

# The Closed End Pen

by John Solberg



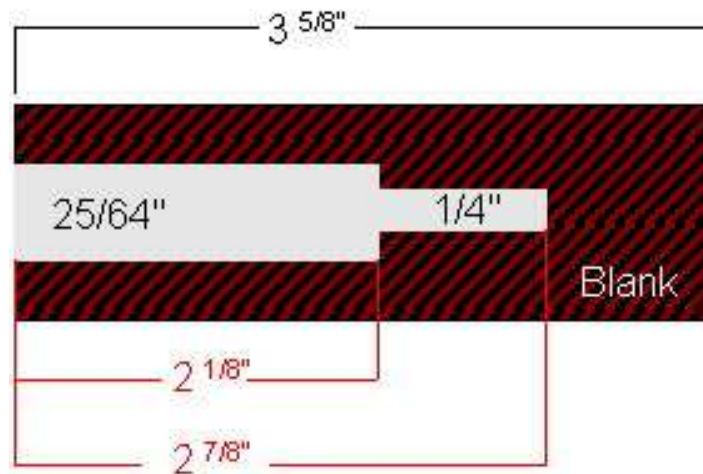
(Baron in Chocolate Mint Lucite)

## Supplies and Equipment:

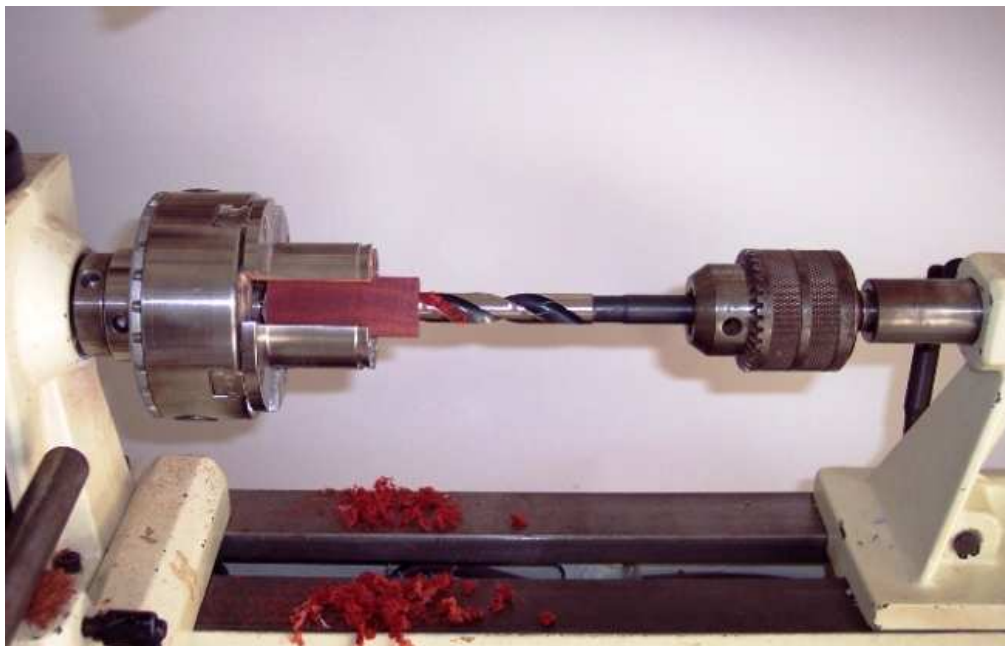
- A pen blank of your choice approximately  $\frac{3}{4}$ " x  $\frac{3}{4}$ " x 6" long
- Drills:  $\frac{25}{64}$ " lower barrel,  $\frac{15}{32}$ " cap barrel,  $\frac{1}{4}$ " for spring if rollerball  $\frac{5}{16}$ " for fountain pen
- Bushing: 19A – for cap
- Calipers
- Barrel trimmer system of your choice . . . Pen mill, disc sander, lathe
- A pen kit of your choice – Baron or Jr. Gent. for this demonstration
- Lathe
- Turning tools
- Pen mandrel and / or pin chuck
- Drill chuck or Beall chuck
- Scroll chuck for drilling on the lathe . . . . Optional
- CA or epoxy glue . . . Your choice
- Sandpaper
- Finish of choice
- Assembly instructions & assembly press

