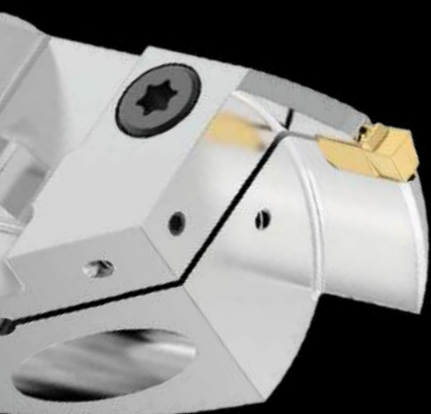
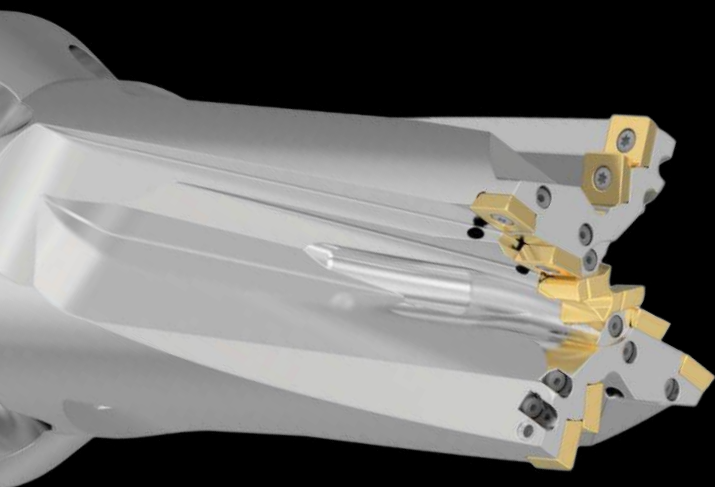


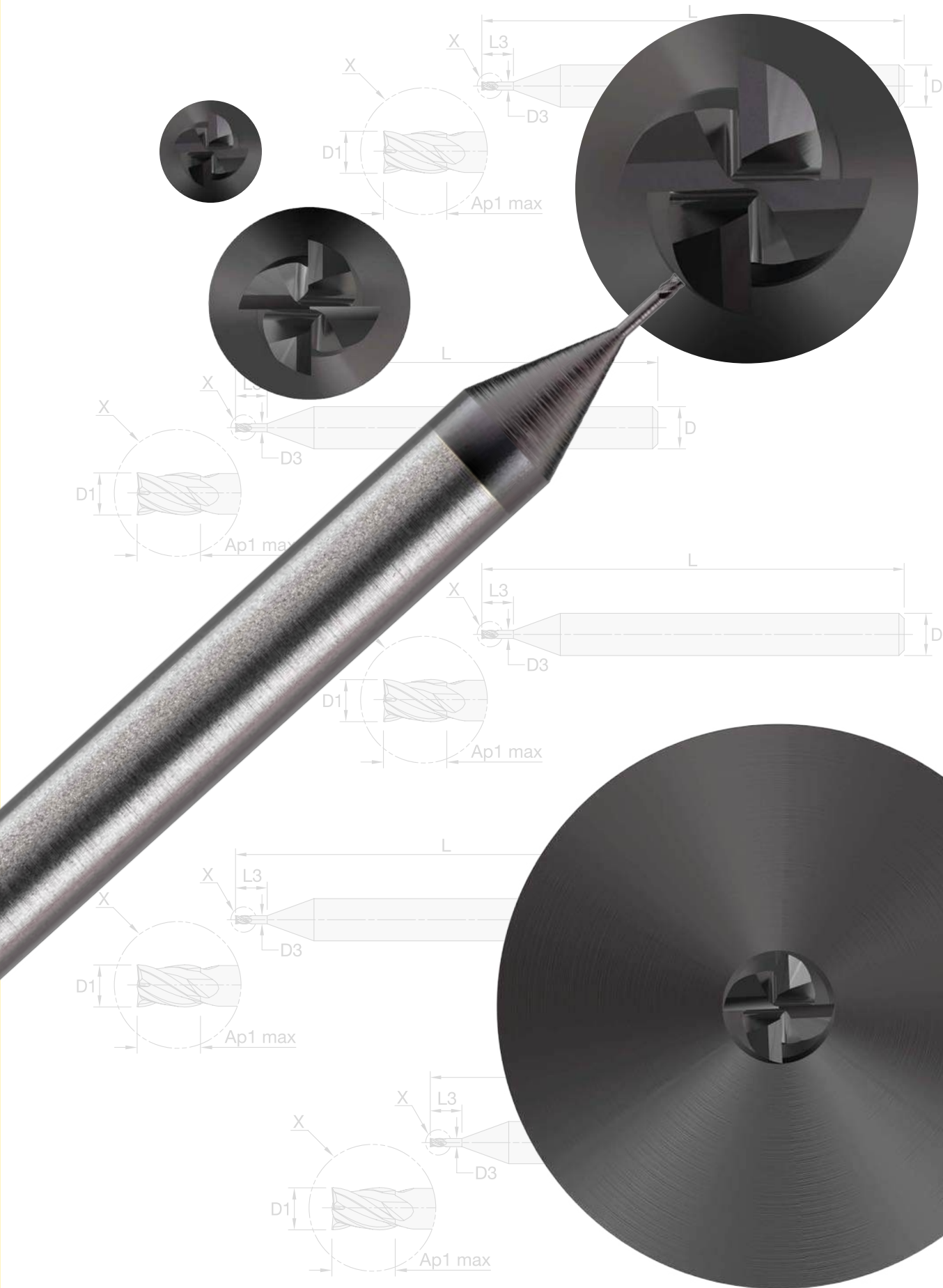
SPRING 2025 inch/mm
INNOVATIONS

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SOLID END MILLS



KenCut™ Micro MEMM High-Performance End Mills

KenCut Micro MEMM high-performance end mills are the latest addition to Kennametal's platform of advanced milling solutions. These micro-mills, feature the KCSM10 grade and are ideal for machining bone screws and other instruments made from medical-grade stainless steel and titanium materials. Designed for clean cutting, they leave no burrs behind, making them great for precision applications like side milling, slotting, pocket milling and helical milling.

Applications



Side Milling/
Shoulder Milling



Pocket Milling



Helical Milling



Slotting

Materials

PRIMARY



Stainless Steels



Titanium

SECONDARY



Hardened
Steel



Alloy Steels



Cast Iron



kennametal.com

Kennametal's First Micro End Mill for Small Parts Medical and Aerospace Materials

- Advanced 3 and 4-flute designs for higher metal removal rates
- Optimized carbide grade for increased fracture resistance, stability and reduced deflection
- Gash design with corner protection for extended tool life, preventing chipping
- Extended neck geometry for better reach and stability in smaller spaces
- KCSM10 coating for smooth chip evacuation and tight tolerances
- Standard offering from 0.2mm to 1.0mm, with custom sizes on request

Industries



Aerospace



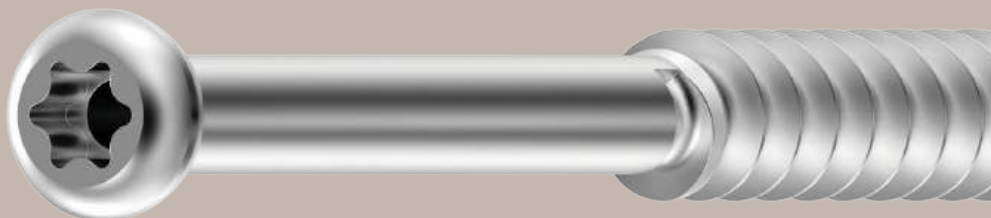
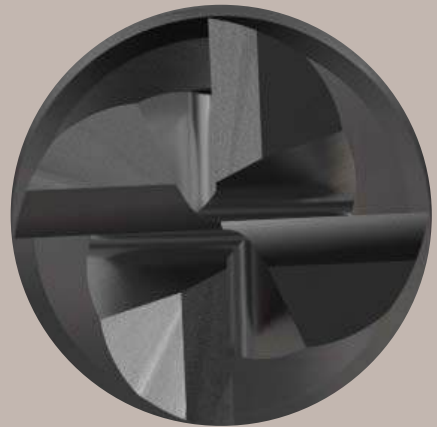
Medical



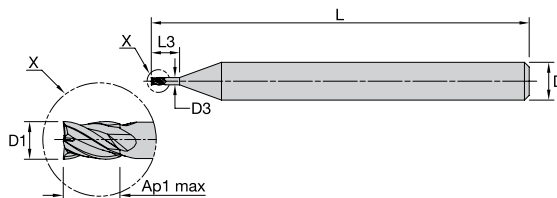
Aerospace Door Latch



Advanced High-Performance Design



Medical Bone Screw



● Primary
○ Secondary

P	Blue	○
M	Yellow	●
K	Red	○
N	Green	○
S	Orange	●
H	Grey	○

KCSM10

KenCut • Micro End Mills MEMM • Square End • Plain Shank • Metric

Order Number	Catalog Number	D1	D	D3	AP1 Max	L	L3	Hexalobe Size	
7291227	MEMM3SE0020B0030HAM	0.20	4.00	0.18	0.30	40.00	0.60	T4, T5	●
7291228	MEMM3SE0030B0050HAM	0.30	4.00	0.28	0.50	40.00	0.90	T6, T7	●
7291229	MEMM3SE0030C0050HAM	0.30	4.00	0.28	0.50	40.00	1.50	T6, T7	●
7291230	MEMM4SE0040B0060HAM	0.40	4.00	0.37	0.60	40.00	1.00	T7, T8, T9, T10	●
7291371	MEMM4SE0040C0060HAM	0.40	4.00	0.37	0.60	40.00	1.80	T7, T8, T9, T10	●
7291372	MEMM4SE0050A0070HAM	0.50	4.00	0.47	0.70	40.00	1.50	T9, T10, T15	●
7291373	MEMM4SE0050B0070HAM	0.50	4.00	0.47	0.70	40.00	2.50	T9, T10, T15	●
7291374	MEMM4SE0050C0070HAM	0.50	4.00	0.47	0.70	40.00	3.00	T9, T10, T15	●
7291375	MEMM4SE0060B0090HAM	0.60	4.00	0.57	0.90	40.00	3.00	T15, T20	●
7291376	MEMM4SE0070B0010HAM	0.70	4.00	0.67	1.00	40.00	3.50	T20	●
7291377	MEMM4SE0080B0012HAM	0.80	4.00	0.77	1.20	40.00	2.40	T25, T27	●
7291378	MEMM4SE0080C0012HAM	0.80	4.00	0.77	1.20	40.00	3.00	T25, T27	●
7291379	MEMM4SE0080D0012HAM	0.80	4.00	0.77	1.20	40.00	4.00	T25, T27	●
7291380	MEMM4SE0100B0015HAM	1.00	4.00	0.96	1.50	40.00	5.00	T27, T30, T40	●

*KenCut Micro End Mill Recommendation by Hexalobe Size (based on inner radius, Re per ISO10663:2014)

**Required end mill length determined by feature depth

KenCut Micro End Mills • MEMM Series • Metric

Application Data • Side Milling

Material Group		Cutting Speed Vc		mm	D1 - Diameter								
		MM/MIN											
		Max Depth	Min										
P	P0	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	P1	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	P2	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	P3	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	P4	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	P5	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
M	P6	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	M1	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	M2	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
K	M3	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	K1	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	K2	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
S	K3	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	S1	0.15 x D1	10	20	Fz	0.0023	0.0022	0.0035	0.0035	0.0049	0.0055	0.0060	0.0082
	S2	0.15 x D1	10	20	Fz	0.0023	0.0022	0.0035	0.0035	0.0049	0.0055	0.0060	0.0082
	S3	0.15 x D1	10	20	Fz	0.0023	0.0022	0.0035	0.0035	0.0049	0.0055	0.0060	0.0082
H	S4	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	H1	0.15 x D1	10	20	Fz	0.0023	0.0022	0.0035	0.0035	0.0049	0.0055	0.0060	0.0082
	H2	0.15 x D1	10	20	Fz	0.0023	0.0022	0.0035	0.0035	0.0049	0.0055	0.0060	0.0082

