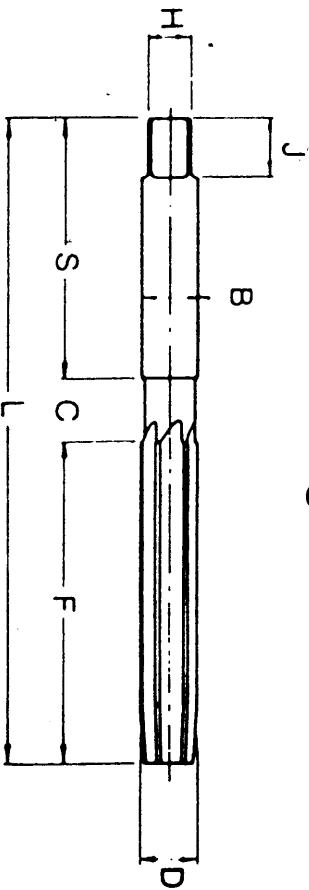


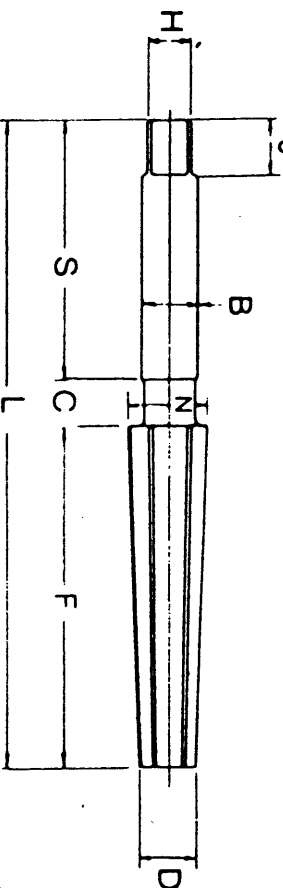
# INSTRUCTIONS FOR ORDERING SPECIAL REAMERS

We are offering below suggestions for a method of specifying Special Reamers to aid in the prompt execution of our customers' orders for such tools. For Line Reamers, Step Reamers and other Special Types, send drawing and detailed instructions.

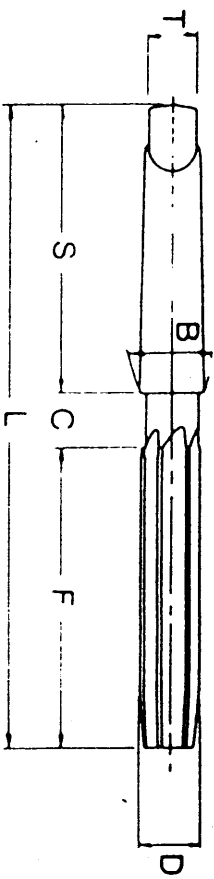
## Straight Shank, Straight Flute Section



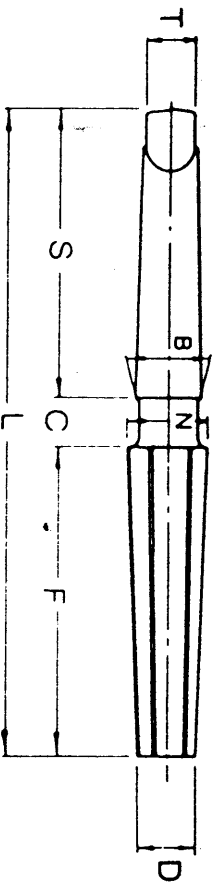
## Straight Shank, Tapered Flute Section



## Taper Shank, Straight Flute Section



## Taper Shank, Tapered Flute Section



D = Diameter of fluted section (with tolerances). Always specify in decimals.

B = Diameter of shank (with tolerances). If standard taper shank is wanted, specify as No. 1 Morse, No. 2 Morse, etc. For special shanks, send detailed drawings or gauge.

T = Dimensions of Tang (if special).

L = Length Overall.

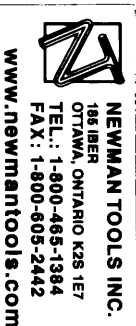
F = Length of Flute.

S = Length of Shank.

H } = Dimensions of Square or other driving means.

J } = Neck Length.

C = Specify Straight, Helical or Spiral Flutes and Hand of Helix.

