



MG

HB
Coating

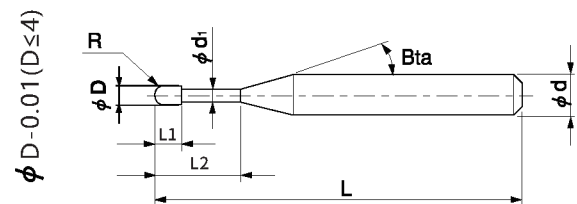
30
SD
0-0.003R
±0.005

Highly recommend ★ ○ ○
/Recommend/Suggest

DIE STEEL	Grade
Carbon steels (S45C/S55C)	○
Alloy steels (SK/SCM/SUS)	○
Prehardened steels (NAK/HPM)	○
Hardened steels (~55/~60/~70HRC)	○
SPECIAL MATERIAL	
Aluminum alloys	○
Graphite	
Copper	○
Plastics	
Carbon fiber	
Titanium alloys	○
Heat resistant alloys	
Cemented carbide	
Hard brittle (non-metallic) material	

Specialty

*Unique U-shaped chip removal groove design can effectively reduce cutting load, have better chip removal performance, and obtain higher metal removal rate.
*Unique HB series coating for more wear resistance and higher heat resistance.
*Suitable for HRC28~52 die steel, stainless steel processing.



Total 77 models

Unit (mm)

Model Number	D Outside Diameter	L1 Length Of Cut	L2 Effective Length	BTa Shank Taper Angle	L Overall Length	T Number Of Flutes	d Shank Diameter	In Stock
SHBLR2-002005	R0.1	0.2	0.5	12°	50	2	4	○
SHBLR2-002010	R0.1	0.2	1	12°	50	2	4	○
SHBLR2-002015	R0.1	0.2	1.5	12°	50	2	4	○
SHBLR2-003010	R0.15	0.3	1	12°	50	2	4	○
SHBLR2-003015	R0.15	0.3	1.5	12°	50	2	4	○
SHBLR2-003020	R0.15	0.3	2	12°	50	2	4	○
SHBLR2-003030	R0.15	0.3	3	12°	50	2	4	○
SHBLR2-004010	R0.2	0.4	1	12°	50	2	4	○
SHBLR2-004020	R0.2	0.4	2	12°	50	2	4	○
SHBLR2-004030	R0.2	0.4	3	12°	50	2	4	○
SHBLR2-004040	R0.2	0.4	4	12°	50	2	4	○
SHBLR2-005010	R0.25	0.5	1	12°	50	2	4	○
SHBLR2-005020	R0.25	0.5	2	12°	50	2	4	○
SHBLR2-005040	R0.25	0.5	4	12°	50	2	4	○
SHBLR2-005060	R0.25	0.5	6	12°	50	2	4	○
SHBLR2-005080	R0.25	0.5	8	12°	50	2	4	○
SHBLR2-006020	R0.3	0.6	2	12°	50	2	4	○
SHBLR2-006040	R0.3	0.6	4	12°	50	2	4	○
SHBLR2-006060	R0.3	0.6	6	12°	50	2	4	○
SHBLR2-006080	R0.3	0.6	8	12°	50	2	4	○
SHBLR2-008020	R0.4	0.8	2	12°	50	2	4	○
SHBLR2-008040	R0.4	0.8	4	12°	50	2	4	○

