

## Speeds and Feeds for the hanger hole in the sconce

### Milling Cutting Speeds (S.F.M) - High Speed Steel Cutters

	Aluminum	400 - 1000	
	Brass	150 - 300	
	Cast Iron (soft)	60 - 80	
→	Steel (soft)	80 - 120	(3/16 " = .1875")
	Steel (medium, annealed)	75 - 95	
	Steel (hard, annealed)	60 - 80	

$$\text{RPM} = \frac{\text{CS} \times 12}{3.14 \times \text{Dia}} = \frac{100 \times 12}{3.14 \times .1875} = \text{2038 RPM}$$

### Drilling Speeds (S.F.M) - High Speed Steel Drill Bits

	Aluminum	200 - 300	
	Brass	200 - 300	
	Cast Iron (soft)	100 - 150	
→	Steel (soft)	80 - 110	(3/8" = .375")
	Steel (medium, annealed)	70 - 80	
	Steel (hard, annealed)	50 - 60	

$$\text{RPM} = \frac{\text{CS} \times 12}{3.14 \times \text{Dia}} = \frac{100 \times 12}{3.14 \times .375} = \text{1019 RPM}$$

### Milling Feed Rates - High Speed Steel End Mills - Inches per tooth per RPM

	Aluminum	.010
	Brass	.006
	Cast Iron (soft)	.008
→	Steel (soft)	.006
	Steel (medium, annealed)	.004
	Steel (hard, annealed)	.002

Feed rate per minute = Feed per tooth per rev X number of teeth X RPM

$$F = R \times T \times \text{RPM}$$

$$F = .006 \times 2 \times 1115 = \text{13.38 inches per minute}$$

Note: Feed rates are commonly reduced for cutters under .5 inches.