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KENNAMETAL®

MASTER CATALOG 2018

VOLUME TWO | **ROTATING** TOOLS

HOLEMAKING | TAPPING | SOLID END MILLING | INDEXABLE MILLING

RMR™ Disc Reaming

Primary Application

In comparison to solid carbide reamers or single-tipped reamers, RMR disc reamers are the economic alternative without disadvantages to productivity or hole quality. Combine RMR disc reamers with the Kennametal SIF™ steerable holder for best results.

Features and Benefits

- Solid carbide disc at front instead of single-tipped carbide blanks.
- Unique coating specifically for reaming applications.
- High-speed and high-performance ready.
- Superior surface finish due to lapped ground leads.
- Improved hole straightness and roundness due to unequal flute spacing (less vibrations) and runout <3 microns.
- Helical and straight flutes for chip control in through and blind holes.
- Adjustment screw with straight-fluted RMR reamers to change internal coolant supply from axial to radial.

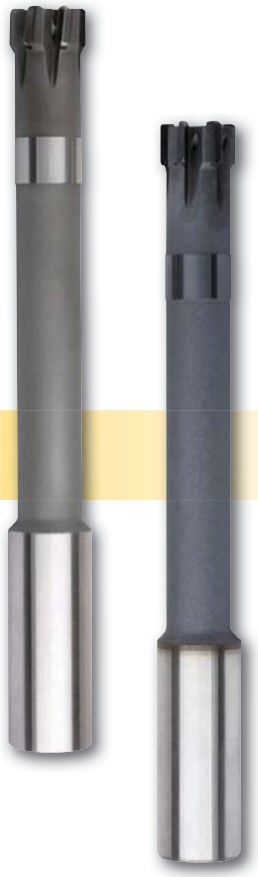
Customization

- All diameters between 14–42,5mm (.5512–1.6732").
- Variation of leads and cylindrical margin for application-specific optimization.

RMB™ Cermet Tipped Reamers

Primary Application

RMB™ multi-flute reamers are tipped with cermet blanks and are available in 14–20mm (.5512–.7874") diameters off-the-shelf and up to 50mm (1.968") as custom solutions. Cermet reamers provide excellent tool life and surface finishes in steel applications. Combine RMB reamers with the Kennametal SIF™ steerable holder for best results.



Features and Benefits

Higher productivity and profitability

- Longer tool life with increased hole and surface quality due to lapped ground leads.
- Cermet enables highest metal removal rates at higher speeds and feeds in steel.
- Improved straightness and cylindrical form compared to competitive tools and reduced vibration due to unequal flutes.
- Adjustment screw with straight-fluted RMB reamers to change internal coolant supply from axial to radial.

Customization

- Diameters up to 50mm (1.968") available with and without internal coolant in 0,001mm (.00004") steps.
- Intermediate diameters from standard offering available as simple specials with short delivery time.
- RMB tooling for machining heat-resistant materials available on request.

RMB-E™ Expandable Reamers

Primary Application

The original idea behind an expansion reamer is to achieve more regrinds. The expansion mechanism is designed for this purpose only.

The Kennametal expandable reaming system is different. It offers a completely linear expansion rate of 2 microns per 30° turn, over an expansion rate of 48 microns. The micron adjustability of this system eliminates manufacturing tolerances and enables machining to the tightest tolerances, typically achieved only by using an uncoated tool or guide pad reaming. No presetting equipment is required.

Features and Benefits

Precision and Productivity

- Use with SIF™ steerable chucks for KST toolholders for easy compensation of radial runout and angular inaccuracies.
- Tools are preadjusted to hit IT6 tolerance.
- Expansion range of 48 microns.
- Completely linear expansion.
- 2 microns per 30° turn.

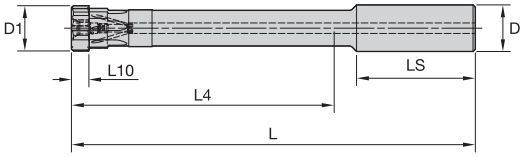
Increased Tool Life

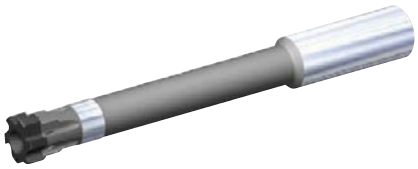
- Longer tool life at smaller tolerances.

Customization

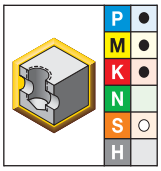
- Diameters up to 42mm (1.65") available with helical and straight flutes in 0,001mm (.00004") increments.

- For hole tolerance H7.
- Intermediate sizes ground to achieve IT6 or IT7 hole tolerance class available.
- Adjustment screw to change internal coolant supply from axial to radial.