KenCut Micro End Mills • MEMM Series • Metric

Application Data • Face Milling

Material Group		Cutting Speed Vc		mm	D1 - Diameter								
		SFM											
		Face Milling	Min		Max	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1
P	P0	0.05 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	P1	0.05 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	P2	0.05 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	P3	0.05 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	P4	0.05 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	P5	0.05 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
M	P6	0.05 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	M1	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	M2	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
K	M3	0.15 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	K1	0.05 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	K2	0.05 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
S	K3	0.05 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	S1	0.05 x D1	10	20	Fz	0.0023	0.0022	0.0035	0.0035	0.0049	0.0055	0.0060	0.0082
	S2	0.05 x D1	10	20	Fz	0.0023	0.0022	0.0035	0.0035	0.0049	0.0055	0.0060	0.0082
	S3	0.05 x D1	10	20	Fz	0.0023	0.0022	0.0035	0.0035	0.0049	0.0055	0.0060	0.0082
H	S4	0.05 x D1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	H1	0.05 x D1	10	20	Fz	0.0023	0.0022	0.0035	0.0035	0.0049	0.0055	0.0060	0.0082
	H2	0.05 x D1	10	20	Fz	0.0023	0.0022	0.0035	0.0035	0.0049	0.0055	0.0060	0.0082

KenCut Micro End Mills • MEMM Series • Metric

Application Data • Slotting

Material Group		Cutting Speed Vc MM/MIN			D1 - Diameter								
	Slotting	Max Depth	Min	Max	mm	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1
P	P0	0.15 x D1	10	45	Fz	0.0021	0.0021	0.0033	0.0034	0.0050	0.0059	0.0070	0.0105
	P1	0.15 x D1	10	45	Fz	0.0021	0.0021	0.0033	0.0034	0.0050	0.0059	0.0070	0.0105
	P2	0.15 x D1	10	45	Fz	0.0021	0.0021	0.0033	0.0034	0.0050	0.0059	0.0070	0.0105
	P3	0.15 x D1	10	45	Fz	0.0021	0.0021	0.0033	0.0034	0.0050	0.0059	0.0070	0.0105
	P4	0.15 x D1	10	45	Fz	0.0021	0.0021	0.0033	0.0034	0.0050	0.0059	0.0070	0.0105
	P5	0.15 x D1	10	45	Fz	0.0021	0.0021	0.0033	0.0034	0.0050	0.0059	0.0070	0.0105
M	P6	0.15 x D1	10	45	Fz	0.0021	0.0021	0.0033	0.0034	0.0050	0.0059	0.0070	0.0105
	M1	0.15 x D1	10	45	Fz	0.0021	0.0021	0.0033	0.0034	0.0050	0.0059	0.0070	0.0105
	M2	0.15 x D1	10	45	Fz	0.0021	0.0021	0.0033	0.0034	0.0050	0.0059	0.0070	0.0105
K	M3	0.15 x D1	10	45	Fz	0.0021	0.0021	0.0033	0.0034	0.0050	0.0059	0.0070	0.0105
	K1	0.15 x D1	10	45	Fz	0.0021	0.0021	0.0033	0.0034	0.0050	0.0059	0.0070	0.0105
	K2	0.15 x D1	10	45	Fz	0.0021	0.0021	0.0033	0.0034	0.0050	0.0059	0.0070	0.0105
S	K3	0.15 x D1	10	45	Fz	0.0021	0.0021	0.0033	0.0034	0.0050	0.0059	0.0070	0.0105
	S1	0.15 x D1	10	15	Fz	0.0023	0.0024	0.0038	0.0034	0.0050	0.0051	0.0059	0.0079
	S2	0.15 x D1	10	15	Fz	0.0023	0.0024	0.0038	0.0034	0.0050	0.0051	0.0059	0.0079
	S3	0.15 x D1	10	15	Fz	0.0023	0.0024	0.0038	0.0034	0.0050	0.0051	0.0059	0.0079
H	S4	0.15 x D1	10	45	Fz	0.0021	0.0021	0.0033	0.0034	0.0050	0.0059	0.0070	0.0105
	H1	0.15 x D1	10	15	Fz	0.0023	0.0024	0.0038	0.0034	0.0050	0.0051	0.0059	0.0079
	H2	0.15 x D1	10	15	Fz	0.0023	0.0024	0.0038	0.0034	0.0050	0.0051	0.0059	0.0079

KenCut Micro End Mills • MEMM Series • Metric

Application Data • Helical Interpolation 0.185°

Material Group		Cutting Speed Vc MM/MIN			D1 - Diameter							
	Helical Interpolation 0.185°	Min	Max	mm	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1
P	P0	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	P1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	P2	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	P3	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	P4	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	P5	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
M	P6	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	M1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	M2	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
K	M3	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	K1	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	K2	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
S	K3	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105
	S4	10	60	Fz	0.0023	0.0021	0.0035	0.0036	0.0050	0.0060	0.0070	0.0105

NOTE: Helical interpolation is the recommended approach for bone screw hexalobe milling



KenCut Micro End Mills • MEMM Series • Inch

Application Data • Side Milling

Material Group		Cutting Speed Vc			in	D1 - Diameter							
		SFM											
		Side Milling											
		Max Depth	Min	Max		0.0079	0.0118	0.0157	0.0197	0.0236	0.0276	0.0315	0.0394
P	P0	0.15 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	P1	0.15 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	P2	0.15 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	P3	0.15 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	P4	0.15 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	P5	0.15 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
M	P6	0.15 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	M1	0.15 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	M2	0.15 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
K	M3	0.15 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	K1	0.15 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	K2	0.15 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
S	K3	0.15 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	S1	0.15 x D1	32.8	65.6	Fz	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0003
	S2	0.15 x D1	32.8	65.6	Fz	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0003
	S3	0.15 x D1	32.8	65.6	Fz	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0003
H	S4	0.15 x D1	32.8	196.9	Fz	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0003	0.0004
	H1	0.15 x D1	32.8	65.6	Fz	0.00009	0.00009	0.00014	0.00014	0.00019	0.00022	0.00024	0.00032
	H2	0.15 x D1	32.8	65.6	Fz	0.00009	0.00009	0.00014	0.00014	0.00019	0.00022	0.00024	0.00032

KenCut Micro End Mills • MEMM Series • Inch

Application Data • Face Milling

Material Group		Cutting Speed Vc											
		SFM				D1 - Diameter							
		Face Milling											
	Max Depth	Min	Max	in	0.0079	0.0118	0.0157	0.0197	0.0236	0.0276	0.0315	0.0394	
P	P0	0.05 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	P1	0.05 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	P2	0.05 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	P3	0.05 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	P4	0.05 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	P5	0.05 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
M	P6	0.05 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	M1	0.15 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	M2	0.15 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
K	M3	0.15 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	K1	0.05 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	K2	0.05 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
S	K3	0.05 x D1	32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.0002	0.00023	0.00028	0.00041
	S1	0.05 x D1	32.8	65.6	Fz	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0003
	S2	0.05 x D1	32.8	65.6	Fz	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0003
	S3	0.05 x D1	32.8	65.6	Fz	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0003
H	S4	0.05 x D1	32.8	196.9	Fz	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0003	0.0004
	H1	0.05 x D1	32.8	65.6	Fz	0.00009	0.00009	0.00014	0.00014	0.00019	0.00022	0.00024	0.00032
	H2	0.05 x D1	32.8	65.6	Fz	0.00009	0.00009	0.00014	0.00014	0.00019	0.00022	0.00024	0.00032

KenCut Micro End Mills • MEMM Series • Inch

Application Data • Slotting

Material Group		Cutting Speed Vc SFM			D1 - Diameter								
					D1 - Diameter								
	Slotting	Max Depth	Min	Max	in	0.0079	0.0118	0.0157	0.0197	0.0236	0.0276	0.0315	0.0394
P	P0	0.15 x D1	32.8	147.6	Fz	0.00008	0.00008	0.00013	0.00013	0.00020	0.00023	0.00027	0.00041
	P1	0.15 x D1	32.8	147.6	Fz	0.00008	0.00008	0.00013	0.00013	0.00020	0.00023	0.00027	0.00041
	P2	0.15 x D1	32.8	147.6	Fz	0.00008	0.00008	0.00013	0.00013	0.00020	0.00023	0.00027	0.00041
	P3	0.15 x D1	32.8	147.6	Fz	0.00008	0.00008	0.00013	0.00013	0.00020	0.00023	0.00027	0.00041
	P4	0.15 x D1	32.8	147.6	Fz	0.00008	0.00008	0.00013	0.00013	0.00020	0.00023	0.00027	0.00041
	P5	0.15 x D1	32.8	147.6	Fz	0.00008	0.00008	0.00013	0.00013	0.00020	0.00023	0.00027	0.00041
M	P6	0.15 x D1	32.8	147.6	Fz	0.00008	0.00008	0.00013	0.00013	0.00020	0.00023	0.00027	0.00041
	M1	0.15 x D1	32.8	147.6	Fz	0.00008	0.00008	0.00013	0.00013	0.00020	0.00023	0.00027	0.00041
	M2	0.15 x D1	32.8	147.6	Fz	0.00008	0.00008	0.00013	0.00013	0.00020	0.00023	0.00027	0.00041
K	M3	0.15 x D1	32.8	147.6	Fz	0.00008	0.00008	0.00013	0.00013	0.00020	0.00023	0.00027	0.00041
	K1	0.15 x D1	32.8	147.6	Fz	0.00008	0.00008	0.00013	0.00013	0.00020	0.00023	0.00027	0.00041
	K2	0.15 x D1	32.8	147.6	Fz	0.00008	0.00008	0.00013	0.00013	0.00020	0.00023	0.00027	0.00041
S	K3	0.15 x D1	32.8	147.6	Fz	0.00008	0.00008	0.00013	0.00013	0.00020	0.00023	0.00027	0.00041
	S1	0.15 x D1	32.8	49.2	Fz	0.0001	0.0001	0.0002	0.0001	0.0002	0.0002	0.0002	0.0003
	S2	0.15 x D1	32.8	49.2	Fz	0.0001	0.0001	0.0002	0.0001	0.0002	0.0002	0.0002	0.0003
	S3	0.15 x D1	32.8	49.2	Fz	0.0001	0.0001	0.0002	0.0001	0.0002	0.0002	0.0002	0.0003
H	S4	0.15 x D1	32.8	147.6	Fz	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0003	0.0004
	H1	0.15 x D1	32.8	49.2	Fz	0.00009	0.00009	0.00015	0.00013	0.00020	0.00020	0.00023	0.00031
	H2	0.15 x D1	32.8	49.2	Fz	0.00009	0.00009	0.00015	0.00013	0.00020	0.00020	0.00023	0.00031

KenCut Micro End Mills • MEMM Series • Inch

Application Data • Helical Interpolation 0.185°

Material Group		Cutting Speed Vc SFM											
					D1 - Diameter								
	Helical Interpolation 0.185°												
	Max Depth	Min	Max	in	0.0079	0.0118	0.0157	0.0197	0.0236	0.0276	0.0315	0.0394	
P	P0		32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.00020	0.00023	0.00028	0.00041
	P1		32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.00020	0.00023	0.00028	0.00041
	P2		32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.00020	0.00023	0.00028	0.00041
	P3		32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.00020	0.00023	0.00028	0.00041
	P4		32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.00020	0.00023	0.00028	0.00041
	P5		32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.00020	0.00023	0.00028	0.00041
M	P6		32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.00020	0.00023	0.00028	0.00041
	M1		32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.00020	0.00023	0.00028	0.00041
	M2		32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.00020	0.00023	0.00028	0.00041
K	M3		32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.00020	0.00023	0.00028	0.00041
	K1		32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.00020	0.00023	0.00028	0.00041
	K2		32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.00020	0.00023	0.00028	0.00041
S	K3		32.8	196.9	Fz	0.00009	0.00008	0.00014	0.00014	0.00020	0.00023	0.00028	0.00041
	S4		32.8	196.9	Fz	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0003	0.0004

NOTE: Helical interpolation is the recommended approach for bone screw hexalobe milling



TURNING



Beyond Evolution™ Bolt-On Heads

The High-Performance Serrated Bolt-On Head Design for Secure Connections

Beyond Evolution serrated bolt-on heads are the newest addition to the Kennametal platform for grooving and turning applications. The unique system is the perfect connection for modular boring systems.

