

Kitless Fountain Pen Tutorial

A Tutorial by:
Shawn Newton



A.K.A "watch_art"



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Kitless Fountain Pen Tutorial by IAP's "watch_art" - Shawn Newton



Somebody asked me for a list of parts and I created this quick tutorial. I hope this will be useful to others out there too. I hope I didn't forget anything. This is for a 9/16" x 28 tpi cap to barrel pen, using an 11mm section to barrel thread, and a #6 Jowo nib unit. It is also clipless.

Notes:

I didn't add in the image - but before I drill a fresh blank, I always start with a stub/centering bit. That way the hole is nice and centered.

Always square the end of the blanks before turning.

When drilling I use a small squirt bottle (like salons use for holding hair color) to constantly squirt water into the hole and on the bit. I keep a Tupperware dish on the lathe bed to keep water from getting EVERY where.

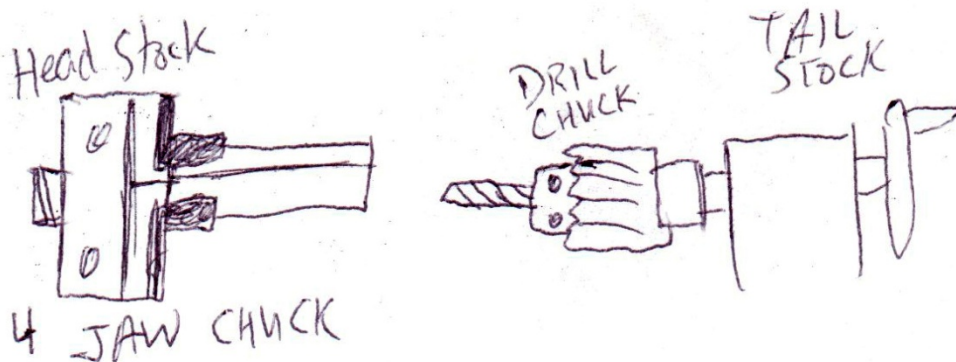
Start with the Nib Section

Load and center your Nib Section blank in a 4 jaw chuck.

Square the end of the blank before drilling. Start with a stub/centering bit.

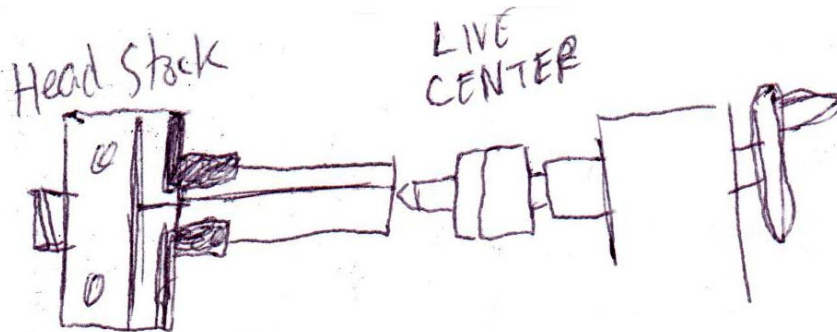
Then drill the blank with a 'J' letter drill bit and drill it 30mm deep.

I always drill the blanks first.

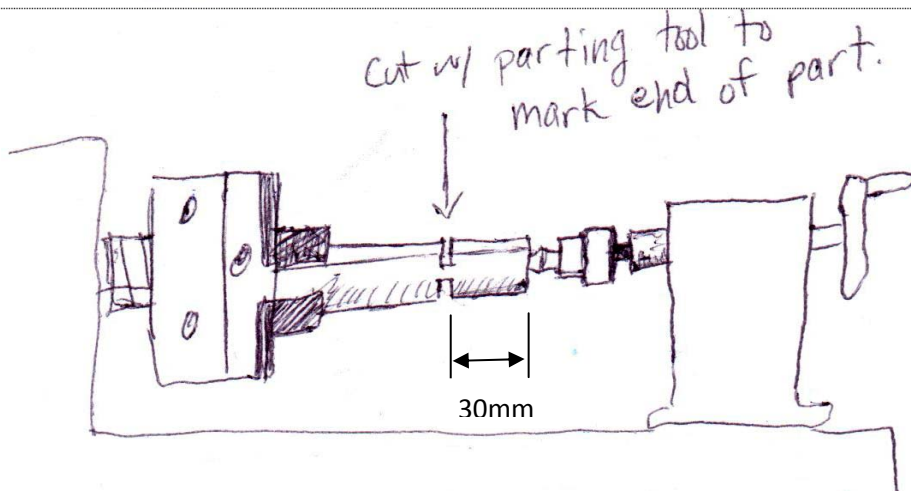


I use a 'live center' with the replaceable tips, use the smallest tip that will fit in the hole.

