

4WLR/6WLR										Cutting Conditions							
Material		Mild Steels/Carbon Steels/Gray Cast Iron SS/FC/SC				Tool Steels / Mould Steels SCM / HPM				Alloy Steels / Pre-hardened Steels NAK80/KP4M				Hardened Steels STAVAX/SKD11			
Hardness		~ 30HRC				30~ 40HRC				40 ~ 45HRC				45~ 55HRC			
Outside Dia	Corner 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
Ø 1	R0.2	42,840	7,871	0.02	0.40	35,700	6,845	0.02	0.40	29,750	5,738	0.015	0.300	22,500	4,835	0.015	0.300
Ø 1.5	R0.5	40,800	8,073	0.02	0.60	34,000	7,020	0.02	0.60	25,500	5,738	0.023	0.500	18,900	4,837	0.023	0.500
Ø 2	R0.5	27,540	8,477	0.03	0.80	22,950	7,371	0.03	0.80	20,400	5,739	0.030	0.600	14,400	4,839	0.030	0.600
Ø 3	R0.5	18,360	9,082	0.05	1.20	15,300	7,898	0.05	1.20	13,600	5,740	0.045	0.900	9,900	4,841	0.045	0.900
•	R0.5	16,320	10,091	0.06	1.60	13,600	8,775	0.06	1.60	11,050	5,741	0.060	1.200	8100.00	4843.0	0.060	1.200
•	R1.0	14,280	9,587	0.06	1.60	11,900	8,336	0.06	1.60	10,200	5,742	0.060	1.200	7200.00	4845.0	0.060	1.200
Ø 5	R0.5	12,240	12,110	0.08	2.00	10,200	10,530	0.08	2.00	9,350	5,743	0.075	1.500	6,570	4,846	0.075	1.500
•	R1.0	11,220	11,100	0.08	2.00	9,350	9,653	0.08	2.00	8,160	5,743	0.075	1.500	5,760	4,848	0.075	1.500
Ø 6	R0.3	11,118	13,320	0.09	2.40	9,265	11,583	0.09	2.40	8,500	5,744	0.090	1.800	5,850	4,850	0.090	1.800
•	R0.5	10,812	13,119	0.09	2.40	9,010	11,408	0.09	2.40	8,075	5,745	0.090	1.800	5,670	4,852	0.090	1.800
•	R1.0	12,907	12,715	0.09	2.40	10,756	11,057	0.09	2.40	7,650	5,747	0.090	1.800	5,220	4,854	0.090	1.800
•	R1.5	8,180	11,100	0.09	2.40	7,650	9,653	0.09	2.40	6,800	5,747	0.090	1.800	4,770	4,856	0.090	1.800
Ø 8	R0.3	8,568	13,623	0.12	3.20	7,140	11,846	0.12	3.20	6,205	5,748	0.120	2.400	4,230	4,858	0.090	2.400
•	R0.5	8,364	13,119	0.12	3.20	6,970	11,408	0.12	3.20	6,035	5,748	0.120	2.400	4,140	4,859	0.120	2.400
•	R1.0	8,160	12,110	0.12	3.20	6,800	10,530	0.12	3.20	5,695	5,749	0.120	2.400	4,068	4,861	0.120	2.400
•	R2.0	7,140	11,100	0.12	3.20	5,950	9,653	0.12	3.20	5,100	5,750	0.120	2.400	3,600	4,863	0.120	2.400
Ø 10	R0.3	6,620	13,098	0.15	4.00	5,517	11,390	0.15	4.00	4,814	5,751	0.150	3.000	3,398	4,865	0.150	3.000
•	R0.5	6,452	12,765	0.15	4.00	5,376	11,100	0.15	4.00	4,692	5,752	0.150	3.000	3,312	4,867	0.150	3.000
•	R1.0	6,283	12,432	0.15	4.00	5,236	10,811	0.15	4.00	4,570	5,753	0.150	3.000	3,226	4,869	0.150	3.000
•	R2.0	5,610	11,100	0.15	4.00	4,675	9,653	0.15	4.00	4,080	5,754	0.150	3.000	2,880	4,871	0.150	3.000
Ø 12	R0.5	5,537	11,908	0.18	4.80	4,614	10,355	0.18	4.80	4,112	5,754	0.180	3.600	2,867	4,872	0.180	3.600
•	R1.0	5,396	11,605	0.18	4.80	4,497	10,091	0.18	4.80	4,008	5,755	0.180	3.600	2,795	4,874	0.180	3.600
•	R2.0	5,255	11,302	0.18	4.80	4,379	9,828	0.18	4.80	3,903	5,756	0.180	3.600	2,722	4,876	0.180	3.600
•	R3.0	4,692	10,091	0.18	4.80	3,910	8,775	0.18	4.80	3,485	5,757	0.180	3.600	2,430	4,878	0.180	3.600
Ø 16	R1.0	4,092	10,479	0.24	6.40	3,410	9,112	0.24	6.40	3,009	5,758	0.240	4.800	2,124	4,880	0.240	4.800
•	R2.0	3,468	8,880	0.24	6.40	2,890	7,722	0.24	6.40	2,550	5,759	0.240	4.800	1,800	4,882	0.240	4.800
Depth of cut		Ap Ae 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%

- If the effective length is long, reduce the RPM and feed maximum 30%.
- Consider the corner radius value when you set up the Ae 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.
- The parameters on the table is based on 4 flutes. For using 6 flutes, use the same RPM and raise up the feed up to 30% in stable milling condition.
- For side milling ,refer to the corner radius value.
- Use this table for your reference . Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- Use suitable cutting oil for material and machining geometry.
- Air blow or oil mist is recommended for smooth chip emission.