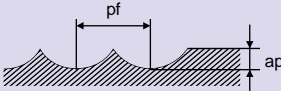
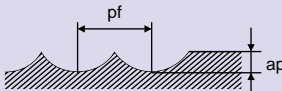


RECOMMENDED CUTTING CONDITIONS

Shoulder milling

Work material		Carbon steel, Alloy steel, Mild Steel, Pre-hardened steel										Austenitic stainless steel, Ferritic, Precipitation hardening stainless steel, Cobalt chromium alloy, Titanium alloy									
Inclination angle		$\alpha \leq 15^\circ$				$\alpha > 15^\circ$				Depth of cut ap (mm)	Pick Feed pf (mm)	$\alpha \leq 15^\circ$				$\alpha > 15^\circ$				Depth of cut ap (mm)	Pick Feed pf (mm)
Dia. (mm)	R (mm)	Cutting speed (m/min)	Revolution (min ⁻¹)	Feed (mm/tooth)	Feed rate (mm/min)	Cutting speed (m/min)	Revolution (min ⁻¹)	Feed (mm/tooth)	Feed rate (mm/min)			Cutting speed (m/min)	Revolution (min ⁻¹)	Feed (mm/tooth)	Feed rate (mm/min)	Cutting speed (m/min)	Revolution (min ⁻¹)	Feed (mm/tooth)	Feed rate (mm/min)		
10	5	300	9600	0.106	6100	200	6400	0.07	2700	0.5	2	225	7200	0.105	4500	150	4800	0.067	1900	0.5	2
12	6	300	8000	0.125	6000	200	5300	0.085	2700	0.6	2.4	225	6000	0.125	4500	150	4000	0.08	1900	0.6	2.4
16	8	300	6000	0.134	4800	200	4000	0.088	2100	0.8	3.2	225	4500	0.14	3700	150	3000	0.09	1600	0.8	3.2
20	10	300	4800	0.156	4500	200	3200	0.1	1900	1	4	225	3600	0.16	3400	150	2400	0.105	1500	1	4
25	12.5	300	3800	0.16	3600	200	2500	0.1	1500	1.2	5	225	2900	0.16	2800	150	1900	0.105	1200	1.2	5
Depth of cut																					

Work material		Heat resistant alloys Inconel718																			
Inclination angle		$\alpha \leq 15^\circ$				$\alpha > 15^\circ$				Depth of cut ap (mm)	Pick Feed pf (mm)										
Dia. (mm)	R (mm)	Cutting speed (m/min)	Revolution (min ⁻¹)	Feed (mm/tooth)	Feed rate (mm/min)	Cutting speed (m/min)	Revolution (min ⁻¹)	Feed (mm/tooth)	Feed rate (mm/min)			Cutting speed (m/min)	Revolution (min ⁻¹)	Feed (mm/tooth)	Feed rate (mm/min)	Cutting speed (m/min)	Revolution (min ⁻¹)	Feed (mm/tooth)	Feed rate (mm/min)		
10	5	60	1900	0.055	630	40	1300	0.035	270	0.5	1										
12	6	60	1600	0.055	520	40	1100	0.035	220	0.6	1.2										
16	8	60	1200	0.062	450	40	800	0.04	190	0.8	1.6										
20	10	60	1000	0.062	370	40	640	0.04	150	1	2										
25	12.5	60	760	0.062	300	40	510	0.04	120	1.2	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.
- 4) α is the inclination angle of the machined surface.