

Turning the Apprentice Letter Opener

We recommend that the following, to turn the letter opener kit

- 7mm Drill Bit
- 5/8" x 5/8" x 2 3/4" Blank
- Pen Mandrel
- Bushing Set BUSH85
- Glue (Thick CA or Epoxy)
- Sandpaper/ Finish
- Drill or Drill Press
- Barrel Trimmer/ Disc Sander
- Pen Press or Clamp
- Eye and Ear Protection

Cutting and Drilling the Pen Blank

1. Cut each blank 1/4" longer than the brass tube.
3. Using a drill press with the blank secured in a vise or clamp, drill a hole through the centre of the blank stopping an 1/8" short of the bit exiting the blank. Drill at 2,000-3,000 rpm backing the drill bit partially out of the hole every 1/2" to clear chips. When using larger bits or drilling plastics drill at 250-500 rpm.
4. Trim away a small amount of wood from the end of the blank to expose the hole. The blank should be slightly longer than the brass tube. This technique prevents cracking caused when the bit exits the blank.

Gluing the Brass Tubes into the Blanks

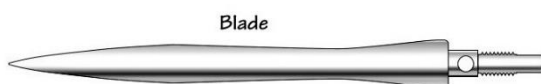
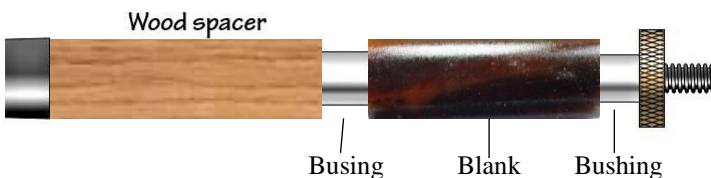
1. Lightly scuff the exterior of the brass tube with 220 grit sand paper to prepare it for gluing.
2. For a fast bond, use thick cyanoacrylate adhesive (super glue) or 5-minute epoxy. For additional working time and more thorough bond, use expanding polyurethane (Gorilla or Sumo Glue). Apply a thin layer of glue to the tube and inside the wood blank. Insert the tube into the blank rotating it as you go to spread the glue evenly. Position the brass tube in the blank so that the wood extends beyond the tube on both ends to allow for trimming.

Trimming/Truing the Blanks

Square the ends of the wood blank with the tube using either a barrel trimmer or disc sander. This step is critical for the pen components to fit together properly. Do Not trim the brass tube as this may result in an improper fit when the pen is assembled.

Mandrel Setup and Turning

1. Assemble the bushings and blank on the pen mandrel as shown below. We recommend for ease of turning, that a piece of wood is used as a spacer on the mandrel shaft as shown in the picture

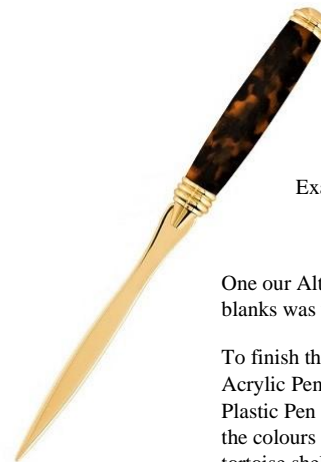


2. Advance a 60 °revolving cone centre into the dimpled end of the mandrel and tighten using light pressure. Do Not over tighten the tailstock or mandrel nut as this may cause the mandrel to flex resulting in off-centre barrels.
3. Turn both blanks to the desired shape leaving the blanks slightly larger than the bushings.
4. Sand the blanks using progressively finer grits of sand paper, then apply the finish.

Assemble the Parts

Layout the parts as shown paying, use a vise or clamp with wood or plastic jaws to prevent damaging parts during assembly.

1. Press the centre coupler, stepped end first, into the one end of the brass tube.
2. Press the end cap into the other end of the brass tube.
3. Slide the bolster nut onto the blade, cone end first and thread the blade / bolster nut into the centre coupler.



Example of the finished Letter Opener

One our Alternative Tortoise Shell pen blanks was used for this project

To finish the project the Micro Mesh Acrylic Pen Kit and the Starbright Plastic Pen Polish was used to enhance the colours and look of the alternative tortoise shell

For more information or to order the Letter Opener Kit Visit our website or call our office

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