

# The Steam Locomotive Pen

## Kit Features

- Easy to Turn with Straight Tube
- Minimal Parts--easy to assemble
- Available in multiple finishes
- Overall Length: 5-9/32"
- End cap w/ cast replica locomotive
- Bolt Action Mechanism

## Required Accessories

- 7mm Pen Mandrel
- Drill Bit: #PK-38BP for Wood, #PKEXEC-38 for Plastic
- Barrel Trimming: #PKTRIM38 or 3/8" sleeve from #PKTRIMSET with squaring jig on disc sander.

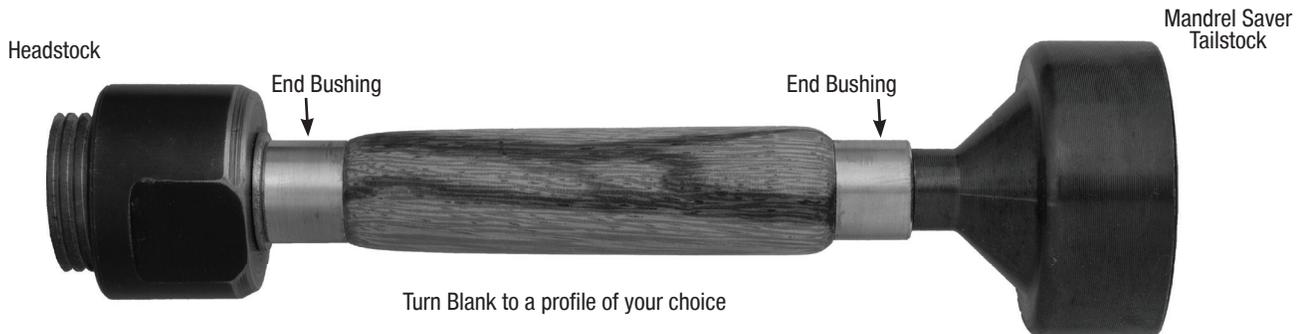
- Bushing Set(3pc): #PKPPENBU (Ends Only)
- Live Tailstock or Mandrel Saver
- 2 part Epoxy or Thick CA (Cyanoacrylate) Glue
- Pen Blank Minimum Size: 3/4" x 3/4" x 2-5/16"L



## Preparing the Blank:

- Cut blank to the length of the tube, adding 1/16" for squaring off.
- Drill hole lengthwise through the blank.
- Spread glue over tube, insert the tube into the blank with a twisting motion to spread the glue evenly inside.
- Center the tube lengthwise inside the blank.
- When the glue is dry, square the ends of the blanks, making sure the trimmed ends are 90° to the tube. Use a 3/8" Barrel Trimmer or 3/8" barrel trimming sleeve with a pen blank squaring jig on a disc sander. Take the excess material down flush to the ends of the tubes. Do not trim past the end of the tube since this may interfere with assembly and the operation of the mechanism. Use a barrel trimmer to clean the inside of the tube.

## DIAGRAM B / TURNING THE BLANK

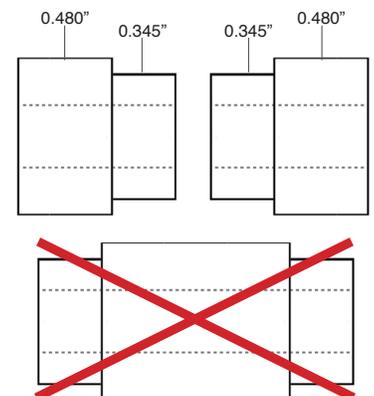


## Turning the Blank:

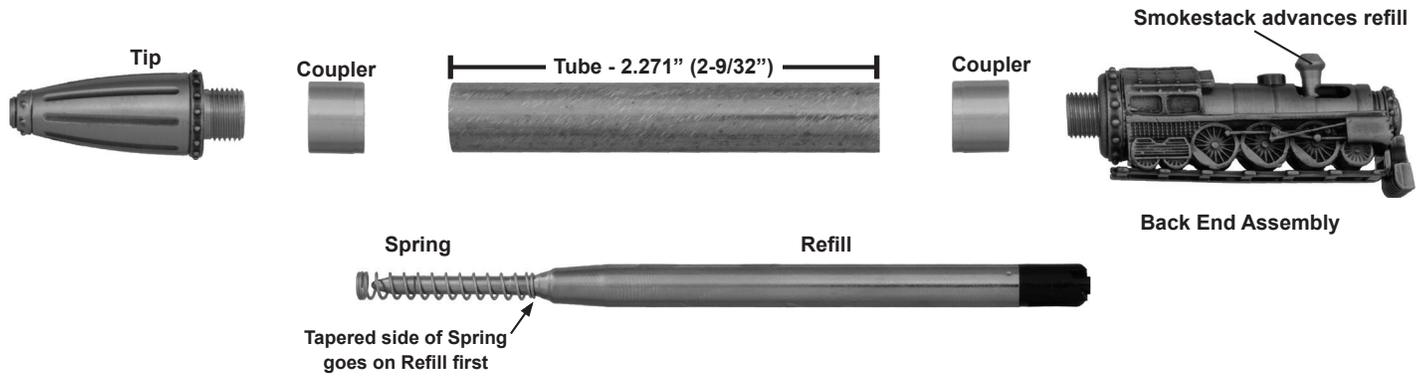
- Mount the bushings and blanks according to Diagram B. Only use the two end bushings; center bushing is not needed.
- When using Mandrel Saver, there is no need for extra spacer bushings or the knurled nut. Slide and lock tailstock directly against bushings and tighten quill until blank and bushings are secure.
- To use Knurled Nut Setup (right), add spacer bushings until past the threads on the end of the Mandrel Shaft.
- Thread on the Knurled Nut and hand tighten to hold all components in place.
- Slide the Tailstock up snugly against the Mandrel shaft, inserting the live center point into the Mandrel dimple.
- Lock Tailstock and hand tighten the quill adjustment with wheel to steady the mandrel. Do not over-tighten, it could damage mandrel shaft.
- Using sharp tools, turn the blank down close to the bushing diameter. Turn the barrel straight or to a profile of your choice.
- Sand the blank down to be flush with the bushings, gradually increasing sandpaper grits.
- Finish the barrel using your choice of polish. Allow sufficient time for the polish to cure—refer to polish manufacturer's instructions.



## Diagram C / Bushing #PKPPENBU



## Diagram D / Parts Layout

**Assembly:**

- Press Couplers reduced diameter first, into both ends of Barrel. Couplers will fit both Tip and Back End, it doesn't matter which side they go in. Just remember, as always, reduced diameter end goes into the tube first.
- Thread Back End Assembly into Barrel.
- Slide Spring – tapered side first – onto Refill Shaft.
- Insert refill back end first into open end of Barrel.
- Thread Tip over Spring and Refill, into Barrel.
- To extend Refill, Slide “smokestack” towards tip and push into locking position. To Retract Refill, slide “smokestack” out of lock position and allow it to slide backwards.
- To change Refill, unthread Tip from the Barrel. Remember to switch Spring to new Refill.