

# Drilling a Pen Blank On the Lathe

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## Drilling a pen blank on the lathe

I drill all my pen blanks on the lathe. It takes a little bit longer than using a drill press, but I find it to be more accurate, both in terms of the hole size and drilling through the center of the blank. The later is particularly important when drilling a segmented blank, as you need to drill directly through the center of the design.

I'm sure others have slightly different techniques, so feel free to post any comments or tips on something I may not have mentioned.

The pen blanks I show here are cherry. A customer ordered a couple of [Perfect Fits](#) and supplied a slab of cherry from which I milled these two blanks.



The first thing I do is mark the center of each end using a [center finder](#) and a [marking knife](#). Once I locate the center I will mark it with a [spring loaded automatic punch](#)



I will then mount the blank on the lathe between centers and knock the edges off with a spindle roughing gouge. Then, starting at one end of the blank, I will turn it round to 3/4".

I use a 3/4" wrench as a gauge. Once the wrench drops over the blank it is at the correct size. Moving the wrench to the side will burnish the wood and show you clearly where the blank still needs to be turned down.



Once the blank has been turned down to 3/4" diameter, I move the tool rest closer to the blank and rest the tubes on it and the blanks. Looking at the grain, I mark where I plan on cutting the upper and lower barrels. I normally cut my blanks using a crosscut sled on my table saw, so I allow for the kerf of the blade between the upper and lower barrels. I also mark the two barrels and draw a couple witness lines at the center band.



Then I'll sharpen my drill bits. I use a set of [Harbor Freight bits](#) and sharpen them using a [Drill Doctor](#). I sharpen them using the 135 degree setting. I'm sure plenty of people will swear by more expensive bits or a different angle, but this is what I use including when I'm drilling blanks segmented with aluminum or brass. So far it seems to be working, so I'll stick with it.



The shot below shows the tools I use to do the actual drilling on the lathe. From left to right, [PSI collet chuck](#), [center bits](#) and [1/2" drill chuck](#). I found that when I started using the center bits, my drilling on the lathe really improved. A big thanks to "rherrel" on the [IAP](#) for turning me on to that!



When I mount the blank in the collet chuck I will orientate it so that the entry hole is on the center band side. Using a center drill that is slightly smaller than the drill bit I need to use, I will drill a starter hole in the blank. The tail stock is locked down on the lathe bed. As I advance the quill in the tail stock by rotating the handle with my right hand, I will apply pressure to the lock lever with my left hand, to the point where it starts to become a little difficult to rotate the handle. I find that pressure on the quill seems to stabilize things a bit and reduce any possible vibration.

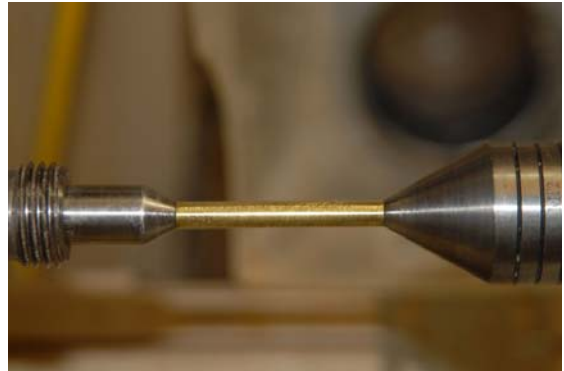


Then I will mount the drill bit in the drill chuck, and applying pressure to the lever, start drilling the blank. I run my lathe between 400 to 500 rpm while drilling. I will typically drill about 1/2 to 1" at a time. If I see the flutes are clearing the chips then I'll keep on drilling. The moment I stop seeing chips being ejected, I will stop the lathe, back out the tail stock using the wheel, clear the flutes, advance the whole tail stock forward, lock it down, turn on the lathe and start advancing the drill bit by rotating the wheel. I'll repeat this until I feel the drill bit exiting the blank.

Before I remove the blank from the collet chuck, I will push the tube into the hole to check the fit and to confirm that I have drilled deep enough. Here are shots of the tube in the blank showing both the entry and exit holes.



Then I'll repeat the procedure on the other blank. Once done, I'll mount a 60 degree live and dead center in the lathe and sand the tubes with some 100 grit paper.



Back at my workbench I plug the tubes with dental wax. Then I'll coat the inside of the blanks with gorilla glue using a q-tip, dip the tubes in some water and then insert them in the blank with a twisting action. Gorilla glue expands as it cures and sometimes will push the tube out of the blank so I use some small clamps until the glue cures.



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