

Turning a Perfume Atomizer

Supplies Needed

- 19/32" Drill Bit
- 1" x 1" x 4" Blank
- Pen Mandrel
- Set of Bushings
- 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 the blanks 1/4" longer than the brass tube.
2. Using a drill press with the blanks secured in a vise or clamp, drill a hole through the center of the blanks 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.
3. Trim away a small amount of wood from the end of the blanks to expose the hole. The blank should be slightly longer than the brass tube. This technique prevents cracking caused when the bit exits the blanks.

Gluing the Brass Tube Into the Blanks

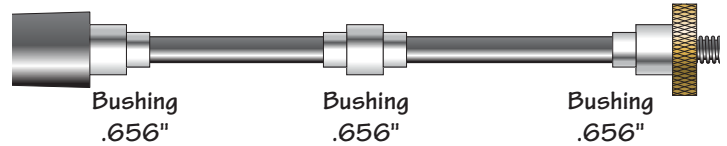
1. Lightly scuff the exterior of the brass tube with 220 grit sand paper to prepare it for gluing.
2. For a fast bond, use thick cyanoacrylate adhesive (super glue) or 5 minute epoxy. For additional working time and more thorough bond, use expanding polyurethane (Gorilla or Sumo Glue). Apply a thin layer 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 Blank

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

Mandrel Setup and Turning

1. Place the bushings and blank (not shown) on the pen mandrel, using a wooden spacer for proper fit.



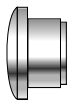
2. Advance a 60° revolving cone center into the dimpled end of the mandrel and tighten using light pressure. **Do Not** over tighten the tailstock or mandrel nut as this may cause the mandrel to flex resulting in off-center barrels.
3. Turn the blank to the desired shape leaving the blank slightly larger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

Assemble the Parts

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

1. Press the round cap into one end of the cap tube.
2. Push the spring into the body tube. The spring will rest between the coupler and the flat cap.
3. Press the short end of the coupler into one end of the body tube.
4. Press the flat cap into the opposite end of the body tube.
5. Insert the atomizer into the body tube. The slight friction against the atomizer, created by the spring, holds the atomizer in place but it can be easily removed.

Round Cap



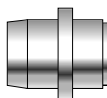
Cap Tube



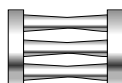
Atomizer



Coupler



Spring



Body Tube



Flat Cap

