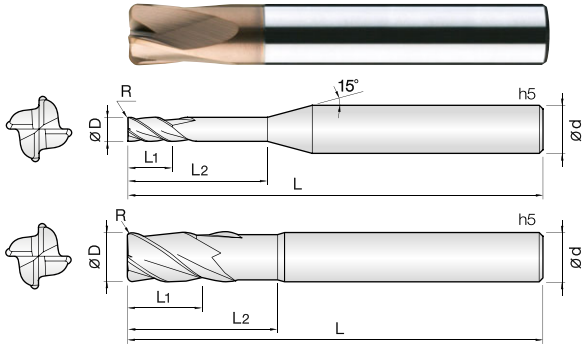


# 4RCU

## 4 Flutes High Speed Corner Radius Cutter



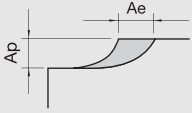
- Cutter for pre-hardened and hardened steel (HRc50~62)
- Good wear resistance by Si-based PVD coating.
- Designed for low speed with high feed condition.
- Suitable for heavy duty and roughing application.
- Minimize fracturing at high feed by high TRS fine WC grade.

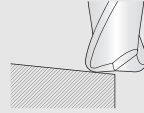


D Size	D Tolerance
Ø1 ~ 5	+0 ~ -0.01 mm
Ø6 ~ 12	-0.005 ~ -0.015 mm
Ø16	-0.01 ~ -0.02 mm

Material		Alloy Steel				Alloy Steels/ Tool Steels				Hardened Steels				⊕ Hardened Steels			
Hardness		~ 30HRC				30 ~ 45HRC				45 ~ 55HRC				55 ~ 62HRC			
Outside Diameter	Radius	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
∅1	R0.2	45,000	7,000	0.05	0.06	42,000	7,800	0.03	0.05	35,000	6,800	0.02	0.05	25,000	2,600	0.02	0.05
∅1.5	R0.5	40,000	9,000	0.06	0.72	40,000	8,000	0.04	0.65	30,000	7,000	0.03	0.60	21,000	2,800	0.02	0.06
∅2	R0.5	33,000	10,000	0.08	0.96	27,000	8,400	0.05	0.86	24,000	7,500	0.04	0.80	16,000	3,000	0.03	0.80
∅3	R0.5	22,000	11,000	0.12	1.44	18,000	9,000	0.08	1.30	16,000	8,500	0.06	1.20	11,000	3,300	0.05	1.20
∅4	R0.5	19,000	13,000	0.17	2.04	16,000	10,000	0.13	1.84	13,000	10,000	0.09	1.70	900	4,000	0.08	1.70
"	R1.0	17,000	12,000	0.15	1.80	14,000	9,500	0.12	1.62	12,000	8,800	0.08	1.50	8,000	3,500	0.07	1.50
∅5	R0.5	15,000	14,000	0.23	2.76	12,000	12,000	0.17	2.48	11,000	10,000	0.12	2.30	7,300	4,300	0.09	2.30
"	R1.0	13,000	13,000	0.20	2.40	11,000	11,000	0.15	2.16	9,600	9,500	0.10	2.00	6,400	3,800	0.08	2.00
∅6	R0.3	13,310	15,730	0.30	3.54	10,900	13,200	0.18	3.19	10,000	13,000	0.12	2.95	6,500	4,600	0.12	2.95
"	R0.5	12,980	15,340	0.29	3.42	10,600	13,000	0.17	3.08	9,500	12,000	0.11	2.85	6,300	4,500	0.11	2.85
"	R1.0	12,600	12,600	0.28	3.36	12,654	12,600	0.17	3.02	9,000	11,000	0.11	2.80	5,800	4,100	0.11	2.80
"	R1.5	11,000	13,000	0.25	3.00	9,000	11,000	0.15	2.70	8,000	9,600	0.10	2.50	5,300	3,800	0.10	2.50
∅8	R0.3	9,800	17,500	0.35	4.25	8,400	13,500	0.24	3.82	7,300	15,000	0.18	3.54	4,700	4,484	0.15	3.54
"	R0.5	8,800	16,500	0.34	4.10	8,200	13,000	0.23	3.69	7,100	13,000	0.17	3.42	4,600	4,370	0.15	3.42
"	R1.0	8,400	15,000	0.34	4.03	8,000	12,000	0.22	3.63	6,700	11,000	0.17	3.36	4,520	4,294	0.15	3.36
"	R2.0	8,200	13,000	0.30	3.60	7,000	11,000	0.20	3.24	6,000	9,600	0.15	3.00	4,000	3,800	0.13	3.00
∅10	R0.3	7,670	15,340	0.35	6.37	6,490	12,980	0.24	5.73	5,664	11,210	0.18	5.31	3,776	4,484	0.15	5.31
"	R0.5	7,475	14,950	0.34	6.16	6,325	12,650	0.23	5.54	5,520	10,925	0.17	5.13	3,680	4,370	0.15	5.13
"	R1.0	7,280	14,560	0.34	6.05	6,160	12,320	0.22	5.44	5,376	10,640	0.17	5.04	3,584	4,256	0.15	5.04
"	R2.0	6,500	13,000	0.30	5.40	5,500	11,000	0.20	4.86	4,800	9,500	0.15	4.50	3,200	3,800	0.13	4.50
∅12	R0.5	7,000	1,500	0.53	6.37	5,428	11,800	0.35	5.73	4,838	10,620	0.30	5.31	3,186	4,130	0.24	5.31
"	R1.0	6,400	14,000	0.51	6.16	5,290	11,500	0.34	5.54	4,715	10,350	0.29	5.13	3,105	4,025	0.23	5.13
"	R2.0	6,000	12,500	0.50	6.05	5,152	11,200	0.34	5.44	4,592	10,080	0.28	5.04	3,024	3,920	0.22	5.04
"	R3.0	5,500	12,000	0.45	5.40	4,600	10,000	0.30	4.86	4,100	9,000	0.25	4.50	2,700	3,500	0.20	4.50
∅16	R1.0	4,838	11,800	0.42	8.58	4,012	10,384	0.25	7.72	3,540	9,204	0.22	7.15	2,360	3,776	0.13	7.35
"	R2.0	4,100	10,000	0.45	9.00	3,400	8,800	0.30	8.10	3,000	7,800	0.25	7.50	2,000	3,200	0.20	7.50

Depth of Cut





Inclined Cutting

■ Coefficients respective of tool overhang

Type	Overhang	Revolution	Feed rate	Depth of Cut ap
Straight	L/D ≤ 5	100%	100%	100%
	L/D = 6	90%	80%	80%
	L/D = 7	80%	70%	70%
Taper neck	L/D = 6	100%	100%	100%
	L/D = 8	90%	80%	80%
	L/D ≥ 10	80%	70%	70%

- The parameters on the table is based on 4flutes. For using 6flutes, use the same RPM and raise up the feed up to 30% in stable milling condition.
- If the effective length is long, reduce the RPM and feed maximum 30%.
- For side milling, refer to the corner radius value.
- For curved milling, set up the lower value of the pitch than the corner radius value of tool diameter.
- For curved milling, raise up the feed up to 30% in stable milling condition.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- If the table over the maximum RPM and feed of your machine, adjust RPM and feed in the same proportion.
- If the effective length is long, refer to the table (Coefficients respective of tool overhang) and adjust the RPM and feed.
- If you use small value of Ap, raise up the RPM and feed.
- Air blow or oil mist is recommended for smooth chip emission.