



MASTER CATALOG **2018**

VOLUME TWO | **ROTATING TOOLS**



HOLEMAKING | TAPPING | SOLID END MILLING | INDEXABLE MILLING

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 12,5–40mm (.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.
- KCMS35™ grade with high Al content TiAlN PVD coating specifically for M3 and S-type materials.
- KC7410™ grade contains multiple layers of PVD coating offering outstanding wear resistance for drilling cast irons.
- KC7135™ grade with thin TiCN-TiN PVD coating for universal usage in all materials.

NEW!



KSEM™ SPL inserts offer extraordinary drilling performance in stainless steels, super alloys, and other demanding environments.

NEW!



KSEM FEG inserts create blind holes, through holes, and countersinks. These inserts are focused on versatility and will support you in many essential drilling applications.



Drill Body Portfolio

- Standard 1, 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 1, 3, 5, and 8 x D.
- KSEM mountable chamfering ring with FAS carbide chamfer inserts.

Customization

- Intermediate diameters available as semi-standards.
- Extensive step drill capabilities to support advanced applications and for one-shot counterboring and chamfering drills.
- Nearly all shank styles for toolholders available as semi-standards.
- Very high L x D ratios possible up to 25 x D and even higher (depending on drill diameter).

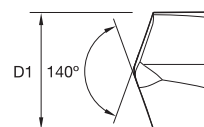
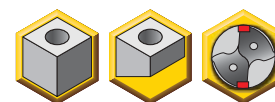
Need to create very small diameter steps for chamfering and counterboring?

CFM inserts fit KSEM made-to-order step drills perfectly. Find them in the KenTIP™ modular drill system section page H43.

NEW!



- KSEM KC7315™ HP cutting edges enable high metal removal rates and superior tool life for steel applications.
- HP geometry offers a wide and strong HP-style chiseled edge that prevents material quenching in the center, enabling high feed rates. Sickie shaped, honed cutting edges provide excellent chip forming and tool life, even in long chipping materials.
- 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 HP cutting edges are perfectly suited to drill alloyed and high-alloy steels.
- Use KC7315 HP cutting edges as an alternative to cast iron materials.



HP

KSEM Inserts • HP KC7315



KC7315	D1		seat size
	mm	in	
KSEM1250HPM	12,500	.4921	C
KSEM1270HPM	12,700	.5000	C
KSEM1280HPM	12,800	.5039	C
KSEM1300HPM	13,000	.5118	C
KSEM1310HPM	13,100	.5160	C
KSEM1320HPM	13,200	.5197	C
KSEM1350HPM	13,500	.5310	C
KSEM1370HPM	13,700	.5394	B
KSEM1380HPM	13,800	.5433	B
KSEM1389HPM	13,890	.5470	B
KSEM1400HPM	14,000	.5512	B
KSEM1410HPM	14,100	.5551	B
KSEM1420HPM	14,200	.5591	B
KSEM1429HPM	14,290	.5630	B
KSEM1440HPM	14,400	.5669	B
KSEM1450HPM	14,500	.5709	B
KSEM1468HPM	14,680	.5780	A
KSEM1480HPM	14,800	.5827	A
KSEM1500HPM	15,000	.5906	A
KSEM1508HPM	15,080	.5940	A
KSEM1530HPM	15,300	.6024	A
KSEM1550HPM	15,500	.6102	A
KSEM1560HPM	15,600	.6142	A
KSEM1570HPM	15,700	.6181	A
KSEM1580HPM	15,800	.6220	A
KSEM1588HPM	15,880	.6250	1
KSEM1600HPM	16,000	.6299	1
KSEM1609HPM	16,090	.6340	1
KSEM1620HPM	16,200	.6378	1
KSEM1627HPM	16,270	.6410	1
KSEM1650HPM	16,500	.6496	1
KSEM1667HPM	16,670	.6560	1
KSEM1700HPM	17,000	.6693	1
KSEM1707HPM	17,070	.6720	1
KSEM1746HPM	17,460	.6875	1
KSEM1750HPM	17,500	.6890	1



- first choice
- alternate choice

KC7315	D1		seat size
	mm	in	
KSEM1786HPM	17,860	.7030	1
KSEM1800HPM	18,000	.7087	1
KSEM1826HPM	18,260	.7190	2
KSEM1850HPM	18,500	.7283	2
KSEM1865HPM	18,650	.7340	2
KSEM1900HPM	19,000	.7480	2
KSEM1905HPM	19,050	.7500	2
KSEM1923HPM	19,228	.7570	2
KSEM1927HPM	19,270	.7590	2
KSEM1945HPM	19,450	.7660	2
KSEM1950HPM	19,500	.7677	2
KSEM1984HPM	19,840	.7810	2
KSEM2000HPM	20,000	.7874	3
KSEM2024HPM	20,240	.7970	3
KSEM2050HPM	20,500	.8071	3
KSEM2064HPM	20,640	.8125	3
KSEM2100HPM	21,000	.8268	3
KSEM2143HPM	21,430	.8440	3
KSEM2150HPM	21,500	.8460	3
KSEM2183HPM	21,830	.8590	3
KSEM2200HPM	22,000	.8661	3
KSEM2223HPM	22,230	.8750	4
KSEM2244HPM	22,440	.8840	4
KSEM2250HPM	22,500	.8858	4
KSEM2300HPM	23,000	.9055	4
KSEM2342HPM	23,420	.9220	4
KSEM2350HPM	23,500	.9252	4
KSEM2381HPM	23,810	.9375	4
KSEM2400HPM	24,000	.9449	4
KSEM2450HPM	24,500	.9646	5
KSEM2461HPM	24,610	.9690	5
KSEM2500HPM	25,000	.9843	5
KSEM2540HPM	25,400	1.0000	5
KSEM2550HPM	25,500	1.0039	5
KSEM2560HPM	25,610	1.0080	5
KSEM2567HPM	25,670	1.0110	5

(continued)

(KSEM Inserts • HP KC7315™ — continued)



KC7315	D1		seat size
	mm	in	
KSEM2600HPM	26,000	1.0236	5
KSEM2619HPM	26,190	1.0310	6
KSEM2650HPM	26,500	1.0433	6
KSEM2659HPM	26,590	1.0470	6
KSEM2700HPM	27,000	1.0630	6
KSEM2750HPM	27,500	1.0827	6
KSEM2778HPM	27,780	1.0940	6
KSEM2800HPM	28,000	1.1024	6
KSEM2818HPM	28,180	1.1090	7
KSEM2850HPM	28,500	1.1220	7
KSEM2858HPM	28,580	1.1250	7
KSEM2900HPM	29,000	1.1417	7
KSEM2937HPM	29,370	1.1563	7
KSEM2950HPM	29,500	1.1614	7
KSEM2977HPM	29,770	1.1720	7
KSEM3000HPM	30,000	1.1811	7
KSEM3016HPM	30,160	1.1875	8
KSEM3050HPM	30,500	1.2008	8
KSEM3096HPM	30,960	1.2190	8
KSEM3100HPM	31,000	1.2205	8



● first choice
○ alternate choice

KC7315	D1		seat size
	mm	in	
KSEM3150HPM	31,500	1.2402	8
KSEM3175HPM	31,750	1.2500	8
KSEM3200HPM	32,000	1.2598	8
KSEM3250HPM	32,500	1.2795	9
KSEM3300HPM	33,000	1.2992	9
KSEM3334HPM	33,340	1.3130	9
KSEM3400HPM	34,000	1.3386	9
KSEM3413HPM	34,130	1.3440	9
KSEM3493HPM	34,930	1.3750	9
KSEM3500HPM	35,000	1.3780	9
KSEM3550HPM	35,500	1.3976	9
KSEM3600HPM	36,000	1.4173	9
KSEM3750HPM	37,500	1.4764	10
KSEM3800HPM	38,000	1.4961	10
KSEM3810HPM	38,100	1.5000	10
KSEM3850HPM	38,500	1.5157	10
KSEM3900HPM	39,000	1.5354	10
KSEM3950HPM	39,500	1.5551	10
KSEM4000HPM	40,000	1.5748	10

Tolerance HP • 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 HP • Inch

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

Application Data

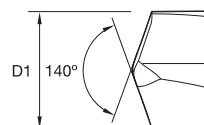
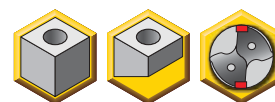
■ Modular Drill Carbide Insert Blades • KSEM • HP Geometry • Grade KC7315 • Through Coolant • Metric

Material Group		Cutting Speed – vc			Metric						
		Range – m/min			Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		12,5	16,0	20,0	25,4	32,0	40,0
P	1	70	90	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
	2	80	100	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
	3	65	75	80	mm/r	0,15–0,28	0,17–0,31	0,19–0,36	0,25–0,46	0,23–0,53	0,33–0,60
	4	50	65	75	mm/r	0,12–0,28	0,14–0,31	0,16–0,36	0,20–0,46	0,23–0,53	0,30–0,60
	5	45	50	65	mm/r	0,09–0,15	0,11–0,18	0,12–0,21	0,15–0,25	0,17–0,29	0,20–0,33
	6	45	50	65	mm/r	0,12–0,23	0,14–0,26	0,16–0,29	0,20–0,38	0,23–0,43	0,26–0,54

■ Modular Drill Carbide Insert Blades • KSEM • HP Geometry • Grade KC7315 • Through Coolant • Inch

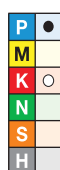
Material Group		Cutting Speed – vc			Inch						
		Range – SFM			Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		0.462	0.630	0.787	1.000	1.260	1.575
P	1	230	300	360	IPR	.006–.012	.007–.014	.007–.016	.010–.021	.011–.024	.013–.027
	2	260	330	390	IPR	.006–.012	.007–.014	.007–.016	.010–.021	.014–.024	.016–.027
	3	210	250	260	IPR	.006–.011	.007–.012	.007–.014	.010–.018	.009–.021	.013–.024
	4	150	160	210	IPR	.005–.011	.006–.012	.006–.014	.008–.018	.009–.021	.012–.024
	5	150	160	210	IPR	.004–.006	.004–.007	.005–.008	.006–.010	.007–.011	.008–.013
	6	150	160	210	IPR	.005–.009	.006–.010	.006–.011	.008–.015	.009–.017	.010–.021

- 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



KC7315	D1		seat size
	mm	in	
KSEM1250HPGM	12,500	.4921	C
KSEM1260HPGM	12,600	.4961	C
KSEM1270HPGM	12,700	.5000	C
KSEM1280HPGM	12,800	.5039	C
KSEM1293HPGM	12,930	.5090	C
KSEM1300HPGM	13,000	.5118	C
KSEM1310HPGM	13,100	.5160	C
KSEM1320HPGM	13,200	.5197	C
KSEM1350HPGM	13,500	.5310	C
KSEM1360HPGM	13,600	.5354	B
KSEM1370HPGM	13,700	.5394	B
KSEM1380HPGM	13,800	.5433	B
KSEM1389HPGM	13,890	.5470	B
KSEM1400HPGM	14,000	.5512	B
KSEM1410HPGM	14,100	.5551	B
KSEM1420HPGM	14,200	.5591	B
KSEM1429HPGM	14,290	.5630	B
KSEM1440HPGM	14,400	.5669	B
KSEM1450HPGM	14,500	.5709	B
KSEM1460HPGM	14,600	.5748	A
KSEM1468HPGM	14,680	.5780	A
KSEM1480HPGM	14,800	.5827	A
KSEM1500HPGM	15,000	.5906	A
KSEM1508HPGM	15,080	.5940	A
KSEM1530HPGM	15,300	.6024	A
KSEM1548HPGM	15,480	.6090	A
KSEM1550HPGM	15,500	.6102	A
KSEM1560HPGM	15,600	.6142	A
KSEM1570HPGM	15,700	.6181	A
KSEM1580HPGM	15,800	.6220	A
KSEM1588HPGM	15,880	.6250	1
KSEM1600HPGM	16,000	.6299	1
KSEM1604HPGM	16,040	.6315	1
KSEM1609HPGM	16,090	.6340	1
KSEM1619HPGM	16,190	.6374	1
KSEM1620HPGM	16,200	.6378	1



- first choice
- alternate choice

KC7315	D1		seat size
	mm	in	
KSEM1627HPGM	16,270	.6410	1
KSEM1650HPGM	16,500	.6496	1
KSEM1660HPGM	16,600	.6535	1
KSEM1667HPGM	16,670	.6560	1
KSEM1700HPGM	17,000	.6693	1
KSEM1707HPGM	17,070	.6720	1
KSEM1735HPGM	17,350	.6831	1
KSEM1746HPGM	17,460	.6875	1
KSEM1750HPGM	17,500	.6890	1
KSEM1760HPGM	17,600	.6929	1
KSEM1770HPGM	17,700	.6969	1
KSEM1786HPGM	17,860	.7030	1
KSEM1800HPGM	18,000	.7087	1
KSEM1826HPGM	18,260	.7190	2
KSEM1850HPGM	18,500	.7283	2
KSEM1860HPGM	18,600	.7323	2
KSEM1865HPGM	18,650	.7340	2
KSEM1880HPGM	18,800	.7402	2
KSEM1900HPGM	19,000	.7480	2
KSEM1905HPGM	19,050	.7500	2
KSEM1925HPGM	19,250	.7579	2
KSEM1927HPGM	19,270	.7590	2
KSEM1932HPGM	19,320	.7606	2
KSEM1935HPGM	19,350	.7618	2
KSEM1945HPGM	19,450	.7660	2
KSEM1950HPGM	19,500	.7677	2
KSEM1970HPGM	19,700	.7756	2
KSEM1984HPGM	19,840	.7810	2
KSEM2000HPGM	20,000	.7874	3
KSEM2024HPGM	20,240	.7969	3
KSEM2050HPGM	20,500	.8071	3
KSEM2064HPGM	20,640	.8125	3
KSEM2070HPGM	20,700	.8150	3
KSEM2100HPGM	21,000	.8268	3
KSEM2110HPGM	21,100	.8307	3
KSEM2120HPGM	21,200	.8346	3

(continued)

(KSEM Inserts • HPG KC7315™ — continued)



KC7315	D1		seat size
	mm	in	
KSEM2133HPGM	21,330	.8398	3
KSEM2143HPGM	21,430	.8440	3
KSEM2150HPGM	21,500	.8460	3
KSEM2170HPGM	21,700	.8543	3
KSEM2183HPGM	21,830	.8590	3
KSEM2200HPGM	22,000	.8661	3
KSEM2210HPGM	22,100	.8701	4
KSEM2215HPGM	22,150	.8720	4
KSEM2223HPGM	22,230	.8750	4
KSEM2244HPGM	22,440	.8840	4
KSEM2250HPGM	22,500	.8858	4
KSEM2262HPGM	22,620	.8906	4
KSEM2300HPGM	23,000	.9055	4
KSEM2305HPGM	23,050	.9075	4
KSEM2310HPGM	23,100	.9094	4
KSEM2325HPGM	23,250	.9154	4
KSEM2330HPGM	23,300	.9173	4
KSEM2342HPGM	23,420	.9220	4
KSEM2350HPGM	23,500	.9252	4
KSEM2381HPGM	23,810	.9375	4
KSEM2400HPGM	24,000	.9449	4
KSEM2430HPGM	24,300	.9567	5
KSEM2450HPGM	24,500	.9646	5
KSEM2461HPGM	24,610	.9690	5
KSEM2470HPGM	24,700	.9724	5
KSEM2500HPGM	25,000	.9843	5
KSEM2540HPGM	25,400	1.0000	5
KSEM2550HPGM	25,500	1.0039	5
KSEM2554HPGM	25,540	1.0055	5
KSEM2560HPGM	25,600	1.0080	5
KSEM2565HPGM	25,654	1.0100	5
KSEM2567HPGM	25,670	1.0110	5
KSEM2600HPGM	26,000	1.0236	5
KSEM2619HPGM	26,190	1.0310	6
KSEM2650HPGM	26,500	1.0433	6
KSEM2653HPGM	26,530	1.0445	6
KSEM2659HPGM	26,590	1.0470	6
KSEM2670HPGM	26,700	1.0512	6
KSEM2700HPGM	27,000	1.0630	6
KSEM2750HPGM	27,500	1.0827	6
KSEM2778HPGM	27,780	1.0940	6
KSEM2800HPGM	28,000	1.1024	6
KSEM2818HPGM	28,180	1.1090	7
KSEM2850HPGM	28,500	1.1220	7
KSEM2858HPGM	28,580	1.1250	7
KSEM2900HPGM	29,000	1.1417	7
KSEM2937HPGM	29,370	1.1563	7
KSEM2950HPGM	29,500	1.1614	7

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



● first choice
○ alternate choice

KC7315	D1		seat size
	mm	in	
KSEM2955HPGM	29,550	1.1634	7
KSEM2973HPGM	29,730	1.1705	7
KSEM2977HPGM	29,770	1.1720	7
KSEM3000HPGM	30,000	1.1811	7
KSEM3016HPGM	30,160	1.1875	8
KSEM3050HPGM	30,500	1.2008	8
KSEM3056HPGM	30,560	1.2030	8
KSEM3096HPGM	30,960	1.2190	8
KSEM3100HPGM	31,000	1.2205	8
KSEM3125HPGM	31,250	1.2303	8
KSEM3150HPGM	31,500	1.2402	8
KSEM3175HPGM	31,750	1.2500	8
KSEM3200HPGM	32,000	1.2598	8
KSEM3220HPGM	32,200	1.2677	9
KSEM3234HPGM	32,340	1.2732	9
KSEM3250HPGM	32,500	1.2795	9
KSEM3254HPGM	32,540	1.2810	9
KSEM3294HPGM	32,940	1.2970	9
KSEM3300HPGM	33,000	1.2992	9
KSEM3334HPGM	33,340	1.3130	9
KSEM3350HPGM	33,500	1.3189	9
KSEM3373HPGM	33,730	1.3280	9
KSEM3400HPGM	34,000	1.3386	9
KSEM3413HPGM	34,130	1.3440	9
KSEM3450HPGM	34,500	1.3583	9
KSEM3493HPGM	34,930	1.3750	9
KSEM3500HPGM	35,000	1.3780	9
KSEM3550HPGM	35,500	1.3976	9
KSEM3572HPGM	35,720	1.4060	9
KSEM3600HPGM	36,000	1.4173	9
KSEM3612HPGM	36,120	1.4220	10
KSEM3650HPGM	36,500	1.4375	10
KSEM3651HPGM	36,510	1.4375	10
KSEM3700HPGM	37,000	1.4567	10
KSEM3731HPGM	37,310	1.4690	10
KSEM3750HPGM	37,500	1.4764	10
KSEM3800HPGM	38,000	1.4961	10
KSEM3810HPGM	38,100	1.5000	10
KSEM3846HPGM	38,460	1.5142	10
KSEM3850HPGM	38,500	1.5157	10
KSEM3900HPGM	39,000	1.5354	10
KSEM3950HPGM	39,500	1.5551	10
KSEM3975HPGM	39,750	1.5650	10
KSEM4000HPGM	40,000	1.5748	10

Tolerance HPG • Inch

D1 inch	tolerance h8
.500–.709	+0.000/-0.0010
>.709–1.181	+0.000/-0.0013
>1.181–1.575	+0.000/-0.0015

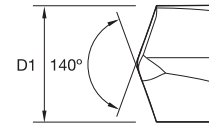
■ Modular Drill Carbide Insert Blades • KSEM™ • HPG Geometry • Grade KC7315™ •
 Through Coolant • Metric

Material Group		Cutting Speed — vc			Metric						
		Range — m/min			Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		12,5	16,0	20,0	25,4	32,0	40,0
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			Inch						
		Range — SFM			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



KCPM45	D1		seat size
	mm	in	
KSEM1250HPGM	12,500	.4921	C
KSEM1270HPGM	12,700	.5000	C
KSEM1280HPGM	12,800	.5039	C
KSEM1293HPGM	12,930	.5090	C
KSEM1300HPGM	13,000	.5118	C
KSEM1350HPGM	13,500	.5310	C
KSEM1360HPGM	13,600	.5354	B
KSEM1380HPGM	13,800	.5433	B
KSEM1389HPGM	13,890	.5470	B
KSEM1400HPGM	14,000	.5512	B
KSEM1410HPGM	14,100	.5551	B
KSEM1429HPGM	14,290	.5630	B
KSEM1450HPGM	14,500	.5709	B
KSEM1468HPGM	14,680	.5780	A
KSEM1500HPGM	15,000	.5906	A
KSEM1508HPGM	15,080	.5940	A
KSEM1550HPGM	15,500	.6102	A
KSEM1580HPGM	15,800	.6220	A
KSEM1588HPGM	15,880	.6250	1
KSEM1600HPGM	16,000	.6299	1
KSEM1609HPGM	16,090	.6340	1
KSEM1620HPGM	16,200	.6378	1
KSEM1627HPGM	16,270	.6410	1
KSEM1650HPGM	16,500	.6496	1
KSEM1667HPGM	16,670	.6560	1
KSEM1700HPGM	17,000	.6693	1
KSEM1707HPGM	17,070	.6720	1
KSEM1746HPGM	17,460	.6875	1
KSEM1750HPGM	17,500	.6890	1
KSEM1786HPGM	17,860	.7030	1
KSEM1800HPGM	18,000	.7087	1
KSEM1826HPGM	18,260	.7190	2



- first choice
- alternate choice

KCPM45	D1		seat size
	mm	in	
KSEM1850HPGM	18,500	.7283	2
KSEM1865HPGM	18,650	.7340	2
KSEM1900HPGM	19,000	.7480	2
KSEM1905HPGM	19,050	.7500	2
KSEM1920HPGM	19,200	.7559	2
KSEM1923HPGM	19,228	.7570	2
KSEM1925HPGM	19,250	.7579	2
KSEM1927HPGM	19,270	.7590	2
KSEM1945HPGM	19,450	.7660	2
KSEM1950HPGM	19,500	.7677	2
KSEM1965HPGM	19,650	.7736	2
KSEM1984HPGM	19,840	.7810	2
KSEM2000HPGM	20,000	.7874	3
KSEM2024HPGM	20,240	.7969	3
KSEM2050HPGM	20,500	.8071	3
KSEM2064HPGM	20,640	.8125	3
KSEM2100HPGM	21,000	.8268	3
KSEM2143HPGM	21,430	.8440	3
KSEM2150HPGM	21,500	.8460	3
KSEM2183HPGM	21,830	.8590	3
KSEM2200HPGM	22,000	.8661	3
KSEM2223HPGM	22,230	.8750	4
KSEM2244HPGM	22,440	.8840	4
KSEM2250HPGM	22,500	.8858	4
KSEM2300HPGM	23,000	.9055	4
KSEM2342HPGM	23,420	.9220	4
KSEM2350HPGM	23,500	.9252	4
KSEM2360HPGM	23,600	.9291	4
KSEM2370HPGM	23,700	.9331	4
KSEM2381HPGM	23,810	.9375	4
KSEM2400HPGM	24,000	.9449	4
KSEM2450HPGM	24,500	.9646	5

(continued)

(KSEM Inserts • HPG KCPM45™ — continued)



Modular Drills

KCPM45	D1		seat size
	mm	in	
KSEM2461HPGM	24,610	.9690	5
KSEM2500HPGM	25,000	.9843	5
KSEM2540HPGM	25,400	1.0000	5
KSEM2550HPGM	25,500	1.0039	5
KSEM2560HPGM	25,600	1.0080	5
KSEM2565HPGM	25,654	1.0100	5
KSEM2567HPGM	25,670	1.0106	5
KSEM2581HPGM	25,810	1.0161	5
KSEM2600HPGM	26,000	1.0236	5
KSEM2619HPGM	26,190	1.0310	6
KSEM2650HPGM	26,500	1.0433	6
KSEM2659HPGM	26,590	1.0470	6
KSEM2700HPGM	27,000	1.0630	6
KSEM2750HPGM	27,500	1.0827	6
KSEM2778HPGM	27,780	1.0940	6
KSEM2800HPGM	28,000	1.1024	6
KSEM2818HPGM	28,180	1.1090	7
KSEM2835HPGM	28,350	1.1161	7
KSEM2850HPGM	28,500	1.1220	7
KSEM2858HPGM	28,580	1.1250	7
KSEM2900HPGM	29,000	1.1417	7
KSEM2937HPGM	29,370	1.1563	7
KSEM2950HPGM	29,500	1.1614	7
KSEM2977HPGM	29,770	1.1720	7
KSEM3000HPGM	30,000	1.1811	7
KSEM3016HPGM	30,160	1.1875	8
KSEM3050HPGM	30,500	1.2008	8
KSEM3096HPGM	30,960	1.2190	8



● first choice
○ alternate choice

KCPM45	D1		seat size
	mm	in	
KSEM3100HPGM	31,000	1.2205	8
KSEM3115HPGM	31,150	1.2264	8
KSEM3150HPGM	31,500	1.2402	8
KSEM3175HPGM	31,750	1.2500	8
KSEM3200HPGM	32,000	1.2598	8
KSEM3250HPGM	32,500	1.2795	9
KSEM3254HPGM	32,540	1.2810	9
KSEM3300HPGM	33,000	1.2992	9
KSEM3334HPGM	33,340	1.3130	9
KSEM3350HPGM	33,500	1.3189	9
KSEM3400HPGM	34,000	1.3386	9
KSEM3450HPGM	34,500	1.3583	9
KSEM3493HPGM	34,930	1.3750	9
KSEM3500HPGM	35,000	1.3780	9
KSEM3600HPGM	36,000	1.4173	9
KSEM3651HPGM	36,510	1.4375	10
KSEM3700HPGM	37,000	1.4567	10
KSEM3731HPGM	37,310	1.4690	10
KSEM3750HPGM	37,500	1.4764	10
KSEM3800HPGM	38,000	1.4961	10
KSEM3810HPGM	38,100	1.5000	10
KSEM3846HPGM	38,460	1.5142	10
KSEM3900HPGM	39,000	1.5354	10
KSEM4000HPGM	40,000	1.5748	10

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			Metric						
		Range — m/min			Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		12,5	16,0	20,0	25,4	32,0	40,0
P	1	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 Drills

■ 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 $\leq 1.5 \times D$.

