

# One Piece Slimline Pen

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## Introduction

Most of the techniques used to make a one piece slimline pen are the results of the creative genius of a fellow penturner and good friend, Don Ward, of Wichita Falls, TX. I met Don on a business trip to Dallas about December 2005 and we became friends. Don is a retired Math teacher, an outstanding pen maker, and a good friend. Thanks Don for all the good qualities of life you represent so admirably, especially your willingness to share your knowledge of pen making.

This tutorial assumes that you have made pens before. If you haven't, please learn basic pen making from kit to finish before attempting this project. These instructions will make a lot more sense if you have made at least a couple of standard pens already.

## The goal

Our goal is to make a ballpoint pen that is comprised of one solid piece of wood rather than two pieces as usual. There will be no center band. Normally this center break allows the user to extend and retract the ballpoint cartridge in the pen by twisting the top portion against the bottom. But we want to really emphasize the beauty of the wood grain by presenting it unbroken and eliminating the center. But we still need to allow the user to extend and retract the pen cartridge as well as gain access to the cartridge when it needs to be replaced, so that's our challenging goal. This may sound like a daunting task, but you will be amazed how simply it can be accomplished.

Considerations:	Materials List	Approx. Cost
<i>Drilling</i>	1. Pen blank	\$ 1.00
<i>Glueing</i>	<i>3/4" square by 4 1/2"</i>	
<i>Wood Density</i>	2. Slimline pen kit	\$ 1.75
<b>Special tooling needed:</b>		
<i>Drill chuck to fit on lathe tailstock</i>		
<i>Expandable Chuck to fit on headstock</i>	<b>Total</b>	<u>\$ 2.75</u>

## Preparing the blank



The pen pictured above was made from Kingwood which I picked up in a woodworking store in Mesa, AZ for \$1.00. Cut the blank to a length of 4½ inches.

Use a  $\frac{3}{4}$  inch square pen blank of your choice. Since the blank will not be cut in the center, a highly figured piece of wood or acrylic can really look great. If using wood, be sure to use a fairly dense species. It will need to support more stress than usual at the nib end when the pen is used.

## Drilling the blank

Are you ready for the big challenge? It's time to drill and here comes the fun part. We need to drill a 7mm hole completely through this 4  $\frac{1}{2}$  inch piece of wood. Since most 7mm drill bits don't have 4 $\frac{1}{2}$  inches of cutting area, this becomes a challenge. My friend Don drills a hole in the blank using a 6 inch long  $\frac{1}{4}$  inch drill bit he purchased and then drills from both ends of the blank with his 7mm drill bit using the  $\frac{1}{4}$  inch hole as a pilot hole. I've never tried this method, but it sounds like it would work well. You can try this method if you don't have a chuck and drill bit chuck like the ones I use.

*Note...* Folks, I'll admit it, I'm cheap. Some people tell me I'm so tight, I squeak when I swim underwater. So, I don't relish buying extra drill bits if I can accomplish the goal with tools I already have on hand. Besides, I never seem to be able to go to the store and come home with just the one item I originally wanted to purchase and the only one I really need. Then when I get back home the wife siren goes off and it can get ugly. I grant you that the tools I'm going to use cost a lot more than an extended length drill bit from a supply house, but I already have these tools on hand to use for other purposes and probably most serious woodturners also have them, or a reasonable facsimile that can get the job done. I'll be using a Oneway Talon expandable chuck and a  $\frac{1}{2}$ " drill bit chuck with a #2MT.

## First things first

But let's not get ahead of ourselves. The first thing I want to do is find the exact center of each end of the blank. You can buy special squares to do this, but I just put the blank in a vise, run a straight edge diagonally across the blank and draw a pencil line down the straight edge.



Do this twice and where the lines intersect will be the center. Once I find the center, I mark the center with a transfer punch. If you haven't invested in transfer punches yet as your pen disassembly tools of choice, you can use a center punch. If you don't have a set of transfer punches or a center punch, shame on you. You must be related to that cheap guy, Bob. You want this punch mark to be fairly substantial so don't be shy. Repeat this process on the other end of the blank and you're ready to drill.

Give your drill press a rest. It deserves it. You're going to drill this bad boy on your lathe. Put the drill chuck in your tailstock and your expandable chuck on the headstock. Insert your 7mm drill bit in the drill chuck and tighten everything except the chuck jaws down so it's solid.