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Model Number	D Outside Diameter	L1 Length Of cut	L2 Effective Length	BTa Shank Taper Angle	L Overall Length	T Number Of Flutes	d Shank Diameter	In Stock
SHBLR2-008060	R0.4	0.8	6	12°	50	2	4	○
SHBLR2-008080	R0.4	0.8	8	12°	50	2	4	○
SHBLR2-009020	R0.45	0.9	2	12°	50	2	4	○
SHBLR2-009040	R0.45	0.9	4	12°	50	2	4	○
SHBLR2-009060	R0.45	0.9	6	12°	50	2	4	○
SHBLR2-009080	R0.45	0.9	8	12°	50	2	4	○
SHBLR2-010020	R0.5	1	2	12°	50	2	4	○
SHBLR2-010040	R0.5	1	4	12°	50	2	4	○
SHBLR2-010060	R0.5	1	6	12°	50	2	4	○
SHBLR2-010080	R0.5	1	8	12°	50	2	4	○
SHBLR2-010100	R0.5	1	10	12°	50	2	4	○
SHBLR2-010120	R0.5	1	12	12°	50	2	4	○
SHBLR2-010140	R0.5	1	14	12°	50	2	4	○
SHBLR2-010160	R0.5	1	16	12°	50	2	4	○
SHBLR2-015040	R0.75	1.5	4	12°	50	2	4	○
SHBLR2-015060	R0.75	1.5	6	12°	50	2	4	○
SHBLR2-015080	R0.75	1.5	8	12°	50	2	4	○
SHBLR2-015100	R0.75	1.5	10	12°	50	2	4	○
SHBLR2-015120	R0.75	1.5	12	12°	50	2	4	○
SHBLR2-015140	R0.75	1.5	14	12°	50	2	4	○
SHBLR2-015160	R0.75	1.5	16	12°	50	2	4	○
SHBLR2-020040	R1	2	4	12°	50	2	4	○
SHBLR2-020060	R1	2	6	12°	50	2	4	○
SHBLR2-020080	R1	2	8	12°	50	2	4	○
SHBLR2-020100	R1	2	10	12°	50	2	4	○
SHBLR2-020120	R1	2	12	12°	50	2	4	○
SHBLR2-020160	R1	2	16	12°	50	2	4	○
SHBLR2-020040-6	R1	2	4	12°	60	2	6	○
SHBLR2-020060-6	R1	2	6	12°	60	2	6	○
SHBLR2-020080-6	R1	2	8	12°	60	2	6	○
SHBLR2-020100-6	R1	2	10	12°	60	2	6	○
SHBLR2-020120-6	R1	2	12	12°	60	2	6	○
SHBLR2-020160-6	R1	2	16	12°	60	2	6	○
SHBLR2-030060	R1.5	3	6	12°	50	2	4	○

2 Flutes

Long Neck Ball

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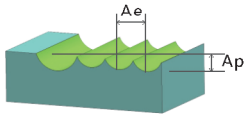
Model Number	D Outside Diameter	L1 Length Of Cut	L2 Effective Length	BTa Shank Taper Angle	L Overall Length	T Number Of Flutes	d Shank Diameter	In Stock
SHBLR2-030080	R1.5	3	8	12°	50	2	4	○
SHBLR2-030100	R1.5	3	10	12°	50	2	4	○
SHBLR2-030120	R1.5	3	12	12°	50	2	4	○
SHBLR2-030160	R1.5	3	16	12°	50	2	4	○
SHBLR2-030200	R1.5	3	20	12°	50	2	4	○
SHBLR2-030060-6	R1.5	3	6	12°	60	2	6	○
SHBLR2-030080-6	R1.5	3	8	12°	60	2	6	○
SHBLR2-030100-6	R1.5	3	10	12°	60	2	6	○
SHBLR2-030120-6	R1.5	3	12	12°	60	2	6	○
SHBLR2-030160-6	R1.5	3	16	12°	60	2	6	○
SHBLR2-030200-6	R1.5	3	20	12°	60	2	6	○
SHBLR2-040080	R2	4	8	12°	50	2	4	○
SHBLR2-040100	R2	4	10	12°	50	2	4	○
SHBLR2-040120	R2	4	12	12°	50	2	4	○
SHBLR2-040160	R2	4	16	12°	50	2	4	○
SHBLR2-040200	R2	4	20	12°	50	2	4	○
SHBLR2-040080-6	R2	4	8	12°	60	2	6	○
SHBLR2-040100-6	R2	4	10	12°	60	2	6	○
SHBLR2-040120-6	R2	4	12	12°	60	2	6	○
SHBLR2-040160-6	R2	4	16	12°	60	2	6	○
SHBLR2-040200-6	R2	4	20	12°	60	2	6	○

*New size added from this series.

○ Stocked items.

