

# Tools and equipment for pen making

Walter Hall looks at the tools and equipment needed for pen turning



PHOTOGRAPHS BY WALTER HALL

A hand saw and bench hook is a simple way of cutting blanks to length

## WALTER HALL



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One of the questions that I am most often asked, or see posted on forums and social media is: 'What tools and equipment do I need to start making pens?'. There are so many options and so much conflicting advice available to the newcomer that it is easy to become confused and spend

money on expensive equipment that is not needed, while neglecting the basics.

In this article I will outline the processes involved in making a basic kit-based pen and set out the options available for the satisfactory completion of each stage. I recommend that you buy the best quality tools you can afford. The old adage 'buy cheap, buy twice' holds true in pen making just as it does in so many other fields.

## Preparing the pen blank

Whether you re-saw your own blanks to size from large sections of timber – by far the cheapest option – or only use ready prepared wooden or man-made pen blanks, you will need a means of cutting the blank to length. At its simplest, this could be a hand saw and bench hook and this is all that is required – there is no need to splash out on expensive machine tools. If you do decide to buy a powered saw, then a bandsaw is the most



A pillar drill and vice will ensure accurate drilling

versatile machine for pen making and indeed for woodturning in general.

## Drilling the blank

Once the blank is cut to size it must be drilled to take the brass tube. To do this effectively, the blank must be held securely in relation to the drill bit, which must be of a suitable type, in good condition and revolving on a true axis at a speed appropriate to the material.

The two principal ways of achieving this are by using a pillar drill or a power drill in a stand, or by drilling on the lathe. Neither way is better than the other.

Drilling using a pillar drill or stand requires the blank to be held in position on the drill table; this can be done using anything from a home-made clamp to a dedicated pen blank vice. As long as the blank is positioned securely and accurately, it matters little which method is used so go with what you can afford. As for the machine itself, obviously better quality machines will be more accurate but equally important is to obtain a machine with sufficient travel to drill through the blank in one pass – 75mm is the practical minimum, which rules out many cheaper machines. I drilled my blanks for years using a power drill in a heavy duty stand, so there is no need to spend a fortune to get accurate results.

Drilling on the lathe will avoid the need to purchase an additional expensive machine, but you will need to have a suitable chuck to hold the blank. Dedicated pen blank chucks and jaws are available and while these are the best way to do the job, often the blank can be held effectively using only the basic jaws provided with the chuck or a set of engineer's or pin jaws, which can be used for other purposes too. You will also need a suitable drill chuck to hold the bit in the tailstock. Either keyed or keyless will be fine, just buy the best quality you can for the sake of accuracy.

The only other tools needed for drilling are the drill bits. HSS jobber bits will be fine if kept sharp and centred on the work carefully, but as you progress with your hobby, you may want to consider some of the better alternatives that were described in my more detailed drilling article in issue 278.



