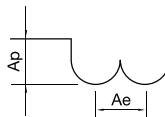


3HRB						Cutting Condition							
Material		Hardened Steels STAVX / SKD11				Heat-treated Steels / Hardened Steels SKD11 / SKD61				Heat-treated Steels / Hardened Steels YXR7 / SKH51			
Hardness		45 ~ 55HRC				55 ~ 62HRC				62 ~ 70HRC			
Radius	Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
R 0.5	4	25,500	2,360	0.050	0.200	21,000	2,000	0.030	0.170	16,000	960	0.030	0.170
"	8	18,500	760	0.015	0.120	18,400	710	0.015	0.120	13,800	287	0.015	0.120
"	12	13,400	540	0.008	0.080	13,300	405	0.008	0.080	9,950	189	0.008	0.080
"	16	10,500	320	0.005	0.045	10,500	225	0.005	0.045	7,850	115	0.005	0.045
R 0.75	8	15,000	1,389	0.045	0.250	14,000	1,280	0.030	0.210	10,500	648	0.030	0.210
"	16	8,850	530	0.012	0.130	8,800	489	0.012	0.130	6,600	208	0.012	0.130
R 1	8	14,000	2,350	0.100	0.400	12,250	1,960	0.060	0.300	9,200	1,060	0.060	0.300
"	16	10,800	776	0.030	0.240	10,700	580	0.030	0.240	8,000	335	0.030	0.240
"	25	7,800	530	0.016	0.160	7,800	380	0.016	0.160	5,850	320	0.016	0.160
R 1.5	16	10,500	2,500	0.150	0.650	9,200	2,100	0.100	0.500	6,900	1,100	0.100	0.500
"	25	8,000	820	0.050	0.380	8,000	640	0.050	0.380	6,000	355	0.050	0.380
"	40	4,900	530	0.020	0.240	4,950	360	0.020	0.240	3,700	220	0.020	0.240
R 2	20	9,000	2,680	0.200	0.850	7,900	2,250	0.130	0.700	5,900	1,240	0.130	0.700
"	30	7,000	845	0.060	0.450	7,000	710	0.060	0.450	5,250	374	0.060	0.450
"	40	4,300	640	0.040	0.390	4,300	420	0.040	0.390	3,200	267	0.040	0.390
R 2.5	30	6,400	1,630	0.160	0.880	6,200	1,430	0.110	0.730	4,650	775	0.110	0.730
"	40	6,000	820	0.080	0.625	5,900	760	0.080	0.625	4,500	415	0.080	0.625
"	50	5,300	530	0.050	0.410	5,200	490	0.040	0.400	4,300	295	0.035	0.370
R 3	20	6,500	2,820	0.300	1.300	5,700	2,390	0.200	1.000	4,300	1,360	0.200	1.000
"	30	6,400	1,720	0.160	0.880	6,200	1,538	0.110	0.730	4,650	843	0.110	0.730
R 4	25	5,200	2,350	0.400	1.700	4,500	2,100	0.250	1.350	3,400	1,060	0.250	1.350
"	40	3,800	1,570	0.300	0.850	2,700	1,260	0.150	0.720	2,040	636	0.120	0.700
R 5	30	4,300	2,170	0.500	2.100	3,750	1,860	0.300	1.700	2,800	986	0.300	1.700
"	50	3,400	1,330	0.400	1.050	2,419	1,200	0.200	0.750	1,806	636	0.190	0.680
R 6	35	3,600	1,890	0.600	2.600	3,150	1,680	0.350	2.000	2,350	840	0.350	2.000
"	60	2,700	1,180	0.500	1.300	1,956	1,043	0.250	0.900	1,459	522	0.220	0.850
Depth of Cut		 Ap : Axial Depth (mm) Ae : Radial Depth (mm) D : Outside Diameter (mm) n : Speed (min⁻¹) Vf : Feed (mm/min)											

- Use the table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- When milling workpiece HRC below 55 (Alloy steel, tool steel), raise up 20% RPM and feed compared to the same diameter.
- Air blow or mist coolant is recommended and wet coolants are recommended for copper milling.
- Use a machine with low vibration and good rigidity ($\phi 1$ or less, the vibration tolerance management will be within 5 μ m).
- Note for chip emission, heat or ignition.