

## **A beginner's guide to pen turning.**

By Walter Hall

This is an article I wrote about 20 years ago for an internet pen making forum. I have updated it to take account of changes in what is available on the pen kit and tools market, but the techniques are much as they always were. I will be publishing this more widely as part of a series of pen making articles so any comments or suggestions for improvement from other pen makers will be welcome.

All the components and tools that you need to start making pens are available from the specialist suppliers like Vince Coates at Turners Workshop, Dan Smith at Taylor's Mirfield and Phil Dart at Beaufort Ink. Mainstream turning suppliers like Turner's Retreat and Axminster Tools are also good sources of supply. It is best to avoid many of the eBay sellers as they often sell inferior quality Chinese imports. You will at the very least need a lathe, a spindle roughing gouge a skew chisel, a mandrel and some means of drilling the blanks.

It is best to begin with something fairly simple such as the 7mm slimline twist pen kits They consist of eight components, two brass barrels, the refill, a twist mechanism, a plated tip, centre ring, clip and end cap:-



Nowadays I would probably recommend starting with one of the single barrelled kits such as the Sierra or Zeta as these avoid the need to concern yourself with matching two halves of the pen. You will also need a suitable pen blank and a mandrel such as the one below. Many pen makers now turn between centres without a mandrel, but that is perhaps something to advance to. Best to start out using a mandrel.

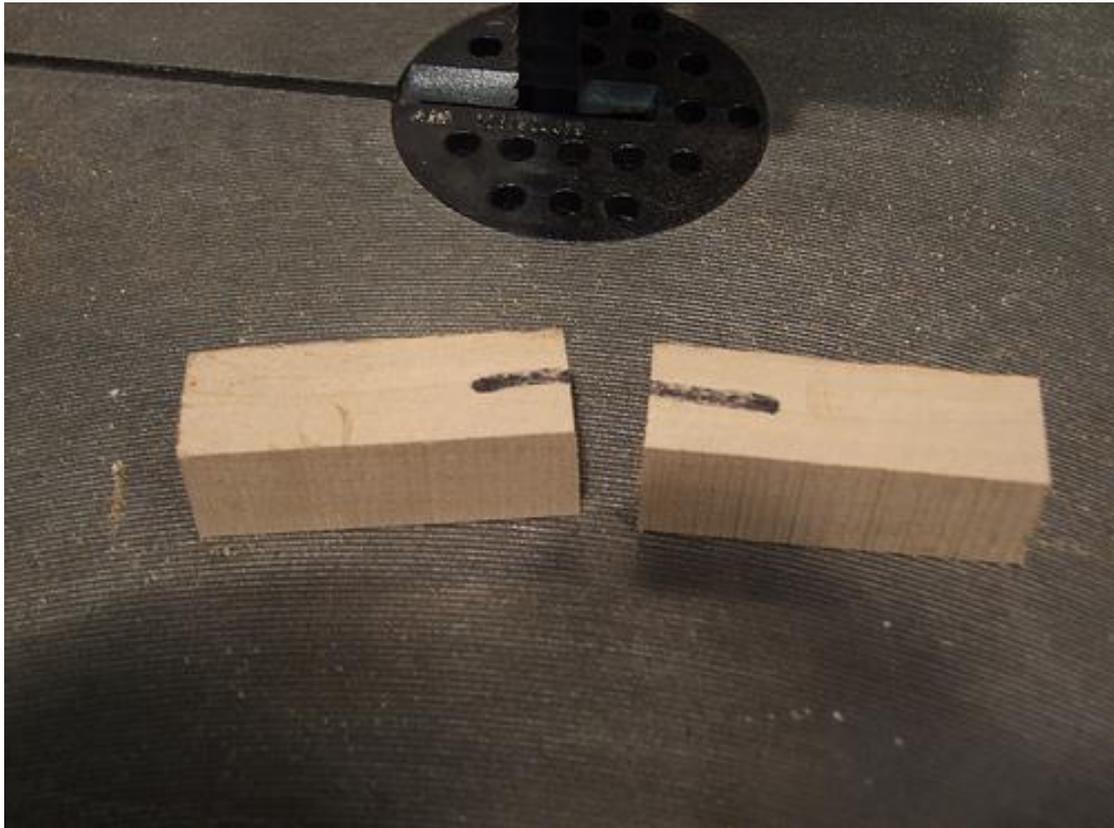


Wooden and acrylic pen blanks are readily available from the same suppliers or you can cut your own wooden ones from any suitable timber you may have in the workshop. I would recommend beginning with something fine grained and easy to work, fruitwoods are a good choice.

