The Journey from *Penturning to Penmaking*

by Kurt Hertzog

Swap Out the Standard Nib and Cap

In the previous column, we discussed upgrading the quality of your pens by substituting the best writing inkfill you can find. In this issue, we'll discuss making some of your own pen parts. We'll be using the 7mm slimline kit as an example, but the concept and techniques are applicable to other kits. While this is sort of a "how-to" type article, I want you to really use it more as a thought starter. Think about these (and other) kit pen parts that you can easily make and how it will free you to create designs and shapes of your own.

The slimline kit comes with the needed brass tubes, clip, end cap, and nib, and depending on the kit selected, the parts are either gold, silver, or black. But suppose you want a different color or perhaps a different length, diameter, or shape for a nib or an end cap made from a different material? Here are a few examples which illustrate the techniques I use to make my own nibs and end caps (see **Fig. 1**).

Fig. 1

Would your pen look better with a different size, shape, color, diameter, or material nib?

I usually make my own nibs out of *Corian,* because I like to have the inkfill end of my nib thin-walled, yet sturdy, and a strong, homogeneous material that doesn't have grain issues is required (see **Fig. 2**). I avoid using wood because the stresses there usually lead to failure; however, feel free to try dense, straight-grained woods if you want to give them a try. I've made nibs from aluminum, brass, other solid surface materials, plastics, and other materials that can be cut on a lathe. Since I am not using an extremely strong component, such as the kit-supplied brass nib, I control my interference fit between the nib and barrel tube to be a light, finger-push press rather than the

Fig. 2

Being able to turn your own nib will give your penmaking new freedom.

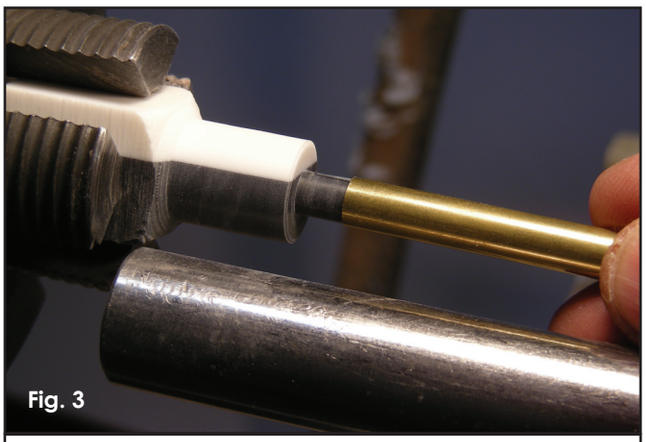


Fig. 3

Rather than an interference press fit, a custom nib will use a slip-fit.

clamp-force press the usual parts require.

The first step is to turn the insertion stub so it achieves a tight slip-fit, based on the actual brass tube's inside diameter (ID). There is no magic dimension for length of the insertion stub; it needs to be long enough to provide an adequate chucking and gluing surface, and impart sufficient use strength (see **Fig. 3**).

Once the insertion stub's outside diameter (OD) is turned, drill for the intended inkfill. Holes are required for both the major diameter of the inkfill and its smaller diameter point (see **Fig. 4**). I roughly calculate where I want the tip to be and then mark the larger drill for a depth that will be a bit shorter than the proper shoulder position for that depth (see **Fig. 5**). Once done, drill the smaller diameter deep enough to penetrate through the end point of the nib.

Reverse-chuck the nib so the insertion stub is now inside the chuck but the mounting grip is on the OD of the blank (see **Fig. 6**). We will get rid of the excess material, part the blank at the approximate length, and shape the nib a bit while we have this strong grip (see **Fig. 7**).

