

Engineering Your
Competitive Edge



KSEM™ HPL(M) Inserts for Unmatched Performance and Reliability in Modular Drilling

NEW!



...engineered specifically for high-speed and high-feed drilling of austenitic stainless steel!

- Faster drilling and fewer insert changes!
- Up to 10 x D using standard tool bodies!
- Secure machining processes in difficult-to-machine materials in challenging operations!
- Disposable insert eliminates the need for tool reconditioning. Turn your used inserts into cash or credit with Kennametal's Carbide Recycling Program!

**Up to 100% Higher Metal Removal Rate
AND 200% Longer Tool Life!**

Kennametal's KSEM modular drill system is your cost-effective, high-productivity holemaking solution!

Distributed by:

Kennametal will significantly improve your holemaking performance!

 **KENNAMETAL®**
Engineering Your Competitive Edge

Markets and Applications

- Designed for machining austenitic stainless steels.
- Ideally suited for applications in the Flange, Chemical, Food, Oil and Gas, Power Generation, and General Engineering industries.

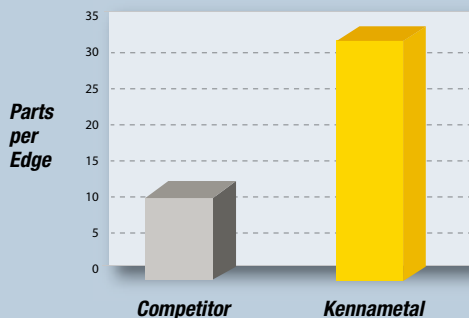
Featured Application

Drilling a Cylinder

Operation:	7xD deep-hole drilling
Customer:	General Engineering
Workpiece:	Cylinder
Material:	1.4301; X5CrNi18-9; AISI 304
Solution:	KSEM2850HPLM KC7320
Results:	<ul style="list-style-type: none"> • Double the productivity! • More than 3 times longer tool life!

	COMPETITOR	KENNAMETAL
grade:	...	KC7320
diameter:	28,5 mm/1.122 in	28,5 mm/1.122 in
insert:	...	KSEM2850HPLM
tool body:	7xD (drilling prefinished hole)	KSEM285R10WN32M 10xD
speed:	50 m/min 165 SFM	50 m/min 165 SFM
feed:	0,1 mm/rev .004 IPR	0,2 mm/rev .008 IPR
depth of hole:	200 mm/7.843 in	200 mm/7.843 in
parts per insert:	10	>32

Over 200% increase in tool life at double the feed rate!



Engineering Your Competitive Edge

NEW!

- **Confidence-building performance:**
Eliminate chip packing, reduce machining noise, and get excellent hole quality.
- **Unparalleled cutting data:**
Increase metal removal rates far above conventional tooling.
- **Outstanding tool life results:**
200% longer tool life compared to conventional modular drilling technology.
- **New wear-resistant KC7320™ grade:**
Provides high-speed capability, reduces cycle times, and increases tool life by 200%.
- **HPL(M) point grinding:**
Creates four chips instead of the conventional two, providing constant chip flow and reducing machining noise.
- **Unique chip form generated:**
Enables superior length-to-diameter capability, delivers outstanding hole quality, and prevents premature tool body wear.



Cutting Data

Select the Cutting Speed

Cutting Groups	Material Group	Composition Structure	Tensile Strength RM (Mpa)	Hardness HB	Cutting Speed vc: m/min / sfm			
					Stable	Normal	Unstable	Interrupted Cut
14.1	Stainless Steel	Austenitic	610	180	90 300	80 260	50 160	30 100
		Austenitic/Ferritic (duplex)	880	260	60 200	50 160	40 130	20 70

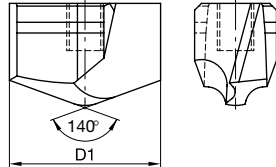
Select the Cutting Feed

Cutting Groups	Material Group	Composition Structure	Feed Rate Per Revolution by Drill Diameter (D) mm/rev / ipr						
			12.5 .492	16 .630	20 .787	22 .866	26 1.024	32 1.260	40 1.574
14.1	Stainless Steel	Austenitic	0,09 - 0,14 .0035 - .0055	0,11 - 0,17 .0043 - .0067	0,13 - 0,20 .0051 - .0079	0,14 - 0,22 .0055 - .0087	0,16 - 0,25 .0063 - .0098	0,18 - 0,28 .0071 - .0110	0,21 - 0,31 .0083 - .0122
		Austenitic/Ferritic (duplex)	0,09 - 0,14 .0035 - .0055	0,11 - 0,17 .0043 - .0067	0,13 - 0,20 .0051 - .0079	0,14 - 0,22 .0055 - .0087	0,16 - 0,25 .0063 - .0098	0,18 - 0,28 .0071 - .0110	0,21 - 0,31 .0083 - .0122

Choose feed rate based on the tool body length. Shorter tool bodies allow higher feed rates; longer tool bodies require lower feed rates.

