

Recommended Cutting Conditions

Side Milling

(inch)

Workpiece Material		Carbon steel, Cast iron, Alloy steel (—30HRC)				Alloy steel, Tool steel, Pre-hardened steel				Austenitic stainless steel, Titanium alloy			
		AISI 1050, AISI No 35 B, AISI P20				AISI H13, AISI W1-10, AISI P21				AISI 304, AISI 306, Ti-6Al-4V			
Dia. DC		Revolution	Feed rate	Depth of Cut	Width of Cut	Revolution	Feed rate	Depth of Cut	Width of Cut	Revolution	Feed rate	Depth of Cut	Width of Cut
(mm)	(inch)	(min ⁻¹)	(IPM)	ap	ae	(min ⁻¹)	(IPM)	ap	ae	(min ⁻¹)	(IPM)	ap	ae
3	.118	10000	28.3	.118	.024	7000	18.9	.118	.024	6000	14.2	.118	.024
4	.157	7500	28.3	.157	.024	5200	18.9	.157	.024	4500	14.2	.157	.024
5	.197	6000	28.3	.197	.024	4200	18.9	.197	.024	3600	14.2	.197	.024
6	.236	5000	28.3	.236	.024	3500	18.9	.236	.024	3000	14.2	.236	.024
7	.276	4500	26.4	.276	.024	3200	17.3	.276	.024	2700	13.4	.276	.024
8	.315	4000	24.4	.315	.024	2800	16.5	.315	.024	2400	12.2	.315	.024
9	.354	3500	22.8	.354	.024	2500	15.0	.354	.024	2100	11.4	.354	.024
10	.394	3200	21.3	.394	.024	2200	14.2	.394	.024	1900	11.0	.394	.024
12	.472	2700	19.3	.472	.024	1900	12.6	.472	.024	1600	9.8	.472	.024
Depth of Cut													

Workpiece Material		Hardened steel (45—55HRC)				Copper, Copper Alloy			
		AISI H13							
Dia. DC		Revolution	Feed rate	Depth of Cut	Width of Cut	Revolution	Feed rate	Depth of Cut	Width of Cut
(mm)	(inch)	(min ⁻¹)	(IPM)	ap	ae	(min ⁻¹)	(IPM)	ap	ae
3	.118	5000	5.5	.118	.008	13000	37.0	.118	.024
4	.157	4000	5.5	.157	.008	9500	35.8	.157	.024
5	.197	3200	5.5	.197	.008	7600	35.8	.197	.024
6	.236	2700	5.5	.236	.008	6400	36.2	.236	.024
7	.276	2300	5.1	.276	.008	5500	32.3	.276	.024
8	.315	2000	5.1	.315	.008	4800	29.1	.315	.024
9	.354	1800	5.1	.354	.008	4200	27.6	.354	.024
10	.394	1600	4.7	.394	.008	3800	25.2	.394	.024
12	.472	1300	4.7	.472	.008	3200	22.8	.472	.024
Depth of Cut									

Note 1) When cutting austenitic stainless steels, the use of water-soluble cutting fluid is effective.

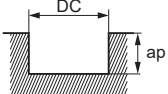
Note 2) If the depth of cut is shallow, the revolution and feed rate can be increased.

Note 3) When drilling, please set the feed rate at 1/3 or below the values above.

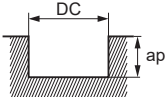
Note 4) If the rigidity of the machine or the work materials installation is very low, or chattering and noise are generated, reduce the revolution and feed rate proportionately.

Slotting

(inch)

Workpiece Material		Carbon steel, Cast iron, Alloy steel (—30HRC)			Alloy steel, Tool steel, Pre-hardened steel			Austenitic stainless steel, Titanium alloy		
		AISI 1050, AISI No 35 B, AISI P20			AISI H13, AISI W1-10, AISI P21			AISI 304, AISI 306, Ti-6Al-4V		
Dia. DC		Revolution (min ⁻¹)	Feed rate (IPM)	Depth of Cut ap	Revolution (min ⁻¹)	Feed rate (IPM)	Depth of Cut ap	Revolution (min ⁻¹)	Feed rate (IPM)	Depth of Cut ap
(mm)	(inch)									
3	.118	10000	28.3	.024	7000	18.9	.024	6000	14.2	.024
4	.157	7500	28.3	.024	5200	18.9	.024	4500	14.2	.024
5	.197	6000	28.3	.024	4200	18.9	.024	3600	14.2	.024
6	.236	5000	28.3	.024	3500	18.9	.024	3000	14.2	.024
7	.276	4500	26.4	.024	3200	17.3	.024	2700	13.4	.024
8	.315	4000	24.4	.024	2800	16.5	.024	2400	12.2	.024
9	.354	3500	22.8	.024	2500	15.0	.024	2100	11.4	.024
10	.394	3200	21.3	.024	2200	14.2	.024	1900	11.0	.024
12	.472	2700	19.3	.024	1900	12.6	.024	1600	9.8	.024
Depth of Cut										

DC: Dia.

Workpiece Material		Hardened steel (45—55HRC)			Copper, Copper Alloy		
		AISI H13					
Dia. DC		Revolution (min ⁻¹)	Feed rate (IPM)	Depth of Cut ap	Revolution (min ⁻¹)	Feed rate (IPM)	Depth of Cut ap
(mm)	(inch)						
3	.118	5000	5.5	.008	13000	37.0	.024
4	.157	4000	5.5	.008	9500	35.8	.024
5	.197	3200	5.5	.008	7600	35.8	.024
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Depth of Cut							

DC: Dia.

Note 1) When cutting austenitic stainless steels, the use of water-soluble cutting fluid is effective.

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

Note 3) When drilling, please set the feed rate at 1/3 or below the values above.

Note 4) If the rigidity of the machine or the work materials installation is very low, or chattering and noise are generated, reduce the revolution and feed rate proportionately.