2 Flutes

Long Neck Ball

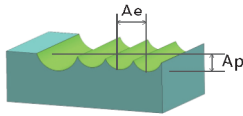


Work Material		Oxygen-free Copper Red Copper				HRC30-45 carbon steel and prehardened steel				HRC45-55 hardened steel			
Radius of Ball Nose	(mm) Effective Length	(min-1) Speed	(mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	(min-1) Speed	(mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	(min-1) Speed	(mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth
R0.1	0.5	30000	150	0.006	0.006	30000	150	0.006	0.006	30000	120	0.006	0.006
R0.1	1	30000	100	0.006	0.006	30000	100	0.006	0.006	30000	100	0.003	0.003
R0.1	1.5	30000	100	0.003	0.003	30000	100	0.003	0.003	30000	100	0.003	0.003
R0.15	1	28000	300	0.01	0.01	28000	300	0.01	0.01	26000	200	0.006	0.006
R0.15	1.5	28000	300	0.008	0.008	28000	300	0.008	0.008	26000	200	0.004	0.004
R0.15	2	24000	200	0.007	0.007	24000	200	0.007	0.007	24000	150	0.003	0.003
R0.15	3	20000	100	0.005	0.005	20000	100	0.005	0.005	18000	100	0.003	0.003
R0.2	1	24000	600	0.01	0.02	24000	600	0.01	0.02	20000	500	0.01	0.01
R0.2	2	24000	400	0.01	0.015	24000	400	0.01	0.015	20000	400	0.008	0.01
R0.2	3	20000	300	0.008	0.008	20000	300	0.008	0.008	18000	300	0.006	0.006
R0.2	4	18000	150	0.005	0.005	18000	150	0.005	0.005	16000	150	0.003	0.003
R0.25	1	22000	800	0.015	0.02	22000	800	0.015	0.02	20000	600	0.01	0.01
R0.25	2	22000	800	0.015	0.02	22000	800	0.015	0.02	18000	600	0.01	0.01
R0.25	4	18000	400	0.01	0.01	18000	400	0.01	0.01	16000	300	0.008	0.008
R0.25	6	14000	200	0.005	0.005	14000	200	0.005	0.005	14000	150	0.008	0.008
R0.25	8	14000	100	0.003	0.003	14000	100	0.003	0.003	14000	100	0.003	0.003
R0.3	2	20000	1000	0.02	0.02	20000	1000	0.02	0.02	20000	800	0.02	0.02
R0.3	4	17000	500	0.015	0.02	17000	500	0.015	0.02	15000	500	0.01	0.01
R0.3	6	15000	400	0.01	0.02	15000	400	0.01	0.02	13000	300	0.008	0.008
R0.3	8	14000	200	0.005	0.01	14000	200	0.005	0.01	13000	150	0.005	0.005
R0.4	2	18000	1200	0.03	0.03	18000	1200	0.03	0.03	18000	1200	0.02	0.02
R0.4	4	18000	800	0.02	0.03	18000	800	0.02	0.03	18000	800	0.02	0.02
R0.4	6	14000	500	0.01	0.03	14000	500	0.01	0.03	16000	600	0.01	0.02
R0.4	8	14000	300	0.01	0.02	14000	300	0.01	0.02	15000	400	0.005	0.01
R0.45	2	17000	1400	0.03	0.04	17000	1400	0.03	0.04	17000	1300	0.02	0.03
R0.45	4	17000	1200	0.03	0.04	17000	1200	0.03	0.04	17000	1000	0.02	0.03
R0.45	6	15000	800	0.02	0.03	15000	800	0.02	0.03	13000	600	0.01	0.02
R0.45	8	13000	500	0.01	0.03	13000	500	0.01	0.03	12000	400	0.01	0.02
R0.5	2	16000	1500	0.03	0.05	16000	1500	0.03	0.05	14000	1200	0.02	0.03
R0.5	4	16000	1300	0.03	0.05	16000	1300	0.03	0.05	14000	1000	0.02	0.03
R0.5	6	16000	1000	0.03	0.05	16000	1000	0.03	0.05	14000	800	0.02	0.03
R0.5	8	14000	500	0.02	0.04	14000	500	0.02	0.04	12000	500	0.01	0.02
R0.5	10	12000	400	0.01	0.03	12000	400	0.01	0.03	12000	400	0.01	0.02
R0.5	12	11000	300	0.01	0.02	11000	300	0.01	0.02	10000	300	0.01	0.02
R0.5	14	10000	250	0.01	0.02	10000	250	0.01	0.02	10000	200	0.008	0.01