■ 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

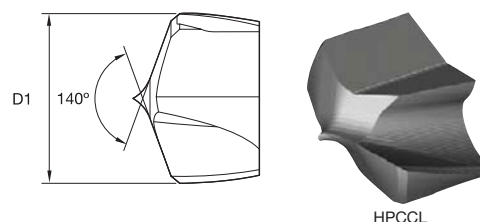
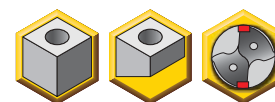
■ Modular Drill Carbide Insert Blades • KSEM • HPG Geometry • Grade KCPM45 •
MQL* • Inch



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 $\leq 1.5 \times D$.

- KSEM KC7410™ HPCCL focuses on tool life and process reliability in cast iron materials in all cast iron materials. It offers increased feed forces in increases your productivity.
- HPCCL geometry offers a wide and strong HP-style chiseled edge that prevents material quenching in the center, enabling high feed rates. With a corner chamfer and strong edges, it creates high quality holes and increased tool life.
- KC7410 is a multilayer AlCr-based coating over fine-grain carbide. It is extraordinarily wear resistant in cast iron applications due to its high hot hardness.
- Use KC7410 HPCCL in all cast iron applications, especially when working in difficult conditions and CGI or ADI irons.



■ KSEM Inserts • HPCCL KC7410



KC7410	D1		seat size
	mm	in	
KSEM1250HPCCLM	12,500	.4921	C
KSEM1270HPCCLM *	12,700	.5000	C
KSEM1293HPCCLM	12,930	.5091	C
KSEM1300HPCCLM	13,000	.5118	C
KSEM1310HPCCLM	13,100	.5157	C
KSEM1350HPCCLM	13,500	.5315	C
KSEM1389HPCCLM	13,890	.5469	B
KSEM1400HPCCLM	14,000	.5512	B
KSEM1429HPCCLM	14,290	.5626	B
KSEM1450HPCCLM	14,500	.5709	B
KSEM1468HPCCLM	14,680	.5780	A
KSEM1500HPCCLM	15,000	.5906	A
KSEM1548HPCCLM *	15,480	.6094	A
KSEM1550HPCCLM	15,500	.6102	A
KSEM1588HPCCLM *	15,880	.6252	1
KSEM1600HPCCLM	16,000	.6299	1
KSEM1609HPCCLM	16,090	.6335	1
KSEM1627HPCCLM	16,270	.6406	1
KSEM1650HPCCLM	16,500	.6496	1
KSEM1667HPCCLM	16,670	.6563	1
KSEM1700HPCCLM	17,000	.6693	1
KSEM1707HPCCLM	17,070	.6720	1
KSEM1746HPCCLM	17,460	.6874	1
KSEM1750HPCCLM	17,500	.6890	1
KSEM1760HPCCLM	17,600	.6929	1
KSEM1800HPCCLM	18,000	.7087	1
KSEM1826HPCCLM	18,260	.7189	2
KSEM1850HPCCLM	18,500	.7283	2
KSEM1900HPCCLM	19,000	.7480	2
KSEM1905HPCCLM	19,050	.7500	2
KSEM1927HPCCLM *	19,270	.7587	2
KSEM1945HPCCLM *	19,450	.7657	2



- first choice
- alternate choice

KC7410	D1		seat size
	mm	in	
KSEM1950HPCCLM	19,500	.7677	2
KSEM1984HPCCLM	19,840	.7811	2
KSEM2000HPCCLM	20,000	.7874	3
KSEM2024HPCCLM	20,240	.7969	3
KSEM2050HPCCLM	20,500	.8071	3
KSEM2064HPCCLM	20,640	.8126	3
KSEM2100HPCCLM	21,000	.8268	3
KSEM2143HPCCLM	21,430	.8437	3
KSEM2150HPCCLM	21,500	.8465	3
KSEM2200HPCCLM	22,000	.8661	3
KSEM2210HPCCLM	22,100	.8701	4
KSEM2223HPCCLM	22,230	.8752	4
KSEM2244HPCCLM	22,440	.8835	4
KSEM2250HPCCLM	22,500	.8858	4
KSEM2300HPCCLM	23,000	.9055	4
KSEM2342HPCCLM	23,420	.9220	4
KSEM2350HPCCLM	23,500	.9252	4
KSEM2381HPCCLM	23,810	.9374	4
KSEM2400HPCCLM	24,000	.9449	4
KSEM2450HPCCLM	24,500	.9646	5
KSEM2461HPCCLM	24,610	.9689	5
KSEM2500HPCCLM	25,000	.9843	5
KSEM2540HPCCLM	25,400	1.0000	5
KSEM2550HPCCLM	25,500	1.0039	5
KSEM2567HPCCLM	25,670	1.0106	5
KSEM2600HPCCLM	26,000	1.0236	5
KSEM2619HPCCLM	26,190	1.0311	6
KSEM2650HPCCLM	26,500	1.0433	6
KSEM2659HPCCLM	26,590	1.0469	6
KSEM2700HPCCLM	27,000	1.0630	6
KSEM2750HPCCLM	27,500	1.0827	6
KSEM2778HPCCLM	27,780	1.0937	6

(continued)

(KSEM Inserts • HPCCL KC7410™ — continued)



KC7410	D1		seat size
	mm	in	
KSEM2800HPCCLM	28,000	1.1024	6
KSEM2818HPCCLM *	28,180	1.0940	7
KSEM2850HPCCLM	28,500	1.1220	7
KSEM2858HPCCLM	28,580	1.1250	7
KSEM2900HPCCLM	29,000	1.1417	7
KSEM2937HPCCLM	29,370	1.1563	7
KSEM2950HPCCLM *	29,500	1.1614	7
KSEM2977HPCCLM	29,770	1.1720	7
KSEM3000HPCCLM	30,000	1.1811	7
KSEM3016HPCCLM	30,160	1.1875	8
KSEM3050HPCCLM	30,500	1.2008	8
KSEM3100HPCCLM	31,000	1.2205	8



● first choice
○ alternate choice

KC7410	D1		seat size
	mm	in	
KSEM3175HPCCLM	31,750	1.2500	8
KSEM3200HPCCLM	32,000	1.2598	8
KSEM3300HPCCLM	33,000	1.2992	9
KSEM3400HPCCLM *	34,000	1.3386	9
KSEM3500HPCCLM	35,000	1.3780	9
KSEM3600HPCCLM	36,000	1.4173	9
KSEM3700HPCCLM	37,000	1.4567	10
KSEM3800HPCCLM	38,000	1.4961	10
KSEM3900HPCCLM	39,000	1.5354	10
KSEM3920HPCCLM	39,200	1.5433	10
KSEM4000HPCCLM *	40,000	1.5748	10

NOTE: *Made-to-order standard item. Standard pricing, manufacturing lead time, and minimum order quantity applies.

Tolerance 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 HPCCL • Inch

D1	tolerance h8
.500–.709	+0,000/-0,0010
>.709–1.181	+0,000/-0,0013
>1.181–1.575	+0,000/-0,0015

Application Data

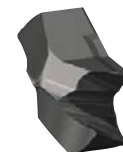
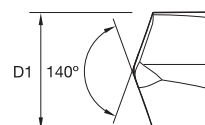
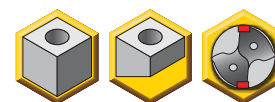
Modular Drill Carbide Insert Blades • KSEM™ • HPCCL Geometry • Grade KC7410™ • Through Coolant • Metric

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
K	1	100	175	200	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	100	160	180	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	70	85	100	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 • HPCCL Geometry • Grade KC7410 • Through Coolant • Inch

Material Group		Cutting Speed — vc			Inch						
		Range — SFM			Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		0.462	0.630	0.787	1.000	1.260	1.575
K	1	330	570	660	IPR	.007–.014	.008–.017	.010–.019	.012–.023	.015–.028	.017–.032
	2	330	520	590	IPR	.007–.013	.008–.016	.010–.019	.012–.023	.015–.028	.017–.032
	3	230	280	330	IPR	.007–.014	.008–.016	.008–.017	.009–.019	.010–.021	.011–.022

- 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



KC7320	D1		seat size
	mm	in	
KSEM1250HPLM	12,500	.4921	C
KSEM1270HPLM	12,700	.5000	C
KSEM1280HPLM	12,800	.5039	C
KSEM1293HPLM	12,930	.5090	C
KSEM1300HPLM	13,000	.5118	C
KSEM1311HPLM	13,100	.5157	C
KSEM1350HPLM	13,500	.5310	C
KSEM1360HPLM	13,600	.5354	B
KSEM1380HPLM	13,800	.5433	B
KSEM1389HPLM	13,890	.5470	B
KSEM1400HPLM	14,000	.5512	B
KSEM1410HPLM	14,100	.5551	B
KSEM1415HPLM	14,150	.5571	B
KSEM1420HPLM	14,200	.5591	B
KSEM1429HPLM	14,290	.5630	B
KSEM1450HPLM	14,500	.5709	B
KSEM1460HPLM	14,600	.5748	A
KSEM1468HPLM	14,680	.5780	A
KSEM1480HPLM	14,800	.5827	A
KSEM1500HPLM	15,000	.5906	A
KSEM1508HPLM	15,080	.5940	A
KSEM1548HPLM	15,480	.6090	A
KSEM1550HPLM	15,500	.6102	A
KSEM1560HPLM	15,600	.6142	A
KSEM1588HPLM	15,880	.6250	1
KSEM1600HPLM	16,000	.6299	1
KSEM1609HPLM	16,090	.6340	1
KSEM1610HPLM	16,100	.6339	1
KSEM1615HPLM	16,150	.6358	1
KSEM1620HPLM	16,200	.6378	1
KSEM1627HPLM	16,270	.6410	1
KSEM1650HPLM	16,500	.6496	1
KSEM1667HPLM	16,670	.6560	1
KSEM1700HPLM	17,000	.6693	1
KSEM1707HPLM	17,070	.6720	1
KSEM1746HPLM	17,460	.6875	1
KSEM1750HPLM	17,500	.6890	1
KSEM1775HPLM	17,750	.6988	1
KSEM1780HPLM	17,800	.7008	1
KSEM1786HPLM	17,860	.7030	1
KSEM1790HPLM	17,900	.7047	1
KSEM1800HPLM	18,000	.7087	1
KSEM1826HPLM	18,260	.7190	2
KSEM1850HPLM	18,500	.7283	2



- first choice
- alternate choice

KC7320	D1		seat size
	mm	in	
KSEM1860HPLM	18,600	.7323	2
KSEM1865HPLM	18,650	.7340	2
KSEM1890HPLM	18,900	.7441	2
KSEM1900HPLM	19,000	.7480	2
KSEM1905HPLM	19,050	.7500	2
KSEM1920HPLM	19,200	.7559	2
KSEM1923HPLM	19,228	.7570	2
KSEM1925HPLM	19,250	.7579	2
KSEM1927HPLM	19,270	.7590	2
KSEM1935HPLM	19,350	.7618	2
KSEM1936HPLM	19,360	.7622	2
KSEM1938HPLM	19,380	.7630	2
KSEM1945HPLM	19,450	.7660	2
KSEM1950HPLM	19,500	.7677	2
KSEM1984HPLM	19,840	.7810	2
KSEM2000HPLM	20,000	.7874	3
KSEM2010HPLM	20,100	.7913	3
KSEM2024HPLM	20,240	.7970	3
KSEM2035HPLM	20,350	.8012	3
KSEM2050HPLM	20,500	.8071	3
KSEM2064HPLM	20,640	.8125	3
KSEM2100HPLM	21,000	.8268	3
KSEM2115HPLM	21,150	.8327	3
KSEM2133HPLM	21,330	.8398	3
KSEM2143HPLM	21,430	.8440	3
KSEM2150HPLM	21,500	.8460	3
KSEM2183HPLM	21,830	.8590	3
KSEM2200HPLM	22,000	.8661	3
KSEM2223HPLM	22,230	.8750	4
KSEM2244HPLM	22,440	.8840	4
KSEM2250HPLM	22,500	.8858	4
KSEM2277HPLM	22,770	.8965	4
KSEM2300HPLM	23,000	.9055	4
KSEM2342HPLM	23,420	.9220	4
KSEM2350HPLM	23,500	.9252	4
KSEM2381HPLM	23,810	.9375	4
KSEM2400HPLM	24,000	.9449	4
KSEM2450HPLM	24,500	.9646	5
KSEM2461HPLM	24,610	.9690	5
KSEM2500HPLM	25,000	.9843	5
KSEM2507HPLM	25,070	.9870	5
KSEM2540HPLM	25,400	1.0000	5
KSEM2550HPLM	25,500	1.0039	5
KSEM2560HPLM	25,600	1.0080	5

(continued)

(KSEM Inserts • HPL KC7320™ — continued)



KC7320	D1		seat size
	mm	in	
KSEM2565HPLM	25,650	1.0098	5
KSEM2567HPLM	25,670	1.0110	5
KSEM2581HPLM	25,810	1.0161	5
KSEM2600HPLM	26,000	1.0236	5
KSEM2619HPLM	26,190	1.0310	6
KSEM2650HPLM	26,500	1.0433	6
KSEM2659HPLM	26,590	1.0470	6
KSEM2670HPLM	26,700	1.0512	6
KSEM2700HPLM	27,000	1.0630	6
KSEM2750HPLM	27,500	1.0827	6
KSEM2779HPLM	27,780	1.0940	6
KSEM2800HPLM	28,000	1.1024	6
KSEM2810HPLM	28,100	1.1063	7
KSEM2817HPLM	28,180	1.1090	7
KSEM2850HPLM	28,500	1.1220	7
KSEM2858HPLM	28,580	1.1250	7
KSEM2900HPLM	29,000	1.1417	7
KSEM2937HPLM	29,370	1.1563	7
KSEM2950HPLM	29,500	1.1614	7
KSEM2977HPLM	29,770	1.1720	7



- first choice
- alternate choice

KC7320	D1		seat size
	mm	in	
KSEM3000HPLM	30,000	1.1811	7
KSEM3016HPLM	30,160	1.1875	8
KSEM3050HPLM	30,500	1.2008	8
KSEM3100HPLM	31,000	1.2205	8
KSEM3150HPLM	31,500	1.2402	8
KSEM3175HPLM	31,750	1.2500	8
KSEM3200HPLM	32,000	1.2598	8
KSEM3254HPLM	32,540	1.2810	9
KSEM3300HPLM	33,000	1.2992	9
KSEM3335HPLM	33,400	1.3130	9
KSEM3400HPLM	34,000	1.3386	9
KSEM3493HPLM	34,930	1.3750	9
KSEM3500HPLM	35,000	1.3780	9
KSEM3571HPLM	35,720	1.4060	9
KSEM3600HPLM	36,000	1.4173	9
KSEM3700HPLM	37,000	1.4567	10
KSEM3750HPLM	37,500	1.4764	10
KSEM3800HPLM	38,000	1.4961	10
KSEM3810HPLM	38,100	1.5000	10
KSEM3846HPLM	38,460	1.5140	10
KSEM3900HPLM	39,000	1.5354	10
KSEM4000HPLM	40,000	1.5748	10

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	+0.000/-0.010
>.709–1.181	+0.000/-0.013
>1.181–1.575	+0.000/-0.015

Application Data

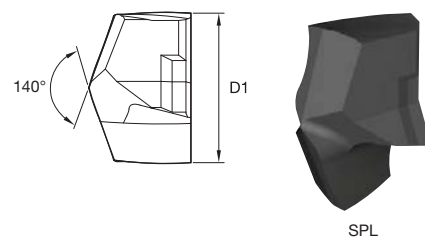
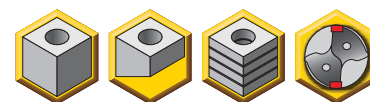
■ Modular Drill Carbide Insert Blades • KSEM • HPL Geometry • Grade KC7320 • Through Coolant • Metric

Material Group		Cutting Speed — vc			Metric						
		Range — m/min			Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		12,5	16,0	20,0	25,4	32,0	40,0
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 • HPL Geometry • Grade KC7320 • Through Coolant • Inch

Material Group		Cutting Speed — vc			Inch						
		Range — SFM			Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		0.462	0.630	0.787	1.000	1.260	1.575
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

- KSEM SPL geometry was made to offer extraordinary drilling performance in stainless steels, super alloys, and other demanding environments.
- KSEM SPL provides process reliability, ensuring longer tool life and productivity in difficult-to-machine materials. Its advanced-point geometry and web design greatly reduces cutting forces.
- KCMS35™ is based on a very tough, fine-grain carbide substrate with a high Al content TiAlN PVD coating. It offers a high level of wear resistance and oxidation stability in parallel with chipping resistance for center point and cutting edges.
- This insert style is ideally suited to drill heavy-duty and corrosion-resistant tube end sheets and other heat exchanger components (especially from M3 and type S materials).
- Use KSEM KCMS35 SPL inserts as an effective alternative for plain and alloyed steels, as well as in the most important Al and Cu applications.



KSEM Inserts • SPL KCMS35



KCMS35	D1		seat size
	mm	in	
KSEM1250SPLM	12,500	.4921	C
KSEM1270SPLM	12,700	.5000	C
KSEM1300SPLM	13,000	.5118	C
KSEM1350SPLM	13,500	.5315	C
KSEM1400SPLM	14,000	.5512	B
KSEM1429SPLM	14,290	.5626	B
KSEM1450SPLM	14,500	.5709	B
KSEM1500SPLM	15,000	.5906	A
KSEM1550SPLM	15,500	.6102	A
KSEM1588SPLM	15,880	.6252	1
KSEM1600SPLM	16,000	.6299	1
KSEM1609SPLM	16,090	.6335	1
KSEM1615SPLM	16,150	.6358	1
KSEM1627SPLM	16,270	.6406	1
KSEM1650SPLM	16,500	.6496	1
KSEM1667SPLM	16,670	.6563	1
KSEM1700SPLM	17,000	.6693	1
KSEM1746SPLM	17,460	.6874	1
KSEM1750SPLM	17,500	.6890	1
KSEM1800SPLM	18,000	.7087	1
KSEM1830SPLM	18,300	.7205	2
KSEM1850SPLM	18,500	.7283	2
KSEM1900SPLM	19,000	.7480	2
KSEM1905SPLM	19,050	.7500	2
KSEM1920SPLM	19,200	.7559	2
KSEM1923SPLM	19,230	.7571	2
KSEM1925SPLM	19,250	.7579	2
KSEM1927SPLM	19,270	.7587	2
KSEM1935SPLM	19,350	.7618	2
KSEM1945SPLM	19,450	.7657	2
KSEM1950SPLM	19,500	.7677	2
KSEM1984SPLM	19,840	.7811	2



- first choice
- alternate choice

KCMS35	D1		seat size
	mm	in	
KSEM2000SPLM	20,000	.7874	3
KSEM2024SPLM	20,240	.7969	3
KSEM2050SPLM	20,500	.8071	3
KSEM2064SPLM	20,640	.8126	3
KSEM2100SPLM	21,000	.8268	3
KSEM2150SPLM	21,500	.8465	3
KSEM2200SPLM	22,000	.8661	3
KSEM2223SPLM	22,230	.8752	4
KSEM2250SPLM	22,500	.8858	4
KSEM2300SPLM	23,000	.9055	4
KSEM2350SPLM	23,500	.9252	4
KSEM2381SPLM	23,810	.9374	4
KSEM2400SPLM	24,000	.9449	4
KSEM2450SPLM	24,500	.9646	5
KSEM2500SPLM	25,000	.9843	5
KSEM2525SPLM	25,250	.9941	5
KSEM2530SPLM	25,300	.9961	5
KSEM2540SPLM	25,400	1.0000	5
KSEM2550SPLM	25,500	1.0039	5
KSEM2560SPLM	25,600	1.0079	5
KSEM2565SPLM	25,650	1.0098	5
KSEM2567SPLM	25,670	1.0106	5
KSEM2581SPLM	25,810	1.0161	5
KSEM2600SPLM	26,000	1.0236	5
KSEM2619SPLM	26,190	1.0311	6
KSEM2630SPLM	26,300	1.0354	6
KSEM2650SPLM	26,500	1.0433	6
KSEM2659SPLM	26,590	1.0469	6
KSEM2700SPLM	27,000	1.0630	6
KSEM2750SPLM	27,500	1.0827	6
KSEM2800SPLM	28,000	1.1024	6
KSEM2850SPLM	28,500	1.1220	7

(continued)

(KSEM Inserts • SPL KCMS35™ — continued)



KCMS35	D1		seat size
	mm	in	
KSEM2858SPLM	28,580	1.1252	7
KSEM2900SPLM	29,000	1.1417	7
KSEM2950SPLM	29,500	1.1614	7
KSEM3000SPLM	30,000	1.1811	7
KSEM3050SPLM	30,500	1.2008	8
KSEM3100SPLM	31,000	1.2205	8
KSEM3150SPLM	31,500	1.2402	8
KSEM3175SPLM	31,750	1.2500	8
KSEM3200SPLM	32,000	1.2598	8
KSEM3250SPLM	32,500	1.2795	9
KSEM3350SPLM	33,500	1.3189	9
KSEM3400SPLM	34,000	1.3386	9

Tolerance SPL • Metric

D1 metric	tolerance h8
12,5–18	+0,000/-0,027
>18–30	+0,000/-0,033
>30–40	+0,000/-0,039



● first choice
○ alternate choice

KCMS35	D1		seat size
	mm	in	
KSEM3450SPLM	34,500	1.3583	9
KSEM3500SPLM	35,000	1.3780	9
KSEM3550SPLM	35,500	1.3976	9
KSEM3600SPLM	36,000	1.4173	9
KSEM3650SPLM	36,500	1.4370	10
KSEM3700SPLM	37,000	1.4567	10
KSEM3750SPLM	37,500	1.4764	10
KSEM3800SPLM	38,000	1.4961	10
KSEM3846SPLM	38,460	1.5142	10
KSEM3850SPLM	38,500	1.5157	10
KSEM3900SPLM	39,000	1.5354	10
KSEM3950SPLM	39,500	1.5551	10
KSEM4000SPLM	40,000	1.5748	10

Tolerance SPL • 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™ • SPL Geometry • Grade KCMS35™ •
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	110	140	170	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	100	120	140	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	80	100	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
M	1	40	60	80	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31
	2	35	55	70	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31
	3	20	40	60	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31
N	1	90	155	220	mm/r	0,19–0,40	0,25–0,50	0,28–0,56	0,32–0,63	0,32–0,70	0,32–0,70
	2	90	155	220	mm/r	0,19–0,40	0,25–0,50	0,28–0,56	0,32–0,63	0,32–0,70	0,32–0,70
	3	80	120	160	mm/r	0,19–0,40	0,25–0,50	0,28–0,56	0,32–0,63	0,32–0,70	0,32–0,70
	4	90	155	220	mm/r	0,19–0,40	0,25–0,50	0,28–0,56	0,32–0,63	0,32–0,70	0,32–0,70
S	1	20	40	60	mm/r	0,05–0,10	0,07–0,12	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25
	2	15	30	45	mm/r	0,05–0,10	0,07–0,12	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25
	3	15	30	45	mm/r	0,05–0,10	0,07–0,12	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25
	4	10	25	40	mm/r	0,05–0,10	0,07–0,12	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31

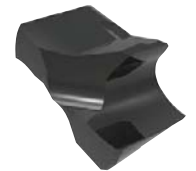
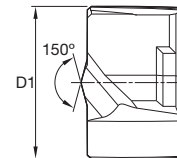
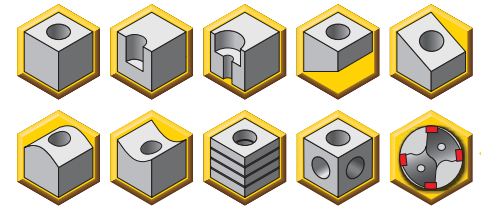
■ Modular Drill Carbide Insert Blades • KSEM • SPL Geometry • Grade KCMS35 •
Through Coolant • Inch

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	360	460	560	IPR	.006–.012	.007–.014	.007–.016	.010–.021	.011–.024	.013–.027
	2	330	390	460	IPR	.006–.012	.007–.014	.007–.016	.010–.021	.011–.024	.013–.027
	3	260	330	390	IPR	.006–.012	.007–.014	.007–.016	.010–.021	.011–.024	.013–.027
M	1	130	200	260	IPR	.004–.006	.004–.007	.005–.008	.006–.010	.007–.011	.008–.012
	2	110	180	230	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
N	1	300	510	720	IPR	.007–.016	.010–.020	.011–.022	.013–.025	.013–.028	.013–.028
	2	300	510	720	IPR	.007–.016	.010–.020	.011–.022	.013–.025	.013–.028	.013–.028
	3	260	390	520	IPR	.007–.016	.010–.020	.011–.022	.013–.025	.013–.028	.013–.028
	4	300	510	720	IPR	.007–.016	.010–.020	.011–.022	.013–.025	.013–.028	.013–.028
S	1	70	130	200	IPR	.002–.004	.003–.005	.004–.006	.004–.007	.005–.008	.006–.010
	2	50	100	150	IPR	.002–.004	.003–.005	.004–.006	.004–.007	.005–.008	.006–.010
	3	50	100	150	IPR	.002–.004	.003–.005	.004–.006	.004–.007	.005–.008	.006–.010
	4	30	80	130	IPR	.002–.004	.003–.005	.004–.006	.004–.007	.005–.008	.006–.010

Application recommendation: We recommend pre-centering when drilling with SPL inserts >5 x D.

