

HSS Drills Taps & Reamers

Speeds and Feeds

	Drill Speeds & Feeds		Taps Speeds	HSS End Mills Speeds & Feeds		Reamer Speeds & Feeds	
	SFM	Feed Rate		SFM	Chip Load Per Flute	Speed	Feed X 3
Non Ferrous Materials							
Aluminum	200-300	M-H	0.005	600-800	.007-.0010	150-160	M
Brass/Bronze	75-150	M-H	0.004	300-400	.007-.0010	145-160	H
Copper/Copper Alloys	80-85	L	0.004	150-250	.005-.007	140-150	H
Plastics	100-200	M-H	0.008	800-1000	.012-.016		
Cast Iron							
Malleable	75-125	M	0.005	90-130	.004-.006	90-110	L
Ductile	50-100	L-M	0.0035	75-100	.002-.004	50-70	L
Steels							
Low Carbon Steels	50-100	M-H	0.004	150-200	.006-.007	15	M
Medium Alloy Steels	45-80	M	0.0035	75-100	.003-.005	10	M
High Strength Steels	40-60	M	0.0025	50-75	.001-.002	8-10	L
Stainless Steels							
PH Series	20-80	M	0.0025	90-110	.002-.004	15-20	L
Austenitic 200, 302, 303 304(L), 316(L)	30-100	M	0.003	115-150	.003-.005	20-30	M
Martensitic 403, 410, 416, 420, 440	10-30	M	0.0025	20-50	.001-.003	10-15	L
High Temp Alloys							
Nickel Base Inconel 601, 625, 718 Waspaloy, Hastelloy	5-15	M	0.0015	20-30	.002-.0045	5-10	L
Cobalt Base Stellite, Haynes 25	7-20	M	0.002	25-35	.003-.005	5-10	L
Iron Base Incoloy 800-802, Haynes 556	7-20	M	0.0025	30-40	.004-.006	5-10	L
Titanium	14-45	M	0.0015	70-100	.006-.007	15-20	L

Drill & Reamer Feed Rate Per Revolution

Drill/Reamer Size	Light	Medium	Heavy	Reamers Feeds Multiply by 2.5
1/16"-1/8"	.0005-.0010	0.001-.0020	.0020-.0030	
1/8-1/4"	.0010-.0030	.0030-.0050	.0050-.0070	
1/4-1/2"	.0030-.0050	.0050-.0070	.0070-.0090	
1/2-3/4"	.0050-.0080	.0080-.0110	.0110-.0140	
3/4-1"	.0080-.0110	.0110-.0140	.0140-.0170	
>1"	.0120-.0150	.0150-.0200	.0200-.0250	

Notes: Speeds and Feeds listed are estimated and will vary by application.
 Reduce Speeds by 50% when slotting.
 When exceeding 1/2 the end mill diameter while profiling, reduce feed rate by 25%.
 Increase Speed by 25% for Cobalt Tools.
 Optimum performance can be achieved when using coated & stub length tools.