## Process:

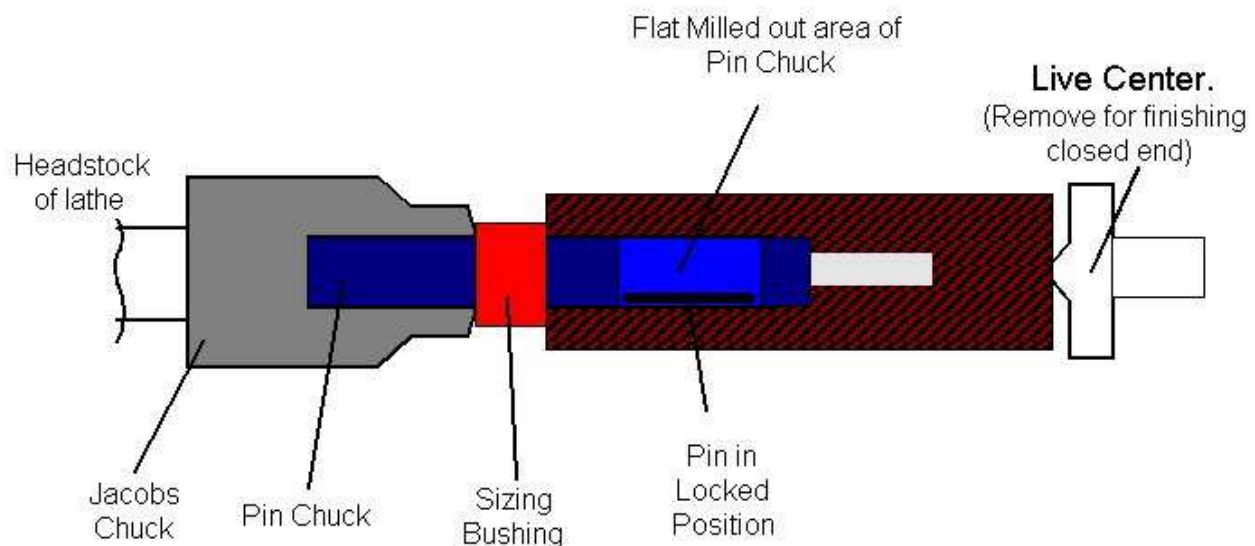
- **The Blank:** This needs to be longer than standard to accommodate the spring or cartridges/converter if fountain pen, and have room for the closed end.
- **Cutting the blank:** Cut the blank into 2 pieces approximately 2" and 4" long (cap end needs to be slightly longer than the tube) Mark them for grain alignment if you want to match the grain between cap and barrel. 4" allows for a small waste block at the end for the tail stock to rest against.
- **Drilling:** This needs to be very accurate on the lower barrel since there needs to be space for the spring to be captivated in blank if making a rollerball. Drill the lower barrel to the following approximate dimensions:



- I prefer to drill this on the lathe because it needs to be done very accurately to align the  $1/4"$  hole in the center of the blank. Drill the  $25/64"$  hole first. Mark the depth length of the tube on the drill bit to give you a guide to the length of the hole. Do the same on a  $1/4"$  drill bit and then add  $3/4"$  to that mark. If you have never used a lathe to drill blanks this is how I do it:

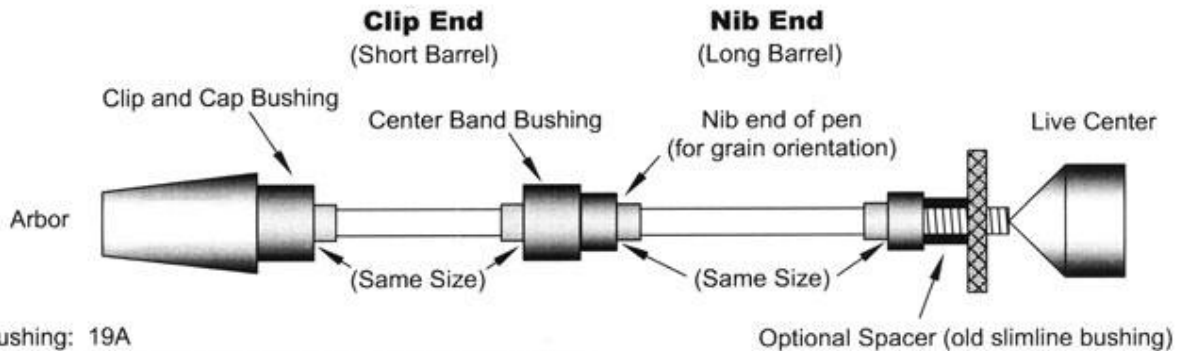


- **Glue in the tubes:** I use 5 minute epoxy but you can use any glue of your choice. With the epoxy I wait about 30 minutes before I proceed to give it a chance to cure more fully. Be sure to rough up the tubes to give the glue a better grip.
- **Square the ends of both cap and body to the brass tubes.** You can use a pen mill, a sander, or because the tube is in the center of the blank from drilling on the lathe, you can use a skew or scraper on the lathe. Use a light touch.
- **Now just chuck and turn to the desired shape.** I prefer to use a pin chuck for this but you can use a standard  $\frac{1}{4}$ " mandrel as well. With a mandrel you will need to use a bushing and the tail stock to support the ends of the lower barrel when turning. Finishing the end is a bit more difficult with this method. Information on pin chucks is found at the end of this write-up. With a pin chuck you cannot use the standard bushings on the lower barrel. I made a special sizing bushing to give the approximate diameter of the barrel. Use calipers to determine the final dimensions. After turning to the desired shape complete the sanding and then part off to the length of choice. The nib end bushing is  $.482$ " so I usually turn to about  $.490$ " to allow for some sanding. The cap portion is turned on a standard mandrel with the normal Baron bushings. Below is the set-up for using a pin chuck.



