

## The Penturner's Corner

The Utah Woodturner's Symposium and the AAW Annual Symposium are now history. I hope all of you that planned on attending were able to do so. I also hope that those interested were able to attend the Penturner's Rendezvous. I was not able to attend and I truly missed not being there. I really enjoyed attending last three years. We must now get ready for the Southwest Association of Turners (SWAT) Symposium in Wichita Falls, TX in early October. I live in Wichita Falls and I will be at that one. Some of us are planning on a penturning meeting of some kind and I will report on any activities we put together in the next few months. Stay tuned.

Last month I introduced the use of a pin chuck for turning calligraphy dip pens. I promised to revisit the use of a pin chuck for turning closed end pens. This month I will offer several methods for holding a pen blank to make closed end pens. Next month I will actually use some of these methods and document the making of several closed end pens. I've included a photo of a closed end pen made from the baron kit. **See figure 1.** The baron is a pen kit sold by <http://www.arizonasilhouette.com> and the pen in figure 1 was made by John Solberg. John demonstrated closed end pens at the Southwestern Association of Turners' annual symposium in 2006. For more information on the annual symposium held in Texas, log onto their website at <http://www.swaturners.org>



Figure 1

A closed end pen is a pen with no terminal hardware on the outside end of either the barrel or the cap, or both. **See Figure 1a** for a double closed end pen (a closed end pen on both ends).



Figure 1a

Closed end pens have been very popular on the various penturning forums the past couple of years. The challenge of making closed end pens lies in holding the pen blank since using a standard mandrel as it is designed to be used will not work. It will not work since the mandrel, used as intended, has to pass through the pen blank and the blank is held in place by bushings and a brass nut. Making a closed end pen requires the mandrel to go into the pen blank but not completely through it. I will show several ways to hold the pen blank to make a closed end pen. Closed end pens have become so popular that one of our

suppliers is selling a specialty mandrel for turning closed end pens. More information on these “expanding” closed end pen mandrels will come later.

One draw back to using a special mandrel for making closed end pens is the requirement to have a mandrel for each size of brass tube. The mandrel, no matter what kind, will fit only one size of brass tube. True, several pen kits use the same size tube, but even more don't! I didn't actually do extensive research but I would guess that it would be necessary to have close to 15 pin chucks or expanding chucks to be able to turn any kits as closed end pens. That gets expensive! Selecting kits that use the same size tubes might allow 4 or 5 different kits to be made as closed end pens using only two or three closed end pen mandrels. This article will show several ways to hold a pen blank for making closed end pens.

Another negative in making closed end pens is holding the actual closed end pen mandrel. The tool of choice for me and others is the Beall Collet Chuck. Take a look at this link for an excellent article on The Beall Collet Chuck and how it works: <http://www.theturnersshop.com/turning/colletchuck/bcc1.html> . The Beall Collet chuck uses industry standard ER32 collets from the metal working industry and make them useable in woodturning. The wide range of collets and the gripping surface allows wooden parts to be held without marring. Marring often occurs when using a Jacob's chuck. These special closed end pen mandrels can also be held using scroll chucks with pin jaws. Other scroll chucks and jaw combinations may also work.

## **PIN CHUCKS**

Pin chucks for turning bowls and other large turnings have been around for some time. A pin chuck is basically a slot cut into a mandrel with a pin dropped into the slot. Here is a link to a pin chuck that screws onto the nose of the lathe and is used to hold bowl blanks. <http://home.pacbell.net/latheart/chucks.htm> . Someone in the pen turning community adapted that idea, scaled it down and made a closed end pen with a smaller pin chuck. **See Figure 2** for a picture of two homemade pin chucks.



**Figure 2**

Placing the brass tube over the pin chuck's slot and pin and then slightly rotating against the rotation of the lathe locks the pen blank in place and holds it securely. **See Figure 3.**



**Figure 3**

Pin chucks can be homemade using a metal lathe and mill. Not all of us have those pieces of equipment. Pin chucks can be made at a machine shop but the cost of tooling and computer code writing is often much greater than the cost of the actual chuck. I once checked on having some made and the chuck itself cost \$10 each, but the CNC code was going to cost \$250...for each different size pin chuck. Ouch! Once in a while members on one of the penturning message boards will offer making pin chucks for a reasonable price. I've seen them for sale, ranging \$5 - \$15. This is much more reasonable than using a commercial machine shop. **Pen Point:** Make friends with someone who has a metal lathe and milling machine.

