

# Making Metal Pen Parts

## by Bill Ooms

Feel free to use these plans to make pens for yourself.

Please don't make these parts to sell to others. (Talk to me if you want to make these parts for sale).

Use these plans as a starting point to evolve your own designs.

Source for metal:

[www.onlinemetals.com](http://www.onlinemetals.com)

[www.use-enco.com](http://www.use-enco.com)

Aluminum (6061 alloy)

Brass (360 alloy)

Things that make life easier:

M4.5 x 0.5 tap (Enco #319-5870)

5/16 x 32 tap (Enco #891-4930)

5/16 x 32 die (Enco #891-4837)

Die holder (Enco #318-2011)

Cutting/tapping lubricant

ER16 collet holder with Morse #2 taper (eBay)

& set of ER16 collets (eBay)

MT3 adapter (LittleMachineShop #1195)

A full set of drill bits: number, letter, 64ths (Enco)

Countersink bit for de-burring holes (Enco)



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# Pen Nib for Mont Blanc rollerball (screw-in)

Start with 3/8" stock  
 Cut and trim to 1.825"  
 Center drill #1  
 Drill #38 >0.3" deep  
 Flip to other end

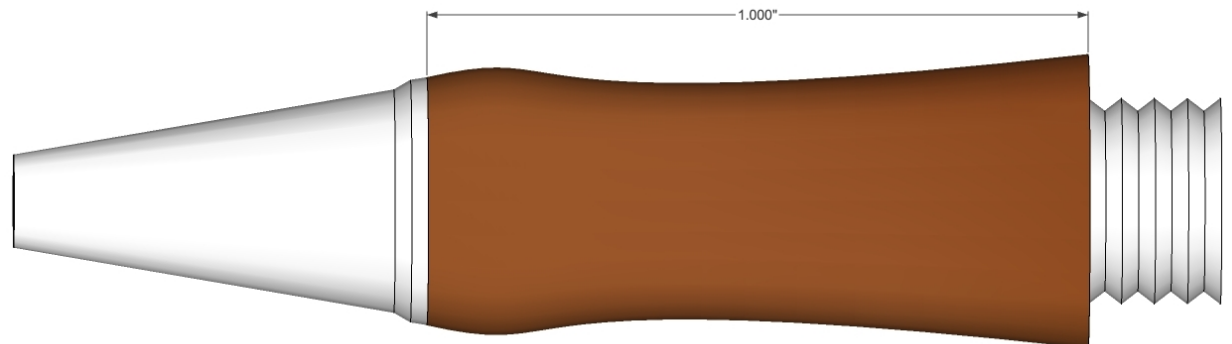
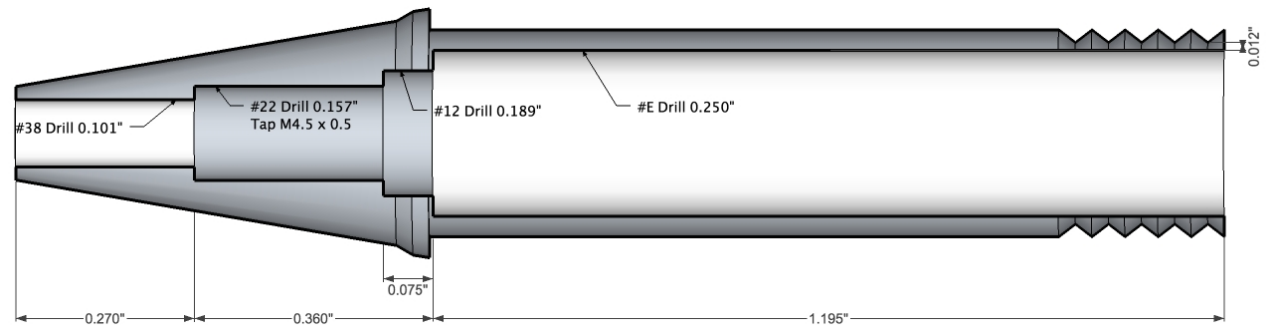
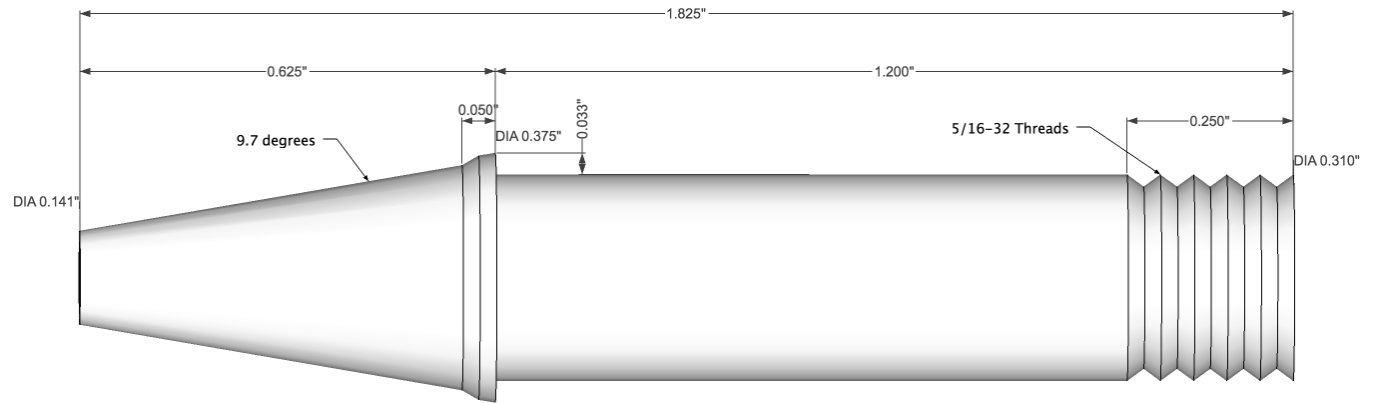
Turn OD to 0.310" for 1.200"  
 check for fit with hole in wood  
 Chamfer end  
 Cut 5/16x32 threads ~0.25" long