Applications

Turning, Grooving

Materials

Universal



- A serrated connection that securely attaches to boring bars for better dynamic performance
- Lightweight and short overhang for high stability, consistent repeatability and better accuracy
- Through coolant technology reduces heat on cutting edge and provides better chip flow and extends tool life

Industries



Aerospace



General
Engineering



Automotive



Wind & Solar



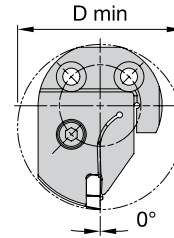
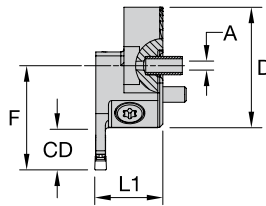
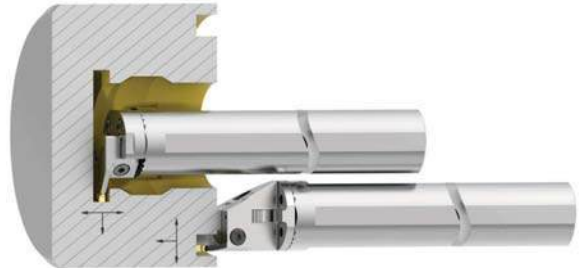
Oil & Gas



Maximum Recommended Feed Rate Values

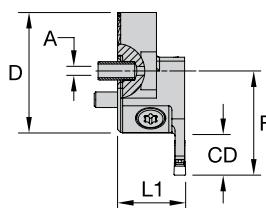
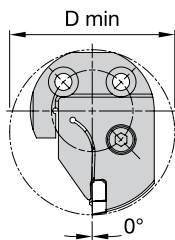
	Material Group	Feed and D.O.C. Factor
Maximum feed rate and D.O.C (Depth Of Cut) should be adjusted by multiplying max feed rate values by following factors for shown materials group	P	0.8
	M	0.7
	K	0.8
	N	0.8
	S	0.5
	H	0.5

	ISO-Turning	Grooving
Steel bar modular and integral	4xD	3xD
Steel dampened bars modular	10xD	5xD
Technical recommendation with low vibration probability		



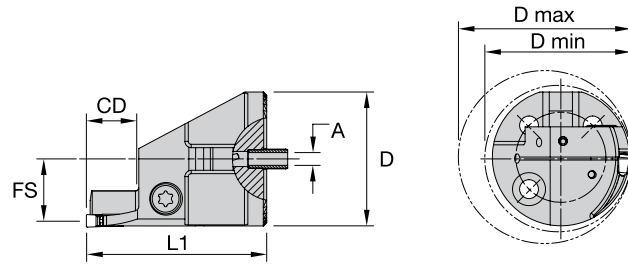
Beyond Evolution • Grooving • H-EVE - Right Hand

Order Number	Catalog Number	Seat Size	A		CD		D		D Min		F		L1	
			Inch	Metric	Inch	Metric	Inch	Metric	Inch	Metric	Inch	Metric	Inch	Metric
7262698	H2533EVEMR0307	3	0.087	2.2	0.276	7	0.984	25	1.299	33	0.799	20.3	0.675	17.14
7262696	H2533EVEMR0207	2	0.083	2.1	0.276	7	0.984	25	1.299	33	0.799	20.3	0.675	17.14
7262702	H3240EVEMR0207	2	0.098	2.5	0.276	7	1.260	32	1.575	40	0.937	23.8	0.675	17.14
7262706	H3243EVEMR0310	3	0.098	2.5	0.394	10	1.260	32	1.693	43	1.055	26.8	0.675	17.14
7262710	H4048EVEMR0207	2	0.118	3	0.276	7	1.575	40	1.890	48	1.095	27.8	0.675	17.14
7262714	H4051EVEMR0310	2	0.118	3	0.394	10	1.575	40	2.008	51	1.213	30.8	0.675	17.14
7262689	H3247EVEMR0314	2	0.098	2.5	0.551	14	1.260	32	1.850	47	1.213	30.8	0.675	17.14
7262690	H3247EVEMR0414	4	0.098	2.5	0.551	14	1.260	32	1.850	47	1.213	30.8	0.675	17.14
7262681	H2533EVEML0407	4	0.087	2.2	0.276	7	0.984	25	1.299	33	0.799	20.3	0.675	17.14
7262685	H3243EVEMR0410	4	0.098	2.5	0.394	10	1.260	32	1.693	43	1.055	26.8	0.675	17.14
7262699	H4053EVEMR0512	5	0.118	3	0.472	12	1.575	40	2.087	53	1.291	32.8	0.675	17.14
7262711	H5063EVEMR0512	5	0.118	3	0.472	12	1.969	50	2.480	63	1.488	37.8	0.675	17.14
7262697	H4053EVEML0612	6	0.118	3	0.472	12	1.575	40	2.087	53	1.291	32.8	0.675	17.14
7262693	H4051EVEMR0410	4	0.118	3	0.394	10	1.575	40	2.008	51	1.213	30.8	0.675	17.14
7262705	H5061EVEMR0410	4	0.118	3	0.394	10	1.969	50	2.402	61	1.409	35.8	0.675	17.14
7262701	H4053EVEMR0612	6	0.118	3	0.472	12	1.575	40	2.087	53	1.291	32.8	0.675	17.14
7262713	H5063EVEMR0612	6	0.118	3	0.472	12	1.969	50	2.480	63	1.488	37.8	0.675	17.14



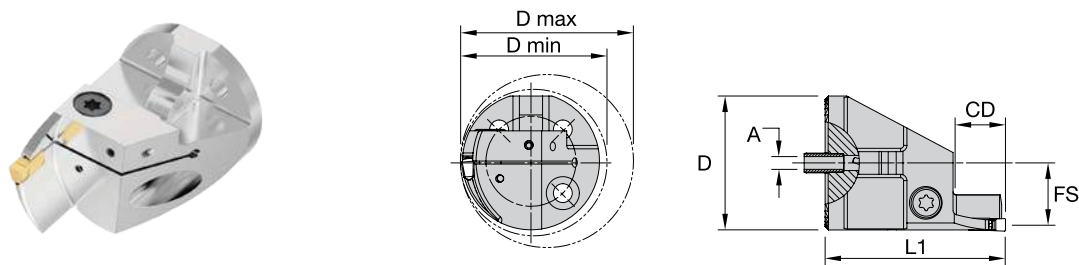
Beyond Evolution • Grooving • H-EVE - Left Hand

Order Number	Catalog Number	Seat Size	A		CD		D		D Min		F		L1	
			Inch	Metric	Inch	Metric	Inch	Metric	Inch	Metric	Inch	Metric	Inch	Metric
7262692	H2533EVEML0207	2	0.083	2.1	0.276	7	0.984	25	1.299	33	0.799	20.3	0.675	17.14
7262694	H2533EVEML0307	3	0.087	2.2	0.276	7	0.984	25	1.299	33	0.799	20.3	0.675	17.14
7262700	H3240EVEML0207	2	0.098	2.5	0.276	7	1.260	32	1.575	40	0.937	23.8	0.675	17.14
7262712	H4051EVEML0310	3	0.118	3	0.394	10	1.575	40	2.008	51	1.213	30.8	0.675	17.14
7262704	H3243EVEML0310	3	0.098	2.5	0.394	10	1.260	32	1.693	43	1.055	26.8	0.675	17.14
7262708	H4048EVEML0207	2	0.118	3	0.276	7	1.575	40	1.890	48	1.095	27.8	0.675	17.14
7262687	H3247EVEML0314	3	0.098	2.5	0.551	14	1.260	32	1.850	47	1.213	30.8	0.675	17.14
7262688	H3247EVEML0414	4	0.098	2.5	0.551	14	1.260	32	1.850	47	1.213	30.8	0.675	17.14
7262686	H3243EVEMR0510	5	0.098	2.5	0.394	10	1.260	32	1.693	43	1.055	26.8	0.675	17.14
7262682	H2533EVEMR0407	4	0.087	2.2	0.276	7	0.984	25	1.299	33	0.799	20.3	0.675	17.14
7262684	H3243EVEML0510	5	0.098	2.5	0.394	10	1.260	32	1.693	43	1.055	26.8	0.675	17.14
7262683	H3243EVEML0410	4	0.098	2.5	0.394	10	1.260	32	1.693	43	1.055	26.8	0.675	17.14
7262695	H4053EVEML0512	5	0.118	3	0.472	12	1.575	40	2.087	53	1.291	32.8	0.675	17.14
7262709	H5063EVEML0612	6	0.118	3	0.472	12	1.969	50	2.480	63	1.488	37.8	0.675	17.14
7262691	H4051EVEML0410	4	0.118	3	0.394	10	1.575	40	2.008	51	1.213	30.8	0.675	17.14
7262707	H5063EVEML0512	5	0.118	3	0.472	12	1.969	50	2.480	63	1.488	37.8	0.675	17.14
7262703	H5061EVEML0410	4	0.118	3	0.394	10	1.969	50	2.402	61	1.409	35.8	0.675	17.14



Beyond Evolution • Face Grooving • H-EVSFG - Right Hand

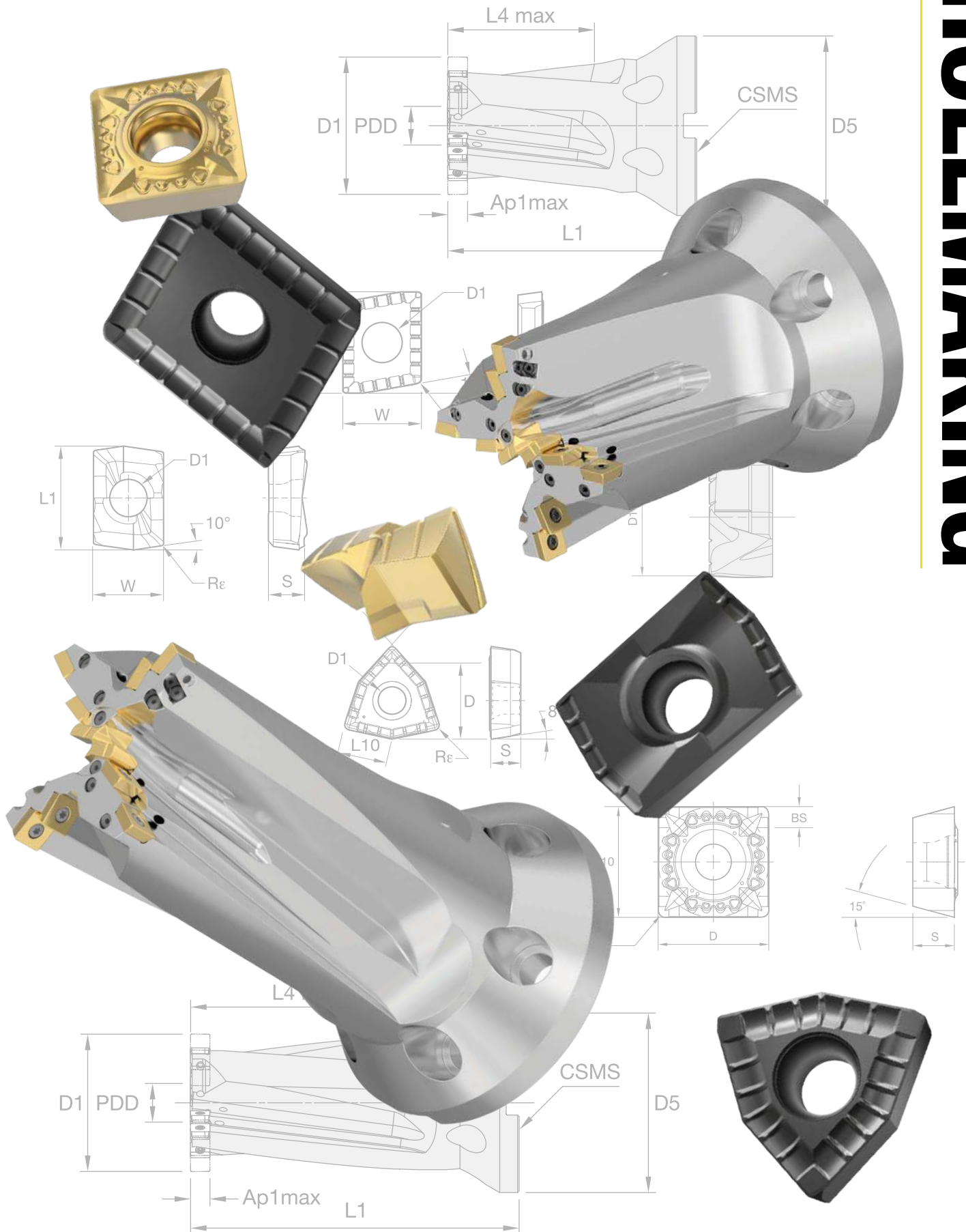
Order Number	Catalog Number	Seat Size	CD		D		D Max		D Min		L1		FS	
			Inch	Metric	Inch	Metric	Inch	Metric	Inch	Metric	Inch	Metric	Inch	Metric
7262620	H40EVSAR0312041050	3	0.472	12	1.575	40	1.969	50	1.614	41	1.679	42.64	0.797	20.25
7262619	H32EVSAR0312033040	3	0.472	12	1.260	32	1.575	40	1.299	33	1.679	42.64	0.640	16.25
7262617	H25EVSAR0212026030	2	0.472	12	0.984	25	1.181	30	1.024	26	1.679	42.64	0.502	12.75
7262618	H25EVSAR0312030035	3	0.472	12	0.984	25	1.378	35	1.181	30	1.679	42.64	0.502	12.75



Beyond Evolution • Face Grooving • H-EVSFG - Left Hand

Order Number	Catalog Number	Seat Size	CD		D		D Max		D Min		L1		FS	
			Inch	Metric	Inch	Metric	Inch	Metric	Inch	Metric	Inch	Metric	Inch	Metric
7262613	H25EVSAL0212026030	2	0.472	12	0.984	25	1.181	30	1.024	26	1.679	42.64	0.502	12.75
7262615	H32EVSAL0312033040	3	0.472	12	1.260	32	1.575	40	1.299	33	1.679	42.64	0.640	16.25
7262614	H25EVSAL0312030035	3	0.472	12	0.984	25	1.378	35	1.181	30	1.679	42.64	0.502	12.75
7262616	H40EVSAL0312041050	3	0.472	12	1.575	40	1.969	50	1.614	41	1.679	42.64	0.7383	18.754

HOLEMAKING



KCMS40 MD Inserts

The HiPIMS grade for achieving ultimate drilling performance in stainless steel applications

NEW KCMS40 grade combines optimum coating adhesion and high carbide toughness for superior chip control and surface finish.