RMR • Disc Style Reamer • Straight Fluted for Blind Holes with Internal Coolant



● first choice
○ alternate choice

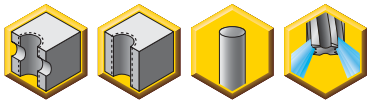
KCU05	D1 mm	D1 in	D mm	D in	L mm	L in	L4 mm	L4 in	L10 mm	L10 in	LS mm	LS in	Z
RMR14000H7SF	14,00	.551	16,000	0.63	147,4	5.8	92,4	3.638	7,50	.295	49,00	1.929	6
RMR15000H7SF	15,00	.591	16,000	0.63	147,4	5.8	92,4	3.638	7,50	.295	49,00	1.929	6
RMR16000H7SF	16,00	.630	20,000	0.79	159,4	6.3	102,4	4.031	7,50	.295	51,00	2.008	6
RMR17000H7SF	17,00	.669	20,000	0.79	159,4	6.3	102,4	4.031	7,50	.295	51,00	2.008	6
RMR18000H7SF	18,00	.709	20,000	0.79	173,4	6.8	116,4	4.583	7,50	.295	51,00	2.008	6
RMR19000H7SF	19,00	.748	20,000	0.79	173,4	6.8	116,4	4.583	7,50	.295	51,00	2.008	6
RMR20000H7SF	20,00	.787	20,000	0.79	173,4	6.8	116,4	4.583	7,50	.295	51,00	2.008	6

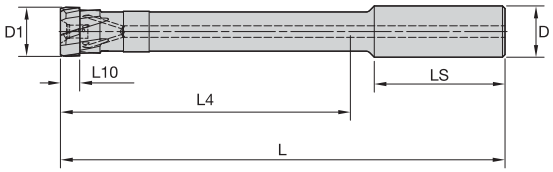
Dimensions for Engineered-Solution Reamers

D1 min mm	D1 min in	D1 max mm	D1 max in	D mm	D in	L mm	L in	L4 mm	L4 in	L10 mm	L10 in	LS mm	LS in	Z
14,000	0.5512	15,999	0.6299	16	0.630	147,4	5.80	92,4	3.64	7,5	0.30	49	1.93	6
16,000	0.6299	17,999	0.7086	20	0.787	159,4	6.28	102,4	4.03	7,5	0.30	51	2.01	6
18,000	0.7087	20,000	0.7874	20	0.787	173,4	6.83	116,4	4.58	7,5	0.30	51	2.01	6
20,001	0.7874	22,499	0.8858	20	0.787	202,4	7.97	145,4	5.72	7,5	0.30	51	2.01	6
22,500	0.8858	24,999	0.9842	20	0.787	212,4	8.36	155,4	6.12	7,5	0.30	51	2.01	6
25,000	0.9843	27,499	1.0826	25	0.984	232,4	9.15	169,4	6.67	7,5	0.30	57	2.24	8
27,500	1.0827	29,999	1.1811	25	0.984	242,4	9.54	179,4	7.06	7,5	0.30	57	2.24	8
30,000	1.1811	32,499	1.2795	25	0.984	272,4	10.72	209,4	8.24	7,5	0.30	57	2.24	8
32,500	1.2795	34,999	1.3779	32	1.260	272,4	10.72	205,4	8.09	7,5	0.30	61	2.40	8
35,000	1.3780	37,499	1.4763	32	1.260	272,4	10.72	205,4	8.09	7,5	0.30	61	2.40	8
37,500	1.4764	39,999	1.5748	32	1.260	272,4	10.72	205,4	8.09	7,5	0.30	61	2.40	8
40,000	1.5748	42,500	1.6732	32	1.260	272,4	10.72	205,4	8.09	7,5	0.30	61	2.40	8

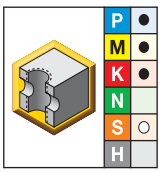
NOTE: The above dimensions are used when ordering engineered-solution reamers on this page unless otherwise specified.

- For hole tolerance H7.
- Intermediate sizes ground to achieve IT6 or IT7 hole tolerance class available.





RMR • Disc Style Reamer • Helical Fluted for Through Holes with Internal Coolant



● first choice
○ alternate choice

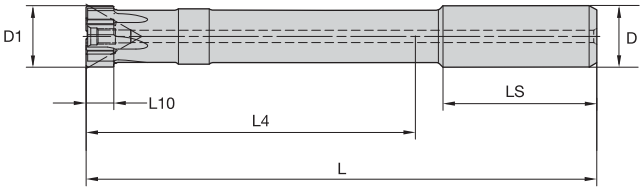
KCU05	D1 mm	D1 in	D mm	D in	L mm	L in	L4 mm	L4 in	L10 mm	L10 in	LS mm	LS in	Z
RMR14000H7HF	14,00	.551	16,00	0.630	147,4	5.80	92,4	3.638	7,5	0.30	49,00	1.93	6
RMR15000H7HF	15,00	.591	16,00	0.630	147,4	5.80	92,4	3.638	7,5	0.30	49,00	1.93	6
RMR16000H7HF	16,00	.630	20,00	0.787	159,4	6.28	102,4	4.031	7,5	0.30	51,00	2.01	6
RMR17000H7HF	17,00	.669	20,00	0.787	159,4	6.28	102,4	4.031	7,5	0.30	51,00	2.01	6
RMR18000H7HF	18,00	.709	20,00	0.787	173,4	6.83	116,4	4.583	7,5	0.30	51,00	2.01	6
RMR19000H7HF	19,00	.748	20,00	0.787	173,4	6.83	116,4	4.583	7,5	0.30	51,00	2.01	6
RMR20000H7HF	20,00	.787	20,00	0.787	173,4	6.83	116,4	4.583	7,5	0.30	51,00	2.01	6

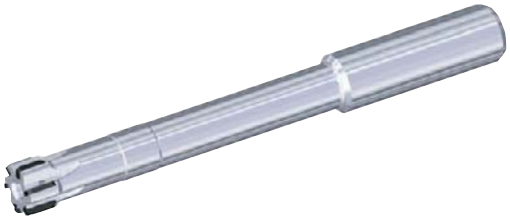
Dimensions for Engineered-Solution Reamers

