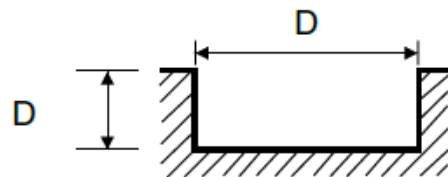


PREMIUM CARBIDE MILL SPEED & FEED CHARTS

2-Flute End Mills - Slotting

Material Hardness	Carbon Steels Alloy Steels Tool Steels <225 Bhn		Carbon Steels Alloy Steels Tool Steels 225-285 Bhn		Carbon Steels Alloy Steels Tool Steels 285-375 Bhn		Stainless Steels Titanium Alloys		Cast Iron		Aluminum Alloys		Copper, Brass Non-Ferrous Metals	
	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM
3/32	5500	3.15	4800	2.76	4000	2.17	8000	2.56	6500	5.91	16000	12.60	12000	9.45
1/8	3700	3.54	3200	3.15	2600	2.36	5300	2.56	4200	5.91	11000	12.60	8000	9.45
5/32	2800	3.54	2400	3.15	2000	2.36	4000	2.56	3200	5.91	8000	12.60	6000	9.45
3/16	2200	3.54	1900	3.15	1600	2.36	3200	2.56	2500	5.91	6400	12.60	4800	9.45
1/4	1800	3.54	1600	3.15	1300	2.36	2600	2.56	2100	7.09	5300	13.39	4000	10.24
5/16	1400	3.54	1200	3.15	1000	2.36	2000	2.56	1600	7.48	4000	13.39	3000	10.24
3/8	1100	3.54	950	3.15	800	2.36	1600	2.56	1300	7.87	3200	13.39	2400	10.24
1/2	900	3.54	800	3.15	660	2.36	1300	2.56	1000	8.27	2600	13.39	2000	10.24
9/16	800	3.54	700	3.15	570	2.36	1100	2.56	900	8.66	2300	13.39	1700	10.24
5/8	700	3.94	600	3.35	500	2.95	1000	2.95	800	8.86	2000	13.39	1500	10.24
13/16	550	3.94	480	3.35	400	2.95	800	3.15	640	9.45	1600	13.39	1200	10.24

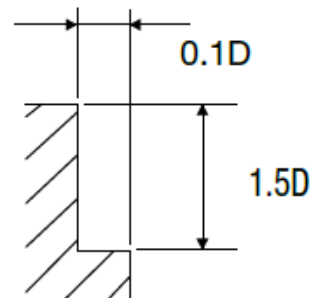


The Feed, in long and extra long types, should be reduced by around 50%.

PREMIUM CARBIDE MILL SPEED & FEED CHARTS

4-Flute End Mills - Side Cutting

Material Hardness	Carbon Steels Alloy Steels Tool Steels <225 Bhn		Carbon Steels Alloy Steels Tool Steels 225-285 Bhn		Carbon Steels Alloy Steels Tool Steels 285-375 Bhn		Stainless Steels Titanium Alloys		Cast Iron		Aluminum Alloys		Copper, Brass Non-Ferrous Metals	
	Diameter	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM
3/32	5500	9.45	4800	8.27	4000	6.30	8000	7.87	6500	17.72	16000	37.80	12000	25.35
1/8	3700	10.63	3200	9.45	2600	7.09	5300	7.87	4200	17.72	11000	37.80	8000	25.35
5/32	2800	10.63	2400	9.45	2000	7.09	4000	7.87	3200	17.72	8000	37.80	6000	25.35
3/16	2200	10.63	1900	9.45	1600	7.09	3200	7.87	2500	17.72	6400	37.80	4800	25.35
1/4	1800	10.63	1600	9.45	1300	7.09	2600	7.87	2100	21.26	5300	40.16	4000	30.71
5/16	1400	10.63	1200	9.45	1000	7.09	2000	7.87	1600	22.44	4000	40.16	3000	30.71
3/8	1100	10.63	950	9.45	800	7.09	1600	7.87	1300	23.62	3200	40.16	2400	30.71
1/2	900	10.63	800	9.45	660	7.09	1300	7.87	1000	24.80	2600	40.16	2000	30.71
9/16	800	10.63	700	9.45	570	7.09	1100	7.87	900	25.98	2300	40.16	1700	30.71
5/8	700	11.81	600	10.24	500	8.66	1000	8.86	800	26.77	2000	40.16	1500	30.71
13/16	550	11.81	480	10.24	400	8.66	800	9.45	640	28.35	1600	40.16	1200	30.71