Applications



Drilling

Materials

PRIMARY



Stainless Steels



High-Temperature Alloys

SECONDARY



Steels



KSEM PLUS Modular Drill for Large Diameter Drilling

- Covers drilling applications in a diameter range from 28mm to 101,6mm (1.102-4") up to 10 x D.
- The KSEM PLUS A1 head for lowest cost per hole
- The KSEM PLUS B1 head for challenging conditions like stacked plates, cross holes, and inclined exits
- Interchangeable head styles with two fully effective cutting edges deliver excellent productivity in all cutting conditions and many materials
- Two fully effective cutting edges deliver excellent productivity

Industries



Aerospace



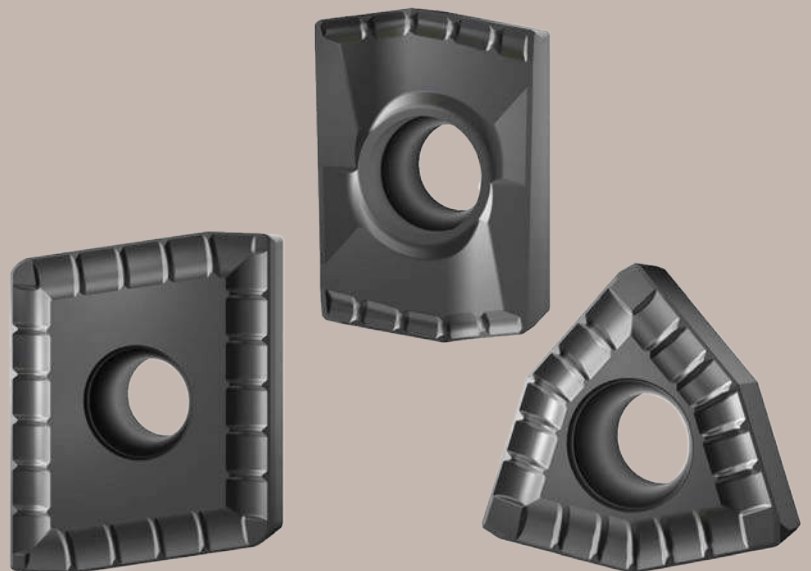
General
Engineering



Oil & Gas



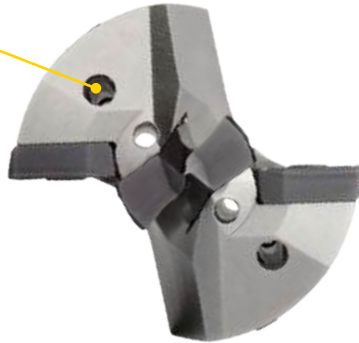
Wind & Solar



KSEM PLUS

Unique tooling concept **for exceptional results**

Multiple coolant holes for optimized coolant supply



Two effective cutting edges for best-in-class Metal removal rates

Precision ground HPF outboard inserts with wiper geometry for improved surface finish and better hole accuracy



KSEM FEG inserts allow drilling up to 8xD without pilot hole

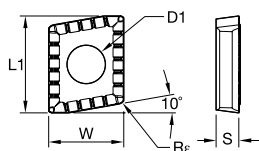
Adjustable DPA carbide guide pads for improved hole straightness and stability during inclined exits and cross holes

KSEM+ interface for highest flexibility and reduced tooling inventory



Radial clamping allows quick and easy head exchange

Advanced chip flute design to provide optimized chip evacuation and highest torsional stiffness



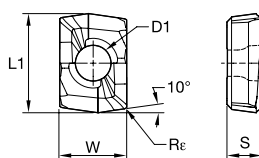
● Primary
○ Secondary

P	Blue	●
M	Yellow	●
K	Red	●
N	Green	●
S	Orange	●
H	Grey	●

KCMS40

DFC-MD • Metric

Catalog Number	LI	W	D1	S	Rε	
DFC040310D28MD	10,00	7,60	2,85	3,18	0,50	●
DFC05T312D32MD	12,00	9,40	3,40	3,75	0,80	●
DFC06T312D36MD	16,00	12,40	4,40	3,75	0,80	●
DFC070416D45MD	18,00	14,50	4,40	4,75	0,80	●
DFC090520D56MD	24,00	19,00	5,50	5,25	0,80	●



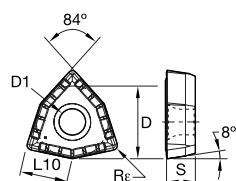
● Primary
○ Secondary

P	Blue	●
M	Yellow	●
K	Red	●
N	Green	●
S	Orange	●
H	Grey	●

KCMS40

DFR-MD • Metric

Catalog Number	LI	W	D1	S	Rε	
DFR040304D28MD	10,76	7,26	2,85	3,79	0,40	●



● Primary
○ Secondary

P	Blue	●
M	Yellow	●
K	Red	●
N	Green	●
S	Orange	●
H	Grey	●

KCMS40

DFT-MD • Metric

Catalog Number	L10	D	D1	S	Rε	
DFT05T308D32MD	5,29	8,00	3,40	3,75	0,80	●
DFT05T308D33MD	5,29	8,00	3,40	3,75	0,80	●
DFT06T308D36MD	6,62	10,00	4,40	3,75	0,80	●
DFT06T308D39MD	6,62	10,00	4,40	3,75	0,80	●
DFT06T308D44MD	6,62	10,00	4,40	3,75	0,80	●
DFT070408D45MD	7,94	12,00	4,40	4,75	0,80	●
DFT070408D50MD	7,94	12,00	4,40	4,75	0,80	●
DFT090508D56MD	9,92	15,00	5,50	5,25	0,80	●
DFT090508D63MD	9,92	15,00	5,50	5,25	0,80	●

Modular Drill • KSEM PLUS • A1 and B1 Style • Metric

Material Group	Condition	Cutting Speed — vc		Recommended Feed Rate (fz) by Diameter						
		Range — m/min		Ø	KSEM 14....17 DFR/DFC04... 28.00–31,74	KSEM 15....18 DFT/DFC07... 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... 56,00–102,35	
		min	max							
P	1	S	115	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	65	mm/r	0,130–0,250	0,130–0,250	0,160–0,280	0,160–0,320	0,200–0,360
S	1	S	25	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	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	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	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	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	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	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	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	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	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	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	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 • A1 and B1 Style • Inch

Material Group	Condition	Cutting Speed → vc		Recommended Feed Rate (fz) by Diameter					
		Range — SFM		Ø	KSEM 14....17 DPR/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
		min	max						
P	1	S	370	944	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
		U	290	698	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
		I	205	451	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
	2	S	295	755	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016
		U	233	558	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016
		I	164	361	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016
	3	S	295	755	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016
		U	230	558	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016
		I	164	361	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016
	4	S	295	722	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016
		U	230	525	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016
		I	264	361	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016
	5	S	295	689	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016
		U	230	689	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016
		I	164	492	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016
	6	S	230	591	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016
		U	164	394	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016
		I	131	328	IPR	0.006–0.011	0.006–0.011	0.008–0.014	0.008–0.016
M	1	S	197	443	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
		U	131	295	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
		I	98	213	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
	2	S	197	443	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
		U	131	295	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
		I	98	213	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
	3	S	164	443	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
		U	131	295	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
		I	82	213	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
S	1	S	82	246	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
		U	66	197	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
		I	49	164	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
	2	S	66	197	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
		U	49	148	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
		I	39	115	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
	3	S	66	197	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
		U	49	148	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
		I	39	131	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
	4	S	66	197	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
		U	49	148	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013
		I	39	131	IPR	0.005–0.010	0.005–0.010	0.006–0.011	0.006–0.013

KSEM PLUS Designs & Capabilities:



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 B1 Head

DFC Outboard Inserts

DPA Guide Pads



KSEM Plus A1 Head

DFR Outboard Inserts
(D<31,75mm)



DFT Outboard Inserts
(D>31,75mm)





FBX™ Drill

Design Upgrade of the Strongest Drilling Platform for Aero Titanium Parts

More stable and stronger with M4 clamping screws for unmatched stability, the enhanced FBX drills feature a larger flute design for improved insert accessibility and standard wrench compatibility, making them ideal for flat bottom holes with superior performance and efficiency.

Applications

PRIMARY



Flat Bottom Drilling



Chain Drilling

SECONDARY



Plunging



Counterboring

Materials

PRIMARY



High-Temperature Alloys



Titanium

SECONDARY



Steels

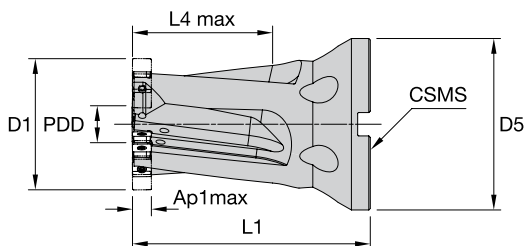


Stainless Steels

Industries

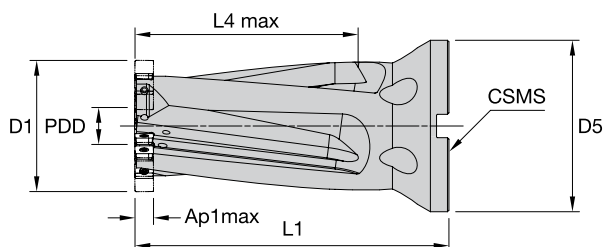


Aerospace



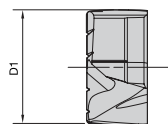
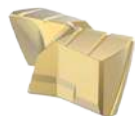
FBX • Short • Taper Flange Mount • Metric

Order Number	Catalog Number	D1	PDD	L1	L4 max	D5	SSC
7228293	KSEMX6001FBX095BTF46M	60,000	38	160,00	95	117	10
7228295	KSEMX7501FBX095BTF46M	75,000	32	160,00	95	117	8
7228297	KSEMX9001FBX095BTF46M	90,000	25	160,00	95	117	5



FBX • Long • Taper Flange Mount • Metric

Order Number	Catalog Number	D1	PDD	L1	L4 max	D5	SSC
7228294	KSEMX6001FBX150BTF46M	60,000	38	215,00	150	117	10
7228296	KSEMX7501FBX150BTF46M	75,000	32	215,00	150	117	8
7228298	KSEMX9001FBX150BTF46M	90,000	25	215,00	150	117	5



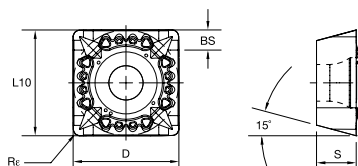
● Primary
○ Secondary

P	Blue	●
M	Yellow	●
K	Red	○
N	Green	○
S	Orange	●
H	Grey	○

KCU45

FBX • CENTER INSERTS

ISO Catalog Number	D1	SSC	
KSEM2500FBXM	25,000	5	●
KSEM3200FBXM	32,000	8	●
KSEM3800FBXM	38,000	10	●