For deeper holes (> = 10 x D), and for drilling M1 and M2 materials in general, we recommend using KSEM HPL inserts as a first choice.

- KSEM FEG flat-bottom inserts create 180° flat holes — only a small cavity remains in the center of the hole ground. KSEM offers an extraordinarily strong pocket seat for your demanding flat-bottom applications.
- Whether it is a blind hole, a through hole, or if you need to countersink, these inserts are focused on versatility and will support you in many essential drilling applications.
- KSEM FEG inserts feature a small centering point as well as double margin lands for improved guidance and hole straightness. A corner chamfer serves to reduce bur formation and to improve tool life.
- KCPM45™ combines a very tough, fine-grain carbide substrate with an advanced multilayer TiAlN coating. It is capable of machining steel even in the most demanding conditions.
- Use KSEM FEG KCPM45 cutting edges as an effective alternative in cast iron, stainless steel, and high-temp alloys.



FEG

Modular Drills

■ KSEM Inserts • FEG KCPM45



KCPM45	D1		seat size
	mm	in	
KSEM1600FEGM	16,000	.6299	1
KSEM1650FEGM	16,500	.6496	1
KSEM1700FEGM	17,000	.6693	1
KSEM1750FEGM	17,500	.6890	1
KSEM1800FEGM	18,000	.7087	1
KSEM1850FEGM	18,500	.7283	2
KSEM1900FEGM	19,000	.7480	2
KSEM1905FEGM	19,050	.7500	2
KSEM1950FEGM	19,500	.7677	2
KSEM1984FEGM	19,840	.7811	2
KSEM2000FEGM	20,000	.7874	3
KSEM2050FEGM	20,500	.8071	3
KSEM2100FEGM	21,000	.8268	3
KSEM2150FEGM	21,500	.8465	3
KSEM2200FEGM	22,000	.8661	3
KSEM2250FEGM	22,500	.8858	4
KSEM2300FEGM	23,000	.9055	4
KSEM2350FEGM	23,500	.9252	4
KSEM2400FEGM	24,000	.9449	4
KSEM2450FEGM	24,500	.9646	5
KSEM2500FEGM	25,000	.9843	5
KSEM2540FEGM	25,400	1.0000	5
KSEM2550FEGM	25,500	1.0039	5
KSEM2580FEGM	25,800	1.0157	5

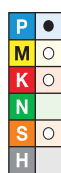


- first choice
- alternate choice

KCPM45	D1		seat size
	mm	in	
KSEM2581FEGM	25,810	1.0161	5
KSEM2600FEGM	26,000	1.0236	5
KSEM2619FEGM	26,190	1.0311	6
KSEM2650FEGM	26,500	1.0433	6
KSEM2670FEGM	26,700	1.0512	6
KSEM2700FEGM	27,000	1.0630	6
KSEM2750FEGM	27,500	1.0827	6
KSEM2800FEGM	28,000	1.1024	6
KSEM2850FEGM	28,500	1.1220	7
KSEM2900FEGM	29,000	1.1417	7
KSEM2950FEGM	29,500	1.1614	7
KSEM3000FEGM	30,000	1.1811	7
KSEM3050FEGM	30,500	1.2008	8
KSEM3100FEGM	31,000	1.2205	8
KSEM3150FEGM	31,500	1.2402	8
KSEM3175FEGM	31,750	1.2500	8
KSEM3200FEGM	32,000	1.2598	8
KSEM3250FEGM	32,500	1.2795	9
KSEM3300FEGM	33,000	1.2992	9
KSEM3350FEGM	33,500	1.3189	9
KSEM3400FEGM	34,000	1.3386	9
KSEM3450FEGM	34,500	1.3583	9
KSEM3500FEGM	35,000	1.3780	9
KSEM3550FEGM	35,500	1.3976	9

(continued)

(KSEM Inserts • FEG KCPM45™ — continued)



● first choice
○ alternate choice

Modular Drills

KCPM45	D1		seat size
	mm	in	
KSEM3600FEGM	36,000	1.4173	9
KSEM3650FEGM	36,500	1.4370	10
KSEM3700FEGM	37,000	1.4567	10
KSEM3750FEGM	37,500	1.4764	10
KSEM3800FEGM	38,000	1.4961	10
KSEM3810FEGM	38,100	1.5000	10
KSEM3850FEGM	38,500	1.5157	10
KSEM3900FEGM	39,000	1.5354	10
KSEM3950FEGM	39,500	1.5551	10
KSEM4000FEGM	40,000	1.5748	10

Tolerance FEG • Metric

D1 metric	tolerance k7
12,5–18	+0,001/+ 0,019
>18–30	+0,002/+ 0,023
>30–40	+0,002/+ 0,027

Tolerance FEG • Inch

D1 inch	tolerance k7
.500–.709	+.0000/+.0008
>.709–1.181	+.0000/+.0009
>1.181–1.575	+.0000/+.0010

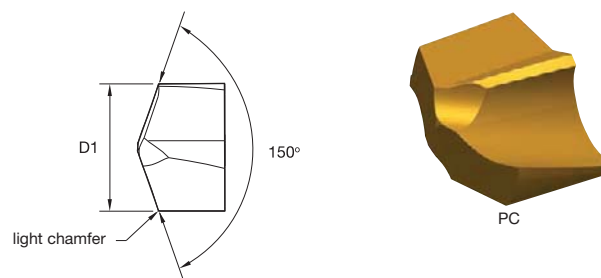
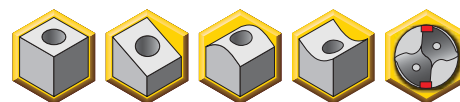
■ Modular Drill Carbide Insert Blades • KSEM™ • FEG Geometry • Grade KCPM45™ •
Through Coolant • Metric

Material Group		Cutting Speed — vc			Metric						
		Range — m/min			Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		12,5	16,0	20,0	25,4	32,0	40,0
P	1	110	140	170	mm/r	0,14–0,23	0,17–0,25	0,19–0,29	0,23–0,38	0,26–0,43	0,33–0,76
	2	100	120	140	mm/r	0,17–0,23	0,19–0,25	0,22–0,29	0,29–0,38	0,32–0,43	0,33–0,76
	3	80	100	120	mm/r	0,14–0,20	0,15–0,23	0,17–0,25	0,23–0,34	0,26–0,38	0,33–0,66
	4	70	90	110	mm/r	0,11–0,20	0,13–0,23	0,14–0,25	0,18–0,34	0,21–0,38	0,26–0,66
M	1	40	60	80	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31
	2	35	55	70	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31
	3	20	40	60	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31
K	1	90	135	175	mm/r	0,17–0,23	0,19–0,25	0,22–0,29	0,29–0,38	0,32–0,43	0,33–0,76
	2	80	120	140	mm/r	0,17–0,23	0,19–0,25	0,22–0,29	0,29–0,38	0,32–0,43	0,33–0,76
	3	70	110	125	mm/r	0,15–0,24	0,18–0,26	0,21–0,29	0,23–0,37	0,25–0,42	0,27–0,57
S	1	20	40	60	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31
	3	15	30	45	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31

■ Modular Drill Carbide Insert Blades • KSEM • FEG Geometry • Grade KCPM45 •
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	360	460	560	IPR	.006–.009	.007–.010	.007–.011	.009–.015	.010–.017	.013–.030
	2	330	390	460	IPR	.007–.009	.007–.010	.009–.011	.011–.015	.013–.017	.013–.030
	3	260	330	390	IPR	.006–.008	.006–.009	.007–.010	.009–.013	.010–.015	.013–.026
	4	230	300	360	IPR	.004–.008	.005–.009	.006–.010	.007–.013	.008–.015	.010–.026
M	1	130	200	260	IPR	.004–.006	.004–.007	.005–.008	.006–.010	.007–.011	.008–.012
	2	110	180	230	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
K	1	300	440	570	IPR	.007–.009	.007–.010	.009–.011	.011–.015	.013–.017	.013–.030
	2	260	390	460	IPR	.007–.009	.007–.010	.009–.011	.011–.015	.013–.017	.013–.030
	3	230	360	410	IPR	.006–.009	.007–.010	.008–.011	.009–.015	.010–.017	.011–.022
S	1	70	130	200	IPR	.004–.006	.004–.007	.005–.008	.006–.010	.007–.011	.008–.012
	3	50	100	150	IPR	.004–.006	.004–.007	.005–.008	.006–.010	.007–.011	.008–.012

- KSEM PC cutting edges serve mainly as precentering inserts, but can also be used in demanding conditions.
- Steep 150° degree angle with a light corner chamfer. Very good centering capability and edge chipping resistance.
- KC7135™ is a very resistant grade featuring a TiCN-TiN PVD coating.



KSEM Inserts • PC KC7135



KC7135	D1		seat size
	mm	in	
KSEM1250PCM	12,500	.4921	C
KSEM1280PCM	12,800	.5039	C
KSEM1300PCM	13,000	.5118	C
KSEM1350PCM	13,500	.5310	C
KSEM1380PCM	13,800	.5433	B
KSEM1400PCM	14,000	.5512	B
KSEM1410PCM	14,100	.5551	B
KSEM1450PCM	14,500	.5709	B
KSEM1460PCM	14,600	.5748	A
KSEM1480PCM	14,800	.5827	A
KSEM1500PCM	15,000	.5906	A
KSEM1550PCM	15,500	.6102	A
KSEM1560PCM	15,600	.6142	A
KSEM1580PCM	15,800	.6220	A
KSEM1600PCM	16,000	.6299	1
KSEM1620PCM	16,200	.6378	1
KSEM1650PCM	16,500	.6496	1
KSEM1700PCM	17,000	.6693	1
KSEM1750PCM	17,500	.6890	1
KSEM1800PCM	18,000	.7087	1
KSEM1850PCM	18,500	.7283	2
KSEM1900PCM	19,000	.7480	2
KSEM1950PCM	19,500	.7677	2
KSEM2000PCM	20,000	.7874	3
KSEM2050PCM	20,500	.8071	3
KSEM2100PCM	21,000	.8268	3
KSEM2150PCM	21,500	.8460	3
KSEM2200PCM	22,000	.8661	3



- first choice
- alternate choice

KC7135	D1		seat size
	mm	in	
KSEM2250PCM	22,500	.8858	4
KSEM2300PCM	23,000	.9055	4
KSEM2350PCM	23,500	.9252	4
KSEM2400PCM	24,000	.9449	4
KSEM2450PCM	24,500	.9646	5
KSEM2500PCM	25,000	.9843	5
KSEM2550PCM	25,500	1.0039	5
KSEM2600PCM	26,000	1.0236	5
KSEM2650PCM	26,500	1.0433	6
KSEM2700PCM	27,000	1.0630	6
KSEM2800PCM	28,000	1.1024	6
KSEM2850PCM	28,500	1.1220	7
KSEM2900PCM	29,000	1.1417	7
KSEM2950PCM	29,500	1.1614	7
KSEM3000PCM	30,000	1.1811	7
KSEM3050PCM	30,500	1.2008	8
KSEM3100PCM	31,000	1.2205	8
KSEM3200PCM	32,000	1.2598	8
KSEM3300PCM	33,000	1.2992	9
KSEM3400PCM	34,000	1.3386	9
KSEM3500PCM	35,000	1.3780	9
KSEM3600PCM	36,000	1.4173	9
KSEM3700PCM	37,000	1.4567	10
KSEM3800PCM	38,000	1.4961	10
KSEM3900PCM	39,000	1.5354	10
KSEM4000PCM	40,000	1.5748	10

Tolerance PC • Metric

D1 metric	tolerance k7
12,5–18	+0,001/+0,019
>18–30	+0,002/+0,023
>30–40	+0,002/+0,027

Tolerance PC • Inch

D1 inch	tolerance k7
.500–.709	+0.0000/+0.0008
>.709–1.181	+0.0000/+0.0009
>1.181–1.575	+0.0000/+0.0010

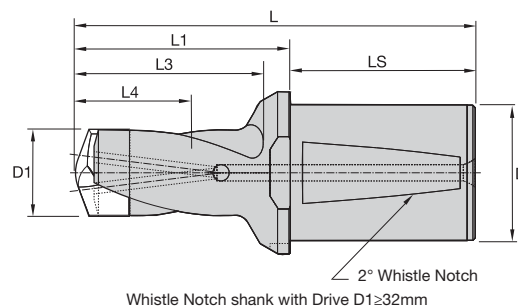
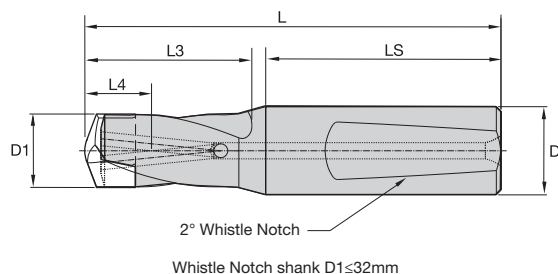
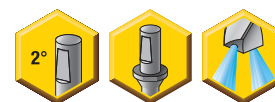
■ Modular Drill Carbide Insert Blades • KSEM™ • PC Geometry • Grade KC7135™ •
Through Coolant • Metric

Material Group		Cutting Speed — vc			Metric					
		Range — m/min			Recommended Feed Rate (f) by Diameter					
		min	Starting Value	max		12,5	16,0	20,0	25,4	32,0
P	1	90	100	110	mm/r	0,14–0,23	0,17–0,25	0,19–0,29	0,23–0,38	0,26–0,43
	2	80	90	100	mm/r	0,17–0,23	0,19–0,25	0,22–0,29	0,29–0,38	0,32–0,43
	3	55	65	75	mm/r	0,14–0,20	0,15–0,23	0,17–0,25	0,23–0,34	0,26–0,38
	4	50	60	70	mm/r	0,11–0,20	0,13–0,23	0,14–0,25	0,18–0,34	0,21–0,38
	5	45	50	60	mm/r	0,08–0,11	0,10–0,13	0,11–0,14	0,14–0,18	0,15–0,20
	6	45	55	65	mm/r	0,11–0,17	0,13–0,18	0,14–0,20	0,18–0,28	0,21–0,31
K	1	60	60	90	mm/r	0,08–0,24	0,09–0,28	0,11–0,31	0,14–0,43	0,15–0,48
	2	60	60	75	mm/r	0,18–0,24	0,21–0,28	0,23–0,31	0,28–0,37	0,32–0,42
	3	40	40	75	mm/r	0,15–0,24	0,18–0,26	0,21–0,29	0,23–0,37	0,25–0,42

■ Modular Drill Carbide Insert Blades • KSEM • PC Geometry • Grade KC7135 •
Through Coolant • Inch

Material Group		Cutting Speed — vc			Inch					
		Range — SFM			Recommended Feed Rate (f) by Diameter					
		min	Starting Value	max		0.462	0.630	0.787	1.000	1.260
P	1	300	330	360	IPR	.006–.009	.007–.010	.007–.011	.009–.015	.010–.017
	2	260	300	330	IPR	.007–.009	.007–.010	.009–.011	.011–.015	.013–.017
	3	180	210	250	IPR	.006–.008	.006–.009	.007–.010	.009–.013	.010–.015
	4	150	160	200	IPR	.004–.008	.005–.009	.006–.010	.007–.013	.008–.015
	5	150	180	210	IPR	.003–.004	.004–.005	.004–.006	.006–.007	.006–.008
	6	150	180	210	IPR	.004–.007	.005–.007	.006–.008	.007–.011	.008–.012
K	1	200	200	300	IPR	.003–.009	.004–.011	.004–.012	.006–.017	.006–.019
	2	200	200	250	IPR	.007–.009	.008–.011	.009–.012	.011–.015	.013–.017
	3	130	130	250	IPR	.006–.009	.007–.010	.008–.011	.009–.015	.010–.017

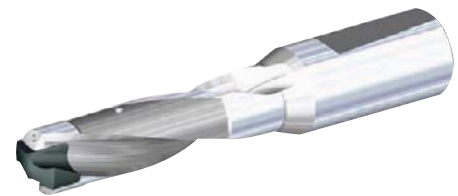
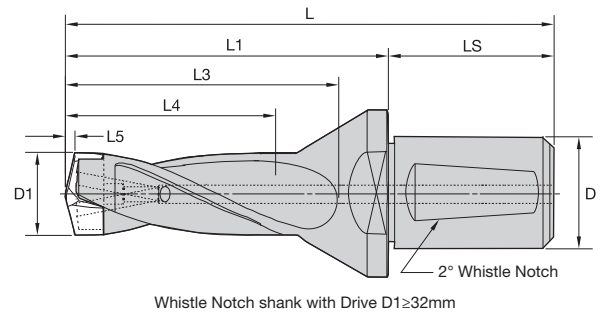
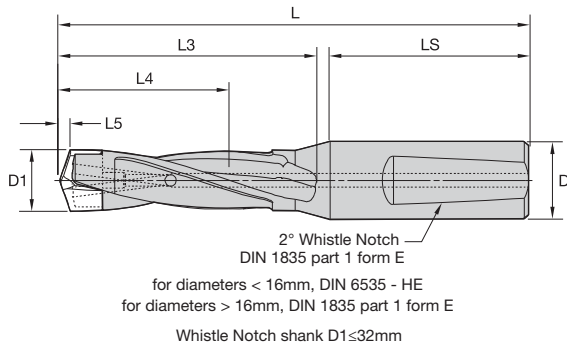
- Use designated insert blade with each drill body.
- For alternatives, see insert blade fitment chart on page H91–H92.
- Drill shipped with central lock screw, wrench, and side pipe plug.
- Order insert blade separately; see pages H52–H71.



■ KSEM WN/WD50 Shank • 1 x D • Metric

 1 x D	D1		D1 max		L	L1	L4 max	L5	LS	D	 		
	mm	in	mm	in							seat size	central lock screw	wrench
KSEM125R1WN16M	12,500	.4921	13,500	.5314	78	—	14	2,0	48	16	C	364.017	170.294
KSEM136R1WN16M	13,510	.5319	14,500	.5708	81	—	15	2,2	48	16	B	364.016	170.289
KSEM146R1WN20M	14,510	.5713	15,874	.6249	85	—	16	2,3	50	20	A	364.016	170.289
KSEM160R1WN20M	16,000	.6299	18,000	.7086	88	—	18	2,5	50	20	1	364.010	170.270
KSEM181R1WN25M	18,010	.7091	19,999	.7873	99	—	20	2,9	56	25	2	364.010	170.270
KSEM200R1WN25M	20,000	.7874	22,000	.8661	102	—	22	3,2	56	25	3	364.011	170.272
KSEM221R1WN25M	22,010	.8665	24,000	.9448	107	—	24	3,5	56	25	4	364.011	170.272
KSEM241R1WN32M	24,010	.9453	26,000	1.0236	115	—	26	3,8	60	32	5	364.012	170.274
KSEM261R1WN32M	26,010	1.0240	28,000	1.1023	119	—	28	4,0	60	32	6	364.012	170.274
KSEM281R1WN32M	28,016	1.1030	30,000	1.1811	123	—	30	4,3	60	32	7	364.013	170.276
KSEM301R1WN32M	30,010	1.1815	32,000	1.2598	127	—	32	4,6	60	32	8	364.013	170.276
KSEM321R1WD50M	32,010	1.2602	36,000	1.4173	147	79	36	4,9	68	50	9	364.015	170.276
KSEM361R1WD50M	36,010	1.4177	40,000	1.5748	155	87	40	5,5	68	50	10	364.015	170.276

- Use designated insert blade with each drill body.
- For alternatives, see insert blade fitment chart on page H91–H92.
- Drill shipped with central lock screw, wrench, and side pipe plug.
- Order insert blade separately; see pages H52–H71.



