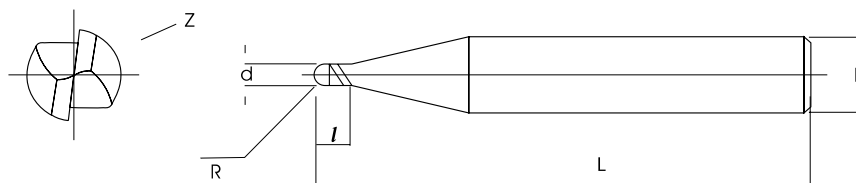


RS

For Multiple Materials

MINIATURE BALL TYPE - 2 flutes

WC=88 Co=12 HRA = 92.4 Rupture=3950N/mm² Grain Size=0.5μm

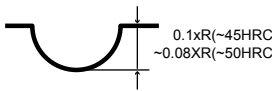
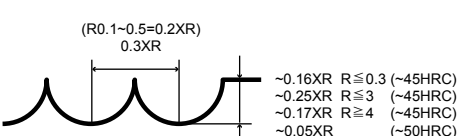


● SUMIB - RS ●



MODE	Diameter d	Radius of Ball Nose R	Flute Length l	Shank Diameter D	Flute Quantity Z	Full Length L
SUMIB 0032	0.3	0.15	0.6	4	2	50
SUMIB 0042	0.4	0.2	0.8	4	2	50
SUMIB 0052	0.5	0.25	1	4	2	50
SUMIB 0062	0.6	0.3	1.2	4	2	50
SUMIB 0072	0.7	0.35	1.4	4	2	50
SUMIB 0082	0.8	0.4	1.6	4	2	50
SUMIB 0092	0.9	0.45	1.8	4	2	50
SUMIB 0102	1.0	0.5	2	4	2	50
SUMIB 0112	1.1	0.55	2.2	4	2	50
SUMIB 0122	1.2	0.6	2.4	4	2	50
SUMIB 0132	1.3	0.65	2.6	4	2	50
SUMIB 0142	1.4	0.7	2.8	4	2	50
SUMIB 0152	1.5	0.75	3	4	2	50
SUMIB 0162	1.6	0.8	3.2	4	2	50
SUMIB 0172	1.7	0.85	3.4	4	2	50
SUMIB 0182	1.8	0.9	3.6	4	2	50
SUMIB 0192	1.9	0.95	3.8	4	2	50
SUMIB 0202	2.0	1	4	4	2	50
SUMIB 0212	2.1	1.05	4.2	4	2	50
SUMIB 0222	2.2	1.1	4.4	4	2	50
SUMIB 0232	2.3	1.15	4.6	4	2	50
SUMIB 0242	2.4	1.2	4.8	4	2	50
SUMIB 0252	2.5	1.25	5	4	2	50
SUMIB 0262	2.6	1.3	5.2	4	2	50
SUMIB 0272	2.7	1.35	5.4	4	2	50
SUMIB 0282	2.8	1.4	5.6	4	2	50
SUMIB 0292	2.9	1.45	5.8	4	2	50
SUMIB 0302	3.0	1.5	6	4	2	50

SUMIB, SUBT 2 Flutes, SULBT ■ Standard Cutting Conditions

Work Material	Carbon Steels S50C		Alloy Steels Prehardened Steels SCM SKD SUS HPM NAK		Hardened Steels SKD61(~50HRC)		Aluminum		Copper	
Cutting Speed	150m/min		120~150m/min		80~100m/min		150~m/min		100~150m/min	
R	Speed (min ⁻¹)	Feed Rate (mm/min)	Speed (min ⁻¹)	Feed Rate (mm/min)	Speed (min ⁻¹)	Feed Rate (mm/min)	Speed (min ⁻¹)	Feed Rate (mm/min)	Speed (min ⁻¹)	Feed Rate (mm/min)
0.15	40,000	400	40,000	360	40,000	330	40,000	440	40,000	400
0.2	40,000	500	40,000	480	40,000	500	40,000	480	40,000	480
0.25	40,000	620	40,000	610	40,000	620	40,000	540	40,000	540
0.3	40,000	750	40,000	750	40,000	750	40,000	600	40,000	600
0.4	40,000	960	40,000	1,000	36,000	900	40,000	800	40,000	800
0.5	40,000	1,200	38,000	1,200	29,000	900	40,000	1,000	40,000	830
0.75	30,000	1,270	25,500	1,100	19,000	700	40,000	1,360	30,000	1,160
1	24,000	1,160	19,000	800	14,300	600	40,000	2,000	24,000	1,200
1.25	19,000	1,000	15,300	670	11,500	510	38,000	2,400	19,000	1,200
1.5	16,000	930	13,000	600	9,600	460	32,000	2,400	16,000	1,200
1.75	13,700	930	11,400	580	8,200	450	27,300	2,400	13,600	1,200
2	12,000	930	10,000	570	7,200	450	24,000	2,400	12,000	1,200
2.5	9,600	930	8,000	560	5,700	450	19,000	2,400	9,600	1,200
3	8,000	930	6,400	540	4,800	450	16,000	2,400	8,000	1,200
4	6,000	900	4,800	540	3,600	450	12,000	2,400	6,000	1,200
5	4,800	900	3,800	540	2,900	450	9,600	2,300	4,800	1,150
6	4,000	900	3,200	540	2,400	450	8,000	2,100	4,000	1,050
7	3,400	900	2,750	540	2,050	450	6,800	2,000	3,400	1,000
8	3,000	900	2,400	540	1,800	450	6,000	2,000	3,000	1,000
10	2,400	900	1,900	520	1,450	450	4,800	2,000	2,400	1,000
12.5	1,900	720	1,520	450	1,160	420	3,840	1,900	1,920	940
Depth of cut (R)	 									

