



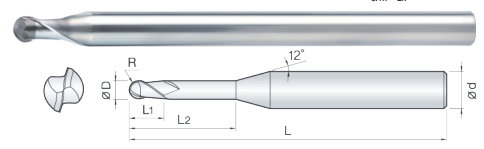
## 2CRB



**2 Flutes CBN High Speed Ball End Mills**  
 Applicable finish processing for hardened mold steel and graphite  
 • Materials: CBN

高速加工用 2刃 CBN ボールエンドミル  
 熱処理 金型鋼・グラファイト精密加工用  
 •材料: CBN

高速加工用2刃CBN球头铣刀  
 适宜难削的模具钢及石墨用的精加工  
 •材料: CBN



Radius tolerance	±0.005mm
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单位/Unit : mm

订货号 Order Number	刃径 Diameter	刃长 Length of cut	有效长 Effective Length	全长 Overall Length	柄径 Shank Dia
	D×R	L1	L2	L	d
2CRB 002 003 S04	0.2X0.1R	0.3	0.3	54	4
2CRB 002 005 S04	0.2X0.1R	0.5	0.5	54	4
2CRB 003 003 S04	0.3X0.15R	0.3	0.3	54	4
2CRB 003 008 S04	0.3X0.15R	0.3	0.8	54	4
2CRB 004 004 S04	0.4X0.2R	0.4	0.4	54	4
2CRB 004 010 S04	0.4X0.2R	0.4	1.0	54	4
2CRB 005 005 S04	0.5X0.25R	0.5	0.5	54	4
2CRB 005 010 S04	0.5X0.25R	0.5	1.0	54	4
2CRB 005 020 S04	0.5X0.25R	0.5	2.0	54	4
2CRB 006 006 S04	0.6X0.3R	0.6	0.6	54	4
2CRB 006 020 S04	0.6X0.3R	0.6	2.0	54	4
2CRB 008 007 S04	0.8X0.4R	0.7	0.7	54	4
2CRB 008 020 S04	0.8X0.4R	0.7	2.0	54	4
2CRB 010 008 S04	1X0.5R	0.8	0.8	54	4
2CRB 010 020 S04	1X0.5R	0.8	2.0	54	4

订货号 Order Number	刃径 Diameter	刃长 Length of cut	有效长 Effective Length	全长 Overall Length	柄径 Shank Dia
	D×R	L1	L2	L	d
2CRB 010 040 S04	1X0.5R	0.8	4.0	54	4
2CRB 012 020 S04	1.2X0.6R	1.0	2.0	54	4
2CRB 012 030 S04	1.2X0.6R	1.0	3.0	54	4
2CRB 012 050 S04	1.2X0.6R	1.0	5.0	54	4
2CRB 015 020 S04	1.5X0.75R	1.4	2.0	54	4
2CRB 015 040 S04	1.5X0.75R	1.4	4.0	54	4
2CRB 015 060 S04	1.5X0.75R	1.4	6.0	54	4
2CRB 020 030 S04	2X1.0R	1.7	3.0	54	4
2CRB 020 050 S06	2X1.0R	1.7	5.0	64	6
2CRB 020 100 S04	2X1.0R	1.7	10.0	54	4
2CRB 030 060 S04	3X1.5R	2.3	6.0	54	4
2CRB 030 080 S06	3X1.5R	2.3	8.0	66	6
2CRB 040 120 S06	4X2.0R	3.0	12.0	67	6
2CRB 040 160 S06	4X2.0R	3.0	16.0	67	6



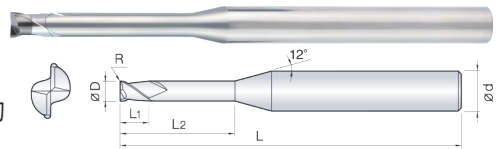
## 2CCR



**2 Flutes CBN High Speed Corner Radius End Mills**  
 Applicable finish processing for hardened mold steel and graphite  
 • Materials: CBN

高速加工用 2刃 CBN コーナーR付エンドミル  
 熱処理 金型鋼・グラファイト精密加工用  
 •材料: CBN

高速加工用2刃CBN锥形半径铣刀  
 适宜难削的模具钢及石墨用的精加工  
 •材料: CBN



Radius tolerance	±0.005mm
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单位/Unit : mm

