

Correction factor by recommended cutting condition overhang length (SIDE MILLING)

Use by multiplying the recommended cutting condition on the next page by the correction factor by overhang length.

Refer to each recommended condition for the long cutting and offset type.

L/D	Carbon steel, Alloy steel, Mild Steel, Copper, Copper alloys AISI 1045, AISI 4140, ASTM A36, AISI 1010				Pre-hardened steel, Carbon steel, Alloy steel, Alloy tool steel AISI P21, AISI P20, AISI 4340, SKD, SKT				Austenitic stainless steel, Ferritic, Precipitation hardening stainless steel, Titanium alloy AISI 304, AISI 316, AISI 304LN, AISI 316LN, AISI 410, AISI 430, AISI 431, AISI 420J2, Ti-6Al-4V			
	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/tooth)	Cutting Width ae (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/tooth)	Cutting Width ae (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/tooth)	Cutting Width ae (mm)
2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
4	80%	80%	90%	70%	80%	80%	90%	70%	80%	80%	90%	70%
5	60%	60%	80%	40%	60%	60%	80%	40%	60%	60%	80%	40%
6	50%	50%	70%	30%	50%	50%	70%	30%	50%	50%	70%	30%
7	40%	40%	70%	20%	40%	40%	70%	20%	30%	30%	60%	20%
8	40%	40%	60%	10%	40%	40%	60%	10%	30%	30%	50%	10%
9	30%	30%	60%	10%	30%	30%	60%	10%	20%	20%	50%	10%

L/D	Precipitation hardening stainless steel, Cobalt chromium alloy AISI 630, AISI 631				Heat resistant alloys Inconel718			
	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/tooth)	Cutting Width ae (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/tooth)	Cutting Width ae (mm)
2	100%	100%	100%	100%	100%	100%	100%	100%
3	100%	100%	100%	100%	100%	100%	100%	100%
4	80%	80%	90%	70%	80%	80%	90%	70%
5	60%	60%	80%	40%	60%	60%	80%	40%
6	50%	50%	70%	30%	50%	50%	70%	30%
7	30%	30%	60%	20%	30%	30%	60%	20%
8	30%	30%	50%	10%	30%	30%	50%	10%
9	20%	20%	50%	10%	20%	20%	50%	10%

RECOMMENDED CUTTING CONDITIONS

Side milling

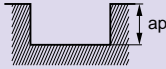
Dia. DC (mm)	Carbon steel, Alloy steel, Mild Steel, Copper, Copper alloys AISI 1045, AISI 4140, ASTM A36, AISI 1010						Pre-hardened steel, Carbon steel, Alloy steel, Alloy tool steel AISI P21, AISI P20, AISI 4340, SKD, SKT						Austenitic stainless steel, Ferritic, Precipitation hardening stainless steel, Titanium alloy AISI 304, AISI 316, AISI 304LN, AISI 316LN, AISI 410, AISI 430, AISI 431, AISI 420J2, Ti-6Al-4V					
	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/tooth)	Table Feed per Min. (mm/min)	Depth of Cut ap (mm)	Cutting Width ae (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/tooth)	Table Feed per Min. (mm/min)	Depth of Cut ap (mm)	Cutting Width ae (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/tooth)	Table Feed per Min. (mm/min)	Depth of Cut ap (mm)	Cutting Width ae (mm)
10	150	4800	0.045	860	8	4	120	3800	0.03	460	8	4	100	3200	0.038	480	8	4
12	150	4000	0.045	720	9.6	4.8	120	3200	0.033	420	9.6	4.8	100	2700	0.04	430	9.6	4.8
16	150	3000	0.05	600	12.8	6.4	120	2400	0.038	360	12.8	6.4	100	2000	0.045	360	12.8	6.4
20	150	2400	0.05	480	16	8	120	1900	0.038	290	16	8	100	1600	0.045	290	16	8
25	150	1900	0.06	460	20	10	120	1500	0.038	230	20	10	100	1300	0.045	230	20	10
Depth of cut																		DC: Dia.

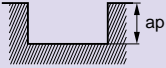
Dia. DC (mm)	Precipitation hardening stainless steel, Cobalt chromium alloy AISI 630, AISI 631						Heat resistant alloys Inconel718						
	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/tooth)	Table Feed per Min. (mm/min)	Depth of Cut ap (mm)	Cutting Width ae (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/tooth)	Table Feed per Min. (mm/min)	Depth of Cut ap (mm)	Cutting Width ae (mm)	
10	75	2400	0.03	290	8	4	40	1300	0.04	210	8	1	
12	75	2000	0.033	260	9.6	4.8	40	1100	0.045	200	9.6	1.2	
16	75	1500	0.038	230	12.8	6.4	40	800	0.05	160	12.8	1.6	
20	75	1200	0.038	180	16	8	40	640	0.05	130	16	2	
25	75	950	0.038	140	20	10	40	510	0.05	100	20	2.5	
Depth of cut													DC: Dia.

- 1) For stainless steel, titanium alloy and heat resistant alloy, the use of water-soluble coolant is effective.
- 2) If the depth of cut is shallow, the revolution and feed rate can be increased.
- 3) Vibration may occur if the rigidity of machine or workpiece is low.
In this case, please reduce the revolution and feed rate proportionately, or set a lower depth of cut.

RECOMMENDED CUTTING CONDITIONS

Slotting

Work material		Carbon steel, Alloy steel, Mild Steel, Copper, Copper alloys AISI 1045, AISI 4140, ASTM A36, AISI 1010					Pre-hardened steel, Carbon steel, Alloy steel, Alloy tool steel AISI P21, AISI P20, AISI 4340, SKD, SKT					Austenitic stainless steel, Ferritic, Precipitation hardening stainless steel, Titanium alloy AISI 304, AISI 316, AISI 304LN, AISI 316LN, AISI 410, AISI 430, AISI 431, AISI 420J2, Ti-6Al-4V				
Dia DC (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/tooth)	Table Feed per Min. (mm/min)	Depth of Cut ap (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/tooth)	Table Feed per Min. (mm/min)	Depth of Cut ap (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/tooth)	Table Feed per Min. (mm/min)	Depth of Cut ap (mm)	
10	100	3200	0.04	510	5	80	2500	0.03	300	5	60	1900	0.02	150	4	
12	100	2700	0.045	490	6	80	2100	0.032	270	6	60	1600	0.025	160	4.8	
16	100	2000	0.05	400	8	80	1600	0.038	240	8	60	1200	0.03	140	6.4	
20	100	1600	0.05	320	10	80	1300	0.038	200	10	60	950	0.034	130	8	
25	100	1300	0.06	310	12	80	1000	0.038	150	12	60	760	0.034	100	10	
Depth of cut																
DC: Dia.																

Work material		Precipitation hardening stainless steel, Cobalt chromium alloy AISI 630, AISI 631				
Dia DC (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/tooth)	Table Feed per Min. (mm/min)	Depth of Cut ap (mm)	
10	40	1300	0.016	83	4	
12	40	1100	0.02	88	4.8	
16	40	800	0.024	77	6.4	
20	40	640	0.027	70	8	
25	40	510	0.027	55	10	
Depth of cut						
DC: Dia.						

- 1) For stainless steel, titanium alloy and heat resistant alloy, the use of water-soluble coolant is effective.
- 2) If the depth of cut is shallow, the revolution and feed rate can be increased.
- 3) Vibration may occur if the rigidity of machine or workpiece is low. In this case, please reduce the revolution and feed rate proportionately, or set a lower depth of cut.