Center drill #3  
 Drill #E 1.195" deep  
 Drill #22 additional 0.360" deep  
 Drill #12 0.075" deep  
 Tap with M4.5x0.5

Flip and hold in 5/16" ER16 collet  
 Cut 9.7° taper full length  
 Then cut more until tip is 0.141"  
 with a 0.050" shoulder  
 Round with jewelers file & polish

## Wood:

1-1/8 x 3/4 x 3/4 blank  
 Rough turn to ~0.62" diameter  
 Drill 5/16 hole  
 Trim to 1.000"  
 Glue onto nib metal piece  
 Turn using a threaded mandrel  
 (use tail stock to keep point of nib straight)



# Body for DeskPen

Start with 1/2" stock  
Turn OD to 0.445" for ~0.4"  
Center drill #4  
Drill 9/32" ~0.4" deep  
Drill #O 0.100" deep  
Tap 5/16-32

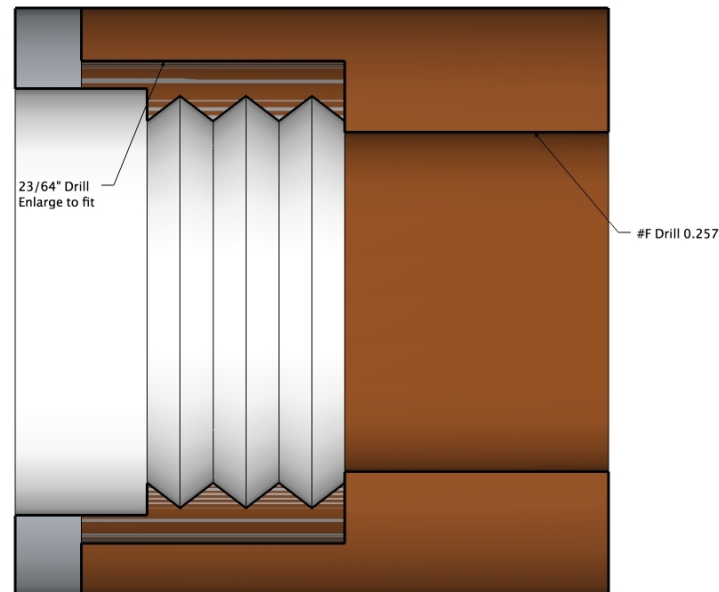
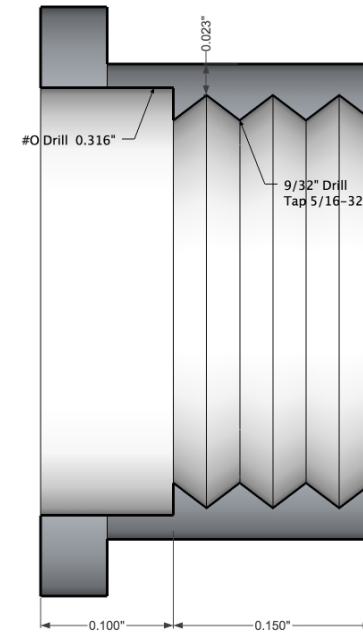
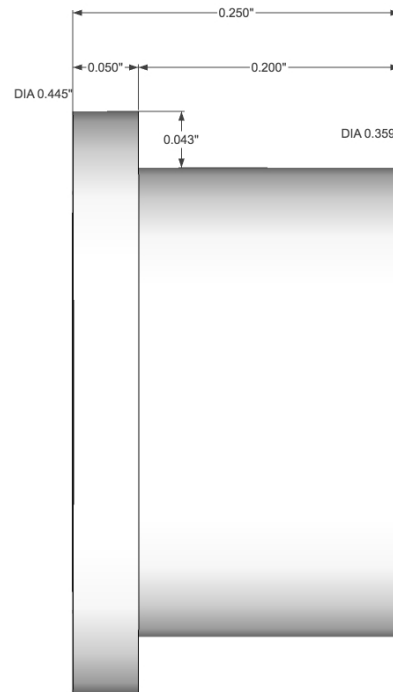
Part off for total length of 0.250"  
Flip & mount on threaded mandrel  
Turn OD to 0.359" leaving 0.050" wide collar  
check for fit with hole in wood

## Wood:

3-1/2" x 3/4" x 3/4" blank  
Rough turn to ~0.62" diameter  
Center drill #3 (both ends if using end button)  
Drill #F hole  
go 1/2 way through from each end  
(can be larger if desired)  
OR if no end button, go > 2.75" deep  
Drill 23/64" hole >0.2" deep  
Trim overall length if desired  
Drill other end to fit button (if used)

## Glue wood

be sure to match the grain with the nib wood  
don't glue the end button until after turning  
Turn using a threaded mandrel  
use tailstock with center-drilled insert



## Button for DeskPen

The end button is optional depending on the style of pen  
The outer diameter and the diameter of the tenon  
may vary with different designs.

Start with 1/2" stock  
Turn OD to 0.445" for ~0.4"  
Turn OD to 0.359" for 0.200"  
Part off to length ~0.35"

Mount piece in chuck  
Turn end at 15 degrees  
leave a shoulder 0.050" wide

### Note:

The diameter of the tenon can be made smaller  
if desired.  
The diameter of the button can be made smaller  
if the pen has a tapered body.