2 Flutes

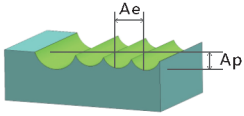
Long Neck
Ball

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Work Material		Oxygen-free Copper Red Copper				HRC30-45 carbon steel and prehardened steel				HRC45-55 hardened steel				
Radius of Ball Nose	(mm) Effective Length	(min-1) Speed	(mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	(min-1) Speed	(mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	(min-1) Speed	(mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	
2 Flutes	R0.5	16	10000	200	0.01	0.01	110000	200	0.01	0.01	10000	200	0.005	0.01
	R0.75	4	16000	1600	0.03	0.06	16000	1600	0.03	0.06	16000	1400	0.02	0.04
	R0.75	6	16000	1400	0.03	0.06	16000	1400	0.03	0.06	14000	1200	0.02	0.04
	R0.75	8	16000	1200	0.03	0.05	16000	1200	0.03	0.05	13000	1000	0.02	0.04
	R0.75	10	12000	800	0.02	0.05	12000	800	0.02	0.05	12000	600	0.01	0.04
	R0.75	12	10000	500	0.02	0.04	10000	500	0.02	0.04	11000	500	0.01	0.04
	R0.75	14	10000	400	0.01	0.03	10000	400	0.01	0.03	10000	400	0.01	0.02
	R0.75	16	8000	300	0.01	0.03	8000	300	0.01	0.03	9000	300	0.01	0.01
	R1	4	16000	1800	0.03	0.06	16000	1800	0.03	0.06	16000	2000	0.03	0.06
	R1	6	15000	1800	0.03	0.06	15000	1800	0.03	0.06	14000	1800	0.03	0.06
	R1	8	15000	1800	0.03	0.06	15000	1800	0.03	0.06	14000	1800	0.03	0.06
	R1	10	15000	1800	0.03	0.06	15000	1800	0.03	0.06	14000	1800	0.03	0.06
	R1	12	13000	1600	0.03	0.06	13000	1600	0.03	0.06	12000	1400	0.02	0.06
	R1	16	10000	1000	0.02	0.06	10000	1000	0.02	0.06	10000	1000	0.02	0.06
	R1	4	16000	1800	0.03	0.06	16000	1800	0.03	0.06	16000	2000	0.03	0.06
	R1	6	15000	1800	0.03	0.06	15000	1800	0.03	0.06	14000	1800	0.03	0.06
	R1	8	15000	1800	0.03	0.06	15000	1800	0.03	0.06	14000	1800	0.03	0.06
	R1	10	15000	1800	0.03	0.06	15000	1800	0.03	0.06	14000	1800	0.03	0.06
	R1	12	13000	1600	0.03	0.06	13000	1600	0.03	0.06	12000	1400	0.02	0.06
	R1	16	10000	1000	0.02	0.06	10000	1000	0.02	0.06	10000	1000	0.02	0.06
Long Neck Ball	R1.5	6	14000	2200	0.05	0.07	14000	2200	0.05	0.07	13000	2200	0.03	0.07
	R1.5	8	14000	2200	0.05	0.07	14000	2200	0.05	0.07	13000	2200	0.03	0.07
	R1.5	10	14000	2200	0.05	0.07	14000	2200	0.05	0.07	13000	2200	0.03	0.07
	R1.5	12	14000	2200	0.04	0.07	14000	2200	0.04	0.07	13000	2200	0.03	0.07
	R1.5	16	12000	2000	0.03	0.07	12000	2000	0.03	0.07	11000	2000	0.03	0.07
	R1.5	20	11000	1000	0.03	0.07	11000	1000	0.03	0.07	10000	1000	0.02	0.07
	R1.5	6	14000	2200	0.05	0.07	14000	2200	0.05	0.07	13000	2200	0.03	0.07
	R1.5	8	14000	2200	0.05	0.07	14000	2200	0.05	0.07	13000	2200	0.03	0.07
	R1.5	10	14000	2200	0.05	0.07	14000	2200	0.05	0.07	13000	2200	0.03	0.07
	R1.5	12	14000	2200	0.04	0.07	14000	2200	0.04	0.07	13000	2200	0.03	0.07
	R1.5	16	12000	2000	0.03	0.07	12000	2000	0.03	0.07	11000	2000	0.03	0.07
	R1.5	20	11000	1000	0.03	0.07	11000	1000	0.03	0.07	10000	1000	0.02	0.07
	R2	8	14000	2400	0.05	0.07	14000	2400	0.05	0.07	12000	2200	0.03	0.07
	R2	10	14000	2400	0.05	0.07	14000	2400	0.05	0.07	12000	2200	0.03	0.07
	R2	12	14000	2400	0.05	0.07	14000	2400	0.05	0.07	12000	2200	0.03	0.07

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Work Material		Oxygen-free Copper Red Copper				HRC30-45 carbon steel and prehardened steel				HRC45-55 hardened steel			
Radius of Ball Nose	(mm) Effective Length	(min-1) Speed	(mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	(min-1) Speed	(mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	(min-1) Speed	(mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth
R2	16	14000	2400	0.04	0.07	14000	2400	0.04	0.07	12000	2200	0.03	0.07
R2	20	12000	2000	0.04	0.07	12000	2000	0.04	0.07	11000	2000	0.03	0.07
R2	8	14000	2400	0.05	0.07	14000	2400	0.05	0.07	12000	2200	0.03	0.07
R2	10	14000	2400	0.05	0.07	14000	2400	0.05	0.07	12000	2200	0.03	0.07
R2	12	14000	2400	0.05	0.07	14000	2400	0.05	0.07	12000	2200	0.03	0.07
R2	16	14000	2200	0.04	0.07	14000	2200	0.04	0.07	12000	2200	0.03	0.07
R2	20	12000	2000	0.04	0.07	12000	2000	0.04	0.07	11000	2000	0.03	0.07

Note:

*Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;

*Recommend oil coolant for Stainless Steels and Heat Resistance Alloys.

2 Flutes

Long Neck
Ball