The Journey from Penturning to Penmaking

by Kurt Hertzog

Questions from the Mailbag

It has been a year since the last questions from the mailbag. I field many questions by e-mail, and try to be prompt and helpful in my responses. Often, these questions and answers would benefit the readership at large, so this issue will feature a few that I think have the broadest appeal. The questions are edited for space, personal information, and the readers' opinions about specific products or suppliers. By the way…any recommended sources are my sources. Please do not construe this information as an endorsement. It is only information. Also, I have no financial interest in any of the vendors or products identified in my columns.

KIT QUALITY

I can get pen kits from two dollars to thirty dollars depending on the style and plating of the pens, but I've seen no visible difference in the mechanical parts. Do you know of any pen kits that may have better quality parts than these and where they might be purchased?

On the quality issues, there are not many in the high-end arena. The market always says they want it, but aren't willing to pay to keep it alive. Most of the forays into the higher-end parts have died and been taken off the market—at least from the kit perspective (see **Figs. 1** and **2**). If you have a desire to move to a higher plateau, you can look into customized parts. There are people out there casting precious metals (mainly silver) that can be integrated into your kit work. This moves the pen a bit upscale, but obviously doesn't really improve functionality—only the bragging rights and uniqueness.

One that I am familiar with is www.silverpenparts.com (see **Fig. 3**), but I am sure that there are others. A Google search can probably turn up many more. As you've noted, once you've gotten to the higher-end kits, there isn't much improvement in quality to be had. (Keep me posted if you venture into the jewelry adornment.) There may be some niche for the more upscale clientele, but I think you'll find that fabricating your own parts will be more fun.

SHARPENING PEN MILL

In the Summer 2010 issue of Woodturning Design, you mention that a pen mill is easy to sharpen. What is the best method for doing so?

The method that I use is a diamond hone. I have a set of the *Eze-Lap* diamond hones (available from many major turning supply houses) that I use around the shop for touching up skews and other edged things.

Fig. 1

From the least expensive to the more expensive, the main differences are in the plating and metal work, not in the inkfill or transmission mechanics.

Fig. 2

The DNS kits from Germany (totally different style kits) have about the most precise and finest fit components available in the kit pen category.

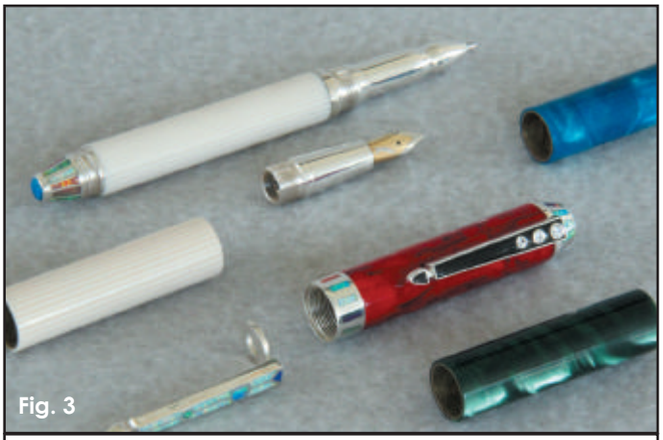


Fig. 3

Mike Redburn (www.silverpenparts.com) makes his own silver castings for his pens. He does offer some of these types of parts for sale to other makers.

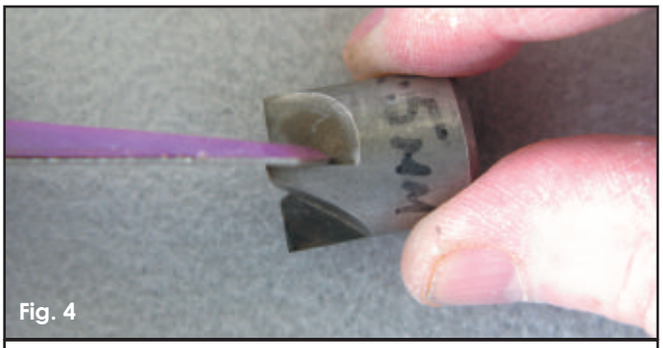


Fig. 4

Touching up an edge is far easier than "sharpening" it. A diamond hone used flat on the front face of each of the pen mill flutes will not damage each cutter's coplanarity or relief angle.