● Primary
○ Secondary

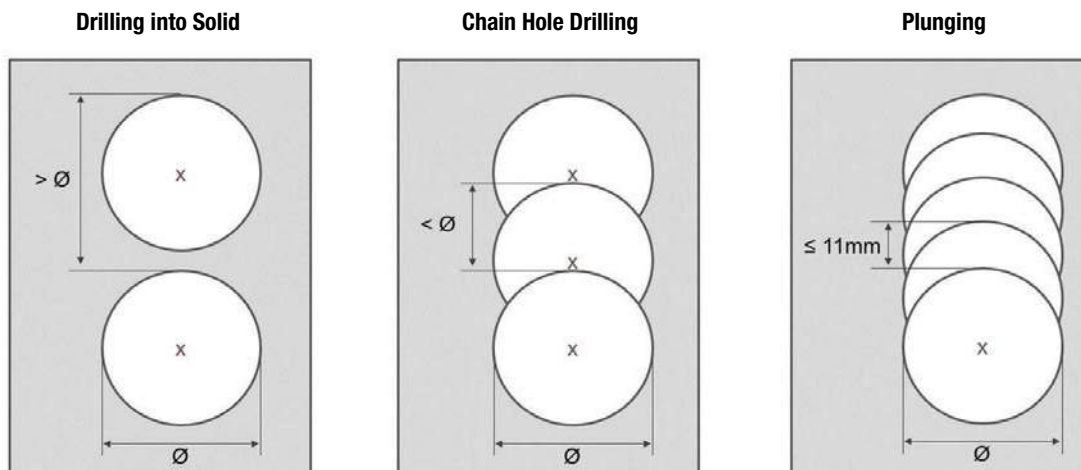
P	Blue	○
M	Yellow	●
K	Red	○
N	Green	○
S	Orange	●
H	Grey	○

KCSM40

FBX • OUTBOARD INSERTS

ISO Catalog Number	D	S	L10	BS	Rε	CE	
SDET1204PDERGB	12,70	4,76	12,70	2,54	0,8	4	●
SDET1204PDSRGB	12,70	4,76	12,70	3,36	0,8	4	●

FBX • APPLICATIONS • Metric



FBX • Insert Selection Guide • Metric

Material Group	Drilling into Solid (zeff = 2)		Chain Hole Drilling (zeff = 2)		Plunging (zeff = 4)	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P5-P6	SDET1204PDERGB	KCSM40	SDET1204PDERGB	KCSM40	SDET1204PDERGB	KCSM40
M1-M3	SDET1204PDERGB	KCSM40	SDET1204PDERGB	KCSM40	SDET1204PDERGB	KCSM40
S4	SDET1204PDSRGB	KCSM40	SDET1204PDSRGB	KCSM40	SDET1204PDSRGB	KCSM40

FBX • Recommended Starting Feeds [mm/REV]

Material Group	Drilling into Solid (zeff = 2)			Chain Hole Drilling (zeff = 2)			Plunging (zeff = 4)		
	min	Starting Value	max	min	Starting Value	max	min	Starting Value	max
P5-P6	0,16	0,20	0,24	0,08	0,14	0,20	0,20	0,40	0,48
M1-M3	0,16	0,20	0,24	0,08	0,14	0,20	0,20	0,40	0,48
S4	0,16	0,20	0,24	0,08	0,14	0,20	0,28	0,48	0,60

FBX • Recommended Starting Speeds [m/min]

Material Group	Drilling into Solid (zeff = 2)			Chain Hole Drilling (zeff = 2)			Plunging (zeff = 4)		
	min	Starting Value	max	min	Starting Value	max	min	Starting Value	max
P5-P6	80	90	100	80	90	100	90	105	120
M1-M3	80	90	100	80	90	100	90	105	120
S4	30	40	50	30	40	50	40	50	60

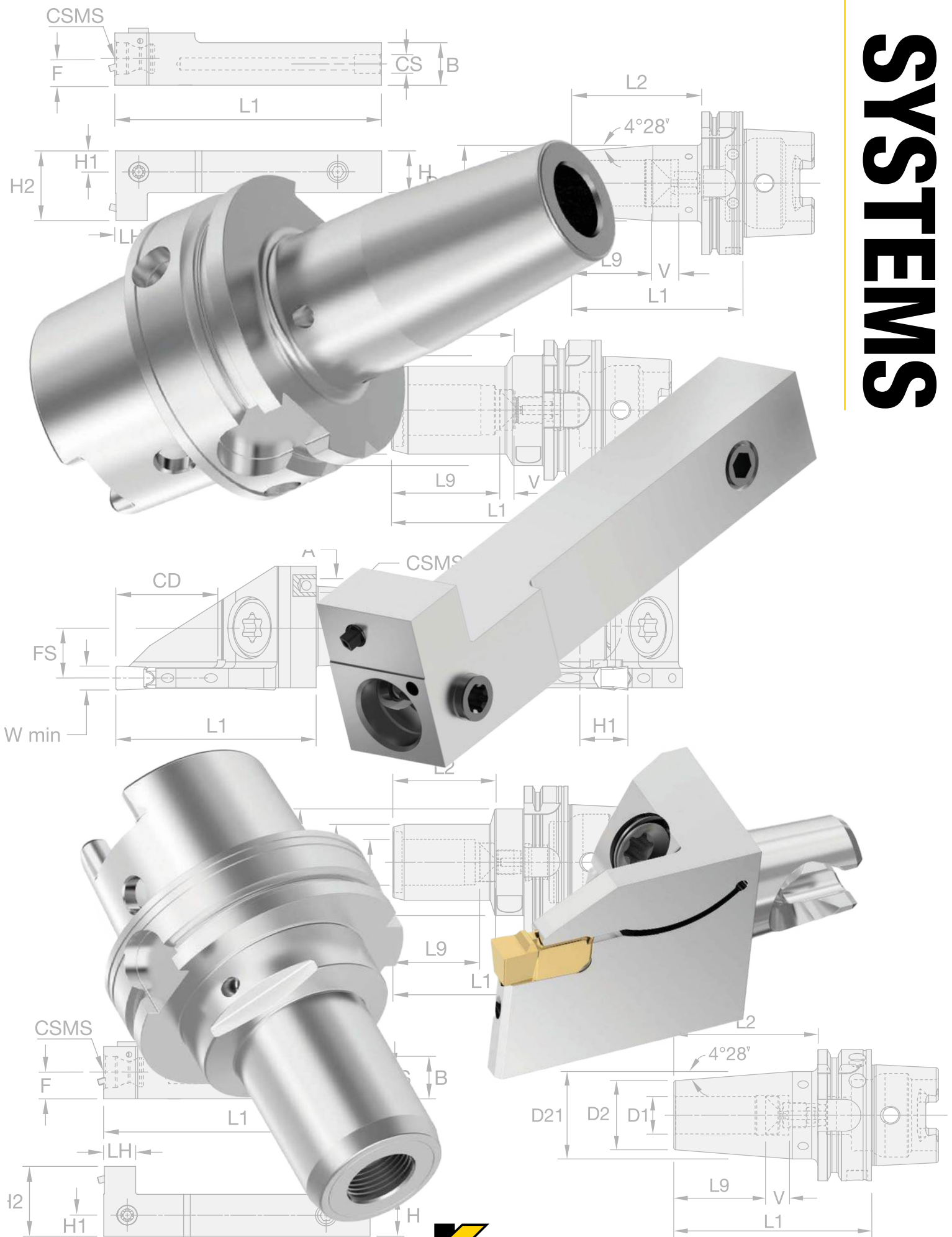
FBX • Recommended Starting Feeds [IPR]

Material Group	Drilling into Solid (zeff = 2)			Chain Hole Drilling (zeff = 2)			Plunging (zeff = 4)		
	min	Starting Value	max	min	Starting Value	max	min	Starting Value	max
P5-P6	0.006	0.008	0.009	0.003	0.006	0.008	0.008	0.016	0.019
M1-M3	0.006	0.008	0.009	0.003	0.006	0.008	0.008	0.016	0.019
S4	0.006	0.008	0.009	0.003	0.006	0.008	0.011	0.019	0.024

FBX • Recommended Starting Speeds [SFM]

Material Group	Drilling into Solid (zeff = 2)			Chain Hole Drilling (zeff = 2)			Plunging (zeff = 4)		
	min	Starting Value	max	min	Starting Value	max	min	Starting Value	max
P5-P6	262	295	328	262	295	328	295	344	394
M1-M3	262	295	328	262	295	328	295	344	394
S4	98	131	164	98	131	164	131	164	197

SYSTEMS



MQL Shrink Fit and Hydraulic Tool Holders

DIN Standard MQL Toolholders Deliver Less Coolant and Achieve Better Performance

Experience smooth transition to cost-saving and environmentally friendly machining with MQL1 and MQL2 shrink fit and hydraulic tool holders. Designed with secure HSK63A and HSK100A connections and to meet DIN standards, these solutions help reduce the use of excess lubricant and provide optimal conditions – delivering high performance and maximum efficiency.

Applications

PRIMARY

Milling, Drilling

SECONDARY

Reaming, Tapping

Materials

PRIMARY

N

Aluminum

SECONDARY

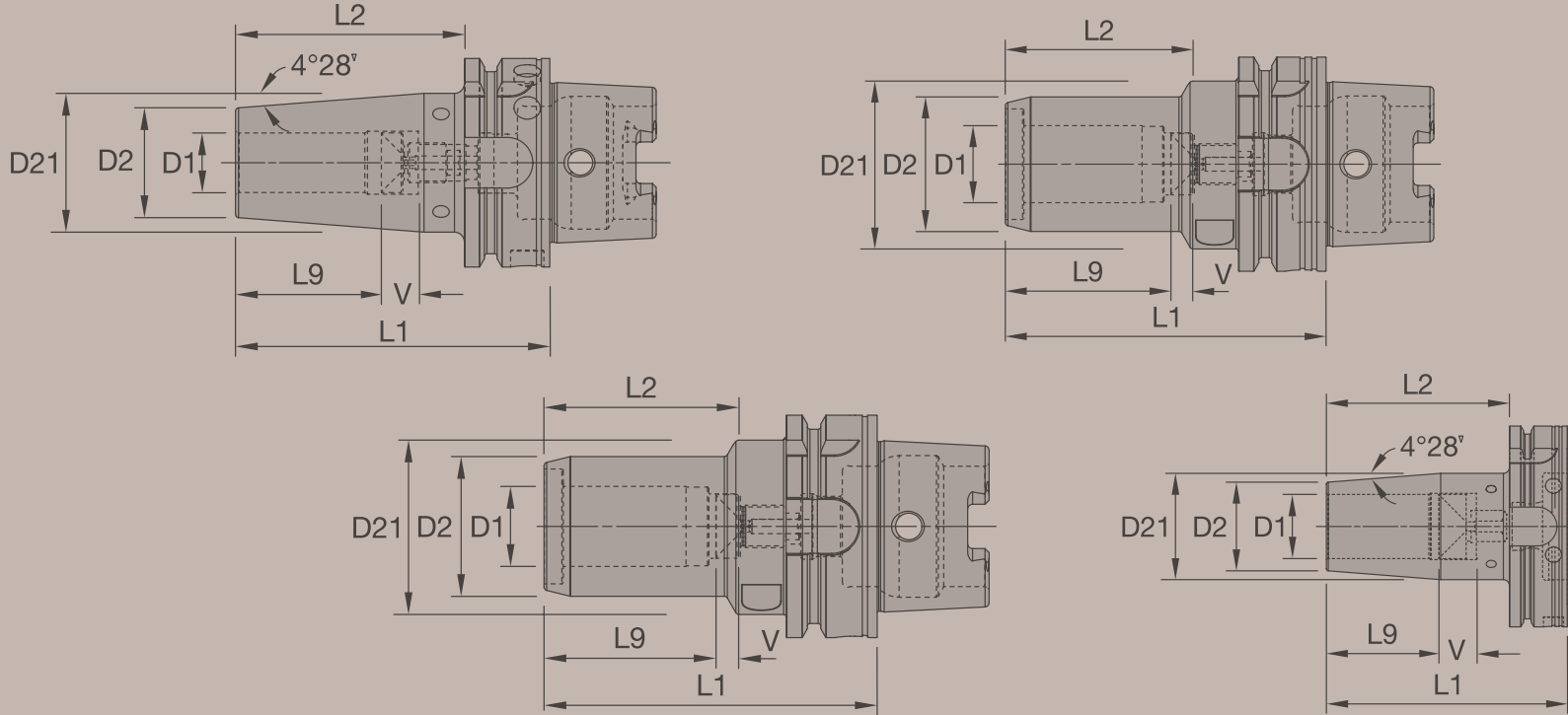
K

Cast Iron

P

Steels





- MQL1 single channel systems for general machining
- MQL2 double channel systems for complex machining and critical applications
- Shrink Fit chucks provide high gripping forces and are safe for 5-axis machining
- Hydraulic chucks offer easy handling and soft cutting action in milling applications
- Short and extended gauge lengths for machining a wide range of components

