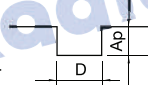
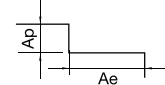
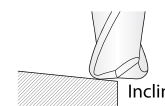


4ERR						Cutting Conditions							
Material		Tool Steels/Mould Steels SCM/HPM				Alloy Steels / Pre-hardened Steels NAK80/KP4M				Hardened Steels STAVAX/SKD11			
Hardness		30~ 40HRC				40~ 45HRC				45 ~ 55HRC			
Outside Dia	Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
Ø 1	4	13,110	1884	0.216	0.435	13,110	700	0.038	0.290	13,000	650	0.032	0.290
"	10	8,194	727	0.052	0.339	8,194	404	0.014	0.135	7,101	343	0.012	0.135
Ø 1.2	4	12,500	1346	0.200	0.503	8,740	950	0.024	0.097	12,500	750	0.019	0.097
"	10	8,000	861	0.058	0.435	6,337	650	0.009	0.077	5,681	389	0.008	0.077
Ø 1.5	6	12,236	2503	0.323	0.726	12,236	1390	0.065	0.484	11,144	900	0.048	0.484
"	12	7,866	1722	0.161	0.610	7,866	957	0.045	0.310	7,211	822	0.034	0.310
Ø 2	6	11,908	2341	0.345	0.919	11,908	1301	0.065	0.871	11,144	1181	0.046	0.871
"	12	8,740	1884	0.200	0.774	8,740	1047	0.047	0.484	7,866	942	0.033	0.484
Ø 2.5	10	9,833	2341	0.365	0.919	9,833	1301	0.081	0.581	9,286	1226	0.056	0.581
"	20	5,900	1023	0.074	0.677	5,900	568	0.017	0.194	5,572	538	0.012	0.194
Ø 3	10	9,833	2637	0.419	0.914	9,833	1465	0.113	0.720	9,286	1136	0.113	0.678
"	20	7,757	2018	0.280	0.839	5,748	1121	0.078	0.624	3,249	867	0.078	0.624
Ø 4	12	8,303	2476	0.441	1.677	8,303	1375	0.129	1.237	6,992	1196	0.089	1.237
"	20	6,446	1895	0.413	1.457	5,586	1053	0.086	0.968	5,463	1091	0.058	0.968
"	30	5,463	978	0.215	1.331	2,803	543	0.046	0.738	2,413	852	0.031	0.738
Ø 6	20	5,681	2852	0.660	2.414	5,187	1585	0.524	1.491	3,387	1346	0.205	1.491
"	40	4,370	2126	0.622	2.254	2,261	1181	0.451	1.435	2,052	987	0.180	1.435
Ø 8	22	5,244	2530	0.581	2.796	5,244	1405	0.461	1.670	3,059	1181	0.180	1.670
Ø 10	24	4,370	2153	0.494	3.175	4,261	1196	0.392	1.809	2,622	1002	0.153	1.809
Ø 12	26	3,605	1803	0.415	3.314	3,605	1002	0.329	2.226	2,185	837	0.129	2.226
Depth of cut		Slotting  Side Milling  Inclined Cutting 											

- Use a rigid precise machine and holder.
- Ap(mm): Axial Depth of cut
- Ae(mm): Radial Depth of cut
- If the effective length is long, reduce the RPM and feed maximum 30% .
- If the effective length or overall length of your tool are not show above the table, adjust your parameter with upper or lower diameter of parameter.
- When milling workpiece HRC over 50 hardened steel , reduce 20% of the RPM and feed compared to the same diameter.
- Consider the corner radius value when you set up the Ae value.
- 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 (Ø1 or less, the vibration tolerance management should be within 5µm).
- Air blow or oil mist is recommended for smooth chip emission and wet coolant milling is recommended for copper material.
- The Above condition are only reference. In actual machining conditions adjust these parameters according to the milling shape, machine ability and the operation environment.