

Slimline Pro Single Tube Click Pen

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MAKING THE SLIMLINE PRO SINGLE TUBE CLICK PEN

Tom Wilson - jolly red



Single tube Slimline Pro click pen I made for my Brother-in-law showing the Vietnam Campaign ribbon.

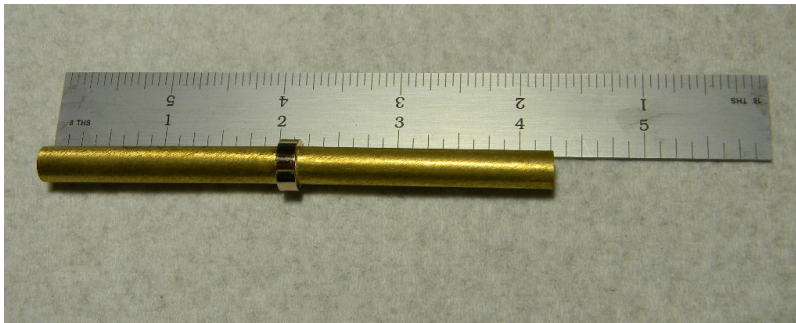
Recently I have been decorating some of my pen and spindle turnings with thread decorations, and was wanting to put some on a click pen. Most of the click pens I saw had either a short, one-piece barrel or a longer two-piece barrel with a center band. The shorter barrels would have let the clip come down over the wrapping and somewhat obscure it. On the longer barrels, I thought the center band would compete with the thread wrappings. Since I could do nothing about the shorter, one piece barrels, I gave some thought to removing the center band on the two piece barrels. The only article I found on doing this was by Don Ward of Red River Pens, who assembled the center band with the tubes, then turned the band down flush with the barrels before gluing it into the blank. Another article on the IAP site shows the same method of turning down the center band for making pencils from two tube kits. This seemed kind of tedious to me, so I decided to see if I could figure out another way.

The kit I started with was the Slimline Pro from Penn State Industries, which is the same kit as used by Don Ward in his article. I used this style because I had done them before and already had the bushings. Also, the construction of this style is much the same as some of the others I had looked at, so the procedure could be modified to suit other kits.

Looking at the way the pen is put together, I realized that the click mechanism was kept in place by being held between the long extension on the center band and the extension on the plunger guide. If the center band was removed, the click mechanism could slide down the barrel when the plunger was pushed to extend the point, and would quit working. So if the band was removed, something would need to replace it to hold the click mechanism in place. A short search of my supplies revealed that a 7 mm pen tube had the right diameter to fit inside the 8 mm tube, stop the sleeve for the clicker from sliding down the barrel, and was large enough inside for the refill to slide through. Cutting a brass tube to length seemed easier than turning down the metal band to match the tubes.

1. Measurements

Measuring the length of the blank



The first of the critical measurements is the overall length of the blank. To find this length, I pressed the upper and lower tubes on the center band. This came out to be 4 1/4 inches.

To find the length of the spacer required to position the clicker mechanism correctly, I used the overall length, then subtracted the length of the portions of the other components that fit into the barrel. This came out to be 2.333 (2 21/64) inches. The thickness of the pocket clip on the plunger guide will provide enough clearance to keep from pressing the components too tightly.

If you are using a kit other than the Slimline Pro from Penn State Industries, be sure to verify the measurements given above. They may or may not be the same as for other click pen kits. The assembly steps given below may also be different.

