

Instructions

Euro/Designer Pen Kit

Tools Required

- Mandrel
- Designer 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 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 (by hand) or a disc sander.
Alternatively, fasten the blank into the chuck and trim the barrel carefully using a parting tool.

Mandrel setup and turning

1. The Designer Bushing Set contains three bushings: a wide bushing for the cap end, a narrow bushing for the tip end and a centre bushing.
2. Assemble the bushings and the blanks onto the mandrel as shown in the diagram. Place the centre band over the centre bushing using some tape to hold it against the lower blank.
3. 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.
4. An alternative is to use a mandrel saver tool to tighten the blanks into the lathe without putting strain on the mandrel shaft.
5. Turn the blanks to the desired shape leaving the blanks slightly larger than the bushings and the diameter of the centre band.
6. Taper the end cap and tip ends of the blanks to conform with the cap and tip. Use the outside diameter of the centre band to determine the outside diameter of the upper blank. Ensure that the wood on the lower blank next to the twisting mechanism does not exceed the bushing diameter as this may cause the twist mechanism to jam.

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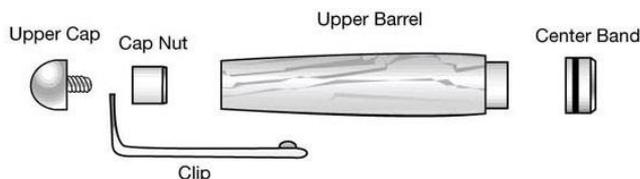
Turning the tenon

1. A tenon must be cut in the upper barrel to accommodate the centre band.
2. The diameter of the tenon should match the narrow diameter of the centre bushing.
3. When turning this blank near the centre bushing, use a small piece of tape to secure the centre band to the bushing to prevent it from spinning and hitting your turning tool.
4. The length of the tenon should be approximately 5mm. Make a pencil mark 5mm from the end and use a parting tool to cut the tenon down to the inside diameter of the bushing.
5. When ready for the final cut, slide the centre band from the bushing onto the tenon to test the fit.
6. When the proper fit is obtained, move the band away from the wood. Sand the blanks using progressively finer sandpaper until the desired finish is reached.
7. When finishing is complete, mount the centre band permanently onto the pen cap using a drop of glue.

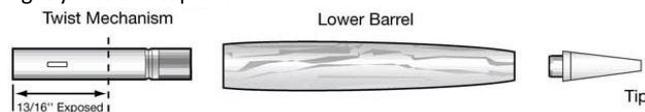
Pen assembly

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

Layout the parts as shown.



1. Press the cap nut (recessed end first) into the tapered end of the upper barrel.
2. Insert the cap thread into the hole in the clip and screw together tightly into the cap nut.



3. Press the tip into the tapered end of the lower barrel.
4. Press the tip into the tapered end of the lower barrel.
5. Mark a line on the twist mechanism 20mm from the chrome end. Press the brass end of the mechanism into the opposite end of the lower barrel up to your mark, leaving 20mm exposed.
6. Twist the mechanism and the pen to check the extension of the refill. Press the mechanism in slightly further if required.
7. Insert refill into twist mechanism and screw to the end.
8. Engage and push barrels together.

