

Creating a Wooden Slim Line Twist Pen

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A piece of Wood (Class Budget of \$4.00) (You are responsible for additional cost)
A Pen Kit of your choice (Class Budget of \$3.00) (You are responsible for additional cost)
A Drill Bit to match the tube size in the kit (7mm will be available) (a brad point bit works best)
CA Glue (Rubberized)
A Pen Mandrel plus Bushings
Bushings to match the tube size (7mm will be available) (You will be responsible for additional bushings)
A Tube Insertion Tool (bought or made)
A Blank Trimming Device
A device to hold the pen blank vertical to drill and trim the blank
A device to press the pen parts together
The finish of your choice
Sandpaper

I start with a square wood blank $\frac{3}{4}$ " to 1" in diameter about 5 inches long or longer if your kit requires it. The harder the wood the better the finish.

I usually create multiple pens at one time, so I mark each end of the blank with a number or letter. I mark the same letter or number on both ends of the blank and I add a swoosh mark in the middle. This makes it easier to set up the blanks on the lathe so the grain is consistent. Then I mark the center of the blank this mark shows where you will cut the blank in half. After you cut the blank, place a straight edge from corner to corner on one end of each blank and draw a line. Move the straight edge to the other corner of the same end and draw a line. This should give you an X at one end of both pen blanks. This will show you where the middle of the end piece is and is the place you will place the drill bit when you drill the hole for the brass tube.

When I am doing multiple pens I cut and drill the pen parts one day.

When you drill the hole for the tube you have to make sure the pen blank is held as vertical as possible. I use a Pen Centering Vise and a drill press but there are other methods available.

When you are ready to insert and glue the tubes in the pen blanks check to see if the tube surface is smooth if so, use 80 to 120 grit sandpaper to rough the surface of the brass tubes. This will add a rough service for the CA glue to adhere to. This will limit tube drift.

Then I will tube the pens another day. I let the pen blanks cool the at least 24 hours before I tube them. I have found I have better success using a Rubberized CA glue instead of the regular CA glue, it is not as brittle as regular CA is. All CA glue reacts very quickly to a warm blank, when it is cool you have more time insert and adjust the tube in the blank. I have found it is easier to insert the tube into the side you started the drilling process as opposed to the end the drill bit exits from.

I spread the CA glue in a spiral around the brass tube before I insert it into the blank. After inserting the tube I will move the tube back and forth in the wood blank to make sure the glue is coating all of the inside of the hole. It is better to have a little more glue than not enough. This movement is why I let the wood blanks cool for 24 hours.

After inserting the tube remember to wipe off any excess CA glue from the Insertion Tool otherwise the next tube will be very hard to remove from the tool. I wipe the tool with a rag as well as using 80 grit sandpaper to clean the tool. If the Insertion Tool does not want to release from the tube a sharp rap on the table will help with the release.

I let the CA glue set for a full 24 hours or you can use an accelerator to set the CA glue (note: if you do use an accelerator make sure it is made by the same manufacture as the CA glue). Letting the CA glue set for 24 hours is not really necessary but I have found I have less tube shifting problems if I do.

I use a Pen Centering Vise to hold the pen blank for the trimming process. Be careful when trimming you want to trim the wood down to but **not into** the brass tube. Check your depth often. If you trim too much the pen blank will become too short for the refill in the kit. Just touch the brass tube so you see a shiny surface on the tubes.

Mount the Mandrel on the lathe and the bushings you will use. I use 6 7mm bushings 2 on each side of each blank and 2 in the middle. If you are using Bushings bigger then 7mm you will add them to the left and right ends of the blanks.

Insert the blanks on the lathe keeping the grain orientation as it was before it was cut.

Turn the blanks to whatever design you desire. Keeping in mind which end will be the point and which will be where the pocket clip will reside. The diameter of the clip end cannot be too thick otherwise the clip won't sit properly when attached to a pocket.

The parts of the pen that form the point and the band in the middle and the cap that holds the pocket clip are the same diameter as the bushings. That means you will want to turn the wood down to the diameter of the bushings. If you leave too much wood at the joint where the wood meets the metal parts there will be a sharp edge that will be uncomfortable to hold. There should be a seamless transition between wood and metal. If you will get it close, you can use sandpaper to make the final smooth adjustment. Remember NO sharp edges.

Use sandpaper of your choice keeping in mind the more grits of sandpaper you use the smoother the wood and the better the finish. Add the finish of your choice.

Remove the pen parts from the lathe keeping the point and the clip end in their proper orientation.

Lay out the all of the parts from the kit in their proper order. If you will do this it will keep you from making a mistake while assembling the parts.

Assemble the parts using whichever device you wish. I use a Pen Assembly Press. The most common mistake is putting the clip end cap on before the pocket clip is on.

I insert the writing pit into the blank first. Then I install the twist mechanism pushing it in to just before the brass part. Then I stop and twist the mechanism to it full out position and screw in the ink refill. I want to see how far the refill protrudes out of the end of the metal pen point. I am looking for the flat part of the refill just behind the very tip. If I do not see it, I remove the refill and press the twist mechanism a **LITTLE** farther. I re-install the refill and check again. You want to be able to see the flat part of the refill just behind tip of the point of refill. The refill point needs to be out far enough to be able to see where you are writing when you are using the pen.

Slip the middle band on the twist mechanism and then install the pock clip and the end cap in the end of the other blank. Now slip that part of the pen onto the twist mechanism and your pen is finished.