# The Journey from Penturning to Penmaking

*by Kurt Hertzog*

## It Doesn't Matter!

One of the things I enjoy the most about teaching and demonstrating is myth-busting, because there are so many misconceptions and less than accurate "facts" that lead people astray—particularly for the newcomer who thirsts for knowledge on the subject. Sometimes, it is the writing or teaching of an "expert" or the nameless and faceless "they" who have said it is so on the Internet. Though I can assure you that I don't have a corner on all the answers and certainly have made more than my fair share of mistakes, I will try to put some of these myths into perspective and debunk the ones I can.

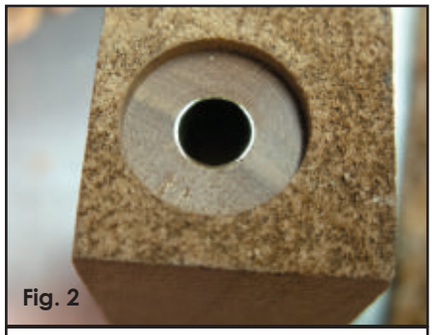
There are two answers to most of my questions when I ask the audience a question. It is either "it doesn't matter" or "it depends." For the most part, "it doesn't matter" answers almost everything, but for the rare occasion it doesn't, "it depends" covers those few instances. Please be assured that my goal isn't to trash anyone who espouses a different opinion; rather, my goal is to relieve those who are paralyzed, fearing they might make a mistake by moving forward in violation of the "truth" that they've been saddled with. I've tried to avoid mentioning any brand names since they aren't really pertinent to this discussion, and for the most part, they are quality products. Feel free to substitute the favorite names that you've heard in those blanked out (XYZ) areas. My beef is not with the various brand-name products, but with the misplaced beliefs that they alone are the reason for success or failure.

### DRILL TYPES

What drill should I use to drill my pen blank? You will get answers that vary from you need a parabolic bit, brad point bit, 118° bit, a 135° bit, an XYZ bit, a TIN-coated bit, a carbide-tipped bit, or some other special contraption to put a hole in the blank. My answer to all of this is that "it really doesn't matter." Far more important to the drilling process than what drill you choose to use is that it is SHARP, and that the proper speeds and feeds are used (see **Fig. 1**).

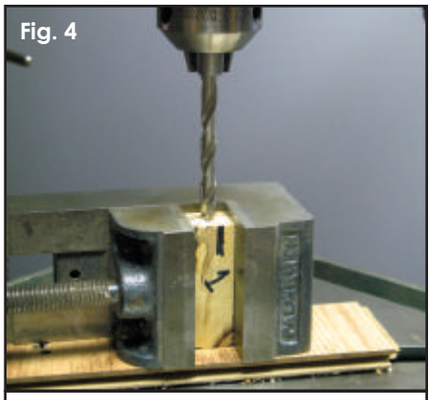
By the way, please explain to me why drilling end grain is improved by using a brad point bit. A brad point bit functions the same as a scoring blade on a table saw or the scoring cutters on a Forstner bit. Its purpose is to reduce fuzzing and tearout when cutting across the grain. Besides, a barrel trimmer or belt sander will probably be used to clean up the end of the blank after gluing, so who cares what the first 1/16" of material looks like (see **Fig. 2**). Use any type drill that you can lay your hands on, ensuring that it is sharp, you have a good start point, and you select the best speeds and feeds for the material at hand (see **Fig. 3**).


**It almost doesn't matter what type of drill that you use to drill holes, providing the bit is sharp, you have a good starting location, and exercise the proper speeds and feeds for the material.**

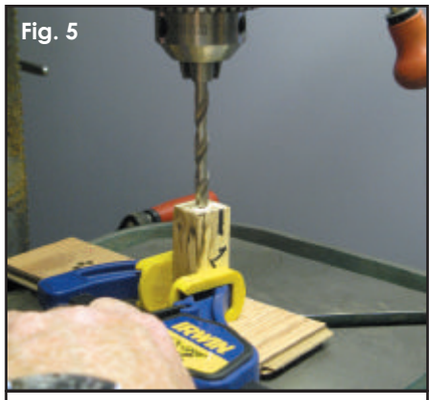



**Do you care what the entry hole edges look like if you are going to face it to the brass edge? Notice the trade-off between positional accuracy required, time, and material.**

