



This is the sequence that I use to make Pens and other items held in a Mandrel

Important items to remember

1. Use the correct Drill size and type!
2. Use the correct size Bushings for the tube/finished item

1

Cut or Buy blanks of the correct size

Simple Biro's can be smaller than Fountain Pens

Size generally

- For Biro's $\frac{3}{4}$ in sq x $4\frac{1}{2}$ – 5 in long min
- For Fountain Pens 1 in sq x $5\frac{3}{4}$ - 6 in long

2

Using the tube, cut the blank into two with a TINY bit added on in case of breakouts. Especially important for acrylics etc

Mark each half at the point where they match so you can pair them up again.

I use letters

3

Drill a hole in each using either:-

- Special jaws in the lathe
- Using a Pillar Drill

With soft wood eg Spalted Woods or Acrylics, I use a Centre Drill First.

4

Rough up the outside of the brass tubes with some 80 grit abrasive then glue the brass tubes into each hole.

I use 2 part epoxy glue but others swear by Superglue – Thick.

If you have an orange peel handy then that can be used to temporarily 'seal' the ends and help prevent glue getting into the tube – just push the tube into the peel to cut out the 'seal', the peel should be easy to remove once the glue has dried.

Use a prodder to push all the way in.

Leave to dry overnight

5

Trim both ends so that the tube is clean and the ends square.

I use the trimmer in a pillar drill. It has several shaft sizes for different tube sizes

6

After this, I tend to cut the corners off on a small band saw to reduce chipping

7

At last you can turn the thing!

Use a mandrel with the appropriate fittings. I use one which can take both parts of a Slimline Biro. Use the correct bushings for the pen and I use a spare brass ring in the centre.

Match the reference letters together (from step 2).

8

Tools

I use a spindle roughing gouge

Then a skew chisel - take fine cuts and shape

Sanding - Use paper to at least 600 grit

Polish - I use Friction Polish, then micro polish

9

Assembly 1

Lay out the components of the pen to make sure you have all the right parts in the right locations

Using a round file, file the inside of each end of each brass tube - they often have some burr there making assembly difficult

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Assembly 2

To push parts together use any of these methods

- Your Lathe with flat pieces of wood in the head and tail stocks.
- One handed, preferably with a 'reverse' action
- Special 'pen-press' machine. There are various types available

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<p>Assembly 3</p> <p>Check the fit of the twist mechanism so that there is sufficient point showing.</p> <p>Check the pen writes – often there will be a plastic seal over the end of the ball-point. If so it should come off easily.</p>	<p>Points to Note</p> <ol style="list-style-type: none"> 1. Be careful of break-out when drilling, especially acrylics 2. Drills <ol style="list-style-type: none"> a. Generally 7mm & 10mm but kits will specify if different sizes are needed – keep track of what sizes go with which kits! b. Brad Point c. Centre Drill to start in difficult wood