■ KSEM WN/WD50 Shank • 3 x D/5 x D • Metric

 3 x D	 5 x D	D1		D1 max		L5	LS	D	seat size	 central lock screw
		mm	in	mm	in					
KSEM125R3WN16M	KSEM125R5WN16M	12,500	.4921	13,000	.5118	2,0	48	16	C	364.017
KSEM130R3WN16M	KSEM130R5WN16M	13,000	.5118	13,500	.5314	2,1	48	16	C	364.017
KSEM135R3WN16M	KSEM135R5WN16M	13,500	.5315	13,500	.5314	2,1	48	16	C	364.017
KSEM136R3WN16M	KSEM136R5WN16M	13,510	.5319	14,000	.5512	2,2	48	16	B	364.016
KSEM140R3WN16M	KSEM140R5WN16M	14,000	.5512	14,500	.5708	2,2	48	16	B	364.016
KSEM145R3WN20M	KSEM145R5WN20M	14,500	.5709	14,500	.5708	2,3	50	20	B	364.016
KSEM146R3WN20M	KSEM146R5WN20M	14,510	.5713	15,000	.5906	2,3	50	20	A	364.016
KSEM150R3WN20M	KSEM150R5WN20M	15,000	.5906	15,500	.6102	2,4	50	20	A	364.016
KSEM155R3WN20M	KSEM155R5WN20M	15,500	.6102	15,874	.6249	2,5	50	20	A	364.016
KSEM160R3WN20M	KSEM160R5WN20M	16,000	.6299	16,500	.6496	2,5	50	20	1	364.010
KSEM165R3WN20M	KSEM165R5WN20M	16,500	.6496	17,000	.6693	2,6	50	20	1	364.010
KSEM170R3WN20M	KSEM170R5WN20M	17,000	.6693	17,500	.6890	2,7	50	20	1	364.010
KSEM175R3WN20M	KSEM175R5WN20M	17,500	.6890	18,000	.7086	2,8	50	20	1	364.010
KSEM180R3WN20M	KSEM180R5WN20M	18,000	.7087	18,000	.7086	2,9	50	20	1	364.010
—	KSEM181R5WN25M	18,010	.7091	18,500	.7283	2,9	56	25	2	364.010
KSEM185R3WN25M	KSEM185R5WN25M	18,500	.7283	19,000	.7480	2,9	56	25	2	364.010
KSEM190R3WN25M	KSEM190R5WN25M	19,000	.7480	19,500	.7677	3,0	56	25	2	364.010
KSEM195R3WN25M	KSEM195R5WN25M	19,500	.7677	19,999	.7873	3,1	56	25	2	364.010
KSEM200R3WN25M	KSEM200R5WN25M	20,000	.7874	20,500	.8071	3,2	56	25	3	364.011
KSEM205R3WN25M	KSEM205R5WN25M	20,500	.8071	21,000	.8268	3,3	56	25	3	364.011
KSEM210R3WN25M	KSEM210R5WN25M	21,000	.8268	21,500	.8465	3,3	56	25	3	364.011
KSEM215R3WN25M	KSEM215R5WN25M	21,500	.8465	22,000	.8661	3,4	56	25	3	364.011
KSEM220R3WN25M	KSEM220R5WN25M	22,000	.8661	22,000	.8661	3,5	56	25	3	364.011
—	KSEM221R5WN25M	22,010	.8665	22,500	.8858	3,5	56	25	4	364.011

(continued)

(KSEM WN/WD50 Shank • 3 x D/5 x D • Metric — continued)

Modular Drills

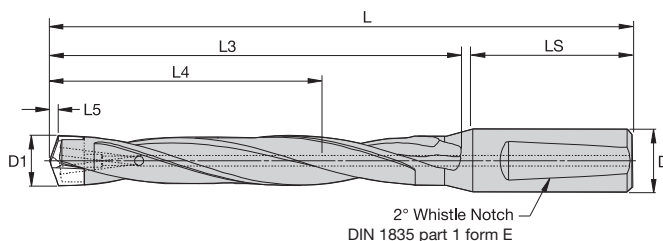
		D1		D1 max						
						L5	LS	D	seat size	central lock screw
		mm	in	mm	in					
3 x D	5 x D									
KSEM225R3WN25M	KSEM225R5WN25M	22,500	.8858	23,000	.9055	3,6	56	25	4	364.011
KSEM230R3WN25M	KSEM230R5WN25M	23,000	.9055	23,500	.9252	3,7	56	25	4	364.011
KSEM235R3WN25M	KSEM235R5WN25M	23,500	.9252	24,000	.9448	3,7	56	25	4	364.011
KSEM240R3WN25M	KSEM240R5WN25M	24,000	.9449	24,000	.9448	3,8	56	25	4	364.011
—	KSEM241R5WN32M	24,010	.9453	24,500	.9646	3,8	60	32	5	364.012
KSEM245R3WN32M	KSEM245R5WN32M	24,500	.9646	25,000	.9843	3,9	60	32	5	364.012
KSEM250R3WN32M	KSEM250R5WN32M	25,000	.9843	25,500	1.0039	3,8	60	32	5	364.012
KSEM255R3WN32M	KSEM255R5WN32M	25,500	1.0039	26,000	1.0236	3,9	60	32	5	364.012
KSEM260R3WN32M	KSEM260R5WN32M	26,000	1.0236	26,000	1.0236	4,0	60	32	5	364.012
—	KSEM261R5WN32M	26,010	1.0240	26,500	1.0433	4,0	60	32	6	364.012
KSEM265R3WN32M	KSEM265R5WN32M	26,500	1.0433	27,000	1.0630	4,1	60	32	6	364.012
KSEM270R3WN32M	KSEM270R5WN32M	27,000	1.0630	27,500	1.0827	4,2	60	32	6	364.012
KSEM275R3WN32M	KSEM275R5WN32M	27,500	1.0827	28,000	1.1023	4,2	60	32	6	364.012
KSEM280R3WN32M	KSEM280R5WN32M	28,000	1.1024	28,000	1.1023	4,3	60	32	6	364.012
—	KSEM281R5WN32M	28,016	1.1030	28,500	1.1220	4,3	60	32	7	364.013
KSEM285R3WN32M	KSEM285R5WN32M	28,500	1.1220	29,000	1.1417	4,4	60	32	7	364.013
KSEM290R3WN32M	KSEM290R5WN32M	29,000	1.1417	29,500	1.1614	4,5	60	32	7	364.013
KSEM295R3WN32M	KSEM295R5WN32M	29,500	1.1614	30,000	1.1811	4,5	60	32	7	364.013
KSEM300R3WN32M	KSEM300R5WN32M	30,000	1.1811	30,000	1.1811	4,6	60	32	7	364.013
—	KSEM301R5WN32M	30,010	1.1815	30,500	1.2008	4,6	60	32	8	364.013
KSEM305R3WN32M	KSEM305R5WN32M	30,500	1.2008	31,000	1.2205	4,7	60	32	8	364.013
KSEM310R3WN32M	KSEM310R5WN32M	31,000	1.2205	31,500	1.2402	4,8	60	32	8	364.013
KSEM315R3WN32M	KSEM315R5WN32M	31,500	1.2402	32,000	1.2598	4,8	60	32	8	364.013
KSEM320R3WN32M	KSEM320R5WN32M	32,000	1.2598	32,000	1.2598	4,9	60	32	8	364.013
KSEM321R3WD50M	KSEM321R5WD50M	32,010	1.2602	33,000	1.2992	4,9	68	50	9	364.015
KSEM330R3WD50M	KSEM330R5WD50M	33,000	1.2992	34,000	1.3386	5,1	68	50	9	364.015
KSEM340R3WD50M	KSEM340R5WD50M	34,000	1.3386	35,000	1.3780	5,2	68	50	9	364.015
KSEM350R3WD50M	KSEM350R5WD50M	35,000	1.3780	36,000	1.4173	5,4	68	50	9	364.015
KSEM360R3WD50M	KSEM360R5WD50M	36,000	1.4173	36,000	1.4173	5,5	68	50	9	364.015
KSEM361R3WD50M	KSEM361R5WD50M	36,010	1.4177	37,000	1.4567	5,5	68	50	10	364.015
KSEM370R3WD50M	KSEM370R5WD50M	37,000	1.4567	38,000	1.4961	5,7	68	50	10	364.015
KSEM380R3WD50M	KSEM380R5WD50M	38,000	1.4961	39,000	1.5354	5,8	68	50	10	364.015
KSEM390R3WD50M	KSEM390R5WD50M	39,000	1.5354	40,000	1.5748	6,0	68	50	10	364.015
KSEM400R3WD50M	KSEM400R5WD50M	40,000	1.5748	40,000	1.5748	6,2	68	50	10	364.015



■ KSEM WD40 Shank • 3 x D/5 x D • Metric

		D1						
				L5	LS	D	seat size	central lock screw
		mm	in					
3 x D	5 x D							
KSEM321R3WD40M	KSEM321R5WD40M	32,010	1.2602	5,6	68	40	9	364.015
KSEM330R3WD40M	KSEM330R5WD40M	33,000	1.2992	5,8	68	40	9	364.015
KSEM340R3WD40M	KSEM340R5WD40M	34,000	1.3386	6,0	68	40	9	364.015
KSEM350R3WD40M	KSEM350R5WD40M	35,000	1.3780	6,1	68	40	9	364.015
KSEM360R3WD40M	KSEM360R5WD40M	36,000	1.4173	6,3	68	40	9	364.015
KSEM361R3WD40M	KSEM361R5WD40M	36,010	1.4177	6,3	68	40	10	364.015
KSEM370R3WD40M	KSEM370R5WD40M	37,000	1.4567	6,5	68	40	10	364.015
KSEM380R3WD40M	KSEM380R5WD40M	38,000	1.4961	6,7	68	40	10	364.015
KSEM390R3WD40M	KSEM390R5WD40M	39,000	1.5354	6,9	68	40	10	364.015
KSEM400R3WD40M	KSEM400R5WD40M	40,000	1.5748	7,0	68	40	10	364.015

- Use designated insert blade with each drill body.
- For alternatives, see insert blade fitment chart on page H91–H92.
- Drill shipped with central lock screw, wrench, and side pipe plug.
- Order insert blade separately; see pages H52–H71.



for diameter <16mm DIN 6535 — HE
for diameter >16mm DIN 1835 part 1 form E
For information on L, L3, and L4 max, see the Modular Drills Dimension Tables on page H94–H95.



■ KSEM WN Shank • 7 x D/10 x D • Metric

 7 x D	 10 x D	D1		D1 max		L5	LS	D	 seat size	 central lock screw
		mm	in	mm	in					
KSEM125R7WN16M	KSEM125R10WN16M	12,500	.4921	13,000	.5118	2,0	48	16	C	364.017
KSEM130R7WN16M	KSEM130R10WN16M	13,000	.5118	13,500	.5314	2,1	48	16	C	364.017
KSEM135R7WN16M	KSEM135R10WN16M	13,500	.5315	13,500	.5314	2,1	48	16	C	364.017
KSEM136R7WN16M	KSEM136R10WN16M	13,510	.5319	14,000	.5512	2,2	48	16	B	364.016
KSEM140R7WN16M	KSEM140R10WN16M	14,000	.5512	14,500	.5708	2,2	48	16	B	364.016
KSEM145R7WN20M	KSEM145R10WN20M	14,500	.5709	14,500	.5708	2,3	50	20	B	364.016
KSEM146R7WN20M	KSEM146R10WN20M	14,510	.5713	15,000	.5906	2,3	50	20	A	364.016
KSEM150R7WN20M	KSEM150R10WN20M	15,000	.5906	15,500	.6102	2,4	50	20	A	364.016
KSEM155R7WN20M	KSEM155R10WN20M	15,500	.6102	15,874	.6249	2,5	50	20	A	364.016
KSEM160R7WN20M	KSEM160R10WN20M	16,000	.6299	16,500	.6496	2,5	50	20	1	364.010
KSEM165R7WN20M	KSEM165R10WN20M	16,500	.6496	17,000	.6693	2,6	50	20	1	364.010
KSEM170R7WN20M	KSEM170R10WN20M	17,000	.6693	17,500	.6890	2,7	50	20	1	364.010
KSEM175R7WN20M	KSEM175R10WN20M	17,500	.6890	18,000	.7086	2,8	50	20	1	364.010
KSEM180R7WN20M	KSEM180R10WN20M	18,000	.7087	18,000	.7086	2,9	50	20	1	364.010
—	KSEM181R10WN25M	18,010	.7091	18,500	.7283	2,9	56	25	2	364.010
KSEM185R7WN25M	KSEM185R10WN25M	18,500	.7283	19,000	.7480	2,9	56	25	2	364.010
KSEM190R7WN25M	KSEM190R10WN25M	19,000	.7480	19,500	.7677	3,0	56	25	2	364.010
KSEM195R7WN25M	KSEM195R10WN25M	19,500	.7677	19,999	.7873	3,1	56	25	2	364.010
KSEM200R7WN25M	KSEM200R10WN25M	20,000	.7874	20,500	.8071	3,2	56	25	3	364.011
KSEM205R7WN25M	KSEM205R10WN25M	20,500	.8071	21,000	.8268	3,3	56	25	3	364.011
KSEM210R7WN25M	KSEM210R10WN25M	21,000	.8268	21,500	.8465	3,3	56	25	3	364.011
KSEM215R7WN25M	KSEM215R10WN25M	21,500	.8465	22,000	.8661	3,4	56	25	3	364.011
KSEM220R7WN25M	KSEM220R10WN25M	22,000	.8661	22,000	.8661	3,5	56	25	3	364.011
—	KSEM221R10WN25M	22,010	.8665	22,500	.8858	3,5	56	25	4	364.011
KSEM225R7WN25M	KSEM225R10WN25M	22,500	.8858	23,000	.9055	3,6	56	25	4	364.011
KSEM230R7WN25M	KSEM230R10WN25M	23,000	.9055	23,500	.9252	3,7	56	25	4	364.011
KSEM235R7WN25M	KSEM235R10WN25M	23,500	.9252	24,000	.9448	3,7	56	25	4	364.011
KSEM240R7WN25M	KSEM240R10WN25M	24,000	.9449	24,000	.9448	3,8	56	25	4	364.011
—	KSEM241R10WN32M	24,010	.9453	24,500	.9646	3,8	60	32	5	364.012
KSEM245R7WN32M	KSEM245R10WN32M	24,500	.9646	25,000	.9843	3,9	60	32	5	364.012
KSEM250R7WN32M	KSEM250R10WN32M	25,000	.9843	25,500	1.0039	3,8	60	32	5	364.012
KSEM255R7WN32M	KSEM255R10WN32M	25,500	1.0039	26,000	1.0236	3,9	60	32	5	364.012

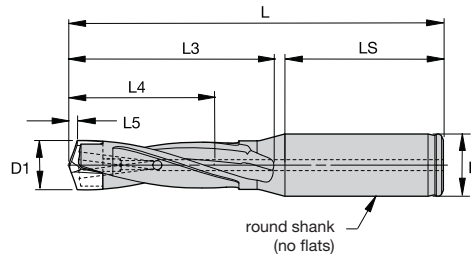
(continued)

(KSEM WN Shank • 7 x D/10 x D • Metric — continued)

Modular Drills

			D1		D1 max						
	7 x D	10 x D	mm	in	mm	in	L5	LS	D	seat size	central lock screw
	KSEM260R7WN32M	KSEM260R10WN32M	26,000	1.0236	26,000	1.0236	4,0	60	32	5	364.012
	—	KSEM261R10WN32M	26,010	1.0240	26,500	1.0433	4,0	60	32	6	364.012
	KSEM265R7WN32M	KSEM265R10WN32M	26,500	1.0433	27,000	1.0630	4,1	60	32	6	364.012
	KSEM270R7WN32M	KSEM270R10WN32M	27,000	1.0630	27,500	1.0827	4,2	60	32	6	364.012
	KSEM275R7WN32M	KSEM275R10WN32M	27,500	1.0827	28,000	1.1023	4,2	60	32	6	364.012
	KSEM280R7WN32M	KSEM280R10WN32M	28,000	1.1024	28,000	1.1023	4,3	60	32	6	364.012
	—	KSEM281R10WN32M	28,016	1.1030	28,500	1.1220	4,3	60	32	7	364.013
	KSEM285R7WN32M	KSEM285R10WN32M	28,500	1.1220	29,000	1.1417	4,4	60	32	7	364.013
	KSEM290R7WN32M	KSEM290R10WN32M	29,000	1.1417	29,500	1.1614	4,5	60	32	7	364.013
	KSEM295R7WN32M	KSEM295R10WN32M	29,500	1.1614	30,000	1.1811	4,5	60	32	7	364.013
	KSEM300R7WN32M	KSEM300R10WN32M	30,000	1.1811	30,000	1.1811	4,6	60	32	7	364.013
	—	KSEM301R10WN32M	30,010	1.1815	30,500	1.2008	4,6	60	32	8	364.013
	KSEM305R7WN32M	—	30,500	1.2008	31,000	1.2205	4,7	60	32	8	364.013
	KSEM310R7WN32M	KSEM310R10WN32M	31,000	1.2205	31,500	1.2402	4,8	60	32	8	364.013
	KSEM315R7WN32M	—	31,500	1.2402	32,000	1.2598	4,8	60	32	8	364.013
	KSEM320R7WN32M	KSEM320R10WN32M	32,000	1.2598	32,000	1.2598	4,9	60	32	8	364.013

- Use designated insert blade with each drill body.
- For alternatives, see insert blade fitment chart on page H91–H92.
- Drill shipped with central lock screw and wrench.
- Order insert blade separately; see pages H52–H71.



For information on L, L3, and L4 max, see page H97.



■ KSEM Round Shank • 3 x D/5 x D • Inch

		D1		D1 max		L5	L6	D	seat size	central lock screw
		mm	in	mm	in					
–	KSEM0500R5SS050	12,700	.5000	13,200	.5197	.079	1.50	.5000	C	364.017
KSEM0500R3SS075	KSEM0500R5SS075	12,700	.5000	13,200	.5197	.079	2.00	.7500	C	364.017
KSEM0509R3SS075	KSEM0509R5SS075	12,929	.5090	13,429	.5287	.081	2.00	.7500	C	364.017
–	KSEM0516R5SS075	13,106	.5160	13,500	.5314	.082	2.00	.7500	C	364.017
KSEM0531R3SS075	KSEM0531R5SS075	13,494	.5313	13,500	.5314	.084	2.00	.7500	C	364.017
KSEM0547R3SS075	–	13,891	.5469	14,394	.5667	.087	2.00	.7500	B	364.016
–	KSEM0547R5SS075	13,894	.5470	14,394	.5667	.087	2.00	.7500	B	364.016
KSEM0563R3SS075	KSEM0563R5SS075	14,300	.5630	14,500	.5708	.089	2.00	.7500	B	364.016
KSEM0578R3SS075	KSEM0578R5SS075	14,681	.5780	15,181	.5977	.092	2.00	.7500	A	364.016
KSEM0594R3SS075	KSEM0594R5SS075	15,088	.5940	15,588	.6137	.094	2.00	.7500	A	364.016
KSEM0609R3SS075	KSEM0609R5SS075	15,469	.6090	15,874	.6249	.097	2.00	.7500	A	364.016
KSEM0625R3SS075	KSEM0625R5SS075	15,875	.6250	16,375	.6447	.099	2.00	.7500	1	364.010
KSEM0634R3SS075	KSEM0634R5SS075	16,104	.6340	16,604	.6537	.101	2.00	.7500	1	364.010
KSEM0641R3SS075	KSEM0641R5SS075	16,281	.6410	16,781	.6607	.102	2.00	.7500	1	364.010
KSEM0656R3SS075	KSEM0656R5SS075	16,670	.6563	17,170	.6760	.104	2.00	.7500	1	364.010
KSEM0672R3SS075	KSEM0672R5SS075	17,069	.6720	17,569	.6917	.107	2.00	.7500	1	364.010
KSEM0688R3SS075	KSEM0688R5SS075	17,463	.6875	17,963	.7072	.109	2.00	.7500	1	364.010
KSEM0703R3SS075	KSEM0703R5SS075	17,856	.7030	18,000	.7086	.112	2.00	.7500	1	364.010
KSEM0719R3SS075	KSEM0719R5SS075	18,256	.7187	18,756	.7384	.114	2.00	.7500	2	364.010
KSEM0734R3SS075	KSEM0734R5SS075	18,644	.7340	19,144	.7537	.117	2.00	.7500	2	364.010
KSEM0750R3SS075	KSEM0750R5SS075	19,050	.7500	19,550	.7697	.119	2.00	.7500	2	364.010
KSEM0750R3SS100	KSEM0750R5SS100	19,050	.7500	19,550	.7697	.119	3.00	1.0000	2	364.010
KSEM0759R3SS075	KSEM0759R5SS075	19,279	.7590	19,779	.7787	.121	2.00	.7500	2	364.010
KSEM0766R3SS100	KSEM0766R5SS100	19,456	.7660	19,956	.7857	.122	3.00	1.0000	2	364.010
KSEM0781R3SS100	KSEM0781R5SS100	19,844	.7813	19,999	.7873	.124	3.00	1.0000	2	364.010
KSEM0797R3SS100	KSEM0797R5SS100	20,244	.7970	20,744	.8167	.127	3.00	1.0000	3	364.011
KSEM0813R3SS100	KSEM0813R5SS100	20,638	.8125	21,138	.8322	.129	3.00	1.0000	3	364.011
KSEM0844R3SS100	KSEM0844R5SS100	21,431	.8437	21,931	.8634	.134	3.00	1.0000	3	364.011
KSEM0859R3SS100	KSEM0859R5SS100	21,819	.8590	22,000	.8661	.136	3.00	1.0000	3	364.011
KSEM0875R3SS100	KSEM0875R5SS100	22,225	.8750	22,725	.8947	.139	3.00	1.0000	4	364.011
KSEM0875R3SS125	KSEM0875R5SS125	22,225	.8750	22,725	.8947	.139	3.25	1.2500	4	364.011
KSEM0884R3SS100	KSEM0884R5SS100	22,454	.8840	22,954	.9037	.140	3.00	1.0000	4	364.011

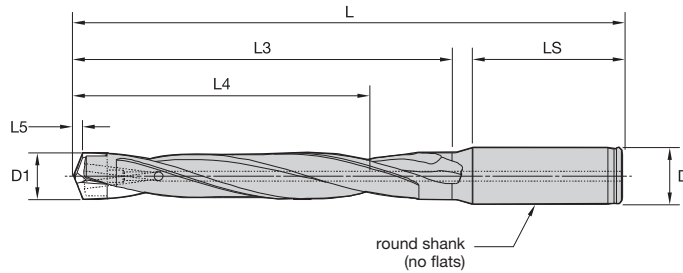
(continued)

(KSEM Round Shank • 3 x D/5 x D • Inch — continued)

Modular Drills

										
3 x D	5 x D	D1		D1 max		L5	LS	D	seat size	central lock screw
		mm	in	mm	in					
KSEM0906R3SS100	KSEM0906R5SS100	23,019	.9063	23,519	.9260	.144	3.00	1.0000	4	364.011
KSEM0922R3SS100	KSEM0922R5SS100	23,419	.9220	23,919	.9417	.146	3.00	1.0000	4	364.011
KSEM0938R3SS100	KSEM0938R5SS100	23,813	.9375	24,000	.9448	.149	3.00	1.0000	4	364.011
KSEM0969R3SS100	KSEM0969R5SS100	24,606	.9687	25,106	.9884	.154	3.00	1.0000	5	364.012
KSEM0984R3SS100	KSEM0984R5SS100	25,003	.9844	25,503	1.0041	.151	3.00	1.0000	5	364.012
KSEM1000R3SS100	KSEM1000R5SS100	25,400	1.0000	25,900	1.0197	.154	3.00	1.0000	5	364.012
–	KSEM1000R5SS125	25,400	1.0000	25,900	1.0197	.154	3.25	1.2500	5	364.012
KSEM1011R3SS125	KSEM1011R5SS125	25,679	1.0110	26,000	1.0236	.156	3.25	1.2500	5	364.012
KSEM1031R3SS125	KSEM1031R5SS125	26,195	1.0313	26,695	1.0510	.159	3.25	1.2500	6	364.012
–	KSEM1047R5SS125	26,594	1.0470	27,094	1.0667	.161	3.25	1.2500	6	364.012
KSEM1063R3SS125	KSEM1063R5SS125	26,988	1.0625	27,488	1.0822	.164	3.25	1.2500	6	364.012
–	KSEM1094R5SS125	27,781	1.0937	28,000	1.1023	.168	3.25	1.2500	6	364.012
KSEM1109R3SS125	KSEM1109R5SS125	28,169	1.1090	28,669	1.1287	.171	3.25	1.2500	7	364.013
KSEM1125R3SS125	KSEM1125R5SS125	28,575	1.1250	29,075	1.1447	.173	3.25	1.2500	7	364.013
KSEM1156R3SS125	KSEM1156R5SS125	29,370	1.1563	29,870	1.1760	.178	3.25	1.2500	7	364.013
KSEM1172R3SS125	KSEM1172R5SS125	29,769	1.1720	30,000	1.1811	.180	3.25	1.2500	7	364.013
KSEM1188R3SS125	KSEM1188R5SS125	30,163	1.1875	30,663	1.2072	.183	3.25	1.2500	8	364.013
–	KSEM1203R5SS125	30,556	1.2030	31,056	1.2227	.185	3.25	1.2500	8	364.013
KSEM1219R3SS125	KSEM1219R5SS125	30,958	1.2188	31,458	1.2385	.188	3.25	1.2500	8	364.013
KSEM1250R3SS125	KSEM1250R5SS125	31,750	1.2500	32,000	1.2598	.192	3.25	1.2500	8	364.013
KSEM1250R3SS150	KSEM1250R5SS150	31,750	1.2500	32,000	1.2598	.192	3.75	1.5000	8	364.013
KSEM1281R3SS150	KSEM1281R5SS150	32,537	1.2810	33,537	1.3204	.197	3.75	1.5000	9	364.015
KSEM1297R3SS150	KSEM1297R5SS150	32,941	1.2969	33,941	1.3363	.200	3.75	1.5000	9	364.015
KSEM1313R3SS150	KSEM1313R5SS150	33,350	1.3130	34,350	1.3524	.202	3.75	1.5000	9	364.015
KSEM1328R3SS150	KSEM1328R5SS150	33,731	1.3280	34,731	1.3674	.204	3.75	1.5000	9	364.015
–	KSEM1344R5SS150	34,138	1.3440	35,138	1.3834	.207	3.75	1.5000	9	364.015
KSEM1375R3SS150	KSEM1375R5SS150	34,925	1.3750	35,925	1.4144	.212	3.75	1.5000	9	364.015
KSEM1406R3SS150	KSEM1406R5SS150	35,712	1.4060	36,000	1.4173	.216	3.75	1.5000	9	364.015
–	KSEM1422R5SS150	36,119	1.4220	37,119	1.4614	.219	3.75	1.5000	10	364.015
KSEM1438R3SS150	KSEM1438R5SS150	36,513	1.4375	37,513	1.4769	.221	3.75	1.5000	10	364.015
–	KSEM1469R5SS150	37,313	1.4690	38,313	1.5084	.226	3.75	1.5000	10	364.015
KSEM1500R3SS150	KSEM1500R5SS150	38,100	1.5000	39,100	1.5394	.231	3.75	1.5000	10	364.015
KSEM1514R3SS150	KSEM1514R5SS150	38,456	1.5140	39,456	1.5534	.233	3.75	1.5000	10	364.015

- Use designated insert blade with each drill body.
- For alternatives, see insert blade fitment chart on page H91–H92.
- Drill shipped with central lock screw and wrench.
- Order insert blade separately; see pages H52–H71.



