071–0.0126	0.0079–0.0134
			I	HP	KMF										
		U	O	HP	KCU40	820	**1148**	1476	SFM	0.0020–0.0035	0.0024–0.0047	0.0031–0.0059	0.0047–0.0079	0.0055–0.0098	0.0063–0.0110
			I	HP	KMF										
		I	O	HP	KCU40	492	**820**	1148	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KMF										
	4	S	O	HP	KCU25	984	**1312**	1640	SFM	0.0028–0.0047	0.0039–0.0063	0.0047–0.0079	0.0063–0.0110	0.0071–0.0126	0.0079–0.0134
			I	HP	KC7140										
		U	O	HP	KCU40	820	**1148**	1476	SFM	0.0020–0.0035	0.0024–0.0047	0.0031–0.0059	0.0047–0.0079	0.0055–0.0098	0.0063–0.0110
			I	HP	KC7140										
		I	O	HP	KCU40	656	**984**	1312	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KC7140										
	5	S	O	HP	KCU40	1312	**1476**	1640	SFM	0.0028–0.0047	0.0039–0.0063	0.0047–0.0079	0.0063–0.0110	0.0071–0.0126	0.0079–0.0134
			I	HP	KMF										
		U	O	HP	KCU40	820	**1148**	1476	SFM	0.0020–0.0035	0.0024–0.0047	0.0031–0.0059	0.0047–0.0079	0.0055–0.0098	0.0063–0.0110
			I	HP	KMF										
		I	O	HP	KCU40	656	**984**	1312	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KMF										
	6	S	O	HP	KCU40	1312	**1476**	1640	SFM	0.0028–0.0047	0.0039–0.0063	0.0047–0.0079	0.0063–0.0110	0.0071–0.0126	0.0079–0.0134
			I	HP	KMF										
		U	O	HP	KCU40	820	**1148**	1476	SFM	0.0020–0.0035	0.0024–0.0047	0.0031–0.0059	0.0047–0.0079	0.0055–0.0098	0.0063–0.0110
			I	HP	KMF										
		I	O	HP	KCU40	656	**984**	1312	SFM	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039	0.0035–0.0059	0.0043–0.0071	0.0051–0.0098
			I	HP	KMF										

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Drill Fix™ DFSP™ • Inch

Inch														
Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — SFM			Recommended Feed Rate (fz) by Diameter					
						min	Starting Value	max	Ø	SPGX05 DFTX2 .551–.708"	SPGX06 DFT03 .709–.865"	SPGX07 DFT05 .866–1.023"	SPGX09 DFT05 1.024–1.299"	SPGX12 DFT06/..07 1.300–1.732"	SPGX15 DFT07/..09 1.733–2.165"
S	1	S	O	HP	KCU40	197	**230**	246	SFM	0.0012–0.0024	0.0016–0.0031	0.0020–0.0039	0.0031–0.0047	0.0039–0.0059	0.0047–0.0071
			I	MD	KC7140										
		U	O	HP	KCU40	131	**164**	197	SFM	0.0008–0.0012	0.0008–0.0016	0.0012–0.0020	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039
			I	MD	KC7140										
		I	O	HP	KCU40	82	**98**	131	SFM	0.0008–0.0012	0.0008–0.0016	0.0012–0.0020	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039
			I	MD	KC7140										
	2	S	O	HP	KCU40	164	**197**	230	SFM	0.0012–0.0024	0.0016–0.0031	0.0020–0.0039	0.0031–0.0047	0.0039–0.0059	0.0047–0.0071
			I	MD	KC7140										
		U	O	HP	KCU40	98	**131**	164	SFM	0.0008–0.0012	0.0008–0.0016	0.0012–0.0020	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039
			I	MD	KC7140										
		I	O	HP	KCU40	82	**98**	131	SFM	0.0008–0.0012	0.0008–0.0016	0.0012–0.0020	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039
			I	MD	KC7140										
	3	S	O	HP	KCU40	230	**262**	295	SFM	0.0012–0.0024	0.0016–0.0031	0.0020–0.0039	0.0031–0.0047	0.0039–0.0059	0.0047–0.0071
			I	MD	KC7140										
		U	O	HP	KCU40	164	**197**	230	SFM	0.0008–0.0012	0.0008–0.0016	0.0012–0.0020	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039
			I	MD	KC7140										
		I	O	HP	KCU40	98	**131**	164	SFM	0.0008–0.0012	0.0008–0.0016	0.0012–0.0020	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039
			I	MD	KC7140										
	4	S	O	HP	KCU40	230	**262**	295	SFM	0.0012–0.0024	0.0016–0.0031	0.0020–0.0039	0.0031–0.0047	0.0039–0.0059	0.0047–0.0071
			I	MD	KC7140										
		U	O	HP	KCU40	164	**197**	230	SFM	0.0008–0.0012	0.0008–0.0016	0.0012–0.0020	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039
			I	MD	KC7140										
		I	O	HP	KCU40	98	**131**	164	SFM	0.0008–0.0012	0.0008–0.0016	0.0012–0.0020	0.0016–0.0024	0.0020–0.0031	0.0024–0.0039
			I	MD	KC7140										

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O = Outboard insert

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thread size range min–max	shank/ dimension	hole		chamfer		helix angle	coolant		
		through	blind	type	form		flood	through	
High-Performance Spiral-Point Taps for Through Holes									
M3–M20	DIN 371, 374, 376	•		plug	D	L15°	•		
Multipurpose Spiral-Point Taps for Through Holes									
#2–1 1/4"	ANSI 302A	•		plug	B	0°	•		
M2–M36	DIN 371, 374, 376	•		plug	B	0°	•		
High-Performance Spiral-Flute Taps for Blind Holes									
M3–M18	DIN 371, 374, 376		•	semi-bottoming	C	45°	•		
M5–M18	DIN 371, 374, 376		•	semi-bottoming	C	45°		•	
Multipurpose Spiral-Flute Taps for Blind Holes									
#2–1 1/8”	ANSI 302A		•	semi-bottoming	C	45°	•		
M3–M18	ANSI 302A		•	semi-bottoming	C	45°	•		
M2–M36	DIN 371, 374, 376		•	semi-bottoming	C	45°	•		
M3–M20	DIN 371, 374, 376		•	bottoming	E	45°	•		
M2–M52	DIN 371, 374, 376		•	semi-bottoming	C	45°	•		
High-Performance Straight-Flute Taps for Through and Blind Holes for Short-Chipping Materials									
M4–M22	DIN 371, 376	•	•	semi-bottoming	C	0°	•		
M5–M20	DIN 371, 376		•	semi-bottoming	C	0°		•	

	● first choice ○ alternate choice P M K N S H	series	grade/ coating		page(s)	recommended cutting parameters
	● ● ○ ○	T620	KP6525 KM6515		C124	C148–C149
	● ○ ● ○	T820	KSP32 KSP39		C125–C127	C150–C151
	● ○ ● ○	T820	KSP32 KSP39		C128–C129	C150–C151
	● ● ○ ○	T630	KP6525 KM6515		C132	C148–C149
	● ● ○ ○	T631	KP6525 KM6515		C133	C148–C149
	● ○ ● ○	T838	KSP39 KSP32		C134	C150–C151
	● ○ ● ○	T838	KSP39 KSP32		C140–C142	C150–C151
	● ○ ● ○	T830	KSP32 KSP39		C135–C136	C150–C151
	● ○ ● ○	T832	KSP32 KSP39		C137	–
	● ○ ○ ○	T838	KSU31 KSP39		C138–C139	C150–C151
	● ●	T640	KP6525		C146	C148–C149
	● ●	T641	KP6525		C147	C148–C149

Spiral-Point Taps for Through Holes

High-Performance Taps for Through-Hole Applications

- Steel and steel alloys.
- Stainless steel.
- Cast iron.
- Aluminum.

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.

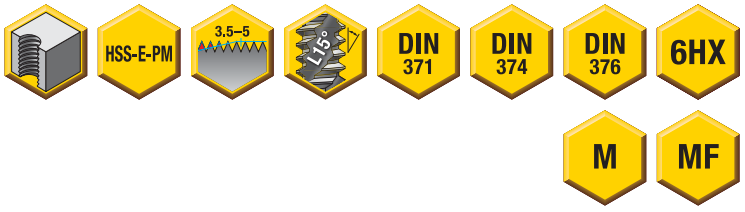
Multipurpose HSS-E GOtap™ Taps

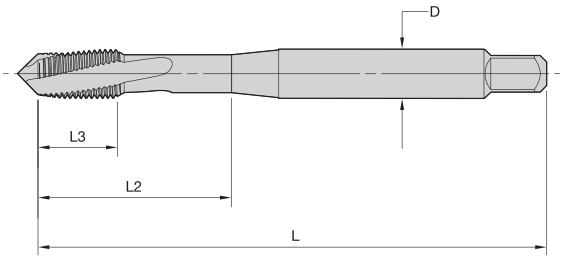
- Optimized spiral-point geometry for efficient chip evacuation in through-hole applications.
- Manufactured with high vanadium HSS-E material for exceptional wear characteristics and longer tool life.
- Advanced PVD coatings to reduce tapping torque, resulting in high-quality thread finish and longer tool life.
- For use in both synchronous and non-synchronous machines, including rigid, synchronous, and tension/compression tap holders.

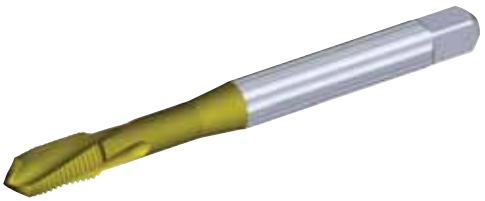
General-Purpose Taps

- High-quality spiral-point HSS taps for reliable, consistent performance.
- Wide range of sizes and pitch limits offered with PVD coatings and surface treatments.

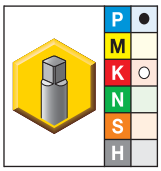
- KM6515 TiN + CrC/C for tapping stainless steel.
- KP6525 TiCN + TiN for tapping steel.



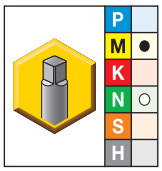




T620 • DIN 371, 374, and 376 • Form D Plug Chamfer • Metric • for Steel and Stainless Steel



KP6525



KM6515

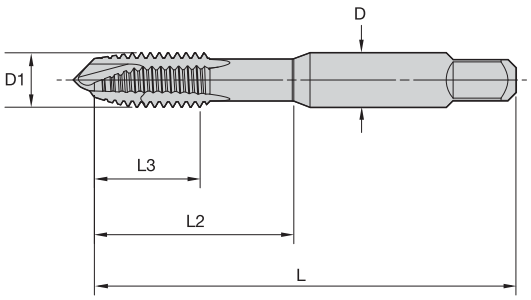
● first choice
○ alternate choice

KP6525 order #	KP6525 catalog #	KM6515 order #	KM6515 catalog #	metric dimensions 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
3868215	T620MF080X100R6HX-D4	3868110	T620MF080X100R6HX-D4	M8 X 1	90	13	35	6,0	3	DIN 374	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
3868204	T620M200X250R6HX-D6	3868099	T620M200X250R6HX-D6	M20 X 2,5	140	25	64	16,0	4	DIN 376	6HX

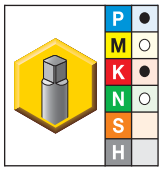
Shank Tolerance

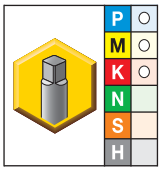
D	tolerance h6
12–18	+0, -0,011
20–30	+0, -0,013
32–36	+0, -0,016

- KSP32 TiCN/TiN
- KSP39 oxide



T820 • Form B Plug Chamfer • Machine Screw and Fractional • ANSI



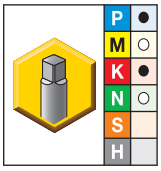


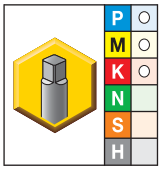
● first choice
○ alternate choice

KSP32		KSP39		inch dimensions						
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D	number of flutes	pitch diameter limit
	–	5455233	T820NC#02-56RH2-A	2 - 56	1.75	.39	.50	.141	2	H2
	–	5455234	T820NC#02-56RH3-A	2 - 56	1.75	.39	.50	.141	2	H3
	–	5455235	T820NC#02-56RH4-A	2 - 56	1.75	.39	.50	.141	2	H4
	–	5455236	T820NC#03-48RH2-A	3 - 48	1.82	.45	.57	.141	2	H2
5455237	T820NC#04-40RH2-A	5455239	T820NC#04-40RH2-A	4 - 40	1.88	.51	.69	.141	2	H2
	–	5455830	T820NC#04-40RH3-A	4 - 40	1.88	.51	.69	.141	2	H3
	–	5455831	T820NC#04-40RH4-A	4 - 40	1.88	.51	.69	.141	2	H4
5455833	T820NC#04-40RH5-A	5455834	T820NC#04-40RH5-A	4 - 40	1.88	.51	.69	.141	2	H5
	–	5455835	T820NC#04-40RH6-A	4 - 40	1.88	.51	.69	.141	2	H6
	–	5455836	T820NF#04-48RH2-A	4 - 48	1.88	.51	.69	.141	2	H2
	–	5455832	T820NF#04-48RH4-A	4 - 48	1.88	.51	.69	.141	2	H4
	–	5455837	T820NC#05-40RH2-A	5 - 40	1.94	.58	.75	.141	2	H2
	–	5455838	T820NC#06-32RH2-A	6 - 32	1.99	.38	.71	.141	2	H2
5455839	T820NC#06-32RH3-A	5455841	T820NC#06-32RH3-A	6 - 32	1.99	.38	.71	.141	2	H3
	–	5455842	T820NC#06-32RH4-A	6 - 32	1.99	.38	.71	.141	2	H4
	–	5455843	T820NC#06-32RH5-A	6 - 32	1.99	.38	.71	.141	2	H5
	–	5455844	T820NC#06-32RH6-A	6 - 32	1.99	.38	.71	.141	2	H6
	–	5455845	T820NC#06-32RH7-A	6 - 32	1.99	.38	.71	.141	2	H7
	–	5455846	T820NF#06-40RH2-A	6 - 40	1.99	.38	.71	.141	2	H2
	–	5455847	T820NF#06-40RH3-A	6 - 40	1.99	.38	.76	.141	2	H3
	–	5455866	T820NF#08-36RH2-A	8 - 36	2.11	.38	.76	.168	2	H2
	–	5455848	T820NC#08-32RH2-A	8 - 32	2.12	.38	.76	.168	2	H2
5455849	T820NC#08-32RH3-A	5455861	T820NC#08-32RH3-A	8 - 32	2.12	.38	.76	.168	2	H3
5455862	T820NC#08-32RH4-A		–	8 - 32	2.12	.38	.76	.168	2	H4
	–	5455863	T820NC#08-32RH5-A	8 - 32	2.12	.38	.76	.168	2	H5
	–	5455864	T820NC#08-32RH6-A	8 - 32	2.12	.38	.76	.168	2	H6
	–	5455865	T820NC#08-32RH7-A	8 - 32	2.12	.38	.76	.168	2	H7
5455881	T820NF#10-32RH3-A	5455883	T820NF#10-32RH3-A	10 - 32	2.36	.50	.91	.194	2	H3
	–	5455884	T820NF#10-32RH4-A	10 - 32	2.36	.50	.91	.194	2	H4
	–	5455886	T820NF#10-32RH5-A	10 - 32	2.36	.50	.91	.194	2	H5
	–	5455887	T820NF#10-32RH6-A	10 - 32	2.36	.50	.91	.194	2	H6
	–	5455889	T820NF#10-32RH7-A	10 - 32	2.36	.50	.91	.194	2	H7

(continued)

(T820 • Form B Plug Chamfer • Machine Screw and Fractional • ANSI — continued)