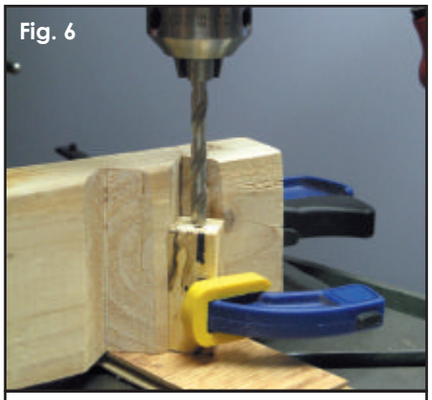

**Sharp drill, good starting point, and speeds and feeds are the ticket to a properly drilled hole with a good inside gluing surface—no voodoo required, just good fundamentals.**




**A machinist's vise works quite well as a drilling fixture, as do nearly all the pen-drilling vises available on the market. Remember, it is only holding the blank based on your prep and clamping.**




**With proper care (and perpendicular cut on the bottom), you can do quite nicely with this multitasking clamp—perhaps a bit less accurate, but certainly workable and safe.**



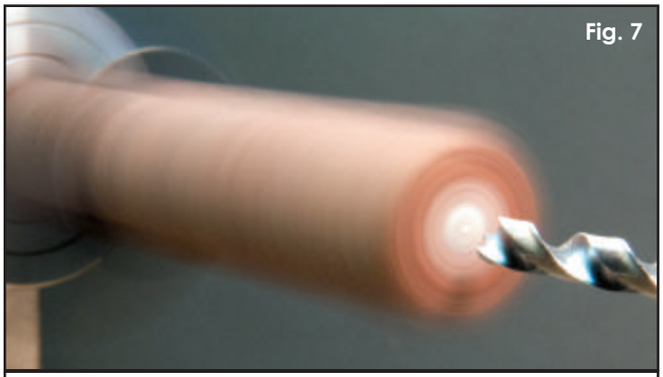

**This is a scrap of 2x4 that was surfaced, perpendicularly cut, and cut with two Vs to accept blanks that are square and those less than square. It's not very pretty, but certainly safe and quite accurate.**

## HOLDING BLANKS FOR DRILLING

Then there's the "fact?" that in order to drill blanks properly, you need to have a drilling vise from XYZ, a machinist vise, a clamp from XYZ, a lathe chuck from XYZ, etc. (see **Fig. 4**). It doesn't matter what you hold the pen blank with for drilling; pick anything that you want as long as you can do it safely (see **Fig. 5**). You will always have the balance between precision and speed of operation (see **Fig. 2**). If a very precise and accurate clamping method is used, with proper technique, you can be very frugal with material. If you want to pick up the pace or be less precise with the material holding or both, allow more material for error, and trade that material cost for speed of operation and lack of precision required (see **Figs. 6** and **7**).

## OVERHEATING PLASTICS

When drilling plastic, you're told to keep a small spray bottle nearby and spray the drill bit with water to cool it off and to keep from getting melted holes. Spraying a drill bit with water to cool it while drilling plastic—you are kidding, right? How about slowing the drill speed a bit? How about reducing the feed rate? How about using a sharp drill? How about asking yourself how the cast-iron drill press table will like the water that will inevitably drip on it? If indeed there is too much heat buildup on the drill bit, letting it cool for a moment while you do something else makes more sense than spraying it with water or putting ice cubes on it (see **Fig. 8**).




**Don't overlook the most available and accurate drilling equipment that you already have. In my opinion, nothing comes close to the lathe for ease of use, accuracy, and safety (with proper procedures) when drilling blanks.**

## TURNING-TOOL SELECTION

You *need* a miniature spindle gouge, a skew chisel, a set of penturning tools from XYZ company, a 1" scraper, or a "fill in your own blank" tool in order to turn pens; but, in reality, it doesn't matter what tool is used to turn pens (see **Fig. 9**). You can do a quality job on virtually any traditional pen material using any tool, from carbon steel through the carbide-tipped tools, providing that the tool is sharp and you present the tool (whichever is your choice) correctly. You can use anything from a 1/8" parting tool to a fairly large roughing gouge and do a quality job. There is no magic tool and no special size or shape needed. As a matter of fact, the small tools are often less desirable. Thought to be more easily used for detailing and precision, they are more flexible and dampen vibration less than larger tools. Being able to present a sharp tool to the work and control it—using some basic turning skills—will yield great results (see **Fig. 10**). Of course, that moves to the next point on finishing.

