

2WUPB/2WSB/2WPB										Cutting Conditions							
Material		Copper Alloys C1100				Alloy Steels / Pre-hardened Steels NAK80/KP4M				Hardened Steels STAVAX/SKD11				Heat treated Steels/Hardened Steels SKD11/SKD61			
Hardness						40~ 45HRC				45 ~ 55HRC				50~ 62HRC			
Radius	Effective Length	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
R0.25	0.5	56,000	1,250	0.050	0.150	53,000	1,250	0.040	0.120	43,500	1,000	0.025	0.070	32,200	750	0.035	0.022
"	1	56,000	1,380	0.050	0.125	50,000	1,000	0.040	0.100	41,350	800	0.025	0.058	30,600	600	0.021	0.022
R0.3	0.6	58,000	1,510	0.060	0.180	52,000	1,380	0.048	0.144	42,650	1,100	0.030	0.084	31,500	825	0.042	0.026
"	1.2	58,000	1,710	0.060	0.155	48,500	1,020	0.048	0.124	40,500	810	0.030	0.072	30,000	610	0.025	0.026
R0.4	0.8	52,000	1,870	0.080	0.240	48,000	1,500	0.064	0.192	39,500	1,200	0.040	0.112	29,250	900	0.056	0.036
"	2	52,000	1,970	0.080	0.200	45,000	1,065	0.064	0.160	37,500	870	0.040	0.093	27,800	650	0.033	0.036
R0.5	1	41,000	1,660	0.100	0.300	38,540	1,560	0.080	0.240	36,900	1,250	0.050	0.140	27,300	940	0.063	0.040
"	2.5	41,000	1,880	0.100	0.200	38,540	1,000	0.080	0.160	31,500	800	0.050	0.090	23,000	600	0.022	0.040
R0.6	3	34,000	2,120	0.120	0.360	31,960	1,550	0.096	0.288	32,800	1,250	0.060	0.168	24,400	940	0.072	0.051
R0.75	1.5	27,000	2,280	0.150	0.450	25,380	1,600	0.120	0.360	28,700	1,280	0.075	0.210	21,500	960	0.087	0.068
"	4	27,000	1,830	0.150	0.325	25,380	1,000	0.120	0.260	26,000	800	0.075	0.152	19,250	600	0.052	0.068
R1	2	32,700	3,560	0.200	0.600	30,738	1,850	0.160	0.480	24,600	1,480	0.100	0.280	18,250	1,110	0.112	0.089
"	5	32,700	2,980	0.200	0.435	30,738	1,350	0.160	0.348	22,000	1,080	0.100	0.203	16,250	810	0.067	0.089
R1.25	6	30,600	3,680	0.250	0.542	28,764	1,600	0.200	0.430	27,901	1,280	0.125	0.251	15,500	960	0.067	0.115
R1.5	3	26,100	4,400	0.300	0.957	24,534	2,520	0.240	0.766	23,798	2,050	0.150	0.447	15,500	1,530	0.197	0.171
"	8	26,100	4,110	0.300	0.765	24,534	2,350	0.240	0.612	23,798	1,880	0.150	0.357	15,500	1,410	0.100	0.171
R2	4	18,800	4,160	0.400	1.380	17,672	2,450	0.320	1.100	17,142	1,960	0.200	0.644	12,800	1,470	0.266	0.208
"	8	18,800	3,920	0.400	1.020	17,672	2,350	0.320	0.816	17,142	1,880	0.200	0.476	12,800	1,410	0.134	0.208
R2.5	5	17,300	3,980	0.500	1.660	16,262	2,560	0.400	1.330	15,774	2,050	0.250	0.770	11,000	1,530	0.215	0.240
"	10	17,300	3,660	0.500	1.275	16,262	2,300	0.400	1.020	15,774	1,840	0.250	0.595	11,000	1,380	0.180	0.240
R3	6	16,500	3,880	0.600	2.340	15,510	2,700	0.480	1.870	15,045	2,160	0.300	1.090	9,600	1,620	0.290	0.281
"	12	16,500	3,500	0.600	1.530	15,510	2,400	0.480	1.225	15,045	1,920	0.300	0.715	9,600	1,440	0.230	0.281
R4	8	11,660	4,000	0.800	3.100	10,960	2,300	0.640	2.480	10,632	1,840	0.400	1.446	7,600	1,380	0.400	0.175
"	14	11,660	3,850	0.800	2.050	10,960	2,000	0.640	1.640	10,632	1,600	0.400	0.957	7,600	1,200	0.400	0.175
R5	10	9,560	4,100	1.000	3.750	8,986	2,200	0.800	3.000	8,717	1,780	0.500	1.750	6,400	1,340	0.500	0.154
"	18	9,560	3,720	1.000	2.550	8,986	1,700	0.800	2.040	8,717	1,360	0.500	1.190	6,400	1,020	0.500	0.154
R6	12	7,100	4,000	1.200	4.420	6,674	1,850	0.960	3.540	6,474	1,480	0.600	2.060	5,450	1,110	0.600	0.159
"	22	7,100	3,250	1.200	3.050	6,674	1,600	0.960	2.440	6,474	1,280	0.600	1.423	5,450	960	0.600	0.159
R8	30	4,650	2,000	1.120	3.870	4,371	1,630	0.790	2.350	4,240	1,100	0.500	1.742	4,000	810	0.450	1.150
R10	38	3,200	2,200	1.100	4.120	3,008	1,460	0.840	2.530	2,918	1,100	0.520	1.866	3,100	800	0.400	1.000
Depth of cut		Slotting - Ap : Axial Depth - D : Outside Diameter Side Milling - Ap : Axial Depth - Ae : Radial Depth															

- If the effective length is long, reduce the RPM and feed in the same proportion.
- 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.
- Use a machine with low vibration and good rigidity ($\phi 1$ or less, the vibration tolerance management should be within $5\mu\text{m}$).
- Air blow or oil mist is recommended for smooth chip emission and wet coolant milling is recommended for copper material.