订货号 Order Number	刃径 Diameter	刃长 Length of cut	有效长 Effective Length	全长 Overall Length	柄径 Shank Dia
	D×R	L1	L2	L	d
2CCR 002 003 003	0.2X0.03R	0.3	0.3	54	4
2CCR 002 003 005	0.2X0.03R	0.5	0.5	54	4
2CCR 003 005 003	0.3X0.05R	0.3	0.3	54	4
2CCR 003 005 008	0.3X0.05R	0.3	0.8	54	4
2CCR 004 005 010	0.4X0.05R	0.4	1.0	54	4
2CCR 004 010 010	0.4X0.1R	0.4	1.0	54	4
2CCR 005 005 015	0.5X0.05R	0.5	1.5	54	4
2CCR 005 010 015	0.5X0.1R	0.5	1.5	54	4
2CCR 006 005 020	0.6X0.05R	0.6	2.0	54	4
2CCR 006 010 020	0.6X0.1R	0.6	2.0	54	4
2CCR 008 010 020	0.8X0.1R	0.8	2.0	54	4
2CCR 010 010 020	1X0.1R	0.9	2.0	54	4
2CCR 010 020 020	1X0.2R	0.9	2.0	54	4
2CCR 012 010 030	1.2X0.1R	1.0	3.0	54	4
2CCR 012 020 030	1.2X0.2R	1.0	3.0	54	4
2CCR 015 010 020	1.5X0.1R	1.4	2.0	54	4
2CCR 015 010 040	1.5X0.1R	1.4	4.0	54	4
2CCR 015 020 020	1.5X0.2R	1.4	2.0	54	4

订货号 Order Number	刃径 Diameter	刃长 Length of cut	有效长 Effective Length	全长 Overall Length	柄径 Shank Dia
	D×R	L1	L2	L	d
2CCR 015 020 040	1.5X0.2R	1.4	4.0	54	4
2CCR 020 010 030	2X0.1R	1.7	3.0	54	4
2CCR 020 010 050	2X0.1R	1.7	5.0	64	6
2CCR 020 020 030	2X0.2R	1.7	3.0	54	4
2CCR 020 020 050	2X0.2R	1.7	5.0	64	6
2CCR 030 010 060	3X0.1R	2.3	6.0	54	4
2CCR 030 010 080	3X0.1R	2.3	8.0	66	6
2CCR 030 020 060	3X0.2R	2.3	6.0	54	4
2CCR 030 020 080	3X0.2R	2.3	8.0	66	6
2CCR 030 030 060	3X0.3R	2.3	6.0	54	4
2CCR 030 030 080	3X0.3R	2.3	8.0	66	6
2CCR 040 010 120	4X0.1R	3.0	12.0	67	6
2CCR 040 020 120	4X0.2R	3.0	12.0	67	6
2CCR 040 030 120	4X0.3R	3.0	12.0	67	6
2CCR 040 050 120	4X0.5R	3.0	12.0	67	6

- The numerical value of Pf Aa of 2CRB is applied to the 20~40% down.
- 2CRB Pf Aa は下記数値の 20~40% Down 適用
- 2CRB Pf Aa の値适用于下面的数值的20~40%降低

