

Making the Ellipse or Zodiac pen



The “kit” contains
ALL THIS:



Start by taking the brass tube out.

Now, take your pen blank and cut it to the length of the brass tube, plus about a half an inch (total 2.75” plus or minus a little).

Drill the blank with a 10.5mm (for plastics) or 27/64” (for wood blanks) drill bit.

Drilling detail: Start with a SHARP drill bit. When drilling, measure the length of the brass tube and mark your drill bit. Do NOT drill through the blank, just drill longer than the amount needed, then cut off the remainder, exposing the hole. This will save you many “blow outs” caused by the drill bit exiting the pen blank.



As you drill your blanks, you should “back off” and clear the flutes of your drill bit every quarter to half inch. Be certain to avoid getting the blank hot. It is sometimes advisable to put water into the hole to keep it cool. If you do this, be certain to allow the blank to dry thoroughly before attempting to glue in the brass tubes.

mounted on
bushings

Additional information if using spaulted or burl or other “unstable” pen blanks: Before cutting off the end, you MAY want to put thin CA glue into the hole and “swish it around” for a while.

You can repeat this several times, over several days if the material is “punky” or “rotten”. Allow to set for a couple days before you attempt to redrill, however, as the drill bit will get warm and thin CA can really grip the bit if it is still somewhat active.



After drilling the hole, test fit the brass tube into it, the tube should slide in, without much friction. If you are using a resin that you expect to be somewhat translucent, now is the time to paint your brass tube, and/or the inside of the hole you just made. IF you are going to paint, you MAY want to make the hole a little larger, either by using a 7/16" bit or by sanding the inside of the hole a little, by putting sandpaper around a wood dowel.

Glue the tube into the hole you have drilled. Gluing detail: You can use CA (Superglue) or Epoxy, whichever you prefer. Do NOT use thin CA, either medium or thick will fill gaps, thin will not.

To get a good adhesion, take some time, here. First put a liberal coating of glue on your brass tube. Insert into blank, about half the length of the tube and rotate the tube inside the blank. Give it 15-20 revolutions, then remove from blank. Put a little more glue on the tube and insert from the opposite end of the blank. Again rotate quite a bit. IF you start to feel resistance

(like the glue setting), insert the tube quickly and make sure it is not sticking out on either end.

NOTE: IF you have painted your tubes or the inside of the hole, you may find the paint is smeared by the CA glue. It is preferable to use Epoxy when painting. Epoxy can actually be tinted as well, to make it more invisible on the finished pen.

Once the brass tube is glued in place, set the blank aside for a day or so to give the glue time to set completely.

"Facing" the blank."Conventional Wisdom" uses a pen mill to face the blank at this point. I believe it is safer to turn the blank down close to it's final size, then "face it" with sandpaper. You can find more information on how I do this in the videos on ExoticBlanks.com

By the way, if you are facing wood, especially diamondwood or punky wood, you can put a little thin CA on the end. This will harden the material, making it less likely to break in facing or in later turning.

Turning: Mount on a standard "7 millimeter" mandrel rod, using standard sierra bushings. If you have difficulty inserting the bushings, there is, most likely, dried glue inside your brass tube. You should remove the dried glue. This can be accomplished with a round file (like you would use to sharpen a chain saw), or a pocket knife, or a brush (as is used to clean guns). Also be careful to remove any burr on the brass tube that may have resulted from your facing tool. This can be done with a deburring or chamfering tool.

Turn the blank down close to size of the bushings. (Bushing sizes will be about .480") It is a good idea to measure the kit components and determine what diameter YOU like. A caliper is a good investment and can improve the quality of ALL your turned pens. But, you can use the above as a rough guide and achieve a pretty good result!!



Page 3--Assembly



Before beginning assembly, make certain there is no glue remaining in the ends of your tubes. The first half inch of each end MUST be CLEAN. Use a small penknife or a round file to clean it out thoroughly!!! (I know I said this before, but it IS IMPORTANT!!!!!!!)

This pen is different from many other kits (similar to the original kits called sierras). You can put the spring on the refill and insert it into the "nib end" and screw on the transmission without having to do anything with your turned blank (now pen barrel).

Once the lower part of the pen is assembled, test it using the transmission, does it extend? Retract? It works!!!

