

Saturday Program Meeting

Turning Pens

Richard Hicks, Rod Ruppel & Lyman Frugia

Sixteen club members attended our first 2003



Saturday Program Meeting, hosted by Ray Ward, on February 15th. We presented a program about making pens and other small

turned items. We had a total of 5 lathes, so



everyone could have some 'hands-on' lathe time. We discussed wearing the proper safety equipment while turning – mainly a

respirator and eye protection. We also had some small turning squares for the new turners to practice on.

Since the first pen and pencil kits were released about 12 years ago, the manufacturers have come up with a lot of different styles as well as other kits like letter openers, key chains and perfume holders. The kits contain all of the metal parts and instructions needed to make the item. They've also improved the quality of the parts – they fit together well and the plating lasts a lot longer. There are also a lot of alternative materials available - Dymondwood, Corian and acrylics, just to name a few.

Basically, you start with a piece of wood, or alternative material, and drill a hole in it. Then glue a brass barrel in the hole and turn the barrel on a lathe to the proper shape and size. Apply a finish, or polish the turning, and assemble the item. The kit instructions are pretty straightforward and easy to follow, so I'll concentrate on some of the details that help make the turning and assembly easier.

Tools

Drill Bits – The 7mm pens use a letter 'J' bit and the 8mm uses a letter 'O' bit. There are several types of bits available, but the best ones have 'parabolic flutes'. This flute configuration helps clear the chips and keeps the drill running cool - that helps prevent the blank from cracking.

Drilling Jigs – To drill the pen blanks, you'll need a drill press with at least a 2 ¼" stroke. You'll also need a way to hold the pen blank in a vertical position as you're drilling. There are a



lot of commercial jigs available, or you can make a homemade jig like mine. I used three pieces of wood to make the block.

The overall size is 6" L x 2 ¼" W x 2" H. The critical part is the center



board – it MUST be square to the bottom of the jig. The holders are eyebolts in threaded inserts. You will also need a

jig so that you can repeatedly center the blank under the drill bit.

Mandrels – There are several different styles available. One style mounts in a three-jaw chuck; the other type is mounted



in a No. 1 or No. 2 Morse taper adapter. Unless you have a dial indicator and a lot of time to center

the mandrel in the three-jaw chuck, stick with the Morse taper mandrel.

Reamers - There are several methods you can use to clean excess glue out of the



inside of the brass barrels. I prefer to use an adjustable reamer. Use a 1/4" to 9/32" reamer for 7mm

barrels and a 9/32" to 5/16" for 8mm barrels.

Assembly - There are a lot of jigs and techniques available to assemble your pens



when you've finished the barrels. I use a drill press with a 'pressing pad' mounted in the chuck and a jig to

help hold the pieces in line during the pressing operation.

Tips & Techniques

Just a collection of tips and techniques I've developed over the years...

When selecting wood, look for finely figured stock - usually only available in exotics. Remember, your finished barrels will be 5/16" to 3/8" in diameter - so that piece of figured wood that looks real good as a board, will lose a lot of it's beauty as a pen barrel. I prefer to use Dymondwood because the finish is in the wood - it won't wear off!

I glue my barrels into the blanks with a two-part epoxy made by Loctite. The quick setting formula sets up in about 2 minutes

and you can turn your blank in about 15 minutes. The 2-ton formulation sets up in about 15 minutes and you can turn the barrels about 12 hours later. Make some dowels that 'just-fit' the inside of the barrels. Put them in the barrels and as you insert the barrels in the blank, the dowels will help keep most of the epoxy out of the barrels. If you twist the barrel as you insert it in the blank, it helps the epoxy make a good bond.

Make sure the ends of the blanks are square to the barrels, otherwise the metal parts will not seat against them.

Be very careful to properly size the length of the pen barrels. This is especially true of the 8mm pens and the 7mm pencils. There's no length adjustment in the mechanisms or assembly procedure.

Be careful when you remove the excess glue from the inside of the barrel - if you enlarge the inside of the barrel, the other parts will not fit.

I usually start sanding with 120 grit, then move to 180, then 220 and finish with 400. Then I use a piece of white scuff pad that's the equivalent to 1,000 grit as the final step.

I use Craft Supplies 'French Polish' for natural wood barrels and a 'stiff, loose muslin' buffing wheel with 'white jewelers rouge' on Dymondwood parts.

Sources for Pen kits, supplies and tools:

Berea Hardwoods	1-877-736-5487
Craft Supplies USA	1-800-551-8876
Penn State Industries	1-800-377-7297
Woodcraft	1-800-225-1153