



Size R0.1~R3

Attaching the inspection sheet of R accuracy

Super EXCELLENT BALL



Material Applications (☆ Highly Recommended ○ Recommended ○ Suggested)

Work Material															
Carbon Steels S45C S55C	Alloy Steels SK / SCM SUS	Prehardened Steels NAK HPM	Hardened Steels			Cast Iron	Aluminum Alloys	Graphite	Copper	Plastics	Glass Filled Plastics	Titanium Alloys	Heat Resistant Alloys	Cemented Carbide	Hard Brittle (Non-Metallic) Materials
			~55HRC	~60HRC	~70HRC										
○	○	○	○	○		○			○			○	○		

Features

Super high R tolerance type.

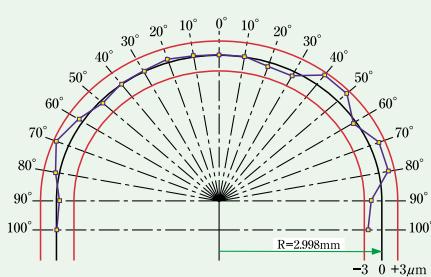
R Tolerance $P D/2 \pm 0.003$ (P D shows the diameter from the tip of the point of 1.25 x nominal R).

R accuracy inspection sheet included with every tool.

Diameter Tolerance: 0/-0.01

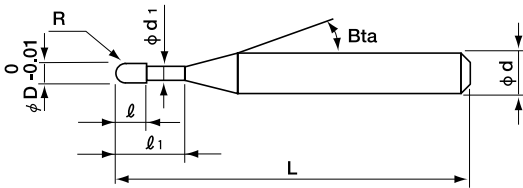
[R Accuracy Inspection Sheet]

Measurements of Ball R Accuracy
 Model : High R Tolerance Ball End Mill
 Lot. No.:7720011
 No.001



Angle	L side	R side
0°	2.998	2.998
10°	2.998	2.998
20°	2.999	2.997
30°	2.998	2.997
40°	2.998	3.000
50°	2.997	3.000
60°	2.999	2.997
70°	3.000	3.000
80°	2.999	3.000
90°	2.997	2.997
100°	2.998	2.996
R Accuracy	R=2.998	+0.002 -0.002
Actual Outer Diameter	$\phi D=5.996$	

HLB-SE



The shank taper angle shown is not an exact value and to avoid contact with the work piece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the work piece.

Total 24 models

Unit (mm)

Model Number	Radius of Ball Nose R	Effective Length ℓ_1	Length of Cut ℓ	Neck Diameter ϕd_1	Shank Taper Angle Bta	Overall Length L	Shank Diameter ϕd	Price (¥)
HLB 2002-003 SE	RO.1	0.3	0.16	0.17	16°	45	4	15,000
HLB 2002-010 SE		1				45	4	16,500
HLB 2003-005 SE	RO.15	0.5	0.24	0.27		45	4	14,500
HLB 2003-015 SE		1.5				45	4	15,800
HLB 2004-005 SE	RO.2	0.5	0.32	0.37		45	4	9,900
HLB 2004-020 SE		2				45	4	10,200
HLB 2005-010 SE	RO.25	1	0.4	0.47		45	4	9,900
HLB 2005-025 SE		2.5				45	4	10,200
HLB 2006-010 SE	RO.3	1	0.48	0.57		45	4	9,900
HLB 2006-030 SE		3				45	4	10,200
HLB 2010-025 SE	RO.5	2.5	0.8	0.96		45	4	9,900
HLB 2010-060 SE		6				45	4	10,200
HLB 2015-030 SE	RO.75	3	1.2	1.44		45	4	9,900
HLB 2015-080 SE		8				45	4	10,200
HLB 2020-030 SE	R1	3	1.6	1.94	45	4	9,900	
HLB 2020-100 SE		10			45	4	10,200	
HLB 2030-060 SE	R1.5	6	2.4	2.91	60	6	11,340	
HLB 2030-160 SE		16			60	6	11,760	
HLB 2040-080 SE	R2	8	3.2	3.91	70	6	11,030	
HLB 2040-200 SE		20			70	6	11,550	
HLB 2050-100 SE	R2.5	10	4	4.91	70	6	12,080	
HLB 2050-250 SE		25			70	6	12,600	
HLB 2060-100 SE	R3	10	4.8	5.91	-	80	6	13,020
HLB 2060-300 SE		30			80	6	13,650	

Square

Long Neck Square

Radius

Long Neck Radius

Ball / Long Shank Ball

Long Neck Ball

Taper Neck Ball

Taper

Spiral V Cutter

Drill Thread Mill

EURO Series

Technical Data