Bring the live center up against the blank.



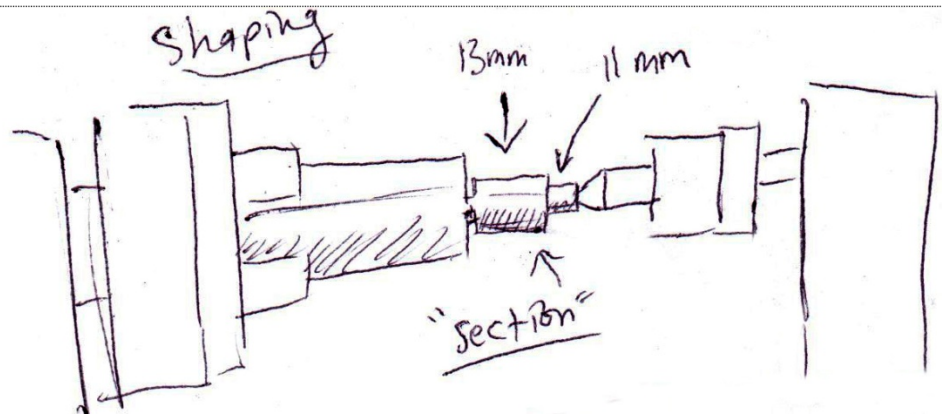
Using a shallow cut, part to the left of squared end, 30mm for the Nib Section.



I shape the Nib Section (13mm thick) and the tenon (11mm thick).

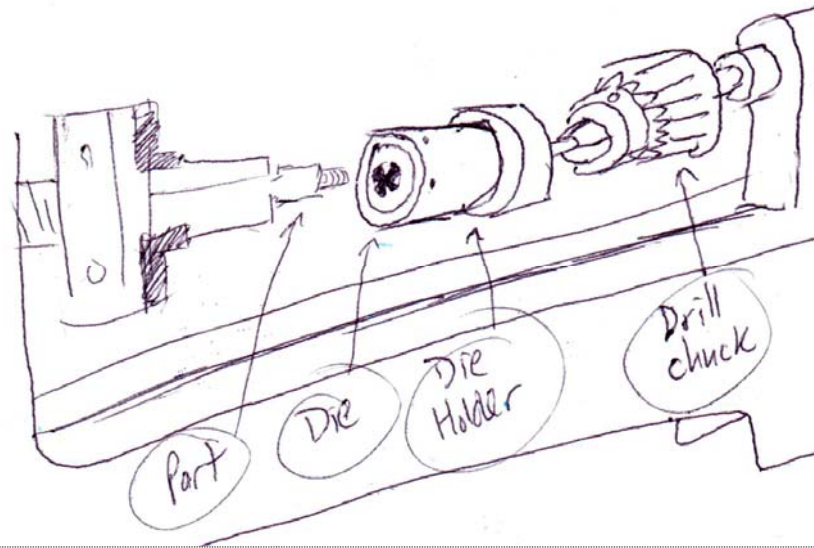
Go ahead and give the Nib Section the shape that you prefer.

Pinched, lipped, tapered, or whatever. Turn, sand and polish to make it pretty.



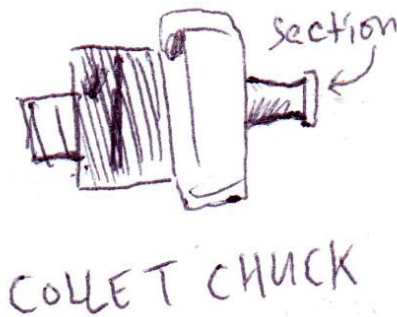
Outside Threading

I always thread the outside parts **LAST**, but while they're still attached to the blank in the headstock.



Part the Nib Section off the blank and place it in your 11mm collet.

Clean up the front of the Nib Section.

