

# Native Pens

## Stick Shift Pen Instructions

### Required:

1/4" Mandrel

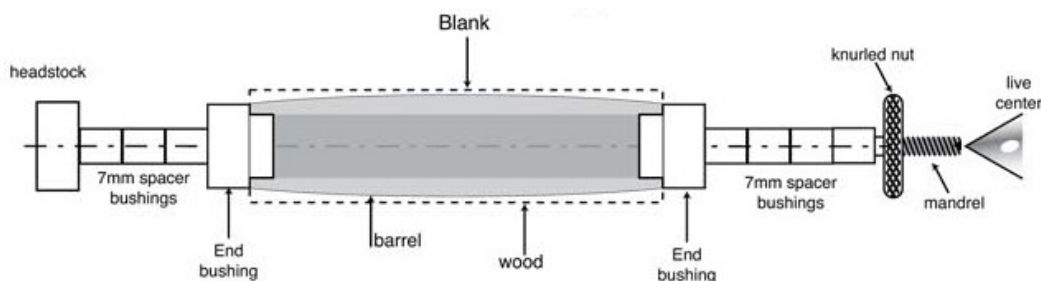
9.5mm or 3/8" Drill Bit

Pen Mill

Stick Shift Bushings

### Turning the Pen Barrel.

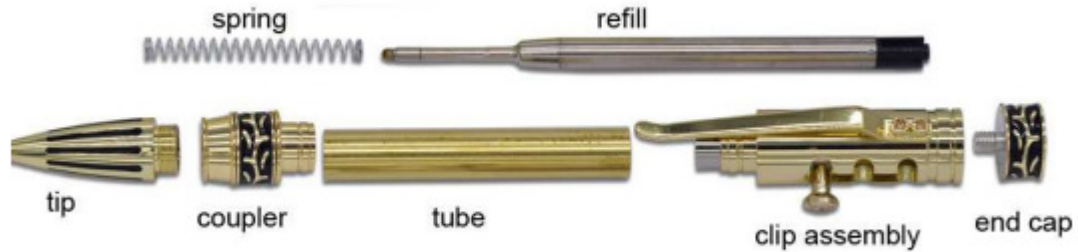
1. Cut a pen blank slightly longer than the brass tube.
  - a. Recommended blank size is 20mm x 20mm x 60mm.
2. Drill the blank through the centre, lengthwise, with a Ø9.5mm bit.
3. Sand the surface of the brass tube. This can be done by hand or mounted in the bushes on the lathe. This will clean off any oxidation and roughen the surface for a better glue bond.
4. Bond the tube into the timber blank. This can be done with CA or two-part epoxy glue. Insert the tube with a twisting motion then push it in until slightly under flush. About equal distance in from each end of the timber blank.
5. Allow glue to cure as required by glue manufacturer.
6. Clean all the dried glue from inside the brass tube. This can be done with a appropriate size drill bit by hand. Not cleaning out all the glue from the tube is the most common cause of pen failure.
7. Using a pen mill, face off the ends of the blanks until you can just see the bright brass end of the tube. STOP facing at this point. Another method to square the ends is sanding on a disc sander against a square fence or using a jig to hold the tube square to the disc.
8. Another method of squaring the ends of the blank is to turn the blank until it is just round. Then using a mitre gauge to maintain the blank perpendicular to the sanding disc, just touch the ends to the disc. Once the blank is square and you can see the ends of the tube brighten you can return the blank to the mandrel and finish the turning until the desired shape is reached.
9. Finish the pen to your specifications. Remove the barrel from the mandrel and it is ready for assembly.



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### Assembly of the pen.



1. Remove the Tip from the Coupler.
2. Press the Coupler into one end of the Barrel.
3. Remove the End Cap from the Clip Assembly.
4. Press the Clip Assembly into the other end of the Barrel.
5. Replace the End Cap.
6. Place the Spring over the Refill and insert through the Coupler.
7. Screw the Tip onto the Coupler.
8. Your pen is finished.