

# How to turn a slimline pen



You will need:

- 1 wooden pen blank (minimum size: 20 x 20 x 125mm)
- 1 slimline pen making kit
- 7mm drill bit
- A pen turning mandrel
- CA glue
- Sandpaper (a range of grit sizes 120 to 1000)
- A pen press or bench vice

## Part 1 — Preparing the blanks

1. Cut the timber blank to 20mm x 20mm x 125mm.
2. On a bandsaw (or bench saw) cut the blank into lengths approximately 3mm longer than the upper and lower tubes. The centre of the cuts will be the centre of the pen to ensure the grain matches up.
3. Mark the matching ends as these will be the centre. The holes are drilled from these ends so the grain remains matched even if the drill wanders along the grain while drilling. Set up the first blank in a drill press or similar. Ensure the blanks are held firmly and are square to the drill bit.
4. Carefully drill right through the blank using a 7mm drill bit. Make small advances with the drill, backing it out often and allowing the shavings to clear out of the drill flutes.
5. Repeat this process on the second blank.
6. Take the 2 tubes from the pen kit packet and sand them along the whole length using an old piece of sand paper. This is to form a key for the glue to adhere to.
7. Once sanded, insert the tubes into the blanks to ensure the tubes slide in freely before glueing.
8. To glue in the tubes use a medium CA adhesive (Observe safety precautions; wear gloves and complete this process in a well-ventilated area to minimise the impact of fumes.) First apply a small amount of CA to the inside of the first blank hole at the matched end. Run it around the entire hole circumference. Stand the blank on end so the CA runs down through the hole.
9. Apply CA to the brass tube in dots around the tube. Rotate the tube to get a fairly even spread.
10. Insert the brass tube into the blank from the matched (centre) end. Work it in and out a couple of times while turning it to ensure a good even coverage of CA inside the blank. Then push the tube in until approximately 1 - 1 1/2 mm down inside the matched end.
11. Check to ensure that both ends of the blank have glue coverage around the tube ends. If it looks a little dry you can wipe a bit of CA around the tube. Allow the CA to dry overnight.
12. The next day - hold each blank in a vice or similar. Using a battery drill on high speed carefully run the Pen Mill into the brass tube to clear out any CA. If there is CA build-up in the end of the tube the mill can be difficult to start. Back the Mill out to clear away the CA.
13. Next, using gentle downward pressure, start to mill the end of the pen. Take care and take your time as excessive pressure can cause the mill to grab, which can cause very small splits in the timber. Mill the blank until the brass tube is reached. Back the mill away from the blank as you mill to check progress.

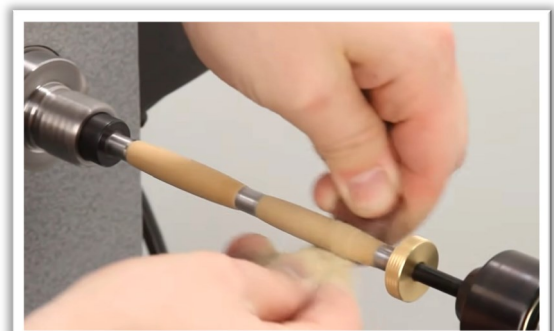
Repeat this for each end of the two blanks.

14. Once milled, remove any burrs on the inside of the brass tube. This will also aid with the assembling of the finished pen.
15. The blanks are now ready for turning.



## Part 2 — Turning, sanding and polishing

1. Set up the pen blanks on the mandrel. This pen uses 3 slimline bushings. One at either end, with one between the blanks. E(xtra bushings may be required at each end to allow the mandrel nut to be tightened.) Insert the mandrel into the Morse taper of the headstock then bring up the tailstock into the mandrel end. This is for support only, do not tighten the tail stock or you might bend the mandrel. At this stage you can decide which end of the blanks will be the writing tip end.
2. Once set up you can start turning the pen. Roughing out the blanks. Use a roughing gouge or similar with the lathe running at a fairly high speed. Turn off the timber until the blanks are round. Stop the lathe and check the blanks for any defects exposed in this stage. If there is a defect you can decide to keep it and continue as it might be turned off before the pen is finished or to turn the wood off the tubes then start again. Remember, a small defect can be hidden behind the clip during assembly.
3. Start to shape the blanks; change to a smaller chisel and start to shape the pen. Depending on the grain of the timber is it good practice to always turn toward the ends of the blanks. This way any chipping at the blank end from starting the chisel can be avoided. A good method for doing this is to turn a shallow taper at the end of each blank, always working toward the blank end.
4. Once the tapers are cut the timber between can be quickly removed without worrying about cutting toward the ends. At this point, if you are going to have any shape in the pen, you should stop turning close to your final desired diameter.
5. Final Shaping. Using the turning chisel you are comfortable with, start to create the final shape for your pen, again taking care to turn toward the ends of the pen blanks. As you get close to the bushing diameter take care as a chip at the blank end could drop below the bush diameter. It may be necessary to reduce the sideways travel speed of your cut near the ends.
6. Once again turn the tapers on the blank ends, leaving the end diameter of the blank about 1/2—1mm larger than the bushing.
7. Again remove the timber from between the tapers. Taking care to make shallow cuts. Turn the pen until and your basic shape is reached and the blanks are generally 1/2mm larger than the bushings. This way there is some timber left for sanding.
8. Start from a grit suitable for the timber. (Dust extraction is recommended.) Ensure the sandpaper is always moving both side to side and up and down. Some timbers require you to stop the lathe and then sand them along the length of the blanks to remove ring scratches.



9. Use a soft foam block to help finish the shaping of the pen if required.
10. Continue sanding through all the grits to your desired surface level. At this stage your pen is ready for your desired finish. The pen blanks are now the upper and lower barrels of your pen.
11. While on the mandrel, apply your desired finish.
12. Once finishing is complete, remove the pen from the mandrel, keeping the centres together to ensure the grain matches on your finished pen.



## Part 3 — Assembling and pressing

1. Arrange the parts on clean soft surface in the correct order, ready for assembly. Be sure to keep the centre ends of the barrels correctly aligned.
2. Using a Pen press or bench vice, press the writing tip into the lower barrel. Take care to ensure the tip is correctly aligned before pressing it in.
3. Then press the twist mechanism into the lower barrel. Be careful not to push this in too far. Again, ensure the twist mechanism is correctly aligned before pressing.
4. Remove from the press and insert the refill. Ensure it extends out of the writing tip enough for writing. If not, press the twist mechanism into the lower barrel a little further.
5. Next, slip the clip over the cap then press the cap into the upper barrel.
6. Finally, slip the centre band over the twist mechanism, and then push the upper barrel on with a twisting motion. Your pen is now complete.