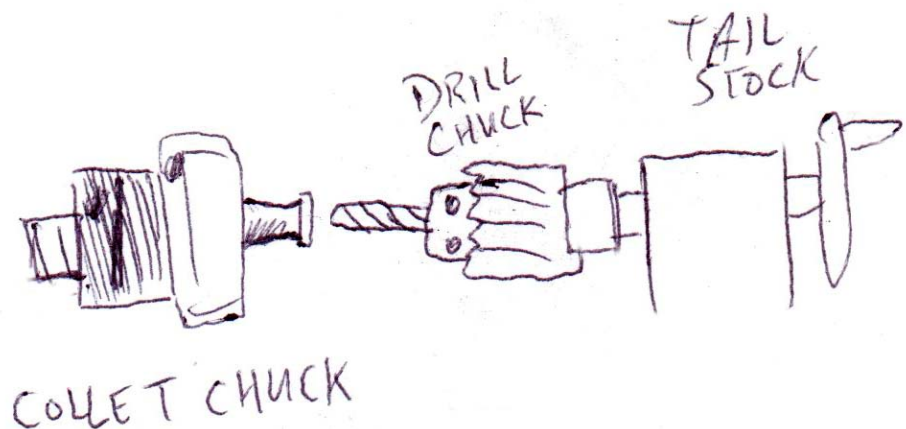


Now with an 'N' letter drill bit and with the lathe in reverse, mush in about 2mm at the end of the hole.

(Note – putting lathe in reverse helps create a chamfer and your bit doesn't catch the part or cause vibration. This makes it easier, especially with bigger bits for the Cap.)

Then put the lathe in the normal forward direction.

Use this 'N' letter drill bit and drill the Nib Section 13.5mm deep.



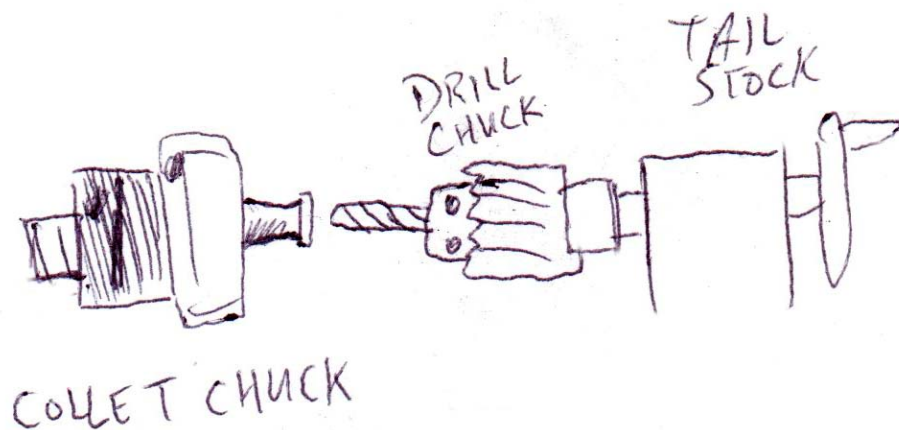
Now with an 8.5mm drill bit, and with the lathe in reverse, mush in about 2mm at the end of the hole.

Then put the lathe in the normal forward direction.

Use this 8.5mm drill bit, drill it 2mm deep. This will give room for the nib unit housing and collar.

Then tap with the special tap for your nib unit. Remember this tutorial is for a #6 Jowo.

(Continued)



You're done with the Nib Section. Now place a nib in it.

Go ahead and place a converter on it. Measure from the shoulder that goes down to the threads to the end of the converter.

This will precisely determine how deep your Barrel needs to be. You could make it deeper or shallower than the numbers I quote.

Done with the Nib Section



Load and center your Barrel blank in the 4 jaw chuck.

Square the end of the blank before drilling. Use the stub/centering bit.

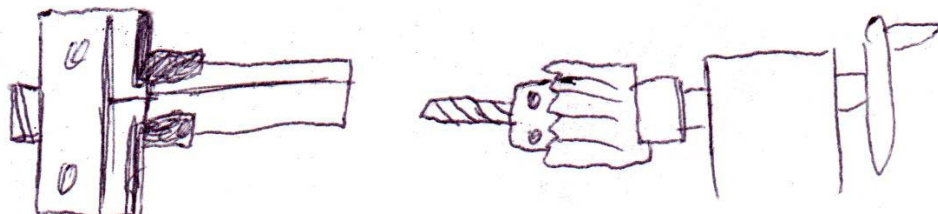
With a 5/16" drill bit and with the lathe in reverse, mush in about 2mm at the end of the Barrel blank hole.

Then put the lathe in the normal forward direction.

Use this 5/16" drill bit and drill it 70-80mm deep. This will give room for a converter to fit in.

