MSBH345

Size R0.5 ~ R3

Premium ≦65 HRC

MSBH345

Regular Line
MUGEN PREMIUM
Full Cutting Length Type

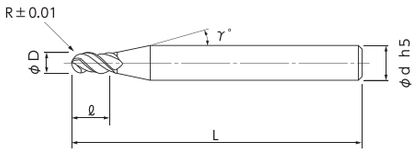
MUGEN COATING PREMIUM 3-Flute Ball End Mill for Hardened Steel

Total 26 sizes

Recommended Milling Conditions

MG | 3 | 45° | φd h5 | 3D

3-flute high helix angle ball end mill
for prehardened steels and hardened steels up to 65HRC



- MUGEN COATING PREMIUM realizes long tool life for machining on high-hardened steel.
- Original 3-flute design and unequal flute spacing to suppress chattering realize high efficient machining.

Unit : mm

Code No.	Radius (R)	Length of Cut (ℓ)	Dia. (D)	Neck Taper Angle (γ)	Shank Dia. (d)	Overall Length (L)
08-00607-00050	R0.5	1.5	1	12°	6	60
▌08-00607-00060	R0.6	2	1.2	12°	6	60
▌08-00607-00070	R0.7	3	1.4	12°	6	60
▌08-00607-00080	R0.8	3	1.6	12°	6	60
▌08-00607-00090	R0.9	3	1.8	12°	6	60
08-00607-00100	R1	3	2	12°	6	60
▌08-00607-00110	R1.1	3.5	2.2	12°	6	60
▌08-00607-00120	R1.2	4	2.4	12°	6	60
▌08-00607-00130	R1.3	4	2.6	12°	6	60
▌08-00607-00140	R1.4	5	2.8	12°	6	60
08-00607-00150	R1.5	5	3	12°	6	60
▌08-00607-00160	R1.6	5	3.2	12°	6	60
▌08-00607-00170	R1.7	6	3.4	12°	6	60
▌08-00607-00180	R1.8	6	3.6	12°	6	60
▌08-00607-00190	R1.9	6	3.8	12°	6	60
08-00607-00200	R2	6	4	12°	6	70
▌08-00607-00210	R2.1	7	4.2	12°	6	70
▌08-00607-00220	R2.2	7	4.4	12°	6	70
▌08-00607-00230	R2.3	7	4.6	12°	6	70
▌08-00607-00240	R2.4	8	4.8	12°	6	70
08-00607-00250	R2.5	8	5	12°	6	70
▌08-00607-00260	R2.6	8	5.2	12°	6	70
▌08-00607-00270	R2.7	9	5.4	12°	6	70
▌08-00607-00280	R2.8	9	5.6	12°	6	70
▌08-00607-00290	R2.9	9	5.8	12°	6	70
08-00607-00300	R3	10	6	–	6	80

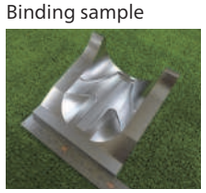
How to Order When you order, indicate MSBH345 (R). ※(γ) is reference value.

▌Semi-standard products, please inquire for price and delivery.

Work Material	Hardened Steels SKD61·STAVAX (~52HRC)				Hardened Steels SKD11 (~62HRC)				High Speed Steels SKH (~65HRC)			
Radius	Depth of Cut		Feed	Spindle Speed	Depth of Cut		Feed	Spindle Speed	Depth of Cut		Feed	Spindle Speed
	ap mm	ae mm	mm/min	min⁻¹	ap mm	ae mm	mm/min	min⁻¹	ap mm	ae mm	mm/min	min⁻¹
0.5	0.1	0.3	2,500	30,000	0.1	0.2	2,500	30,000	0.08	0.1	2,000	30,000
1	0.2	0.6	3,000	20,000	0.2	0.6	3,000	20,000	0.15	0.3	2,500	20,000
1.5	0.2	1	3,000	18,000	0.2	0.8	3,000	16,000	0.2	0.5	2,000	14,000
2	0.3	1.5	3,000	15,000	0.2	1	3,000	12,000	0.2	0.6	2,000	10,000
2.5	0.3	2	3,000	12,000	0.2	1.2	3,000	10,000	0.2	0.7	2,000	8,000
3	0.4	2	3,000	9,000	0.3	1.2	3,000	7,200	0.2	1	2,000	6,800
Notes	※1 Depth of Cut: ap=Axial Depth of Cut / ae=Radial Depth of Cut. ※2 We recommend using oil mist coolant. ※3 Adjust both spindle speed and feed at the same rate. ※4 Adjust milling conditions according to the volume of depth of cut and rigidity of machine. ※5 Length of overhang is 4 to 5 times Dia. When it is longer than 4 to 5 times Dia., adjust the conditions listed above.											

Machining Case 1

Binding sample



- Work material : DC53 60HRC
- Total machining time : 15hr 16min
- Coolant : Oil mist
- Work Size : 100 x 100mm (Machining depth 50mm)

Process	Roughing	Semi-finishing	Finishing	Stock removal
Tool	MSBH345 R3	MSBH345 R3	MSBH345 R3	MSBH345 R2
Spindle speed [min⁻¹]	7,200			12,000
Feed [mm/min]	3,000	3,000	2,200	2,200
Depth of cut apxae [mm]	0.3x1.5	0.3x0.5	0.1x0.1	0.1x0.1
Machining time	6hr 40min	49min	7hr20min	27min