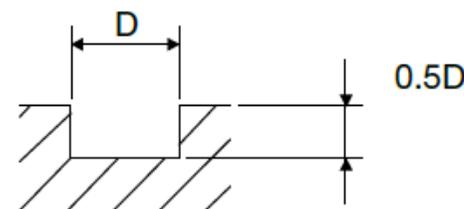


PREMIUM COBALT MILL SPEED & FEED CHARTS

2-Flute Finish Slotting - HSS-Co8 End Mills

Material Hardness	Carbon Steels Alloy Steels Tool Steels		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		Aluminum Aluminum Alloys	
	Diameter	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM
1/8	3500	2.20	3200	1.80	2500	1.60	1600	0.80	11000	9.80
1/4	1800	3.50	1600	3.10	1200	2.40	800	1.60	5600	12.20
3/8	1100	4.00	900	3.50	800	3.10	450	1.80	3100	15.80
1/2	900	4.30	800	4.00	630	3.10	400	2.00	2500	15.00
5/8	700	4.30	560	3.50	450	2.80	280	1.80	2000	13.80
3/4	630	4.00	500	3.50	400	2.80	250	1.80	1800	13.80
7/8	500	4.00	450	3.50	350	2.80	220	1.80	1400	11.80
1	450	3.50	400	3.10	310	2.40	180	1.40	1200	11.00
1-1/8	400	3.10	350	2.80	280	2.20	160	1.20	1100	10.50
1-3/8	310	2.40	250	2.00	200	1.60	120	1.00	900	8.70
1-1/2	310	2.40	250	2.00	200	1.60	120	1.00	900	8.70
1-3/4	280	2.40	220	2.00	180	1.60	110	1.00	800	7.80
2	250	2.00	190	1.80	110	1.00	80	0.80	630	6.30

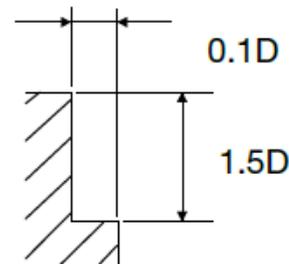


The Feed, in long and extra long types, should be reduced by around 50%.

PREMIUM COBALT MILL SPEED & FEED CHARTS

Multi-Flute - Finish Side Cutting - HSS-Co8 End Mills

Material Hardness	Carbon Steels Alloy Steels Tool Steels		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		Aluminum Aluminum Alloys	
	Diameter	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM
1/8	3500	4.30	3200	3.10	2500	2.40	1600	1.20	11000	15.00
1/4	1800	7.10	1600	5.70	1200	3.50	800	2.40	5600	18.50
3/8	1100	7.90	900	6.30	800	4.70	450	2.60	3100	23.60
1/2	900	8.70	800	7.10	630	4.70	400	3.00	2500	22.40
5/8	700	8.70	560	6.30	450	4.10	280	2.60	2000	20.90
3/4	630	7.90	500	6.30	400	4.10	250	2.60	1800	20.90
13/16	500	7.90	450	6.30	350	4.10	220	2.60	1400	17.70
15/16	500	7.90	450	6.30	350	4.10	220	2.60	1200	17.70
1	450	7.10	400	5.70	310	3.50	180	2.00	1100	16.50
1-1/2	310	4.70	250	3.50	200	2.40	120	1.40	900	13.00
1-3/4	280	4.70	220	3.50	150	2.40	110	1.40	900	11.80
2	280	4.70	190	3.50	110	1.80	80	1.00	800	11.80

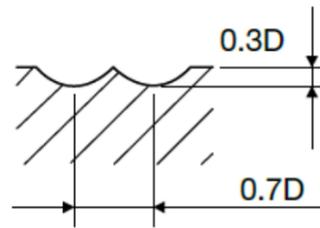


The Feed, in long and extra long types, should be reduced by around 50%.