Industries



Aerospace



Medical

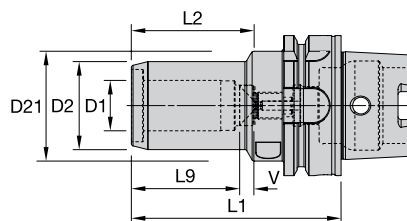


EV



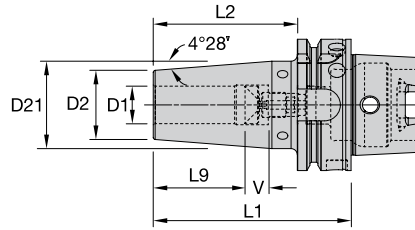
Automotive





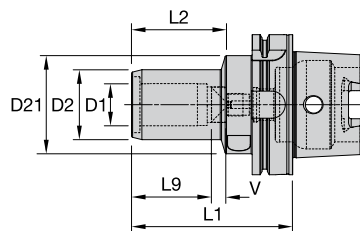
Hydraulic Chuck HSK63A • MQL 1 Channel • Metric

Order Number	Catalog Number	Back-End System Size	D1	D2	D21	L1	L2	L9	V
7150543	HSK63AHCTA1MQL1C06080M	HSK63A	6	25.6	49.85	80	34	27	10
7150544	HSK63AHCTA1MQL1C08080M	HSK63A	8	27.6	49.85	80	35	27	10
7150545	HSK63AHCTA2MQL1C10085M	HSK63A	10	29.6	49.85	85	40	31	10
7150546	HSK63AHCTA2MQL1C12090M	HSK63A	12	31.54	49.85	90	45	36	10
7150547	HSK63AHCTA2MQL1C14090M	HSK63A	14	33.54	49.85	90	45	36	10
7150548	HSK63AHCTA2MQL1C16095M	HSK63A	16	37.54	49.85	95	51	39	10
7150549	HSK63AHCTA2MQL1C18095M	HSK63A	18	39.54	49.85	95	52	39	10
7150550	HSK63AHCTA2MQL1C20100M	HSK63A	20	41.54	49.85	100	58	41	10
7150571	HSK63AHCTA2MQL1C25115M	HSK63A	25	49.9	70	115	51	47	10
7150572	HSK63AHCTA2MQL1C32120M	HSK63A	32	59.9	75	120	55	51	10



Shrink Fit HSK63A • MQL 1 Channel • Metric

Order Number	Catalog Number	Back-End System Size	D1	D2	D21	L1	L2	L9	V
7144738	HSK63ATTA1MQL1C06080M	HSK63A	6	21	26.9	80	54.05	26	10
7144739	HSK63ATTA1MQL1C08080M	HSK63A	8	21	26.9	80	54.05	26	10
7144740	HSK63ATTA2MQL1C10085M	HSK63A	10	24	31.9	85	59.05	31	10
7144771	HSK63ATTA2MQL1C12090M	HSK63A	12	24	31.9	90	64.05	36	10
7144772	HSK63ATTA2MQL1C14090M	HSK63A	14	27	33.9	90	64.05	36	10
7144773	HSK63ATTA2MQL1C16095M	HSK63A	16	27	33.9	95	69.05	39	10
7144775	HSK63ATTA2MQL1C18095M	HSK63A	18	33	41.9	95	69.05	39	10
7144776	HSK63ATTA2MQL1C20100M	HSK63A	20	33	41.9	100	74.05	41	10
7144777	HSK63ATTA2MQL1C25115M	HSK63A	25	44	52.9	115	89.05	47	10
7144778	HSK63ATTA2MQL1C32120M	HSK63A	32	44	52.9	120	94.05	51	10
7158754	HSK63ATTD2MQL1C06160M	HSK63A	6	21	26.9	160	50	26	10
7158755	HSK63ATTD2MQL1C08160M	HSK63A	8	21	26.9	160	50	26	10
7158756	HSK63ATTD2MQL1C10160M	HSK63A	10	24	31.9	160	63	31	10
7158757	HSK63ATTD2MQL1C12160M	HSK63A	12	24	31.9	160	63	36	10
7158758	HSK63ATTD2MQL1C14160M	HSK63A	14	27	33.9	160	57	36	10
7158759	HSK63ATTD2MQL1C16160M	HSK63A	16	27	33.9	160	57	39	10
7158760	HSK63ATTD2MQL1C18160M	HSK63A	18	33	41.9	160	69	39	10
7158861	HSK63ATTD2MQL1C20160M	HSK63A	20	33	41.9	160	69	41	10
7158862	HSK63ATTD2MQL1C25160M	HSK63A	25	44	52.9	160	134.05	47	10
7158863	HSK63ATTD2MQL1C32160M	HSK63A	32	44	52.9	160	134.05	51	10



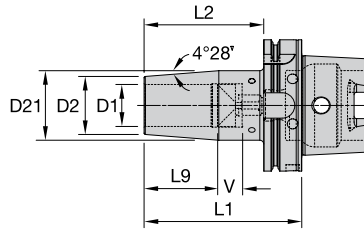
Hydraulic Chuck HSK100A • MQL 1 Channel • Metric

Order Number	Catalog Number	Back-End System Size	D1	D2	D21	L1	L2	L9	V
7150532	HSK100AHCTA1MQL1C06085M	HSK100A	6	25.6	49.85	85	36	27	10
7150533	HSK100AHCTA1MQL1C08085M	HSK100A	8	27.6	49.85	85	36	27	10
7150534	HSK100AHCTA2MQL1C10090M	HSK100A	10	29.6	49.85	90	42	31	10
7150535	HSK100AHCTA2MQL1C12095M	HSK100A	12	31.54	49.85	95	47	36	10
7150537	HSK100AHCTA2MQL1C14095M	HSK100A	14	33.54	49.85	95	47	36	10
7150538	HSK100AHCTA2MQL1C16100M	HSK100A	16	37.54	49.85	100	53	39	10
7150539	HSK100AHCTA2MQL1C18100M	HSK100A	18	39.54	49.85	100	53	39	10
7150540	HSK100AHCTA2MQL1C20105M	HSK100A	20	41.54	49.85	105	59	41	10
7150541	HSK100AHCTA2MQL1C25115M	HSK100A	25	49.9	70	115	64	47	10
7150542	HSK100AHCTA2MQL1C32120M	HSK100A	32	59.9	75	120	70	51	10

Spare Parts and Hardware

MQL 1 Channel • Adjustment Screws • Metric

Order Number	Catalog Number	Bore Diameter	Toolholder L1
7219170	ASML1EI-0906A1	6	80
7219241	ASML1EI-0908A1	8	80
7219242	ASML1EI-1210A2	10	85
7219243	ASML1EI-1212A2	12	90
7219244	ASML1EI-1214A2	14	90
7219245	ASML1EI-1216A2	16	95
7219246	ASML1EI-1218A2	18	95
7219247	ASML1EI-1220A2	20	100
7219248	ASML1EI-1225A2	25	115
7219249	ASML1EI-1232A2	32	120
7219250	ASML1EI-1306D2	6	160
7219251	ASML1EI-1308D2	8	160
7219252	ASML1EI-1310D2	10	160
7219253	ASML1EI-1312D2	12	160
7219254	ASML1EI-1314D2	14	160
7219255	ASML1EI-1316D2	16	160
7219256	ASML1EI-1318D2	18	160
7219257	ASML1EI-1320D2	20	160
7219258	ASML1EI-1325D2	25	160
7219259	ASML1EI-1332D2	32	160



Shrink Fit HSK100A • MQL 1 Channel • Metric

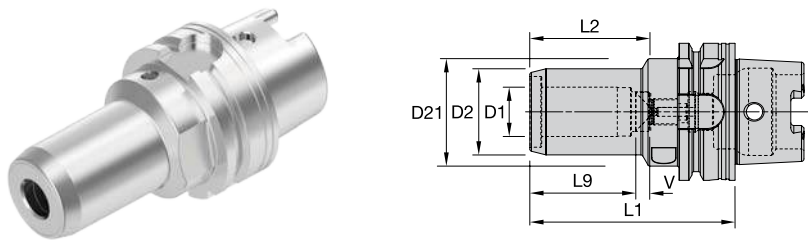
Order Number	Catalog Number	Back-End System Size	D1	D2	D21	L1	L2	L9	V
7158895	HSK100ATTA1MQL1C06085M	HSK100A	6	21	26.9	85	56.05	26	10
7158896	HSK100ATTA1MQL1C08085M	HSK100A	8	21	26.9	85	56.05	26	10
7158897	HSK100ATTA2MQL1C10090M	HSK100A	10	24	31.9	90	61.05	31	10
7158898	HSK100ATTA2MQL1C12095M	HSK100A	12	24	31.9	95	66.05	36	10
7158899	HSK100ATTA2MQL1C14095M	HSK100A	14	27	33.9	95	66.05	36	10
7158900	HSK100ATTA2MQL1C16100M	HSK100A	16	27	33.9	100	71.05	39	10
7158901	HSK100ATTA2MQL1C18100M	HSK100A	18	33	41.9	100	71.05	39	10
7158902	HSK100ATTA2MQL1C20105M	HSK100A	20	33	41.9	105	76.05	41	10
7158903	HSK100ATTA2MQL1C25115M	HSK100A	25	44	52.9	115	86.05	47	10
7158904	HSK100ATTA2MQL1C32120M	HSK100A	32	44	52.9	120	91.05	51	10
7158674	HSK100ATTD2MQL1C06160M	HSK100A	6	21	26.9	160	50	26	10
7158675	HSK100ATTD2MQL1C08160M	HSK100A	8	21	26.9	160	50	26	10
7158676	HSK100ATTD2MQL1C10160M	HSK100A	10	24	31.9	160	63	31	10
7158677	HSK100ATTD2MQL1C12160M	HSK100A	12	24	31.9	160	63	36	10
7158678	HSK100ATTD2MQL1C14160M	HSK100A	14	27	33.9	160	57	36	10
7158679	HSK100ATTD2MQL1C16160M	HSK100A	16	27	33.9	160	57	39	10
7158680	HSK100ATTD2MQL1C18160M	HSK100A	18	33	41.9	160	69	39	10
7158911	HSK100ATTD2MQL1C20160M	HSK100A	20	33	41.9	160	69	41	10
7158912	HSK100ATTD2MQL1C25160M	HSK100A	25	44	52.9	160	69	47	10
7158916	HSK100ATTD2MQL1C32160M	HSK100A	32	44	52.9	160	69	51	10

MQL 1 Channel • Transfer Tubes

Order Number	Catalog Number	Connection Size
7224362	TTUBEMQL1CH63	HSK63A
7224364	TTUBEMQL1CH100	HSK100A

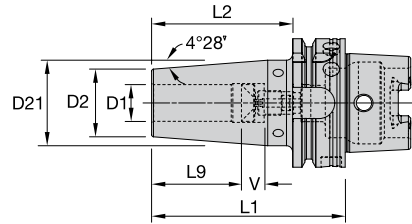
MQL 1 Channel • Filling Part • Manual Toolchange

Order Number	Catalog Number	Connection Size
7224363	FPARTMQL1CH63	HSK63A
7224365	FPARTMQL1CH100	HSK100A



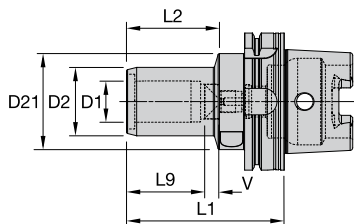
Hydraulic Chuck HSK63A • MQL 2 Channel • Metric