I take the cutter head off, if possible. If not, I sharpen it in place. Of the set I have, I use the "medium" hone, which is the coarsest. I don't mess with the upper surface. It has the clearance angle along with being ground so that all four cutting surfaces are in the same plane (see **Fig. 4**). Fooling with that is asking for trouble. By using the hone on the flat front plane of each cutter, you can hone the front face and sharpen the cutting edge up top. It won't mess with the clearance angle or the four cutter edges being in the same plane. Keep the hone flat on the front surface and keep it in contact. Slide it back and forth until you have some shiny areas up near the cutter showing (see **Fig. 5**). Repeat on all four cutter positions. That will keep the cutters working for you.

The key to keeping a pen mill working is to continually "touch it up," rather than trying to sharpen it. Once you've let it get dull, the home user really doesn't have the mechanisms to sharpen it. If it is sharp and you continue to keep it sharp, you can extend the life considerably. Accept the fact that the tool is perishable and, with use, will degrade. That can be extended, but with use, it will degrade and need to be replaced.

POLYESTER RESIN QUESTIONS

I read your article about polyester resin and bought some materials to try casting some blanks. I dyed some rice and went about casting a blank. How long does it take to cure? And the resin looks cloudy. I also tried casting a clear blank with a covered tube. Any tips on making the resin clear and not cloudy. I appreciate any tips that you can give me. What is a cheap source for resin?

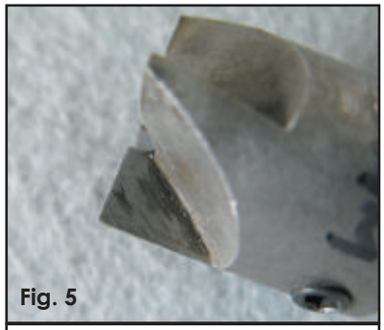


Fig. 5

It doesn't take much to touch up the edges. You'll be able to see the progress by the shininess on the front face of each cutter flute.

Polyester resin should be cured within twenty-four hours, but please check the instructions on your particular brand. The surface may still have a bit of "tackiness," but that shouldn't be an issue. Properly mixed, I've never had it take longer than overnight or so to cure with the brands and formulations that I use.

The cloudiness is usually from more energetic mixing and entrained air. Although, even careful folding of the catalyst and resin will have a bit of a cloudy look. That should disappear on curing, unless it is excessive. When stirring, go very slowly with care to minimize any air entrapment. It is a catalytic reaction, so just getting the chemicals together is all that is required.

As for cheap sources of resin...the better values only really come from quantity purchase (see **Fig. 6**). There is no cheap source that I have been able to find. The prices do

Fig. 6

I haven't found any "cheap" sources of quality polyester resin. There are high-margin retailers and industrial supply differences, as well as quantity purchase price breaks.

vary based on the actual blend and brand that you select, but no one really gives better deals than a discount store. I buy mine by the gallon from Douglas and Sturgess, but there are many other dealers out there. Last time I made a purchase, it was sixty-plus dollars a gallon plus shipping and hazardous materials charges. Not cheap, but reasonable in price when you consider how much casting can be done if you aren't wasteful. Planning, careful measurement, and full utilization does make it only a small fraction of a dollar per blank when the math is run. An Internet search will provide you with many sources to choose from.

DRILLING BACKER BOARD

You use a backer board when drilling with a drill press so as not to blow out the bottom of the pen blank. You highly recommend using the lathe as your "drill press." Do you use a backer board with this technique, and if so, how?

I always use a backer board on a drill press for two reasons. One, the hole in the table of my drill press is fairly big and the blanks don't sit well (or fall through). The second and main reason is to provide support so that when the drill breaks out, there is support for it and minimization of "blowout" (see **Fig. 7**).