Now with an 11mm drill bit and the lathe in reverse, mush in about 2mm at the end of the hole.

Next make the Barrel



Then put the lathe in the normal forward direction.

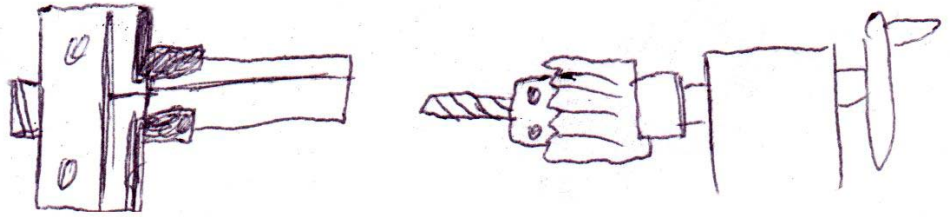
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Use this 11mm drill bit and drill it 15mm deep. This is for the threads of your Nib Section to mate with.

Then with an 11.25mm bit and the lathe in reverse, mush in about 2mm at the end of the hole.

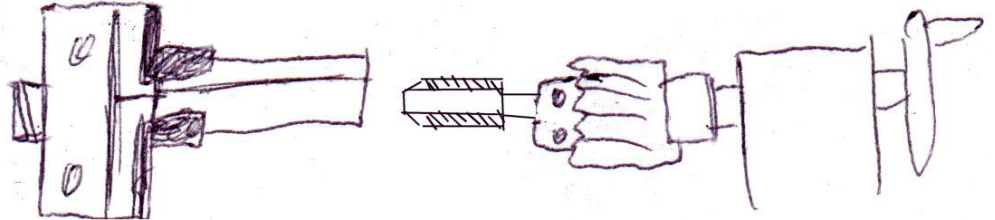
Then put the lathe in the normal forward direction.

Use this 11.25mm drill bit and drill this out at the same 2mm depth.

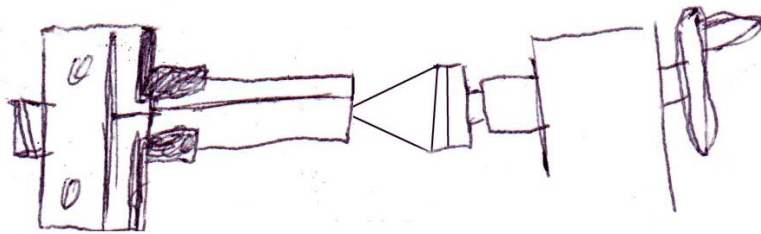


Tap the hole with your 11x.75 tap. I use cooking oil on a paint brush as a lubricant.

Test fit the section. Be sure the Barrel blank end is square or the Nib Section won't fit snug against it.



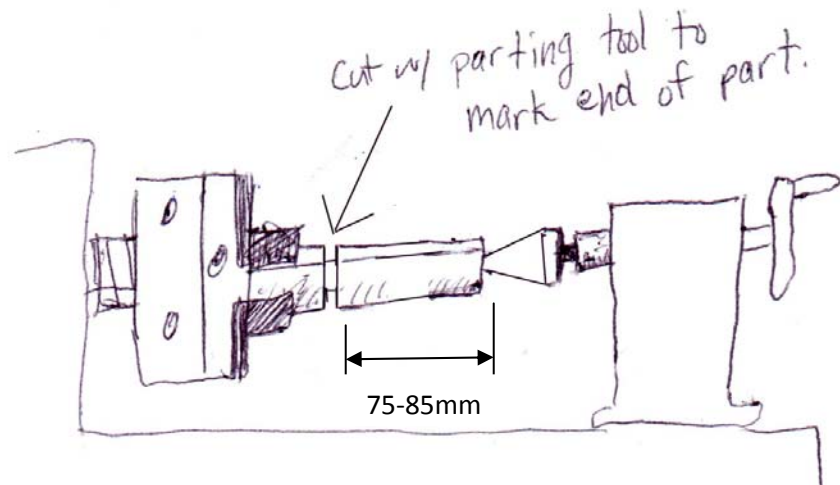
Snug the large 'live center' against the Barrel blank.



Remember the Barrel hole was drilled 70-80mm deep.

Using a shallow cut, part to the left of the squared end, 75-85mm for the barrel.