D1 min mm	D1 min in	D1 max mm	D1 max in	D mm	D in	L mm	L in	L4 mm	L4 in	L10 mm	L10 in	LS mm	LS in	Z
14,000	0.5512	15,999	0.6299	16	0.630	147,4	5.80	92,4	3.64	7,5	0.30	49	1.93	6
16,000	0.6299	17,999	0.7086	20	0.787	159,4	6.28	102,4	4.03	7,5	0.30	51	2.01	6
18,000	0.7087	20,000	0.7874	20	0.787	173,4	6.83	116,4	4.58	7,5	0.30	51	2.01	6
20,001	0.7874	22,499	0.8858	20	0.787	202,4	7.97	145,4	5.72	7,5	0.30	51	2.01	6
22,500	0.8858	24,999	0.9842	20	0.787	212,4	8.36	155,4	6.12	7,5	0.30	51	2.01	6
25,000	0.9843	27,499	1.0826	25	0.984	232,4	9.15	169,4	6.67	7,5	0.30	57	2.24	8
27,500	1.0827	29,999	1.1811	25	0.984	242,4	9.54	179,4	7.06	7,5	0.30	57	2.24	8
30,000	1.1811	32,499	1.2795	25	0.984	272,4	10.72	209,4	8.24	7,5	0.30	57	2.24	8
32,500	1.2795	34,999	1.3779	32	1.260	272,4	10.72	205,4	8.09	7,5	0.30	61	2.40	8
35,000	1.3780	37,499	1.4763	32	1.260	272,4	10.72	205,4	8.09	7,5	0.30	61	2.40	8
37,500	1.4764	39,999	1.5748	32	1.260	272,4	10.72	205,4	8.09	7,5	0.30	61	2.40	8
40,000	1.5748	42,500	1.6732	32	1.260	272,4	10.72	205,4	8.09	7,5	0.30	61	2.40	8

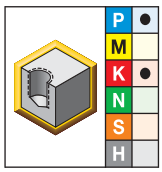
NOTE: The above dimensions are used when ordering engineered-solution reamers on this page unless otherwise specified.

- For hole tolerance H7.
- Intermediate sizes ground to achieve IT6 or IT7 hole tolerance class available.
- Adjustment screw to change internal coolant supply from axial to radial.





RMB • Blind Hole Cermet-Tipped Reamer



● first choice
○ alternate choice

KT6215	D1 mm	D1 in	D mm	D in	L mm	L in	L4 mm	L4 in	L10 mm	L10 in	LS mm	LS in	Z
RMB14000H7SF *	14,00	.550	16,00	0.63	145,0	5.7	76,0	2.990	8,0	0.3	49,0	1.9	6
RMB15000H7SF	15,00	.590	16,00	0.63	145,0	5.7	76,0	2.990	8,0	0.3	49,0	1.9	6
RMB16000H7SF	16,00	.630	20,00	0.79	157,0	6.2	86,0	3.390	8,0	0.3	51,0	2.0	6
RMB17000H7SF *	17,00	.670	20,00	0.79	157,0	6.2	86,0	3.390	8,0	0.3	51,0	2.0	6
RMB18000H7SF *	18,00	.710	20,00	0.79	171,0	6.7	100,0	3.940	8,0	0.3	51,0	2.0	6
RMB19000H7SF *	19,00	.750	20,00	0.79	171,0	6.7	100,0	3.940	8,0	0.3	51,0	2.0	6
RMB20000H7SF *	20,00	.790	20,00	0.79	200,0	7.9	129,0	5.080	8,0	0.3	51,0	2.0	6

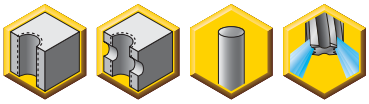
NOTE: Uncoated carbide grade K605™ and uncoated cermet grade KT325™ are available on request.
*Made-to-order standard item. Standard pricing, manufacturing lead time, and minimum order quantity applies.

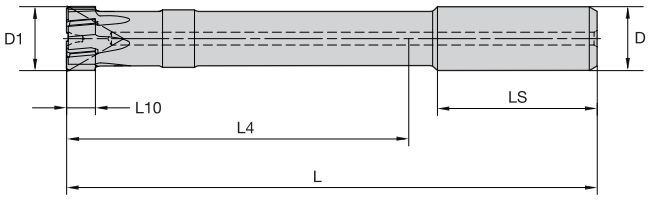
Dimensions for Engineered-Solution Reamers

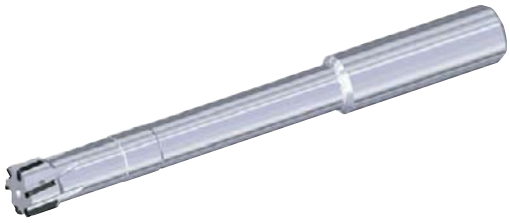
D1 min mm	D1 min in	D1 max mm	D1 max in	D mm	D in	L mm	L in	L4 mm	L4 in	L10 mm	L10 in	LS mm	LS in	Z
14,000	0.5512	15,999	0.6299	16	0.630	145	5.71	76	2.99	8	0.31	49	1.93	6
16,000	0.6299	17,999	0.7086	20	0.787	157	6.18	86	3.39	8	0.31	51	2.01	6
18,000	0.7087	19,999	0.7874	20	0.787	171	6.73	100	3.94	8	0.31	51	2.01	6
20,000	0.7874	21,999	0.8661	20	0.787	200	7.87	129	5.08	8	0.31	51	2.01	6
22,000	0.8661	25,999	1.0236	20	0.787	210	8.27	139	5.47	10	0.39	51	2.01	6
26,000	1.0236	29,999	1.1811	25	0.984	240	9.45	163	6.42	10	0.39	57	2.24	8
30,000	1.1811	32,000	1.2598	25	0.984	270	10.63	193	7.60	12	0.47	57	2.24	8

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

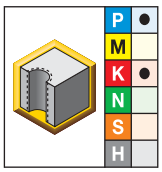
- For hole tolerance H7.
- Intermediate sizes ground to achieve IT6 or IT7 hole tolerance class available.
- Adjustment screw to change internal coolant supply from axial to radial.