## A QUALITY, DURABLE FINISH

Then you will hear that in order to get the best finish on a pen, you need to use XYZ friction finish; XYZ wax; sand through 12,000 uMesh; XYZ buffing system (some magical

Fig. 8

**Sharp drill and correct speeds and feeds create good holes in both wood and plastics. The materials are the same, but the pieces on the left were drilled with proper speeds and feeds and the ones on the right with too much of both.**

secret chemical mix taught by a mystic); or some other combination of sanding, finishing, polishing, and buffing materials. "They" say that if you don't have the secret mix, you can't get a quality, durable finish. If you do have it, you are assured of creating the best finishes on your work. Obviously, the techniques used are as important as the materials available. Preparation for the finish is key and without proper preparation, no special products or subsequent process will overcome poor prep.

A treatise on finishing will take far more space than what I can devote here, but please accept that there is no magic required. It is a tried-and-true process that is easily learned and having the right brand names doesn't guarantee you'll get a quality finish without proper process. Begin the sanding process with a coarser grit than you need. Sand at a slow rpm, letting the abrasive paper stay engaged and cut like the cutting tool that it is. At the completion of that grit, consider sanding axially with the lathe off and rotating by hand (see **Fig. 11**). Use a clean paper towel to clean the turning mechanically between each grit, and progress through the sequence of grits until you get to the desired end point. Your choice of friction finish, spray-on materials, cyanoacrylate (CA or superglue) finish, or other is your call. With plastics and some woods that will receive no specific added finish, you'll want to progress through the grits and often into the chemical or uMesh products. There are special buffing agents available as well. If you are working with wood and will be adding a finish, you often will need to level or polish (or both) that finish after application and curing. The same process applies except that the grit starts at a much finer abrasive. Progressively use radial, then axial, and then cleaning prior to the next finer grit through to the desired endpoint. To really understand the prepping and finishing process, find or buy a set of Russ Fairfield's videos on the finishing subject. They are clear, concise, and accurate. (*Please note:* I have no financial interest in Russ Fairfield's videos in any way, other than I do help his widow continue his legacy of teaching. Contact me for details.)

## WHAT FINISH SHOULD YOU SELECT?

There are opinions on this that will range from stick wax to a multipart catalytic process finish. Regardless of the advice that you've heard, I think this is one of the few times

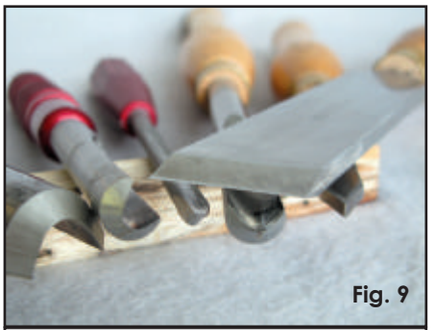


Fig. 9

**It doesn't matter what tool is used to turn a pen. Sharp tools, good technique, and a light touch will work every time. There is no magic in any tool that I've seen.**

Fig. 10

**Just about everyone can be successful with a spindle roughing gouge—lots of mass, easy to sharpen and use, and certainly capable of making the cuts needed for pen work.**

Fig. 11

**Sanding under power produces radial scratch patterns, while sanding with the power off axially will help eliminate these. Doing both, working through the grits, and cleaning between grits will help produce a finish-ready surface.**


Fig. 12

It depends on what finish you use for your pens, but any of these finishing products will work quite nicely. Your selection will determine the balance between quick and easy versus the finish toughness and durability.

Fig. 13

My favorite finishes for pens are CA and lacquer. Here, a CA finish is being applied. I find that if this is properly done, it is about as visually pleasing and durable as they come.

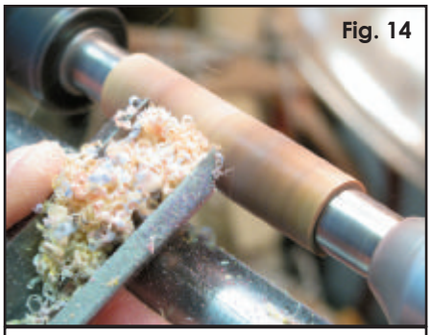


Fig. 14

A sharp tool, properly presented, will cut wood or plastic nicely if you rotate the blank by hand. A better cut is usually high rotational speed with light touch—surface feet per minute wins as long as you are being safe.


Fig. 15

With proper hole sizing and internal surface (speeds and feeds, remember), any of these adhesives will work quite nicely. I tend to favor the polyurethanes, but do use everything shown here at times.

Fig. 16

Contrary to some of the "experts," I am a big fan of scuffing the brass tubes. Using coarse abrasive paper to remove some of the drawing lube and oxidation to provide some mechanical tooth for the adhesive makes a lot of sense to me.