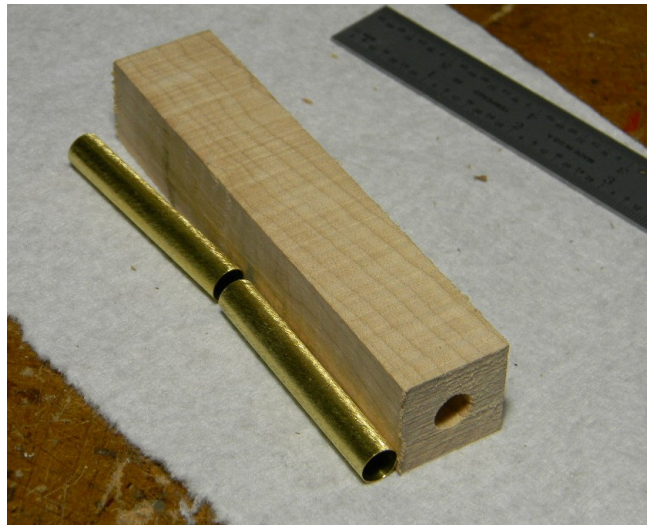
2. Making the 7 mm spacer and the blank

Trimming the spacer to length



To make the 7 mm spacer, I started with a 10 inch long, 7 mm brass tube, which cost about \$10.00 for 10 tubes. Since I could get 4 spacers from each tube, that made the cost of one spacer about \$0.25. I cut the 10 inch tube into 4 - 2 $\frac{3}{8}$ inch long pieces using a band saw, then squared one end of each of the spacers with two cut ends. To square the ends, I used a belt sander. Lightly pushing the tube against the moving belt results in a square end very quickly. This gave me 4 tubes with one square end on each of them. Then I marked the required length on each tube and used the belt sander to remove the excess tube. I checked the length with a caliper to ensure it was correct. Then I removed the burr from sanding using a deburring tool. I could have used a knife to scrape off the burr, but I have the deburring tool so I have to use it, don't I?

The blank and tubes ready to glue



The blank for the pen needs to be cut to 4 $\frac{3}{8}$ inches and then drilled for the tubes. One of the original 8 mm tubes is glued into each end of the blank with your favorite glue, leaving the end of the tube flush with the end of the blank. Once the glue has set, clean out any excess glue at the center of the blank with a $\frac{9}{32}$ inch drill bit, rotating the bit by hand to keep from damaging the inside of the tube.

Trimming the blank and tubes to length



Then trim the blank square with the tubes to its final length of 4 1/4 inches. The ends of the tubes should be flush with the ends of the blank. Removing some of the tube while squaring the ends will not matter, since the length of the blank is the determining factor in the operation of the pen, not the length of the tubes.

3. Turning

The blank is then turned as you would turn any other pen, using your favorite methods.

4. Finishing

Sanding and finishing is done as you would any other pen.

5. Assembly

Assembly is done in the following order:

- a. Press the pen coupler, wide end first, into the lower end of the pen.
- b. Slide in a 7 mm spacer from the other end. Make sure it goes all the way in to the end of the extension for the pen tip connector. A spare 7 mm tube makes a great pusher, if one is needed.
- c. Insert the 3-part plastic mechanism (put together as shown in the assembly diagram that comes with the kit). The large diameter of the sleeve goes in first (threaded stub pointing upward). Push it in until it contacts the 7 mm spacer. Again, a 7 mm tube makes a great pusher.



- d. Using a 7 mm tube to push in the click mechanism

- e. Slide the plunger guide, narrow end first, into the pocket clip hole. Press this assembly into the upper end of the barrel.
- f. Insert the refill through the pen coupler, and use it to push the mechanism towards the clip end until the mechanism is in as far as it will go. Slide the refill spring over the tip of the refill, and screw on the pen tip.
- g. Drop the mechanism spring over the threaded stem, and screw the plunger onto the threaded stem.

The pen is now finished. Give it a few clicks to ensure the refill extends out properly.

The assembled pen with the refill extended



6. Conclusion

If you have a highly figured blank this allows more of the figure to show and eliminates the need to align the grain during assembly. If you are putting decorations or segments on the barrel, it will allow them to extend the full length without interruptions. It is also slightly easier to assemble since the center band does not need to be pressed in.

It is critical to get the length of the blank and the 7 mm spacers correct. Once the pen is assembled it cannot be taken apart easily (experience speaking here). I have made several of these, and they all worked correctly when the blank and spacers are the correct length. The ones where I used other dimensions resulted in trying to get the pen back apart (which is where the experience comes from).

There are several other styles of pens which use the same mechanism as the Slimline Pro and could probably be modified using the same procedure for making the blank. It would also be possible to make one piece pencils in this style using a blank cut to the correct length and tubes at each end of the blank, and no spacer would be needed. This would allow the making of a matching pen and pencil set.

I haven't tried any others yet, but plan to in the near future. If you do decide to try this, please let me know how it turns out for you.

Sources of supplies:

The Slimline Pro kits and 7 mm tubing are available from several sources, including:

Penn State Industries (<https://www.pennstateind.com>)

Woodnwhimsies (<http://www.woodnwhimsies.com>)

Craft Supplies USA (<https://www.woodturnerscatalog.com>)

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