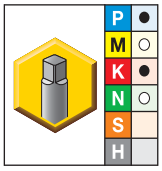


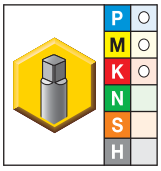


KSP32		KSP39		inch dimensions						
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D	number of flutes	pitch diameter limit
5455867	T820NC#10-24RH3-A	5455869	T820NC#10-24RH3-A	10 - 24	2.37	.50	.91	.194	2	H3
–		5455885	T820NC#10-24RH5-A	10 - 24	2.37	.50	.91	.194	2	H5
–		5455888	T820NC#10-24RH7-A	10 - 24	2.37	.50	.91	.194	2	H7
–		5455891	T820NF#12-28RH3-A	12 - 28	2.37	.50	.96	.220	2	H3
–		5416851	T820NC02500-20RH2-A	1/4 - 20	2.50	.63	1.00	.255	3	H2
5416852	T820NC02500-20RH3-A	5416854	T820NC02500-20RH3-A	1/4 - 20	2.50	.63	1.00	.255	3	H3
–		5416855	T820NC02500-20RH5-A	1/4 - 20	2.50	.63	1.00	.255	3	H5
–		5416856	T820NC02500-20RH7-A	1/4 - 20	2.50	.63	1.00	.255	3	H7
–		5416857	T820NF02500-28RH2-A	1/4 - 28	2.50	.63	1.00	.255	3	H2
5416858	T820NF02500-28RH3-A	5416880	T820NF02500-28RH3-A	1/4 - 28	2.50	.63	1.00	.255	3	H3
–		5416881	T820NF02500-28RH4-A	1/4 - 28	2.50	.63	1.00	.255	3	H4
–		5416882	T820NF02500-28RH5-A	1/4 - 28	2.50	.63	1.01	.255	3	H5
–		5416883	T820NF02500-28RH6-A	1/4 - 28	2.50	.63	1.01	.255	3	H6
–		5416884	T820NF02500-28RH7-A	1/4 - 28	2.50	.63	1.01	.255	3	H7
5416885	T820NC03125-18RH3-A	5416887	T820NC03125-18RH3-A	5/16 - 18	2.72	.69	1.14	.318	3	H3
–		5416888	T820NC03125-18RH5-A	5/16 - 18	2.72	.69	1.14	.318	3	H5
–		5416889	T820NC03125-18RH7-A	5/16 - 18	2.72	.69	1.14	.318	3	H7
5416890	T820NF03125-24RH3-A	5416892	T820NF03125-24RH3-A	5/16 - 24	2.72	.69	1.14	.318	3	H3
–		5416893	T820NF03125-24RH4-A	5/16 - 24	2.72	.69	1.14	.318	3	H4
–		5416894	T820NF03125-24RH5-A	5/16 - 24	2.72	.69	1.14	.318	3	H5
–		5416895	T820NF03125-24RH6-A	5/16 - 24	2.72	.69	1.14	.318	3	H6
–		5416896	T820NF03125-24RH7-A	5/16 - 24	2.72	.69	1.14	.318	3	H7
5416897	T820NC03750-16RH3-A	5416899	T820NC03750-16RH3-A	3/8 - 16	2.94	.75	1.27	.381	3	H3
–		5416900	T820NC03750-16RH5-A	3/8 - 16	2.94	.75	1.27	.381	3	H5
–		5416901	T820NC03750-16RH7-A	3/8 - 16	2.94	.75	1.27	.381	3	H7
5416902	T820NF03750-24RH3-A	5416904	T820NF03750-24RH3-A	3/8 - 24	2.94	.75	1.27	.381	3	H3
–		5416905	T820NF03750-24RH4-A	3/8 - 24	2.94	.75	1.27	.381	3	H4
–		5416906	T820NF03750-24RH5-A	3/8 - 24	2.94	.75	1.27	.381	3	H5
–		5416907	T820NF03750-24RH6-A	3/8 - 24	2.94	.75	1.27	.381	3	H6
–		5416908	T820NF03750-24RH7-A	3/8 - 24	2.94	.75	1.27	.381	3	H7
–		5416910	T820NC04375-14RH3-A	7/16 - 14	3.16	.88	1.49	.323	3	H3
–		5416911	T820NC04375-14RH5-A	7/16 - 14	3.16	.88	1.49	.323	3	H5
–		5416913	T820NF04375-20RH3-A	7/16 - 20	3.16	.88	1.49	.323	3	H3
–		5416914	T820NF04375-20RH5-A	7/16 - 20	3.16	.88	1.49	.323	3	H5
–		5416915	T820NF04375-20RH6-A	7/16 - 20	3.16	.88	1.49	.323	3	H6
–		5416916	T820NF04375-20RH7-A	7/16 - 20	3.16	.88	1.49	.323	3	H7
5416917	T820NC05000-13RH3-A	5416919	T820NC05000-13RH3-A	1/2 - 13	3.38	.94	1.74	.367	3	H3
–		5416930	T820NC05000-13RH5-A	1/2 - 13	3.38	.94	1.74	.367	3	H5
–		5416931	T820NC05000-13RH7-A	1/2 - 13	3.38	.94	1.74	.367	3	H7
5416932	T820NF05000-20RH3-A	5416934	T820NF05000-20RH3-A	1/2 - 20	3.38	.94	1.74	.367	3	H3
–		5416935	T820NF05000-20RH5-A	1/2 - 20	3.38	.94	1.74	.367	3	H5
–		5416936	T820NF05000-20RH6-A	1/2 - 20	3.38	.94	1.74	.367	3	H6
–		5416937	T820NF05000-20RH7-A	1/2 - 20	3.38	.94	1.74	.367	3	H7
5416938	T820NC05625-12RH3-A	5416939	T820NC05625-12RH3-A	9/16 - 12	3.59	1.00	1.74	.429	3	H3
–		5416941	T820NF05625-18RH3-A	9/16 - 18	3.59	1.00	1.74	.429	3	H3
5416942	T820NC06250-11RH3-A	5416944	T820NC06250-11RH3-A	5/8 - 11	3.81	1.09	1.89	.480	3	H3
–		5416945	T820NC06250-11RH5-A	5/8 - 11	3.81	1.09	1.89	.480	3	H5
–		5416946	T820NC06250-11RH7-A	5/8 - 11	3.81	1.09	1.89	.480	3	H7

(continued)

(T820 • Form B Plug Chamfer • Machine Screw and Fractional • ANSI — continued)





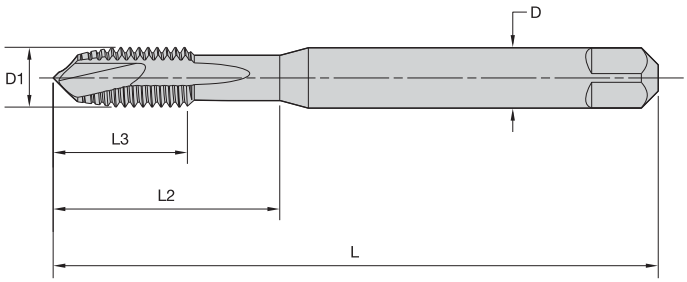
KSP32		KSP39		inch dimensions						
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D	number of flutes	pitch diameter limit
5416947	T820NF06250-18RH3-A	5416948	T820NF06250-18RH3-A	5/8 - 18	3.81	1.09	1.89	.480	3	H3
5416949	T820NF06250-18RH5-A	5416950	T820NF06250-18RH5-A	5/8 - 18	3.81	1.09	1.89	.480	3	H5
—		5416951	T820NF06250-18RH6-A	5/8 - 18	3.81	1.09	1.89	.480	3	H6
5416952	T820NC07500-10RH3-A	5416954	T820NC07500-10RH3-A	3/4 - 10	4.25	1.22	2.08	.590	3	H3
5416955	T820NF07500-16RH3-A	5416957	T820NF07500-16RH3-A	3/4 - 16	4.25	1.22	2.08	.590	3	H3
—		5416961	T820NF08750-14RH4-A	7/8 - 14	4.69	1.34	2.30	.696	3	H4
5416958	T820NC08750-9RH4-A	—		7/8 - 9	4.69	1.34	2.30	.697	3	H4
5416962	T820NC10000-8RH5-A	5416964	T820NC10000-8RH5-A	1 - 8	5.13	1.50	2.58	.800	3	H5
—		5416965	T820NF10000-12RH4-A	1 - 12	5.13	1.50	2.58	.800	3	H4
—		5416966	T820NC11250-7RH6-A	1 1/8 - 7	5.44	1.71	2.56	.895	4	H6
—		5416967	T820NF11250-12RH5-A	1 1/8 - 12	5.44	1.71	2.56	.895	4	H5
—		5416968	T820NC12500-7RH6-A	1 1/4 - 7	5.75	1.71	2.56	1.021	4	H6

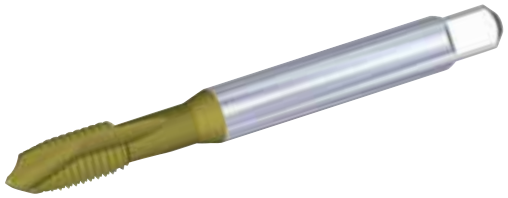
*NOTE: **Bright taps (KSU30) available.*

Shank Tolerance

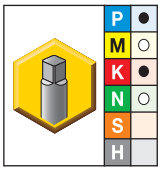
D inch	tolerance
.141–.635	+0, -.0015
>.635–1.51	+0, -.0020
>1.51–2.01	+0, -.0030

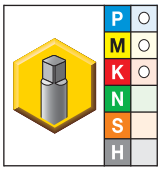
- KSP32 TiCN/TiN
- KSP39 oxide





T820 • DIN 371, 374, and 376 • Form B Plug Chamfer • Metric



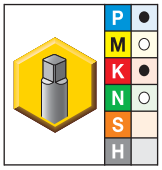


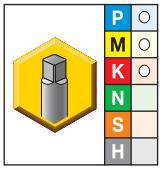
● first choice
○ alternate choice

KSP32		KSP39		metric dimensions							
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
5417205	T820M020X040R6H-D1	5417206	T820M020X040R6H-D1	M2 X 0,4	45	7	13	2,8	2	DIN 371	6H
	–	5417207	T820M020X040R6G-D1	M2 X 0,4	45	7	13	2,8	2	DIN 371	6G
	–	5417208	T820M025X045R6H-D1	M2,5 X 0,45	50	7	15	2,8	2	DIN 371	6H
	–	5417209	T820M025X045R6G-D1	M2,5 X 0,45	50	7	15	2,8	2	DIN 371	6G
5417220	T820M030X050R6H-D1	5417221	T820M030X050R6H-D1	M3 X 0,5	56	8	18	3,5	2	DIN 371	6H
	–	5417222	T820M030X050R6G-D1	M3 X 0,5	56	8	18	3,5	2	DIN 371	6G
	–	5417223	T820M035X060R6H-D1	M3,5 X 0,6	56	9	20	4,0	2	DIN 371	6H
	–	5417226	T820MF040X050R6H-D4	M4 X 0,5	63	10	21	2,8	2	DIN 374	6H
5417224	T820M040X070R6H-D1	5417225	T820M040X070R6H-D1	M4 X 0,7	63	11	21	4,5	2	DIN 371	6H
	–	5417227	T820M040X070R6G-D1	M4 X 0,7	63	11	21	4,5	2	DIN 371	6G
	–	5417230	T820MF050X050R6H-D4	M5 X 0,5	70	12	25	3,5	2	DIN 374	6H
5417228	T820M050X080R6H-D1	5417229	T820M050X080R6H-D1	M5 X 0,8	70	12	25	6,0	2	DIN 371	6H
	–	5417231	T820M050X080R6G-D1	M5 X 0,8	70	12	25	6,0	2	DIN 371	6G
	–	5417234	T820MF060X050R6H-D4	M6 X 0,5	80	12	30	4,5	3	DIN 374	6H
	–	5417235	T820MF060X075R6H-D4	M6 X 0,75	80	12	30	4,5	3	DIN 374	6H
	–	5417248	T820M060X100R6H-D6	M6 X 1	80	12	30	4,5	3	DIN 376	6H
5417232	T820M060X100R6H-D1	5417233	T820M060X100R6H-D1	M6 X 1	80	12	30	6,0	3	DIN 371	6H
	–	5417236	T820M060X100R6G-D1	M6 X 1	80	12	30	6,0	3	DIN 371	6G
5417237	T820M070X100R6H-D1	5417238	T820M070X100R6H-D1	M7 X 1	80	12	30	7,0	3	DIN 371	6H
	–	5417239	T820M070X100R6G-D1	M7 X 1	80	12	30	7,0	3	DIN 371	6G
	–	5417242	T820MF080X100R6H-D4	M8 X 1	90	15	35	6,0	3	DIN 374	6H
	–	5417249	T820M080X125R6H-D6	M8 X 1,25	90	15	35	6,0	3	DIN 376	6H
5417240	T820M080X125R6H-D1	5417241	T820M080X125R6H-D1	M8 X 1,25	90	15	35	8,0	3	DIN 371	6H
	–	5417243	T820M080X125R6G-D1	M8 X 1,25	90	15	35	8,0	3	DIN 371	6G

(continued)

(T820 • DIN 371, 374, and 376 • Form B Plug Chamfer • Metric — continued)





● first choice
○ alternate choice

KSP32		KSP39		metric dimensions							
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
	–	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
	–	5417250	T820M100X150R6H-D6	M10 X 1,5	100	18	39	7,0	3	DIN 376	6H
5417244	T820M100X150R6H-D1	5417245	T820M100X150R6H-D1	M10 X 1,5	100	18	39	10,0	3	DIN 371	6H
	–	5417247	T820M100X150R6G-D1	M10 X 1,5	100	18	39	10,0	3	DIN 371	6G
	–	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
	–	5417255	T820M120X175R6G-D6	M12 X 1,75	110	21	44	9,0	3	DIN 376	6G
	–	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
	–	5417260	T820M140X200R6G-D6	M14 X 2	110	24	52	11,0	3	DIN 376	6G
	–	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
	–	5417264	T820M160X200R6G-D6	M16 X 2	110	24	51	12,0	3	DIN 376	6G
	–	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
	–	5479786	T820MF200X150R6H-D4	M20 X 1,5	125	24	56	16,0	3	DIN 374	6H
	–	5479787	T820MF200X200R6H-D4	M20 X 2	140	30	64	16,0	3	DIN 374	6H
5417268	T820M200X250R6H-D6	5417269	T820M200X250R6H-D6	M20 X 2,5	140	30	64	16,0	3	DIN 376	6H
	–	5479788	T820MF220X150R6H-D4	M22 X 1,5	125	24	62	18,0	3	DIN 374	6H
	–	5479789	T820MF220X200R6H-D4	M22 X 2	140	30	70	18,0	3	DIN 374	6H
	–	5417270	T820M220X250R6H-D6	M22 X 2,5	140	30	70	18,0	3	DIN 376	6H
	–	5479790	T820MF240X150R6H-D4	M24 X 1,5	140	28	67	18,0	3	DIN 374	6H
	–	5417271	T820M240X300R6H-D6	M24 X 3	160	36	77	18,0	3	DIN 376	6H
	–	5417272	T820M270X300R6H-D6	M27 X 3	160	36	82	20,0	4	DIN 376	6H
	–	5417273	T820M300X350R6H-D6	M30 X 3,5	180	42	91	22,0	4	DIN 376	6H
	–	5417274	T820M330X350R6H-D6	M33 X 3,5	180	42	100	25,0	4	DIN 376	6H
	–	5417275	T820M360X400R6H-D6	M36 X 4	200	48	110	28,0	4	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.
- Aluminum.

High-Performance Beyond™ HSS-E-PM Taps

- Right-hand spiral flutes with the flute form and helix angle optimized 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.

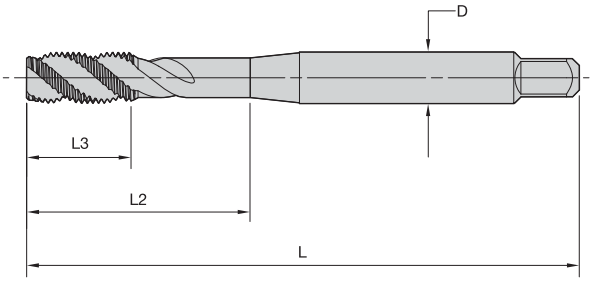
Multipurpose HSS-E GOtap™ Taps

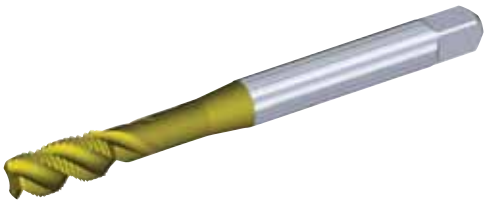
- Advanced spiral-flute geometry designed for free cutting action and efficient chip evacuation in blind holes.
- Manufactured with high vanadium HSS-E material for exceptional wear characteristics and longer tool life.
- Advanced PVD coatings to reduce tapping torque, resulting in high-quality thread finish and longer tool life.
- For use in both synchronous and non-synchronous machines, including rigid, synchronous, and tension/compression tap holders.