Dedicated pen jaws can be used to hold the blank for drilling on the lathe

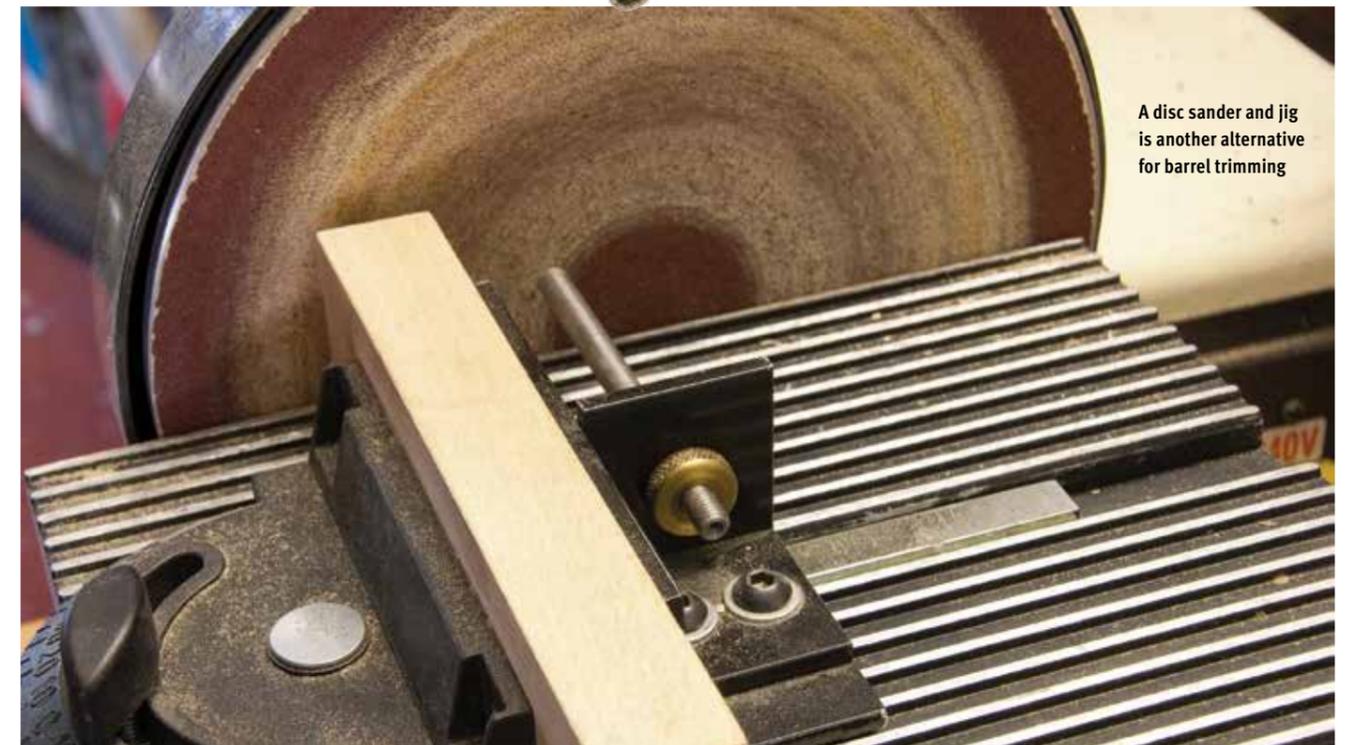
## Squaring off

Before beginning turning, the ends of the blank must be trimmed square to the tube; this can be done with a barrel trimmer or using a jig with a disc sander. The best barrel trimmers have up to six cutters and a range of alternative shafts to fit differing sized tubes. You can buy or make sleeves to fit other sizes of tube. A suitable jig for use with a sanding disc can be purchased or you could make your own from an old mandrel shaft, but sleeves will also be required if a jig and sanding disc are used. It is also, of course, possible to improvise a disc sander using the lathe.

A good quality barrel trimmer such as this six cutter type is needed to trim and square the barrels to the tubes



A disc sander and jig is another alternative for barrel trimming



## Mounting on the lathe

You will of course need a lathe and advising on choosing the best is beyond the scope of this article, but suffice to say that build quality and accuracy trump fancy features, such as variable speed. It is possible to turn pens between centres either with or without bushes and for this you will need little more than a 60° dead centre in the headstock and a 60° revolving centre in the tailstock. You will also need callipers to measure the diameter of the work and the skill to turn

to size accurately. For this reason, most beginners will prefer to use a mandrel. In my opinion, there is little to choose between the major brands. More important is to choose an adjustable mandrel, which can be shortened or lengthened to suit the work in hand.

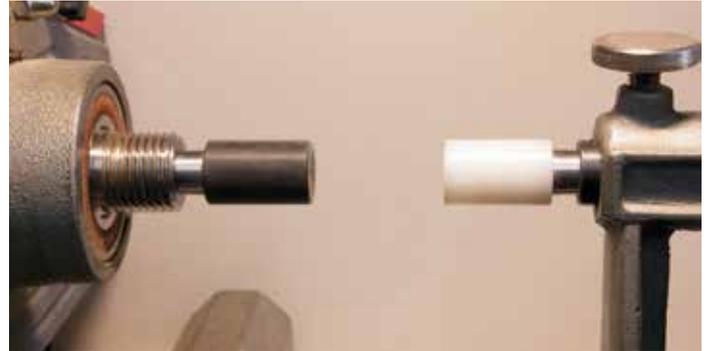
Collet style adjustable mandrels are probably the most accurate and my personal preference. A non-essential but useful addition is a 'mandrel saver' or

'quick change pen centre', which will help to avoid stresses on the mandrel that can lead to inaccuracy. Because tolerances vary it is best to choose one from the same manufacturer as your mandrel.

You will also require bushings and yes, you will need a different set for each type of kit. There is no way round this other than making your own and if you have the skill to do that, then you could be turning between centres anyway.



Mandrels come in many different forms but my preference is for colletted adjustable types such as these



You can buy or make inserts for the Morse taper of your lathe to press together the components during assembly

## Turning tools

I turn almost all my pens with nothing more than a 19mm spindle roughing gouge and a 19mm oval skew chisel. Occasionally, I use a parting tool but the need for this is rare. You do not need anything else. You may prefer smaller tools and as you progress, you may wish to experiment with carbide-tipped tools, but to begin with it is best to concentrate on the basic tools of spindle roughing gouge and skew chisel. Buy the best you can afford and learn to sharpen them properly.

## Finishing

You will also need a range of abrasives and finishes and this will be the subject of a future article. To begin with you will get by with a range of aluminium oxide abrasives from 120 to 400 grit, sanding sealer and friction polish for wood and Micro-Mesh from 1,500 to 12,000 grit and a suitable burnishing cream or polish for acrylics. You should not use cloths to polish on the lathe for safety reasons. Non-woven materials or safety cloths should be used.

## Assembly

Pressing the components together is the final stage of the job. For many years, I used the jaws of my bench vice protected with MDF jaw plates and this was a perfectly adequate solution. You can buy or make inserts for the Morse tapers of your lathe, which can then be used as an improvised press or you could use your pillar drill as a press. At some stage, most turners will buy a pen press, but this is by no means essential. ●



Only basic turning tools are needed to begin with. I use full-size tools but some turners, especially those with smaller lathes, prefer to use smaller tools