For information on L, L3, and L4 max, see the Modular Drills Dimension Tables on page H96.



KSEM Round Shank • 7 x D/10 x D • Inch

 10 x D	 7 x D	D1		D1 max		L5	LS	D		seat size	central lock screw
		mm	in	mm	in						
–	KSEM0500R7SS050	12,700	.5000	13,200	.5197	.079	1.50	.5000		C	364.017
KSEM0500R10SS075	KSEM0500R7SS075	12,700	.5000	13,200	.5197	.079	2.00	.7500		C	364.017
KSEM0509R10SS075	KSEM0509R7SS075	12,929	.5090	13,429	.5287	.081	2.00	.7500		C	364.017
KSEM0516R10SS075	KSEM0516R7SS075	13,096	.5156	13,500	.5314	.082	2.00	.7500		C	364.017
KSEM0531R10SS075	KSEM0531R7SS075	13,494	.5313	13,500	.5314	.084	2.00	.7500		C	364.017
KSEM0547R10SS075	KSEM0547R7SS075	13,891	.5469	14,394	.5667	.087	2.00	.7500		B	364.016
KSEM0563R10SS075	KSEM0563R7SS075	14,288	.5625	14,500	.5708	.089	2.00	.7500		B	364.016
KSEM0578R10SS075	KSEM0578R7SS075	14,681	.5780	15,181	.5977	.092	2.00	.7500		A	364.016
KSEM0594R10SS075	KSEM0594R7SS075	15,083	.5938	15,588	.6137	.094	2.00	.7500		A	364.016
KSEM0609R10SS075	KSEM0609R7SS075	15,479	.6094	15,874	.6249	.097	2.00	.7500		A	364.016
KSEM0625R10SS075	KSEM0625R7SS075	15,875	.6250	16,375	.6447	.099	2.00	.7500		1	364.010
KSEM0634R10SS075	KSEM0634R7SS075	16,104	.6340	16,604	.6537	.101	2.00	.7500		1	364.010
KSEM0656R10SS075	KSEM0656R7SS075	16,670	.6563	17,170	.6760	.104	2.00	.7500		1	364.010
KSEM0688R10SS075	KSEM0688R7SS075	17,463	.6875	17,963	.7072	.109	2.00	.7500		1	364.010
KSEM0719R10SS075	KSEM0719R7SS075	18,256	.7187	18,756	.7384	.114	2.00	.7500		2	364.010
KSEM0750R10SS075	KSEM0750R7SS075	19,050	.7500	19,550	.7502	.119	2.00	.7500		2	364.010
KSEM0750R10SS100	KSEM0750R7SS100	19,050	.7500	19,550	.7502	.119	3.00	1.0000		2	364.010
–	KSEM0759R7SS075	19,279	.7590	19,779	.7787	.121	2.00	.7500		2	364.010
KSEM0759R10SS100	–	19,279	.7590	19,779	.7787	.121	3.00	1.0000		2	364.010
KSEM0781R10SS100	KSEM0781R7SS100	19,844	.7813	19,999	.7873	.124	3.00	1.0000		2	364.010
KSEM0813R10SS100	KSEM0813R7SS100	20,638	.8125	21,138	.8322	.129	3.00	1.0000		3	364.011
KSEM0844R10SS100	KSEM0844R7SS100	21,431	.8437	21,931	.8634	.134	3.00	1.0000		3	364.011
KSEM0875R10SS100	KSEM0875R7SS100	22,225	.8750	22,725	.8947	.139	3.00	1.0000		4	364.011
–	KSEM0875R7SS125	22,225	.8750	22,725	.8947	.139	3.25	1.2500		4	364.011
KSEM0884R10SS100	KSEM0884R7SS100	22,454	.8840	22,954	.9037	.140	3.00	1.0000		4	364.011
KSEM0906R10SS100	KSEM0906R7SS100	23,019	.9063	23,519	.9260	.144	3.00	1.0000		4	364.011
KSEM0938R10SS100	KSEM0938R7SS100	23,813	.9375	24,000	.9448	.149	3.00	1.0000		4	364.011
KSEM0969R10SS100	KSEM0969R7SS100	24,606	.9687	25,106	.9884	.154	3.00	1.0000		5	364.012
KSEM0984R10SS100	KSEM0984R7SS100	25,003	.9844	25,503	1.0041	.151	3.00	1.0000		5	364.012
KSEM1000R10SS100	KSEM1000R7SS100	25,400	1.0000	25,900	1.0197	.154	3.00	1.0000		5	364.012
KSEM1000R10SS125	KSEM1000R7SS125	25,400	1.0000	25,900	1.0197	.154	3.25	1.2500		5	364.012
KSEM1011R10SS125	KSEM1011R7SS125	25,679	1.0110	26,000	1.0236	.156	3.25	1.2500		5	364.012

(continued)

Modular Drills

KSEM™ Round Shank Bodies

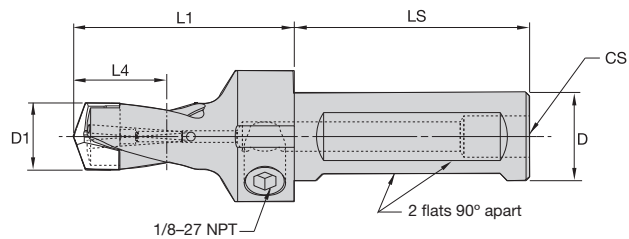


(KSEM Round Shank • 7 x D/10 x D • Inch — continued)

Modular Drills

 10 x D	 7 x D	D1		D1 max						
		mm	in	mm	in	L5	LS	D	seat size	central lock screw
KSEM1031R10SS125	KSEM1031R7SS125	26,195	1.0313	26,695	1.0510	.159	3.25	1.2500	6	364.012
KSEM1063R10SS125	KSEM1063R7SS125	26,988	1.0625	27,488	1.0822	.164	3.25	1.2500	6	364.012
KSEM1094R10SS125	KSEM1094R7SS125	27,781	1.0937	28,000	1.1023	.168	3.25	1.2500	6	364.012
KSEM1125R10SS125	KSEM1125R7SS125	28,575	1.1250	29,075	1.1447	.173	3.25	1.2500	7	364.013
KSEM1156R10SS125	KSEM1156R7SS125	29,370	1.1563	29,870	1.1760	.178	3.25	1.2500	7	364.013
KSEM1188R10SS125	KSEM1188R7SS125	30,163	1.1875	30,663	1.2072	.183	3.25	1.2500	8	364.013
KSEM1219R10SS125	KSEM1219R7SS125	30,958	1.2188	31,458	1.2385	.188	3.25	1.2500	8	364.013
KSEM1250R10SS125	KSEM1250R7SS125	31,750	1.2500	32,000	1.2598	.192	3.25	1.2500	8	364.013
KSEM1250R10SS150	KSEM1250R7SS150	31,750	1.2500	32,000	1.2598	.192	3.75	1.5000	8	364.013

- Use designated insert blade with each drill body.
- For alternatives, see insert blade fitment chart on page H91–H92.
- Drill shipped with central lock screw, wrench, and side pipe plug.
- Order insert blade separately; see pages H52–H71.

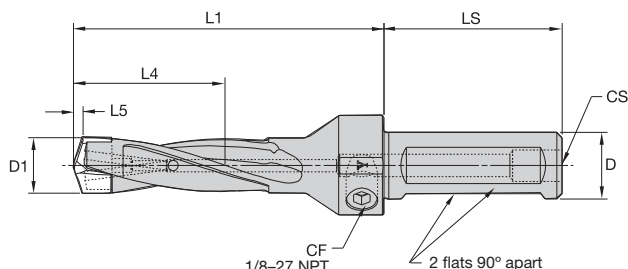


■ KSEM Flanged Shank • 1 x D • Inch



1 x D	D1		D1 max		L	L1	L4 max	L5	LS	D	seat size	CS	central lock screw	wrench
	mm	in	mm	in										
KSEM0493R1SSF075	12,522	.4930	13,500	.5314	3.94	1.94	.53	.07	2.00	.750	C	1/8-27 NPT	364.017	170.294
KSEM0532R1SSF075	13,513	.5320	14,500	.5708	4.00	2.00	.61	.08	2.00	.750	B	1/8-27 NPT	364.016	170.289
KSEM0571R1SSF075	14,503	.5710	15,874	.6249	4.00	2.00	.63	.09	2.00	.750	A	1/8-27 NPT	364.016	170.289
KSEM0625R1SSF075	15,875	.6250	18,000	.7086	4.19	2.19	.71	.10	2.00	.750	1	1/8-27 NPT	364.010	170.270
KSEM0709R1SSF075	18,009	.7090	19,999	.7873	4.25	2.25	.78	.11	2.00	.750	2	1/8-27 NPT	364.010	170.270
KSEM0788R1SSF100	20,015	.7880	22,000	.8661	5.50	2.50	.87	.13	3.00	1.000	3	1/4-18 NPT	364.011	170.272
KSEM0867R1SSF100	22,022	.8670	24,000	.9448	5.56	2.56	.95	.14	3.00	1.000	4	1/4-18 NPT	364.011	170.272
KSEM0945R1SSF100	24,003	.9450	26,000	1.0236	5.63	2.63	1.02	.15	3.00	1.000	5	1/4-18 NPT	364.012	170.274
KSEM1024R1SSF125	26,010	1.0240	28,000	1.1023	6.13	2.88	1.11	.16	3.25	1.250	6	1/4-18 NPT	364.012	170.274
KSEM1103R1SSF125	28,016	1.1030	30,000	1.1811	6.19	2.94	1.18	.17	3.25	1.250	7	1/4-18 NPT	364.013	170.276
KSEM1182R1SSF125	30,023	1.1820	32,000	1.2598	6.25	3.00	1.27	.18	3.25	1.250	8	1/4-18 NPT	364.013	170.276
KSEM1260R1SSF125	32,004	1.2600	36,000	1.4173	6.50	3.25	1.42	.19	3.25	1.250	9	1/4-18 NPT	364.015	170.276
KSEM1418R1SSF125	36,017	1.4180	40,000	1.5748	6.63	3.38	1.57	.22	3.25	1.250	10	1/4-18 NPT	364.015	170.276

- Use designated insert blade with each drill body.
- For alternatives, see insert blade fitment chart on page H91–H92.
- Drill shipped with central lock screw, wrench, and side pipe plug.
- Order insert blade separately; see pages H52–H71.



For information on L, L3, and L4 max, see the Modular Drills Dimension Tables on page H96.



■ KSEM Flanged Shank • 3 x D/5 x D • Inch

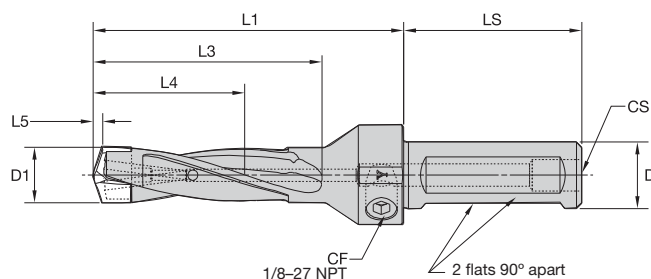
 3 x D	 5 x D	D1		D1 max		L5	LS	D	seat size	CS	 central lock screw
		mm	in	mm	in						
KSEM0500R3SSF075	KSEM0500R5SSF075	12,700	.5000	13,200	.5197	.08	2.00	.750	C	1/8-27 NPT	364.017
KSEM0509R3SSF075	KSEM0509R5SSF075	12,929	.5090	13,429	.5287	.08	2.00	.750	C	1/8-27 NPT	364.017
KSEM0516R3SSF075	KSEM0516R5SSF075	13,106	.5160	13,500	.5314	.08	2.00	.750	C	1/8-27 NPT	364.017
KSEM0531R3SSF075	KSEM0531R5SSF075	13,487	.5310	13,500	.5314	.08	2.00	.750	C	1/8-27 NPT	364.017
KSEM0547R3SSF075	KSEM0547R5SSF075	13,894	.5470	14,394	.5667	.09	2.00	.750	B	1/8-27 NPT	364.016
KSEM0563R3SSF075	KSEM0563R5SSF075	14,300	.5630	14,500	.5708	.09	2.00	.750	B	1/8-27 NPT	364.016
KSEM0578R3SSF075	KSEM0578R5SSF075	14,681	.5780	15,181	.5977	.09	2.00	.750	A	1/8-27 NPT	364.016
KSEM0594R3SSF075	KSEM0594R5SSF075	15,088	.5940	15,588	.6137	.09	2.00	.750	A	1/8-27 NPT	364.016
KSEM0609R3SSF075	KSEM0609R5SSF075	15,469	.6090	15,874	.6249	.10	2.00	.750	A	1/8-27 NPT	364.016
KSEM0625R3SSF075	KSEM0625R5SSF075	15,875	.6250	16,375	.6447	.10	2.00	.750	1	1/8-27 NPT	364.010
KSEM0634R3SSF075	–	16,104	.6340	16,604	.6537	.10	2.00	.750	1	1/8-27 NPT	364.010
KSEM0641R3SSF075	–	16,281	.6410	16,781	.6607	.10	2.00	.750	1	1/8-27 NPT	364.010
KSEM0672R3SSF075	–	17,069	.6720	17,569	.6917	.11	2.00	.750	1	1/8-27 NPT	364.010
KSEM0688R3SSF075	KSEM0688R5SSF075	17,463	.6875	17,963	.7072	.11	2.00	.750	1	1/8-27 NPT	364.010
KSEM0703R3SSF075	–	17,856	.7030	18,000	.7086	.11	2.00	.750	1	1/8-27 NPT	364.010
KSEM0734R3SSF075	–	18,644	.7340	19,144	.7537	.12	2.00	.750	2	1/8-27 NPT	364.010
KSEM0750R3SSF075	KSEM0750R5SSF075	19,050	.7500	19,550	.7502	.12	2.00	.750	2	1/8-27 NPT	364.010
KSEM0750R3SSF100	KSEM0750R5SSF100	19,050	.7500	19,550	.7502	.12	3.00	1.000	2	1/4-18 NPT	364.010
KSEM0759R3SSF100	–	19,279	.7590	19,779	.7787	.12	3.00	1.000	2	1/4-18 NPT	364.010
KSEM0766R3SSF100	–	19,456	.7660	19,956	.7857	.12	3.00	1.000	2	1/4-18 NPT	364.010
KSEM0781R3SSF100	–	19,844	.7813	19,999	.7873	.12	3.00	1.000	2	1/4-18 NPT	364.010
KSEM0797R3SSF100	–	20,244	.7970	20,744	.8167	.13	3.00	1.000	3	1/4-18 NPT	364.011
KSEM0813R3SSF100	KSEM0813R5SSF100	20,638	.8125	21,138	.8322	.13	3.00	1.000	3	1/4-18 NPT	364.011
KSEM0859R3SSF100	–	21,819	.8590	22,000	.8661	.14	3.00	1.000	3	1/4-18 NPT	364.011
KSEM0875R3SSF100	KSEM0875R5SSF100	22,225	.8750	22,725	.8947	.14	3.00	1.000	4	1/4-18 NPT	364.011
KSEM0875R3SSF125	KSEM0875R5SSF125	22,225	.8750	22,725	.8947	.14	3.25	1.250	4	1/4-18 NPT	364.011
KSEM0884R3SSF100	–	22,454	.8840	22,954	.9037	.14	3.00	1.000	4	1/4-18 NPT	364.011
KSEM0906R3SSF100	–	23,019	.9063	23,519	.9260	.14	3.00	1.000	4	1/4-18 NPT	364.011
KSEM0922R3SSF100	–	23,419	.9220	23,919	.9417	.15	3.00	1.000	4	1/4-18 NPT	364.011
KSEM0938R3SSF100	KSEM0938R5SSF100	23,813	.9375	24,000	.9448	.15	3.00	1.000	4	1/4-18 NPT	364.011
KSEM0969R3SSF100	KSEM0969R5SSF100	24,606	.9687	25,106	.9884	.15	3.00	1.000	5	1/4-18 NPT	364.012
KSEM0984R3SSF100	KSEM0984R5SSF100	25,003	.9844	25,503	1.0041	.15	3.00	1.000	5	1/4-18 NPT	364.012

(continued)

(KSEM Flanged Shank • 3 x D/5 x D • Inch — continued)

 3 x D	 5 x D	D1		D1 max		L5	LS	D	seat size	CS	 central lock screw
		mm	in	mm	in						
KSEM1000R3SSF100	KSEM1000R5SSF100	25,400	1.0000	25,900	1.0197	.15	3.00	1.000	5	1/4-18 NPT	364.012
KSEM1000R3SSF125	KSEM1000R5SSF125	25,400	1.0000	25,900	1.0197	.15	3.25	1.250	5	1/4-18 NPT	364.012
KSEM1011R3SSF100	—	25,679	1.0110	26,000	1.0236	.16	3.00	1.000	5	1/4-18 NPT	364.012
KSEM1031R3SSF125	—	26,195	1.0313	26,695	1.0510	.16	3.25	1.250	6	1/4-18 NPT	364.012
KSEM1047R3SSF125	—	26,594	1.0470	27,094	1.0667	.16	3.25	1.250	6	1/4-18 NPT	364.012
KSEM1063R3SSF125	KSEM1063R5SSF125	26,988	1.0625	27,488	1.0822	.16	3.25	1.250	6	1/4-18 NPT	364.012
KSEM1094R3SSF125	—	27,781	1.0937	28,000	1.1023	.17	3.25	1.250	6	1/4-18 NPT	364.012
KSEM1109R3SSF125	—	28,169	1.1090	28,669	1.1287	.17	3.25	1.250	7	1/4-18 NPT	364.013
KSEM1125R3SSF125	KSEM1125R5SSF125	28,575	1.1250	29,075	1.1447	.17	3.25	1.250	7	1/4-18 NPT	364.013
KSEM1156R3SSF125	—	29,370	1.1563	29,870	1.1760	.18	3.25	1.250	7	1/4-18 NPT	364.013
KSEM1188R3SSF125	KSEM1188R5SSF125	30,163	1.1875	30,663	1.2072	.18	3.25	1.250	8	1/4-18 NPT	364.013
KSEM1203R3SSF125	—	30,556	1.2030	31,056	1.2227	.19	3.25	1.250	8	1/4-18 NPT	364.013
KSEM1250R3SSF125	KSEM1250R5SSF125	31,750	1.2500	32,000	1.2598	.19	3.25	1.250	8	1/4-18 NPT	364.013
KSEM1250R3SSF150	KSEM1250R5SSF150	31,750	1.2500	32,000	1.2598	.19	3.75	1.500	8	1/4-18 NPT	364.013
KSEM1281R3SSF150	—	32,540	1.2811	36,000	1.4173	.20	3.75	1.500	9	1/4-18 NPT	364.015
KSEM1281R5SSF150	—	32,540	1.2811	36,000	1.4173	.22	3.75	1.500	9	1/4-18 NPT	364.015
KSEM1297R3SSF150	KSEM1297R5SSF150	32,940	1.2969	36,000	1.4173	.23	3.75	1.500	9	1/4-18 NPT	364.015
KSEM1313R3SSF150	KSEM1313R5SSF150	33,340	1.3126	36,000	1.4173	.23	3.75	1.500	9	1/4-18 NPT	364.015
KSEM1328R3SSF150	—	33,730	1.3280	36,000	1.4173	.23	3.75	1.500	9	1/4-18 NPT	364.015
—	KSEM1328R5SSF150	33,730	1.2380	36,000	1.4173	.23	3.75	1.500	9	1/4-18 NPT	364.015
KSEM1344R3SSF150	KSEM1344R5SSF150	34,130	1.3437	36,000	1.4173	.24	3.75	1.500	9	1/4-18 NPT	364.015
KSEM1375R3SSF150	KSEM1375R5SSF150	34,930	1.3752	36,000	1.4173	.24	3.75	1.500	9	1/4-18 NPT	364.015
KSEM1406R3SSF150	KSEM1406R5SSF150	35,720	1.4063	36,000	1.4173	.25	3.75	1.500	9	1/4-18 NPT	364.015
KSEM1422R3SSF150	KSEM1422R5SSF150	36,120	1.4220	40,000	1.5748	.25	3.75	1.500	10	1/4-18 NPT	364.015
KSEM1438R3SSF150	KSEM1438R5SSF150	36,520	1.4378	40,000	1.5748	.25	3.75	1.500	10	1/4-18 NPT	364.015
KSEM1469R3SSF150	KSEM1469R5SSF150	37,310	1.4689	40,000	1.5748	.26	3.75	1.500	10	1/4-18 NPT	364.015
KSEM1500R3SSF150	KSEM1500R5SSF150	38,100	1.5000	40,000	1.5748	.26	3.75	1.500	10	1/4-18 NPT	364.015
KSEM1514R3SSF150	KSEM1514R5SSF150	38,460	1.5142	40,000	1.5748	.27	3.75	1.500	10	1/4-18 NPT	364.015

- Use designated insert blade with each drill body.
- For alternatives, see insert blade fitment chart on page H91–H92.
- Drill shipped with central lock screw, wrench, and side pipe plug.
- Order insert blade separately; see pages H52–H71.



