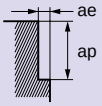
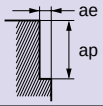
RECOMMENDED CUTTING CONDITIONS

Side milling

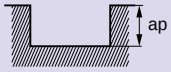
Work material	Carbon steel, Alloy steel, Mild Steel, Copper, Copper alloys						Pre-hardened steel, Carbon steel, Alloy steel, Alloy tool steel						Austenitic stainless steel, Ferritic, Precipitation hardening stainless steel, Titanium alloy					
Dia. (mm)	Cutting speed (m/min)	Revolution (min^{-1})	Feed (mm/tooth)	Feed rate (mm/min)	Depth of cut ap (mm)	Depth of cut ae (mm)	Cutting speed (m/min)	Revolution (min^{-1})	Feed (mm/tooth)	Feed rate (mm/min)	Depth of cut ap (mm)	Depth of cut ae (mm)	Cutting speed (m/min)	Revolution (min^{-1})	Feed (mm/tooth)	Feed rate (mm/min)	Depth of cut ap (mm)	Depth of cut ae (mm)
10	150	4800	0.09	1700	10	2	120	3800	0.06	910	10	2	100	3200	0.075	960	10	2
12	150	4000	0.09	1400	12	2.4	120	3200	0.065	830	12	2.4	100	2700	0.08	860	12	2.4
16	150	3000	0.1	1200	16	3.2	120	2400	0.075	720	16	3.2	100	2000	0.09	720	16	3.2
20	150	2400	0.1	960	20	4	120	1900	0.075	570	20	4	100	1600	0.09	580	20	4
25	150	1900	0.12	910	25	5	120	1500	0.075	450	25	5	100	1300	0.09	470	25	5
Depth of cut																		

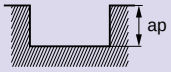
Work material	Precipitation hardening stainless steel, Cobalt chromium alloy						Heat resistant alloys Inconel718					
Dia. (mm)	Cutting speed (m/min)	Revolution (min^{-1})	Feed (mm/tooth)	Feed rate (mm/min)	Depth of cut ap (mm)	Depth of cut ae (mm)	Cutting speed (m/min)	Revolution (min^{-1})	Feed (mm/tooth)	Feed rate (mm/min)	Depth of cut ap (mm)	Depth of cut ae (mm)
10	75	2400	0.06	580	10	2	40	1300	0.04	210	10	1
12	75	2000	0.065	520	12	2.4	40	1100	0.045	200	12	1.2
16	75	1500	0.075	450	16	3.2	40	800	0.05	160	16	1.6
20	75	1200	0.075	360	20	4	40	640	0.05	130	20	2
25	75	950	0.075	290	25	5	40	510	0.05	100	25	2.5
Depth of cut												

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) The irregular helix flute end mill has a large effect on controlling vibration when compared to standard end mills. However, if the rigidity of the machine or the workpiece installation is poor, vibration or abnormal sound can occur. 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					Pre-hardened steel, Carbon steel, Alloy steel, Alloy tool steel					Austenitic stainless steel, Ferritic, Precipitation hardening stainless steel, Titanium alloy				
Dia. (mm)	Cutting speed (m/min)	Revolution (min^{-1})	Feed (mm/tooth)	Feed rate (mm/min)	Depth of cut ap (mm)	Cutting speed (m/min)	Revolution (min^{-1})	Feed (mm/tooth)	Feed rate (mm/min)	Depth of cut ap (mm)	Cutting speed (m/min)	Revolution (min^{-1})	Feed (mm/tooth)	Feed rate (mm/min)	Depth of cut ap (mm)
10	150	4800	0.06	1200	5	120	3800	0.04	610	5	100	3200	0.05	640	5
12	150	4000	0.06	960	6	120	3200	0.045	580	6	100	2700	0.055	590	6
16	150	3000	0.07	840	8	120	2400	0.05	480	8	100	2000	0.06	480	8
20	150	2400	0.07	670	10	120	1900	0.05	380	10	100	1600	0.06	380	10
25	150	1900	0.08	610	12	120	1500	0.05	300	12	100	1300	0.06	310	12
Depth of cut															

Work material	Precipitation hardening stainless steel, Cobalt chromium alloy					Heat resistant alloys Inconel718				
Dia. (mm)	Cutting speed (m/min)	Revolution (min^{-1})	Feed (mm/tooth)	Feed rate (mm/min)	Depth of cut ap (mm)	Cutting speed (m/min)	Revolution (min^{-1})	Feed (mm/tooth)	Feed rate (mm/min)	Depth of cut ap (mm)
10	60	1900	0.04	300	5	30	950	0.04	150	2
12	60	1600	0.045	290	6	30	800	0.045	140	2.4
16	60	1200	0.05	240	8	30	600	0.05	120	3.2
20	60	950	0.05	190	10	30	480	0.05	96	4
25	60	760	0.05	150	12	30	380	0.05	76	5
Depth of cut										

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) The irregular helix flute end mill has a large effect on controlling vibration when compared to standard end mills.
   However, if the rigidity of the machine or the workpiece installation is poor, vibration or abnormal sound can occur.
   In this case, please reduce the revolution and feed rate proportionately, or set a lower depth of cut.