Put the point of the 7mm drill bit into the impression you've made at the center of one end of the blank and hold it there with your hand.

Now slide the tailstock until the opposite end of the blank goes into the inner jaws of the expandable chuck and start tightening those jaws until the chuck firmly holds the blank. Lock down your tailstock.



Set the lathe speed to 300 rpm if you can, or as close as you can get to it. You should have a relatively slow spinning blank in contact with a stationary drill bit and held firmly in place by your expandable chuck jaws. The drill bit will not have to support the weight of the blank because it is secured in the jaws of your expandable chuck. Rotate the tailstock handwheel slowly and move the stationary drill bit in and out of the rotating blank. I usually go in ¼ inch at a time and then back the drill bit out to allow the loose wood to leave the drill flutes and let the bit and blank cool off. Keep doing this until you can't drill any further. Reverse the blank and repeat the process until you have drilled completely through the blank.

Please don't become impatient and fail to retract the bit often or you can catch the blank on fire or melt it. Don't ask me how I know this or why there is a wall mounted fire extinguisher directly above my lathe. Check the drilled holes for alignment by taking the blank off the lathe and placing a 7mm pen tube in one end of the holes and letting gravity cause it to slide all the way through. If it does, you're all set to start making a glue mess.

### **The exercise in "messology"**

Rough up one of the two 7mm brass tubes that came with the kit. You should only rough up one tube, not both. Glue this roughed up tube into one end of the one piece pen blank using the glue of your choice. I prefer 5 minute epoxy glue, but you can use CA or Polyurethane, or whatever floats your boat. Set the blank aside so the glue can dry. Take a break. Have a coke. Write a novel. But please wait until your glue has dried. Don't ask me why I know this is important.

### **Squaring and turning the blank**

Now we need to square the pen blank ends on both ends. I use a pen mill, but you can use whatever method works best for you. Once the ends have been squared, insert the loose tube into the end of the blank with no tube yet, but **DO NOT** use glue on it.



Mount all this on your standard pen mandrel, use two slimline bushings, one on each end to secure it for turning. Turn the blank to the desired shape, sand and apply the finish of choice.

### ***Caution....***

If you want to turn the shape so that the clip end of the blank is larger than normal, be careful it doesn't get too large. Putting too much pressure on the loose end of the clip not only looks unsightly to my eye, but can cause that end of the clip to make indentations in the pen over time. Don't ask me how I know this.

### **Preparing the bottom portion**

To assemble the bottom portion of the pen, take your loose and un-roughened tube out of the pen blank and press the pen nib into one end. Now press the transmission into the other end of the tube to the depth you desire.



*The assembled nib, tube, transmission and cartridge.*

The depth is determined by how far you want the cartridge to protrude out of the nib when the pen is in use. In any case, the cartridge should always fully retract when the pen isn't in use to avoid ink marks on shirt pockets.



*The entire blank with the clip pressed in slides over the bottom assembly.*

Once this is done, install the completed top portion over this assembly, press your clip finial and clip in the other end of the pen. Be sure it slides easily, but offers sufficient support for the nib when being used.

Now it's time to enjoy your new one piece slimline pen and see how many people notice there is no center break in the turning material. If someone notices, you can be sure they are either a genius, or a pen maker. The two terms aren't necessarily mutually exclusive, but sadly they all too often seem to be that way, especially in my shop.

### **It's time to rock 'n roll**

To move the cartridge in and out of the nib, grasp just the nib with one hand, and rotate the entire pen body with the other hand. Since the bottom tube isn't glued to the pen body, it will remain stationary when you twist and the upper tube which is glued to the body will grip and twist the transmission causing the cartridge to extend and retract. To change cartridges, remove the entire upper portion of the pen from the bottom portion to access the cartridge. Pretty slick, huh?

Thanks Don Ward of [Red River Pens](http://www.RedRiverPens.com) for thinking of this fun and inexpensive project.

## One last thought

Well I hope it isn't really my last thought, but at my age, you never know. Some think I had my last good thought many years ago anyway. Be that as it may, there is no reason why with a few modifications, you couldn't use other kinds of twist mechanism ballpoint pen kits to make one of these pens. Without thinking about it too much, I can think of ways to adapt this to a Cigar or Jr. Gent II very easily. So experiment with this. Turn the creative side of you loose, and have some fun.

A handwritten signature in cursive script that reads "Bob".

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