Order Number	Catalog Number	Back-End System Size	D1	D2	D21	L1	L2	L9	V
7147434	HSK63AHCTA1MQL2C06080M	HSK63A	6	25.6	49.85	80	34	27	10
7147435	HSK63AHCTA1MQL2C08080M	HSK63A	8	27.6	49.85	80	35	27	10
7147436	HSK63AHCTA2MQL2C10085M	HSK63A	10	29.6	49.85	85	40	31	10
7147437	HSK63AHCTA2MQL2C12090M	HSK63A	12	31.54	49.85	90	45	36	10
7147438	HSK63AHCTA2MQL2C14090M	HSK63A	14	33.54	49.85	90	45	36	10
7147439	HSK63AHCTA2MQL2C16095M	HSK63A	16	37.54	49.85	95	51	39	10
7147440	HSK63AHCTA2MQL2C18095M	HSK63A	18	39.54	49.85	95	52	39	10
7147451	HSK63AHCTA2MQL2C20100M	HSK63A	20	41.54	49.85	100	58	41	10
7147453	HSK63AHCTA2MQL2C25115M	HSK63A	25	49.9	70	115	51	47	10
7147454	HSK63AHCTA2MQL2C32120M	HSK63A	32	59.9	75	120	55	51	10



Shrink Fit HSK63A • MQL 2 Channels • Metric

Order Number	Catalog Number	Back-End System Size	D1	D2	D21	L1	L2	L9	V
7144782	HSK63ATTA1MQL2C06080M	HSK63A	6	21	26.9	80	54.05	26	10
7144783	HSK63ATTA1MQL2C08080M	HSK63A	8	21	26.9	80	54.05	26	10
7144784	HSK63ATTA2MQL2C10085M	HSK63A	10	24	31.9	85	59.05	31	10
7144789	HSK63ATTA2MQL2C12090M	HSK63A	12	24	31.9	90	64.05	36	10
7144801	HSK63ATTA2MQL2C14090M	HSK63A	14	27	33.9	90	64.05	36	10
7144802	HSK63ATTA2MQL2C16095M	HSK63A	16	27	33.9	95	69.05	39	10
7144803	HSK63ATTA2MQL2C18095M	HSK63A	18	33	41.9	95	69.05	39	10
7144804	HSK63ATTA2MQL2C20100M	HSK63A	20	33	41.9	100	74.05	41	10
7144805	HSK63ATTA2MQL2C25115M	HSK63A	25	44	52.9	115	89.05	47	10
7144806	HSK63ATTA2MQL2C32120M	HSK63A	32	44	52.9	120	94.05	51	10
7158865	HSK63ATTD2MQL2C06160M	HSK63A	6	21	26.9	160	50	26	10
7158866	HSK63ATTD2MQL2C08160M	HSK63A	8	21	26.9	160	50	26	10
7158867	HSK63ATTD2MQL2C10160M	HSK63A	10	24	31.9	160	63	31	10
7158868	HSK63ATTD2MQL2C12160M	HSK63A	12	24	31.9	160	63	36	10
7158869	HSK63ATTD2MQL2C14160M	HSK63A	14	27	33.9	160	57	36	10
7158870	HSK63ATTD2MQL2C16160M	HSK63A	16	27	33.9	160	57	39	10
7158891	HSK63ATTD2MQL2C18160M	HSK63A	18	33	41.9	160	69	39	10
7158892	HSK63ATTD2MQL2C20160M	HSK63A	20	33	41.9	160	69	41	10
7158893	HSK63ATTD2MQL2C25160M	HSK63A	25	44	52.9	160	134.05	47	10
7158894	HSK63ATTD2MQL2C32160M	HSK63A	32	44	52.9	160	134.05	51	10



Hydraulic Chuck HSK100A • MQL 2 Channel • Metric

Order Number	Catalog Number	Back-End System Size	D1	D2	D21	L1	L2	L9	V
7150512	HSK100AHCTA1MQL2C06085M	HSK100A	6	25.6	49.85	85	36	27	10
7150513	HSK100AHCTA1MQL2C08085M	HSK100A	8	27.6	49.85	85	36	27	10
7150514	HSK100AHCTA2MQL2C10090M	HSK100A	10	29.6	49.85	90	42	31	10
7150515	HSK100AHCTA2MQL2C12095M	HSK100A	12	31.54	49.85	95	47	36	10
7150516	HSK100AHCTA2MQL2C14095M	HSK100A	14	33.54	49.85	95	47	36	10
7150517	HSK100AHCTA2MQL2C16100M	HSK100A	16	37.54	49.85	100	53	39	10
7150518	HSK100AHCTA2MQL2C18100M	HSK100A	18	39.54	49.85	100	53	39	10
7150531	HSK100AHCTA2MQL2C32120M	HSK100A	32	59.9	75	120	70	51	10

Spare Parts and Hardware

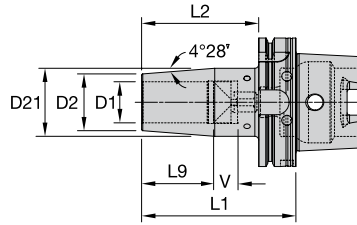
MQL 2 Channel • Adjustment Screws • Metric

Order Number	Catalog Number	Bore Diameter	Toolholder DIN Style	Cross-section (mm ²)
7225407	ASD06A1MQL2C30350382	6	A1	4.15
7225408	ASD08A1MQL2C30350383	8	A1	4.15
7225410	ASD10A2MQL2C30350384	10	A2/D2	4.15
7225411	ASD12A2D2MQL2C30350392	12	A2/D2	9.08
7225412	ASD14A2D2MQL2C30350393	14	A2/D2	9.08
7225413	ASD16A2D2MQL2C30350394	16	A2/D2	9.08
7225414	ASD18A2D2MQL2C30350395	18	A2/D2	9.08
7225415	ASD20A2D2MQL2C30350396	20	A2/D2	16.62
7225416	ASD25A2D2MQL2C30350397	25	A2/D2	16.62
7225417	ASD32A2D2MQL2C30350398	32	A2/D2	16.62
7225418	ASD06D2MQL2C30350857	6	D2	4.15
7225419	ASD08D2MQL2C30350281	8	D2	4.15
7225420	ASD10D2MQL2C30350299	10	D2	4.15

*MQL 2 Channel Axial Adjustment Screws fits both HSK63A and HSK100A toolholders

MQL 2 Channel • Transfer Tubes • HSK100A • Metric

Order Number	Catalog Number	Bore Diameter	Toolholder L1	Cross-section (mm ²)
7226935	TT63D6-10SSMQL2C30055130	From 6 to 10	80	4.15
7226936	TT63D12-18SSMQL2C30055135	From 12 to 18	90-95	9.08
7242009	TT63D20SSMQL2C30055136	20	100	16.62
7226937	TT63D25-32SSMQL2C30055134	From 25 to 32	115-120	16.62
7226938	TT63D6-8LSMQL2C30055253	From 6 to 8	160	4.15
7226939	TT63D10LSMQL2C30055255	10	160	4.15
7226940	TT63D12-14LSMQL2C30055258	From 12 to 14	160	9.08
7226962	TT63D16-18LSMQL2C30055261	From 16 to 18	160	9.08
7226963	TT63D20LSMQL2C30055264	20	160	16.62
7226964	TT63D25LSMQL2C30055267	25	160	16.62
7226965	TT63D32LSMQL2C30055270	32	160	16.62



Shrink Fit HSK100A • MQL 2 Channels • Metric

Order Number	Catalog Number	Back-End System Size	D1	D2	D21	L1	L2	L9	V
7158856	HSK100ATTA1MQL2C06085M	HSK100A	6	21	26.9	85	56.05	26	10
7158857	HSK100ATTA1MQL2C08085M	HSK100A	8	21	26.9	85	56.05	26	10
7158858	HSK100ATTA2MQL2C10090M	HSK100A	10	24	31.9	90	61.05	31	10
7158859	HSK100ATTA2MQL2C12095M	HSK100A	12	24	31.9	95	66.05	36	10
7158860	HSK100ATTA2MQL2C14095M	HSK100A	14	27	33.9	95	66.05	36	10
7158881	HSK100ATTA2MQL2C16100M	HSK100A	16	27	33.9	100	71.05	39	10
7158882	HSK100ATTA2MQL2C18100M	HSK100A	18	33	41.9	100	71.05	39	10
7158883	HSK100ATTA2MQL2C20105M	HSK100A	20	33	41.9	105	76.05	41	10
7158884	HSK100ATTA2MQL2C25115M	HSK100A	25	44	52.9	115	86.05	47	10
7158885	HSK100ATTA2MQL2C32120M	HSK100A	32	44	52.9	120	91.05	51	10
7158696	HSK100ATTD2MQL2C06160M	HSK100A	6	21	26.9	160	50	26	10
7158697	HSK100ATTD2MQL2C08160M	HSK100A	8	21	26.9	160	50	26	10
7158698	HSK100ATTD2MQL2C10160M	HSK100A	10	24	31.9	160	63	31	10
7158699	HSK100ATTD2MQL2C12160M	HSK100A	12	24	31.9	160	63	36	10
7158700	HSK100ATTD2MQL2C14160M	HSK100A	14	27	33.9	160	57	36	10
7158851	HSK100ATTD2MQL2C16160M	HSK100A	16	27	33.9	160	57	39	10
7158852	HSK100ATTD2MQL2C18160M	HSK100A	18	33	41.9	160	69	39	10
7158853	HSK100ATTD2MQL2C20160M	HSK100A	20	33	41.9	160	69	41	10
7158854	HSK100ATTD2MQL2C25160M	HSK100A	25	44	52.9	160	69	47	10
7158855	HSK100ATTD2MQL2C32160M	HSK100A	32	44	52.9	160	69	51	10

MQL 2 Channel • Transfer Tubes • HSK63A • Metric

Order Number	Catalog Number	Bore Diameter	Toolholder L1	Cross-section (mm²)
7226966	TT100D6-10SSMQL2C30055144	From 6 to 10	85	4.15
7226967	TT100D12-18SSMQL2C30055146	From 12 to 18	95-100	9.08
7226968	TT100D20-32SSMQL2C30055147	From 20 to 32	105-120	16.62
7226969	TT100D6-8LSMQL2C30055272	From 6 to 8	160	4.15
7226970	TT100D10LSMQL2C30055274	10	160	4.15
7226981	TT100D12-14LSMQL2C30055277	From 12 to 14	160	9.08
7226982	TT100D16-18LSMQL2C30055280	From 16 to 18	160	9.08
7226983	TT100D20LSMQL2C30055283	20	160	16.62
7226984	TT100D25LSMQL2C30055286	25	160	16.62
7226985	TT100D32LSMQL2C30055289	32	160	16.62

KM™ Micro HPCR Modular Quick-Change System

The Ultimate Cooling System for Consistent Performance at Every Turn

Applications

Turning, Grooving and Cut-off

Materials

UNIVERSAL



KM Micro HPCR clamping units are the latest addition to the KM Micro platform. The dual coolant clamping units for smaller toolholders feature a flexible modular design including a riser and nozzle that provide optimal cooling to the turning insert's cutting edge. Additionally, an internal port channels coolant directly into the cutting heads of grooving and cut-off tools.