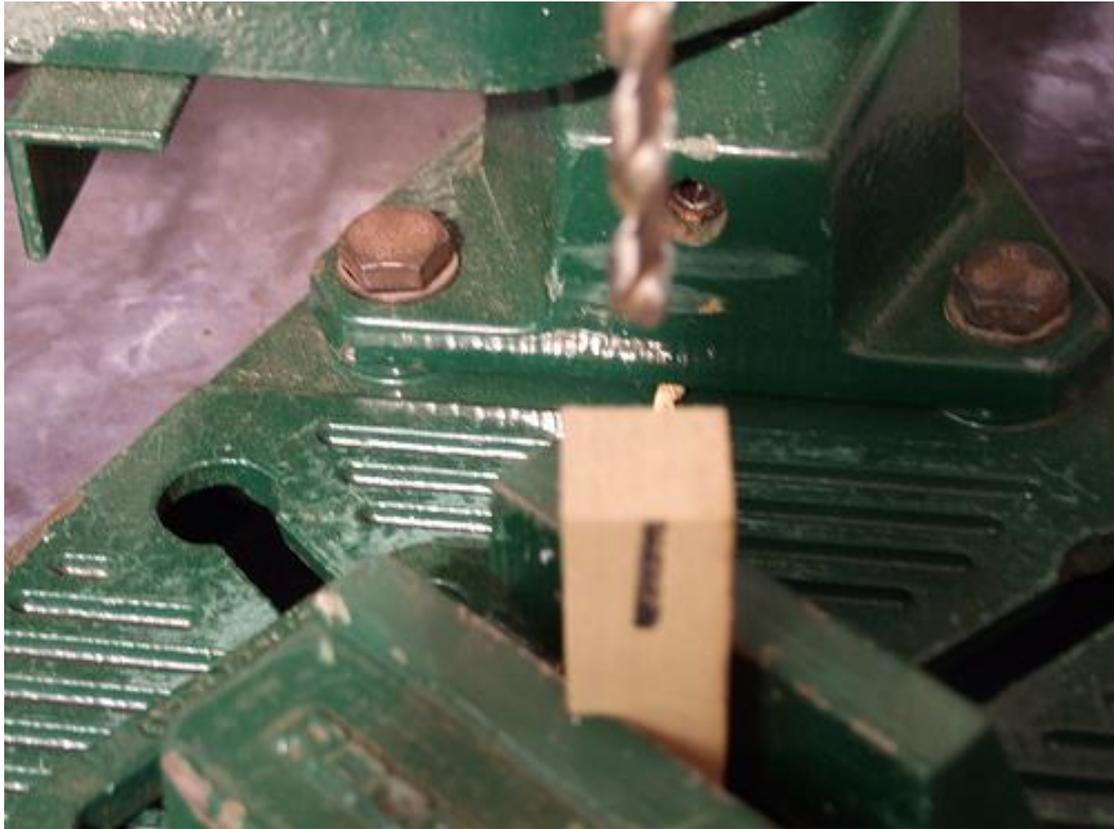
Another tool you will find invaluable is an end mill or barrel trimmer such as the one below to square off the ends of the blanks. You will find it difficult to get good fitting parts without one although it is possible to square off blanks on a disc sander.



Now you have gathered together all the tools and components it is time to start the enjoyable part. First of all you need to cut the pen blank to length. I cut the blanks about 2mm longer than the brass tubes to allow for squaring off with the barrel trimmer. Keep the two components in the correct order so that the figure of the timber flows through the whole pen. It helps to mark the matching ends with a marker pen as I have done here:-



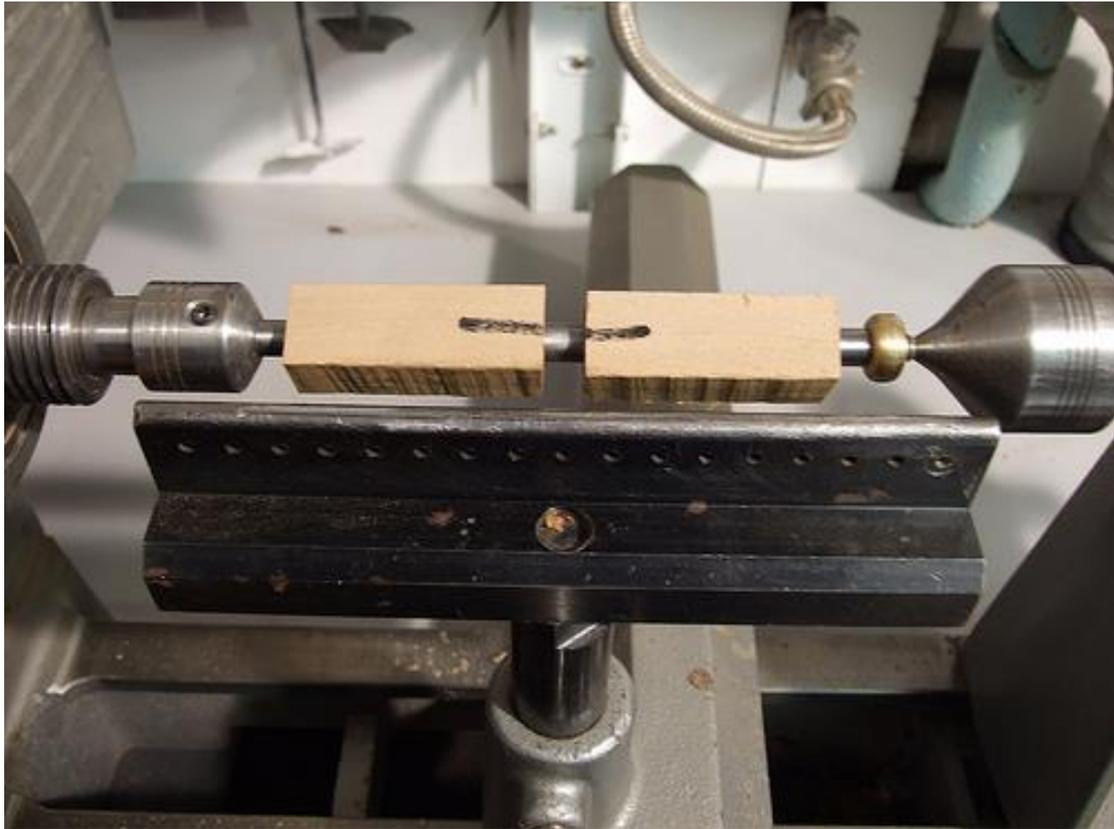
Now drill the blanks with a 7mm twist drill or lip and spur bit to take the brass tubes (Check drill size for kits other than the slimline). A good way of doing this is with the blank in a chuck on the lathe and a drill in a Jacobs chuck in the tailstock. You can also use a drill press or a power drill in a drill stand as I have done here. Drilling accurately through the centre of the blank is difficult even with a drill press because the drill tends to try and follow the grain, so it is best to drill from the centre of the blanks out towards what will be the ends of the finished pen. This will achieve the best matching figure.