Pin chucks can be made using a standard file and/or sandpaper. The only limitation is finding the correct size of rod to use. A pin chuck has to be large enough to just slide inside the tube of the pen being made. The fit of the rod inside the brass tube has to be such that there is as little slack as possible between the OD of the rod and the ID of the tube. Less slack is better and will make a more accurate pen. Drill rod comes in a wide selection of sizes. If luck has it, the exact size will be available. If not, get the smallest available diameter just larger than the ID of the tube. Hold the drill rod with a chuck of some kind and reduce its diameter until the tube will just slide over it. This can be done with sandpaper or file or both. Then the slot for the pin can be made using a grinding wheel and then finished off with a file. When making a pin chuck I use kits that require little or no sanding on the rod. Drill rod is available from industrial suppliers such as ENCO and MSC DIRECT and can be found on the web at <http://www1.mscdirect.com> and <http://www.use-enco.com>. Be sure to order a small diameter rod for making pins. I use 1/8" drill rod for the pens. Small nails can be used on the pin chucks for smaller tubes such as the 7mm pens. Notice in **Figure 2** that one of the pin chucks was made from a standard bolt which had to be sanded down just a tiny bit. I used a grade 5 case hardened bolt.

Harbor Freight sells a set of 28 transfer punches that some penturners have used to make pin chucks. These punches have several sizes that just fit into the brass tubes of several popular pen kits. Then, only the slot for the pin has to be formed. Here is a link to the set: <http://www.harborfreight.com/cpi/ctaf/displayitem.taf?Itemnumber=3577>. These punches are also excellent for disassembling pens. Every size I have ever needed has been included in this set.

I would offer one word of warning and safety. If a Jacob's chuck is ever used in the head stock without tailstock support, then the use of draw bar is essential. When purchasing a Jacob's chuck a threaded hole in the MT arbor should be a requirement. I use an all thread rod, large washer, and wing nut to hold a Jacob's chuck securely in the head stock taper.

Richard Kleinhenz has an excellent article about using and making pin chucks: <http://penmakersguild.com/articles/pinchuck.pdf>

## **EXPANDING CLOSED END PEN MANDRELS**

Expanding closed end pen mandrels are basically hollow tubes with a bolt passing through. An integrated bushing is on one end and the other end has a slit and a cone shaped threaded washer. As the bolt is tightened the cone shaped washer pulls the split end apart and holds the brass tube. These expanding mandrels are sold by Arizona Silhouette:

[http://arizonasilhouette.com/Closed\\_End\\_Pen\\_Mandrel.htm](http://arizonasilhouette.com/Closed_End_Pen_Mandrel.htm) ..

**See Figure 4** showing a close up of the closed end pen mandrel sold by Arizona Silhouette.



**Figure 4**

This mandrel is a clever idea and works great. But, it is a pricey tool because it only useable on one size pen tube. Each different size brass tube requires its own dedicated closed end pen mandrel. Arizona Silhouette also sells a video showing Ed Davidson using these mandrels and turning closed end pens.

## **WOODEN JAM CHUCK**

I noticed a post on IAP by Gerry Rhoades and how he uses a wooden homemade jam chuck for turning closed end pens. Gerry explained that the idea was shared with him by Mike Vickery. **See Figure 5.** Here is what Gerry had to say about making and using these wooden jam chucks:



**Figure 5**

“The idea is not mine. I got it from Mike Vickery. We were corresponding about pin chucks and he told me that he sometimes did this (made his own from wood) if he didn't want to wait for a pin chuck to be made or shipped. I use a Beall collet chuck with a 3/4" collet. I've been using a 3/4" poplar dowel. I cut a piece of dowel about 6" long and put it in the collet chuck. I then turn it down until it's close to the inside diameter of the tube. I finish taking it the correct dimension with sandpaper. When the tube will just barely fit, I give it two coats of thin CA and then sand it back down. I also turn a shoulder on it that's about 0.020" larger than

the bushing diameter and coat that also with CA. I then force the blank onto it until it meets the shoulder. I use the tailstock just like I would if I was using a dedicated closed end mandrel.” -Thanks Gerry and Mike.

Certainly a Jacob’s chuck could be used to hold the ¾” dowel if a Beall collet chuck or other collet chuck were not available. The dowel could even be held in some scroll chucks with regular or pin jaws.

### **PIN CHUCK ALTERNATIVE**

There is an alternative to these special chucks and mandrels. It uses a standard mandrel and one of the kit’s bushing. **Pen Point:** Be sure to use the correct bushing for the end of the pen accepting the mandrel. Cut a blank longer than needed for the pen barrel. I usually make it 3 inches longer than is needed just to be safe. Drill a hole using the suggested bit and make the hole as long as the tube. Making the hole 1/16” longer will give some room to square the end of the blank to the tube. Then, drill another hole, ¼” in diameter, centered on the first one. The total of the two holes should be long enough to accommodate the rollerball refill and spring, or the ink pump if a fountain pen is being made. Drilling these two holes is easier done on the lathe than on a drill press. The length of the two holes will be different for each pen, so take careful measurement. In next month’s column I will carefully explain how to determine the length of each hole and the combined total length of them both.