KSEM™ HPL(M) Insert Blades

Carbide Insert – Inch and Metric



D1 Tolerance h8

metric		inch	
D1	Tolerance	D1	Tolerance
12,5 - 18,0	0,000 / -0,027	.500 - .709	.0000 / -.0010
>18,0 - 30,0	0,000 / -0,033	>.709 - 1.181	.0000 / -.0013
>30,0 - 40,0	0,000 / -0,039	>1.81 - 1.575	.0000 / -.0015

D1 mm	D1 inch	order number	ISO catalog number	ANSI catalog number	KC7320	seat size series
12,50	.492	3380488	KSEM1250HPLM	KSEM1250HPLM	•	C
12,60	.496	3380489	KSEM1260HPLM	KSEM1260HPLM	•	C
12,70	.500	3380490	KSEM1270HPLM	KSEM0500HPL	•	C
12,80	.504	3380491	KSEM1280HPLM	KSEM1280HPLM	•	C
12,93	.509	3380492	KSEM1293HPLM	KSEM0509HPL	•	C
13,00	.512	3381103	KSEM1300HPLM	KSEM1300HPLM	•	C
13,10	.516	3381634	KSEM1311HPLM	KSEM0515HPL	•	C
13,50	.531	3381104	KSEM1350HPLM	KSEM1350HPLM	•	C
13,60	.535	3381105	KSEM1360HPLM	KSEM1360HPLM	•	B
13,80	.543	3381106	KSEM1380HPLM	KSEM1380HPLM	•	B
13,89	.547	3381107	KSEM1389HPLM	KSEM0547HPL	•	B
14,00	.551	3381108	KSEM1400HPLM	KSEM1400HPLM	•	B
14,10	.555	3381109	KSEM1410HPLM	KSEM1410HPLM	•	B
14,15	.557	3381110	KSEM1415HPLM	KSEM1415HPLM	•	B
14,20	.559	3381111	KSEM1420HPLM	KSEM1420HPLM	•	B
14,29	.563	3381112	KSEM1429HPLM	KSEM0563HPL	•	B
14,50	.571	3381113	KSEM1450HPLM	KSEM1450HPLM	•	B
14,60	.575	3381114	KSEM1460HPLM	KSEM1460HPLM	•	A
14,68	.578	3381115	KSEM1468HPLM	KSEM0578HPL	•	A
14,80	.583	3381116	KSEM1480HPLM	KSEM1480HPLM	•	A
15,00	.591	3381117	KSEM1500HPLM	KSEM1500HPLM	•	A
15,08	.594	3381118	KSEM1508HPLM	KSEM0594HPL	•	A
15,48	.609	3381119	KSEM1548HPLM	KSEM0609HPL	•	A
15,50	.610	3381120	KSEM1550HPLM	KSEM1550HPLM	•	A
15,60	.614	3381121	KSEM1560HPLM	KSEM1560HPLM	•	A
15,88	.625	3381122	KSEM1588HPLM	KSEM0625HPL	•	1
16,00	.630	3381123	KSEM1600HPLM	KSEM1600HPLM	•	1
16,10	.634	3381125	KSEM1610HPLM	KSEM1610HPLM	•	1
16,09	.634	3381124	KSEM1609HPLM	KSEM0634HPL	•	1
16,15	.636	3381126	KSEM1615HPLM	KSEM1615HPLM	•	1
16,20	.638	3381127	KSEM1620HPLM	KSEM1620HPLM	•	1
16,27	.641	3381128	KSEM1627HPLM	KSEM0641HPL	•	1
16,50	.650	3381129	KSEM1650HPLM	KSEM1650HPLM	•	1
16,67	.656	3381130	KSEM1667HPLM	KSEM0656HPL	•	1