- **Sand and finish to your preferred method.**
- **Assemble per the kit instructions.** (Baron instructions attached) If you are going to make a standard rollerball, insert the spring into the end of the lower barrel with the large end going in first. If you are going to make a fountain pen set aside the spring, you will not need it. The  $\frac{1}{4}$ " hole in the end will need to be enlarged slightly to accommodate the use of two ink cartridges. (if you know you will be using this setup, drill the hole with a  $\frac{5}{16}$ " drill bit) The standard converter pump will fit nicely without enlarging the hole but will not work with the spring in place. (See mock-up).

## Instructions for the Baron Fountain and Rollerball Pens

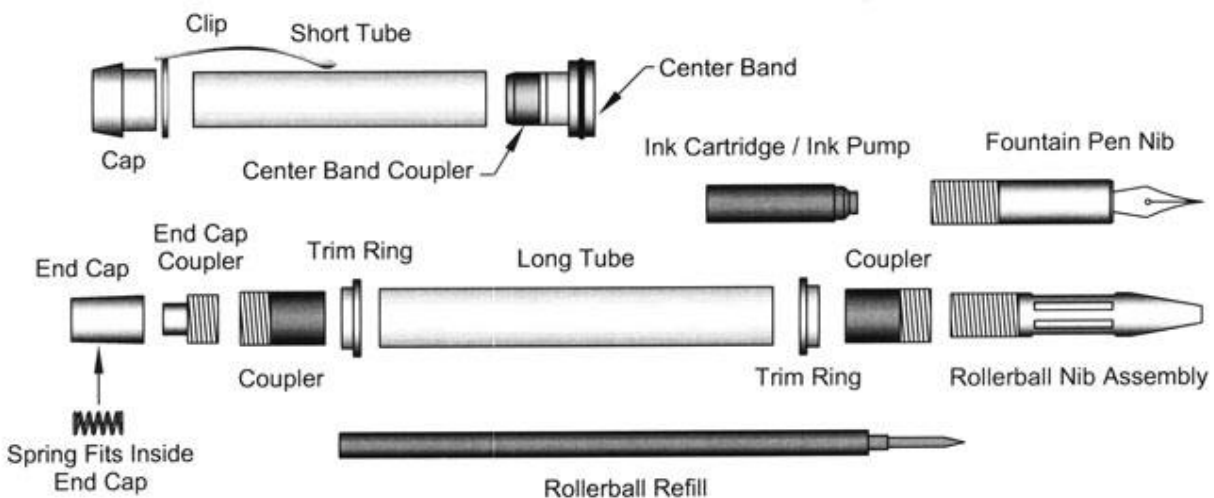


Bushing: 19A

Drills needed: 15/32" (upper barrel), 25/64" (lower barrel)

Blank size: 3/4" x 3/4" x 5" long

1. Slide the clip & cap bushing, upper (short) pen blank, center band bushing, lower barrel bushing, lower (long) pen blank, the second lower barrel bushing and threaded brass thumb nut on to the mandrel. Lightly tighten the brass thumb nut. Carefully slide the tail stock (with a 60° live center installed) up to the concave center of the mandrel and secure. DO NOT over tighten or apply excessive force to the mandrel as damage may result! Do not over tighten the brass thumb nut as this can cause the mandrel to bend and cause your pen to come out oval. A spacer may be installed to give you more room between the thumb nut and the last bushing.
2. Turn the pen blank to the desired shape using the bushings as a guide. Sand the blanks to the desired grit and then apply your choice of finish.
3. Assembly:
  - A. Slide the CLIP onto the CAP and press into one end of the short pen blank.
  - B. Slide the black CENTER BAND COUPLER into the plated CENTER BAND and press into the other end of the short pen blank.
  - C. Press the END CAP COUPLER into the END CAP. Press a COUPLER & TRIM RING into one end of the long pen blank. Press the remaining COUPLER & TRIM RING into the other end of the long pen blank. Note: the couplers and trim rings are identical.
  - D. Install the SPRING into the END CAP ASSEMBLY (to keep the spring in place apply a drop of silicone seal inside the END CAP). Screw the END CAP ASSEMBLY onto the appropriate end of the long pen blank (as determined by your design).
  - E. Rollerball pen: Insert the REFILL and screw the ROLLERBALL NIB ASSEMBLY into the COUPLER. Fountain pen: install the ink cartridge / pump into the back of the fountain nib and screw the assembly into the COUPLER.



## The Baron Pin Chuck





Photo of pin chuck by: James Mann – IAP name: Fanger - Used with permission