

# Instructions

## Slimline/Fancy Pen and Pencil Kit

### Tools Required

- Mandrel
- Slimline Bushing Set
- 7mm Drill Bit
- 7mm Barrel Trimmer (Optional)

### Cutting and drilling the blanks

1. Cut each blank 5mm longer than the brass tube.
2. Drill a hole through the centre of the blank.  
Either use a drill press with the blank secured in a vice or clamp or use your lathe with a drill bit mounted into the tailstock chuck.  
Drill at high speed penetrating about 10 mm to 20mm at a time and then clearing the swarf to prevent overheating of the drill bit.  
To prevent cracking or chipping of the wood when the drill bit exits the other end of the blank, stop drilling 3mm before the bit drill reaches the end of the blank and then trim the end of the blank using a saw to expose the hole.

### Glue the brass tubes into the blanks

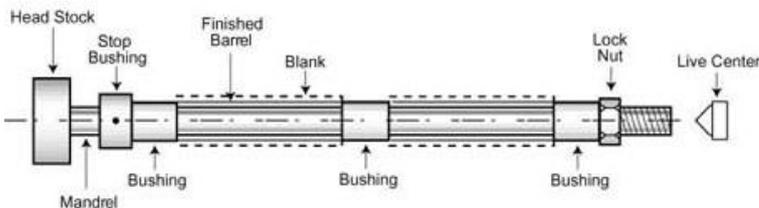
1. Using 200 grit sandpaper, lightly scuff the exterior of the brass tubes to prepare them for gluing.
2. Apply a thin layer of superglue or epoxy to the tube and insert the tube into the blank. Rotate the tube as you push it into the blank to spread the glue evenly – this must be done fairly quickly to avoid getting the barrel stuck before it's inside the blank.
3. Position the tube inside the blank so that the wood extends beyond the tube on both ends to allow for trimming.

### Trimming the blanks

Square the ends of the wood blank with the tube using either a barrel trimmer or disc sander.  
Alternatively, fasten the blank into the chuck and trim the barrel carefully using a parting tool.

### Mandrel setup and turning

1. Assemble the bushings and the blanks onto the mandrel as shown in the diagram.
2. Ensure that the mandrel is tight on your lathe using your live centre in the dimpled end of the mandrel. Do not over-tighten the tailstock or mandrel nut as this may cause the mandrel to flex resulting in off-centre barrels.
3. An alternative is to use a mandrel saver tool to tighten the blank into the lathe without putting strain on the mandrel shaft.



4. Turn the blanks to the desired shape leaving the blanks slightly larger than the bushings.
5. After turning, sand the blanks using progressively finer sandpaper until the desired finish is reached.

### General assembly points

Use a vice or clamp with wood or plastic jaws to prevent damaging the parts during assembly.

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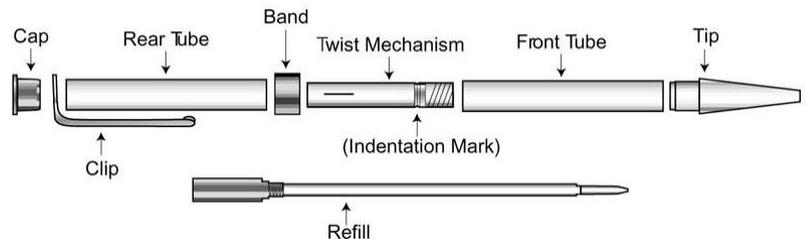
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Front and rear tubes are identical on both pen and pencil kits and may be used in any order.

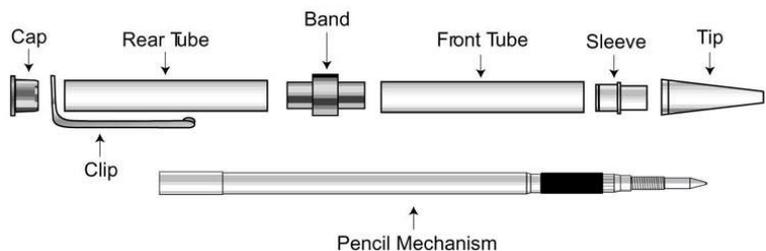
### Pen assembly

Layout the parts as shown.



1. Press the writing tip into the end of the lower brass tube.
2. Press the twist mechanism, brass end first, into the opposite end of the same tube until the indentation mark meets the end of the barrel.
3. Screw in the refill and check that the refill point extends correctly beyond the writing tip. If necessary, press the twist mechanism slightly further into the brass tube to expose more of the refill tip. Be careful not to press the twist mechanism too far into the tube as it cannot be pulled out.
4. Slide the clip onto the stepped portion of the cap. This will only slide part way on. Do not attempt to force it.
5. Press the clip/cap assembly into the end of the upper tube.
6. Slide the centre band over the twist mechanism.
7. Slide the upper tube over the exposed twist mechanism to complete the pen.

### Pencil assembly



1. Press the sleeve, recessed end first into the end of the barrel.
2. Press the band onto the opposite end of the barrel.
3. Press the rear barrel onto the band.
4. Press the cap into the clip then onto the rear tube.
5. Insert the pencil mechanism through the cap and out the opposite end.
6. Screw the tip tightly onto the threaded end of the mechanism.
7. Clip the plunger onto the back of the mechanism.
8. The pencil operates by pushing down on the plunger to click the lead out.
9. Use 0.7mm lead to refill your pencil.