


CUTTING CONDITIONS


Milling | Endmills | Cutting conditions

AE-VTSS


Slot Milling

	Mild Steel • Carbon Steel • Cast Iron		Alloy Steel • Tool Steel		Prehardened Steel • Hard-ened Steel		Stainless Steel		Precipitation Stainless Steel		Titanium Alloy	
	SS400 • S55C • FC250 ~750N/mm²		SCM • SKS • SKD ~30HRC		PX5 • NAK80 30~45HRC		SUS304 • SUS420 ≤200HB		SUS630		Ti-6Al-4V	
Cutting Speed	100		70		60		60		50		50	
Ø	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)
3	10.600	650	7.400	480	6.400	350	6.400	330	5.300	300	5.300	280
4	8.000	670	5.600	500	4.800	350	4.800	340	4.000	320	4.000	310
5	6.400	710	4.500	560	3.800	420	3.800	390	3.200	340	3.200	330
6	5.300	740	3.700	620	3.200	460	3.200	260	2.700	330	2.700	320
8	4.000	630	2.800	500	2.400	440	2.400	260	2.000	310	2.000	300
10	3.200	580	2.200	490	1.900	380	1.900	240	1.600	290	1.600	280
12	2.700	560	1.900	460	1.600	380	1.600	230	1.300	290	1.300	280
Depth of cut	<div>ap</div> <div>0,5D</div>								<div>ap</div> <div>0,25D</div>			

Side Milling

	Mild Steel • Carbon Steel • Cast Iron SS400 • S55C • FC250 ~750N/mm²		Alloy Steel • Tool Steel SCM • SKS • SKD ~30HRC		Prehardened Steel • Hard- ened Steel PX5 • NAK80 30~45HRC		Stainless Steel SUS304 • SUS420 ≤200HB		Precipitation Stainless Steel SUS630		Titanium Alloy Ti-6Al-4V					
	Cutting Speed		90		80		70		70		60					
Ø	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)				
3	10.600	960	9.600	610	8.500	460	7.400	310	7.400	330	6.400	310				
4	8.000	1.060	7.200	650	6.400	480	5.600	350	5.600	360	4.800	340				
5	6.400	1.150	5.700	690	5.100	540	4.500	370	4.500	370	3.800	340				
6	5.300	1.190	4.800	870	4.200	630	3.700	420	3.700	380	3.200	360				
8	4.000	1.020	3.600	870	3.200	620	2.800	400	2.800	300	2.400	280				
10	3.200	960	2.900	780	2.500	530	2.200	380	2.200	280	1.900	270				
12	2.700	810	2.400	720	2.100	440	1.900	360	1.900	280	1.600	250				
Depth of cut	<table><tr><td>ap</td><td>ae</td></tr><tr><td>1D</td><td>0,2D</td></tr></table>												ap	ae	1D	0,2D
	ap	ae														
1D	0,2D															

Plunging

	Mild Steel • Carbon Steel • Cast Iron		Alloy Steel • Tool Steel		Prehardened Steel • Hard-ened Steel		Stainless Steel		Precipitation Stainless Steel		Titanium Alloy	
	SS400 • S55C • FC250 ~750N/mm²		SCM • SKS • SKD ~30HRC		PX5 • NAK80 30~45HRC		SUS304 • SUS420 ≤200HB		SUS630		Ti-6Al-4V	
Cutting Speed	100		70		60		60		50		50	
Ø	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)
3	10.600	250	7.400	115	6.400	110	6.400	110	5.300	60	5.300	60
4	8.000	250	5.600	115	4.800	110	4.800	110	4.000	60	4.000	60
5	6.400	285	4.500	120	3.800	110	3.800	110	3.200	65	3.200	65
6	5.300	320	3.700	120	3.200	110	3.200	110	2.700	70	2.700	70
8	4.000	300	2.800	110	2.400	100	2.400	100	2.000	65	2.000	65
10	3.200	290	2.200	105	1.900	95	1.900	95	1.600	60	1.600	60
12	2.700	275	1.900	100	1.600	90	1.600	90	1.300	55	1.300	55
Depth of cut	<div>ap</div> <div>≤0,5D</div>											

1. Use a rigid and precise machine and holder.
2. The rotational speed is calculated by the median of the recommended cutting speed. Adjustment may be necessary depending on the rigidity of the workpiece fixture and machine.
3. Please use a suitable fluid with high smoke retardant properties.
4. During dry (no fluid) milling, please use air blow to remove disposable chips from the milling area and to eliminate chip packing.
5. Please use water-soluble coolant when machining stainless steel, precipitation stainless steel, titanium alloy.
6. Reduce speed and feed as well as depth of cut when high precision is required.