# **Budget Comfort Grip pen**



#### Needed:

Mandrel A, drill 7 mm, bushing 14A

### Preparing the blanks

- Cut two blanks a 1/4" longer than the length of the brass tubes to allow for squaring off.
- Drill lengthwise through each blank using a 7 mm drill bit.
- Scuff the brass tubes with sand paper to clean off oxidation and give the glue a better adhesion surface.
- 4. Plug the ends of the tube with a material of your choice we recommend base plate wax to keep the glue from getting into the tube. Push the tube ends into a thin section of the material to form a plug. This is very important glue inside the tubes is a common cause of kit failure.
- Roll one of the tubes in glue and insert it into the blank with a twisting motion until it is equidistant between both ends of the blank. Repeat with the other tube.
- **6.** Set aside until the glue has had time to reach its maximum strength.
- When the glue has cured, use a hobby knife to remove the plugs from the ends.



8. Using a barrel trimmer of the proper size, square off the ends of the blanks until you can see bright brass tube. STOP at this point. This can also be done with the proper jig and a disk sander. *Improper tube length is another common cause of pen failure.* 

## **Turning the blanks**



- Put the bushings and barrels onto the mandrel referring to the image above.
- 2. Lower blank: turn the blank down, using lathe chisels and abrasives, to the size of the bushings. Make a pencil mark 1" from the tip end of the lower blank. Use a parting tool to remove the blank down to the brass tube and to the tip end bushing. Keep a sharp, 90 degree corner on the blank.
- **3.** Upper blank: Turn this blank similar to the lower blank, but gradually taper the end toward the smaller bushing.
- **4.** Sand using a range of grits and apply a finish of your choice. For a smooth finish,

sand with Micro Mesh to 12,000 grit.

5. Remove the blanks from the mandrel.

### Assembling the pen

- Slip the cushion grip, wide end first, over the exposed end of the brass tube.
- 2. Press the pen tip into the tube against the cushion grip.
- **3.** Press the twist mechanism, brass end first, into the opposite end to the identification mark. Stop near the mark to check for the desired extension of the refill.
- **4.** Press the cap through the clip and into the narrow blank end of the upper barrel.
- Slip the pen centre band over the exposed mechanism. Carefully press the top barrel down over the twist mechanism to complete the pen.
- **6.** The pen operates by twisting the ends to advance or retract the refill.