RMB • Through Hole Cermet-Tipped Reamer



● first choice
○ alternate choice

KT6215	D1 mm	D1 in	D mm	D in	L mm	L in	L4 mm	L4 in	L10 mm	L10 in	LS mm	LS in	Z
RMB14000H7HF *	14,00	.550	16,00	0.63	145,0	5.7	76,0	2.990	7,6	0.3	49,0	1.9	6
RMB15000H7HF *	15,00	.590	16,00	0.63	145,0	5.7	76,0	2.990	7,6	0.3	49,0	1.9	6
RMB16000H7HF	16,00	.630	20,00	0.79	157,0	6.2	86,0	3.390	7,6	0.3	51,0	2.0	6
RMB18000H7HF *	18,00	.710	20,00	0.79	171,0	6.7	100,0	3.940	7,6	0.3	51,0	2.0	6
RMB19000H7HF *	19,00	.750	20,00	0.79	171,0	6.7	100,0	3.940	7,6	0.3	51,0	2.0	6
RMB20000H7HF *	20,00	.790	20,00	0.79	200,0	7.9	129,0	5.080	7,6	0.3	51,0	2.0	6

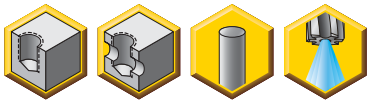
NOTE: Uncoated carbide grade K605™ is available on request.
*Made-to-order standard item. Standard pricing, manufacturing lead time, and minimum order quantity applies.

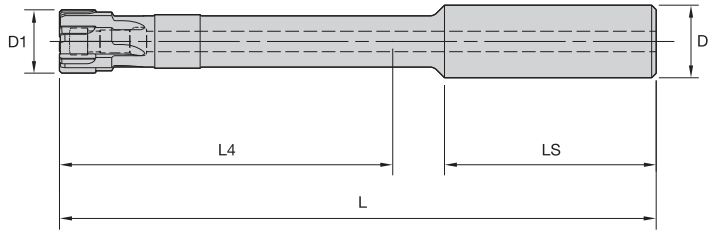
Dimensions for Engineered-Solution Reamers

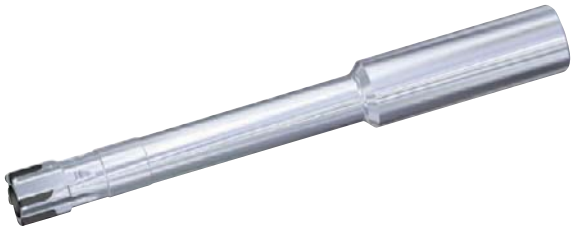
D1 min mm	D1 min in	D1 max mm	D1 max in	D mm	D in	L mm	L in	L4 mm	L4 in	L10 mm	L10 in	LS mm	LS in	Z
14,000	0.5512	15,999	0.6299	16	0.630	145	5.71	76	2.99	8	0.31	49	1.93	6
16,000	0.6299	17,999	0.7086	20	0.787	157	6.18	86	3.39	8	0.31	51	2.01	6
18,000	0.7087	19,999	0.7874	20	0.787	171	6.73	100	3.94	8	0.31	51	2.01	6
20,000	0.7874	21,999	0.8661	20	0.787	200	7.87	129	5.08	8	0.31	51	2.01	6
22,000	0.8661	25,999	1.0236	20	0.787	210	8.27	139	5.47	10	0.39	51	2.01	6
26,000	1.0236	29,999	1.1811	25	0.984	240	9.45	163	6.42	10	0.39	57	2.24	8
30,000	1.1811	32,000	1.2598	25	0.984	270	10.63	193	7.60	12	0.47	57	2.24	8

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

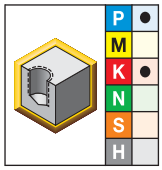
- For hole tolerance H6.
- Intermediate sizes available.
- Allen expansion screw.

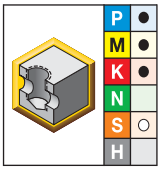






RMB-E • Blind Hole Expansion Reamer





● first choice
○ alternate choice

KC6005	KC6305	D1 mm	D1 in	D mm	D in	L mm	L in	L4 mm	L4 in	LS mm	LS in	Z
RMBE14000H6SF *	RMBE14000H6SF	14,00	.551	16,00	0.63	131,5	5.2	72,5	2.854	49,0	1.9	6
RMBE15000H6SF *	RMBE15000H6SF *	15,00	.591	16,00	0.63	136,5	5.4	77,5	3.051	49,0	1.9	6
RMBE16000H6SF *	RMBE16000H6SF *	16,00	.630	20,00	0.79	143,5	5.7	82,5	3.248	54,4	2.1	6
RMBE17000H6SF *	RMBE17000H6SF *	17,00	.669	20,00	0.79	148,5	5.8	87,5	3.445	51,0	2.0	6
RMBE18000H6SF *	RMBE18000H6SF *	18,00	.709	20,00	0.79	153,5	6.0	92,5	3.642	51,0	2.0	6
RMBE19000H6SF *	RMBE19000H6SF	19,00	.748	20,00	0.79	158,5	6.2	97,5	3.839	51,0	2.0	6
RMBE20000H6SF *	RMBE20000H6SF *	20,00	.787	25,00	0.98	169,8	6.7	102,5	4.035	57,0	2.2	6

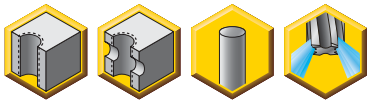
NOTE: Uncoated carbide grade K605™ and uncoated cermet grade KT325™ are available on request.
*Made-to-order standard item. Standard pricing, manufacturing lead time, and minimum order quantity applies.