General-Purpose Taps

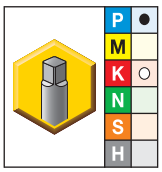
- HSS spiral-flute taps with a neck design for improved chip flow in blind holes.
- Wide range of sizes and pitch limits offered with PVD coatings and surface treatments.
- Heavy-duty spiral-flute taps ideal for blind-hole tapping in materials up to 30 Rc.

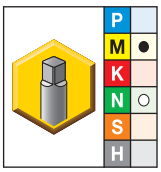
- KM6515 TiN + CrC/C for stainless steel.
- KP6525 TiCN + TiN for steel.





T630 • DIN 371, 374, and 376 • Form C Semi-Bottoming Chamfer • Metric • For Steel and Stainless Steel • Rigid and Synchronous Holders





● first choice
○ alternate choice

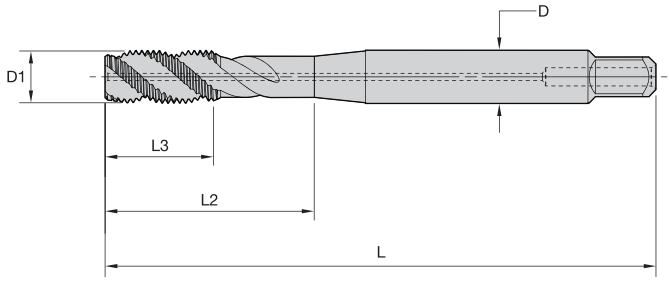
KP6525		KM6515		metric dimensions							
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
3868571	T630M030X050R6HX-D1	3868825	T630M030X050R6HX-D1	M3 X 0,5	56	8	18	3,5	3	DIN 371	6HX
3868572	T630M040X070R6HX-D1	3868826	T630M040X070R6HX-D1	M4 X 0,7	63	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
3868942	T630MF080X100R6HX-D4	3868856	T630MF080X100R6HX-D4	M8 X 1	90	13	35	6,0	3	DIN 374	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

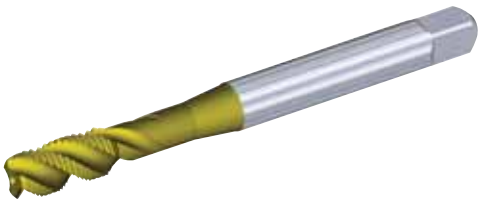
NOTE: Suggested for use in rigid and synchronous holders.

Shank Tolerance

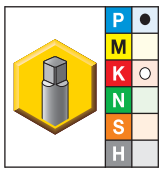
D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011

- KM6515 TiN + CrC/C for stainless steel.
- KP6525 TiCN + TiN for steel.

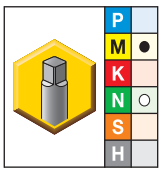




T631 • DIN 371, 374, and 376 • Form C Semi-Bottoming Chamfer • Through Coolant • Metric • For Steel and Stainless Steel • Rigid and Synchronous Holders



KP6525



KM6515

● first choice
○ alternate choice

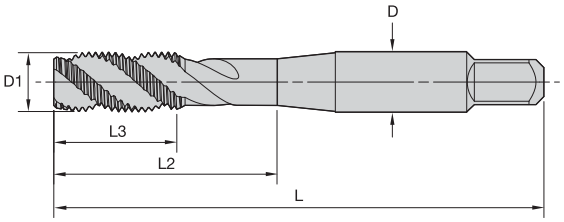
KP6525		KM6515		metric dimensions							
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
3868976	T631M050X080R6HX-D1	4026180	T631M050X080R6HX-D1	M5 X 0,8	70	10	25	6,0	3	DIN 371	6HX
3868977	T631M060X100R6HX-D1	4026181	T631M060X100R6HX-D1	M6 X 1	80	10	30	6,0	3	DIN 371	6HX
3869003	T631MF080X100R6HX-D4	4026231	T631MF080X100R6HX-D4	M8 X 1	90	13	35	6,0	3	DIN 374	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

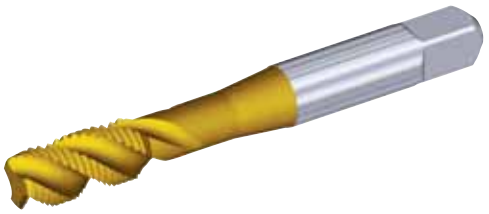
NOTE: Suggested for use in rigid and synchronous holders.

Shank Tolerance

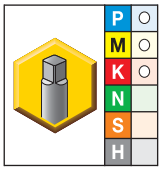
D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011

- KSP32 TiCN/TiN
- KSP39 oxide





T838 • Form C Semi-Bottoming Chamfer • Metric • ANSI • Tension/Compression Holders



KSP39

● first choice
○ alternate choice

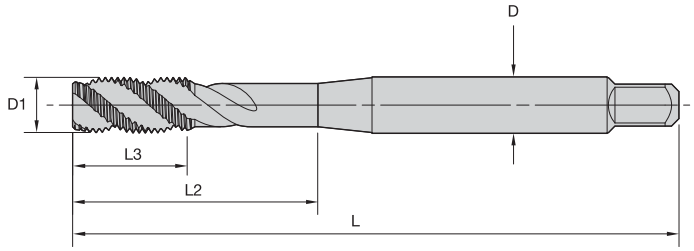
order #	catalog #	inch dimensions D1 size	L	L3	L2	D	number of flutes	pitch diameter limit
6140807	T838M030X050RD3-A	M3 X 0,5	1.94	.58	.75	.141	2	D3
6140809	T838M035X060RD4-A	M3,5 X 0,6	1.99	.38	.71	.141	2	D4
6140813	T838M040X070RD4-A	M4 X 0,7	2.12	.38	.76	.168	3	D4
6140817	T838M050X080RD4-A	M5 X 0,8	2.37	.50	.91	.194	3	D4
6140821	T838M060X100RD5-A	M6 X 1	2.50	.63	1.01	.255	3	D5
6140823	T838M070X100RD5-A	M7 X 1	2.73	.69	1.15	.318	3	D5
6140825	T838MF080X100RD5-A	M8 X 1	2.71	.69	1.12	.318	3	D5
6140829	T838M080X125RD5-A	M8 X 1,25	2.71	.69	1.12	.318	3	D5
6140841	T838MF100X125RD5-A	M10 X 1,25	2.92	.74	1.25	.381	3	D5
6140843	T838M100X150RD6-A	M10 X 1,5	2.92	.75	1.26	.381	3	D6
6140847	T838MF120X125RD5-A	M12 X 1,25	3.38	.94	1.74	.367	3	D5
6140849	T838MF120X150RD5-A	M12 X 1,5	3.38	.94	1.74	.367	3	D5
6140853	T838M120X175RD6-A	M12 X 1,75	3.38	.94	1.74	.367	3	D6
6140854	T838MF140X150RD6-A	M14 X 1,5	3.59	1.00	1.74	.429	3	D6
6140855	T838M140X200RD7-A	M14 X 2	3.59	1.00	1.74	.429	3	D7
6140856	T838MF160X150RD6-A	M16 X 1,5	3.81	1.09	1.89	.480	3	D6
6140857	T838M160X200RD7-A	M16 X 2	3.81	1.09	1.89	.480	3	D7
6140858	T838MF180X150RD6-A	M18 X 1,5	4.03	1.09	1.89	.542	4	D6
6140859	T838M180X250RD7-A	M18 X 2,5	4.03	1.09	1.89	.542	4	D7

NOTE: Suitable for tension/compression holders.

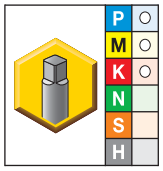
Shank Tolerance

D inch	tolerance
.141–.635	+0, -.0015
>.635–1.51	+0, -.0020
>1.51–2.01	+0, -.0030

- KSP32 TiCN/TiN
- KSP39 oxide



T830 • DIN 371, 374, and 376 • Form C Semi-Bottoming Chamfer • Metric • Rigid and Synchronous Holders



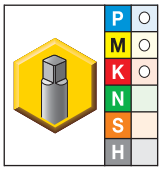
KSP39

● first choice
○ alternate choice

order #	catalog #	metric dimensions D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
5417276	T830M020X040R6H-D1	M2 X 0,4	45	7	13	2,8	2	DIN 371	6H
5417277	T830M020X040R6G-D1	M2 X 0,4	45	7	13	2,8	2	DIN 371	6G
5417278	T830M025X045R6H-D1	M2,5 X 0,45	50	7	15	2,8	2	DIN 371	6H
5417279	T830M025X045R6G-D1	M2,5 X 0,45	50	7	15	2,8	2	DIN 371	6G
5417281	T830M030X050R6H-D1	M3 X 0,5	56	8	18	3,5	2	DIN 371	6H
5417282	T830M030X050R6G-D1	M3 X 0,5	56	8	18	3,5	2	DIN 371	6G
5417283	T830M035X060R6H-D1	M3,5 X 0,6	56	9	20	4,0	2	DIN 371	6H
5417285	T830M040X070R6H-D1	M4 X 0,7	63	11	21	4,5	3	DIN 371	6H
5417286	T830M040X070R6G-D1	M4 X 0,7	63	11	21	4,5	3	DIN 371	6G
5417288	T830M050X080R6H-D1	M5 X 0,8	70	12	25	6,0	3	DIN 371	6H
5417289	T830M050X080R6G-D1	M5 X 0,8	70	12	25	6,0	3	DIN 371	6G
5417304	T830M060X100R6H-D6	M6 X 1	80	12	30	4,5	3	DIN 376	6H
5417291	T830M060X100R6H-D1	M6 X 1	80	12	30	6,0	3	DIN 371	6H
5417292	T830M060X100R6G-D1	M6 X 1	80	12	30	6,0	3	DIN 371	6G
5417293	T830M070X100R6H-D1	M7 X 1	80	12	30	7,0	3	DIN 371	6H
5417297	T830MF080X100R6H-D4	M8 X 1	90	15	35	6,0	3	DIN 374	6H
5417305	T830M080X125R6H-D6	M8 X 1,25	90	15	35	6,0	3	DIN 376	6H
5417295	T830M080X125R6H-D1	M8 X 1,25	90	15	35	8,0	3	DIN 371	6H
5417298	T830M080X125R6G-D1	M8 X 1,25	90	15	35	8,0	3	DIN 371	6G
5417302	T830MF100X125R6H-D4	M10 X 1,25	100	18	39	7,0	3	DIN 374	6H
5417306	T830M100X150R6H-D6	M10 X 1,5	100	18	39	7,0	3	DIN 376	6H
5417300	T830M100X150R6H-D1	M10 X 1,5	100	18	39	10,0	3	DIN 371	6H
5417303	T830M100X150R6G-D1	M10 X 1,5	100	18	39	10,0	3	DIN 371	6G
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
5417308	T830M120X175R6H-D6	M12 X 1,75	110	21	44	9,0	3	DIN 376	6H
5417312	T830M120X175R6G-D6	M12 X 1,75	110	21	44	9,0	3	DIN 376	6G
5417316	T830MF140X150R6H-D4	M14 X 1,5	100	21	47	11,0	3	DIN 374	6H

(continued)

(T830 • DIN 371, 374, and 376 • Form C Semi-Bottoming Chamfer • Metric • Rigid and Synchronous Holders — continued)



KSP39

● first choice
○ alternate choice

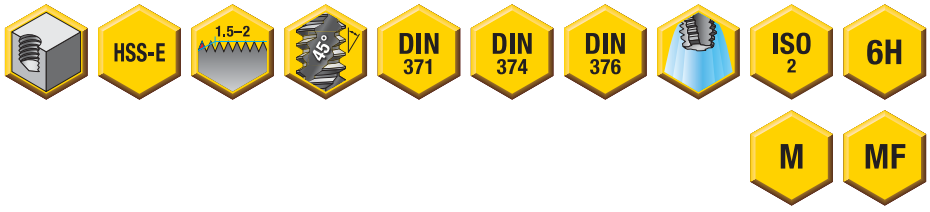
order #	catalog #	metric dimensions D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
5417314	T830M140X200R6H-D6	M14 X 2	110	24	52	11,0	3	DIN 376	6H
5417317	T830M140X200R6G-D6	M14 X 2	110	24	52	11,0	3	DIN 376	6G
5417319	T830MF160X150R6H-D4	M16 X 1,5	100	21	46	12,0	3	DIN 374	6H
5417318	T830M160X200R6H-D6	M16 X 2	110	24	51	12,0	3	DIN 376	6H
5417330	T830M160X200R6G-D6	M16 X 2	110	24	51	12,0	3	DIN 376	6G
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
5417334	T830M220X250R6H-D6	M22 X 2,5	140	30	70	18,0	4	DIN 376	6H
5417335	T830M240X300R6H-D6	M24 X 3	160	36	77	18,0	4	DIN 376	6H
5417336	T830M270X300R6H-D6	M27 X 3	160	36	82	20,0	4	DIN 376	6H
5417337	T830M300X350R6H-D6	M30 X 3,5	180	42	91	22,0	4	DIN 376	6H
5417338	T830M330X350R6H-D6	M33 X 3,5	180	42	100	25,0	4	DIN 376	6H
5417339	T830M360X400R6H-D6	M36 X 4	200	48	110	28,0	5	DIN 376	6H

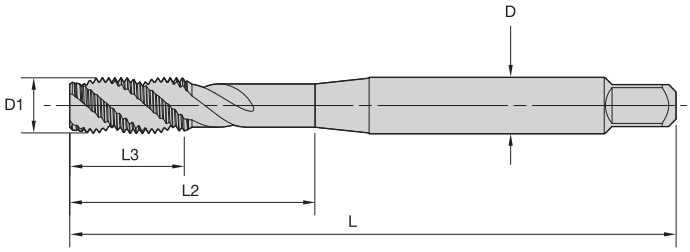
NOTE: Suggested for use in rigid and synchronous holders.

