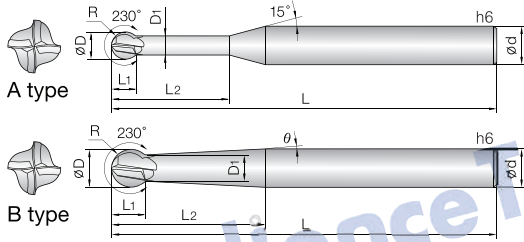


4 Flutes Hard Cut Spherical 3D Cut 230° Ball End Mills For Hardened Steels



4HSPB

- **Ball Endmills for various work material (HRC 52-68) Pre-hardened steels and Hardened steels.**
- Good wear resistance by high quality Si-based H coating.
- High-Precise edge tolerance.
- 230° degree Ball shape for wide range 3D machining.
- Minimize chattering and fracturing by taper designed flute.
- Good surface finish.
- Outstanding performance at high speed machining by ultra fine (0.2µm) WC grade.



Unit(mm)

Model Number	Cutting Dia. D	Radius Of BN R	Neck Dia D	Length Of Cut L1	Effective Length L2	Angle θ	Type	Overall Length L	Shank dia d
4HSPB 010 000 040 660	1	0.5R	0.91	0.7	4	0°	A	60	6
4HSPB 010 000 060 660	1	0.5R	0.91	0.7	6	0°	A	60	6
4HSPB 010 013 200 675	1	0.5R	0.91	0.7	20	1°30'	B	75	6
4HSPB 015 000 060 660	1.5	0.75R	1.36	1	6	0°	A	60	6
4HSPB 015 000 080 660	1.5	0.75R	1.36	1	8	0°	A	60	6
4HSPB 015 013 200 675	1.5	0.75R	1.36	1	20	1°30'	B	75	6
4HSPB 020 000 060 660	2	1R	1.8	1.4	6	0°	A	60	6
4HSPB 020 000 100 660	2	1R	1.8	1.4	10	0°	A	60	6
4HSPB 020 013 200 675	2	1R	1.8	1.4	20	1°30'	B	75	6
4HSPB 030 000 100 660	3	1.5R	2.7	2.1	10	0°	A	60	6
4HSPB 030 000 150 660	3	1.5R	2.7	2.1	15	0°	A	60	6
4HSPB 030 013 300 675	3	1.5R	2.7	2.1	30	1°30'	B	75	6
4HSPB 040 000 120 660	4	2R	3.6	2.8	12	0°	A	60	6
4HSPB 040 000 200 660	4	2R	3.6	2.8	20	0°	A	60	6
4HSPB 040 030 250 675	4	2R	3.6	2.8	25	3°	B	75	6
4HSPB 050 010 400 6A0	5	2.5R	4.5	3.5	40	1°	B	100	6
4HSPB 060 000 150 675	6	3R	5.4	4.2	15	0°	A	75	6
4HSPB 060 000 300 6A0	6	3R	5.4	4.2	30	0°	A	100	6
4HSPB 060 010 210 6A0	6	3R	5.4	4.2	21	1°	B	100	6
4HSPB 080 010 280 8A0	8	4R	7.2	5.7	28	1°	B	100	8
4HSPB 100 010 350 AA0	10	5R	9	7.1	35	1°	B	100	10
4HSPB 120 010 420 CC0	12	6R	10.8	8.5	42	1°	B	120	12