You are right that any backing material is not readily done in a lathe. I find that because the resolution on the lathe is much finer and more controllable, breakout is usually much less of an issue (see **Fig. 8**). That being said, when drilling plastic or any material that might be more susceptible to blowout, I allow for some extra material. Controlling the force and easing up as you get near to breaking through works nicely, but having an 1/8" (or a bit more) certainly is a wise idea.

As usual, sharp drills and proper speeds and feeds for the material provide the best results.

VACUUM SYSTEMS

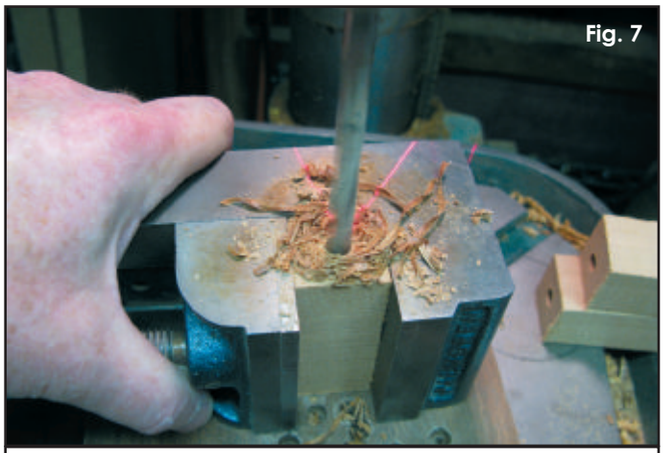
You mention your homemade vacuum chamber to get rid of bubbles. Did you, by any chance, make your own vacuum pump as well? I recently learned of the vacuum pump for holding pieces on the lathe and would like to make one myself. If you could give me any direction on this, I would greatly appreciate it.

About the vacuum pump...I didn't make my own pump, but did make my own vacuum system from a small, retired hospital oxygenator compressor pump. All compressors are vacuum pumps if you plumb them backward (see **Figs. 9**, **10**, and **11**). Take a look at the articles on my website at www.kurthertzog.com. The page with the demos/articles/etc. has a few listed near the top. Those may help explain the way I've done my vacuum system and homemade vacuum chucks. I have made several of the chucks and vacuum systems. One system for the lathe, one for traveling and demos, and one as a spare.

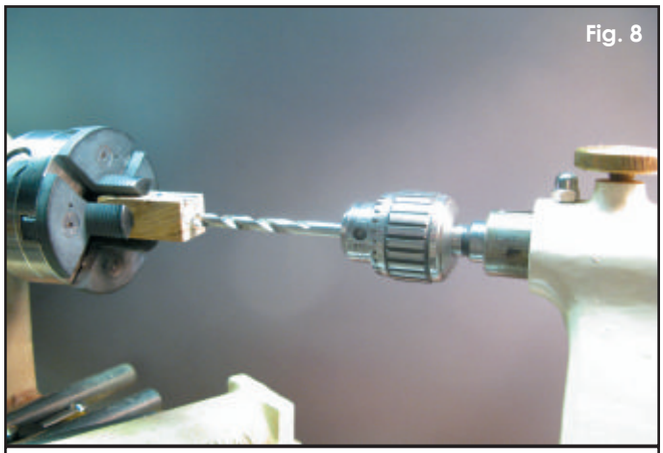
SHOW-QUALITY PENS

As a beginning penturner, I am always looking for ways to improve my work. In your article, you mentioned juried pen shows as a way to learn more about pens and techniques. I've never attended a show because I've never heard of one being held. I am curious about what makes a pen worthy of being in a show. What do the judges look for in evaluating a piece? Is there an article on what details to perfect to make the turning look better than a beginning piece? When you look at a blue ribbon pen, what about it impresses you?

