Size R0.2～R3

CPRB

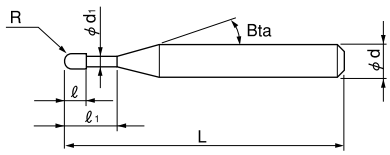
MG | 30° | R ±0.01 | Shank Dia 0/-0.005

Material Applications (☆ Highly Recommended ◎ Recommended ○ Suggested)

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

Features

Long neck ball design for milling Plastics.
Designed especialy for deep rib milling using an undercut form.



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 80 models

Unit (mm)

Model Number	Radius of Ball Nose R	Effective Length ℓ1	Length of Cut ℓ	Neck Diameter φd1	Shank Taper Angle Bta	Overall Length L	Shank Diameter φd	Price (¥)
CPRB 2004-1	R0.2	1	0.4	0.36	11°	45	4	8,000
CPRB 2004-2		2				45	4	8,800
CPRB 2004-3		3				45	4	9,800
CPRB 2005-2	R0.25	2	0.8	0.46	11°	45	4	8,000
CPRB 2005-4		4				45	4	8,000
CPRB 2005-6		6				45	4	8,800
CPRB 2005-8		8				45	4	8,800
CPRB 2005-10		10				50	4	9,500
CPRB 2006-2	R0.3	2	1	0.56	11°	45	4	7,200
CPRB 2006-4		4				45	4	7,200
CPRB 2006-6		6				45	4	7,200
CPRB 2006-8		8				45	4	7,200
CPRB 2008-2	R0.4	2	1.1	0.76	11°	45	4	7,080
CPRB 2008-4		4				45	4	7,080
CPRB 2008-6		6				45	4	7,080
CPRB 2008-8		8				45	4	7,080
CPRB 2008-10		10				50	4	7,080

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Unit (mm)

Model Number	Radius of Ball Nose R	Effective Length ℓ1	Length of Cut ℓ	Neck Diameter φd1	Shank Taper Angle Bta	Overall Length L	Shank Diameter φd	Price (¥)
CPRB 2010-3	R0.5	3	1.2	0.93	11°	45	4	6,120
CPRB 2010-4		4				45	4	6,120
CPRB 2010-6		6				45	4	6,120
CPRB 2010-8		8				45	4	6,120
CPRB 2010-10		10				45	4	6,120
CPRB 2010-12		12				45	4	6,120
CPRB 2010-14		14				50	4	6,120
CPRB 2010-16		16				50	4	6,120
CPRB 2010-20		20				55	4	7,200
CPRB 2012-8	R0.6	8	1.3	1.13	11°	45	4	8,000
CPRB 2012-12		12				45	4	8,000
CPRB 2014-8	R0.7	8	1.4	1.33	11°	45	4	8,000
CPRB 2014-12		12				45	4	8,000
CPRB 2014-16		16				50	4	8,000
CPRB 2015-6	R0.75	6	1.45	1.43	11°	45	4	6,240
CPRB 2015-8		8				45	4	6,240
CPRB 2015-10		10				45	4	6,240
CPRB 2015-12		12				45	4	6,240
CPRB 2015-16		16				50	4	6,240
CPRB 2015-20		20				55	4	6,240
CPRB 2016-8	R0.8	8	1.5	1.5	11°	45	4	8,000
CPRB 2016-12		12				45	4	8,000
CPRB 2016-16		16				50	4	8,000
CPRB 2016-20		20				55	4	8,000
CPRB 2018-8	R0.9	8	1.6	1.7	11°	45	4	8,000
CPRB 2018-12		12				45	4	8,000
CPRB 2018-16		16				50	4	8,000
CPRB 2018-20		20				55	4	8,000
CPRB 2020-4	R1	4	1.7	1.9	11°	45	4	6,120
CPRB 2020-6		6				45	4	6,120
CPRB 2020-8		8				45	4	6,120
CPRB 2020-10		10				45	4	6,120
CPRB 2020-12		12				45	4	6,120
CPRB 2020-14		14				50	4	6,120
CPRB 2020-16		16				50	4	6,120
CPRB 2020-20		20				55	4	6,120
CPRB 2020-22		22				60	4	6,120
CPRB 2020-25		25				65	4	6,120
CPRB 2020-30		30				70	4	7,440