• RPM : rev./min • Feed : mm/min

Material		NAK, KP4M				STAVAX				STD / SKD				SKH			
Hardness		~ 40HRC				~ 52HRC				~ 62HRC				~ 68HRC			
Radius	Effective Length	Aa	Pf	RPM	FEED	Aa	Pf	RPM	FEED	Aa	Pf	RPM	FEED	Aa	Pf	RPM	FEED
RO.1	0.3	0.005	0.008	38,000	260	0.003	0.010	38,000	250	0.003	0.008	38,000	230	0.003	0.007	38,000	220
	0.5	0.005	0.005	38,000	220	0.003	0.006	38,000	210	0.002	0.006	38,000	190	0.002	0.005	38,000	180
RO.15	0.3	0.006	0.012	38,000	410	0.006	0.010	38,000	340	0.006	0.010	38,000	300	0.006	0.01	38,000	250
	0.8	0.005	0.010	38,000	380	0.005	0.008	38,000	300	0.005	0.008	38,000	270	0.005	0.008	38,000	260
RO.2	0.4	0.009	0.012	38,000	450	0.007	0.013	38,000	460	0.007	0.012	38,000	420	0.007	0.012	38,000	410
	1	0.007	0.010	38,000	420	0.006	0.010	38,000	430	0.006	0.010	38,000	380	0.006	0.010	35,000	350
RO.25	0.5	0.010	0.016	38,000	500	0.008	0.017	38,000	550	0.008	0.017	38,000	520	0.008	0.017	35,000	400
	1	0.008	0.014	36,000	500	0.007	0.013	34,000	480	0.007	0.013	34,000	440	0.007	0.013	31,000	340
	2	0.006	0.012	35,000	500	0.006	0.010	30,000	400	0.006	0.010	30,000	360	0.006	0.010	28,000	290
RO.3	0.6	0.012	0.018	38,000	740	0.010	0.020	38,000	720	0.010	0.020	38,000	630	0.010	0.020	35,000	500
	2	0.010	0.014	38,000	700	0.008	0.014	35,000	630	0.008	0.015	35,000	540	0.008	0.015	32,000	420
RO.4	0.7	0.015	0.025	38,000	860	0.013	0.025	35,000	760	0.013	0.025	35,000	700	0.013	0.025	32,000	530
	2	0.010	0.020	33,000	700	0.010	0.017	30,000	630	0.010	0.018	30,000	540	0.010	0.018	28,000	430
RO.5	0.8	0.020	0.030	38,000	1,000	0.016	0.030	35,000	900	0.016	0.030	35,000	800	0.016	0.030	32,000	630
	2	0.017	0.026	36,000	900	0.015	0.025	32,000	800	0.014	0.027	32,000	700	0.014	0.027	29,000	540
	4	0.015	0.020	30,000	700	0.012	0.020	26,000	630	0.012	0.020	25,000	500	0.012	0.020	22,000	380
RO.6	2	0.020	0.040	36,000	2,000	0.024	0.035	36,000	1,500	0.020	0.032	36,000	1,300	0.015	0.025	35,000	1,000
	3	0.020	0.040	35,000	1,800	0.020	0.030	35,000	1,100	0.015	0.030	35,000	1,000	0.012	0.025	32,000	900
	5	0.020	0.035	28,000	1,400	0.018	0.033	26,000	900	0.018	0.030	26,000	800	0.018	0.025	24,000	700
RO.75	2	0.025	0.040	38,000	3,000	0.025	0.040	35,000	1,100	0.025	0.030	35,000	1,000	0.020	0.030	32,000	900
	4	0.025	0.030	35,000	2,700	0.025	0.030	33,000	1,000	0.020	0.030	30,000	900	0.020	0.025	27,000	800
	6	0.020	0.030	30,000	2,200	0.020	0.025	30,000	900	0.020	0.020	26,000	800	0.020	0.020	24,000	700
R1	3	0.030	0.050	35,000	2,200	0.020	0.040	35,000	1,200	0.020	0.035	35,000	1,000	0.020	0.030	32,000	900
	5	0.030	0.050	32,000	1,900	0.020	0.035	32,000	1,000	0.020	0.030	32,000	900	0.020	0.030	30,000	800
	10	0.020	0.035	24,000	900	0.015	0.030	20,000	700	0.015	0.025	20,000	600	0.015	0.020	16,000	450
R1.5	6	0.040	0.050	30,000	1,400	0.030	0.040	28,000	1,100	0.033	0.040	28,000	1,000	0.033	0.040	22,000	760
	8	0.035	0.060	28,000	1,200	0.030	0.040	25,000	1,000	0.030	0.040	25,000	900	0.030	0.040	20,000	660
R2	12	0.040	0.060	30,000	2,400	0.030	0.050	28,000	1,400	0.030	0.050	25,000	1,200	0.030	0.040	20,000	1,000
	16	0.030	0.050	24,000	1,800	0.030	0.040	22,000	1,000	0.030	0.040	20,000	800	0.020	0.040	16,000	750
Depth of Cut	<p>The diagram illustrates the cutting profile of a ball end mill. It shows a series of overlapping semi-circular arcs representing the tool's path. The horizontal distance between the peaks of two consecutive arcs is labeled as Pf (pitch). The vertical distance from the original surface to the peak of the cut is labeled as Aa (axial depth of cut). The diagram is used to define the parameters for the cutting data table.</p>																

- The numerical value of Pf Aa of 2CRB is applied to the 20~40% down.
- 2CRB Pf Aa は下記数値の 20~40% Down 適用
- 2CRB Pf Aa の値适用于下面的数値的20~40%降低