NOW, line up your pen barrel (that you just turned) with the nib end (that you just assembled) and see which end of the barrel fits better on your nib end. Remember, this is the junction that you will feel when you write--try to optimize your fit on this end. Then, push the clip assembly into the end you have decided to make the "top" of the pen.

Test operation again, if it does NOT move smoothly, you have crud in the brass tube. Re-clean!!

If it works great, just "take a bow" and make the next one!!!

It should look a lot like this:

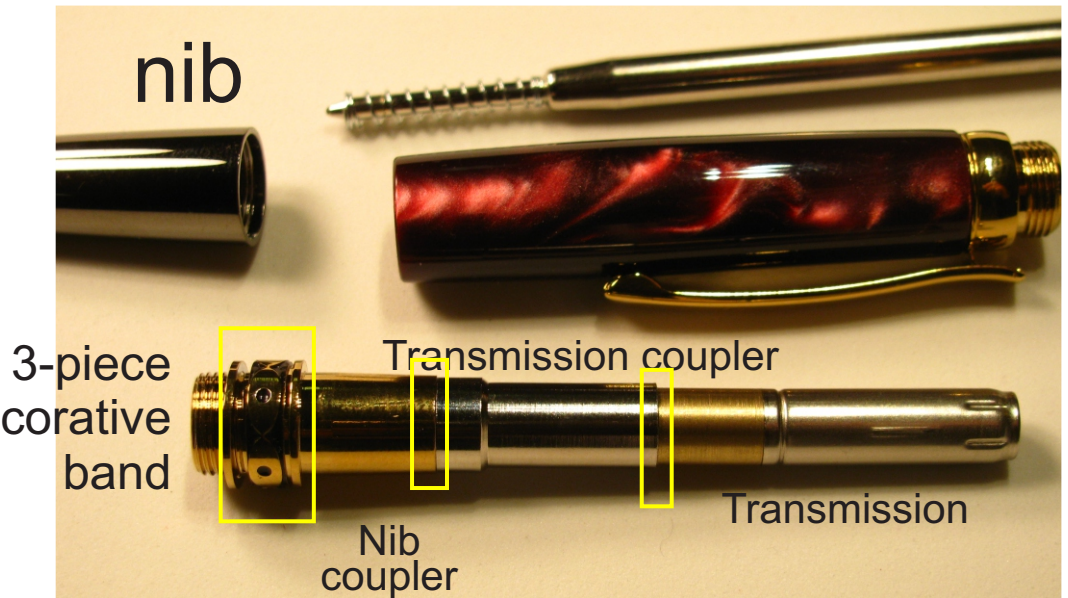


"Parker" style pens write MUCH more smoothly with the Schmidt 9000 refill--it sold pens for ME!!



Page 4--Assembly Options

The design of these parts allow you many optional ways of improving your customers' writing and carrying experiences. I hope to explain what I mean, below:



My suggested first option: Use some threadlock and carefully assemble the parts as shown. All of the yellow boxes have a junction that can be made relatively permanent, since the pen refill can be put into the pen by simply unscrewing the nib from the "gold part".

If you intend to do this, I would also put an adhesive (epoxy, locktite, but not CA, CA can discolor plated parts) on the three piece decorative band, so the end user does not lose the small pieces when changing the refill.

I believe this will be the best assembly procedure. I see no "downside" to it--feel free to contact me if you think of something I missed.

OPTION 2:

You CAN assemble it, just like any other single body pen (sierra, sienna, whatever). This would mean you need not use any adhesive anywhere. IF your end user pushes the transmission up into the body, while trying to change the refill, you can simply unscrew the finial (back end) and push the transmission down, engage the threads and screw it back together with the nib coupler, then push the body down to fill the small gap. (Same as making the pen, originally).

OPTION 3:

You could assemble the transmission coupler to the nib coupler and put threadlock on just that one junction. Then the pen will open from the body side (unscrewing the transmission from the transmission coupler) or from the nib side. Again, if you do not put adhesive in the nib threads (and I do advise against adhesive here), I would make the 3 piece decorative band into one assembly, using epoxy.

I hope all of this is clear---the Ellipse gives you great flexibility when you are assembling. I know some folks don't like to use "glue", so it is NOT required. But I think you will get better results if you try my suggested method. Twenty years of making and selling pens, retail, SHOULD have taught me SOMETHING--these pens are the first results!!