Grip the nib on the insertion stub and finish shaping it, now that the heavy work is done (see **Fig. 8**). I use spigot jaws on my 4-jawed chuck, but you can use a drill chuck

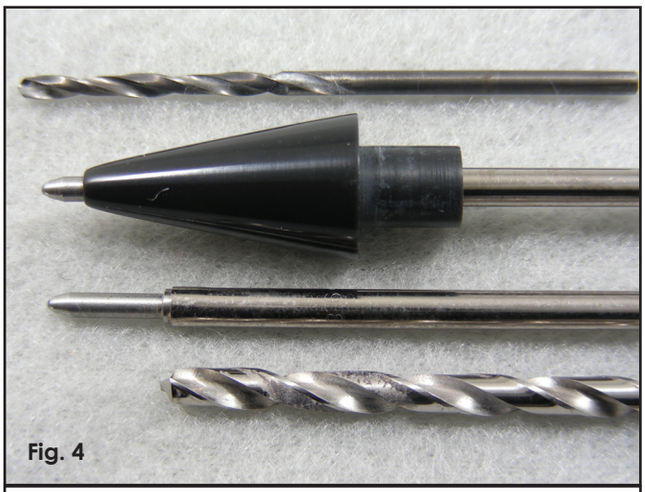


Fig. 4

The two different diameters needed to accommodate the inkfill.

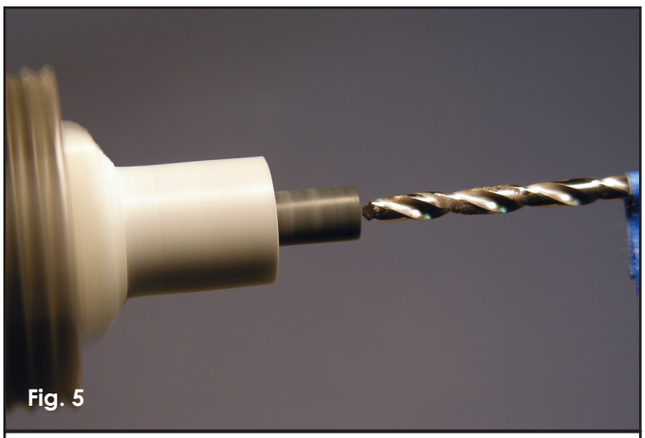


Fig. 5

I plan the larger diameter drill depth to be intentionally a bit shallow.

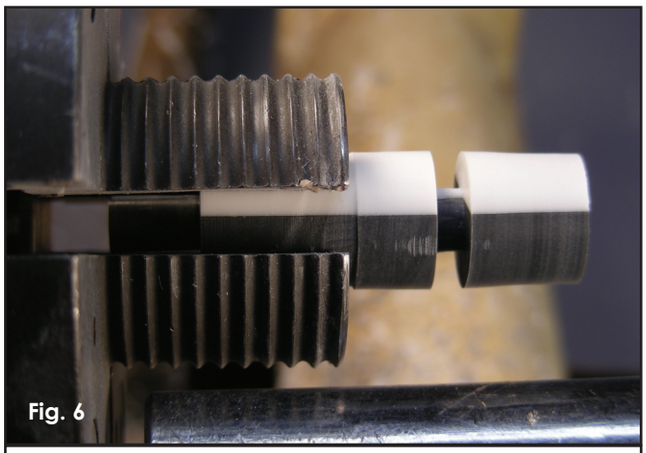


Fig. 6

The mounting is reversed using the OD for a very strong grip.

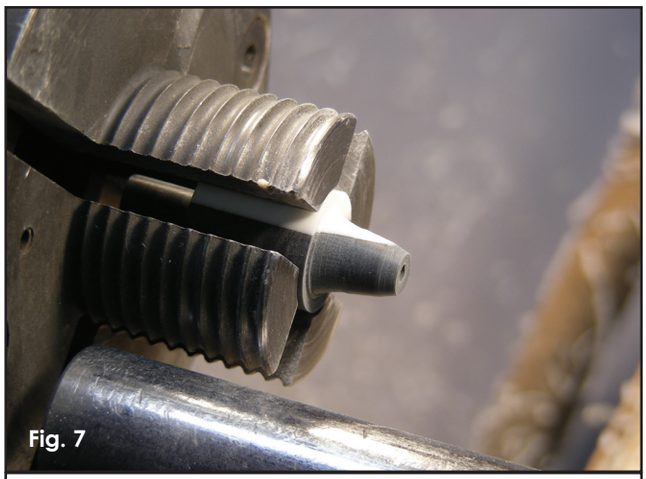


Fig. 7

Part off the excess stock and do some rough shaping while there is a strong grip.

for this (or the entire process) if you wish. Butt the nib up flush to the chuck face to provide maximum support, or leave a space if you are concerned about cutting near the jaws. Remember...light touch, sharp tools. Make the nib-interface diameter precise, but leave the nib end OD just a bit proud; we'll fine-tune it by sanding (see **Fig. 9**).

