

Endmill Speeds and Feeds

MATERIALS	HEAT-RESISTANT COBALT BASE ALLOYS, HIGH TENSILE STEELS (50-55 C)		HEAT-RESISTANT AUSTENITIC ALLOYS, HIGH TENSILE STEELS (46-50 C)		MATERIALS	HEAT-RESISTANT NICKEL BASE ALLOYS, HIGH STRENGTH STAINLESS STEELS, HIGH STRENGTH TITANIUM ALLOYS		HIGH STRENGTH STAINLESS STEELS, HIGH TENSILE STEELS (40-60 C) MEDIUM STRENGTH TITANIUM ALLOYS			
	DIA. OF END MILLS	SPEED 5-10 SFM	FEED	SPEED 10-15 SFM		FEED	DIA. OF END MILLS	SPEED 15-20 SFM	FEED	SPEED 20-40 SFM RPM	FEED
		RPM	CHIP LOAD PER TOOTH	RPM		CHIP LOAD PER TOOTH		RPM	CHIP LOAD PER TOOTH	CHIP LOAD PER TOOTH	
1/16	*	*	*	*	1/16	*	*	1222-2444	.0002-.0005		
3/32	*	*	*	*	3/32	611-815	.0002-.0005	815-1629	.0002-.0005		
1/8	*	*	*	*	1/8	456-611	.0002-.0005	611-1222	.0002-.0005		
3/16	*	*	204-306	.0002-.0005	3/16	306-407	.0002-.0005	407-815	.0002-.0005		
1/4	76-153	.0002-.001	153-230	.0002-.001	1/4	229-306	.0002-.001	306-611	.0002-.001		
5/16	61-122	.0002-.001	122-183	.0002-.001	5/16	183-244	.0002-.001	244-489	.0002-.001		
3/8	51-102	.0002-.001	102-153	.0002-.001	3/8	153-203	.0002-.001	203-407	.0005-.002		
7/16	44-88	.0005-.001	88-132	.0005-.001	7/16	131-175	.0005-.002	175-349	.0005-.002		
1/2	38-76	.0005-.001	76-115	.0005-.001	1/2	115-153	.0005-.002	153-306	.0005-.003		
9/16	34-68	.0005-.002	68-104	.0005-.002	9/16	104-136	.0005-.002	136-272	.0005-.003		
5/8	31-61	.0005-.002	61-92	.0005-.002	5/8	92-122	.0005-.002	122-244	.001-.004		
11/16	28-56	.0005-.002	56-84	.0005-.002	11/16	84-111	.0005-.002	111-222	.001-.004		
3/4	26-51	.0005-.002	51-76	.0005-.002	3/4	76-102	.001-.004	102-203	.001-.004		
13/16	24-47	.001-.003	47-71	.001-.003	13/16	71-94	.001-.004	94-189	.001-.004		
7/8	22-44	.001-.003	44-65	.001-.003	7/8	65-87	.001-.004	87-175	.001-.004		
15/16	20-40	.001-.003	40-62	.001-.003	15/16	62-81	.001-.004	81-163	.001-.004		
1	19-38	.001-.003	38-58	.001-.003	1	58-76	.001-.004	76-153	.002-.006		
1 1/8	34	.0015-.004	34-51	.0015-.004	1 1/8	51-68	.0015-.005	68-136	.002-.006		
1 1/4	31	.0015-.004	31-46	.0015-.004	1 1/4	46-61	.0015-.005	61-122	.002-.006		
1 3/8	28	.0015-.004	28-42	.0015-.004	1 3/8	42-55	.0015-.005	55-111	.002-.006		
1 1/2	26	.0015-.004	26-38	.0015-.004	1 1/2	38-51	.002 UP	51-102	.003 UP		
1 5/8	24	.002 UP	35	.002 UP	1 5/8	35-47	.002 UP	47-94	.003 UP		
1 3/4	22	.002 UP	32	.002 UP	1 3/4	32-43	.002 UP	43-87	.003 UP		
1 7/8	20	.002 UP	30	.002 UP	1 7/8	30-40	.003 UP	40-81	.003 UP		
2	19	.002 UP	29	.003 UP	2	29-38	.003 UP	38-76	.003 UP		
2 1/8	18	.003 UP	28	.003 UP	2 1/8	36	.003 UP	36-72	.003 UP		
2 1/4	17	.003 UP	26	.003 UP	2 1/4	34	.003 UP	34-68	.003 UP		
2 3/8	16	.003 UP	25	.003 UP	2 3/8	32	.003 UP	32-64	.003 UP		
2 1/2	15	.003 UP	23	.003 UP	2 1/2	30	.003 UP	30-61	.003 UP		
2 5/8	15	.003 UP	22	.003 UP	2 5/8	29	.003 UP	29-58	.003 UP		
2 3/4	14	.003 UP	21	.003 UP	2 3/4	28	.003 UP	28-56	.003 UP		
2 7/8	14	.003 UP	20	.003 UP	2 7/8	27	.003 UP	27-53	.003 UP		
3	13	.003 UP	19	.003 UP	3	26	.003 UP	26-51	.003 UP		

