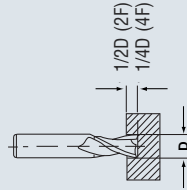


Materials	1. Mild Steels (Up to 70 x 10 ³ lb/in ²)		1. Medium Tensile Steels (70 x 10 ³ -115 x 10 ³ lb/in ²)		1. High Tensile Steels (142 x 10 ³ -200 x 10 ³ lb/in ²)		1. Heat Resistant High Alloys		1. Aluminum			
	rpm	Feed (in/min)	rpm	Feed (in/min)	rpm	Feed (in/min)	rpm	Feed (in/min)	rpm	Feed (in/min)		
5/32	3150	4.50	3000	2.70	1800	1.35	1250	0.79	800	0.34	10000	9.00
3/16	2500	4.95	2360	3.04	1400	1.46	1000	0.90	630	0.34	8000	10.24
1/4	2000	5.74	1900	3.38	1120	1.58	800	1.01	500	0.45	6300	10.80
5/16	1600	6.41	1500	3.83	900	1.80	630	1.13	400	0.56	5000	11.93
3/8	1400	6.64	1180	4.28	710	2.03	500	1.24	315	0.56	4000	13.73
7/16	1120	6.75	1060	4.50	630	2.14	450	1.35	280	0.56	3550	13.50
1/2	1000	6.75	850	4.61	500	2.25	355	1.35	224	0.56	2800	13.39
9/16	900	6.53	750	4.28	450	2.14	315	1.35	200	0.68	2500	13.50
5/8	800	6.08	670	4.28	400	2.14	280	1.46	180	0.68	2240	12.71
11/16	710	6.08	600	4.05	355	2.14	250	1.46	160	0.68	2000	12.04
3/4	710	6.08	530	3.83	315	2.03	224	1.46	140	0.68	1800	12.15
13/16	630	5.63	530	3.83	315	2.03	224	1.46	140	0.68	1800	12.15
7/8	560	5.29	475	3.83	280	2.03	200	1.46	125	0.68	1600	11.48
15/16	500	5.29	425	3.04	250	1.80	180	1.35	112	0.68	1400	10.69
1	500	5.29	375	2.70	224	1.58	160	1.13	100	0.68	1250	10.13
1-1/8	450	4.50	335	2.36	200	1.46	140	1.01	90	0.68	1120	9.56
1-1/4	400	4.28	300	2.14	180	1.35	125	0.90	80	0.56	1000	8.55
1-3/8	355	3.83	265	1.91	160	1.13	112	0.79	71	0.56	900	8.10
1-1/2	315	3.60	236	1.69	140	1.01	100	0.68	63	0.45	800	7.20
1-3/4	280	3.15	212	1.58	125	0.90	90	0.68	56	0.45	710	6.41
2	250	2.81	190	1.35	112	0.79	80	0.56	50	0.34	630	5.63

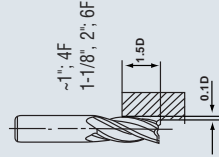


NOTES:

- 1) The cutting conditions in this table are given for reference, which should be varied depending on the machine, tooling, depth of cut, cutting fluid and other conditions
- 2) Use a holder of strong gripping force and machine of high stiffness
- 3) In case of deeper operation, slow down feed by 20-50%
- 4) The feed, in long types, should be reduced by around 50%

SPEEDS AND FEEDS - MULTI-FLUTE HSCO END MILLS

Material	1. Mild Steels (Up to 70 x 10 ³ lb/in ²)		1. Medium Tensile Steels (70 x 10 ³ -115 x 10 ³ lb/in ²)		1. High Tensile Steels (115 x 10 ³ -142 x 10 ³ lb/in ²)		1. High Tensile Steels (142 x 10 ³ -200 x 10 ³ lb/in ²)		1. Heat Resistant High Alloys		1. Aluminum 2. Alloyed Aluminum 3. Plastic 4. Woods		
	Hardness Cutting Speeds	rpm	Feed (in/min)	rpm	Feed (in/min)	rpm	Feed (in/min)	rpm	Feed (in/min)	rpm	Feed (in/min)	rpm	Feed (in/min)
2. Brass	Up to Bhn 145	130-135 SFM		Bhn 145-237	105-125 SFM	Bhn 237-286	65-80 SFM	Bhn 286-390	30-50 SFM	Bhn 390-451	16-32 SFM	325-590 SFM	
3. Bronze	Up to Hrc 0			Hrc 0-22		Hrc 22-30		Hrc 30-42		Hrc 42-48			
1/8	4500	9.11	6.41	3550	9.11	2240	3.26	1250	1.46	800	0.68	16000	28.80
5/32	3550	10.24	7.20	2800	7.20	1800	3.60	1000	1.69	630	0.79	12500	31.95
3/16	2800	11.14	8.10	2240	8.10	1400	4.05	800	1.91	500	0.90	10000	34.20
1/4	2240	12.94	9.11	1800	9.11	1120	4.50	630	2.14	400	1.01	8000	38.03
5/16	1800	14.51	10.13	1400	10.13	900	5.18	500	2.36	315	1.13	6300	43.09
3/8	1600	15.30	10.58	1250	10.58	800	5.51	450	2.59	280	1.24	5600	42.75
7/16	1250	15.06	10.80	1000	10.80	630	5.63	355	2.70	224	1.13	4500	42.98
1/2	1120	15.06	10.24	900	10.24	560	5.29	315	2.70	200	1.35	4000	43.20
9/16	1000	14.40	10.24	800	10.24	500	5.60	280	2.81	180	1.35	3550	40.28
5/8	900	13.73	9.56	710	9.56	450	5.60	250	2.81	160	1.24	3150	38.03
11/16	800	13.73	8.55	630	8.55	400	5.06	224	2.81	140	1.24	2800	37.80
3/4	800	13.73	8.55	630	8.55	400	5.06	224	2.81	140	1.24	2800	37.80
13/16	710	12.83	7.54	560	7.54	355	5.06	200	2.93	125	1.24	2500	36.00
7/8	630	12.04	6.75	500	6.75	315	4.50	180	2.59	112	1.24	2240	34.31
15/16	560	11.25	6.08	450	6.08	280	4.05	160	2.25	100	1.24	2000	32.40
1	560	11.25	6.08	450	6.08	280	4.05	160	2.25	100	1.24	2000	32.40
1-1/8	500	13.97	7.45	400	7.45	250	4.97	140	2.79	90	1.86	1800	42.54
1-1/4	450	13.35	6.68	355	6.68	224	4.50	125	2.48	80	1.55	1600	37.73
1-3/8	400	11.95	5.90	315	5.90	200	4.04	112	2.17	71	1.40	1400	34.78
1-1/2	355	11.18	5.28	280	5.28	180	3.57	100	2.02	63	1.24	1250	31.05
1-3/4	315	10.69	5.06	250	5.06	160	3.49	90	1.91	56	1.24	1120	30.26
2	280	9.56	4.50	224	4.50	140	3.04	80	1.69	50	1.13	1000	27.00



NOTES:

- The cutting conditions in this table are given for reference, which should be varied depending on the machine, tooling, depth of cut, cutting fluid and other conditions
- Use a holder of strong gripping force and machine of high stiffness
- For 2FL end mill slow down to 1/2 of feed speed
- For finish cut put rpm, up to 1.5 to 1.3 times faster
- The feed, in long types should be reduced by around 50%