Now it's decision time. If you are going to permanently install the nib, there is nothing else to do to the insertion stub at this point. However, if the nib is to be removable, I recommend the following: Using a V-block on the drill press (shopmade or commercial), drill a small shallow-depth dimple midway on the insertion stub for the small dot of glue that will be used later in the assembly (see **Fig. 10**). I find that now is a good time, since the nib has to be remounted in the chuck at this point anyway. It is small, easy to handle, and any accidental scratching is unimportant. It needs to be remounted anyway, so I haven't disturbed my mounting solely to do this step.

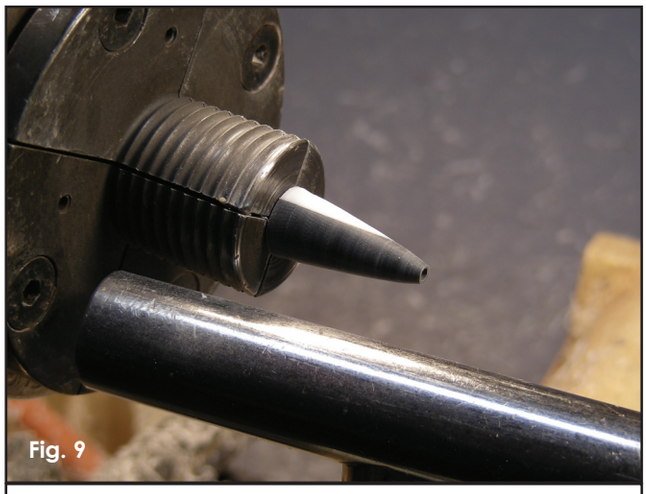
Re-chuck the nib (securely, but gently) so you have access to the entire exposed portion of the nib (see **Fig. 11**). You have a hollow tube with relatively thin walls squeezed in the jaws. Check that the nib is running true; loosen, reposition, and retighten as necessary until it runs perfectly true.

Next, fine-tune the nib shoulder dimension and finish sanding. When turning the OD of the nib shoulder to match the OD of the already completed body, either measure the diameter of the shoulder or periodically remove the nib and test the fit as you go. Personally, I like the trial-and-error method best; I can creep up on that perfect fit!

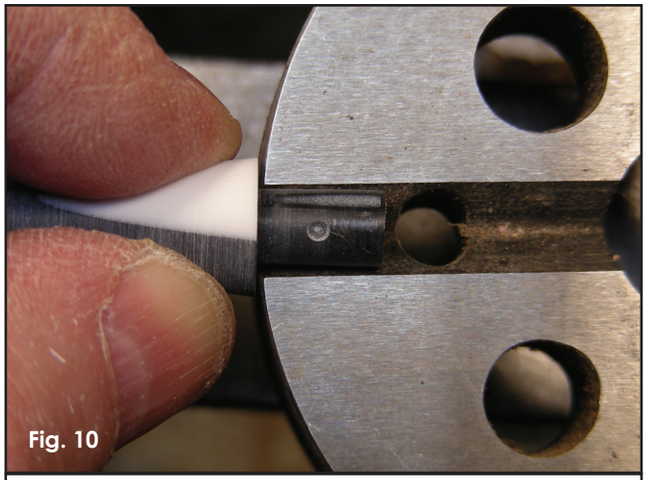
Sand the nib through the grits to the level necessary based on your material. For *Corian*, I sand through 600 and then run through the *MicroMesh* grits to 12,000 in order to achieve a high gloss (see **Fig. 11**). You've now created a nib of your own style, shape, dimension, and material.

The last thing to do is to fine-tune the larger inkfill hole that limits tip extension; remember, we intentionally left it a bit short. If the nib is to be used in a twist-style pen where the projection is controlled by the transmission press depth, you only need to make sure that the larger hole allows the shoulder of the inkfill to extend deep enough without bottoming out (see **Fig. 12**). However, most of the time, I

Re-chuck the nib on the insertion stub.



Do the final shaping with sharp tools, using a light touch.



A removable nib benefits from a shallow dimple for gluing.