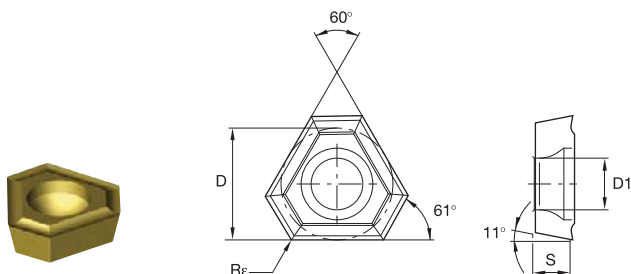
■ KSEM Flanged Shank • 8 x D • Inch



8 x D	D1		D1 max		L1	L3	L4 max	L5	LS	D	seat size	CS	central lock screw	wrench
	mm	in	mm	in										
KSEM0625R8SSF075	15,875	.6250	16,375	.6447	6.25	5.63	5.00	.10	2.00	.750	1	1/8-27 NPT	364.010	170.271
KSEM0688R8SSF075	17,463	.6875	17,963	.7072	7.00	6.38	5.50	.11	2.00	.750	1	1/8-27 NPT	364.010	170.271
KSEM0750R8SSF075	19,050	.7500	19,550	.7502	7.50	6.88	6.00	.12	2.00	.750	2	1/8-27 NPT	364.010	170.281
KSEM0750R8SSF100	19,050	.7500	19,550	.7502	7.50	6.88	6.00	.12	3.00	1.000	2	1/4-18 NPT	364.010	170.281
KSEM0813R8SSF100	20,638	.8125	21,138	.8322	8.00	7.38	6.50	.13	3.00	1.000	3	1/4-18 NPT	364.011	170.282
KSEM0875R8SSF100	22,225	.8750	22,725	.8947	8.50	7.88	7.00	.14	3.00	1.000	4	1/4-18 NPT	364.011	170.282
KSEM0875R8SSF125	22,225	.8750	22,725	.8947	8.50	7.88	7.00	.14	3.25	1.250	4	1/4-18 NPT	364.011	170.282
KSEM0938R8SSF100	23,813	.9375	24,000	.9448	9.13	8.51	7.50	.15	3.00	1.000	4	1/4-18 NPT	364.011	170.282
KSEM0984R8SSF100	25,003	.9844	25,503	1.0041	9.50	8.88	7.88	.15	3.00	1.000	5	1/4-18 NPT	364.012	170.283
KSEM1000R8SSF100	25,400	1.0000	25,900	1.0197	9.63	9.01	8.00	.15	3.00	1.000	5	1/4-18 NPT	364.012	170.283
KSEM1000R8SSF125	25,400	1.0000	25,900	1.0197	9.63	9.01	8.00	.15	3.25	1.250	5	1/4-18 NPT	364.012	170.283
KSEM1063R8SSF125	26,988	1.0625	27,488	1.0822	10.25	9.63	8.50	.16	3.25	1.250	6	1/4-18 NPT	364.012	170.283
KSEM1125R8SSF125	28,575	1.1250	29,075	1.1447	10.75	10.13	9.00	.17	3.25	1.250	7	1/4-18 NPT	364.013	170.284
KSEM1188R8SSF125	30,163	1.1875	30,663	1.2072	11.38	10.76	9.50	.18	3.25	1.250	8	1/4-18 NPT	364.013	170.284
KSEM1250R8SSF125	31,750	1.2500	32,000	1.2598	11.88	11.26	10.00	.19	3.25	1.250	8	1/4-18 NPT	364.013	170.284
KSEM1250R8SSF150	31,750	1.2500	32,000	1.2598	11.88	11.26	10.00	.19	3.75	1.500	8	1/4-18 NPT	364.013	170.284

KSEM Chamfering Solutions

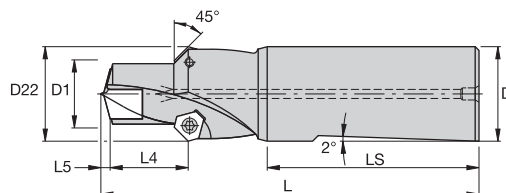
- Drilling and chamfering in one operation.
- No height adjustment required.
- Low setup time.
- Use standard inserts.
- Tool bodies available as standard.



TPGX-GD Geometry

catalog number	D		S		Re		D1		KC7015	KC7315	KC7140
	mm	in	mm	in	mm	in	mm	in			
TPGX0902ZPRGD	5,56	.219	2,38	.094	0,20	.008	2,50	.098	●	●	●
TPGX1102ZPRGD	6,35	.250	2,38	.094	0,20	.008	2,85	.112	●	●	●
TPGX1303ZPRGD	7,94	.313	3,18	.125	0,20	.008	3,40	.134	●	●	●
TPGX1603ZPRGD	9,52	.375	3,18	.125	0,20	.008	4,40	.173	●	●	●

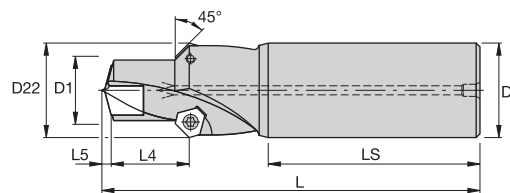
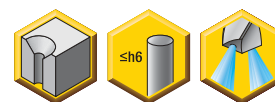
- Use any KSEM insert blade diameter within the designated seat size.
- Drill shipped with central lock screw, insert screw, and wrenches.
- Order insert blades separately; see pages H52–H71.
- Order TPGX chamfering insert separately; see page H85.



KSEM Bodies • WN/WD50 Shank with Chamfer • 1 x D • Metric

1 x D	D1		D1 max		D22	L	L4 max	L5	LS	D	seat size	chamfer insert	central lock screw	wrench
	mm	in	mm	in										
KSEM125R1WN16F45M	12,500	.4921	13,500	.5314	18	107	14	2,0	48,0	16	C	KSEM1250	364.017	170.051
KSEM136R1WN16F45M	13,510	.5319	14,500	.5708	19	107	15	2,2	48,0	16	B	KSEM1351	364.016	170.289
KSEM146R1WN20F45M	14,510	.5713	15,874	.6249	20	109	16	2,3	50,0	20	A	KSEM1451	364.016	170.289
KSEM160R1WN20F45M	16,000	.6299	18,000	.7086	22	110	18	2,5	50,0	20	1	KSEM1600	364.010	170.270
KSEM181R1WN25F45M	18,010	.7091	19,999	.7873	25	118	20	2,9	56,0	25	2	KSEM1801	364.010	170.270
KSEM200R1WN25F45M	20,000	.7874	22,000	.8661	28	120	22	3,2	56,0	25	3	KSEM2000	364.011	170.272
KSEM221R1WN25F45M	22,010	.8665	24,000	.9448	30	123	24	3,5	56,0	25	4	KSEM2201	364.011	170.272
KSEM241R1WN32F45M	24,010	.9453	26,000	1.0236	34	129	26	3,8	60,0	32	5	KSEM2401	364.012	170.055
KSEM261R1WN32F45M	26,010	1.0240	28,000	1.1023	36	131	28	4,0	60,0	32	6	KSEM2601	364.012	170.055
KSEM281R1WN32F45M	28,016	1.1030	30,000	1.1811	38	134	30	4,3	60,0	32	7	KSEM2801	364.013	170.276
KSEM301R1WN32F45M	30,010	1.1815	32,000	1.2598	40	136	32	4,6	60,0	32	8	KSEM3001	364.013	170.276
KSEM321R1WD50F45M	32,010	1.2602	36,000	1.4173	42	155	36	4,9	68,0	50	9	KSEM3201	364.015	170.276
KSEM361R1WD50F45M	36,010	1.4177	40,000	1.5748	46	165	40	5,5	68,0	50	10	KSEM3601	364.015	170.276

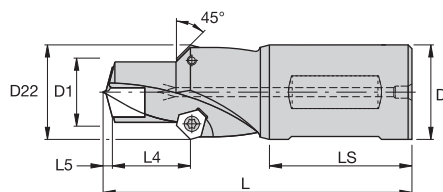
- Use any KSEM insert blade diameter within the designated seat size.
- Drill shipped with central lock screw, insert screw, and wrenches.
- Order insert blades separately; see pages H52–H71.
- Order TPGX chamfering insert separately; see page H85.



■ KSEM Bodies • WN/WD50 Shank with Chamfer • 1 x D • Metric



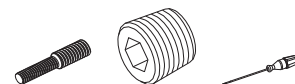
1 x D	D1		D1 max		D22	L	L4 max	L5	LS	D	seat size	chamfer insert	central lock screw	wrench
	mm	in	mm	in										
KSEM125R1WN16F45M	12,500	.4921	13,500	.5314	18	107	14	2,0	48,0	16	C	KSEM1250	364.017	170.051
KSEM136R1WN16F45M	13,510	.5319	14,500	.5708	19	107	15	2,2	48,0	16	B	KSEM1351	364.016	170.289
KSEM146R1WN20F45M	14,510	.5713	15,874	.6249	20	109	16	2,3	50,0	20	A	KSEM1451	364.016	170.289
KSEM160R1WN20F45M	16,000	.6299	18,000	.7086	22	110	18	2,5	50,0	20	1	KSEM1600	364.010	170.270
KSEM181R1WN25F45M	18,010	.7091	19,999	.7873	25	118	20	2,9	56,0	25	2	KSEM1801	364.010	170.270
KSEM200R1WN25F45M	20,000	.7874	22,000	.8661	28	120	22	3,2	56,0	25	3	KSEM2000	364.011	170.272
KSEM221R1WN25F45M	22,010	.8665	24,000	.9448	30	123	24	3,5	56,0	25	4	KSEM2201	364.011	170.272
KSEM241R1WN32F45M	24,010	.9453	26,000	1.0236	34	129	26	3,8	60,0	32	5	KSEM2401	364.012	170.055
KSEM261R1WN32F45M	26,010	1.0240	28,000	1.1023	36	131	28	4,0	60,0	32	6	KSEM2601	364.012	170.055
KSEM281R1WN32F45M	28,016	1.1030	30,000	1.1811	38	134	30	4,3	60,0	32	7	KSEM2801	364.013	170.276
KSEM301R1WN32F45M	30,010	1.1815	32,000	1.2598	40	136	32	4,6	60,0	32	8	KSEM3001	364.013	170.276
KSEM321R1WD50F45M	32,010	1.2602	36,000	1.4173	42	155	36	4,9	68,0	50	9	KSEM3201	364.015	170.276
KSEM361R1WD50F45M	36,010	1.4177	40,000	1.5748	46	165	40	5,5	68,0	50	10	KSEM3601	364.015	170.276



■ KSEM Bodies • Flanged Shank with Chamfer • 1 x D • Inch

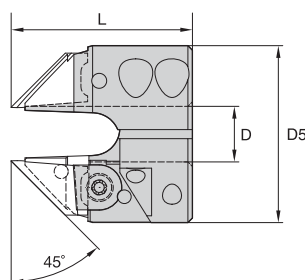


1 x D	D1		D1 max		D22	L	L4 max	L5	LS	D	seat size	chamfer insert	central lock screw	pipe plug	wrench
	mm	in	mm	in											
KSEM0493R1SSF075F45	12,500	.4921	13,500	.5314	.70	4.00	.53	.08	2.00	.750	C	KSEM1250	364.017	HSFS0125	170.051
KSEM0532R1SSF075F45	13,600	.5354	14,500	.5708	.74	4.25	.57	.08	2.00	.750	B	KSEM1360	364.016	HSFS0125	170.289
KSEM0571R1SSF075F45	14,600	.5748	15,874	.6249	.77	4.25	.62	.09	2.00	.750	A	KSEM1460	364.016	HSFS0125	170.289
KSEM0625R1SSF075F45	15,880	.6252	18,000	.7086	.88	4.25	.71	.10	2.00	.750	1	KSEM0625	364.010	HSFS0125	170.270
KSEM0709R1SSF075F45	18,260	.7189	19,999	.7873	.96	4.25	.78	.11	2.00	.750	2	KSEM0719	364.010	HSFS0125	170.270
KSEM0788R1SSF100F45	20,000	.7874	22,000	.8661	1.11	5.50	.87	.13	3.00	1.000	3	KSEM2000	364.011	HSFS0125	170.272
KSEM0867R1SSF100F45	22,230	.8752	24,000	.9448	1.19	5.50	.94	.14	3.00	1.000	4	KSEM0875	364.011	HSFS0125	170.272
KSEM0945R1SSF100F45	24,500	.9646	26,000	1.0236	1.34	5.75	1.02	.15	3.00	1.000	5	KSEM2450	364.012	HSFS0125	170.055
KSEM1024R1SSF125F45	26,187	1.0310	28,000	1.1023	1.42	5.75	1.10	.16	3.25	1.250	6	KSEM1031	364.012	HSFS0125	170.055
KSEM1103R1SSF125F45	28,169	1.1090	30,000	1.1811	1.50	6.25	1.18	.17	3.25	1.250	7	KSEM1109	364.013	HSFS0125	170.276
KSEM1182R1SSF125F45	30,160	1.1874	32,000	1.2598	1.58	6.25	1.26	.18	3.25	1.250	8	KSEM1188	364.013	HSFS0125	170.276
KSEM1260R1SSF125F45	32,500	1.2795	36,000	1.4173	1.66	6.25	1.42	.19	3.25	1.250	9	KSEM3250	364.015	HSFS0125	170.276
KSEM1418R1SSF125F45	36,119	1.4220	40,000	1.5748	1.82	6.25	1.57	.22	3.25	1.250	10	KSEM1422	364.015	HSFS0125	170.276



- The NEW chamfering rings for KSEM are available in a diameter range of 12,5–32mm.
- The KSEM SEF ring is double-edged, features a more rigid design to withstand high feed rates, and reduces time-consuming deburring and small chamfer operations.
- Reduce machining time — combine drilling and chamfering in one operation.
- Short-term availability — standard tooling off-the-shelf — KSEM body and inserts, SEF ring, and SEFAS™ inserts.
- Flexibility — adjustable drilling depth.

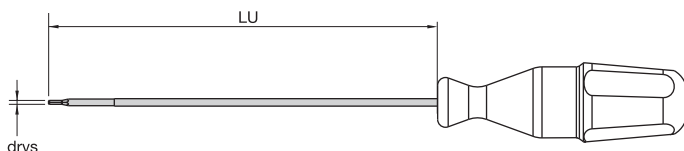
- For speed and feed recommendations, please refer to catalog recommendations based on geometry and tool body length of the carrying KSEM tool.
- Small chamfers up to 1mm do not need further feed reduction.
- At deeper chamfers, a feed rate reduction of 50% is highly recommended to avoid vibrations and movement of the ring during operation.
- For inserts, please refer to SEFAS System.



KSEM Chamfer Rings

	D		L		D5					
catalog number	mm	in	mm	in	mm	in	clamp assembly	chip deflector	chip deflector screw	drill clamp screw
KSEM125SEFM	12,5	.4921	40	1.57	39	1.54	360.551	360.660	128.508	191.726
KSEM130SEFM	13,0	.5118	40	1.57	39	1.54	360.551	360.660	128.508	191.726
KSEM135SEFM	13,5	.5315	40	1.57	39	1.54	360.551	360.660	128.508	191.726
KSEM140SEFM	14,0	.5512	40	1.57	40	1.57	360.551	360.661	128.508	199.123
KSEM145SEFM	14,5	.5709	40	1.57	40	1.57	360.551	360.661	128.508	199.123
KSEM150SEFM	15,0	.5906	40	1.57	40	1.57	360.551	360.662	128.508	199.123
KSEM155SEFM	15,5	.6102	40	1.57	40	1.57	360.551	360.662	128.508	199.123
KSEM160SEFM	16,0	.6299	42	1.65	43	1.69	360.551	360.663	128.508	199.123
KSEM165SEFM	16,5	.6496	42	1.65	43	1.69	360.551	360.663	128.508	199.123
KSEM170SEFM	17,0	.6693	42	1.65	43	1.69	360.551	360.663	128.508	199.123
KSEM175SEFM	17,5	.6890	42	1.65	43	1.69	360.551	360.663	128.508	199.123
KSEM180SEFM	18,0	.7087	42	1.65	43	1.69	360.551	360.663	128.508	199.123
KSEM185SEFM	18,5	.7283	42	1.65	43	1.69	360.551	360.664	128.508	199.123
KSEM190SEFM	19,0	.7480	42	1.65	43	1.69	360.551	360.664	128.508	199.123
KSEM195SEFM	19,5	.7677	42	1.65	43	1.69	360.551	360.664	128.508	199.123
KSEM200SEFM	20,0	.7874	48	1.89	50	1.97	360.551	360.665	128.510	199.123
KSEM205SEFM	20,5	.8071	48	1.89	50	1.97	360.551	360.665	128.510	199.123
KSEM210SEFM	21,0	.8268	48	1.89	50	1.97	360.551	360.665	128.510	199.123
KSEM215SEFM	21,5	.8465	48	1.89	50	1.97	360.551	360.665	128.510	199.123
KSEM220SEFM	22,0	.8661	48	1.89	50	1.97	360.551	360.665	128.510	199.123
KSEM225SEFM	22,5	.8858	50	1.97	50	1.97	360.551	360.666	128.510	—
KSEM230SEFM	23,0	.9055	50	1.97	50	1.97	360.551	360.666	128.510	—
KSEM235SEFM	23,5	.9252	50	1.97	50	1.97	360.551	360.666	128.510	—
KSEM240SEFM	24,0	.9449	50	1.97	50	1.97	360.551	360.666	128.510	—
KSEM245SEFM	24,5	.9646	54	2.13	55	2.17	360.551	360.667	128.510	—
KSEM250SEFM	25,0	.9843	54	2.13	55	2.17	360.551	360.667	128.510	—
KSEM255SEFM	25,5	1.0039	54	2.13	55	2.17	360.551	360.667	128.510	—
KSEM260SEFM	26,0	1.0236	54	2.13	55	2.17	360.551	360.667	128.510	—
KSEM265SEFM	26,5	1.0433	56	2.20	55	2.17	360.551	360.668	128.510	—
KSEM270SEFM	27,0	1.0630	56	2.20	55	2.17	360.551	360.668	128.510	—
KSEM275SEFM	27,5	1.0827	56	2.20	55	2.17	360.551	360.668	128.510	—
KSEM280SEFM	28,0	1.1024	56	2.20	55	2.17	360.551	360.668	128.510	—
KSEM285SEFM	28,5	1.1220	61	2.40	60	2.36	360.551	360.669	128.510	—
KSEM290SEFM	29,0	1.1417	61	2.40	60	2.36	360.551	360.669	128.510	—
KSEM295SEFM	29,5	1.1614	61	2.40	60	2.36	360.551	360.669	128.510	—
KSEM300SEFM	30,0	1.1811	61	2.40	60	2.36	360.551	360.669	128.510	—
KSEM305SEFM	30,5	1.2008	61	2.40	60	2.36	360.551	360.670	128.510	—
KSEM310SEFM	31,0	1.2205	61	2.40	60	2.36	360.551	360.670	128.510	—
KSEM315SEFM	31,5	1.2402	61	2.40	60	2.36	360.551	360.670	128.510	—
KSEM320SEFM	32,0	1.2598	61	2.40	60	2.36	360.551	360.670	128.510	—

NOTE: Order inserts separately; see the SEFAS system on page I30.



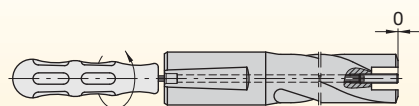
KSEM Wrenches

Modular Drills

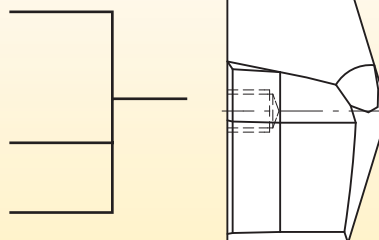
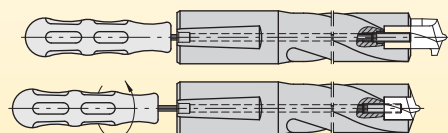
order number	catalog number	central lock screw		DRVS	LU	
		D1<32mm	D1≥32mm		mm	in
1126021	170.270	364.010	—	1.5 mm	185,00	7
1126032	170.271	364.010	—	1.5 mm	225,00	9
1510773	170.281	364.010	—	1.5 mm	297,00	12
1255899	170.285	364.010	—	1.5 mm	351,00	14
1126040	170.272	364.011	—	2 mm	210,00	8
1126049	170.273	364.011	—	2 mm	260,00	10
1510776	170.282	364.011	—	2 mm	343,00	14
1255900	170.286	364.011	—	2 mm	405,00	16
1126066	170.274	364.012	—	2.5 mm	240,00	9
1126072	170.275	364.012	—	2.5 mm	295,00	12
1510779	170.283	364.012	—	2.5 mm	393,00	15
1255901	170.287	364.012	—	2.5 mm	459,00	18
1126079	170.276	364.101	364.015	3 mm	265,00	10
1126088	170.277	364.101	364.015	3 mm	330,00	13
1510781	170.284	364.101	364.015	3 mm	439,00	17
1255902	170.288	364.101	364.015	3 mm	513,00	20
1834819	170.294	364.017	—	T5	156,00	6
1836470	170.295	364.017	—	T5	188,00	7
1836471	170.296	364.017	—	T5	290,00	11
1795811	170.289	364.016	—	T6	156,00	6
1795956	170.290	364.016	—	T6	188,00	7
1795960	170.291	364.016	—	T6	290,00	11

Mounting the Inserts

1.



2.



Inserts (<32mm) without Connector Pin

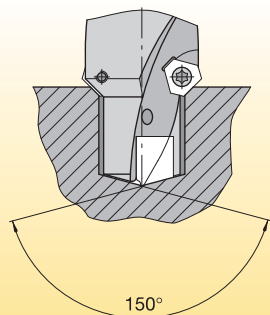
- 1) Use the screwdriver to set the threaded pin:
 - For inserts up to Ø 32mm, flush with the drill face.
 - For inserts bigger Ø 32mm, set 2mm below the drill face.
- 2) Tighten the insert using the screwdriver to fit securely in the insert seat.

To change the insert, turn the clamping screw counter-clockwise until the insert is released.

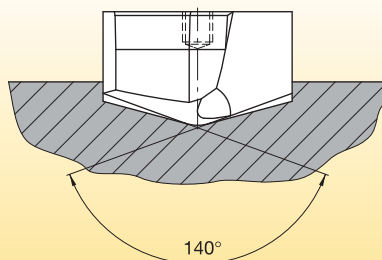
Repair of Damaged Threaded Pin

In the event that the central threaded pin becomes damaged, it can be removed after severing it in the tool body. To do this, drill beneath the insert seat in the tool body. The insert and threaded pin can then be removed. For information regarding the position and diameter of this repair hole, please refer to the manual (sheet **290.001 D/GB**) supplied with the tool body.

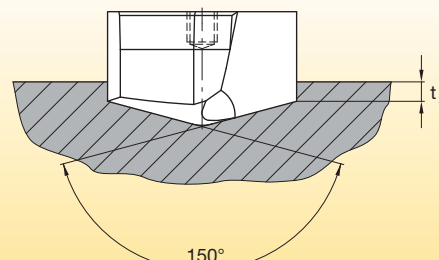
NOTE: For inserts without a connector pin, avoid jamming during mounting through precise positioning.



Precentering with FAS centering tool



HP inserts of the follower drill



Centering using PC inserts

Why is pre-centering necessary?

- Generally speaking, for drilling depths 5x the nominal diameter and above (5 x D).
- In unstable conditions (workpiece and tool clamping).

Why pre-center using PC inserts?

- Soft-cut entry of follower drill due to 150° point angle of the PC insert.
- No extension of the follower drill in the entry area.
- Prevent chipping and breaking on the cutting edges.
- To avoid deflection, it is recommended to pre-center with PC inserts using toolholders as short as possible (1 x D).

What happens if...

...a center cannot be used for technical reasons?

- Spot drill with normal insert at normal and reduced cutting data (approximately 1/2 vc and approximately 1/2 vf), then continue drilling with regular cutting data without lifting off/stopping.

...there is no suitable PC cutting insert in the standard range (ø)?

- Use a made-to-order PC insert with k7 tolerance in the required nominal diameter.

OR

- Pre-center, using the same cutting insert as used for the follower drill but without the cutting edges penetrating the workpiece (spot drill ø approximately 90% of drill ø D1).