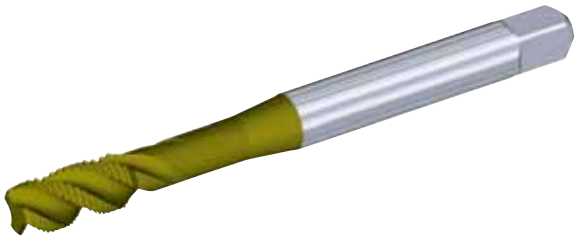
Shank Tolerance

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

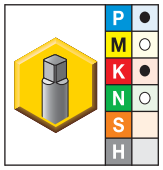
- KSP32 TiCN/TiN
- KSP39 oxide

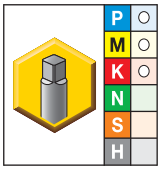






T832 • DIN 371, 374, and 376 • Form E Bottoming Chamfer • Metric • Rigid and Synchronous Holders





● first choice
○ alternate choice

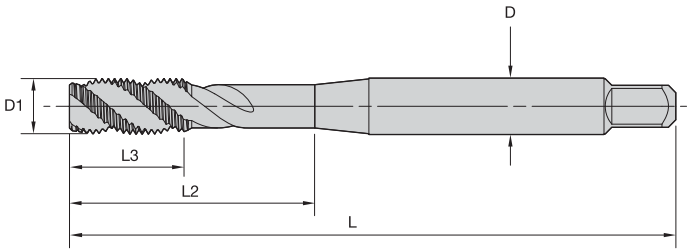
KSP32		KSP39								
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
5417357	T832M030X050R6H-D1	5417359	T832M030X050R6H-D1	M3 X 0,5	56	8	18	3,5	2	DIN 371	6H
5417371	T832M040X070R6H-D1	5417373	T832M040X070R6H-D1	M4 X 0,7	63	11	21	4,5	3	DIN 371	6H
5417375	T832M050X080R6H-D1	5417377	T832M050X080R6H-D1	M5 X 0,8	70	12	25	6,0	3	DIN 371	6H
5417379	T832M060X100R6H-D1	5417381	T832M060X100R6H-D1	M6 X 1	80	12	30	6,0	3	DIN 371	6H
5417387	T832MF080X100R6H-D4	5417389	T832MF080X100R6H-D4	M8 X 1	90	15	35	6,0	3	DIN 374	6H
5417383	T832M080X125R6H-D1	5417385	T832M080X125R6H-D1	M8 X 1,25	90	15	35	8,0	3	DIN 371	6H
5417395	T832MF100X125R6H-D4	5417396	T832MF100X125R6H-D4	M10 X 1,25	100	18	39	7,0	3	DIN 374	6H
5417391	T832M100X150R6H-D1	5417393	T832M100X150R6H-D1	M10 X 1,5	100	18	39	10,0	3	DIN 371	6H
5417399	T832MF120X150R6H-D4	5417400	T832MF120X150R6H-D4	M12 X 1,5	100	21	39	9,0	3	DIN 374	6H
5417397	T832M120X175R6H-D6	5417398	T832M120X175R6H-D6	M12 X 1,75	110	21	44	9,0	3	DIN 376	6H
5417403	T832MF140X150R6H-D4	5417404	T832MF140X150R6H-D4	M14 X 1,5	100	21	47	11,0	3	DIN 374	6H
5417401	T832M140X200R6H-D6	5417402	T832M140X200R6H-D6	M14 X 2	110	24	52	11,0	3	DIN 376	6H
	–	5417405	T832M160X200R6H-D6	M16 X 2	110	24	51	12,0	3	DIN 376	6H
5417406	T832M180X250R6H-D6	5417407	T832M180X250R6H-D6	M18 X 2,5	125	30	58	14,0	4	DIN 376	6H
5417408	T832M200X250R6H-D6	5417409	T832M200X250R6H-D6	M20 X 2,5	140	30	64	16,0	4	DIN 376	6H

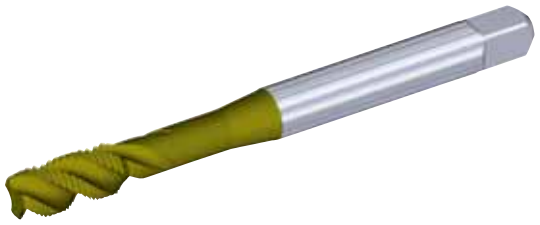
NOTE: Suggested for use in rigid and synchronous holders.

Shank Tolerance

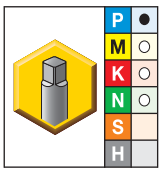
D mm	tolerance h9
1–3	+0, -0,025
>3–6	+0, -0,030
>6–10	+0, -0,036
>10–18	+0, -0,043
>18–30	+0, -0,052

- KSU31 TiN
- KSP39 oxide





T838 • DIN 371, 374, and 376 • Form C Semi-Bottoming Chamfer • Metric • Tension/Compression Holders



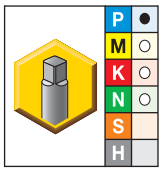
KSU31

● first choice
○ alternate choice

order #	catalog #	metric dimensions D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
6172968	T838M020X040R6H-D1	M2 X 0,4	45	7	13	2,8	3	DIN 371	6H
6172970	T838M030X050R6H-D1	M3 X 0,5	56	5	19	3,5	3	DIN 371	6H
6173002	T838M040X070R6H-D1	M4 X 0,7	63	7	21	4,5	3	DIN 371	6H
6173004	T838M050X080R6H-D1	M5 X 0,8	70	8	26	6,0	3	DIN 371	6H
6173006	T838M050X080R6H-D6	M5 X 0,8	70	8	27	3,5	3	DIN 376	6H
6173008	T838MF060X075R6H-D4	M6 X 0,75	80	10	34	4,5	3	DIN 374	6H
6173010	T838M060X100R6H-D1	M6 X 1	80	10	30	6,0	3	DIN 371	6H
6173012	T838M060X100R6H-D6	M6 X 1	80	10	34	4,5	3	DIN 376	6H
6173014	T838MF080X075R6H-D4	M8 X 0,75	90	13	37	6,0	3	DIN 374	6H
6173016	T838MF080X100R6H-D4	M8 X 1	90	13	37	6,0	3	DIN 374	6H
6173018	T838M080X125R6H-D1	M8 X 1,25	90	13	37	8,0	3	DIN 371	6H
6173020	T838M080X125R6H-D6	M8 X 1,25	90	13	37	6,0	3	DIN 376	6H
6173022	T838MF100X075R6H-D4	M10 X 0,75	90	15	40	7,0	3	DIN 374	6H
6173024	T838MF100X100R6H-D4	M10 X 1	90	15	40	7,0	3	DIN 374	6H
6173026	T838MF100X125R6H-D4	M10 X 1,25	100	15	44	7,0	3	DIN 374	6H
6173028	T838M100X150R6H-D1	M10 X 1,5	100	15	41	10,0	3	DIN 371	6H
6173030	T838M100X150R6H-D6	M10 X 1,5	100	15	44	7,0	3	DIN 376	6H
6173052	T838MF120X100R6H-D4	M12 X 1	100	13	50	9,0	3	DIN 374	6H
6173054	T838MF120X125R6H-D4	M12 X 1,25	100	13	50	9,0	3	DIN 374	6H
6173056	T838MF120X150R6H-D4	M12 X 1,5	100	13	50	9,0	3	DIN 374	6H
6173058	T838M120X175R6H-D6	M12 X 1,75	110	18	55	9,0	3	DIN 376	6H
6173060	T838MF140X100R6H-D4	M14 X 1	100	15	41	11,0	4	DIN 374	6H
6173062	T838MF140X125R6H-D4	M14 X 1,25	100	15	41	11,0	4	DIN 374	6H
6173064	T838MF140X150R6H-D4	M14 X 1,5	100	15	41	11,0	4	DIN 374	6H
6173066	T838M140X200R6H-D6	M14 X 2	110	20	50	11,0	3	DIN 376	6H
6173069	T838MF160X150R6H-D4	M16 X 1,5	100	15	45	12,0	4	DIN 374	6H
6173111	T838M160X200R6H-D6	M16 X 2	110	20	55	12,0	4	DIN 376	6H
6173113	T838MF180X150R6H-D4	M18 X 1,5	110	17	55	14,0	4	DIN 374	6H

(continued)

(T838 • DIN 371, 374, and 376 • Form C Semi-Bottoming Chamfer • Metric • Tension/Compression Holders — continued)



● first choice
○ alternate choice

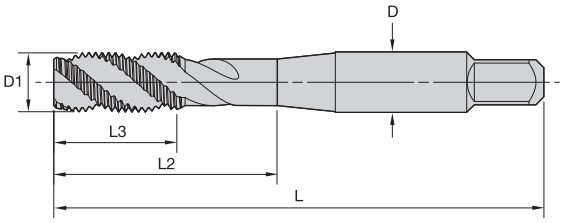
KSU31		metric dimensions							
order #	catalog #	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
6173115	T838MF180X200R6H-D4	M18 X 2	125	25	61	14,0	4	DIN 374	6H
6173117	T838M180X250R6H-D6	M18 X 2,5	125	25	61	14,0	4	DIN 376	6H
6173119	T838MF200X150R6H-D4	M20 X 1,5	125	17	56	16,0	4	DIN 374	6H
6173131	T838MF200X200R6H-D4	M20 X 2	140	25	65	16,0	4	DIN 374	6H
6173133	T838M200X250R6H-D6	M20 X 2,5	140	25	65	16,0	4	DIN 376	6H
6173135	T838MF220X150R6H-D4	M22 X 1,5	125	18	61	18,0	4	DIN 374	6H
6173137	T838MF220X200R6H-D4	M22 X 2	140	25	66	18,0	4	DIN 374	6H
6173139	T838M220X250R6H-D6	M22 X 2,5	140	25	66	18,0	4	DIN 376	6H
6173141	T838MF240X150R6H-D4	M24 X 1,5	140	20	67	18,0	4	DIN 374	6H
6173143	T838MF240X200R6H-D4	M24 X 2	140	20	67	18,0	4	DIN 374	6H
6173145	T838M240X300R6H-D6	M24 X 3	160	30	77	18,0	4	DIN 376	6H
6173147	T838MF270X150R6H-D4	M27 X 1,5	140	20	65	20,0	4	DIN 374	6H
6173149	T838M270X300R6H-D6	M27 X 3	160	33	85	20,0	4	DIN 376	6H
6173151	T838MF300X150R6H-D4	M30 X 1,5	150	22	68	20,0	4	DIN 374	6H
6173153	T838MF300X200R6H-D4	M30 X 2	150	22	68	22,0	4	DIN 374	6H
6173155	T838M300X350R6H-D6	M30 X 3,5	180	35	87	22,0	4	DIN 376	6H
6173157	T838M330X350R6H-D6	M33 X 3,5	180	35	92	25,0	4	DIN 376	6H
6173159	T838M360X400R6H-D6	M36 X 4	200	40	110	28,0	4	DIN 376	6H
6173171	T838M390X400R6H-D6	M39 X 4	200	40	105	32,0	4	DIN 376	6H
6173173	T838M420X450R6H-D6	M42 X 4,5	200	40	105	32,0	5	DIN 376	6H
6173175	T838M450X450R6H-D6	M45 X 5	220	50	110	36,0	5	DIN 376	6H
6173177	T838M480X500R6H-D6	M48 X 5	250	50	145	36,0	5	DIN 376	6H
6173179	T838M520X500R6H-D6	M52 X 5	250	50	135	40,0	5	DIN 376	6H

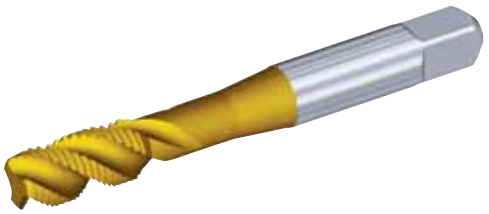
NOTE: Suitable for tension/compression holders.

Shank Tolerance

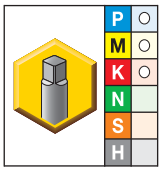
D mm	tolerance h9
1–3	+0, -0,025
>3–6	+0, -0,030
>6–10	+0, -0,036
>10–18	+0, -0,043
>18–30	+0, -0,052

- KSP32 TiCN/TiN
- KSP39 oxide





T838 • Form C Semi-Bottoming Chamfer • Machine Screw and Fractional • ANSI • Tension/Compression Holders



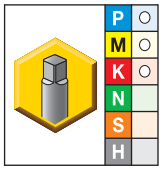
KSP39

● first choice
○ alternate choice

order #	catalog #	inch dimensions D1 size	L	L3	L2	D	number of flutes	pitch diameter limit
6140594	T838NC#02-56RH2-A	2 - 56	1.76	.39	.50	.141	2	H2
6140596	T838NC#03-48RH2-A	3 - 48	1.82	.46	.57	.141	2	H2
6140600	T838NC#04-40RH2-A	4 - 40	1.88	.52	.70	.141	2	H2
6140601	T838NC#04-40RH3-A	4 - 40	1.88	.52	.70	.141	2	H3
6140602	T838NC#04-40RH4-A	4 - 40	1.88	.52	.70	.141	2	H4
6140603	T838NC#04-40RH5-A	4 - 40	1.88	.52	.70	.141	2	H5
6140604	T838NF#04-48RH2-A	4 - 48	1.88	.53	.70	.141	2	H2
6140605	T838NC#05-40RH2-A	5 - 40	1.95	.59	.76	.141	2	H2
6140606	T838NC#06-32RH2-A	6 - 32	2.00	.39	.72	.141	2	H2
6140608	T838NC#06-32RH3-A	6 - 32	2.00	.39	.72	.141	2	H3
6140609	T838NC#06-32RH4-A	6 - 32	2.00	.39	.72	.141	2	H4
6140610	T838NC#06-32RH5-A	6 - 32	2.00	.39	.72	.141	2	H5
6140611	T838NC#06-32RH7-A	6 - 32	2.00	.39	.72	.141	2	H7
6140612	T838NF#06-40RH2-A	6 - 40	2.00	.39	.72	.141	2	H2
6140613	T838NF#06-40RH3-A	6 - 40	2.00	.39	.72	.141	2	H3
6140614	T838NC#08-32RH2-A	8 - 32	2.13	.38	.77	.168	3	H2
6140616	T838NC#08-32RH3-A	8 - 32	2.13	.38	.77	.168	3	H3
6140617	T838NC#08-32RH4-A	8 - 32	2.13	.38	.77	.168	3	H4
6140618	T838NC#08-32RH5-A	8 - 32	2.13	.38	.77	.168	3	H5
6140619	T838NC#08-32RH6-A	8 - 32	2.13	.38	.77	.168	3	H6
6140620	T838NC#08-32RH7-A	8 - 32	2.13	.38	.77	.168	3	H7
6140621	T838NC#10-24RH2-A	10 - 24	2.38	.50	.92	.194	3	H2
6140623	T838NC#10-24RH3-A	10 - 24	2.38	.50	.92	.194	3	H3
6140624	T838NC#10-24RH4-A	10 - 24	2.38	.50	.92	.194	3	H4
6140625	T838NC#10-24RH5-A	10 - 24	2.38	.50	.92	.194	3	H5
6140626	T838NC#10-24RH7-A	10 - 24	2.38	.50	.92	.194	3	H7
6140627	T838NF#10-32RH2-A	10 - 32	2.38	.50	.92	.194	3	H2
6140629	T838NF#10-32RH3-A	10 - 32	2.38	.50	.92	.194	3	H3

(continued)

(T838 • Form C Semi-Bottoming Chamfer • Machine Screw and Fractional • ANSI • Tension/Compression Holders — continued)