D1	D1	order number	ISO catalog number	ANSI catalog number	KC7320	seat size series
17,00	.669	3381131	KSEM1700HPLM	KSEM1700HPLM	•	1
17,07	.672	3381132	KSEM1707HPLM	KSEM0672HPL	•	1
17,46	.688	3381133	KSEM1746HPLM	KSEM0688HPL	•	1
17,50	.689	3381134	KSEM1750HPLM	KSEM1750HPLM	•	1
17,75	.699	3381135	KSEM1775HPLM	KSEM1775HPLM	•	1
17,80	.701	3381136	KSEM1780HPLM	KSEM1780HPLM	•	1
17,86	.703	3381137	KSEM1786HPLM	KSEM0703HPL	•	1
17,90	.705	3381138	KSEM1790HPLM	KSEM1790HPLM	•	1
18,00	.709	3381139	KSEM1800HPLM	KSEM1800HPLM	•	1
18,26	.719	3381140	KSEM1826HPLM	KSEM0719HPL	•	2
18,39	.724	3381141	KSEM1839HPLM	KSEM1839HPLM	•	2
18,50	.728	3381142	KSEM1850HPLM	KSEM1850HPLM	•	2
18,60	.732	3381143	KSEM1860HPLM	KSEM1860HPLM	•	2
18,65	.734	3381144	KSEM1865HPLM	KSEM0734HPL	•	2
18,90	.744	3381145	KSEM1890HPLM	KSEM1890HPLM	•	2
19,00	.748	3381146	KSEM1900HPLM	KSEM1900HPLM	•	2
19,05	.750	3381147	KSEM1905HPLM	KSEM0750HPL	•	2
19,20	.756	3381148	KSEM1920HPLM	KSEM1920HPLM	•	2
19,23	.757	3381149	KSEM1923HPLM	KSEM0757HPL	•	2
19,25	.758	3381150	KSEM1925HPLM	KSEM0758HPL	•	2
19,27	.759	3381151	KSEM1927HPLM	KSEM0759HPL	•	2
19,35	.762	3381152	KSEM1935HPLM	KSEM1935HPLM	•	2
19,36	.762	3381153	KSEM1936HPLM	KSEM1936HPLM	•	2
15,45	.766	3381154	KSEM1945HPLM	KSEM0766HPL	•	2
19,50	.768	3381155	KSEM1950HPLM	KSEM1950HPLM	•	2
19,84	.781	3381156	KSEM1984HPLM	KSEM0781HPL	•	2
20,00	.787	3381157	KSEM2000HPLM	KSEM2000HPLM	•	3
20,10	.791	3381158	KSEM2010HPLM	KSEM2010HPLM	•	3
20,24	.797	3381159	KSEM2024HPLM	KSEM0797HPL	•	3
20,35	.801	3381160	KSEM2035HPLM	KSEM2035HPLM	•	3
20,50	.807	3381161	KSEM2050HPLM	KSEM2050HPLM	•	3
20,64	.813	3381162	KSEM2064HPLM	KSEM0813HPL	•	3
21,00	.827	3381163	KSEM2100HPLM	KSEM2100HPLM	•	3
21,15	.833	3381164	KSEM2115HPLM	KSEM2115HPLM	•	3

continued on next page

KSEM™ HPL(M) Insert Blades (continued)