Fig. 17

Don't be afraid to make mistakes. You can always get another piece of wood and a tube. Of course, don't experiment with your precious, high-cost stuff. Use the FOG (found on ground) stuff for your practice, experimentation, and learning, if needed, but JUST DO IT!

when "it depends" is a better answer than "it doesn't matter." It really depends on the pen material, your skills, end use, time available, and end product value. If you are making the proverbial slimline at a $15 price point, you probably won't want to spend considerable time prepping, shooting lacquer, waiting for curing, and rubbing it out. If you are making a one-of-a-kind desk pen in the much higher price bracket, you may want to do that kind of a finish. Finishes range from friction pen polishes to waterborne specialty materials. You will always pick the amount of time and cost of the finish versus the appearance, durability, and toughness. Rarely does fast and cheap equate to great looking and tough as nails. Pick the finish for each of your needs based on this balance, and have a few in your bag of tricks. For fast, midpoint, and high end, you may have three different solutions (see **Figs. 12** and **13**).

## YOU NEED TO TURN FAST? SLOW?

Depending on whom you listen to, you need to turn fast; others will say turn slowly; while many will quote a speed in rpm. I'd suggest that since pens are usually low mass, in balance, and fairly simply turned, the speed really doesn't matter—that is, of course, if it is safe and you feel comfortable. With sharp tools, you can cut wood by spinning the wood against the cutting edge by hand so that the high speed isn't necessary. Most experienced turners will turn as fast as is safe, because the higher the surface speed by the cutting edge, the better the quality of the cut. I'm a fan of faster, but don't let the decision paralyze you. Try

cutting at various speeds to see what suits you best with your technique, tool, sharpness, material, and dexterity. Do not be taken in by that Internet post from the nameless and faceless that professes that 1975.125 rpm is correct. Be safe; start slow, and speed up to the point where you get the best results. There is no one answer for all situations and materials (see **Fig. 14**).

## YOU MUST USE XYZ ADHESIVE

There are widely differing opinions on which adhesive to use to bond the tubes to the pen blank. About the only one that I haven't heard recommended is the traditional wood glue, although I may have missed it. I think this is another of the "it doesn't matter" responses. I do have a favorite adhesive and method, but I have used them all. They all work and will do a nice job, so pick your favorite (see **Fig. 15**). I do have some recommendations that I believe will make any selected adhesive more successful—it has to do with the brass tube and hole preparation. If the tube isn't clean and ready to accept a good bond, there is a greater likelihood that there will be a bond failure one day (see **Fig. 16**). The same goes for the drilled hole in the blank. There is a fine line between too fine and too coarse a surface finish in the hole, and this will even vary based on the adhesive selection.

## BOTTOM LINE

Though there is a huge supply of old wives' tales regarding the rights and wrongs according to the large crowd offering their advice, there is a bottom line. I certainly recommend listening to advice and learning from others. I also recommend that everyone continue to learn and never stop adding to their knowledge base. That said, just because it was said or written, doesn't make it fact! Writing something on the Internet doesn't take any credentials other than access to the public library computer. Be certain that you vet your source if you are going to accept it as the final word. Books and magazines bear the same scrutiny. Do not be afraid to take what has been advised and prove it to yourself. If it doesn't hold true or you find a better way, change appropriately. The bottom line from my perspective is (as the *Nike* tagline states) "just do it." Don't be a victim of analysis paralysis. If you don't have the recommended drill, use what you have. If you don't have a fancy drilling vise, don't keep that from preventing you from drilling blanks. If you mess up, go get another piece of wood. Pretend that wood grows on trees (see **Fig. 17**). Do not ever lose sight of the fact that the magic is never in the tools—the magic is always in the hands of the craftsman!


### Kurt Hertzog

**A professional woodturner, demonstrator, and teacher, Kurt Hertzog enjoys the continuum of woodturning, from making his own turning tools to photographing his finished turnings.**

**Kurt is a regular feature columnist for both *Woodturning Design* and *Woodturning* magazines, one of the five Council Members of the Pen Makers Guild, and a member of the Board of Directors of the American Association of Woodturners.**

**Kurt's work has been featured in the American Association of Woodturners "Rounding The Corners" Exhibit, and he has been published in *Woodturning Design*, *American Woodturner*, *Woodturning*, *Pen World*, and *Stylus* magazines. You can see his work on his website at www.kurthertzog.com.**