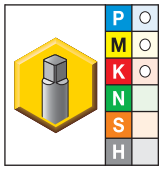
KSP39

● first choice
○ alternate choice

order #	catalog #	inch dimensions D1 size	L	L3	L2	D	number of flutes	pitch diameter limit
6140630	T838NF#10-32RH4-A	10 - 32	2.38	.50	.92	.194	3	H4
6140631	T838NF#10-32RH5-A	10 - 32	2.38	.50	.91	.194	3	H5
6140632	T838NF#10-32RH6-A	10 - 32	2.38	.50	.92	.194	3	H6
6140633	T838NF#10-32RH7-A	10 - 32	2.38	.50	.92	.194	3	H7
6140634	T838NC#12-24RH3-A	12 - 24	2.43	.50	.96	.220	3	H3
6140635	T838NF#12-28RH3-A	12 - 28	2.43	.50	.96	.220	3	H3
6140636	T838NC02500-20RH2-A	1/4 - 20	2.50	.63	1.00	.255	3	H2
6140638	T838NC02500-20RH3-A	1/4 - 20	2.50	.63	1.00	.255	3	H3
6140639	T838NC02500-20RH5-A	1/4 - 20	2.50	.63	1.00	.255	3	H5
6140640	T838NC02500-20RH7-A	1/4 - 20	2.50	.63	1.00	.255	3	H7
6140671	T838NF02500-28RH2-A	1/4 - 28	2.50	.63	1.00	.255	3	H2
6140673	T838NF02500-28RH3-A	1/4 - 28	2.50	.63	1.00	.255	3	H3
6140675	T838NF02500-28RH4-A	1/4 - 28	2.50	.63	1.00	.255	3	H4
6140677	T838NF02500-28RH5-A	1/4 - 28	2.50	.63	1.00	.255	3	H5
6140679	T838NF02500-28RH6-A	1/4 - 28	2.50	.63	1.00	.255	3	H6
6140681	T838NF02500-28RH7-A	1/4 - 28	2.50	.63	1.00	.255	3	H7
6140685	T838NC03125-18RH3-A	5/16 - 18	2.72	.69	1.13	.318	3	H3
6140687	T838NC03125-18RH5-A	5/16 - 18	2.72	.69	1.13	.318	3	H5
6140689	T838NC03125-18RH7-A	5/16 - 18	2.72	.69	1.13	.318	3	H7
6140694	T838NF03125-24RH3-A	5/16 - 24	2.72	.69	1.13	.318	3	H3
6140696	T838NF03125-24RH5-A	5/16 - 24	2.72	.69	1.12	.318	3	H5
6140698	T838NF03125-24RH7-A	5/16 - 24	2.72	.69	1.12	.318	3	H7
6140702	T838NC03750-16RH3-A	3/8 - 16	2.94	.75	1.27	.381	3	H3
6140704	T838NC03750-16RH5-A	3/8 - 16	2.94	.75	1.27	.381	3	H5
6140706	T838NC03750-16RH7-A	3/8 - 16	2.94	.75	1.27	.381	3	H7
6140710	T838NF03750-24RH3-A	3/8 - 24	2.94	.75	1.27	.381	3	H3
6140712	T838NF03750-24RH4-A	3/8 - 24	2.94	.75	1.27	.381	3	H4
6140714	T838NF03750-24RH5-A	3/8 - 24	2.94	.75	1.27	.381	3	H5
6140716	T838NF03750-24RH6-A	3/8 - 24	2.94	.75	1.27	.381	3	H6
6140720	T838NC04375-14RH3-A	7/16 - 14	3.16	.88	1.49	.323	3	H3
6140722	T838NC04375-14RH5-A	7/16 - 14	3.16	.88	1.49	.323	3	H5
6140724	T838NC04375-14RH7-A	7/16 - 14	3.16	.88	1.49	.323	3	H7
6140728	T838NF04375-20RH3-A	7/16 - 20	3.16	.88	1.49	.323	3	H3
6140730	T838NF04375-20RH5-A	7/16 - 20	3.16	.88	1.49	.323	3	H5
6140732	T838NF04375-20RH6-A	7/16 - 20	3.16	.88	1.49	.323	3	H6
6140734	T838NF04375-20RH7-A	7/16 - 20	3.16	.88	1.49	.323	3	H7
6140676	T838NC05000-13RH3-A	1/2 - 13	3.38	.94	1.74	.367	3	H3
6140678	T838NC05000-13RH5-A	1/2 - 13	3.38	.94	1.74	.367	3	H5
6140680	T838NC05000-13RH7-A	1/2 - 13	3.38	.94	1.74	.367	3	H7
6140684	T838NF05000-20RH3-A	1/2 - 20	3.38	.94	1.74	.367	3	H3
6140686	T838NF05000-20RH5-A	1/2 - 20	3.38	.94	1.74	.367	3	H5
6140688	T838NF05000-20RH6-A	1/2 - 20	3.38	.94	1.74	.367	3	H6
6140690	T838NF05000-20RH7-A	1/2 - 20	3.38	.94	1.74	.367	3	H7
6140692	T838NC05625-12RH3-A	9/16 - 12	3.59	1.00	1.74	.429	3	H3
6140695	T838NC05625-12RH5-A	9/16 - 12	3.59	1.00	1.74	.429	3	H5
6140697	T838NF05625-18RH3-A	9/16 - 18	3.59	1.00	1.74	.429	3	H3
6140699	T838NF05625-18RH5-A	9/16 - 18	3.59	1.00	1.74	.429	3	H5
6140703	T838NC06250-11RH3-A	5/8 - 11	3.81	1.09	1.89	.480	3	H3

(continued)

(T838 • Form C Semi-Bottoming Chamfer • Machine Screw and Fractional • ANSI • Tension/Compression Holders — continued)



KSP39		inch dimensions						
order #	catalog #	D1 size	L	L3	L2	D	number of flutes	pitch diameter limit
6140705	T838NC06250-11RH5-A	5/8 - 11	3.81	1.09	1.89	.480	3	H5
6140707	T838NC06250-11RH7-A	5/8 - 11	3.81	1.09	1.89	.480	3	H7
6140711	T838NF06250-18RH3-A	5/8 - 18	3.81	1.09	1.89	.480	3	H3
6140713	T838NF06250-18RH5-A	5/8 - 18	3.81	1.09	1.89	.480	3	H5
6140715	T838NF06250-18RH6-A	5/8 - 18	3.81	1.09	1.89	.480	3	H6
6140717	T838NF06250-18RH7-A	5/8 - 18	3.81	1.09	1.89	.480	3	H7
6140721	T838NC07500-10RH3-A	3/4 - 10	4.25	1.22	2.08	.590	4	H3
6140723	T838NC07500-10RH5-A	3/4 - 10	4.25	1.22	2.08	.590	4	H5
6140727	T838NF07500-16RH3-A	3/4 - 16	4.25	1.22	2.08	.590	4	H3
6140729	T838NF07500-16RH5-A	3/4 - 16	4.25	1.22	2.08	.590	4	H5
6140731	T838NC08750-9RH4-A	7/8 - 9	4.69	1.34	2.30	.697	4	H4
6140733	T838NF08750-14RH4-A	7/8 - 14	4.69	1.34	2.30	.697	4	H4
6140735	T838NC10000-8RH5-A	1 - 8	5.13	1.50	2.58	.800	4	H5
6140737	T838NF1000-12RH4-A	1 - 12	5.12	1.50	2.58	.800	4	H4
6140738	T838NC11250-7RH6-A	1 1/8 - 7	5.44	1.71	2.56	.896	4	H6

Shank Tolerance

D inch	tolerance
.141–.635	+0, -.0015
>.635–1.51	+0, -.0020
>1.51–2.01	+0, -.0030

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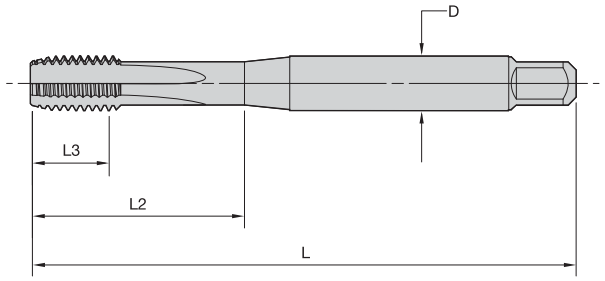
High-Performance Taps for Through-Hole and Blind-Hole Applications

- Cast iron.
- Cast aluminum.

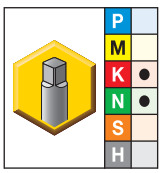
High-Performance Beyond™ HSS-E-PM Taps

- Straight-flute design for through- and blind-hole tapping in cast iron and cast aluminum.
- 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 aluminum.



T640 • DIN 371 and 376 • Form C Semi-Bottoming Chamfer • Metric • For Cast Iron and Cast Aluminum



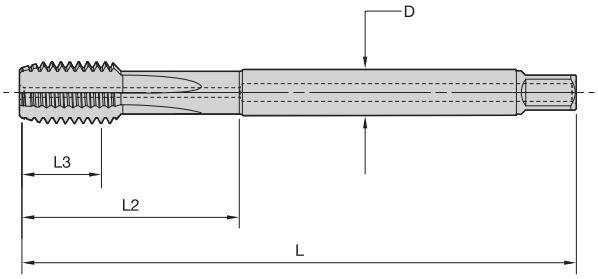
● first choice
○ alternate choice

KP6525									
order #	catalog #	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
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
4035469	T640M220X250R6HX-D6	M22 X 2,5	140	25	70	18,0	4	DIN 376	6HX

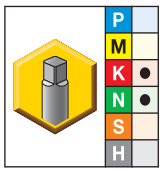
Shank Tolerance

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 aluminum.



T641 • DIN 371 and 376 • Form C Semi-Bottoming Chamfer • Through Coolant • Metric • For Cast Iron and Cast Aluminum



KP6525

● first choice
○ alternate choice

order #	catalog #	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	**21**	32
	2	T620	KP6525	17	**25**	38	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	KP6525	8	**12**	18	T630	KP6525	6	**8**	13

NOTE: Increase speed by up to 25% when using coolant taps (T631, T641).

High-Performance Taps • HSS-E-PM • Inch

Material Group		Through Holes					Blind Holes				
				Range — SFM					Range — SFM		
		Tap Style	Grade	min	Starting Value	max	Tap Style	Grade	min	Starting Value	max
P	1	T620	KP6525	70	**100**	150	T630	KP6525	50	**70**	100
	2	T620	KP6525	50	**80**	120	T630	KP6525	40	**60**	90
	3	T620	KP6525	40	**50**	60	T630	KP6525	30	**30**	40
	5	T620	KP6525	40	**50**	60	T630	KP6525	30	**30**	40
M	1	T620	KM6515	40	**50**	60	T630	KM6515	30	**30**	40
	2	T620	KM6515	30	**40**	50	T630	KM6515	20	**30**	40
	3	T620	KM6515	30	**30**	40	T630	KM6515	20	**20**	30
K	1	T640	KP6525	90	**110**	150	T640	KP6525	60	**80**	100
	2	T640	KP6525	80	**100**	130	T640	KP6525	50	**70**	90
	3	T640	KP6525	60	**80**	110	T640	KP6525	40	**60**	70
N	2	T640	KP6525	100	**150**	190	T640	KP6525	70	**100**	130
	4	T640	KP6525	22	**30**	49	T640	KP6525	15	**23**	34
S	1	T620	KP6525	30	**40**	60	T630	KP6525	18	**28**	41

NOTE: Increase speed by up to 25% when using coolant taps (T631, 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	KSU31, KSP32	23	**30**	38	T830, T838	KSU31, KSP32	15	**21**	30
		T820	KSP39	11	**15**	19	T830, T838	KSP39	7	**11**	15
	2	T820	KSU31, KSP32	18	**24**	30	T830, T838	KSU31, KSP32	12	**17**	24
		T820	KSP39	11	**14**	18	T830, T838	KSP39	7	**10**	14
	3	T820	KSU31, KSP32	17	**22**	28	T830, T838	KSU31, KSP32	11	**15**	22
		T820	KSP39	9	**12**	15	T830, T838	KSP39	6	**8**	12
M	1	T820	KSP32	14	**18**	23	T830, T838	KSP32	9	**13**	18
		T820	KSP39	8	**10**	13	T830, T838	KSP39	5	**7**	10
	3	T820	KSP32	11	**15**	19	T830, T838	KSP32	7	**11**	15
		T820	KSP39	7	**9**	11	T830, T838	KSP39	4	**6**	9
K	2	T820	KSU31, KSP32	16	**21**	26	T830, T838	KSU31, KSP32	10	**15**	21
		T820	KSP39	9	**12**	15	T830, T838	KSP39	6	**8**	12
N	1	T820	KSMN34, KSP32	37	**49**	61	T838	KSP32	24	**34**	49
		T820	–	20	**27**	34	T830	–	13	**19**	27
	2	T820	KSP32	30	**40**	50	T830, T838	KSP32	20	**28**	40
		T820	–	16	**21**	26	T830	–	10	**15**	21
	4	T820	KSP32	37	**49**	61	T830, T838	KSP32	24	**34**	49
		T820	–	20	**27**	33	T830	–	13	**19**	27

KSP39 = Oxide
KSU31 = TiN
KSP32 = TiCN/TiN

GOtap™ • Inch

Material Group		Through Holes					Blind Holes				
				Range — SFM					Range — SFM		
		Tap Style	Grade	min	Starting Value	max	Tap Style	Grade	min	Starting Value	max
P	1	T820	KSU31, KSP32	75	**100**	125	T830, T838	KSU31, KSP32	50	**70**	100
		T820	KSP39	35	**50**	60	T830, T838	KSP39	25	**35**	50
	2	T820	KSU31, KSP32	60	**80**	100	T830, T838	KSU31, KSP32	40	**55**	80
		T820	KSP39	35	**45**	55	T830, T838	KSP39	25	**30**	45
	3	T820	KSU31, KSP32	55	**70**	90	T830, T838	KSU31, KSP32	35	**50**	70
		T820	KSP39	30	**40**	50	T830, T838	KSP39	20	**30**	40
M	1	T820	KSP32	45	**60**	75	T830, T838	KSP32	30	**40**	60
		T820	KSP39	25	**35**	40	T830, T838	KSP39	15	**25**	35
	3	T820	KSP32	35	**50**	60	T830, T838	KSP32	25	**35**	50
		T820	KSP39	20	**30**	35	T830, T838	KSP39	15	**20**	30
K	2	T820	KSU31, KSP32	50	**70**	85	T830, T838	KSU31, KSP32	35	**50**	70
		T820	KSP39	30	**40**	50	T830, T838	KSP39	20	**30**	40
N	1	T820	KSP32	120	**160**	200	T830, T838	KSP32	80	**115**	160
		T820	—	65	**90**	110	T830	—	45	**60**	90
	2	T820	KSP32	100	**130**	165	T830, T838	KSP32	65	**90**	130
		T820	—	50	**70**	85	T830	—	35	**50**	70
	4	T820	KSP32	55	**70**	90	T830, T838	KSP32	35	**50**	70
		T820	—	25	**35**	40	T830	—	15	**25**	35

KSP39 = Oxide
KSU31 = TiN
KSP32 = TiCN/TiN

Tooling Systems

Tooling Systems

Hydraulic Chucks D2–D11

Shrink Fit Toolholders D12–D17

Shell Mill Adapters D18–D24

Hydraulic Chucks

HydroForce™

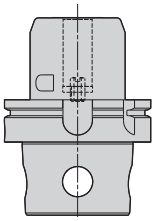
For any application, providing an unparalleled combination of accuracy and clamping force.

Optimum performance for round-tool applications.

Activation of the chuck is achieved by turning the piston screw, which pressurizes the hydraulic fluid and exerts force on a thin-walled membrane along the length of the clamping bore.

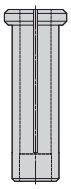
This highly concentric clamping force not only holds the tool shank more securely, but also produces a dampening effect that reduces vibration and helps eliminate micro-cracking on cutting edges.

Portfolio

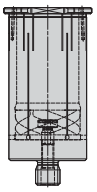


HydroForce™

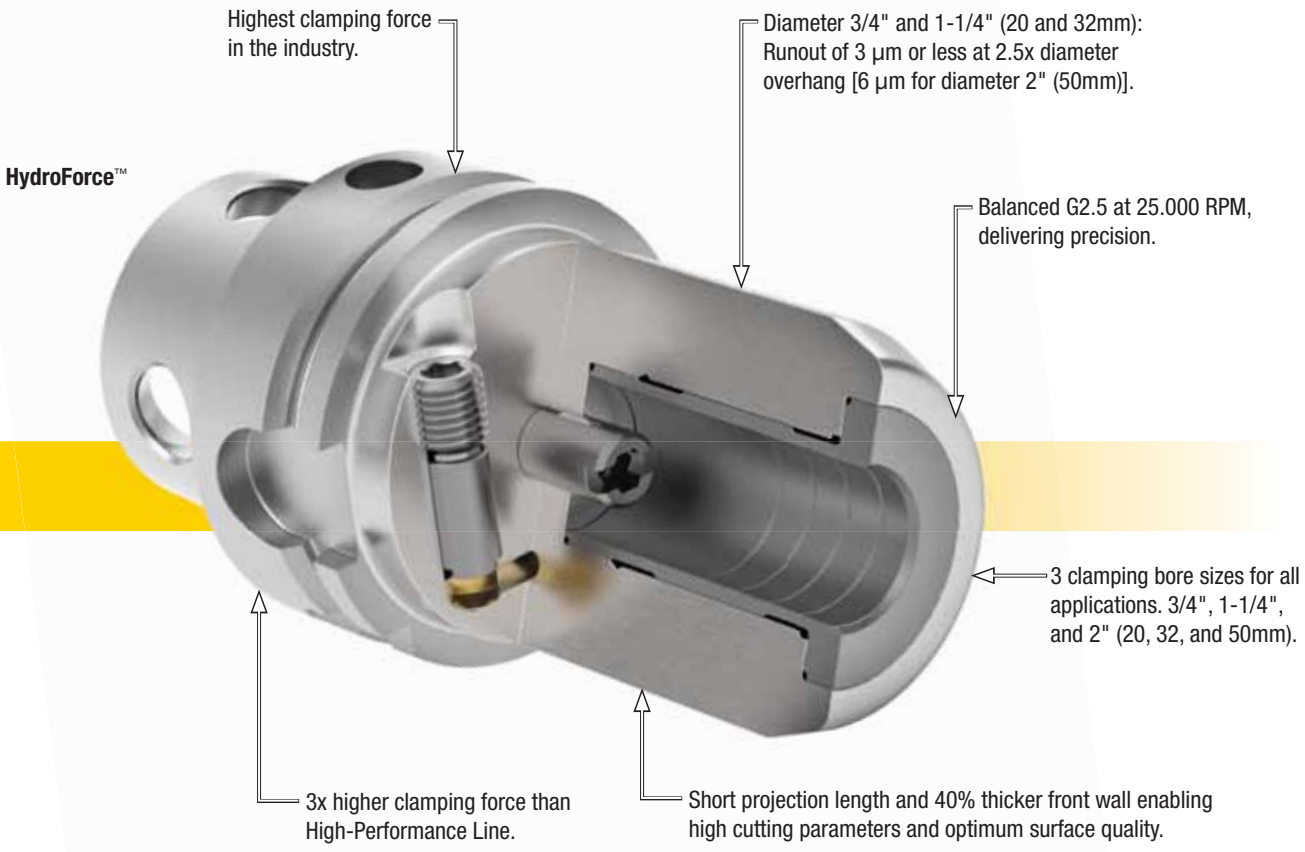
Accessories

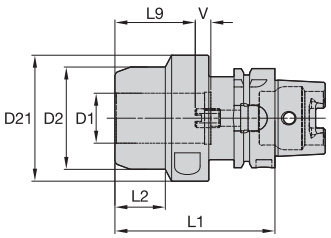


Reducer sleeves



HydroForce Safe-Lock™ reducer sleeves with pullout protection.