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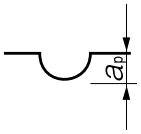
Unit（mm）

Model Number	Radius of Ball Nose R	Effective Length ℓ1	Length of Cut ℓ	Neck Diameter φd1	Shank Taper Angle Bta	Overall Length L	Shank Diameter φd	Price (¥)
CPRB 2030-8	R1.5	8	2.5	2.9	11°	60	6	8,640
CPRB 2030-10		10				60	6	8,640
CPRB 2030-12		12				60	6	8,640
CPRB 2030-16		16				60	6	8,640
CPRB 2030-20		20				70	6	8,640
CPRB 2030-25		25				70	6	8,640
CPRB 2030-30		30				70	6	8,640
CPRB 2030-35		35				80	6	10,080
CPRB 2040-10	R2	10	3	3.8	11°	70	6	8,640
CPRB 2040-12		12				70	6	8,640
CPRB 2040-16		16				70	6	8,640
CPRB 2040-20		20				70	6	8,640
CPRB 2040-25		25				70	6	8,640
CPRB 2040-30		30				70	6	8,640
CPRB 2040-35		35				80	6	8,880
CPRB 2040-40		40				90	6	9,120
CPRB 2040-45		45				90	6	10,320
CPRB 2040-50		50				100	6	11,280
CPRB 2050-20	R2.5	20	3.5	4.8	11°	70	6	12,080
CPRB 2050-25		25				70	6	12,080
CPRB 2050-30		30				80	6	13,130
CPRB 2050-35		35				80	6	13,130
CPRB 2060-30	R3	30	6	5.8	–	80	6	10,080
CPRB 2060-50		50			–	120	6	12,180

Milling Conditions for CPRB

WORK MATERIAL		ALUMINUM ALLOYS			PLASTICS		
Velocity		Vc＝65～70m/min			Vc＝40～45m/min		
Model Number	Radius of Ball Nose (mm)	Spindle Speed (min^{-1})	Feed Rate (mm/min)	a_p Axial Depth (mm)	Spindle Speed (min^{-1})	Feed Rate (mm/min)	a_p Axial Depth (mm)
2004	**R0.2**	35,000	560	0.005～0.01	35,000	1,100	0.07～0.2
2005	**R0.25**	35,000	700	0.003～0.01	28,000	1,200	0.08～0.25
2006	**R0.3**	35,000	910	0.006～0.03	24,000	1,200	0.1～0.3
2008	**R0.4**	26,000	940	0.006～0.05	18,000	900	0.13～0.4
2010	**R0.5**	21,000	970	0.005～0.08	14,000	700	0.17～0.5
2012	**R0.6**	18,000	1,010	0.04～0.09	12,000	600	0.2～0.6
2014	**R0.7**	15,000	1,020	0.05～0.1	10,000	500	0.23～0.7
2015	**R0.75**	14,000	1,010	0.06～0.12	9,500	480	0.25～0.75
2016	**R0.8**	13,000	1,010	0.08～0.13	9,000	450	0.27～0.8
2018	**R0.9**	12,000	1,060	0.09～0.15	8,000	400	0.3～0.9
2020	**R1.0**	11,000	1,100	0.03～0.21	7,000	350	0.33～1
2030	**R1.5**	6,900	760	0.03～0.23	4,800	240	0.5～1.5
2040	**R2.0**	5,200	690	0.01～0.28	3,600	180	0.6～2
2050	**R2.5**	4,200	590	0.16～0.31	2,900	150	0.8～2.5
2060	**R3.0**	3,500	550	0.22～0.36	2,400	120	1～3

Slotting
a_p : Axial Depth (mm)



Note:
・Adjust the axial depth (ap) based on the effective length and milling condition.
・The surface velocity is based on the tool diameter. On tools R0.25mm or smaller, the maximum spindle speed may limit the ability to attain the recommended velocity.
・Recommend water soluble coolant for Stainless Steels and Aluminum Alloys.
・Recommend air blow for Plastics.
・Remove chips from the work piece to keep the milling surface quality.
・If chips clog on the tool, stop the operation and remove them accordingly.