

## Reaming Recommendations

Work piece hardness and machinability must be considered when setting machine speed.

The feed rate plays an important part in the life expectancy of a tool and the hole finish which one is looking to attain. Improper feed rate can cause excessive tool wear as well as an inadequate hole finish.

Excessive tool wear and hole finish can be a result of all of the above.

To eliminate chatter, slow cutting speed and increase feed appropriately.

Stock removal on roughing operations should not exceed 2% to 4% of tool diameter in most cases.

Stock removal recommendations on finishing operations are .002 to .004.

For best results with brass, cast iron and some plastics, use a left-hand spiral-fluted reamer with negative shear action. This type of reamer helps prevent chips from working back into spiral flutes and scoring the hole.

In all reaming operations, use constant-flow coolants. Soluble oil is effective for most metals; however, sulphur-based oils are recommended for stainless and certain alloy steels. Lard oil and kerosene improve the finish on aluminum.

Hole preparation may affect reamer performance due to work hardening.

### Recommended Stock Removal

Reamer Diameter	Removal (Inches)
Up to 1/16 Incl.	.003 to .005
Over 1/16 to 1/8 Incl.	.004 to .008
Over 1/8 to 1/4 Incl.	.006 to .012
Over 1/4 to 3/8 Incl.	.008 to .014
Over 3/8 to 1/2 Incl.	.010 to .015
Over 1/2 to 3/4 Incl.	.012 to .018

### Recommended Feeds

Material	Feed in Inches Per Revolution
Steels	
Rockwell C50 or Harder	.002 to .004
Rockwell C30 to 50	.004 to .008
Cast Iron & Malleable Iron	.005 to .012
Non-Ferrous Materials	.005 to .012

### Recommended Speeds

Material	Speed in Surface Feet Per Minute
Steel (All Types)	
Rockwell C60 or Harder	8 - 12
Rockwell C50 to 60	15 - 30
Rockwell C40 to 50	20 - 40
Rockwell C30 to 40	35 - 65
Under Rockwell C30	60 - 90
Cast Iron and Malleable Iron	50 - 85
Non-Ferrous	
Aluminum, Brass, Bronze, Copper, Fiber, Plastic, Hard Rubber, etc.	90 - 175

### Recommended Lubricants

Material	Lubricant
Steel Harder than Rockwell C50	Light Oil
Steel Softer than Rockwell C50	Light Oil for Good Finishes or Soluble Oil and Water
Cast Iron and Malleable Iron	Soluble Oil and Water
Non-Ferrous Materials	Soluble Oil and Water

All Dimensions in Inches