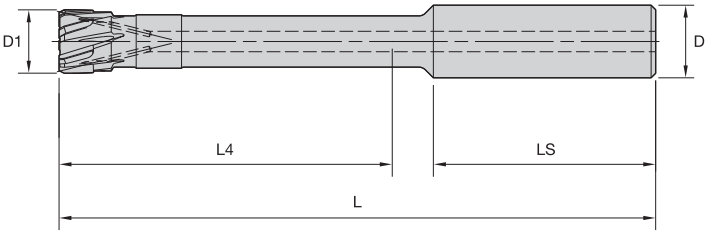
Dimensions for Engineered-Solution Reamers

D1 min mm	D1 min in	D1 max mm	D1 max in	D mm	D in	L mm	L in	L4 mm	L4 in	LS mm	LS in	Z
14,000	0.5512	14,499	0.5708	16	0.630	131,5	5.18	72,5	2.85	49	1.93	6
14,500	0.5709	14,999	0.5905	16	0.630	134,0	5.28	75,0	2.95	49	1.93	6
15,000	0.5906	15,499	0.6102	16	0.630	136,5	5.37	77,5	3.05	49	1.93	6
15,500	0.6102	15,999	0.6299	16	0.630	139,0	5.47	80,0	3.15	49	1.93	6
16,000	0.6299	16,499	0.6496	20	0.787	143,5	5.65	82,5	3.25	51	2.01	6
16,500	0.6496	16,999	0.6693	20	0.787	146,0	5.75	85,0	3.35	51	2.01	6
17,000	0.6693	17,499	0.6889	20	0.787	148,5	5.85	87,5	3.44	51	2.01	6
17,500	0.6890	17,999	0.7086	20	0.787	151,0	5.94	90,0	3.54	51	2.01	6
18,000	0.7087	18,499	0.7283	20	0.787	153,5	6.04	92,5	3.64	51	2.01	6
18,500	0.7283	18,999	0.7480	20	0.787	156,0	6.14	95,0	3.74	51	2.01	6
19,000	0.7480	19,499	0.7677	20	0.787	158,5	6.24	97,5	3.84	51	2.01	6
19,500	0.7677	19,999	0.7874	20	0.787	161,0	6.34	100,0	3.94	51	2.01	6
20,000	0.7874	20,499	0.8070	25	0.984	169,8	6.68	102,5	4.04	57	2.24	6

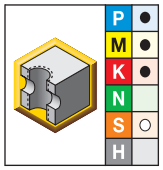
NOTE: The above dimensions are used when ordering engineered-solution reamers on this page unless otherwise specified.
Custom expandable reamers available starting from a diameter of 8mm.

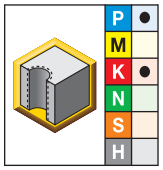
- For hole tolerance H6.
- Intermediate sizes available.
- Allen expansion screw.





RMB-E • Through Hole Expansion Reamer





● first choice
○ alternate choice

KC6005	KC6305	D1 mm	D1 in	D mm	D in	L mm	L in	L4 mm	L4 in	LS mm	LS in	Z
RMBE14000H6HF	RMBE14000H6HF *	14,00	.551	16,00	0.63	131,5	5.2	72,5	2.854	49,0	1.9	6
RMBE15000H6HF *	RMBE15000H6HF	15,00	.591	16,00	0.63	136,5	5.4	77,5	3.051	49,0	1.9	6
RMBE16000H6HF *	RMBE16000H6HF	16,00	.630	20,00	0.79	143,5	5.7	82,5	3.248	51,0	2.0	6
RMBE17000H6HF *	RMBE17000H6HF *	17,00	.669	20,00	0.79	148,5	5.8	87,5	3.445	51,0	2.0	6
RMBE18000H6HF *	RMBE18000H6HF	18,00	.709	20,00	0.79	153,5	6.0	92,5	3.642	51,0	2.0	6
RMBE19000H6HF *	RMBE19000H6HF *	19,00	.748	20,00	0.79	158,5	6.2	97,5	3.839	51,0	2.0	6
RMBE20000H6HF *	RMBE20000H6HF	20,00	.787	25,00	0.98	169,8	6.7	102,5	4.035	57,0	2.2	6

NOTE: Uncoated carbide grade K605™ is available on request.
*Made-to-order standard item. Standard pricing, manufacturing lead time, and minimum order quantity applies.

