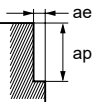


RECOMMENDED CUTTING CONDITIONS

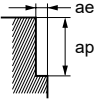
■ Shoulder milling (L/D=3)

Other than the L/D = 3, use following recommended cutting conditions by multiplying the J003 page correction factor of the overhang length.

Work material	P						N						P						M		S	
	Carbon steel, Alloy steel, Mild Steel, Copper, Copper alloys												Pre-hardened steel, Carbon steel, Alloy steel, Alloy tool steel				Austenitic stainless steel, Ferritic and martensitic stainless steel, Titanium alloy					
Dia. DC (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/t)	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/t)	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/t)	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	490	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 

Work material	M						S						S					
	Precipitation hardening stainless steel, Cobalt chromium alloy												Heat resistant alloys					
Dia. DC (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/t)	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/t)	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/t)	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	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	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	40	800	0.05	160	12.8	1.6
20	75	1200	0.038	180	16	8	40	640	0.05	130	16	2	40	640	0.05	130	16	2
25	75	950	0.038	140	20	10	40	510	0.05	100	20	2.5	40	510	0.05	100	20	2.5

Depth of cut 

Note 1) For stainless steel, titanium and heat resistant alloys, the use of water-soluble coolant is effective.

Note 2) If the depth of cut is shallow, the revolution and feed rate can be increased.

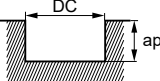
Note 3) Vibration may occur if the rigidity of machine or workpiece is low.

In this case, please reduce the revolution and feed rate proportionately, or set a lower depth of cut.

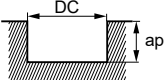
RECOMMENDED CUTTING CONDITIONS

■ Slot milling

Work material	P					N					P					M					S														
	Carbon steel, Alloy steel, Mild Steel, Copper, Copper alloys										Pre-hardened steel, Carbon steel, Alloy steel, Alloy tool steel										Austenitic stainless steel, Ferritic and martensitic stainless steel, Titanium alloy														
Dia. DC (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/t)	Table Feed per Min. (mm/min)	Depth of Cut ap (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/t)	Table Feed per Min. (mm/min)	Depth of Cut ap (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/t)	Table Feed per Min. (mm/min)	Depth of Cut ap (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/t)	Table Feed per Min. (mm/min)	Depth of Cut ap (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/t)	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	60	1600	0.025	160	4.8	60	1200	0.03	140	6.4	60	950	0.034	130	8	60	760	0.034	100	10
12	100	2700	0.045	490	6	80	2100	0.032	270	6	60	1600	0.025	160	4.8	60	1200	0.03	140	6.4	60	950	0.034	130	8	60	760	0.034	100	10					
16	100	2000	0.05	400	8	80	1600	0.038	240	8	60	1200	0.03	140	6.4	60	950	0.034	130	8	60	760	0.034	100	10										
20	100	1600	0.05	320	10	80	1300	0.038	200	10	60	950	0.034	130	8	60	760	0.034	100	10															
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	M					S					
	Precipitation hardening stainless steel, Cobalt chromium alloy										
Dia. DC (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/t)	Table Feed per Min. (mm/min)	Depth of Cut ap (mm)	Dia. DC (mm)	Cutting Speed (m/min)	Main Spindle Revolution (min ⁻¹)	Feed per Tooth (mm/t)	Table Feed per Min. (mm/min)	Depth of Cut ap (mm)
10	40	1300	0.016	83	4	10	40	1300	0.016	83	4
12	40	1100	0.02	88	4.8	12	40	1100	0.02	88	4.8
16	40	800	0.024	77	6.4	16	40	800	0.024	77	6.4
20	40	640	0.027	70	8	20	40	640	0.027	70	8
25	40	510	0.027	55	10	25	40	510	0.027	55	10

Depth of cut  DC:Dia.

Note 1) For stainless steel, titanium and heat resistant alloys, the use of water-soluble coolant is effective.

Note 2) If the depth of cut is shallow, the revolution and feed rate can be increased.

Note 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.