• RPM : rev./min • Feed : mm/min

Material		NAK, KP4M				STAVAX				STD / SKD				SKH			
Hardness		~ 40HRC				~ 52HRC				~ 62HRC				~ 68HRC			
Radius	Effective Length	Aa	Pf	RPM	FEED	Aa	Pf	RPM	FEED	Aa	Pf	RPM	FEED	Aa	Pf	RPM	FEED
R0.03	0.3	0.005	0.008	38,000	260	0.003	0.010	38,000	250	0.003	0.008	38,000	230	0.003	0.007	38,000	220
	0.5	0.005	0.005	38,000	220	0.003	0.006	38,000	210	0.002	0.006	38,000	190	0.002	0.005	38,000	180
R0.05	0.3	0.006	0.012	38,000	420	0.006	0.010	38,000	340	0.006	0.010	38,000	300	0.006	0.01	38,000	250
	0.8	0.005	0.010	38,000	380	0.005	0.008	38,000	300	0.005	0.008	38,000	270	0.005	0.008	38,000	260
R0.1	1	0.007	0.010	38,000	420	0.006	0.010	38,000	430	0.006	0.010	38,000	380	0.006	0.010	35,000	350
	1	0.007	0.010	38,000	420	0.006	0.010	38,000	430	0.006	0.010	38,000	380	0.006	0.010	35,000	350
R0.05	1.5	0.007	0.014	38,000	550	0.007	0.012	35,000	500	0.007	0.012	35,000	450	0.007	0.012	30,000	330
R0.1		0.007	0.014	38,000	550	0.007	0.012	35,000	500	0.007	0.012	35,000	450	0.007	0.012	30,000	330
R0.05	2	0.010	0.014	38,000	700	0.008	0.014	35,000	630	0.008	0.015	35,000	540	0.008	0.015	32,000	420
		0.010	0.014	38,000	700	0.008	0.014	35,000	630	0.008	0.015	35,000	540	0.008	0.015	32,000	420
R0.1	2	0.010	0.020	33,000	700	0.010	0.017	30,000	630	0.010	0.018	30,000	540	0.010	0.018	28,000	430
		0.020	0.030	38,000	1,000	0.016	0.030	35,000	900	0.016	0.030	35,000	800	0.016	0.030	32,000	630
R0.2	3	0.020	0.030	38,000	1,000	0.016	0.030	35,000	900	0.016	0.030	35,000	800	0.016	0.030	32,000	630
R0.1		0.020	0.040	35,000	2,000	0.020	0.030	35,000	1,100	0.150	0.030	35,000	1,000	0.012	0.025	32,000	900
R0.2	3	0.020	0.040	35,000	2,000	0.020	0.030	35,000	1,100	0.150	0.030	35,000	1,000	0.012	0.025	32,000	900
R0.1		2	0.025	0.040	38,000	3,000	0.025	0.040	35,000	1,100	0.025	0.030	35,000	1,000	0.020	0.030	32,000
R0.2	4	0.025	0.030	35,000	2,700	0.025	0.030	33,000	1,000	0.020	0.030	30,000	900	0.020	0.025	27,000	800
	2	0.025	0.040	38,000	3,000	0.025	0.040	35,000	1,100	0.025	0.030	35,000	1,000	0.020	0.030	32,000	900
R0.2	4	0.025	0.030	35,000	2,700	0.025	0.030	33,000	1,000	0.020	0.030	30,000	900	0.020	0.025	27,000	800
R0.1	3	0.030	0.050	32,000	1,900	0.020	0.035	32,000	1,000	0.020	0.030	32,000	900	0.020	0.030	30,000	800
	5	0.025	0.045	30,000	1,600	0.020	0.035	28,000	900	0.020	0.030	28,000	800	0.020	0.030	24,000	650
R0.2	3	0.030	0.050	32,000	1,900	0.020	0.035	32,000	1,000	0.020	0.030	32,000	900	0.020	0.030	30,000	800
	5	0.025	0.045	30,000	1,600	0.020	0.035	28,000	900	0.020	0.030	28,000	800	0.020	0.030	24,000	650
R0.1	6	0.040	0.050	24,000	2,200	0.030	0.040	28,000	1,100	0.033	0.040	28,000	1,000	0.033	0.040	22,000	760
	8	0.035	0.060	20,000	1,700	0.030	0.040	25,000	1,000	0.030	0.040	25,000	900	0.030	0.040	20,000	660
R0.2	6	0.040	0.050	24,000	2,200	0.030	0.040	28,000	1,100	0.033	0.040	28,000	1,000	0.033	0.040	22,000	760
	8	0.035	0.060	20,000	1,700	0.030	0.040	25,000	1,000	0.030	0.040	25,000	900	0.030	0.040	20,000	660
R0.3	6	0.040	0.050	24,000	2,200	0.030	0.040	28,000	1,100	0.033	0.040	28,000	1,000	0.033	0.040	22,000	760
	8	0.035	0.060	20,000	1,700	0.030	0.040	25,000	1,000	0.030	0.040	25,000	900	0.030	0.040	20,000	660
R0.1	12	0.040	0.060	28,000	2,200	0.030	0.050	25,000	1,200	0.030	0.050	22,000	1,000	0.030	0.040	20,000	800
R0.2		0.040	0.060	28,000	2,200	0.030	0.050	25,000	1,200	0.030	0.050	22,000	1,000	0.030	0.040	20,000	800
R0.3		0.040	0.060	28,000	2,200	0.030	0.050	25,000	1,200	0.030	0.050	22,000	1,000	0.030	0.040	20,000	800
R0.5		0.030	0.050	24,000	1,800	0.030	0.040	22,000	1,000	0.030	0.040	20,000	800	0.020	0.040	16,000	750

Depth of Cut

