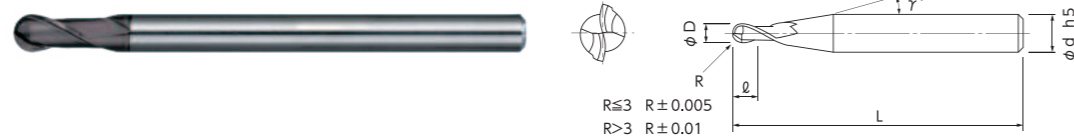


Ball end mill for prehardened steels and hardened steels up to 65HRC
For multi-purpose from roughing to finishing



- Standard ball end mill for hardened steels and suitable for finishing process.
- Applicable for hardened steels up to 65HRC.

Unit : mm

Code No.	Radius (R)	Length of Cut (ℓ)	Dia. (D)	Neck Taper Angle (γ)	Shank Dia. (d)	Overall Length (L)
08-00507-00005	R0.05	0.1	0.1	12°	4	50
08-00507-00007	R0.075	0.15	0.15	12°	4	50
08-00507-00010	R0.1	0.2	0.2	12°	4	50
08-00507-00015	R0.15	0.3	0.3	12°	4	50
08-00507-00020	R0.2	0.6	0.4	12°	4	50
08-00507-00025	R0.25	0.8	0.5	12°	4	50
08-00507-00030	R0.3	0.9	0.6	12°	4	50
08-00507-00040	R0.4	1.2	0.8	12°	4	50
08-00507-00050	R0.5	1.5	1	12°	4	50
08-00507-00075	R0.75	2.3	1.5	12°	4	50
08-00507-00100	R1	3	2	12°	4	60
08-00507-00125	R1.25	3.8	2.5	12°	6	60
08-00507-00150	R1.5	5	3	12°	6	60
08-00507-00201	R2	6	4	-	4	70
08-00507-00200	R2	6	4	12°	6	70
08-00507-00250	R2.5	8	5	12°	6	70
08-00507-00300	R3	10	6	-	6	80
08-00507-00400	R4	12	8	-	8	90
08-00507-00500	R5	15	10	-	10	100
08-00507-00600	R6	20	12	-	12	100

How to Order When you order, indicate MSBH230 (R)×(d). ※(γ) is reference value.

Machining Case 1

3D Shape Model



- Work material: STAVAX 52HRC
- Total machining time : 9hr 23min
- Coolant : Oil mist

Work Size : 100 x 100mm (Machining depth 20mm)

Process	Roughing	Semi-finishing	Finishing
Tool	MSBH230 R3	MSBH230 R2	MSBH230 R2
Spindle speed [min ⁻¹]	14,000	15,000	
Feed [mm/min]	3,000	2,000	1,800
Depth of cut $\bar{a}_p \times \bar{a}_e$ [mm]	0.3×2	0.2×0.3	0.08×0.05
Machining time	2hr 30min	2hr 23min	4hr 30min

Work Material	Hardened Steels SKD61-STAVAX-HPM38 (~52HRC)				Hardened Steels SKD11 (~62HRC)				High Speed Steels SKH (~65HRC)			
	Depth of Cut		Feed	Spindle Speed	Depth of Cut		Feed	Spindle Speed	Depth of Cut		Feed	Spindle Speed
Radius	\bar{a}_p mm	\bar{a}_e mm	mm/min	min ⁻¹	\bar{a}_p mm	\bar{a}_e mm	mm/min	min ⁻¹	\bar{a}_p mm	\bar{a}_e mm	mm/min	min ⁻¹
0.05	0.005	0.005	150	40,000	0.003	0.005	100	40,000	0.002	0.005	60	40,000
0.075	0.005	0.005	180	40,000	0.003	0.005	150	40,000	0.002	0.005	100	40,000
0.1	0.01	0.02	360	40,000	0.01	0.01	320	40,000	0.003	0.005	240	40,000
0.15	0.01	0.03	420	40,000	0.01	0.02	360	40,000	0.005	0.01	300	40,000
0.2	0.02	0.06	1,000	40,000	0.02	0.05	820	40,000	0.01	0.02	480	40,000
0.25	0.03	0.07	1,200	40,000	0.025	0.05	1,000	40,000	0.015	0.03	600	40,000
0.3	0.05	0.1	1,600	40,000	0.03	0.06	1,200	40,000	0.02	0.05	720	30,000
0.4	0.1	0.15	2,200	40,000	0.07	0.1	1,800	40,000	0.05	0.1	1,200	30,000
0.5	0.1	0.3	2,500	40,000	0.1	0.2	2,000	30,000	0.08	0.1	1,400	25,000
0.75	0.15	0.3	3,000	30,000	0.1	0.3	2,500	30,000	0.1	0.2	2,000	25,000
1	0.2	0.5	3,000	25,000	0.2	0.5	2,500	25,000	0.15	0.3	2,000	20,000
1.25	0.2	0.6	3,000	25,000	0.2	0.5	2,500	20,000	0.15	0.3	2,000	16,000
1.5	0.2	0.8	3,000	20,000	0.2	0.6	2,500	18,000	0.2	0.5	2,000	14,000
2	0.3	1.5	3,000	20,000	0.2	0.8	2,500	16,000	0.2	0.6	2,000	12,000
2.5	0.3	1.5	3,000	18,000	0.2	1.2	2,500	12,000	0.2	0.7	2,000	9,200
3	0.3	2	3,000	16,000	0.3	1.2	2,500	8,000	0.2	1	2,000	7,000
4	0.5	2	2,500	10,000	0.4	1.2	1,800	7,000	0.3	1	1,200	5,000
5	0.7	2.5	2,000	7,000	0.5	1.5	1,500	5,000	0.4	1.2	1,000	4,000
6	1	3	1,500	5,000	0.6	2	1,200	4,000	0.5	1.5	800	3,000

- Notes**
- ※1 Depth of Cut: \bar{a}_p =Axial Depth of Cut / \bar{a}_e =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 tool overhang must be as short as possible.