- Optional dual coolant delivery system for reduced heat and enhanced chip control at the cutting-edge
- Easy insert replacement with front clamp designed heads for Swiss-type lathes
- Flexible quick-change capabilities with new A4 and Beyond Evolution heads for Cut-Off and Grooving
- Shanks available in 12mm, 16mm, 1/2" and 5/8" shank sizes
- Primarily for Swiss-type lathes, but compatible with a wide range of machines

Industries



General
Engineering



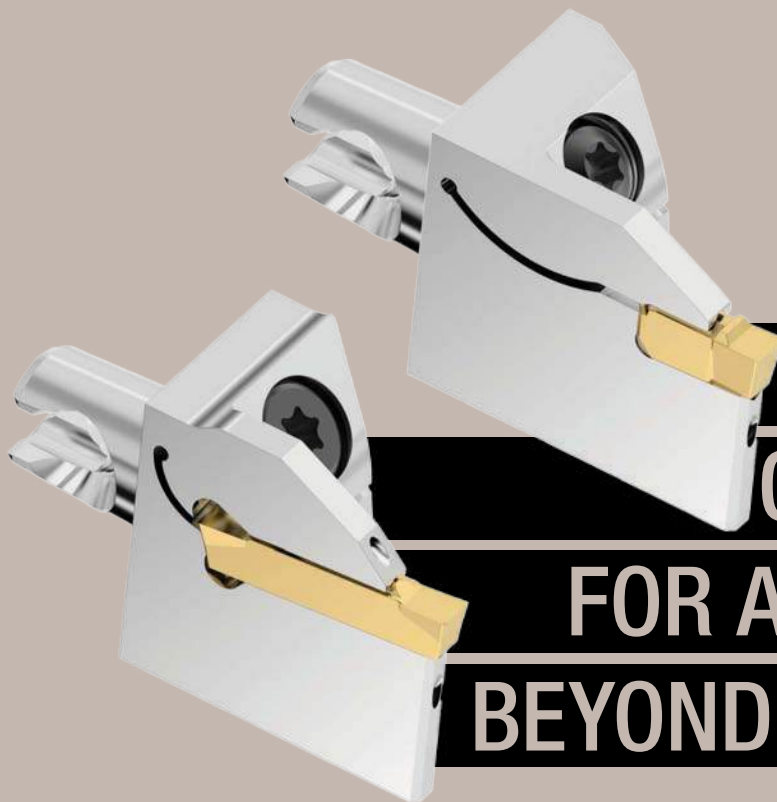
Medical



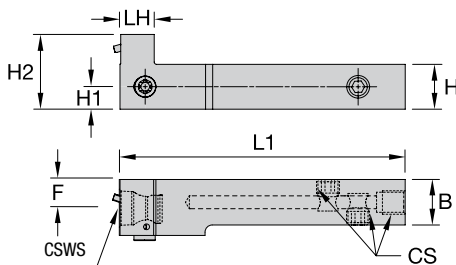
Automotive



Aerospace



**NEW KM MICRO
CUTTING HEADS
FOR A4 AND
BEYOND EVOLUTION**



KM-CM-HPCR • Square Shank • KM Micro Clamping Units • Inch

Order Number	Catalog Number	CSWS system size	B	H	H1	H2	F	LH	L1	CS
7272062	KM12LCM08400HPCR	KM12	.500	.500	.264	.850	.315	.394	4.000	M8X1
7272061	KM12RCM08400HPCR	KM12	.500	.500	.264	.850	.315	.390	4.000	M8X1
7272048	KM16LCM10400HPCR	KM16	.625	.625	.309	1.035	.394	.472	4.000	M8X1
7272047	KM16RCM10400HPCR	KM16	.625	.625	.309	1.035	.394	.472	4.000	M8X1

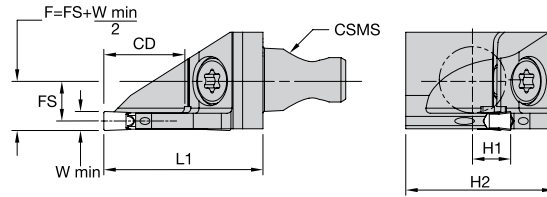
KM-CM-HPCR • Square Shank • KM Micro Clamping Units • Metric

Order Number	Catalog Number	CSWS system size	B	H	H1	H2	F	LH	L1	CS
7272050	KM12LCM1212100HPCR	KM12	12.0	12.0	6.0	20.9	8.0	10.0	100.0	M8X1
7272049	KM12RCM1212100HPCR	KM12	12.0	12.0	6.0	20.9	8.0	10.0	100.0	M8X1
7272046	KM16LCM1616100HPCR	KM16	16.0	16.0	8.0	26.4	10.0	12.0	100.0	M8X1
7272045	KM16RCM1616100HPCR	KM16	16.0	16.0	8.0	26.4	10.0	12.0	100.0	M8X1

Spare Parts and Hardware

Clamping Units

Item	Order Number	Catalog Number	Description
KM-12	7285442	NZLM25060100	Nozzle, M2.5
	1748152	MS2022	Set Screw, M2.5
	7285444	MS2306S	M8 Coolant Plug
	3953388	KM12NAPKG	KM12 Spare Parts Package
	1930173	TWT256R	Torque Wrench & Bit, 25 IP
	2244316	BT25IP	TORX Driver Bit, 25mm long, 25 IP
	2244318	BTE25IP	TORX Driver Bit, 50mm long, 25 IP
	2906898	TBWL25IP	Thumbwheel & Bit, 25 IP
KM-16	7285443	NZLM3063140	Nozzle, M3.0
	7285445	MS2305	Set Screw, M3.0
	7285444	MS2306S	M8 Coolant Plug
	3953386	KM16NAPKG	KM16 Spare Parts Package
	1851809	TWT278R	Torque Wrench & Bit, 27 IP
	2244317	BT27IP	TORX Driver Bit, 25mm long, 27 IP
	2244319	BTE27IP	TORX Driver Bit, 50mm long, 27 IP
	2906899	TBWL27IP	Thumbwheel & Bit, 27 IP



A4 • KM Micro Cutting Units OD Application • Coolant • Inch

Order Number	Catalog Number	CSMS system size	Seat Size	W min	CD	H1	H2	FS	L1
7272097	KM12A4SCFL011325C	KM12	1	.059	.512	.236	1.079	.285	.984
7272096	KM12A4SCFR011325C	KM12	1	.059	.512	.236	1.079	.285	.984
7272093	KM12A4SCFL021325C	KM12	2	.079	.512	.236	.874	.276	.984
7272092	KM12A4SCFR021325C	KM12	2	.079	.512	.236	.874	.276	.984
7271589	KM12A4SCFL031325C	KM12	3	.118	.512	.236	.917	.256	.984
7271588	KM12A4SCFR031325C	KM12	3	.304	.512	.236	.917	.256	.984
7272099	KM16A4SCFL011330C	KM16	1	.059	.512	.315	1.158	.364	1.181
7272098	KM16A4SCFR011330C	KM16	1	.059	.512	.315	1.158	.364	1.181
7272095	KM16A4SCFL021630C	KM16	2	.079	.630	.315	.984	.315	1.181
7272094	KM16A4SCFR021630C	KM16	2	.079	.630	.315	.984	.315	1.181
7272091	KM16A4SCFL031630C	KM16	3	.118	.630	.315	.984	.335	1.181
7271590	KM16A4SCFR031630C	KM16	3	.118	.630	.315	.984	.335	1.181

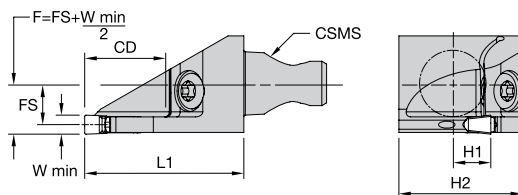
A4 • KM Micro Cutting Units OD Application • Coolant • Metric

Order Number	Catalog Number	CSMS system size	Seat Size	W min	CD	H1	H2	FS	L1
7272097	KM12A4SCFL011325C	KM12	1	1.5	13	6	27.4	7.25	25
7272096	KM12A4SCFR011325C	KM12	1	1.5	13	6	27.4	7.25	25
7272093	KM12A4SCFL021325C	KM12	2	2	13	6	22.2	7	25
7272092	KM12A4SCFR021325C	KM12	2	2	13	6	22.2	7	25
7271589	KM12A4SCFL031325C	KM12	3	3	13	6	23.3	6.5	25
7271588	KM12A4SCFR031325C	KM12	3	3	13	6	23.3	6.5	25
7272099	KM16A4SCFL011330C	KM16	1	1.5	13	8	29.4	9.25	30
7272098	KM16A4SCFR011330C	KM16	1	1.5	13	8	29.4	9.25	30
7272095	KM16A4SCFL021630C	KM16	2	2	16	8	25	8	30
7272094	KM16A4SCFR021630C	KM16	2	2	16	8	25	8	30
7272091	KM16A4SCFL031630C	KM16	3	3	16	8	25	8.5	30
7271590	KM16A4SCFR031630C	KM16	3	3	16	8	25	8.5	30

Spare Parts and Hardware

A4

Item	Order Number	Catalog Number	Description
KM-12	1599982	MS-1159	Insert Screw, M5
	1022703	KT-20	TORX Wrench
KM-16	1021379	MS-1169	Insert Screw, M5
	1022703	KT-20	TORX Wrench



Beyond Evolution • KM Micro Cutting Units OD Application • Coolant • Inch

Order Number	Catalog Number	CSMS system size	Seat Size	W min	CD	H1	H2	FS	L1
7272081	KM12EVSCFL1B1325C	KM12	1B	.055	.512	.236	.906	.289	.984
7272080	KM12EVSCFR1B1325C	KM12	1B	.055	.512	.236	.906	.289	.984
7272086	KM12EVSCFL1F1325C	KM12	1F	.063	.512	.236	.906	.284	.984
7272085	KM12EVSCFR1F1325C	KM12	1F	.063	.512	.236	.906	.284	.984
7272076	KM12EVSCFL021325C	KM12	2	.079	.512	.236	.827	.276	.984
7272075	KM12EVSCFR021325C	KM12	2	.079	.512	.236	.827	.276	.984
7272071	KM12EVSCFL031325C	KM12	3	.118	.512	.236	.768	.256	.984
7271960	KM12EVSCFR031325C	KM12	3	.118	.512	.236	.768	.256	.984
7272084	KM16EVSCFL1B1330C	KM16	1B	.055	.512	.315	1.102	.366	1.181
7272082	KM16EVSCFR1B1330C	KM16	1B	.055	.512	.315	1.102	.366	1.181
7272088	KM16EVSCFL1F1330C	KM16	1F	.063	.512	.315	1.102	.362	1.181
7272087	KM16EVSCFR1F1330C	KM16	1F	.063	.512	.315	1.102	.362	1.181
7272079	KM16EVSCFL021630C	KM16	2	.079	.630	.315	.941	.354	1.181
7272078	KM16EVSCFR021630C	KM16	2	.079	.630	.315	.941	.354	1.181
7272073	KM16EVSCFL031630C	KM16	3	.118	.630	.315	.980	.256	1.181
7272072	KM16EVSCFR031630C	KM16	3	.118	.630	.315	.980	.256	1.181

Beyond Evolution • KM Micro Cutting Units OD Application • Coolant • Metric

Order Number	Catalog Number	CSMS system size	Seat Size	W min	CD	H1	H2	FS	L1
7272081	KM12EVSCFL1B1325C	KM12	1B	1.4	13	6	23	7.35	25
7272080	KM12EVSCFR1B1325C	KM12	1B	1.4	13	6	23	7.35	25
7272086	KM12EVSCFL1F1325C	KM12	1F	1.6	13	6	23	7.2	25
7272085	KM12EVSCFR1F1325C	KM12	1F	1.6	13	6	23	7.2	25
7272076	KM12EVSCFL021325C	KM12	2	2	13	6	21	7	25
7272075	KM12EVSCFR021325C	KM12	2	2	13	6	21	7	25
7272071	KM12EVSCFL031325C	KM12	3	3	13	6	19.5	6.5	25
7271960	KM12EVSCFR031325C	KM12	3	3	13	6	19.5	6.5	25
7272084	KM16EVSCFL1B1330C	KM16	1B	1.4	13	8	28	9.3	30
7272082	KM16EVSCFR1B1330C	KM16	1B	1.4	13	8	28	9.3	30
7272088	KM16EVSCFL1F1330C	KM16	1F	1.6	13	8	28	9.2	30
7272087	KM16EVSCFR1F1330C	KM16	1F	1.6	13	8	28	9.2	30
7272079	KM16EVSCFL021630C	KM16	2	2	16	8	23.9	9	30
7272078	KM16EVSCFR021630C	KM16	2	2	16	8	23.9	9	30
7272073	KM16EVSCFL031630C	KM16	3	3	16	8	24.9	6.5	30
7272072	KM16EVSCFR031630C	KM16	3	3	16	8	24.9	6.5	30

Spare Parts and Hardware

Beyond Evolution

Item	Order Number	Catalog Number	Description
KM-12	1132523	191.916	Insert Screw, M4
	1022701	KT-15	TORX Wrench
KM-16	1021379	MS-1169	Insert Screw, M5
	1022703	KT-20	TORX Wrench



We've Been Cutting Metal Since 1938.



Our Story Is One of Continuous Innovation

It starts in 1938 with our founder, metallurgist Philip M. McKenna, who after years of research created revolutionary tungsten-titanium carbide alloy cutting tools specifically for working with steel. That single development not only led to a new class of machining tools that cut faster, lasted longer and drove productivity in everything from the automobile to the airplane, but also led to the opening of McKenna Metals Company in Latrobe, Pennsylvania, United States. Today, that company is Kennametal Inc.—a recognized leader in metalworking serving customers across continents and industries including transportation, construction, aerospace and defense, machining and cutting, energy and general engineering. We have a reputation for building innovative solutions for our customers' most challenging applications. The name Kennametal is synonymous for high-quality, high-performance tools that can withstand the most strenuous conditions and bring ease to a wide range of machining operations. We help our customers' operations run longer, faster and with greater precision. We don't cut corners. We cut metal. Your toughest materials don't stand a chance.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



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