Highest clamping force in the industry.
Diameter 3/4" and 1-1/4" (20 and 32mm): Runout of 3 µm or less at 2.5x diameter overhang [6 µm for diameter 2" (50mm)].
HydroForce™
Balanced G2.5 at 25.000 RPM, delivering precision.
3 clamping bore sizes for all applications. 3/4", 1-1/4", and 2" (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.



Metric

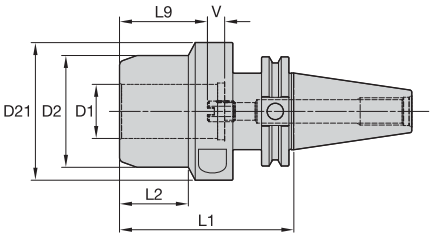
CSMS	order number	catalog number	D1	D2	D21	L1	L2	L9	V	actuation wrench	wrench size actuation screw	wrench size stop screw	kg
HSK63A													
	6048237	**HSK63AHCTHT32100M**	32	65	80	100	32	51	10	**170.136**	6 mm	6 mm	2,25
HSK100A													
	5520976	**HSK100AHCTHT20090M**	20	65	–	90	61	41	10	**170.135**	5 mm	5 mm	3,38

NOTE: Do not overtorque actuation screw. Tighten by hand until stop is felt.
Supplied with stop screw.
Actuation wrench must be ordered separately.

Inch

CSMS	order number	catalog number	D1	D2	D21	L1	L2	L9	V	actuation wrench	wrench size actuation screw	wrench size stop screw	lbs
HSK63A													
	5520958	**HSK63AHCTHT075350**	3/4	2.067	–	3.500	2.478	1.618	.394	**170.135**	5 mm	5 mm	3.39
	6048238	**HSK63AHCTHT125400**	1 1/4	2.559	3.150	4.000	1.260	2.008	.394	**170.136**	6 mm	6 mm	5.11
HSK100A													
	5520959	**HSK100AHCTHT125400**	1 1/4	3.150	–	4.000	2.860	2.012	.394	**170.136**	6 mm	6 mm	9.61

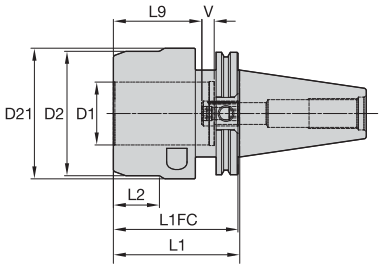
NOTE: Do not overtorque actuation screw. Tighten by hand until stop is felt.
Supplied with stop screw.
Actuation wrench must be ordered separately.



Inch

CSMS	order number	catalog number	D1	D2	D21	L1	L2	L9	V	actuation wrench	wrench size actuation screw	wrench size stop screw	lbs
CV40													
	5521075	**CV40HCTHT075275**	3/4	2.283	—	2.750	2.000	1.618	.394	**170.135**	5 mm	5 mm	3.41
	5647194	**CV40HCTHT125400**	1 1/4	2.559	3.150	4.000	1.575	2.012	.394	**170.136**	6 mm	6 mm	5.59
CV50													
	5521076	**CV50HCTHT125315**	1 1/4	3.150	—	3.150	2.400	2.012	.394	**170.136**	6 mm	6 mm	9.48

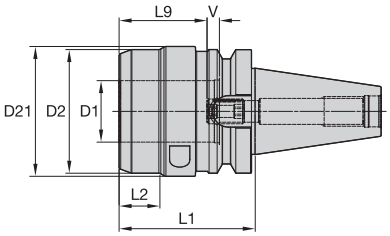
NOTE: Do not overtorque actuation screw. Tighten by hand until stop is felt.
Supplied with stop screw.
Actuation wrench must be ordered separately.
For diameter D1 1-1/4" (32mm), use an L-shape Allen wrench with side length of approximately 7-7/8" (200mm).



Inch

CSMS	order number	catalog number	D1	D2	D21	L1	L1FC	L2	L9	V	actuation wrench	wrench size actuation screw	wrench size stop screw	lbs
CVKV40														
	6048261	**CVKV40HCTHT125315**	—	2.559	3.150	3.150	3.110	.787	2.008	.394	**170.136**	6 mm	6 mm	4.39
	5521077	**CVKV40HCTHT075275**	3/4	2.283	—	2.750	2.711	2.000	1.618	.394	**170.135**	5 mm	5 mm	3.43
CVKV50														
	5521078	**CVKV50HCTHT125315**	1 1/4	3.150	—	3.150	3.091	2.400	2.012	.394	**170.136**	6 mm	6 mm	9.52

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 1-1/4" (32mm), use an L-shape Allen wrench with side length of approximately 7-7/8" (200mm).

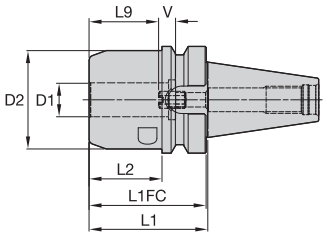


Inch

CSMS	order number	catalog number	D1	D2	D21	L1	L2	L9	V	actuation wrench	wrench size actuation screw	wrench size stop screw	lbs
BT40													
	6048258	**BT40HCTHT125315**	—	3.150	—	3.150	3.150	2.008	.394	**170.136**	6 mm	6 mm	5.03
	5521073	**BT40HCTHT075275**	3/4	2.283	—	2.750	1.687	1.618	.394	**170.135**	5 mm	5 mm	3.70
BT50													
	5521074	**BT50HCTHT125350**	1 1/4	3.150	—	3.500	2.004	2.012	.394	**170.136**	6 mm	6 mm	11.14

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 1-1/4" (32mm), use an L-shape Allen wrench with side length of approximately 7-7/8" (200mm).

HydroForce™ High-Torque Line • BTKV AD

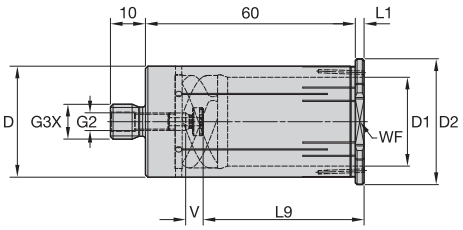


Inch

CSMS	order number	catalog number	D1	D2	L1	L1FC	L2	L9	V	actuation wrench	wrench size actuation screw	wrench size stop screw	lbs
BTKV40													
	6048260	**BTKV40HCTHT125315**	1 1/4	3.150	3.150	3.110	3.110	2.008	.394	**170.136**	6 mm	6 mm	5.03

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 1-1/4" (32mm), use an L-shape Allen wrench with side length of approximately 7-7/8" (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.

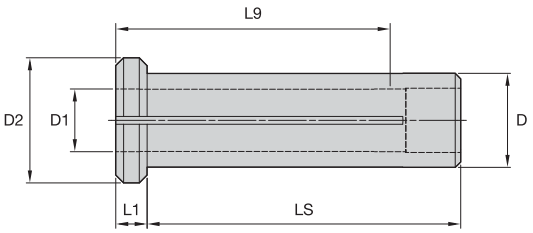


Inch

order number	catalog number	D1	D	D2	L1	L9	V	G3X	G2	WF
5998754	**12HCSFC0500**	.500	1.250	1.417	.098	1.614	.154	M12	M6	1.260
5998755	**12HCSFC0625**	.625	1.250	1.417	.098	1.732	.154	M12	M6	1.260
5998756	**12HCSFC0750**	.750	1.250	1.417	.098	1.811	.154	M12	M6	1.260
5998757	**12HCSFC1000**	1.000	1.250	1.417	.098	1.850	.154	M12	M6	1.260

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.

- 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).

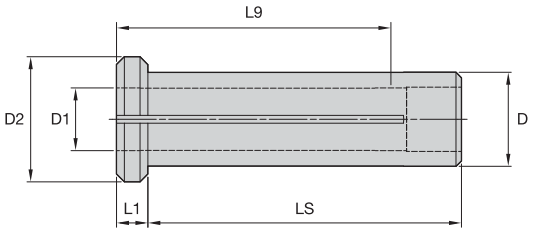


Metric with Metric Bores

CSMS	order number	catalog 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
	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								
	3026678	**32MHC090M**	9	32	36	4	37	60
	3026685	**32MHC160M**	16	32	36	4	48	60
	3026687	**32MHC180M**	18	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.

- 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).

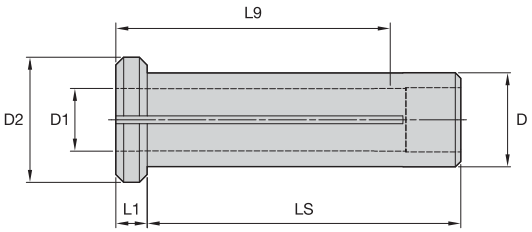


Metric with Inch Bores

CSMS	order number	catalog number	D1	D	D2	L1	L9	LS
20M								
	1093566	**20HCM0188**	3/16	20	25	4	28	50
	1093567	**20HCM0250**	1/4	20	25	4	36	50
	1093568	**20HCM0312**	5/16	20	25	4	37	50
	1093569	**20HCM0375**	3/8	20	25	4	38	50
	1093570	**20HCM0438**	7/16	20	25	4	40	50
	1093571	**20HCM0500**	1/2	20	25	4	45	50
	1093572	**20HCM0562**	9/16	20	25	4	45	50
	1093573	**20HCM0625**	5/8	20	25	4	48	50
32M								
	1093594	**32HCM0500**	1/2	32	36	4	45	60
	1093595	**32HCM0562**	9/16	32	36	4	46	60
	1093596	**32HCM0625**	5/8	32	36	4	46	60
	1093597	**32HCM0688**	11/16	32	36	4	48	60
	1093598	**32HCM0750**	3/4	32	36	4	50	60
	1093599	**32HCM0875**	7/8	32	36	4	51	60
	1093600	**32HCM1000**	1	32	36	4	56	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.

- 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).

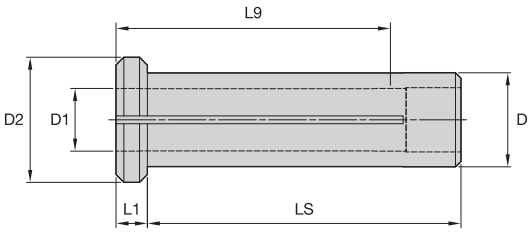


Inch with Metric Bores

CSMS	order number	catalog number	D1	D	D2	L1	L9	LS
3/4								
	2248995	**75HC030M**	3	3/4	25	4	28	50
	2248996	**75HC040M**	4	3/4	25	4	28	50
	2248997	**75HC050M**	5	3/4	25	4	28	50
	1093271	**75HC060M**	6	3/4	25	4	36	50
	1093272	**75HC080M**	8	3/4	25	4	37	50
	1093273	**75HC100M**	10	3/4	25	4	40	50
	1093524	**75HC120M**	12	3/4	25	4	45	50
	1093525	**75HC140M**	14	3/4	25	4	45	50
	1093526	**75HC160M**	16	3/4	25	4	48	50
1 1/4								
	1093539	**12HC180M**	18	1 1/4	36	4	49	60
	1093540	**12HC200M**	20	1 1/4	36	4	50	60
	1093541	**12HC250M**	25	1 1/4	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.

- 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).



Inch with Inch Bores

CSMS	order number	catalog number	D1	D	D2	L1	L9	LS
3/4								
	1937870	**75HC0125**	1/8	3/4	24	4	28	50
	1093496	**75HC0188**	3/16	3/4	24	4	29	50
	1093497	**75HC0250**	1/4	3/4	24	4	38	50
	1093498	**75HC0312**	5/16	3/4	24	4	41	50
	1093500	**75HC0375**	3/8	3/4	24	4	41	50
	1093501	**75HC0438**	7/16	3/4	24	4	41	50
	1093268	**75HC0500**	1/2	3/4	24	4	46	50
	1093269	**75HC0562**	9/16	3/4	24	4	46	50
	1093270	**75HC0625**	5/8	3/4	24	4	46	50
1 1/4								
	1093527	**12HC0500**	1/2	1 1/4	36	4	45	60
	1093528	**12HC0562**	9/16	1 1/4	36	4	46	60
	1093529	**12HC0625**	5/8	1 1/4	36	4	46	60
	1093530	**12HC0688**	11/16	1 1/4	36	4	48	60
	1093533	**12HC0750**	3/4	1 1/4	36	4	50	60
	2248952	**12HC0812**	13/16	1 1/4	36	4	50	60
	1093535	**12HC0875**	7/8	1 1/4	36	4	51	60
	1093536	**12HC1000**	1	1 1/4	36	4	55	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.

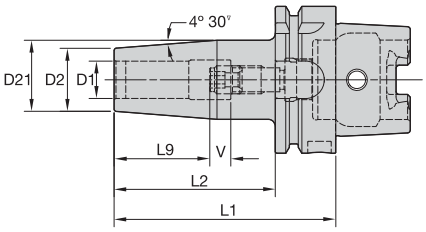
Shrink Fit Toolholders

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 (CV40, CV50, HSK63A, HSK100A, BT40, BT50, and PSC63).
- Balanced to G2.5 @ 25,000 RPM.
- Compatible with steel and carbide shanks.
- Runout accuracy <3 µm at 3 x D for extended tool life and consistent surface finishing.
- Through coolant capability.



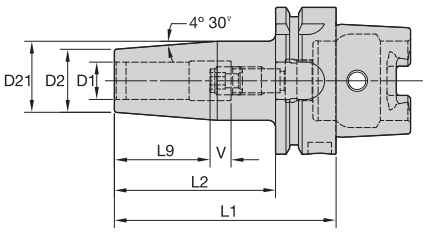
TTGL • Metric

order number	catalog number	D1	D2	D21	L1	L2	L9	V	stop screw	wrench size stop screw	kg
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
6199631	**HSK63ATTGL25115M**	25	44	53	115	89	48	10	**TTSS16014M**	8 mm	1,78

TTGL • Inch

order number	catalog number	D1	D2	D21	L1	L2	L9	V	lbs
6199581	**HSK63ATTGL025315**	1/4	.83	1.06	3.15	2.13	1.02	.39	1.85
6199582	**HSK63ATTGL031315**	5/16	.83	1.06	3.15	2.13	1.02	.39	1.84
6199583	**HSK63ATTGL038335**	3/8	.94	1.26	3.35	2.32	1.26	.39	2.02
6199584	**HSK63ATTGL050354**	1/2	.94	1.26	3.54	2.52	1.46	.39	2.04
6199585	**HSK63ATTGL062374**	5/8	1.06	1.34	3.74	2.72	1.57	.39	2.20
6199586	**HSK63ATTGL075394**	3/4	1.30	1.65	3.94	2.91	1.65	.39	2.67
6199587	**HSK63ATTGL100453**	1	1.73	2.09	4.53	3.50	1.89	.39	3.91

NOTE: For technical information, visit kennametal.com.



