

4WHR/6WHR					Cutting Conditions											
Slotting																
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	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	19,250	150	0.50	1.00	19,250	150	0.50	1.00	17,280	122	0.50	1.00	15,552	98	0.20	0.80
Ø 1.5	12,845	230	0.75	2.00	12,800	220	0.75	2.00	11,520	178	0.75	2.00	10,368	142	0.30	1.20
Ø 2	9,600	345	1.00	2.00	9,500	330	1.00	2.00	8,550	267	1.00	2.00	7,695	212	0.40	1.60
Ø 3	6,400	490	1.50	3.00	6,400	440	1.50	3.00	5,800	360	1.50	3.00	5,300	240	0.60	2.40
Ø 4	4,800	550	2.00	4.00	4,800	500	2.00	4.00	4,400	410	2.00	4.00	4,000	280	0.80	3.20
Ø 5	3,850	600	2.50	5.00	3,800	550	2.50	5.00	3,420	446	2.50	5.00	3,078	356	1.00	4.00
Ø 6	3,200	610	3.00	6.00	3,200	550	3.00	6.00	2,900	450	3.00	6.00	2,700	310	1.20	4.80
Ø 8	2,400	650	4.00	8.00	2,400	590	4.00	8.00	2,200	480	4.00	8.00	2,000	330	1.60	6.40
Ø 10	1,900	580	5.00	10.00	1,900	520	5.00	10.00	1,800	440	5.00	10.00	1,600	290	2.00	8.00
Ø 12	1,600	540	6.00	12.00	1,600	480	6.00	12.00	1,500	400	6.00	12.00	1,300	260	2.40	9.60
Ø 16	1,200	520	8.00	16.00	1,200	510	8.00	16.00	1,080	413	8.00	16.00	972	328	3.20	12.80
Ø 20	960	510	10.00	20.00	950	500	10.00	20.00	855	405	10.00	20.00	770	324	4.00	16.00
Depth of cut	0.8D ~ 45HRC 0.05D 0.5D 45HRC ~ 0.02D															

Side Cutting																
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	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	28,790	115	1.00	0.10	25,911	104	1.0	0.1	22,024	88	0.50	0.03	17,619	70	0.50	0.03
Ø 1.5	19,200	403	2.00	0.20	17,280	363	2.0	0.2	14,688	308	0.80	0.05	11,750	247	0.80	0.05
Ø 2	14,400	690	2.00	0.20	12,960	621	2.0	0.2	11,016	528	1.00	0.06	8,813	422	1.00	0.06
Ø 3	9,600	860	3.00	0.30	9,600	770	3.0	0.3	8,500	610	1.50	0.09	7,400	460	1.50	0.09
Ø 4	7,200	920	4.00	0.40	7,200	830	4.0	0.4	6,400	660	2.00	0.12	5,600	500	2.00	0.12
Ø 5	6,750	960	5.00	0.50	5,175	864	5.0	0.5	4,399	734	2.50	0.15	3,519	588	2.50	0.15
Ø 6	4,800	1,080	6.00	0.60	4,800	970	6.0	0.6	5,100	720	3.00	0.18	3,700	580	3.00	0.18
Ø 8	3,600	1,150	8.00	0.80	3,600	1,040	8.0	0.8	4,200	750	4.00	0.24	2,800	630	4.00	0.24
Ø 10	2,900	1,070	10.00	1.00	2,900	960	10.0	1.0	2,500	740	5.00	0.30	2,200	570	5.00	0.30
Ø 12	2,400	1,000	12.00	1.20	2,400	900	12.0	1.2	2,100	700	6.00	0.36	1,900	550	6.00	0.36
Ø 16	1,800	1,000	16.00	1.60	1,620	900	16.0	1.6	1,377	765	8.00	0.48	1,102	612	8.00	0.48
Ø 20	1,440	930	20.00	2.00	1,296	837	20.0	2.0	1,102	711	10.00	0.60	881	569	10.00	0.60
Depth of cut	~ 45HRC 45HRC ~															

- 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.