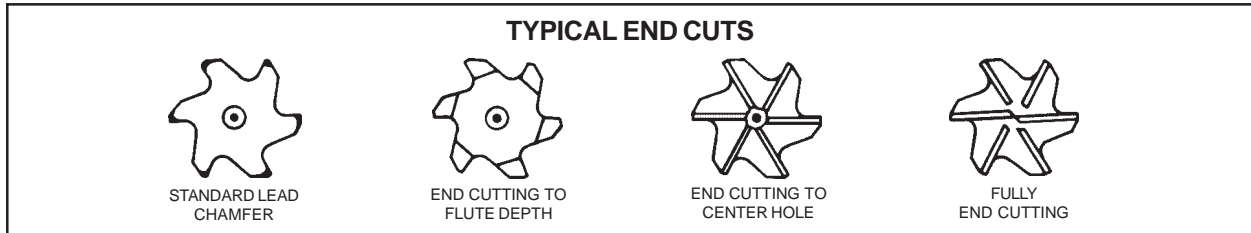
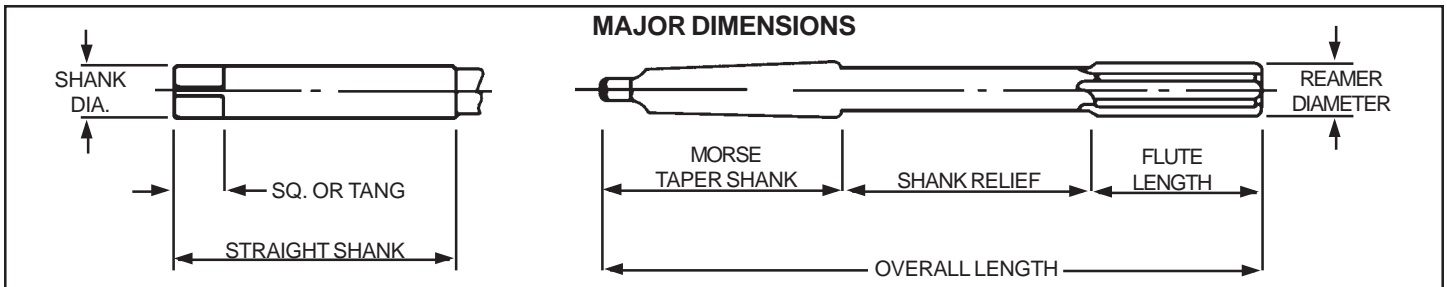


Newman Tools Inc.  
 185 Iber Rd.  
 Ottawa, Ontario, Canada K2S 1E7  
 Tel 613-836-6776 Fax 613-836-9070  
 www.newmantools.com tel 1-800-465-1384 fax 1-800-605-2442

## SPECIAL REAMER QUOTATION FORM

Please fill out the following form for a quote on Special Reamers.

1. Make a copy of this form.
2. Fill in the specifications.
3. Fax or e-mail to Newman Tools



Quantity: \_\_\_\_\_

Material: HSS  Cobalt  Carbide  Carbide Tipped

Reamer Diameter: \_\_\_\_\_

Type of Flute: STR  RHS  LHS

Length of Flute: \_\_\_\_\_

Overall Length: \_\_\_\_\_

Shank Diameter: STD \_\_\_\_\_ REDUCED SHANK \_\_\_\_\_ DIA. X LENGTH \_\_\_\_\_

Shank: STR \_\_\_\_\_ TANG \_\_\_\_\_ SQ \_\_\_\_\_ MTS# \_\_\_\_\_ THREADED HEX \_\_\_\_\_

# 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 percent 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 the 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.

## 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	Feet in Inches Per Revolution
<b>STEELS</b>	
Rockwell C50 or Harder.....	.002 to .004
Rockwell C30 to 50.....	.004 to .008
Cast Iron & Malleable Iron.....	.005 to .010
Non-Ferrous Materials.....	.005 to .012

## Recommended Speeds

Material	Speed in Surface Feet Per Minute
<b>Steel ( All Types)</b>	
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 & Malleable Iron.....	50-85
<b>Non-Ferrous</b>	
Aluminum, Brass, Bronze, Copper, Fibre, 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 & Malleable Iron.....	Soluble Oil and Water
Non-Ferrous Materials.....	Soluble Oil and Water

All Dimensions in Inches