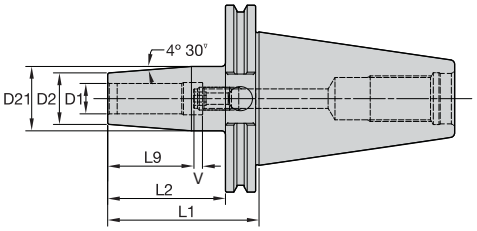
TTGL • Metric

order number	catalog 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
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
6201877	**HSK100ATTGL20105M**	20	33	42	105	76	42	10	**TTSS16014M**	8 mm	2,58

TTGL • Inch

order number	catalog number	D1	D2	D21	L1	L2	L9	V	lbs
6199574	**HSK100ATTGL025335**	1/4	.83	1.06	3.35	2.20	1.02	.39	4.85
6199575	**HSK100ATTGL031335**	5/16	.83	1.06	3.35	2.20	1.02	.39	4.84
6199576	**HSK100ATTGL038354**	3/8	.94	1.26	3.54	2.40	1.26	.39	5.04
6199577	**HSK100ATTGL050374**	1/2	.94	1.26	3.74	2.60	1.46	.39	5.06
6199578	**HSK100ATTGL062394**	5/8	1.06	1.34	3.94	2.80	1.57	.39	5.22
6199579	**HSK100ATTGL075413**	3/4	1.30	1.65	4.13	2.99	1.65	.39	5.70
6199580	**HSK100ATTGL100453**	1	1.73	2.09	4.53	3.39	1.89	.39	6.84

NOTE: For technical information, visit kennametal.com.



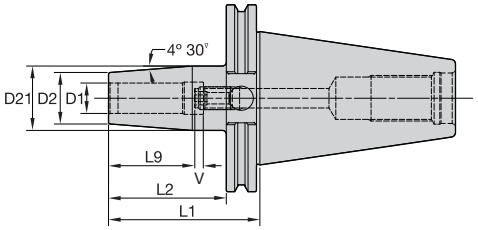
TTGL • Metric

order number	catalog number	D1	D2	D21	L1	L2	L9	V	stop screw	wrench size stop screw	kg
6199502	CV40TTGL06M315	6	21	27	80	61	26	10	TTSS05014M	2.5 mm	1,07
6199503	CV40TTGL08M315	8	21	27	80	61	26	10	TTSS06014M	3 mm	1,06
6199504	CV40TTGL10M315	10	24	32	80	61	32	10	TTSS08014M	4 mm	1,12
6199505	CV40TTGL12M315	12	24	32	80	61	37	10	TTSS10014M	5 mm	1,11
6199506	CV40TTGL14M315	14	27	34	80	61	37	10	TTSS10014M	5 mm	1,16
6199507	CV40TTGL16M315	16	27	34	80	61	40	10	TTSS12014M	6 mm	1,14
6199508	CV40TTGL18M315	18	33	41	80	61	40	10	TTSS12014M	6 mm	1,25
6199509	CV40TTGL20M315	20	33	42	80	61	42	10	TTSS16014M	8 mm	1,25
6199510	CV40TTGL25M394	25	44	53	100	81	48	10	TTSS16014M	8 mm	1,77

TTGL • Inch

order number	catalog number	D1	D2	D21	L1	L2	L9	V	stop screw	wrench size stop screw	lbs
6199542	CV40TTGL025315	1/4	.83	1.06	3.15	2.40	1.02	.39	TTSS05014M	2.5 mm	2.35
6199543	CV40TTGL031315	5/16	.83	1.06	3.15	2.40	1.02	.39	TTSS08014M	4 mm	2.34
6199544	CV40TTGL038315	3/8	.94	1.26	3.15	2.40	1.26	.39	TTSS08014M	4 mm	2.48
6199545	CV40TTGL044315	7/16	.94	1.26	3.15	2.40	1.26	.39	TTSS08014M	4 mm	2.47
6199546	CV40TTGL050315	1/2	.94	1.26	3.15	2.40	1.46	.39	TTSS10014M	5 mm	2.43
6199547	CV40TTGL056315	9/16	1.06	1.34	3.15	2.40	1.46	.39	TTSS10014M	5 mm	2.46
6199548	CV40TTGL062315	5/8	1.06	1.34	3.15	2.40	1.57	.39	TTSS12014M	6 mm	2.51
6199549	CV40TTGL068315	11/16	1.30	1.59	3.15	2.40	1.57	.39	TTSS12014M	6 mm	2.74
6199550	CV40TTGL075315	3/4	1.30	1.65	3.15	2.40	1.65	.39	TTSS16014M	8 mm	2.79
6199561	CV40TTGL088315	7/8	1.30	1.65	3.15	2.40	1.65	.39	TTSS16014M	8 mm	2.69
6199562	CV40TTGL100394	1	1.73	2.09	3.94	3.19	1.89	.39	TTSS16014M	8 mm	3.88

NOTE: For technical information, visit kennametal.com.



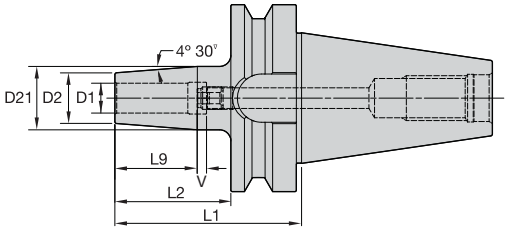
TTGL • Metric

order number	catalog number	D1	D2	D21	L1	L2	L9	V	stop screw	wrench size stop screw	kg
6199551	CV50TTGL06M315	6	21	27	80	61	26	10	TTSS05014M	2.5 mm	2,90
6199552	CV50TTGL08M315	8	21	27	80	61	26	10	TTSS06014M	3 mm	2,89
6199553	CV50TTGL10M315	10	24	32	80	61	32	10	TTSS08014M	4 mm	2,95
6199554	CV50TTGL12M315	12	24	32	80	61	37	10	TTSS10014M	5 mm	2,94
6199555	CV50TTGL14M315	14	27	34	80	61	37	10	TTSS10014M	5 mm	2,99
6199556	CV50TTGL16M315	16	27	34	80	61	40	10	TTSS12014M	6 mm	2,97
6199557	CV50TTGL18M315	18	33	42	80	61	40	10	TTSS12014M	6 mm	3,11
6199558	CV50TTGL20M315	20	33	42	80	61	42	10	TTSS16014M	8 mm	3,08
6199559	CV50TTGL25M394	25	44	53	100	81	48	10	TTSS16014M	8 mm	3,69
6199560	CV50TTGL32M394	32	44	53	100	81	48	10	TTSS16014M	8 mm	3,51

TTGL • Inch

order number	catalog number	D1	D2	D21	L1	L2	L9	V	stop screw	wrench size stop screw	lbs
6199563	CV50TTGL025315	1/4	.83	1.06	3.15	2.40	1.02	.39	TTSS05014M	2.5 mm	6.38
6199564	CV50TTGL031315	5/16	.83	1.06	3.15	2.40	1.02	.39	TTSS06014M	3 mm	6.37
6199565	CV50TTGL038315	3/8	.94	1.26	3.15	2.40	1.26	.39	TTSS08014M	4 mm	6.51
6199566	CV50TTGL044315	7/16	.94	1.26	3.15	2.40	1.26	.39	TTSS08014M	4 mm	6.50
6199567	CV50TTGL050315	1/2	.94	1.26	3.15	2.40	1.46	.39	TTSS10014M	5 mm	6.47
6199568	CV50TTGL056315	9/16	1.06	1.33	3.15	2.40	1.40	.39	TTSS12014M	6 mm	6.47
6199569	CV50TTGL062315	5/8	1.06	1.33	3.15	2.40	1.57	.39	TTSS12014M	6 mm	6.54
6199570	CV50TTGL075315	3/4	1.30	1.65	3.15	2.40	1.65	.39	TTSS16014M	8 mm	6.82
6199571	CV50TTGL088315	7/8	1.30	1.65	3.15	2.40	1.65	.39	TTSS16014M	8 mm	6.73
6199572	CV50TTGL100394	1	1.73	2.09	3.94	3.19	1.89	.39	TTSS16014M	8 mm	8.11
6199573	CV50TTGL125394	1 1/4	1.73	2.09	3.94	3.19	1.89	.39	TTSS16014M	8 mm	7.76

NOTE: For technical information, visit kennametal.com.



TTGL • Inch

order number	catalog number	D1	D2	D21	L1	L2	L9	V	stop screw	wrench size stop screw	lbs
6199595	**BT40TTGL025354**	1/4	.83	1.06	3.54	2.48	1.02	.39	**TTSS05014M**	2.5 mm	2.71
6199596	**BT40TTGL031354**	5/16	.83	1.06	3.54	2.48	1.02	.39	**TTSS06014M**	3 mm	2.70
6199598	**BT40TTGL038354**	3/8	.94	1.26	3.54	2.48	1.26	.39	**TTSS08014M**	4 mm	2.85
6199599	**BT40TTGL050354**	1/2	.94	1.26	3.54	2.48	1.46	.39	**TTSS10014M**	5 mm	2.80
6199600	**BT40TTGL062354**	5/8	1.06	1.34	3.54	2.48	1.57	.39	**TTSS12014M**	6 mm	2.88

NOTE: For technical information, visit kennametal.com.

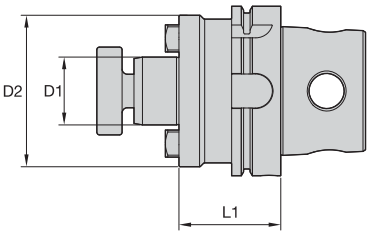
Shell Mill Adapters with Through Coolant

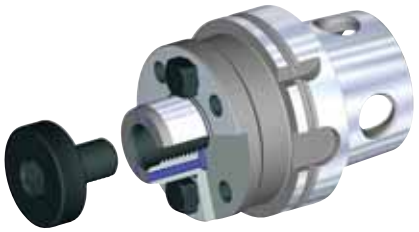
ERICKSON™

Through coolant shell mill adapters are designed to deliver coolant directly to the cutting edge where it is most effective in extending insert life.

Through coolant shell mill adapters 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: KM4X™ 100, HSK63A, HSK100A, CV40, CV50, and BT30.
- Coolant design for maximum coolant flow channeled directly to the cutting edge or through the center of the tool.
- Expanded range of smaller mounting diameters defined by “SM2” in the catalog 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.



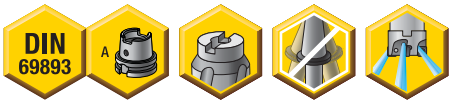


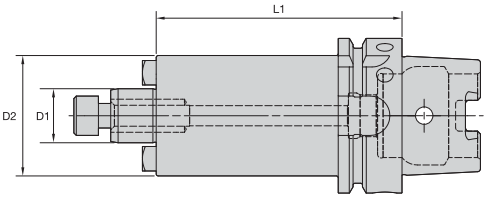
KM QUICK CHANGE

SMC Lock IN-KM4X • Inch

order number	catalog number	D1	D2	L1	lock screw	lock screw maximum torque (ft. lbs.)	wrench size lock screw	lbs
4160286	**KM4X100SMC075400**	3/4	1.75	4.00	**KLS07**	45	1/4	7.02
4160315	**KM4X100SMC125400**	1 1/4	2.88	4.00	**KLS12**	70	5/16	10.50

NOTE: Do not overtighten lock screw; use torque recommendations above.
Supplied with lock screw and drive keys.
Lock screw wrench not included.





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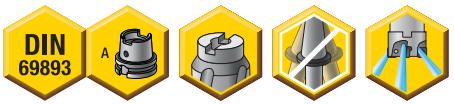
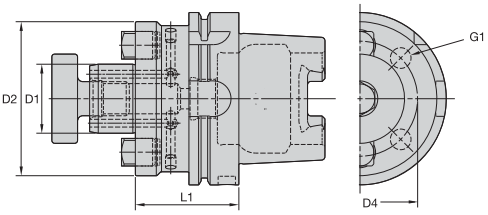
SMC Cap MM-HSK Form A

order number	catalog number	D1	D2	L1	lock screw	lock screw maximum torque (ft. lbs.)	drive key	wrench size lock screw	kg
3872683	**HSK63ASMC22050M**	22	49	50	**MS1234**	45	**KDK22M**	8 mm	1,05
3872685	**HSK63ASMC22100M**	22	49	100	**MS1234**	45	**KDK22M**	8 mm	1,77
3872686	**HSK63ASMC22160M**	22	49	160	**MS1234**	45	**KDK22M**	8 mm	2,63

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.





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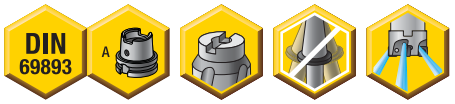
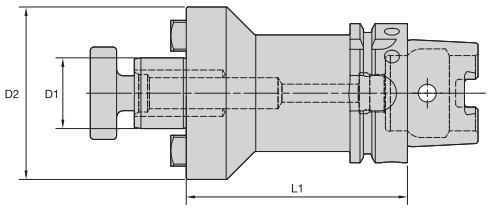
SMC Lock MM-HSK Form A

order number	catalog number	D1	D2	D4	G1	L1	lock screw	lock screw maximum torque (ft. lbs.)	drive key	wrench size lock screw	kg
3872687	**HSK63ASMC27060M**	27	60	—	—	60	**KLSS27M**	60	**KDK27M**	10 mm	1,42
3872688	**HSK63ASMC27100M**	27	60	—	—	100	**KLSS27M**	60	**KDK27M**	10 mm	2,11
3872690	**HSK63ASMC32060M**	32	78	—	—	60	**KLSS32M**	70	**KDK32M**	14 mm	1,77
3872693	**HSK63ASMC40060M**	40	89	67	M12X1.75	60	**KLSS40M**	75	**KDK40M**	17 mm	2,14

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.





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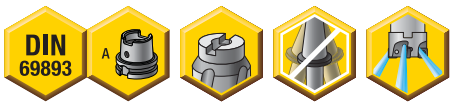
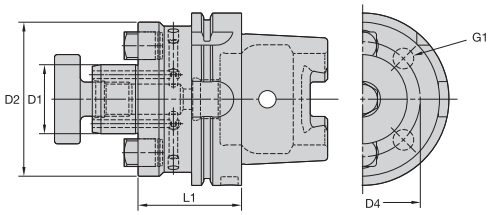
SMC Lock IN-HSK Form A

order number	catalog number	D1	D2	L1	lock screw	lock screw maximum torque (ft. lbs.)	drive key	wrench size lock screw	lbs
3762411	HSK63ASMC075200	3/4	1.75	2.00	KLS07	45	KDK05	1/4	2.17
3762413	HSK63ASMC100225	1	2.75	2.25	KLS10	60	KDK06	5/16	3.11
3762415	HSK63ASMC125225	1 1/4	2.88	2.25	KLS12	70	KDK08	5/16	3.40
3762416	HSK63ASMC150225	1 1/2	3.81	2.25	KLS15	75	KDK10	3/8	4.59

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.

HSK100A Shank Tools





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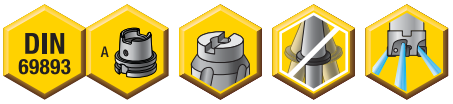
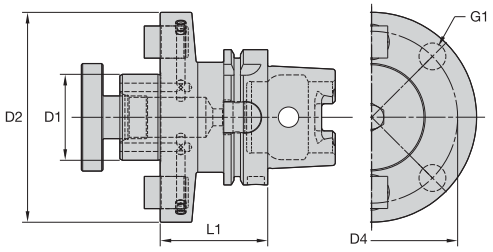
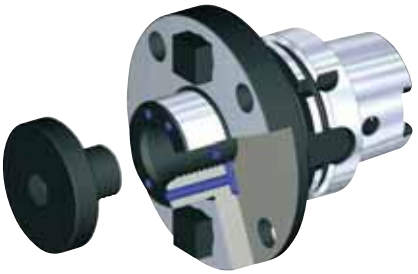
SMC Lock MM-HSK Form A

order number	catalog number	D1	D2	D4	G1	L1	drive key	kg
3872514	HSK100ASMC60070M	60	129	102	M16X2	70	KDK60M	5,53

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.