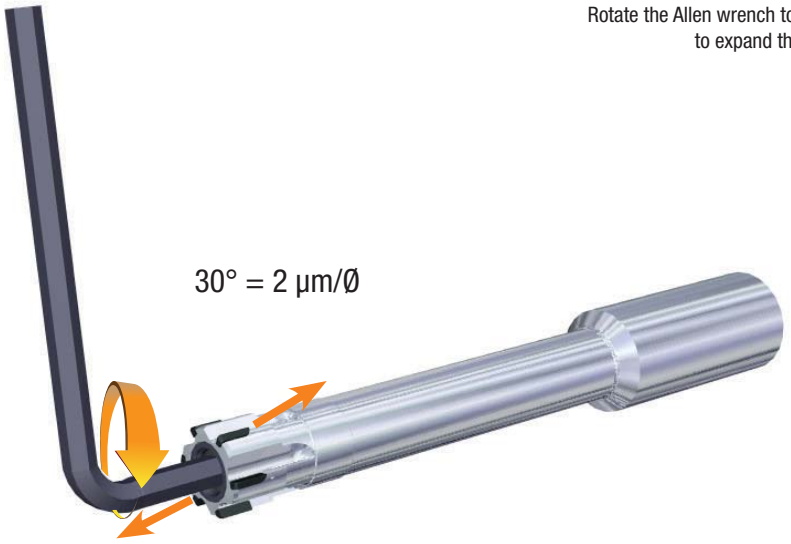
Dimensions for Engineered-Solution Reamers

D1 min mm	D1 min in	D1 max mm	D1 max in	D mm	D in	L mm	L in	L4 mm	L4 in	LS mm	LS in	Z
14,000	0.5512	14,499	0.5708	16	0.630	131,5	5.18	72,5	2.85	49	1.93	6
14,500	0.5709	14,999	0.5905	16	0.630	134,0	5.28	75,0	2.95	49	1.93	6
15,000	0.5906	15,499	0.6102	16	0.630	136,5	5.37	77,5	3.05	49	1.93	6
15,500	0.6102	15,999	0.6299	16	0.630	139,0	5.47	80,0	3.15	49	1.93	6
16,000	0.6299	16,499	0.6496	20	0.787	143,5	5.65	82,5	3.25	51	2.01	6
16,500	0.6496	16,999	0.6693	20	0.787	146,0	5.75	85,0	3.35	51	2.01	6
17,000	0.6693	17,499	0.6889	20	0.787	148,5	5.85	87,5	3.44	51	2.01	6
17,500	0.6890	17,999	0.7086	20	0.787	151,0	5.94	90,0	3.54	51	2.01	6
18,000	0.7087	18,499	0.7283	20	0.787	153,5	6.04	92,5	3.64	51	2.01	6
18,500	0.7283	18,999	0.7480	20	0.787	156,0	6.14	95,0	3.74	51	2.01	6
19,000	0.7480	19,499	0.7677	20	0.787	158,5	6.24	97,5	3.84	51	2.01	6
19,500	0.7677	19,999	0.7874	20	0.787	161,0	6.34	100,0	3.94	51	2.01	6
20,000	0.7874	20,499	0.8070	25	0.984	169,8	6.68	102,5	4.04	57	2.24	6

NOTE: The above dimensions are used when ordering engineered-solution reamers on this page unless otherwise specified.
Custom expandable reamers available starting with a diameter of 8mm.

To Expand

Rotate the Allen wrench to the right to expand the reamer.



To Contract

Expansion always reversible: Rotate the Allen wrench to the left to contract the reamer.

- 30° = 2 µm linear expansion.
- 720° = 2 revolutions; = 48 µm maximum expansion.
- Hard stop after 720° expansion. You cannot over expand!
- The expansion occurs in the elastic material behavior.
- You cannot reduce the diameter below D1.

RMR • Metric

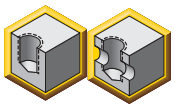
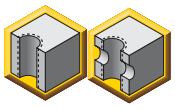
Material Group		KCU05 Cutting Speed — vc Range — m/min			Metric Recommended Feed Rate per Tooth				
					Tool Diameter (mm)	14,00–19,99mm		20,00–32,00mm	
		min	Starting Value	max	Feed/Tooth	min	max	min	max
P	1	90	**120**	155	mm/z	0,10	0,22	0,10	0,25
	2	90	**120**	155	mm/z	0,10	0,22	0,10	0,25
	3	75	**100**	130	mm/z	0,10	0,22	0,10	0,25
	4	50	**80**	105	mm/z	0,10	0,22	0,10	0,25
	5	30	**40**	60	mm/z	0,10	0,22	0,10	0,25
	6	30	**40**	60	mm/z	0,08	0,20	0,08	0,22
M	1	15	**20**	40	mm/z	0,08	0,18	0,08	0,20
	2	15	**20**	30	mm/z	0,08	0,18	0,08	0,20
	3	15	**20**	30	mm/z	0,08	0,18	0,08	0,20
K	1	80	**110**	130	mm/z	0,10	0,22	0,10	0,25
	2	65	**90**	110	mm/z	0,10	0,22	0,10	0,25
	3	50	**70**	90	mm/z	0,10	0,20	0,10	0,25
S	1	15	**20**	30	mm/z	0,10	0,18	0,10	0,20
	2	15	**20**	30	mm/z	0,10	0,18	0,10	0,20
	3	20	**30**	40	mm/z	0,10	0,20	0,10	0,20
	4	20	**30**	40	mm/z	0,10	0,20	0,10	0,20

Hole Finishing

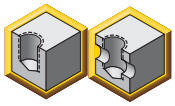
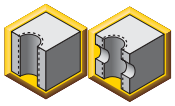
RMR • Inch