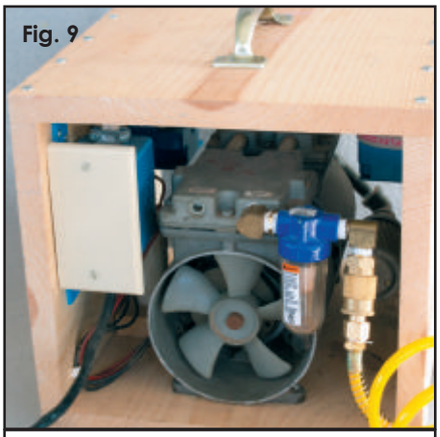
Shows I spoke of can be anything from craft shows, where the vendors are selected based on the caliber of their crafts, to exhibitions of "artists" where their work is on display. Both extremes and the continuum in between have their own low and high ends. The local church bazaar may look for price points, quality, and mix to provide their customers with an assortment of shopping opportunities (see **Fig. 12**). There are higher-end shows of that nature where the limited number of booths fosters competition among



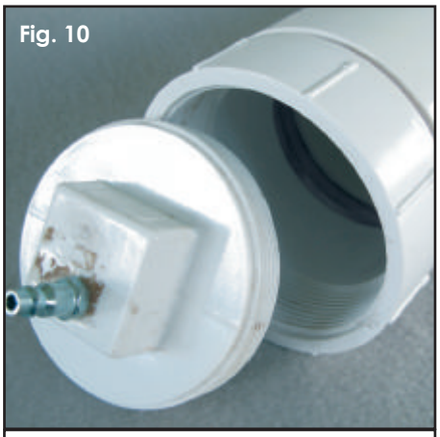
Using a backer board to support the end of the pen blank during drilling will help minimize material blowout. Easing up as you break out will also help; plastics are very susceptible to blowout issues.



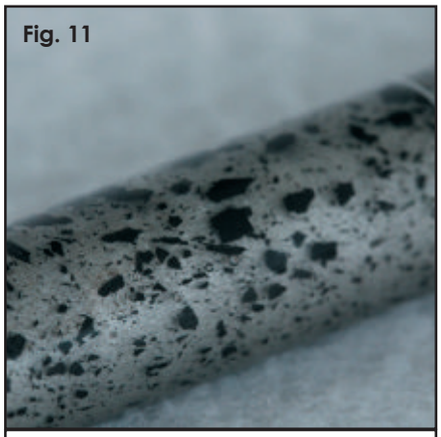
Using a lathe for drilling has many advantages. It doesn't have quill travel limits if you slide the tailstock to drill; it drills concentrically with the mounting of the blank, and holds the blank safely and securely.



All my own vacuum pumps, stationary and traveling, are old hospital oxygenator bubbling compressors taken out of service after reaching their run time limit. I plumb them backward to obtain a vacuum, and most pull 27" Hg or so.



To help minimize trapped bubbles in my polyester resin castings, I often immediately put them into my home-built vacuum chamber to draw them to the surface while still viscous.



A very unique and well-made polyester resin cast pen blank shows some evidence of entrapped air. There is little time to encourage entrained air bubbles to rise to the surface of the casting.

craftsmen, and those who are selected achieve a bit of status from that selection. The same holds true for gallery exhibitions. Works are selected for their artistic achievement, which usually is indicative of higher craftsmanship as well.

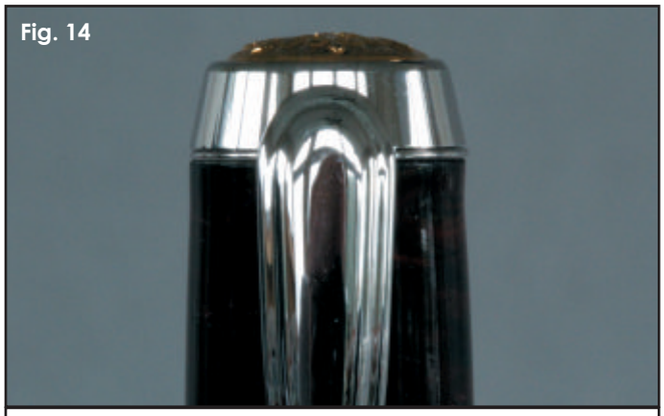
There are many things that will enter into the evaluation criteria, ranging from craftsmanship to uniqueness. Again, it depends on the venue and its purpose. The lower-end shows are looking for a vendor of pens, for example, to fill out their spectrum of craftsmen. If you are the only penturner, you may not face serious scrutiny (see **Fig. 13**). If you are trying to get into a regional pen show (Los Angeles, Atlanta, New York City, Boston, etc.), you may not get juried in, even if you are very accomplished, based on the others applying who may be world famous artisans.