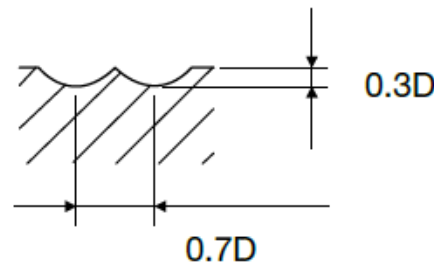


The Feed, in long and extra long types, should be reduced by around 50%.

PREMIUM CARBIDE MILL SPEED & FEED CHARTS

2-Flute - Ball Nose End Mills

Material Hardness	Carbon Steels Alloy Steels Tool Steels <285 Bhn		Carbon Steels Alloy Steels Tool Steels 285-375 Bhn		Cast Iron		Aluminum Alloys	
	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM
3/32	5200	3.54	4400	1.77	7300	5.91	21500	11.02
1/8	3500	3.94	2900	1.77	4900	6.30	14300	11.02
5/32	2600	3.94	2100	1.77	3600	7.87	10900	11.02
3/16	2100	4.13	1700	1.77	2900	9.06	8800	12.99
1/4	1700	3.94	1430	1.77	2400	9.84	7260	12.99
5/16	1270	3.74	1100	1.77	1800	12.60	5500	14.96
3/8	1000	3.74	870	1.77	1430	12.60	4300	14.96
1/2	870	3.35	730	1.77	1200	12.60	3600	17.32
9/16	750	3.35	620	1.77	1000	12.80	3000	17.32
5/8	650	3.35	540	1.77	920	12.80	2700	14.96
11/16	580	3.35	480	1.77	810	12.80	2400	14.96
13/16	500	3.35	430	1.77	730	11.42	2100	14.96

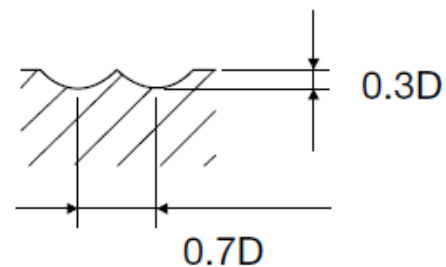


The Feed, in long and extra long types, should be reduced by around 50%.

PREMIUM CARBIDE MILL SPEED & FEED CHARTS

4-Flute - Ball Nose End Mills

Material Hardness	Carbon Steels Alloy Steels Tool Steels <285 Bhn		Carbon Steels Alloy Steels Tool Steels 285-275 Bhn		Cast Iron		Aluminum Alloys	
	Diameter	RPM	IPM	RPM	IPM	RPM	IPM	RPM
3/32	5200	5.51	4400	2.76	7300	9.06	21500	16.54
1/8	3500	5.91	2900	2.76	4900	9.45	14300	16.54
5/32	2600	5.91	2100	2.76	3600	11.81	10900	16.54
3/16	2100	6.30	1700	2.76	2900	13.78	8800	19.69
1/4	1700	5.91	1430	2.76	2400	14.96	7260	19.69
5/16	1270	5.52	1100	2.76	1800	18.90	5500	22.44
3/8	1000	5.52	870	2.76	1430	18.90	4300	22.44
1/2	870	5.12	730	2.76	1200	18.90	3600	25.98
9/16	750	5.12	620	2.76	1000	19.29	3000	25.98
5/8	650	5.12	540	2.76	920	19.29	2700	22.44
11/16	580	5.12	480	2.76	810	19.29	2400	22.44
13/16	500	5.12	430	2.76	730	17.29	2100	22.44



The Feed, in long and extra long types, should be reduced by around 50%.