The nib is sanded to a high gloss.

use my custom nibs to control the inkfill extension in a desk pen, so the inkfill must rest on this internal shoulder. I have found two methods that work well for deepening precisely the larger diameter hole.

First, lock the larger drill in a tap handle. Then, holding the nib in the fingers of one hand, deepen the hole by twisting the tap handle with the other hand. Second, mount the drill in a drill chuck, either in the lathe or drill press. Again, hold the nib in your fingers and use the other hand to spin the chuck holding the drill. ***NO POWER***. Gently spin the chuck by hand to extend the hole. Trial-and-error testing with the intended inkfill gets me to the perfect depth with either method.

The custom nib requires glue to hold it in rather than the clamp-force press fit required by the standard metal nib. If a permanent installation is desired, use the glue of your choice and wet the entire inside diameter of the tube of the pen barrel (you don't need gobs of glue) and twist the nib as you slide it in place. Apply pressure until it cures to get a nice tight seam at the joint; you can either use tape or rubber bands to keep the pressure on the parts.

If the nib is to be removable, use your glue of choice, but use a toothpick to put only a small dot in the drilled dimple. This small dot of glue is more than enough to hold the nib securely in place and yet will allow it to be "broken free" and removed somewhere down the road if necessary. The nib can be removed later by gripping it (by hand) in a soft rubber, cap-remover pad and twisting it to break the glue bond.

Scuff up the ID of the brass tube first with some abrasive paper to ensure that there is a good glue surface and that it is not contaminated by oxidation or drawing lube. **WITHOUT** twisting, slide the nib straight into the mating part and apply some pressure until the joint sets.

What about the other end of the pen? You can make an end cap following similar procedures.

I usually put a groove to show my intended cut-off length and another one as a "glue trap" when I turn and fit the insertion stub (see **Fig. 13**). Although not needed, the insertion stub on this end can be made a heavier press if you wish, since there won't be a fragile, thin-walled tube with which to contend.

Regardless of the pen style and attachment method, do you see the possibilities (see **Fig. 14**)? You can make a one-to-one replacement, a different shape, or a multi-material inlayed end cap. Get creative!

Fig. 12

Tip extension is controlled by the depth of the larger diameter hole.

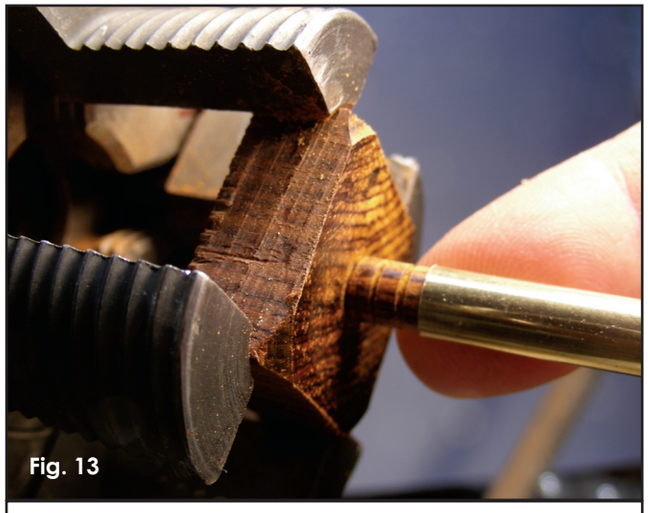


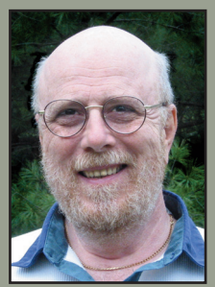
Fig. 13

The same slip-fit can be used for a custom end cap.

Fig. 14

You can turn a one-to-one replacement or design something totally different in size, shape, and material.

Kurt Hertzog



Kurt Hertzog is a turner who enjoys the entire continuum of woodturning—from making his own turning tools to photographing his finished work. He began woodturning with pens, and though he has branched out turning a bit of everything, he still enjoys returning to pens. A frequent demonstrator and instructor of many facets of woodturning, he particularly enjoys teaching sharpening, workholding, and advanced penmaking. Kurt is a council member in the Pen Makers Guild, the current webmaster for two AAW chapters, and a past officer in several others. You can see examples of his work at www.kurthertzog.com, www.penmakersguild.com, and www.wnywoodturners.com.