Carbide Insert - Inch and Metric

D1	D1	order number	ISO catalog number	ANSI catalog number	KC7320	seat size series	D1	D1	order number	ISO catalog number	ANSI catalog number	KC7320	seat size series
21,33	.840	3381165	KSEM2133HPLM	KSEM2133HPLM	•	3	28,00	1.102	3381644	KSEM2800HPLM	KSEM2800HPLM	•	6
21,43	.844	3381167	KSEM2143HPLM	KSEM0844HPL	•	3	28,10	1.106	3381166	KSEM2810HPLM	KSEM2810HPLM	•	7
21,50	.846	3381169	KSEM2150HPLM	KSEM2150HPLM	•	3	28,18	1.109	3381639	KSEM2817HPLM	KSEM1109HPL	•	7
21,83	.859	3381171	KSEM2183HPLM	KSEM0859HPL	•	3	28,50	1.122	3381168	KSEM2850HPLM	KSEM2850HPLM	•	7
22,00	.866	3381173	KSEM2200HPLM	KSEM2200HPLM	•	3	28,58	1.125	3381170	KSEM2858HPLM	KSEM1125HPL	•	7
22,23	.875	3381175	KSEM2223HPLM	KSEM0875HPL	•	4	29,00	1.142	3381172	KSEM2900HPLM	KSEM2900HPLM	•	7
22,44	.884	3381177	KSEM2244HPLM	KSEM0884HPL	•	4	29,73	1.156	3381174	KSEM2937HPLM	KSEM1156HPL	•	7
22,50	.886	3381179	KSEM2250HPLM	KSEM2250HPLM	•	4	29,50	1.161	3381176	KSEM2950HPLM	KSEM2950HPLM	•	7
22,77	.897	3381181	KSEM2277HPLM	KSEM2277HPLM	•	4	29,77	1.172	3381178	KSEM2977HPLM	KSEM1172HPL	•	7
23,00	.906	3381183	KSEM2300HPLM	KSEM2300HPLM	•	4	30,00	1.181	3381180	KSEM3000HPLM	KSEM3000HPLM	•	7
23,42	.922	3381185	KSEM2342HPLM	KSEM0922HPL	•	4	30,16	1.188	3381182	KSEM3016HPLM	KSEM1188HPL	•	8
23,50	.925	3381187	KSEM2350HPLM	KSEM2350HPLM	•	4	30,50	1.201	3381184	KSEM3050HPLM	KSEM3050HPLM	•	8
23,81	.938	3381189	KSEM2381HPLM	KSEM0938HPL	•	4	31,00	1.220	3381186	KSEM3100HPLM	KSEM3100HPLM	•	8
24,00	.945	3381191	KSEM2400HPLM	KSEM2400HPLM	•	4	31,50	1.240	3381188	KSEM3150HPLM	KSEM3150HPLM	•	8
24,50	.965	3381193	KSEM2450HPLM	KSEM2450HPLM	•	5	31,75	1.250	3381190	KSEM3175HPLM	KSEM1250HPL	•	8
24,61	.969	3381195	KSEM2461HPLM	KSEM0969HPL	•	5	32,00	1.260	3381192	KSEM3200HPLM	KSEM3200HPLM	•	8
25,00	.984	3381616	KSEM2500HPLM	KSEM2500HPLM	•	5	32,54	1.281	3381641	KSEM3254HPLM	KSEM1281HPL	•	9
25,07	.987	3381618	KSEM2507HPLM	KSEM2507HPLM	•	5	33,00	1.299	3381194	KSEM3300HPLM	KSEM3300HPLM	•	9
25,40	1.000	3381620	KSEM2540HPLM	KSEM1000HPL	•	5	33,40	1.313	3381643	KSEM3335HPLM	KSEM1313HPL	•	9
25,50	1.004	3381622	KSEM2550HPLM	KSEM2550HPLM	•	5	34,00	1.339	3381615	KSEM3400HPLM	KSEM3400HPLM	•	9
25,60	1.008	3381624	KSEM2560HPLM	KSEM1008HPL	•	5	34,93	1.375	3381196	KSEM3493HPLM	KSEM1375HPL	•	9
25,65	1.010	3381626	KSEM2565HPLM	KSEM2565HPLM	•	5	35,00	1.378	3381617	KSEM3500HPLM	KSEM3500HPLM	•	9
25,67	1.011	3381628	KSEM2567HPLM	KSEM1011HPL	•	5	35,72	1.406	3381197	KSEM3571HPLM	KSEM1406HPL	•	9
26,00	1.024	3381630	KSEM2600HPLM	KSEM2600HPLM	•	5	36,00	1.417	3381619	KSEM3600HPLM	KSEM3600HPLM	•	9
26,19	1.031	3381633	KSEM2619HPLM	KSEM1031HPL	•	6	37,00	1.457	3381621	KSEM3700HPLM	KSEM3700HPLM	•	10
26,50	1.043	3381635	KSEM2650HPLM	KSEM2650HPLM	•	6	37,50	1.476	3381623	KSEM3750HPLM	KSEM3750HPLM	•	10
26,59	1.047	3381636	KSEM2659HPLM	KSEM1047HPL	•	6	38,00	1.496	3381625	KSEM3800HPLM	KSEM3800HPLM	•	10
26,70	1.051	3381638	KSEM2670HPLM	KSEM2670HPLM	•	6	38,10	1.500	3381198	KSEM3810HPLM	KSEM1500HPL	•	10
25,81	1.061	3381632	KSEM2581HPLM	KSEM1016HPL	•	5	38,46	1.514	3381199	KSEM3846HPLM	KSEM1514HPL	•	10
27,00	1.063	3381640	KSEM2700HPLM	KSEM2700HPLM	•	6	39,00	1.535	3381627	KSEM3900HPLM	KSEM3900HPLM	•	10
27,50	1.083	3381642	KSEM2750HPLM	KSEM2750HPLM	•	6	39,50	1.555	3381629	KSEM3950HPLM	KSEM3950HPLM	•	10
27,78	1.094	3381637	KSEM2779HPLM	KSEM1094HPL	•	6	40,00	1.575	3381631	KSEM4000HPLM	KSEM4000HPLM	•	10

Order example:
(KSEM drilling insert, diameter 12,50mm)

or by order number: 1 x 3380488

