

## Turning a Premium Salt and Pepper Shaker

### Supplies Needed

- Drive Center (Opt.)
- 1-1/4" Forstner Bit
- 2" x 2-1/4 Project Blank
- Pen Mandrel
- Shaker Pen Bushings
- Glue (Thick CA or Epoxy)
- Sandpaper/Finish
- Drill Chuck or Drill Press
- Disc Sander
- Pen Press or Clamp
- Eye and Ear Protection

### Cutting and Drilling the Blank

1. Cut a blank 1/4" longer than the chrome tube.
2. Using a drill press with the blank secured in a vise or clamp, drill a hole through the center 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.
3. 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 Chrome Tube Into the Blank

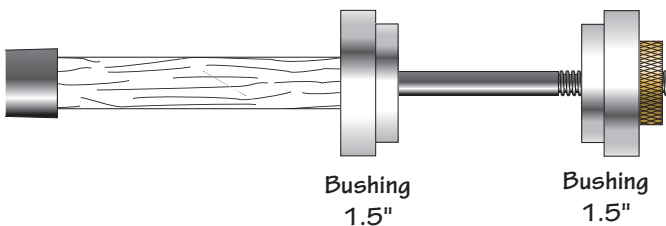
1. Lightly scuff the exterior of the chrome tube with 220 grit sand paper to prepare it for gluing.
2. For a fast bond, use thick cyanoacrylate adhesive (super glue) or 5 minute epoxy. For additional working time and more thorough bond, use expanding polyurethane. Apply a thin layer of glue to the tube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

### Truing the Blank

1. Square the ends of the wood blank with the tube either by Truing the blank on the lathe or using a disc sander. This step is critical for the shaker components to fit together properly. **Do Not** trim the chrome tube as this may result in an improper fit when the shaker is assembled.

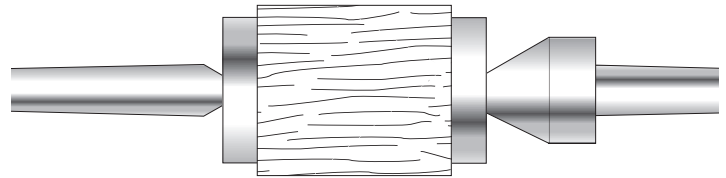
### Mandrel Setup and Turning

1. Assemble the bushings and blank on the pen mandrel as shown below.



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. (Optional) You can also use a 60 degree drive center and cone center to mount the blank as shown below.



Optional Method

4. Turn the blank to the desired shape leaving the blank slightly larger than the bushings.
5. Sand the blank using progressively finer grits of sand paper, then apply the finish.

### Assemble the Parts

Layout the parts as shown paying careful attention when assembling the shaker kit. Use a vise or clamp with wood or plastic jaws to prevent damaging parts during assembly.

1. Press the end cap into the blank.
2. Put the plastic canister into the threaded insert and press into the blank.
3. Fill the plastic canister with salt or pepper and thread the shaker cap onto the threaded insert.