Once the holes are drilled, slide a spacer onto the mandrel, then the proper bushing, and then the pen blank. The mandrel should fit into the ¼” hole and the spacer should take up the extra room between the end of the bushing and the end of the MT arbor. Bring up the tail stock and tighten the blank and bushing against the spacer. A mandrel whose length is adjustable makes this method much easier. The same spacer can be used on every kit. **See Figure 6.** This is one case where a picture is worth a thousand words.

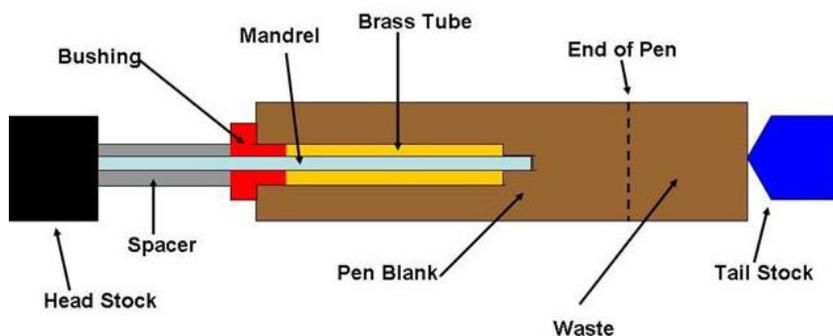


Figure 6

### **CONCRETE ANCHOR TOOL**

Another penturning friend, Ron McIntire, showed me how to use a rather unusual piece of hardware for turning closed end pens. This piece of hardware is an anchor used in concrete. The anchor is placed into a hole in concrete and as a bolt is turned the anchor expands and holds inside the hole. Using it to hold a pen blank the hole in the blank and brass tube act as the hole in the concrete and the anchor is expanded holding the pen blank securely. The exposed part of

the anchor's bolt is then held in a Jacob's chuck or a collet chuck as mentioned earlier. This is a rather unique idea but only works on a few kits because of the limited sizes of these anchors. But, it does work and costs little. **See figure 7.**



**Figure 7**

The top image is two anchors. One is 3/8" x 1 7/8" and the second one is 3/8" x 3". I removed the sleeve from the shorter bolt and placed it on the longer bolt with washer and nut as shown in the third image. The bottom image is a baron cap tube over the sleeve and the nut was turned against the washer enough to lock the brass tube in place. I placed the "anchor mandrel" in a Jacob's chuck and surprisingly it ran straight and true. I noticed no wobble. This is the first time I've tried this and I will have a complete report next month on exactly which kits can be used with the limited sizes of these anchors. Oh, and the two anchors only cost \$.87. -Thanks Ron for sharing this.

### **Parting off**

I have reported on several methods of holding pen blanks for making closed end pens. In next month's column I will document the actual making of a closed end pen using these methods. This will allow me to share the nuances of each method and how best to make them work correctly. I hope several readers will get one of these methods ready, order a kit or two, and prepare to make a pen that will be truly be different than any other pen they've made. Closed end pens are really unique and the shape or style of the closed end portion is limitless. Even twist pens can be made closed end for dramatic and unique effect.

Here is a short list of pens with caps that lend themselves to being modified into closed end pens. These pens are available as both rollerballs and fountain pens. Several other suppliers carry limited offerings of Berea and PSI kits, but the suppliers listed carry the complete line from both manufacturers. Craft Supplies USA has no resellers. CSUSA kits are only available from them.

**From Craft Supplies USA: <http://www.woodturnerscatalog.com>**

- Gentleman's and Jr Gentleman's II
- Statesman and Jr Statesman II
- Emperor, Jr Emperor, Imperial, Lotus
- Executive
- The Americana Rollerball or Fountain pen
- Artisan Rollerball or fountain pen]
- Liger and Havana Pens

**Berea kits: <http://www.arizonasilhouette.com>**

- Baron, Churchill, Sedona
- El Grande, El Presidente, El Toro
- Lady's Pocket/Purse pen
- Streamline Americana Screwcap, Streamline RT Screw Cap

**PSI kits: <http://www.woodturningz.com>**

- The Majestic
- Traditional (posting and non posting cap)
- Designer, Designer Elite
- Mini Purse Pen, Capri Mini

I look forward to sharing more about the actual making of closed end pens in next month's column. As always, your comments and questions are welcome.

Email them to me at [don@RedRiverPens.com](mailto:don@RedRiverPens.com) .

Do a good turn daily!

Don