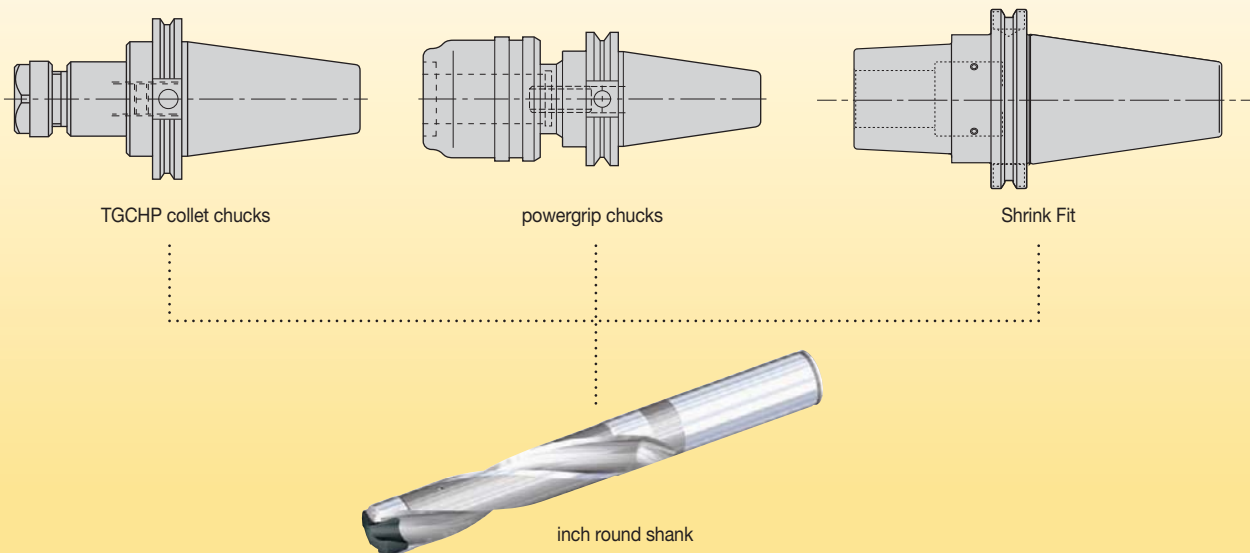
...only one tool body is required?

- Enter the workpiece with 50% feed until the cutting edges and the heels have penetrated the hole, then continue drilling without lifting off/stopping using regular cutting data.

Rotating Applications

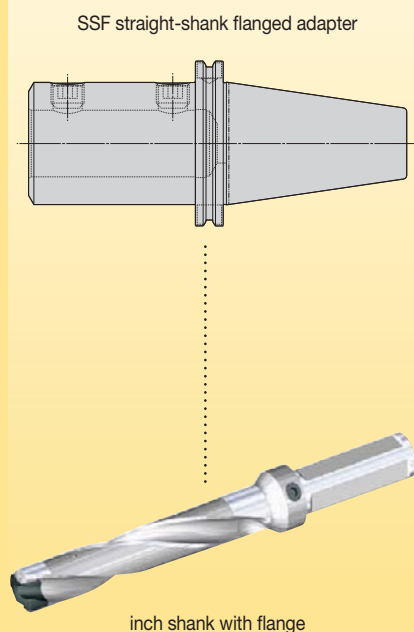
KSEM inch drills with round shanks (no flats) are specifically designed for rotating applications where the drill rotates and the workpiece remains stationary.

The shank to drill-point location of these drills is held to an extremely close tolerance. To maintain accuracy, and get maximum performance from the KSEM drill, use only the approved toolholding method shown below.



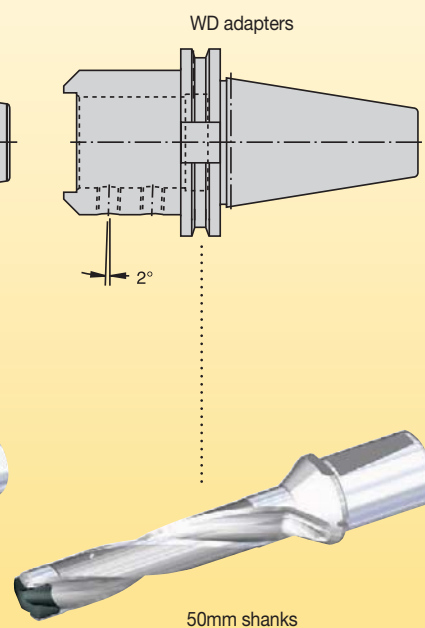
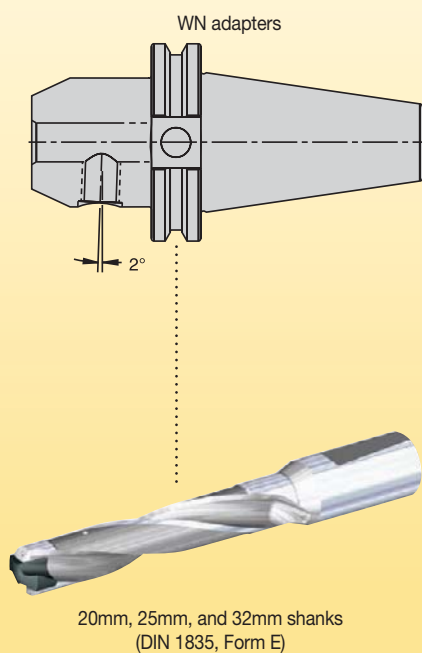
Inch Drill Bodies with Flange

KSEM inch drills with a flange can be used in rotating applications where the drill rotates and the workpiece remains stationary. To maintain accuracy and get maximum performance from the drill, use only the approved toolholding method shown here.



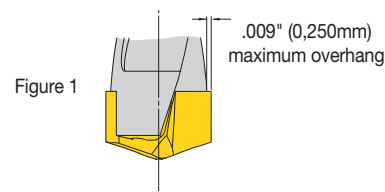
Metric Drill Bodies with a 2° Whistle Notch

KSEM metric drills come equipped with 2° Whistle Notch shanks. The 20mm, 25mm, and 32mm diameter shanks use WN adapters. The 50mm shank uses a WD adapter. Choose the correct adapter to minimize runout and securely hold the drill.



Insert blades may be used, within limits, on different drill bodies. The insert blade must be of the same seat size. Overhang (see Figure 1) must be kept under .0098" (0,250mm) per side. For best drilling performance, rigidity, and efficient chip evacuation, always use the first-choice steel body. Performance may be compromised by using alternatives. In some applications, chips may bind between the drill body and the hole wall — especially when machining long-chipping materials like austenitic stainless steel and low-carbon steel.

(does not apply to stub length drills)



diameter D		insert blade	seat size	first choice	alternate body 1	alternate body 2	alternate body 3	alternate body 4
inch	mm							
.492	12,50	KSEM1250	C	KSEM125..M	-	-	-	-
.500	12,70	KSEM0500	C	KSEM0500..	KSEM125..M	-	-	-
.509	12,93	KSEM0509	C	KSEM0509..	KSEM0500..	KSEM125..M	-	-
.512	13,00	KSEM1300	C	KSEM130..M	KSEM0509..	KSEM0500..	KSEM125..M	-
.516	13,10	KSEM0516	C	KSEM0516..	KSEM130..M	KSEM0509..	KSEM0500..	-
.531	13,50	KSEM1350	C	KSEM135..M	KSEM0531..	KSEM0516..	KSEM130..M	-
.547	13,89	KSEM0547	B	KSEM0547..	KSEM136..M	-	-	-
.551	14,00	KSEM1400	B	KSEM140..M	KSEM136..M	KSEM0547..	-	-
.563	14,29	KSEM0563	B	KSEM0563..	KSEM140..M	KSEM0547..	-	-
.571	14,50	KSEM1450	B	KSEM145..M	KSEM0563..	KSEM140..M	-	-
.578	14,68	KSEM0578	A	KSEM0578..	KSEM146..M	-	-	-
.591	15,00	KSEM1500	A	KSEM150..M	KSEM146..M	KSEM0578..	-	-
.594	15,08	KSEM0594	A	KSEM0594..	KSEM150..M	KSEM0578..	-	-
.609	15,48	KSEM0609	A	KSEM0609..	KSEM0594..	KSEM150..M	-	-
.610	15,50	KSEM1550	A	KSEM155..M	KSEM0609..	KSEM0594..	KSEM150..M	-
.625	15,88	KSEM0625	1	KSEM0625..	-	-	-	-
.630	16,00	KSEM1600	1	KSEM160..M	KSEM0625..	-	-	-
.634	16,09	KSEM0634	1	KSEM0634..	KSEM160..M	KSEM0625..	-	-
.641	16,27	KSEM0641	1	KSEM0641..	KSEM0634..	KSEM160..M	KSEM0625..	-
.650	16,50	KSEM1650	1	KSEM165..M	KSEM0641..	KSEM0634..	-	-
.656	16,67	KSEM0656	1	KSEM0656..	KSEM165..M	KSEM0641..	-	-
.669	17,00	KSEM1700	1	KSEM170..M	KSEM0656..	KSEM165..M	-	-
.672	17,07	KSEM0672	1	KSEM0672..	KSEM170..M	KSEM0656..	-	-
.688	17,46	KSEM0688	1	KSEM0688..	KSEM0672..	KSEM170..M	-	-
.689	17,50	KSEM1750	1	KSEM175..M	KSEM0688..	KSEM0672..	KSEM170..M	-
.700	17,78	KSEM0700	1	N/A	KSEM175..M	KSEM0688..	-	-
.703	17,86	KSEM0703	1	KSEM0703..	KSEM175..M	KSEM0688..	-	-
.709	18,00	KSEM1800	1	KSEM180..M	KSEM0703..	KSEM175..M	-	-
.719	18,26	KSEM0719	2	KSEM0719..	KSEM181..M	-	-	-
.728	18,50	KSEM1850	2	KSEM185..M	KSEM0719..	KSEM181..M	-	-
.734	18,65	KSEM0734	2	KSEM0734..	KSEM185..M	KSEM0719..	-	-
.748	19,00	KSEM1900	2	KSEM190..M	KSEM0734..	KSEM185..M	-	-
.750	19,05	KSEM0750	2	KSEM0750..	KSEM190..M	KSEM0734..	-	-
.759	19,27	KSEM0759	2	KSEM0759..	KSEM0750..	KSEM190..M	-	-
.766	19,45	KSEM0766	2	KSEM0766..	KSEM0759..	KSEM0750..	KSEM190..M	-
.768	19,50	KSEM1950	2	KSEM195..M	KSEM0766..	KSEM0759..	KSEM0750..	KSEM190..M
.781	19,84	KSEM0781	2	KSEM0781..	KSEM195..M	KSEM0766..	-	-
.787	20,00	KSEM2000	3	KSEM200..M	-	-	-	-
.797	20,24	KSEM0797	3	KSEM0797..	KSEM200..M	-	-	-
.800	20,32	KSEM0800	3	N/A	KSEM0797..	KSEM200..M	-	-
.807	20,50	KSEM2050	3	KSEM205..M	KSEM0797..	KSEM200..M	-	-
.813	20,64	KSEM0813	3	KSEM0813..	KSEM205..M	KSEM0797..	-	-
.827	21,00	KSEM2100	3	KSEM210..M	KSEM0813..	KSEM205..M	-	-
.844	21,43	KSEM0844	3	KSEM0844..	KSEM210..M	-	-	-
.847	21,50	KSEM2150	3	KSEM215..M	KSEM0844..	KSEM210..M	-	-
.859	21,83	KSEM0859	3	KSEM0859..	KSEM215..M	KSEM0844..	-	-
.866	22,00	KSEM2200	3	KSEM220..M	KSEM0859..	KSEM215..M	-	-
.875	22,23	KSEM0875	4	KSEM0875..	KSEM221..M	-	-	-
.884	22,44	KSEM0884	4	KSEM0884..	KSEM0875..	KSEM221..M	-	-
.886	22,50	KSEM2250	4	KSEM225..M	KSEM0884..	KSEM0875..	KSEM221..M	-
.906	23,00	KSEM2300	4	KSEM230..M	KSEM0906..	KSEM225..M	-	-
.922	23,42	KSEM0922	4	KSEM0922..	KSEM230..M	-	-	-
.925	23,50	KSEM2350	4	KSEM235..M	KSEM0922..	KSEM230..M	-	-
.938	23,81	KSEM0938	4	KSEM0938..	KSEM235..M	KSEM0922..	-	-
.945	24,00	KSEM2400	4	KSEM240..M	KSEM0938..	KSEM235..M	-	-

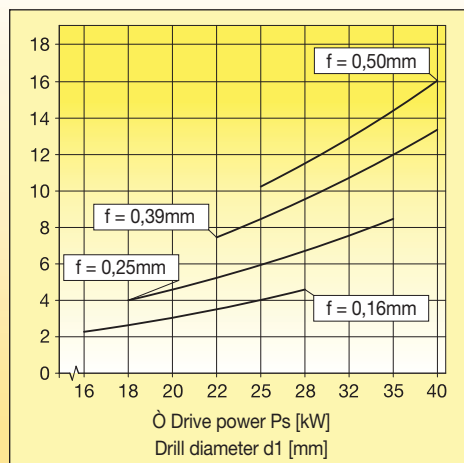
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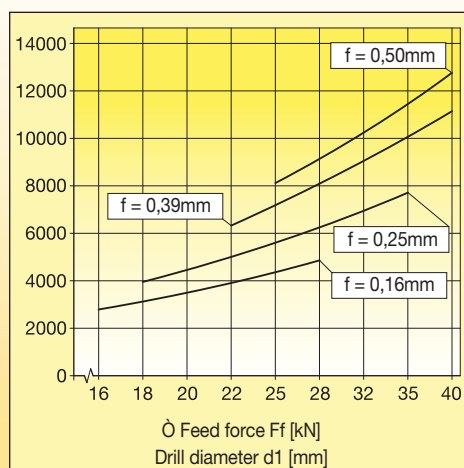
Modular Drills

diameter D		insert blade	seat size	first choice	alternate body 1	alternate body 2	alternate body 3	alternate body 4
inch	mm							
.965	24,50	KSEM2450	5	KSEM245..M	KSEM241..M	-	-	-
.969	24,61	KSEM0969	5	KSEM0969..	KSEM245..M	-	-	-
.984	25,00	KSEM2500	5	KSEM250..M	KSEM0984..	KSEM0969..	KSEM245..M	-
1.000	25,40	KSEM1000	5	KSEM1000..	KSEM250..M	-	-	-
1.004	25,50	KSEM2550	5	KSEM255..M	KSEM1000..	KSEM250..M	-	-
1.011	25,67	KSEM1011	5	KSEM1011..	KSEM255..M	-	-	-
1.024	26,00	KSEM2600	5	KSEM260..M	KSEM1011..	KSEM255..M	-	-
1.031	26,19	KSEM1031	6	KSEM1031..	KSEM261..M	-	-	-
1.043	26,50	KSEM2650	6	KSEM265..M	KSEM1031..	KSEM261..M	-	-
1.047	26,59	KSEM1047	6	KSEM1047..	KSEM265..M	KSEM1031..	KSEM261..M	-
1.063	27,00	KSEM2700	6	KSEM270..M	KSEM1063..	KSEM1047..	KSEM265..M	-
1.083	27,50	KSEM2750	6	KSEM275..M	KSEM270..M	KSEM1063..	-	-
1.094	27,78	KSEM1094	6	KSEM1094..	KSEM275..M	-	-	-
1.102	28,00	KSEM2800	6	KSEM280..M	KSEM1094..	KSEM275..M	-	-
1.109	28,18	KSEM1109	7	KSEM1109..	KSEM281..M	-	-	-
1.122	28,50	KSEM2850	7	KSEM285..M	KSEM1109..	KSEM281..M	-	-
1.125	28,58	KSEM1125	7	KSEM1125..	KSEM285..M	KSEM1109..	KSEM281..M	-
1.142	29,00	KSEM2900	7	KSEM290..M	KSEM1125..	KSEM285..M	-	-
1.156	29,37	KSEM1156	7	KSEM1156..	KSEM290..M	-	-	-
1.161	29,50	KSEM2950	7	KSEM295..M	KSEM1156..	KSEM290..M	-	-
1.172	29,77	KSEM1172	7	KSEM1172..	KSEM295..M	KSEM1156..	-	-
1.181	30,00	KSEM3000	7	KSEM300..M	KSEM1172..	KSEM295..M	-	-
1.188	30,16	KSEM1188	8	KSEM1188..	KSEM301..M	-	-	-
1.201	30,50	KSEM3050	8	KSEM305..M	KSEM1188..	KSEM301..M	-	-
1.203	30,56	KSEM1203	8	KSEM1203..	KSEM305..M	KSEM1188..	KSEM301..M	-
1.219	30,96	KSEM1219	8	KSEM1219..	KSEM1203..	KSEM305..M	-	-
1.220	31,00	KSEM3100	8	KSEM310..M	KSEM1219..	KSEM1203..	KSEM305..M	-
1.240	31,50	KSEM3150	8	KSEM315..M	KSEM310..M	-	-	-
1.250	31,75	KSEM1250	8	KSEM1250..	KSEM315..M	-	-	-
1.260	32,00	KSEM3200	8	KSEM320..M	KSEM1250..	KSEM315..M	-	-
1.280	32,50	KSEM3250	9	-	KSEM321..M	-	-	-
1.281	32,54	KSEM1281	9	KSEM1281..	KSEM321..M	-	-	-
1.297	32,94	KSEM1297	9	KSEM1297..	KSEM1281..	-	-	-
1.299	33,00	KSEM3300	9	KSEM330..M	KSEM1297..	KSEM1281..	-	-
1.313	33,34	KSEM1313	9	KSEM1313..	KSEM330..M	KSEM1297..	-	-
1.319	33,50	KSEM3350	9	-	-	KSEM1313..	KSEM330..M	-
1.328	33,73	KSEM1328	9	KSEM1328..	KSEM1313..	-	-	-
1.339	34,00	KSEM3400	9	KSEM340..M	KSEM1328..	-	-	-
1.344	34,13	KSEM1344	9	KSEM1344..	KSEM340..M	KSEM1328..	-	-
1.358	34,50	KSEM3450	9	-	-	KSEM1344..	KSEM340..M	-
1.375	34,93	KSEM1375	9	KSEM1375..	-	-	-	-
1.378	35,00	KSEM3500	9	KSEM350..M	KSEM1375..	-	-	-
1.398	35,50	KSEM3550	9	-	-	KSEM350..M	-	-
1.406	35,72	KSEM1406	9	KSEM1406..	-	-	-	-
1.417	36,00	KSEM3600	9	KSEM360..M	KSEM1406..	-	-	-
1.422	36,12	KSEM1422	10	KSEM1422..	KSEM361..M	-	-	-
1.437	36,50	KSEM3650	10	-	-	KSEM1422..	KSEM361..M	-
1.438	36,51	KSEM1438	10	KSEM1438..	KSEM1422..	KSEM361..M	-	-
1.457	37,00	KSEM3700	10	KSEM370..M	KSEM1438..	-	-	-
1.469	37,31	KSEM1469	10	KSEM1469..	KSEM370..M	-	-	-
1.476	37,50	KSEM3750	10	-	-	KSEM1469..	KSEM370..M	-
1.496	38,00	KSEM3800	10	KSEM380..M	-	-	-	-
1.500	38,10	KSEM1500	10	KSEM1500..	KSEM380..M	-	-	-
1.514	38,46	KSEM1514	10	KSEM1514..	KSEM1500..	KSEM380..M	-	-
1.516	38,50	KSEM3850	10	-	-	KSEM1514..	KSEM1500..	KSEM380..M
1.535	39,00	KSEM3900	10	KSEM390..M	-	-	-	-
1.555	39,50	KSEM3950	10	-	-	KSEM390..M	-	-
1.575	40,00	KSEM4000	10	KSEM400..M	-	-	-	-

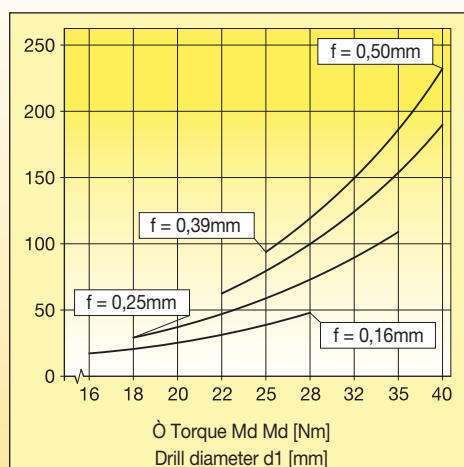
Drive Power (kW)



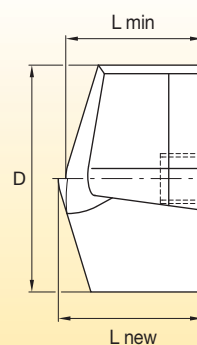
Feed Force (kN)



Torque (Nm)



NOTE: The diagrams above are used to determine the drive power, feed force, and torque. They are based on cutting force measurement in tempered steels in Cgr. 6. Tensile strength: $R_m = 600 \text{ N/mm}^2$. The base cutting speed used is: $v_c = 80 \text{ m/min}$.