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MATERIALS	HEAT-RESISTANT FERRITIC BASE ALLOYS, MEDIUM STRENGTH STAINLESS STEELS UNALLOYED TITANIUM TOOL STEELS (30-40 C)	MACHINE STEEL, HARD BRASS AND BRONZE, ELECTROLYTIC COPPER, MILD STEEL FORGINGS (20-30 C)	MATERIALS	CAST IRON, <u>MILD STEEL</u> , HALF HARD BRASS AND BRONZE	BRASS, BRONZE, <u>ALLOYED ALUMINUM</u> , ABRASIVE PLASTICS
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DIA. OF END MILLS	SPEED 40-60 SFM RPM	FEED	SPEED 60-80 SFM	FEED
		CHIP LOAD PER TOOTH	RPM	CHIP LOAD PER TOOTH
1/16	2444-3667	.0002 -.005	3667-4888	.0002 -.0005
3/32	1629-2750	.0002 -.005	2750-3259	.0002 -.0005
1/8	1222-1833	.0002 -.005	1833-2440	.0002 -.001
3/16	815-1222	.0002 -.005	1222-1625	.0002 -.001
1/4	611-917	.0002 -.001	917-1222	.0005 -.002
5/16	489-733	.0002 -.001	733-978	.0005 -.002
3/8	406-611	.0005 -.002	611-815	.001 -.003
7/16	349-524	.0005 -.002	524-698	.001 -.003
1/2	306-458	.001 -.003	458-611	.001 -.003
9/16	272-412	.001 -.003	412-543	.001 -.004
5/8	244-367	.001 -.004	367-489	.001 -.004
11/16	222-337	.001 -.004	337-444	.001 -.004
3/4	203-306	.001 -.004	306-407	.001 -.004
13/16	189-284	.001 -.004	284-379	.002 -.006
7/8	175-262	.002 -.006	262-349	.002 -.006
15/16	163-246	.002 -.006	246-326	.002 -.006
1	153-229	.002 -.006	229-306	.002 -.006
1 1/8	136-204	.002 -.006	204-272	.002 -.006
1 1/4	122-183	.002 -.006	183-244	.003 UP
1 3/8	111-167	.003 UP	167-222	.003 UP
1 1/2	102-153	.003 UP	153-204	.003 UP
1 5/8	94-141	.003 UP	141-188	.003 UP
1 3/4	87-131	.003 UP	131-175	.003 UP
1 7/8	81-122	.003 UP	122-163	.003 UP
2	76-115	.003 UP	115-153	.003 UP
2 1/8	72-108	.003 UP	108-144	.003 UP
2 1/4	68-102	.003 UP	103-136	.003 UP
2 3/8	64-97	.003 UP	97-128	.003 UP
2 1/2	61-92	.003 UP	92-122	.003 UP
2 5/8	58-88	.003 UP	88-116	.003 UP
2 3/4	56-83	.003 UP	83-111	.003 UP
2 7/8	53-80	.003 UP	80-106	.003 UP
3	51-76	.003 UP	76-102	.003 UP

DIA. OF END MILLS	SPEED 80-100 SFM	FEED	SPEED 100-200 SFM	FEED
	RPM	CHIP LOAD PER TOOTH	RPM	CHIP LOAD PER TOOTH
1/16	4888-6111	.0002 -.0005	6111-12222	.0002 -.0005
3/32	3259-4073	.0002 -.0005	4073-8146	.0002 -.0005
1/8	2440-3056	.0002 -.001	3056-6112	.0002 -.001
3/16	1625-2037	.0002 -.001	2037-4074	.0002 -.001
1/4	1222-1528	.0005 -.002	1528-3056	.0005 -.002
5/16	978-1222	.0005 -.002	1222-2444	.0005 -.002
3/8	815-1019	.001 -.003	1019-2038	.0005 -.003
7/16	698-873	.001 -.003	873-1746	.0005 -.003
1/2	611-764	.001 -.003	764-1528	.0005 -.003
9/16	543-678	.001 -.004	678-1356	.0005 -.004
5/8	489-611	.001 -.004	611-1222	.0005 -.004
11/16	444-555	.001 -.004	555-1110	.0005 -.004
3/4	407-509	.002 -.006	509-1018	.001 -.006
13/16	379-469	.002 -.006	469-938	.001 -.006
7/8	349-436	.002 -.006	436-872	.001 -.006
15/16	326-407	.002 -.006	407-814	.001 -.006
1	306-382	.002 -.006	382-764	.002 UP
1 1/8	272-340	.003 UP	340-680	.002 UP
1 1/4	244-306	.003 UP	306-612	.002 UP
1 3/8	222-278	.003 UP	278-556	.002 UP
1 1/2	204-255	.003 UP	255-510	.003 UP
1 5/8	188-235	.003 UP	235-470	.003 UP
1 3/4	175-218	.003 UP	218-436	.003 UP
1 7/8	163-204	.003 UP	204-408	.003 UP
2	153-191	.003 UP	191-382	.003 UP
2 1/8	144-179	.003 UP	179-358	.003 UP
2 1/4	136-170	.003 UP	170-340	.003 UP
2 3/8	128-161	.003 UP	161-322	.003 UP
2 1/2	122-153	.003 UP	153-306	.003 UP
2 5/8	116-145	.003 UP	145-290	.003 UP
2 3/4	111-139	.003 UP	139-278	.003 UP
2 7/8	106-132	.003 UP	132-264	.003 UP
3	102-127	.003 UP	127-154	.003 UP