Glue the brass barrels into the blanks. Many people use CA (superglue) for this but for wooden blanks I prefer either PU (polyurethane adhesive) or a two-part epoxy and for acrylics either CA or epoxy work well. If you do use superglue a good tip is to wear thin rubber gloves. It is much easier to dispose of the gloves than it is to get CA off your fingers. You now need to leave the glue to harden. Follow the manufacturer's guidance for drying times and do not be tempted to move on to the next step until everything is nicely set.

Once you are sure the adhesive is set, trim the ends of the barrels square using the barrel trimmer. I do this by turning the blank by hand against the trimmer fitted in a Jacobs chuck in the morse taper of the lathe with the lathe turned off. You can do this with the lathe running slowly but if you do, please take care. I have also made a handled chuck to do this by hand, but then I make a lot of pens, so the time taken to make it was worthwhile.

Fit the mandrel in the headstock morse taper and slide the prepared barrel blanks onto the mandrel separated by the bushings provided. Tighten up the nut on the end of the mandrel and bring up the tailstock. Here is everything set up and ready to go.



Now to begin turning. You will need a roughing gouge and a skew chisel. Make sure they are sharp. You can buy small tools that are supposed to be designed for pen turning but to my mind they are a waste of money. I have never used anything other than a 1" roughing gouge and  $\frac{3}{4}$ " oval skew. I carry out the whole process from first cut to final finish with the lathe running at about 2000 RPM, you may want to use a slower speed for the initial cuts if you lack confidence. Nowadays carbide Tipped tools are becoming popular, they are essentially scrapers and I don't find them very good for spindle work in wood, but they are quite effective if used on acrylic and other man-made materials.

Using a roughing gouge and initially taking light cuts, turn the blanks down to a cylinder just slightly greater in diameter than the bushings. Then turn down to the exact diameter with the skew chisel, taking care to keep the diameter the same all the way along the barrel. I see so many pens that have a hollow in the middle of the barrel and only match the diameter of the components at the ends. It may pay to leave the turning a little proud of the bushings depending upon how much sanding you are going to need to do. The better your skew work, the less sanding you will have to do. Here are the barrels turned and ready for sanding.



You need to sand the barrels to a fine finish. I generally start with 240 or 320 grit and work down to anything up to 1200 depending upon the quality of the kit I am making. I use j-flex or Abranet.

Now all that remains before assembly is the finish. Acrylic blanks only need polishing with a fine abrasive paste or wax, for wooden pens I used to use cellulose sanding sealer followed by friction polish. It is easy to apply and gives a pleasing finish that can be maintained with an occasional waxing. This is not a lasting finish though if it is not maintained. A better option I often use nowadays is several coats of melamine lacquer. There is an online tutorial for this finish on the Beaufort ink website:

<https://www.beaufortink.co.uk/blog/using-liquid-melamine-as-a-pen-finish>

It is also possible to use CA (superglue) or CA/BLO (superglue and boiled linseed oil) which gives a durable high gloss finish. There are several videos of how to do this on YouTube. It is not my favourite finish, but it is very popular especially with American pen makers.

Final assembly is done by push fitting the components into the tubes using a bench vice or a pen press and there you have it. You could also use your lathe as a pen press by making wooden blanks to fit in the head and tailstock.

