Identification

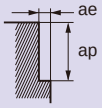
Use by multiplying the recommended cutting condition on the next page by the correction factor by overhang length.
Refer to each recommended condition for the long cutting and offset type.

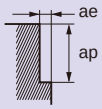
Work material	Carbon steel, Alloy steel, Mild Steel, Copper, Copper alloys				Pre-hardened steel, Carbon steel, Alloy steel, Alloy tool steel				Austenitic stainless steel, Ferritic, Precipitation hardening stainless steel, Titanium alloy			
L/D	**Vc (m/min)**	**n (min^{-1})**	**fz (mm/tooth)**	**ae (mm)**	**Vc (m/min)**	**n (min^{-1})**	**fz (mm/tooth)**	**ae (mm)**	**Vc (m/min)**	**n (min^{-1})**	**fz (mm/tooth)**	**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%

Work material	Precipitation hardening stainless steel, Cobalt chromium alloy				Heat resistant alloys			
L/D	**Vc (m/min)**	**n (min^{-1})**	**fz (mm/tooth)**	**ae (mm)**	**Vc (m/min)**	**n (min^{-1})**	**fz (mm/tooth)**	**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

Work material	Pre-hardened steel, Carbon steel, Alloy steel, Alloy tool steel						Austenitic stainless steel, Ferritic, Precipitation hardening stainless steel, Titanium alloy						Precipitation hardening stainless steel, Cobalt chromium alloy					
DC (mm)	**Vc** (m/min)	**n** (min^{-1})	**fz** (mm/tooth)	**Vf** (mm/min)	**ap** (mm)	**ae** (mm)	**Vc** (m/min)	**n** (min^{-1})	**fz** (mm/tooth)	**Vf** (mm/min)	**ap** (mm)	**ae** (mm)	**Vc** (m/min)	**n** (min^{-1})	**fz** (mm/tooth)	**Vf** (mm/min)	**ap** (mm)	**ae** (mm)
10	200	6400	0.07	2700	10	1	150	4800	0.07	2000	10	1	100	3200	0.07	1300	10	1
12	200	5300	0.085	2700	12	1.2	150	4000	0.085	2000	12	1.2	100	2700	0.085	1400	12	1.2
16	200	4000	0.07	2800	16	0.64	150	3000	0.088	2600	16	0.64	100	2000	0.07	1400	16	0.64
20	200	3200	0.08	3100	20	0.8	150	2400	0.1	2900	20	0.8	100	1600	0.08	1500	20	0.8
25	200	2500	0.08	2400	25	1	150	1900	0.1	2300	25	1	100	1300	0.08	1200	25	1
Depth of cut	 DC:Dia.																	

Work material	Heat resistant alloys					
DC (mm)	**Vc** (m/min)	**n** (min^{-1})	**fz** (mm/tooth)	**Vf** (mm/min)	**ap** (mm)	**ae** (mm)
10	40	1300	0.033	260	10	0.5
12	40	1100	0.035	230	12	0.6
16	40	800	0.038	300	16	0.64
20	40	640	0.04	310	20	0.8
25	40	510	0.04	240	25	1
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) 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.
4) If the machining radius at the corner is the same as the tool radius when using the head with more than 10 flutes, please set the depth of cut and feed rate to half of the above.