You may wish to read back through my columns. If you don't have the back issues of *Woodturning Design* magazine, they are available from the publisher. Currently, they are having a back issue sale. Visit them at their website for details (www.woodturningdesign.com). If you only wish to review the pen-related items, I post my past columns on my website. You are welcome to read and review them at your leisure. They are located on the articles/demos/classes page of my site. There are currently seventeen back columns from *Woodturning Design* alone and others from other publications. There are several past columns that deal with fit, finish, uniqueness, marketing, and striving for perfection, which you may find answer this question for you (see **Fig. 14**).

Perfection is the base criteria. Flawless execution is the minimum requirement. Then it becomes the uniqueness,

This is a simple mistake that is easily avoided and fixable, indicative of the new or careless maker. The transmission has been pressed in slightly too far, causing an unsightly inkfill extension.

These two careless mistakes on this kit pen are often found in the lower-end venues—poor fit at the nib and it still has sanding flaws.



Perhaps a bit less evident, but here are two major flaws as you progress upscale. The barrel-to-endcap fit is flawed (probably eccentric, showing uneven fit side to side), and there are wall taper differences side to side at the end cap interface.

creativity, and artistic appeal that come into play (see **Fig. 15**). Obviously, the competition determines which is the ribbon pen. If it is a competition among new penturners all competing with kit pens, the ribbon winner may be a pen that still has much room for improvement. If it is among members of a penmakers guild where membership has already raised the bar, then the ribbon winner will be a fairly subjective choice from among a host of very accomplished works.

There are many books published on pens, but most deal with the shop setup, tool selection, and the mechanics of turning pens. They don't often delve into what you are asking about—the things that set you apart from the herd. Check your local library and turning retailer for an assortment of penturning books to choose from. As far as other writings that may help, the information I point to on my website may help with some of the questions you've asked.

As you move upscale into the higher-end pens with custom pen design and case fabrication, flawless fit and finish is the absolute minimum, with the new barrier being its "artistic appeal."

Woodturning Design

Answers Frequently Asked Questions

How often is *Woodturning Design* published?
Woodturning Design is published six times per year: February, April, June, August, October, and December.

Where can I buy the magazine on the newsstand?
Woodturning Design is sold at so many stores across the country that we couldn't begin to list them all here. If your favorite store does not carry *Woodturning Design*, please request that they do, so you can purchase it there. You can also purchase a current copy for $6.99 (plus $3.00 for U.S. shipping, $4.00 Canada, and $9.00 Foreign) from All American Crafts, Attn: Marie Arnold, 7 Waterloo Road, Stanhope, NJ 07874. Checks should be made payable to All American Crafts.

What should I do if I have a problem with my subscription?
There are three ways to get answers: You can write to *Woodturning Design*, P.O. Box 422418, Palm Coast, FL 32142-2418; call (800) 940-6591; or visit our website at www.woodturningdesign.com and click on "Subscribe."

I missed an issue and want to order one. How do I do that?
Back issues of *Woodturning Design* (available while supplies last) can be purchased for $6.99, plus $3.00 for U.S. shipping, $4.00 Canada, and $9.00 Foreign. Be sure to list which issues you would like and send a check to *Woodturning Design* Back Issues, P.O. Box 422418, Palm Coast, FL 32142-2418 or call (800) 940-6591.

How can I submit my idea for a design or article to *Woodturning Design*?
We want *Woodturning Design* to be reader-driven and reader-written as much as possible. If you have an idea for a great project or feature article, go to our website at www.woodturningdesign.com and click on "Submission Guidelines." Or you can write to:

Joe Herrmann, Editor, *Woodturning Design*
1882 St. Rt. 45, Rock Creek, Ohio 44084
or e-mail at:
editors@woodturningdesign.com

We do not guarantee if or when your idea or project will be published. If we can't use it, we will return it to you.