

RECOMMENDED CUTTING CONDITIONS

Shoulder milling

Work material	Carbon steel, Cast iron, Alloy steel (-30HRC)			Alloy steel, Tool steel, Pre-hardened steel			Austenitic stainless steel, Titanium alloy			Heat resistant alloy		
	AISI 1050, AISI 35, AISI P20 etc.			AISI H13, AISI W1-10, AISI P21 etc.			AISI 304, AISI 306, Ti-6Al-4V etc.			Inconel718 etc.		
DC (mm)	Revolution (min ⁻¹)	Table feed (mm/min) (IPM)		Revolution (min ⁻¹)	Table feed (mm/min) (IPM)		Revolution (min ⁻¹)	Table feed (mm/min) (IPM)		Revolution (min ⁻¹)	Table feed (mm/min) (IPM)	
1	19000	600	23.6	13000	310	12.2	10000	200	7.9	9500	65	2.6
1.5	14000	600	23.6	9000	310	12.2	7500	210	8.3	6400	75	3.0
2	11000	600	23.6	7200	310	12.2	6000	210	8.3	4800	75	3.0
3	8500	770	30.3	5300	380	15.0	4400	220	8.7	3200	100	3.9
4	7200	850	33.5	4400	480	18.9	3700	250	9.8	2400	130	5.1
6	5300	940	37.0	3200	490	19.3	2700	270	10.6	1600	130	5.1
8	4000	1010	39.8	2400	560	22.0	2000	280	11.0	1200	120	4.7
10	3200	1000	39.4	1900	480	18.9	1600	300	11.8	950	110	4.3
12	2700	950	37.4	1600	440	17.3	1300	300	11.8	800	90	3.5
16	2000	720	28.3	1200	350	13.8	1000	260	10.2	600	70	2.8
20	1600	600	23.6	1000	290	11.4	800	240	9.4	480	60	2.4

Depth of cut

Depth of cut

Drilling

Work material	Carbon steel, Cast iron, Alloy steel (-30HRC)			Alloy steel, Tool steel, Pre-hardened steel			Austenitic stainless steel, Titanium alloy		
	AISI 1050, AISI 35, AISI P20 etc.			AISI H13, AISI W1-10, AISI P21 etc.			AISI 304, AISI 306, Ti-6Al-4V etc.		
DC (mm)	Revolution (min ⁻¹)	Table feed (mm/min) (IPM)		Revolution (min ⁻¹)	Table feed (mm/min) (IPM)		Revolution (min ⁻¹)	Table feed (mm/min) (IPM)	
1	13000	80	3.1	10000	50	2.0	6000	10	0.4
1.5	12000	120	4.7	8000	80	3.1	6000	20	0.8
2	11000	200	7.9	7200	140	5.5	6000	30	1.2
3	8500	250	9.8	5300	180	7.1	4200	50	2.0
4	7200	300	11.8	4400	210	8.3	3300	60	2.4
6	5300	300	11.8	3200	210	8.3	2200	70	2.8
8	4000	320	12.6	2400	220	8.7	1600	80	3.1
10	3200	340	13.4	1900	240	9.4	1300	70	2.8
12	2700	320	12.6	1600	220	8.7	1100	70	2.8
16	2000	250	9.8	1200	180	7.1	800	55	2.2
20	1600	200	7.9	1000	140	5.5	640	55	2.2

Depth of cut

Depth of cut

Slotting

Work material	Carbon steel, Cast iron, Alloy steel (-30HRC)			Alloy steel, Tool steel, Pre-hardened steel			Austenitic stainless steel, Titanium alloy			Heat resistant alloy		
	AISI 1050, AISI 35, AISI P20 etc.			AISI H13, AISI W1-10, AISI P21 etc.			AISI 304, AISI 306, Ti-6Al-4V etc.			Inconel718 etc.		
DC (mm)	Revolution (min ⁻¹)	Table feed (mm/min) (IPM)		Revolution (min ⁻¹)	Table feed (mm/min) (IPM)		Revolution (min ⁻¹)	Table feed (mm/min) (IPM)		Revolution (min ⁻¹)	Table feed (mm/min) (IPM)	
1	13000	130	5.1	10000	80	3.1	6000	30	1.2	5700	25	1.0
1.5	12000	250	9.8	8000	150	5.9	6000	60	2.4	3800	30	1.2
2	11000	500	19.7	7200	260	10.2	6000	130	5.1	2800	35	1.4
3	8500	640	25.2	5300	320	12.6	4200	130	5.1	1900	50	2.0
4	7200	650	25.6	4400	370	14.6	3300	140	5.5	1400	70	2.8
6	5300	720	28.3	3200	380	15.0	2200	140	5.5	950	70	2.8
8	4000	780	30.7	2400	430	16.9	1600	140	5.5	720	60	2.4
10	3200	770	30.3	1900	370	14.6	1300	150	5.9	570	50	2.0
12	2700	730	28.7	1600	340	13.4	1100	150	5.9	480	40	1.6
16	2000	600	23.6	1200	290	11.4	800	130	5.1	360	30	1.2
20	1600	500	19.7	1000	240	9.4	640	120	4.7	290	25	1.0

Depth of cut

Depth of cut

Depth of cut

- 1) When cutting austenitic stainless steels, the use of water-soluble cutting fluid is especially effective.
- 2) If the depth of cut is smaller than this table, feed rate can be increased.
- 3) If the rigidity of the machine or the workpiece installation is very low, or chattering is generated, please reduce the revolution and the feed rate proportionately.