Speed and Feed Data for Regular HSS and Cobalt HSS End Mills in Selected Materials

Material	Heat-resistant cobalt base alloys, High tensile steels (50-55C)		Heat-resistant austenitic alloys, High tensile steels (46-50C)		Heat-resistant nickel base alloys, High strength stainless steels, High strength titanium alloys		High strength stainless steels, High tensile steels (46-46C) Medium strength titanium alloys		Heat-resistant ferritic base alloys, Medium strength Stainless steels, Unalloyed titanium tool steels (30-40C)	
End Mill Style	Cobalt HSS HSS 2 or more flute		Cobalt HSS HSS 2 or more flute		Cobalt HSS HSS 2 or more flute		Cobalt HSS HSS 2 or more flute		HSS 2 or more flute	
Speed (all dia.)	**5-10 SFM**		**10-15 SFM**		**15-20 SFM**		**20-40 SFM**		**40-60 SFM**	
Mill Diameter	**Speed (RPM)**	**Feed (Chip Load per Tooth)**	**Speed (RPM)**	**Feed (Chip Load per Tooth)**	**Speed (RPM)**	**Feed (Chip Load per Tooth)**	**Speed (RPM)**	**Feed (Chip Load per Tooth)**	**Speed (RPM)**	**Feed (Chip Load per Tooth)**
1/16	*	*	*	*	*	*	1222 - 2444	.0002 - .0005	2444 - 3667	.0002 - .0005
3/32	*	*	*	*	611 - 815	.0002 - .0005	815 - 1629	.0002 - .0005	1629 - 2750	.0002 - .0005
1/8	*	*	*	*	456 - 611	.0002 - .0005	611 - 1222	.0002 - .0005	1222 - 1833	.0002 - .0005
3/16	*	*	204 - 306	.0002 - .0005	306 - 407	.0002 - .0005	407 - 815	.0002 - .0005	815 - 1222	.0002 - .0005
1/4	76 - 153	.0002 - .0010	153 - 230	.0002 - .0010	229 - 306	.0002 - .0010	306 - 611	.0002 - .0010	611 - 917	.0002 - .0010
5/16	61 - 122	.0002 - .0010	122 - 183	.0002 - .0010	183 - 244	.0002 - .0010	244 - 489	.0002 - .0010	489 - 733	.0002 - .0010
3/8	51 - 102	.0002 - .0010	102 - 153	.0002 - .0010	153 - 203	.0002 - .0010	203 - 407	.0005 - .0020	407 - 611	.0005 - .0020
7/16	44 - 88	.0005 - .0010	88 - 132	.0005 - .0010	131 - 175	.0005 - .0020	175 - 349	.0005 - .0020	349 - 524	.0005 - .0020
1/2	38 - 76	.0005 - .0010	76 - 115	.0005 - .0010	115 - 153	.0005 - .0020	153 - 306	.0005 - .0030	306 - 458	.0010 - .0030
9/16	34 - 68	.0005 - .0020	68 - 104	.0005 - .0020	104 - 136	.0005 - .0020	136 - 272	.0005 - .0030	272 - 412	.0010 - .0030
3/8	31 - 61	.0005 - .0020	61 - 92	.0005 - .0020	92 - 122	.0005 - .0020	122 - 244	.0010 - .0040	244 - 367	.0010 - .0040
11/16	28 - 56	.0005 - .0020	56 - 84	.0005 - .0020	84 - 111	.0005 - .0020	111 - 222	.0010 - .0040	222 - 337	.0010 - .0040
3/4	26 - 51	.0005 - .0020	51 - 76	.0005 - .0020	76 - 102	.0010 - .0040	102 - 203	.0010 - .0040	203 - 306	.0010 - .0040
13/16	24 - 47	.0010 - .0030	47 - 71	.0010 - .0030	71 - 94	.0010 - .0040	94 - 189	.0010 - .0040	189 - 284	.0010 - .0040
7/8	22 - 44	.0010 - .0030	44 - 65	.0010 - .0030	65 - 87	.0010 - .0040	87 - 175	.0010 - .0040	175 - 262	.0020 - .0060
15/16	20 - 40	.0010 - .0030	40 - 62	.0010 - .0030	62 - 81	.0010 - .0040	81 - 163	.0010 - .0040	163 - 246	.0020 - .0060
1	19 - 38	.0010 - .0030	38 - 58	.0010 - .0030	58 - 76	.0010 - .0040	76 - 153	.0020 - .0060	153 - 229	.0020 - .0060
1-1/8	34	.0015 - .0040	34 - 51	.0015 - .0040	51 - 68	.0015 - .0050	68 - 136	.0020 - .0060	136 - 204	.0020 - .0060
1-1/4	31	.0015 - .0040	31 - 46	.0015 - .0040	46 - 61	.0015 - .0050	61 - 122	.0020 - .0060	122 - 183	.0020 - .0060
1-3/8	28	.0015 - .0040	28 - 42	.0015 - .0040	42 - 55	.0015 - .0050	55 - 111	.0020 - .0060	111 - 167	.0030 +
1-1/2	26	.0015 - .0040	26 - 38	.0015 - .0040	38 - 51	.0020 +	51 - 102	.0030 +	102 - 153	.0030 +
1-5/8	24	.0020 +	35	.0020 +	35 - 47	.0020 +	47 - 94	.0030 +	94 - 141	.0030 +
1-3/4	22	.0020 +	32	.0020 +	32 - 43	.0020 +	43 - 87	.0030 +	87 - 131	.0030 +
1-7/8	20	.0020 +	30	.0020 +	30 - 40	.0030 +	40 - 81	.0030 +	81 - 122	.0030 +
2	19	.0020 +	29	.0030 +	29 - 38	.0030 +	38 - 76	.0030 +	76 - 115	.0030 +
2-1/8	18	.0030 +	28	.0030 +	36	.0030 +	36 - 72	.0030 +	72 - 108	.0030 +
2-1/4	17	.0030 +	26	.0030 +	34	.0030 +	34 - 68	.0030 +	68 - 102	.0030 +
2-3/8	16	.0030 +	25	.0030 +	32	.0030 +	32 - 64	.0030 +	64 - 97	.0030 +
2-1/2	15	.0030 +	23	.0030 +	30	.0030 +	30 - 61	.0030 +	61 - 92	.0030 +
2-5/8	15	.0030 +	22	.0030 +	29	.0030 +	29 - 58	.0030 +	58 - 88	.0030 +
2-3/4	14	.0030 +	21	.0030 +	28	.0030 +	28 - 56	.0030 +	56 - 83	.0030 +
2-7/8	14	.0030 +	20	.0030 +	27	.0030 +	27 - 53	.0030 +	53 - 80	.0030 +
3	13	.0030 +	19	.0030 +	26	.0030 +	26 - 51	.0030 +	51 - 76	.0030 +

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