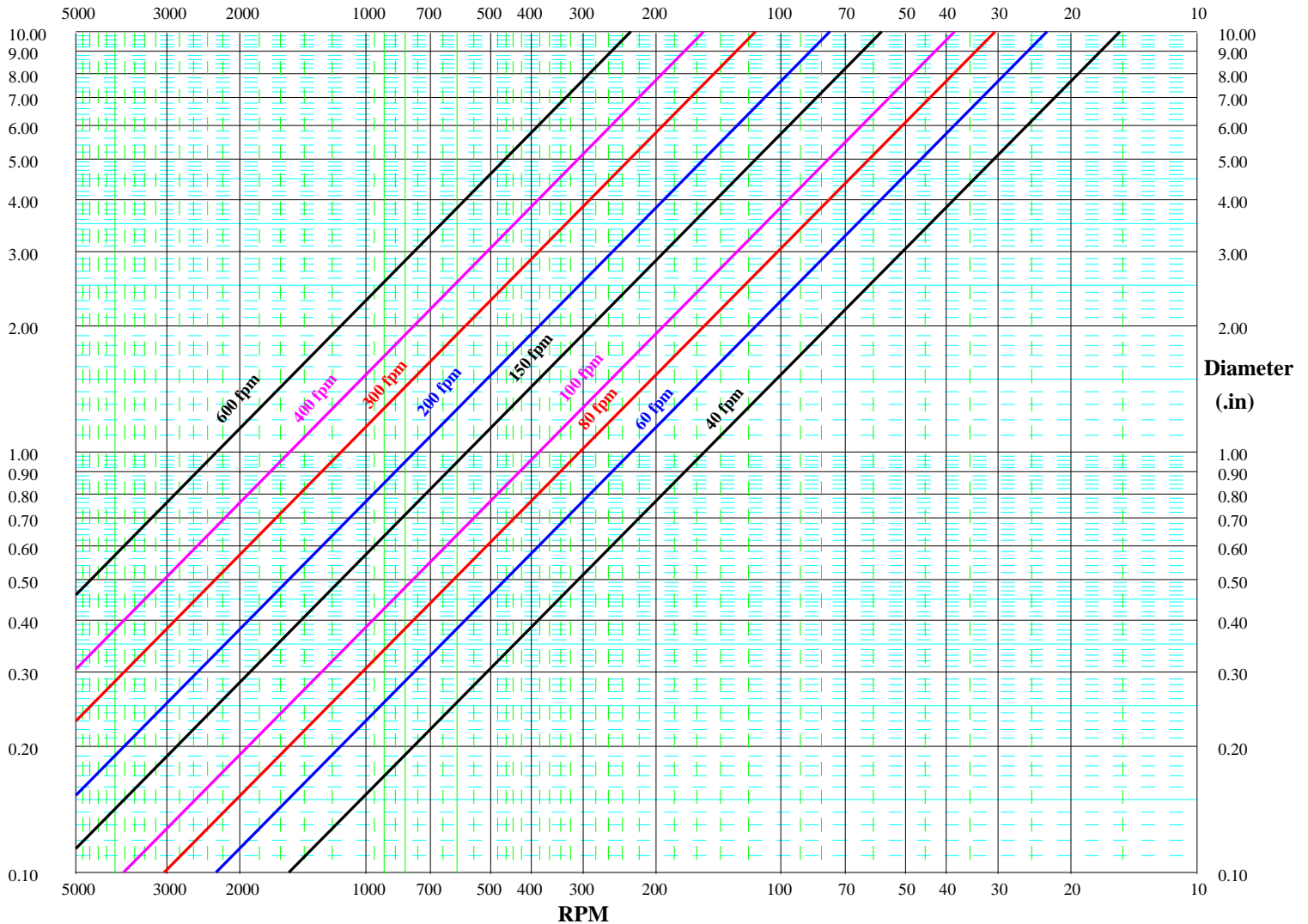


Surface or Cutter Speeds and Feed Information



Approximate Cutting Speeds in Feet per Minute (fpm)			
Material	Turning		Milling
	Roughing .010-.020	Finishing .002-.010	
Cast Iron	60-80	80-100	50-80
Low Carbon Steel	130	160	60-90
Med Carbon Steel	90	100	40-70
High Carbon Steel	50	65	30-50
Tool Steel (annealed)	50	65	30-50
Brass	160	220	70-175
Bronze	90	100	65-130
Aluminum	200-600	300-1000	500-1000

Approximate Milling Feeds in Inches per Tooth (ipt)					
Cutter Type	Material				
	Aluminum	Brass	Cast Iron	Steel	Alloy Steel
End Mill	0.009	0.007	0.004	0.005	0.003
	0.022	0.015	0.009	0.010	0.007
Face Mill	0.016	0.012	0.007	0.008	0.005
	0.040	0.030	0.018	0.020	0.012
Saw	0.006	0.004	0.001	0.003	0.001
	0.010	0.010	0.003	0.005	0.003
Form Cutter	0.006	0.005	0.004	0.004	0.003
	0.010	0.009	0.007	0.006	0.005

To determine milling feeds, F, in inches per minute use $F = \text{Approximate Feed} * T * \text{RPM}$

where the approximate feed is in inches/tooth from the chart,

T is the number of teeth on the cutter and

RPM is the spindle speed.

These are approximate starting points and may need to be adjusted to obtain the desired results.