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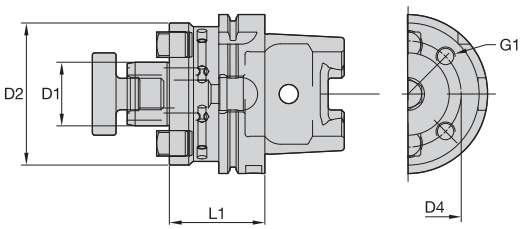
SMC Lock IN-HSK Form A

order number	catalog number	D1	D2	D4	G1	L1	lock screw	lock screw maximum torque (ft. lbs.)	drive key	wrench size lock screw	lbs
3763071	**HSK100ASMC075225**	3/4	1.75	—	—	2.25	**KLS07**	45	**KDK05**	1/4	5.23
3763073	**HSK100ASMC100225**	1	2.75	—	—	2.25	**KLS10**	60	**KDK06**	5/16	6.43
3763075	**HSK100ASMC125250**	1 1/4	2.88	—	—	2.50	**KLS12**	70	**KDK08**	5/16	7.26
3763076	**HSK100ASMC150250**	1 1/2	3.81	—	—	2.50	**KLS15**	75	**KDK10**	3/8	8.94
3763077	**HSK100ASMC200250**	2	4.88	4.00	0.625-11 UNC	2.50	**KLS20**	100	**KDK12**	9/16	10.87
3763078	**HSK100ASMC250250**	2 1/2	4.88	4.00	0.625-11 UNC	2.50	**KLS25**	100	**KDK16**	9/16	11.83

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.

HSK125A Shank Tools



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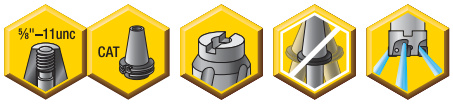
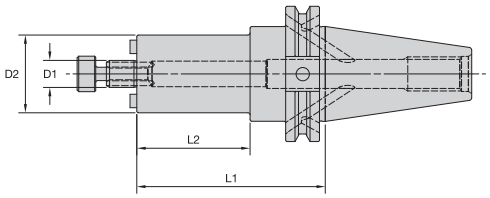
SMC Lock IN-HSK Form A

order number	catalog number	D1	D2	D4	G1	L1	lock screw	lock screw maximum torque (ft. lbs.)	drive key	wrench size lock screw	lbs
5902749	**HSK125ASMC125400**	1 1/4	2.88	—	—	4.00	**KLS12**	70	**KDK08**	5/16	12.74
5902754	**HSK125ASMC250350**	2 1/2	4.88	4.00	5/8-11	3.50	**KLS25**	70	**KDK16**	9/16	21.78

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.





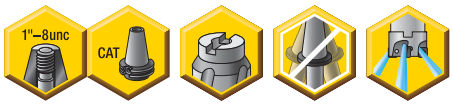
ERICKSON

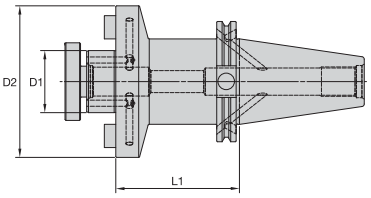
SMC Lock IN-CV Form B/AD

order number	catalog number	D1	D2	L1	L2	lock screw	lock screw maximum torque (ft. lbs.)	drive key	wrench size lock screw	lbs
3641490	CV40BSMC050350	1/2	1.44	3.50	2.09	KLS05	14	KDK04	3/16	3.13
3641513	CV40BSMC075350	3/4	1.75	3.50	2.75	KLS07	45	KDK05	1/4	3.64
3641521	CV40BSMC100400	1	2.75	4.00	3.25	KLS10	60	KDK06	5/16	4.70
3641526	CV40BSMC125400	1 1/4	2.88	4.00	3.25	KLS12	70	KDK08	5/16	5.08
3641528	CV40BSMC150400	1 1/2	3.81	4.00	3.25	KLS15	75	KDK10	3/8	6.85

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.

CAT50 Shank Tools



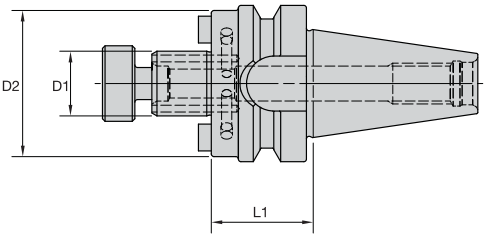


ERICKSON

SMC Lock IN-CV Form B/AD

order number	catalog number	D1	D2	L1	lock screw	lock screw maximum torque (ft. lbs.)	drive key	wrench size lock screw	lbs
3640197	CV50BSMC075350	3/4	1.75	3.50	KLS07	45	KDK05	1/4	7.98
3640205	CV50BSMC100400	1	2.75	4.00	KLS10	60	KDK06	5/16	10.94
3640212	CV50BSMC125350	1 1/4	2.88	3.50	KLS12	70	KDK08	5/16	10.22
3640217	CV50BSMC150400	1 1/2	3.81	4.00	KLS15	75	KDK10	3/8	12.53
3640221	CV50BSMC200400	2	4.88	4.00	KLS20	100	KDK12	9/16	14.94

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.



ERICKSON™

SMC Lock IN-BT Form B/AD

order number	catalog number	D1	D2	L1	lock screw	lock screw maximum torque (ft. lbs.)	drive key	wrench size lock screw	lbs
3648598	**BT30SMC050118**	1/2	1.44	1.18	**KLS05**	14	**KDK04**	3/16	1.02

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.

Kennametal on the Web

kennametal.com

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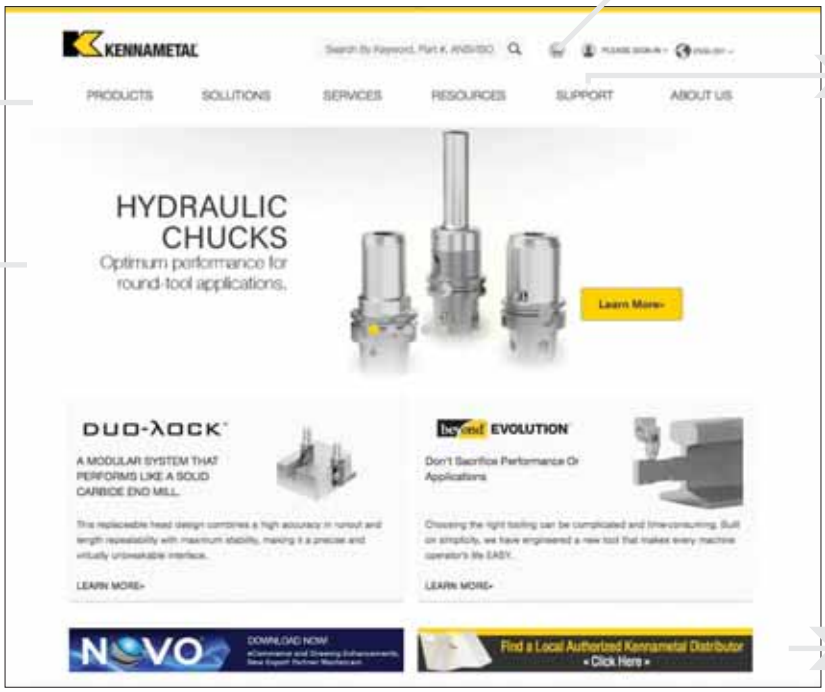

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Our customers are important to us. We want to provide you the best customer service in the industry. If you have a comment or question, please send it to us. We strive to respond to all inquiries within 24 hours.

FIND A LOCAL AUTHORIZED DISTRIBUTOR IN YOUR AREA

Kennametal offers world-class products and services globally. Our distributors know us, and more importantly, they know you. They know better than anyone in the industry how to put the global power of Kennametal to work for you — in your industry, in your region, and for your business.

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 • 5.3–47.8 in. lbs. (0,6–5,4 Nm)

Order Number	Catalog 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 • 3.7–10.3 in. lbs. (5–14 Nm)

Order Number	Catalog 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 Adapter

Order Number	Catalog Number	Drive Size	Description
1963869	**DRIVER**	hex 1/4"	Bit Adapter suitable for standard and extended length 1/4" drive bits

Turning Icons

Through Coolant	Turning	Profiling	Facing	Chamfering
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	Shank: SK CAT(CV) ANSI B5.50	Shell Mill Shank	Milling: Through Coolant

Solid End Milling Icons

Plunge Milling	Ramping: Blank	Ramping: Up to 3º	Slotting: Ball Nose	Slotting: Ball Nose with AE/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: 20º	Helix Angle: 30º	Helix Angle: 38º	Helix Angle: 43º
Helix Angle: 45º	Helix Angle: 37º/39º	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	Shank: Cylindrical with Flat 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)
Shank — Cylindrical with Square	Chamfer Form C (2–3)	Chamfer Form D (3.5–5)	Chamfer Form E (1.5–2)	Chamfer Form (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
American National Standards Institute	Unified Fine Thread	Unified Course Thread	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 CV	Shank: SK BT JIS B 6339
Shank — SK CAT(CV) ANSI B5.50	Shank — SK BT Taper Face Contact	Shank — SK CAT(CV) Taper Face Contact	Shank — SK CAT(CV) ANSI B5.50 5/8"–11 UNC Drawbar	Shank — SK CAT(CV) ANSI B5.50 1"–8 UNC Drawbar
Shank — HSK DIN 69893 Form A	Shank — HSK DIN 69893 Form A	Shank: Shell Mill	Shank: KM4X	Shank: Safe-Lock™ ≤h6
Axial Adjustments: End	Balanced-by-Design	Balance G 2.5/25,000	Balance G 2.@ 25,000 min-1	DIN Number 69893
Accuracy — 3µm or Less	Accuracy — 6µm or Less	Drilling — Through Coolant	Milling — Through Coolant	Through Coolant: 100 bar
Through Coolant: 1500 psi	Through Coolant: Through Adapter 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	–	A36, 1008, 1010, 1018 through 1029; 1108, 1117
P1	Low-Carbon Steels, Short Chipping, Free Machining	C <0,25%	<530	<125	–	10L18, 1200 Series, 1213, 12L14
P2	Medium- and High-Carbon Steels	C >0,25%	>530	<220	<25	1035, 1045, 10L45, 1050, 10L50, 1080, 1137, 1144, 11L44, 1525, 1545, 1572
P3	Alloy Steels and Tool Steels	C >0,25%	600–850	<330	<35	1300, 2000, 3000, 4000, 5000, 8000, P20, SAE: A, D, H, O, S, M, T
P4	Alloy Steels and Tool Steels	C >0,25%	850–1400	340–450	35–48	1300, 2000, 3000, 4000, 5000, 8000, P20, SAE: A, D, H, O, S, M, T
P5	Ferritic, Martensitic, and PH Stainless Steels	–	600–900	<330	<35	15–5 PH, 13–8 PH, 17–4 PH, 400 and 500 Series
P6	High-Strength Ferritic, Martensitic, and PH Stainless Steels	–	900–1350	350–450	35–48	15–5 PH, 13–8 PH, 17–4 PH, 400 and 500 Series
M1	Austenitic Stainless Steel	–	<600	130–200	–	200 Series, 301, 302, 304, 304L, 309
M2	High-Strength Austenitic Stainless and Cast Stainless Steels	–	600–800	150–230	<25	310, 316, 316L, 321, 347, 384 ASTM Cast XM-1, XM-5, XM-7, XM-21
M3	Duplex Stainless Steel	–	<800	135–275	<30	323, 329, F55, 2205, S329000
K1	Gray Cast Iron	–	125–500	120–290	<32	class 20, 25, 30, 35, 40, 45, 50, 55, 60, G1800, G3000, G3500, G4000
K2	Low- and Medium-Strength Ductile Irons (Nodular Irons) and Compacted Graphite Irons (CGI)	–	<600	130–260	<28	60-40-18, 65-45-12, 80-55-06; SAE J434: D4018, D4512, D5506; ASTM A47: Grade 32510, 35018; SAE J158: Grade M3210, M4504, M5003, M5503, M7002; ASTMA842: Grade 250, 300, 350, 400, 450
K3	High-Strength Ductile Irons and Austempered Ductile Iron (ADI)	–	>600	180–350	<43	ASTM A536:100-70-03, 120-90-02, SAE J434: D7003, SAE J158: Grade M8501AST A897: 125-80-10, 150-100-7, 175-125-4, 200-150-1, 230-185
N1	Wrought Aluminum	–	–	–	–	2025, 5050, 7050, 1000, 2017
N2	Low-Silicon Aluminum Alloys and Magnesium Alloys	Si <12,2%	–	–	–	2024, 6061, 7075
N3	High-Silicon Aluminum Alloys and Magnesium Alloys	Si >12,2%	–	–	–	–
N4	Copper-, Brass-, Zinc-Based on Machinability Index Range of 70–100	–	–	–	–	C81500
N5	Nylon, Plastics, Rubbers, Phenolics, Resins, Fiberglass	–	–	–	–	–
N6	Carbon, Graphite Composites, CFRP	–	–	–	–	Graphite, CFK, CFRP
N7	Metal Matrix Composites (MMC)	–	–	–	–	C63000
S1	Iron-Based, Heat-Resistant Alloys	–	500–1200	160–260	25–48	A-286, INCOLOY® 800 Series, A608, A567, Discaloy™, INVAR®, N-155, 16-25-6, 19-9 DL; Cast: ASTM A-297, A-351, A-567, A-608
S2	Cobalt-Based, Heat-Resistant Alloys	–	1000–1450	250–450	25–48	Haynes® 25 (L605), Haynes 188, J-1570, Stellite™, AiResist 213; Cast: AiResist 13, Haynes 21, MAR-M302, MAR-M509, NASA Co-W-Re, WI-52
S3	Nickel-Based, Heat-Resistant Alloys	–	600–1700	160–450	<48	Astroloy™, Hastelloy® B/C/ C-276 /X, INCONEL® 600 and 700 Series, IN102, INCOLOY 900 Series, Rene 41, Waspalloy, Monel®, K-500, MAR-M20, NIMONIC®, UDIMET®
S4	Titanium and Titanium Alloys	–	900–1600	300–400	33–48	Pure: Ti 98.8, Ti 98.9,Ti 99.9; Alloyed: Ti 5Al-2.5Sn, Ti6Al-4V, Ti6Al-2Sn-4Zr-2Mo, Ti-3Al-8V-6Cr-4Mo-4Zr, Ti-10V-2Fe-3Al, Ti-13V-11Cr-3Al
H1	Hardened Materials	–	–	–	44–48	Tool Steel H10, H11, H13, D2, D3, 4340, P20
H2	Hardened Materials	–	–	–	48–55	Tool Steel H10, H11, H13, D2, D3, 4340, P20
H3	Hardened Materials	–	–	–	56–60	Tool Steel H10, H11, H13, D2, D3, 4340, P20
H4	Hardened Materials	–	–	–	>60	Tool Steel H10, H11, H13, D2, D3, 4340, P20
C1	CFRP, CFRP/CFRP	–	–	–	–	–
C2	CFRP/Non-Ferrous	–	–	–	–	–
C3	CFRP/High-Temp	–	–	–	–	–
C4	CFRP/Stainless Steel	–	–	–	–	–
C5	CFRP/Non-Ferrous/High-Temp	–	–	–	–	–

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	Gray 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 Aluminum	–	–	–	–	AlMg1, Al99.5, AlCuMg1, AlCuBiPb, AlMgSi1, ALMgSiPb
N2	Low-Silicon Aluminum Alloys and Magnesium Alloys	Si <12,2%	–	–	–	GAlSiCu4, GDAlSi10Mg
N3	High-Silicon Aluminum Alloys and Magnesium Alloys	Si >12,2%	–	–	–	G-ALSi12, G-AlSi17Cu4, G-AlSi21CuNiMg
N4	Copper-, Brass-, Zinc-Based on Machinability Index Range of 70–100	–	–	–	–	CuZn40, Ms60, G-CuSn5ZnPb, CuZn37, CuSi3Mn
N5	Nylon, Plastics, Rubbers, Phenolics, Resins, Fiberglass	–	–	–	–	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 catalog!

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 catalog 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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