Material Group		KCU05 Cutting Speed — vc Range — SFM			Inch Recommended Feed Rate per Tooth				
					Tool Diameter (inch)	.551–.787"		.787–1.260"	
		min	Starting Value	max	Feed/Tooth	min	max	min	max
P	1	295	**394**	509	inch/z	.004	.009	.004	.010
	2	295	**394**	509	inch/z	.004	.009	.004	.010
	3	246	**328**	427	inch/z	.004	.009	.004	.010
	4	164	**262**	344	inch/z	.004	.009	.004	.010
	5	98	**131**	197	inch/z	.004	.009	.004	.010
	6	98	**131**	197	inch/z	.003	.008	.003	.009
M	1	49	**66**	131	inch/z	.003	.007	.003	.008
	2	49	**66**	98	inch/z	.003	.007	.003	.008
	3	49	**66**	98	inch/z	.003	.007	.003	.008
K	1	262	**361**	427	inch/z	.004	.009	.004	.010
	2	213	**295**	361	inch/z	.004	.009	.004	.010
	3	164	**230**	295	inch/z	.004	.008	.004	.010
S	1	49	**66**	98	inch/z	.004	.007	.004	.008
	2	49	**66**	98	inch/z	.004	.007	.004	.008
	3	66	**98**	131	inch/z	.004	.008	.004	.008
	4	66	**98**	131	inch/z	.004	.008	.004	.008

RMB™ and RMB-E™ • Metric

Material Group		RMB™ — Cermet Tipped						RMB-E™						Metric					
																			
		straight flute			helical flute			straight flute			helical flute								
		KT6215			KT6215			K605			KC6305								
		Cutting Speed — vc												Recommended Feed Rate per Tooth					
		Range — m/min												Tool Diameter (mm)	14,00–19,99mm		20,00–32,00mm		
Material Group		min	Starting Value	max	min	Starting Value	max	min	Starting Value	max	min	Starting Value	max	Feed/ Tooth	min	max	min	max	
P	1	150	**180**	210	180	**210**	240	40	**60**	70	90	**120**	155	mm/z	0,10	0,22	0,10	0,25	
	2	150	**180**	210	180	**210**	240	40	**60**	70	90	**120**	155	mm/z	0,10	0,22	0,10	0,25	
	3	130	**160**	180	150	**180**	210	30	**40**	50	75	**100**	130	mm/z	0,10	0,22	0,10	0,25	
	4	100	**130**	150	120	**150**	170	25	**40**	45	50	**80**	105	mm/z	0,10	0,22	0,10	0,25	
	5	80	**100**	120	100	**130**	150	10	**20**	30	30	**40**	55	mm/z	0,08	0,20	0,08	0,22	
	6	80	**100**	120	100	**130**	150	10	**20**	30	30	**40**	55	mm/z	0,08	0,20	0,08	0,22	
M	1	–	**–**	–	–	**–**	–	8	**10**	15	15	**20**	28	mm/z	0,08	0,18	0,08	0,20	
	2	–	**–**	–	–	**–**	–	8	**10**	15	15	**20**	28	mm/z	0,08	0,18	0,08	0,20	
	3	–	**–**	–	–	**–**	–	8	**10**	15	15	**20**	28	mm/z	0,08	0,18	0,08	0,20	
K	1	150	**180**	200	180	**210**	240	30	**50**	60	80	**110**	130	mm/z	0,10	0,22	0,10	0,25	
	2	130	**160**	180	150	**180**	210	25	**40**	45	65	**90**	110	mm/z	0,10	0,22	0,10	0,25	
	3	100	**130**	160	120	**150**	170	20	**30**	40	50	**70**	90	mm/z	0,10	0,20	0,10	0,22	
N	1	–	**–**	–	–	**–**	–	110	**150**	195	–	**–**	–	mm/z	0,10	0,30	0,10	0,30	
	2	–	**–**	–	–	**–**	–	110	**150**	195	–	**–**	–	mm/z	0,10	0,30	0,10	0,30	
	3	–	**–**	–	–	**–**	–	110	**150**	195	–	**–**	–	mm/z	0,10	0,30	0,10	0,30	
	4	–	**–**	–	–	**–**	–	110	**150**	195	–	**–**	–	mm/z	0,10	0,30	0,10	0,30	
	5	–	**–**	–	–	**–**	–	105	**140**	180	–	**–**	–	mm/z	0,10	0,30	0,10	0,30	
S	1	–	**–**	–	–	**–**	–	8	**10**	15	15	**20**	28	mm/z	0,10	0,18	0,10	0,20	
	2	–	**–**	–	–	**–**	–	8	**10**	15	15	**20**	28	mm/z	0,10	0,18	0,10	0,20	
	3	–	**–**	–	–	**–**	–	15	**20**	30	20	**30**	40	mm/z	0,10	0,20	0,10	0,20	
	4	–	**–**	–	–	**–**	–	15	**20**	30	20	**30**	40	mm/z	0,10	0,20	0,10	0,20	

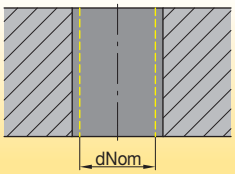
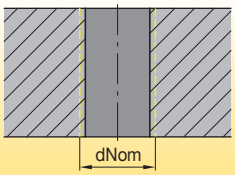
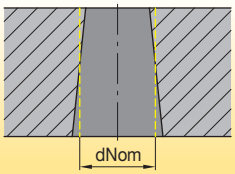
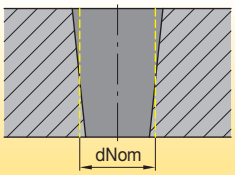
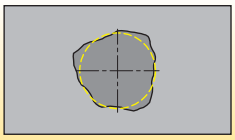
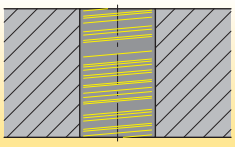
RMB™ and RMB-E™ • Inch