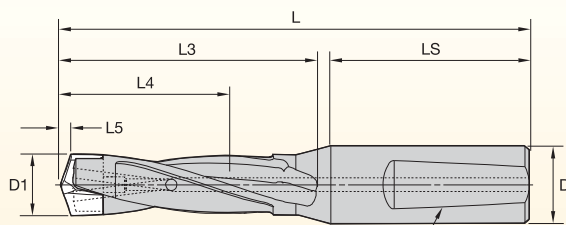
The following coolant pressure is recommended:

relative drilling depth	coolant pressure
1–3 x D	8 bars
5 x D	12 bars
7 x D	20 bars
10 x D	30 bars

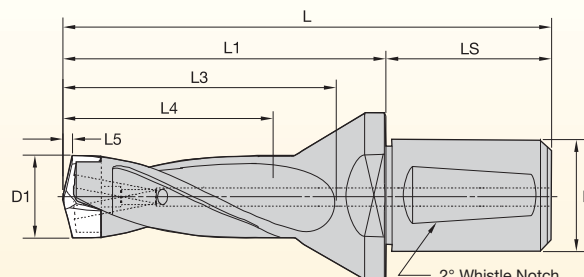
insert seat size	diameter range D (mm)	L min. (mm)	L new (mm)
C	12,50–13,50	8,5	9,6
B	13,51–14,50	8,9	10,1
A	14,51–15,88	9,4	10,6
1	15,88–18,00	10,3	11,6
2	18,01–19,99	11,2	12,6
3	20,00–22,00	12,1	13,6
4	22,01–24,00	13,0	14,6
5	24,01–26,00	13,9	15,6
6	26,01–28,00	14,8	16,6
7	28,01–30,00	15,7	17,6
8	30,01–32,00	16,6	18,6
9	32,01–36,00	18,4	20,6
10	36,01–40,00	20,2	22,6

Modular Drills • Dimension Tables

■ Dimensions for KSEM™ Whistle Notch Shank • WN/WD 3 x D to 10 x D • Metric



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



Whistle Notch shank with Drive D1 ≥ 32mm

D1		WN/WD Shank Metric								WN Shank Metric					
		3 x D				5 x D				7 x D			10 x D		
mm	inch	L	L1	L4 max	wrench	L	L1	L4 max	wrench	L	L4 max	wrench	L	L4 max	wrench
12,50	.4921	111	—	42	170.294	139	—	70	170.294	167	98	170.295	195	125	170.296
13,00	.5118	111	—	42	170.294	139	—	70	170.294	167	98	170.295	200	130	170.296
13,50	.5315	111	—	42	170.294	139	—	70	170.294	167	98	170.295	205	135	170.296
13,51	.5319	111	—	42	170.289	139	—	70	170.289	167	98	170.290	205	135	170.291
14,00	.5512	111	—	42	170.289	139	—	70	170.289	167	98	170.290	210	140	170.291
14,50	.5709	122	—	48	170.289	154	—	80	170.289	186	112	170.290	220	145	170.291
14,51	.5713	122	—	48	170.289	154	—	80	170.289	186	112	170.290	220	145	170.291
15,00	.5906	122	—	48	170.289	154	—	80	170.289	186	112	170.290	225	150	170.291
15,50	.6102	122	—	48	170.289	154	—	80	170.289	186	112	170.290	230	155	170.291
16,00	.6299	122	—	48	170.270	154	—	80	170.270	186	112	170.270	234	160	170.271
16,50	.6496	130	—	54	170.270	166	—	90	170.270	202	126	170.271	241	165	170.281
17,00	.6693	130	—	54	170.270	166	—	90	170.270	202	126	170.271	246	170	170.281
17,50	.6890	130	—	54	170.270	166	—	90	170.270	202	126	170.271	251	175	170.281
18,00	.7087	130	—	54	170.270	166	—	90	170.270	202	126	170.271	256	180	170.281
18,01	.7091	—	—	—	—	184	—	100	170.270	—	—	170.271	269	185	170.281
18,50	.7283	144	—	60	170.270	184	—	100	170.270	224	140	170.271	269	185	170.281
19,00	.7480	144	—	60	170.270	184	—	100	170.270	224	140	170.271	274	190	170.281
19,50	.7677	144	—	60	170.270	184	—	100	170.270	224	140	170.271	279	195	170.281
20,00	.7874	153	—	60	170.272	197	—	100	170.272	241	140	170.273	297	200	170.282
20,50	.8071	153	—	66	170.272	197	—	110	170.272	241	154	170.273	297	205	170.282
21,00	.8268	153	—	66	170.272	197	—	110	170.272	241	154	170.273	297	210	170.282
21,50	.8465	153	—	66	170.272	197	—	110	170.272	241	154	170.273	307	215	170.282
22,00	.8661	153	—	66	170.272	197	—	110	170.272	241	154	170.273	307	220	170.282
22,01	.8665	—	—	—	—	209	—	120	170.272	—	—	170.273	319	225	170.282
22,50	.8858	161	—	72	170.272	209	—	120	170.272	257	168	170.273	319	225	170.282
23,00	.9055	161	—	72	170.272	209	—	120	170.272	257	168	170.273	319	230	170.282
23,50	.9252	161	—	72	170.272	209	—	120	170.272	257	168	170.273	329	235	170.282
24,00	.9449	161	—	72	170.272	209	—	120	170.272	257	168	170.273	329	240	170.282
24,01	.9453	—	—	—	—	226	—	130	170.274	—	—	—	346	245	170.283
24,50	.9646	174	—	78	170.274	226	—	130	170.274	278	182	170.275	346	245	170.283
25,00	.9843	174	—	78	170.274	226	—	130	170.274	278	182	170.275	346	250	170.283
25,50	10.039	174	—	78	170.274	226	—	130	170.274	278	182	170.275	356	255	170.283
26,00	10.236	174	—	78	170.274	226	—	130	170.274	278	182	170.275	356	260	170.283
26,01	10.240	—	—	—	—	238	—	140	170.274	—	—	170.275	363	265	170.283
26,50	10.433	182	—	84	170.274	238	—	140	170.274	294	196	170.275	363	265	170.283
27,00	10.630	182	—	84	170.274	238	—	140	170.274	294	196	170.275	368	270	170.283
27,50	10.827	182	—	84	170.274	238	—	140	170.274	294	196	170.275	378	275	170.283
28,00	11.024	182	—	84	170.274	238	—	140	170.274	294	196	170.275	378	280	170.283
28,02	11.028	—	—	—	—	250	—	150	170.276	—	—	—	390	285	170.284
28,50	11.220	190	—	90	170.276	250	—	150	170.276	310	210	170.277	390	285	170.284
29,00	11.417	190	—	90	170.276	250	—	150	170.276	310	210	170.277	390	290	170.284
29,50	11.614	190	—	90	170.276	250	—	150	170.276	310	210	170.277	400	295	170.284

(continued)

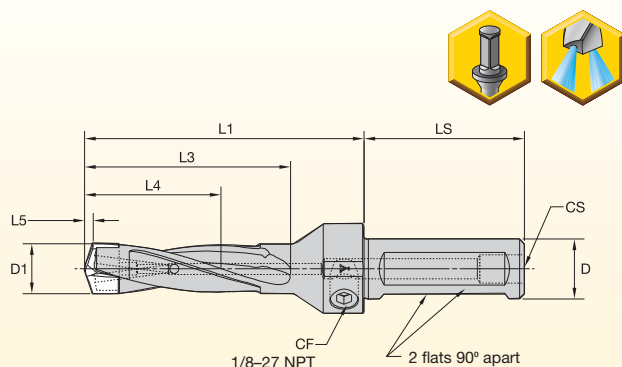
Modular Drills • Dimension Tables *(continued)*
■ Dimensions for KSEM™ Whistle Notch Shank • WN/WD 3 x D to 10 x D • Metric


D1		WN/WD Shank Metric								WN Shank Metric					
		3 x D				5 x D				7 x D			10 x D		
		L	L1	L4 max	wrench	L	L1	L4 max	wrench	L	L4 max	wrench	L	L4 max	wrench
30,00	11.811	190	—	90	170.276	250	—	150	170.276	310	210	170.277	400	300	170.284
30,01	11.815	—	—	—	—	264	—	160	170.276	—	—	170.277	414	305	170.284
30,50	12.008	200	—	96	170.276	264	—	160	170.276	328	224	170.277	—	—	—
31,00	12.205	200	—	96	170.276	264	—	160	170.276	328	224	170.277	414	310	170.284
31,50	12.402	200	—	96	170.276	264	—	160	170.276	328	224	170.277	—	—	—
32,00	12.598	200	—	96	170.276	264	—	160	170.276	328	224	170.277	424	320	170.284
32,01	12.602	220	159	99	170.276	293	225	165	170.277	—	—	—	—	—	—
33,00	12.992	227	159	99	170.276	293	225	165	170.277	—	—	—	—	—	—
34,00	13.386	225	157	102	170.276	293	225	170	170.277	—	—	—	—	—	—
35,00	13.780	235	167	105	170.276	305	237	175	170.277	—	—	—	—	—	—
36,00	14.173	233	165	108	170.276	305	237	180	170.277	—	—	—	—	—	—
36,01	14.177	237	176	111	170.276	318	250	185	170.277	—	—	—	—	—	—
37,00	14.567	244	176	111	170.276	318	250	185	170.277	—	—	—	—	—	—
38,00	14.961	242	174	114	170.276	318	250	190	170.277	—	—	—	—	—	—
39,00	15.354	252	184	117	170.276	330	262	195	170.277	—	—	—	—	—	—
40,00	15.748	250	182	120	170.276	330	262	200	170.277	—	—	—	—	—	—

(continued)

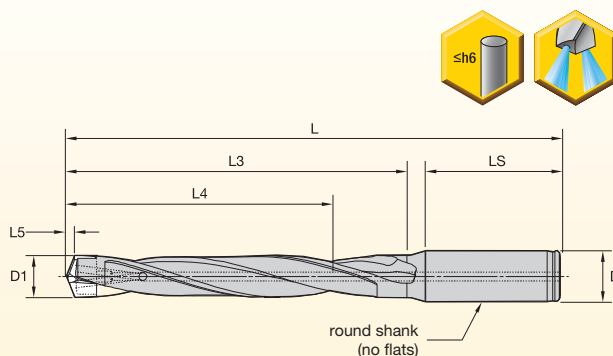
Modular Drills • Dimension Tables (continued)

■ Dimensions for KSEM Flanged Shank • 5 x D/8 x D • Inch



D1		5 x D			8 x D		
mm	inch	L1	L4 max	wrench	L1	L4 max	wrench
12,700	.5000	3.94	2.50	170.294	—	—	—
12,929	.5090	4.00	2.55	170.294	—	—	—
13,106	.5160	4.00	2.58	170.294	—	—	—
13,487	.5310	4.13	2.66	170.294	—	—	—
13,894	.5470	4.13	2.73	170.289	—	—	—
14,300	.5630	4.25	2.81	170.289	—	—	—
14,681	.5780	4.31	2.89	170.289	—	—	—
15,088	.5940	4.38	2.97	170.289	—	—	—
15,469	.6090	4.5	3.05	170.289	—	—	—
15,875	.6250	4.75	3.15	170.270	6.25	5.00	170.271
17,463	.6875	5.25	3.54	170.270	7.00	5.50	170.271
19,050	.7500	5.88	3.94	170.271	7.50	6.00	170.281
19,050	.7500	6.00	3.94	170.271	7.50	6.00	170.281
20,637	.8125	6.25	4.33	170.273	8.00	6.50	170.282
20,638	.8125	6.25	4.33	170.273	—	—	170.282
22,225	.8750	6.63	4.72	170.273	8.50	7.00	170.282
22,225	.8750	6.75	4.72	170.273	8.50	7.00	170.282
23,813	.9375	6.63	4.72	170.273	9.13	7.50	170.282
24,606	.9688	7.13	5.12	170.275	—	—	—
25,003	.9844	7.13	5.12	170.275	9.50	7.88	170.283
25,400	1.0000	7.25	5.12	170.275	9.63	8.00	170.283
25,400	1.0000	7.25	5.12	170.275	9.63	8.00	170.283
26,988	1.0625	7.63	5.51	170.275	10.25	8.50	170.283
28,575	1.1250	8.13	5.91	170.277	10.75	9.00	170.284
30,163	1.1875	8.50	6.30	170.277	11.38	9.50	170.284
31,750	1.2500	8.50	6.30	170.277	11.88	10.00	170.284
31,750	1.2500	8.75	6.30	170.277	11.88	10.00	170.284

■ Dimensions for KSEM Round Shank • 7 x D/10 x D • Inch



D1		7 x D			10 x D		
mm	inch	L1	L4 max	wrench	L1	L4 max	wrench
12,70	.5000	5.63	3.50	170.295	7.75	5.00	170.296
12,70	.5000	6.13	3.50	170.295	—	—	—
12,93	.5090	6.25	3.56	170.295	7.88	5.09	170.296
13,10	.5160	6.25	3.61	170.295	8.00	5.16	170.296
13,49	.5310	6.38	3.72	170.295	8.13	5.31	170.296
13,89	.5470	6.50	3.83	170.290	8.25	5.47	170.291
14,29	.5630	6.63	3.94	170.290	8.38	5.63	170.291
14,68	.5780	6.75	4.05	170.290	8.50	5.78	170.291
15,08	.5940	6.88	4.16	170.290	8.75	5.94	170.291
15,48	.6090	7.00	4.27	170.290	8.88	6.09	170.291
15,88	.6250	7.38	4.41	170.270	9.00	6.25	170.281
16,10	.6335	8.00	4.59	170.271	9.13	6.34	170.281
16,67	.6563	8.00	4.96	170.271	9.38	6.56	170.281
17,46	.6875	8.00	4.96	170.271	9.75	6.88	170.281
18,25	.7188	8.88	5.51	170.271	10.25	7.19	170.281
19,05	.7500	8.88	5.51	170.271	10.50	7.50	170.281
19,05	.7500	9.88	5.51	170.281	11.50	7.50	170.281
19,28	.7585	8.88	5.51	170.271	—	—	—
19,28	.7585	—	—	—	11.50	7.59	170.281
19,85	.7813	9.88	5.51	170.281	11.75	7.81	170.281
20,64	.8125	10.25	6.06	170.273	12.13	8.13	170.282
21,43	.8438	10.25	6.06	170.273	12.50	8.44	170.282
22,23	.8750	10.88	6.61	170.282	12.75	8.75	170.282
22,23	.8750	11.13	6.61	170.282	—	—	—
22,45	.8835	10.88	6.61	170.282	12.88	8.84	170.282
23,02	.9063	10.88	6.61	170.282	13.13	9.06	170.282
23,81	.9375	10.88	6.61	170.282	13.44	9.38	170.282
24,61	.9688	11.63	7.17	170.275	13.88	9.69	170.283
25,00	.9844	11.63	7.17	170.283	14.00	9.84	170.283
25,40	1.0000	11.63	7.17	170.283	14.13	10.00	170.283
25,40	1.0000	11.88	7.17	170.283	14.38	10.00	170.283
25,68	1.0105	12.25	7.08	170.283	14.50	10.11	170.283
26,20	1.0313	12.50	7.72	170.283	14.75	10.31	170.283
26,99	1.0625	12.50	7.72	170.283	15.13	10.63	170.283
27,78	1.0938	12.50	7.72	170.283	15.50	10.94	170.283
28,58	1.1250	13.13	8.27	170.284	15.75	11.25	170.284
29,37	1.1563	13.13	8.27	170.284	16.13	11.56	170.284
30,16	1.1875	13.75	8.82	170.284	16.50	11.88	170.284
30,96	1.2188	13.75	8.82	170.284	16.88	12.19	170.284
31,75	1.2500	13.75	8.82	170.284	17.13	12.50	170.284
31,75	1.2500	14.25	8.82	170.284	17.63	12.50	170.284

(continued)

Modular Drills • Dimension Tables *(continued)*

■ **Dimensions for KSEM Round Shank • 3 x D/5 x D • Inch**



D1		3 x D			5 x D		
mm	inch	L1	L4 max	wrench	L1	L4 max	wrench
12,700	.5000	—	—	170.294	4.63	2.50	170.294
12,700	.5000	4.13	1.50	170.294	5.13	2.50	170.294
12,929	.5090	4.25	1.53	170.294	5.25	2.55	170.294
13,106	.5160	—	—	170.294	5.25	2.58	170.294
13,487	.5310	4.25	1.59	170.294	5.38	2.66	170.294
13,894	.5470	4.38	1.64	170.289	5.44	2.73	170.289
14,300	.5630	4.38	1.69	170.289	5.50	2.81	170.289
14,681	.5780	4.50	1.73	170.289	5.63	2.89	170.289
15,088	.5940	4.50	1.78	170.289	5.75	2.97	170.289
15,469	.6090	4.63	1.83	170.289	5.88	3.05	170.289
15,875	.6250	4.63	1.88	170.270	6.00	3.15	170.270
16,091	.6335	—	—	170.270	6.50	3.54	170.270
16,104	.6340	4.75	1.90	170.270	—	—	170.270
16,281	.6410	4.75	1.92	170.270	6.50	3.54	170.270
16,662	.6560	4.88	1.97	170.270	—	—	170.270
16,669	.6563	—	—	170.270	6.50	3.54	170.270
17,069	.6720	4.88	2.02	170.270	6.50	3.54	170.270
17,463	.6875	4.88	2.06	170.270	6.50	3.54	170.270
17,856	.7030	5.00	2.11	170.270	6.50	3.54	170.270
18,256	.7188	—	—	170.270	7.25	3.94	170.270
18,263	.7190	5.00	2.16	170.270	—	—	170.270
18,644	.7340	5.13	2.20	170.270	7.25	3.94	170.270
19,050	.7500	6.13	2.25	170.270	8.25	3.94	170.271
19,050	.7500	5.13	2.25	170.270	7.25	3.94	170.270
19,279	.7585	5.25	2.28	170.270	7.25	3.94	170.270
19,456	.7660	6.25	2.30	170.270	8.25	3.94	170.271
19,845	.7813	6.25	2.34	170.270	8.13	3.94	170.271
19,837	.7810	—	—	—	—	—	170.271
20,244	.7970	6.38	2.39	170.272	8.50	4.33	170.272
20,638	.8125	6.38	2.44	170.272	8.50	4.33	170.272
21,431	.8438	—	—	170.272	8.50	4.33	170.272
21,438	.8440	6.50	2.53	170.272	—	—	170.272
21,829	.8590	6.63	2.58	170.272	8.50	4.33	170.272
21,819	.8590	—	—	170.272	—	—	170.272
22,225	.8750	6.88	2.63	170.272	9.00	4.72	170.273
22,225	.8750	6.63	2.63	170.272	9.25	4.72	170.273
22,454	.8835	6.75	2.65	170.272	9.00	4.72	170.273
22,454	.8840	—	—	170.272	—	—	170.273
23,012	.9060	6.75	2.72	170.272	—	—	170.273
23,019	.9063	—	—	170.272	9.00	4.72	170.273

D1		3 x D			5 x D		
mm	inch	L1	L4 max	wrench	L1	L4 max	wrench
23,419	.9220	6.88	2.77	170.272	9.00	4.72	170.273
23,813	.9375	6.88	2.81	170.272	9.00	4.72	170.273
24,606	.9688	—	—	170.272	9.50	5.12	170.274
24,613	.9690	7.00	2.91	170.274	—	—	170.274
25,003	.9844	7.13	2.95	170.274	9.50	5.12	170.274
25,400	1.0000	7.13	3.00	170.274	9.75	5.12	170.274
25,400	1.0000	—	—	170.274	9.50	5.12	170.274
25,679	1.0105	—	—	170.274	10.00	5.06	170.274
25,679	1.0110	7.50	3.03	170.274	—	—	—
26,187	1.0310	7.50	3.09	170.274	—	—	—
26,195	1.0313	—	—	170.274	10.25	5.51	170.275
26,594	1.0470	—	—	170.274	10.25	5.51	170.275
26,988	1.0625	7.63	3.19	170.274	10.25	5.51	170.275
27,781	1.0938	—	—	170.276	10.25	5.51	170.275
28,169	1.1090	7.88	3.33	170.274	10.75	5.91	170.276
28,575	1.1250	7.88	3.38	170.276	10.75	5.91	170.276
29,362	1.1560	8.00	3.47	170.276	—	—	—
29,370	1.1563	—	—	170.276	10.75	5.91	170.276
29,769	1.1720	8.13	3.52	170.276	10.75	5.91	170.276
30,163	1.1875	8.13	3.56	170.276	11.25	6.30	170.277
30,556	1.2030	—	—	170.276	11.25	6.30	170.277
30,958	1.2188	—	—	170.276	11.25	6.30	170.277
30,963	1.2190	8.25	3.66	170.276	—	—	—
31,750	1.2500	8.38	3.75	170.276	11.75	6.30	170.277
31,750	1.2500	8.88	3.75	170.276	11.25	6.30	170.277
32,537	1.2810	9.00	3.84	170.276	12.50	6.41	170.277
32,941	1.2970	—	—	170.276	12.50	6.48	170.277
32,944	1.2970	9.13	3.89	170.276	—	—	—
33,350	1.3130	9.13	3.94	170.276	12.50	6.56	170.277
33,731	1.3280	9.25	3.98	170.276	—	—	—
33,734	1.3280	—	—	170.276	12.50	6.64	170.277
34,138	1.3440	—	—	170.276	13.00	6.72	170.277
34,925	1.3750	9.38	4.13	170.276	13.00	6.87	170.277
35,712	1.4060	9.50	4.22	170.276	13.00	7.03	170.277
36,119	1.4220	—	—	170.276	13.50	7.11	170.277
36,513	1.4380	—	—	170.276	13.50	7.19	170.277
36,525	1.4380	9.63	4.31	170.276	—	—	—
37,313	1.4690	—	—	170.276	13.50	7.34	170.277
38,100	1.5000	9.88	4.50	170.276	13.50	7.50	170.277
38,456	1.5140	10.00	4.54	170.276	13.50	7.57	170.277

➤ KGEM Tube Sheet Grooving Tool

Primary Application

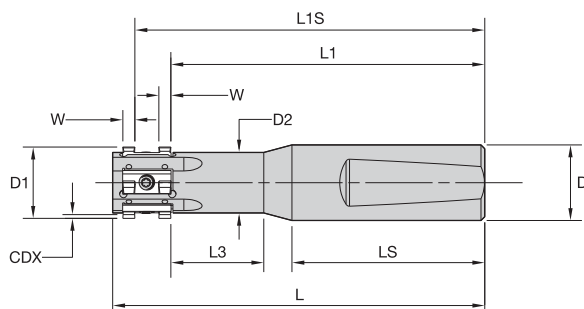
The new Kennametal grooving tool features a unique approach for manufacturing two grooves simultaneously in minimal time, especially in heat exchanger manufacturing. All tubes need a finish operation to connect them. This new grooving insert features a geometry designed for bur-free cutting and is made with KCU45™, a special grade for machining a wide variety of materials in the heat exchanger industry, including A516-grade 70 low-carbon steel, 304 stainless steel, duplex, and Hastelloy®. The minimal amount of tungsten carbide in the insert eliminates the need for refurbishment, enabling the tool to work faster with a lower cost per hole.

Features and Benefits

Higher Productivity and Profitability

- Two edges per insert.
- Up to four inserts working at the same time.
- Rigid tool body design for highest productivity and grooving quality.
- Milling tool for maximum flexibility in hole diameter and interrupted cut for chip control.
- KCU45 grade for machining a variety of materials used for heat exchangers.
- Internal coolant supply for optimal tool life, groove quality, and chip evacuation.
- One-path-to-finish tool.
- Flexibility in groove position.

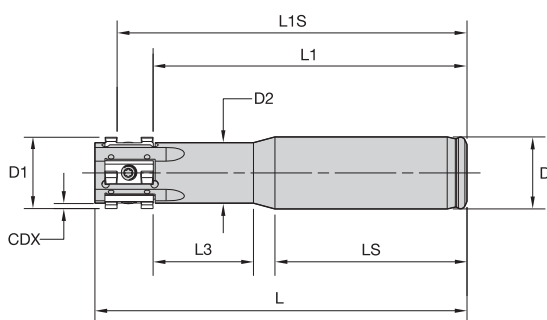




■ KGEM Groover Body • Metric

order number	catalog number												insert screw
		D1		D									
		mm	in	D2	mm	in	L	LS	L1	L1S	L3	CDX	
5408657	KGEM1588R1WN20M	15,88	.625	13,50	20,00	.787	101,00	51,00	85,00	94,52	25,63	1,00	MS1861
5134143	KGEM1905R1WN20M	18,87	.743	16,00	20,00	.787	98,42	50,80	83,03	92,55	24,58	1,00	MS1861
5134145	KGEM1905R3WN20M	18,87	.743	16,00	20,00	.787	123,82	50,80	108,44	117,96	49,99	1,00	MS1861

NOTE: The above dimensions are used when ordering engineered-solution reamers on this page unless otherwise specified.

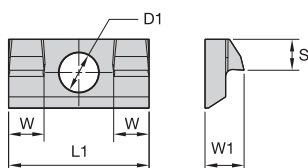


■ KGEM Groover Body • Inch

order number	catalog number	D1		D2	D	L	LS	L1	L1S	L3	CDX	insert screw
		mm	in									
5134142	KGEM0750R1SS075	18,87	.743	.63	.75	3 7/8	2.000	3.269	3.644	1.045	.039	MS1861
5134144	KGEM0750R3SS075	18,87	.743	.63	.75	4 7/8	2.000	4.269	4.644	2.045	.039	MS1861

NOTE: The above dimensions are used when ordering engineered-solution reamers on this page unless otherwise specified.





- first choice
- alternate choice

P	●
M	●
K	●
N	●
S	●
H	●

Modular Drills

■ KGEM Groover Insert

order number	catalog number	D1		W1		W		S		KCU45
		mm	in	mm	in	mm	in	mm	in	
5134141	KGIP0125N0189GD	2,80	.110	3,56	.140	3,18	.125	2,82	.111	●
5986819	KGIP0300N0189GD	2,80	.110	3,56	.140	3,00	.118	2,82	.111	●

Application Data

P	A516-Grade70
M	304SS/Duplex
S	Hastelloy

■ KGEM Tube Sheet Groover • KGIP GD Geometry • Grade KCU45™ • Through Coolant • Metric

Material Group	fz (mm/tooth)	tooth	RPM	vc (m/min)	VFC (mm/min)	VFL (mm/min)	DH (mm)	DT (mm)
P	0,05–0,075	4	1300–1500	77–89	2,46–4,27	264–457	19,05	18,87
M	0,05–0,075	4	600–900	35–53	1,70–2,57	183–274	19,05	18,87
S	0,05–0,075	4	250–300	15–18	0,48–0,86	51–91	19,05	18,87

■ KGEM Tube Sheet Groover • KGIP GD Geometry • Grade KCU45 • Through Coolant • Inch

Material Group	fz (inch/tooth)	tooth	RPM	vc (SFM)	VFC (inch/min)	VFL (inch/min)	DH (inch)	DT (inch)
P	0.002–0.003	4	1300–1500	252–291	0.097–0.168	10.4–18.0	0.75	0.743
M	0.002–0.003	4	600–900	116–174	0.067–0.101	7.2–10.8	0.75	0.743
S	0.002–0.003	4	250–300	48–58	0.019–0.034	2.0–3.6	0.75	0.743

Nomenclature:

fz: feed per tooth

VFL: linear feed rate = fz x number of tooth x RPM

VFC: compensated feed = VFL x (DH - DT)/DH

DT: tool diameter

DH: hole diameter

NOTE: Choose low-feed (fz) for long tools and less rigid machine tools.

Choose low RPM for lower coolant.