1. When slotting, reduce the feed by 60% from above values.
2. Length of overhang is 4 times dia. as standard. When it is longer than 4 times dia., flow figures of above table.
3. Use Oil-mist coolant or Air blow.
4. Adjust both spindle speed and feed according to milling conditions and machine rigidity.

SUMIB, SUBT 2 Flutes, SULBT ■ High-Speed Milling Conditions

Work Material	Carbon Steels S50C		Alloy Steels SCM, SKD, SUS		Prehardened Steels HPM, NAK		Hardened Steels SKD61(~50HRC)	
Cutting Speed	250m/min		200m/min		180m/min		100m/min	
R	Speed (min ⁻¹)	Feed Rate (mm/min)	Speed (min ⁻¹)	Feed Rate (mm/min)	Speed (min ⁻¹)	Feed Rate (mm/min)	Speed (min ⁻¹)	Feed Rate (mm/min)
0.15	~ 40,000	~ 1,200	~ 40,000	~ 960	~ 40,000	~ 800	~ 40,000	350
0.2	~ 40,000	~ 1,200	~ 40,000	~ 960	~ 40,000	~ 800	~ 40,000	480
0.25	~ 40,000	~ 1,200	~ 40,000	~ 960	~ 40,000	~ 800	~ 40,000	520
0.3	~ 40,000	~ 1,200	~ 40,000	~ 960	~ 40,000	~ 800	~ 40,000	560
0.4	~ 40,000	~ 2,400	~ 40,000	~ 2,000	~ 40,000	~ 1,760	40,000	1,000
0.5	~ 40,000	~ 2,400	~ 40,000	~ 2,000	~ 40,000	~ 1,760	32,000	1,500
0.75	~ 40,000	~ 3,700	~ 40,000	~ 3,000	38,000	2,700	21,300	1,500
1	40,000	5,000	32,000	3,200	29,000	2,900	16,000	1,500
1.25	32,000	5,000	25,000	3,200	23,000	2,900	12,800	1,500
1.5	27,000	5,000	21,000	3,200	19,000	2,900	10,600	1,500
1.75	23,000	5,000	18,000	3,200	16,400	2,900	9,100	1,500
2	20,000	4,000	16,000	3,200	14,000	2,900	8,000	1,500
2.5	16,000	3,500	12,800	2,500	11,500	2,300	6,400	1,300
3	13,500	3,000	10,600	2,000	9,500	1,800	5,300	1,200
4	10,000	3,000	8,000	2,000	7,200	1,800	4,000	1,200
5	8,000	3,000	6,400	2,000	5,700	1,800	3,200	1,200
6	6,700	2,500	5,300	1,800	4,800	1,600	2,700	1,200
8	5,000	2,000	4,000	1,500	3,600	1,300	2,000	800
10	4,000	1,500	3,200	1,200	2,900	1,000	1,600	800
12.5	3,200	1,200	2,550	900	2,300	700	1,280	760
Depth of cut (R)								

1. When slotting, reduce the feed by 60% from above values.
2. Length of overhang is 4 times dia. as standard. When it is longer than 4 times dia., follow figures of above table.
3. Recommend Oil-mist coolant or Air blow.
4. If the rigidity of the machine or the work material installation is very low, or chattering is generated, please reduce the revolution and the feed rate proportionately.
5. Use a rigid machine and holder.