		RMB — Cermet Tipped						RMB-E						Inch				
																		
		straight flute			helical flute			straight flute			helical flute							
		KT6215			KT6215			K605			KC6305							
		Cutting Speed — vc												Recommended Feed Rate per Tooth				
		Range — SFM												Tool Diameter (inch)	.551–.787"		.787–1.260"	
Material Group		min	Starting Value	max	min	Starting Value	max	min	Starting Value	max	min	Starting Value	max	Feed/ Tooth	min	max	min	max
P	1	492	**590**	689	590	**689**	787	131	**197**	230	295	**394**	508	inch/z	.004	.009	.004	.010
	2	492	**590**	689	590	**689**	787	131	**197**	230	295	**394**	508	inch/z	.004	.009	.004	.010
	3	426	**525**	590	492	**590**	689	98	**131**	164	246	**328**	426	inch/z	.004	.009	.004	.010
	4	328	**426**	492	394	**492**	558	82	**131**	148	164	**262**	344	inch/z	.004	.009	.004	.010
	5	262	**328**	394	328	**426**	492	33	**66**	98	98	**131**	180	inch/z	.003	.008	.003	.009
	6	262	**328**	394	328	**426**	492	33	**66**	98	98	**131**	180	inch/z	.003	.008	.003	.009
M	1	–	**–**	–	–	**–**	–	26	**33**	49	49	**66**	92	inch/z	.003	.007	.003	.008
	2	–	**–**	–	–	**–**	–	26	**33**	49	49	**66**	92	inch/z	.003	.007	.003	.008
	3	–	**–**	–	–	**–**	–	26	**33**	49	49	**66**	92	inch/z	.003	.007	.003	.008
K	1	492	**590**	656	590	**689**	787	98	**164**	197	262	**361**	426	inch/z	.004	.009	.004	.010
	2	426	**525**	590	492	**590**	689	82	**131**	148	213	**295**	361	inch/z	.004	.009	.004	.010
	3	328	**426**	525	394	**492**	558	66	**98**	131	164	**230**	295	inch/z	.004	.008	.004	.009
N	1	–	**–**	–	–	**–**	–	361	**492**	640	–	**–**	–	inch/z	.004	.012	.004	.012
	2	–	**–**	–	–	**–**	–	361	**492**	640	–	**–**	–	inch/z	.004	.012	.004	.012
	3	–	**–**	–	–	**–**	–	361	**492**	640	–	**–**	–	inch/z	.004	.012	.004	.012
	4	–	**–**	–	–	**–**	–	361	**492**	640	–	**–**	–	inch/z	.004	.012	.004	.012
	5	–	**–**	–	–	**–**	–	344	**459**	590	–	**–**	–	inch/z	.004	.012	.004	.012
S	1	–	**–**	–	–	**–**	–	26	**33**	49	49	**66**	92	inch/z	.004	.007	.004	.008
	2	–	**–**	–	–	**–**	–	26	**33**	49	49	**66**	92	inch/z	.004	.007	.004	.008
	3	–	**–**	–	–	**–**	–	49	**66**	98	66	**98**	131	inch/z	.004	.008	.004	.008
	4	–	**–**	–	–	**–**	–	49	**66**	98	66	**98**	131	inch/z	.004	.008	.004	.008

Reaming Allowances for Multi-Blade Reaming

		reaming allowances in diameter					
		mm			in		
mm	in	min	middle	max	min	middle	max
1,40–4,80	.055–.189	0,08	0,12	0,20	.003	.005	.008
4,81–9,59	.189–.378	0,10	0,15	0,25	.004	.006	.010
9,60–15,00	.378–.591	0,15	0,20	0,30	.006	.008	.012
15,00–20,00	.591–.787	0,15	0,25	0,35	.006	.010	.014
20,00–50,00	.787–1.969	0,20	0,30	0,40	.008	.012	.016

Troubleshooting

Problem		Cause	Possible Remedy
Hole diameter too large.		• Reaming tool running out-of-center. • Concentricity of pilot hole and ream machining unsatisfactory. • Built-up edge. • Unsuitable cooling lubricant. • Reaming tool diameter too large.	• Use equalizing adapter. • Re-align, use floating head. • Change cooling lubricant. • Change cutting speed. • Measure reamers and send for repairs.
Hole diameter too small.		• Reamer worn. • Unsuitable cooling lubricant. • Reaming allowance too small.	• Replace and refit tool. • Change cooling lubricant. • Increase reaming allowance.
Conical hole profile wider towards drill runout.		• Concentricity of pilot hole and reaming unsatisfactory. • Positioning accuracy of pilot hole to reaming.	• Re-align, use equalizing adapter. • Correct positioning accuracy.
Conical hole profile wider at drill entry point.		• Concentricity of pilot hole and reaming unsatisfactory. • Reaming tool skim cutting with ledger.	• Re-align, use floating head. • Securely clamp reaming tool axially.
Hole out-of-center and/or showing chatter marks.		• Reaming tool running out-of-center. • Slanted cutting surface/asymmetrical cutting. • Workpiece twisted.	• Use equalizing adapter. • Spot face as drilling preparation. • Take the direction of impact into account when clamping the workpiece.
Surface quality does not meet specification.		• Tool cutters worn. • Reaming tool running out-of-center. • Incorrect technology data (cutting parameters). • Inadequate chip evacuation.	• Use equalizing adapter. • Re-align, use floating head. • Change cooling lubricant. • Change cutting speed. • Measure reamers and send for repairs.
Feed grooves		• Built-up edge.	• Change cooling lubricant. • Change cutting speed.