PREMIUM COBALT MILL SPEED & FEED CHARTS

2-Flute - Ball Nose - HSS-Co8 End Mills

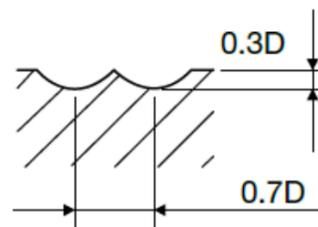
Material Hardness	Carbon Steels Alloy Steels Tool Steels		Carbon Steels Alloy Steels Tool Steels <225 Bhn		Carbon Steels Alloy Steels Tool Steels 225-285 Bhn		Carbon Steels Alloy Steels Tool Steels 285-375 Bhn		Aluminum Aluminum Alloys		
	Diameter	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM
	R1/16 × 1/8	4500	3.70	3400	2.80	2000	1.20	1400	0.80	11000	9.10
	R5/64 × 5/32	3200	4.50	2400	3.10	1400	1.40	1000	1.00	8000	10.20
	R1/8 × 1/4	2200	5.30	1700	3.50	1000	1.80	700	1.00	5600	11.00
	R5/32 × 5/16	1600	6.30	1200	4.10	700	2.00	500	1.20	4000	13.80
	R3/16 × 3/8	1300	7.10	1000	4.70	560	2.40	400	1.40	3200	14.20
	R1/4 × 1/2	1000	6.70	800	4.10	450	2.20	320	1.40	2500	13.40
	R5/16 × 5/8	800	6.00	600	4.00	350	2.20	250	1.40	2000	11.80
	R3/32 × 3/16	600	5.50	500	3.40	300	2.00	200	1.40	1600	11.00
	R1/2 × 1	500	5.10	400	2.80	220	1.60	160	1.20	1300	9.80



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

Multi-Flute - Ball Nose - HSS-Co8 End Mills

Material Hardness	Carbon Steels Alloy Steels Tool Steels		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		Aluminum Aluminum Alloys		
	Diameter	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM
	R1/8 × 1/4	2200	7.90	1700	5.30	1000	2.80	700	1.60	5600	16.50
	R5/32 × 5/16	1600	9.40	1200	6.30	700	3.00	500	1.80	4000	20.90
	R3/16 × 3/8	1300	10.60	1000	7.10	560	3.50	400	2.00	3200	21.30
	R1/4 × 1/2	1000	10.20	800	6.30	450	3.10	320	2.00	2500	20.10
	R5/16 × 5/8	800	9.10	600	6.00	350	3.10	250	2.00	2000	17.70
	R3/32 × 3/16	600	8.30	500	5.10	300	3.00	200	2.00	1600	16.50
	R1/2 × 1	500	7.90	400	4.10	220	2.40	160	1.80	1300	15.00

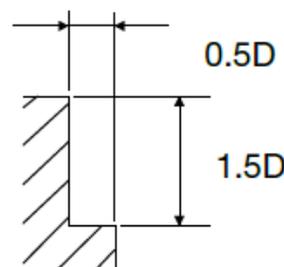


The Feed, in long and extra long types, should be reduced by around 50%.

PREMIUM COBALT MILL SPEED & FEED CHARTS

Multi-Flute - Side Cutting - Roughing - HSS-Co8 End Mills

Material Hardness	Carbon Steels Alloy Steels Tool Steels		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		Aluminum Aluminum Alloys	
	Diameter	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM
1/4	1800	3.10	1600	2.40	1200	2.20	800	1.20	4500	7.90
5/16	1400	4.10	1100	3.00	900	2.60	560	1.40	3100	9.10
3/8	1100	6.00	900	4.70	800	4.30	450	2.40	2500	13.80
1/2	900	7.10	800	5.50	630	4.30	400	2.80	2000	15.80
5/8	700	7.10	560	5.50	450	4.30	280	2.80	1600	17.70
11/16	630	7.10	500	5.50	400	4.30	250	2.80	1400	18.50
7/8	500	8.70	450	6.70	350	5.50	220	3.40	1100	18.50
1	450	8.70	400	6.70	310	5.50	180	3.40	1000	17.70
1-1/8	400	8.10	350	6.30	280	5.10	160	3.40	900	20.10
1-1/4	350	8.10	280	6.30	220	5.10	140	3.40	800	19.70
1-3/8	310	8.10	250	6.30	200	5.10	120	3.40	700	18.50
1-3/4	280	7.90	220	6.00	180	4.70	110	3.10	630	17.70
2	220	7.90	180	6.70	160	5.50	90	3.10	500	14.60



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