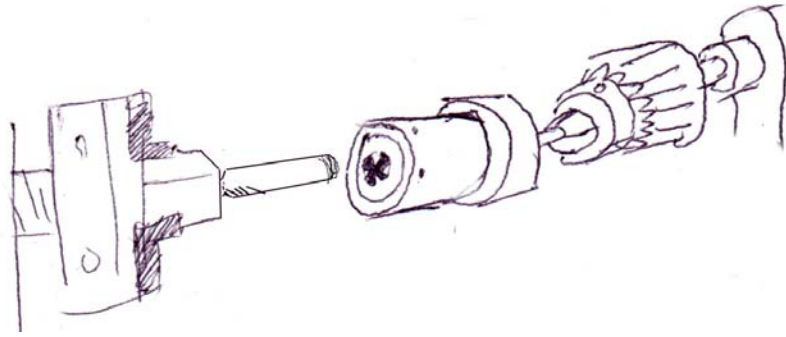
Then simply turn your Barrel to shape and size.



I make the threaded end (14mm thick) or slightly under this size, for the 9/16" threads.

I ALWAYS sand and polish BEFORE cutting the threads.

Then part the Barrel off the blank. You'll finish the parted end of the Barrel at the end of this tutorial.



Load and center your Cap blank in the 4 jaw chuck.

Now make the Cap

Square the end of the blank before drilling. Use the stub/centering bit.

Now with a 23/64" drill bit and with the lathe in reverse, mush in about 2mm at the end of the hole.

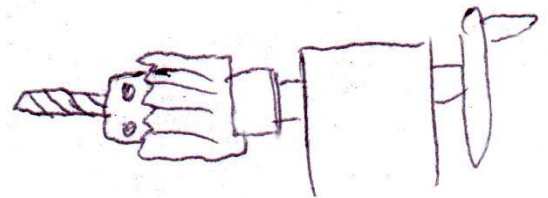
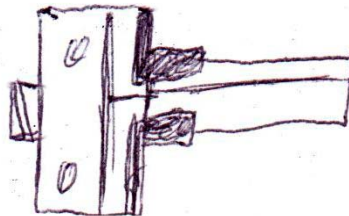
Then put the lathe in the normal forward direction.

Use this 23/64" drill bit and drill it 55-65mm deep. Giving the nib some wiggle room.

Now with a 17/32" drill bit and with the lathe in reverse, mush in about 2mm at the end of the hole.

Then put the lathe in the normal forward direction.

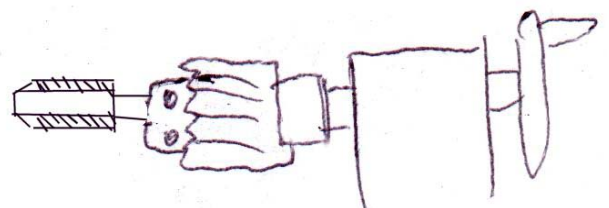
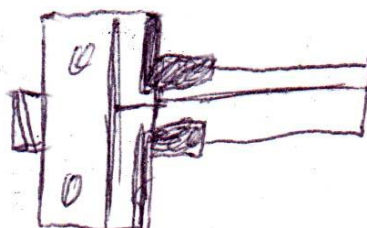
Use this 17/32" drill bit and drill it 25-30mm deep. This creates the shoulder inside the Cap for the Nib Section lip to snug against. This keeps the pen from drying out between uses.



Tap the hole with your 9/16" x 28 tap. Again, I use cooking oil on a paint brush as a lubricant.

Be sure the Barrel and Nib Section fit just right.

If you have to, cut away any threads with a very small parting tool to get it to fit just right.

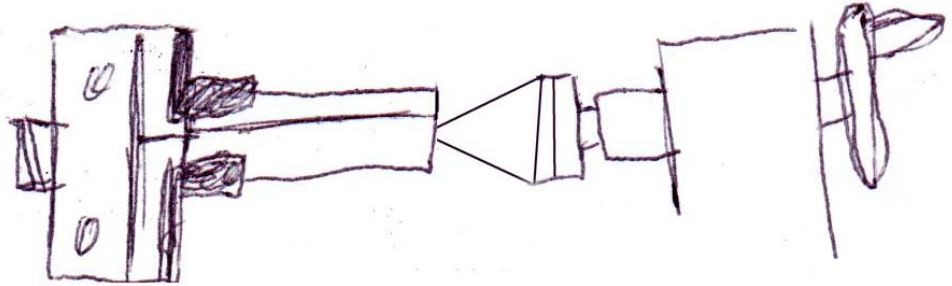


This is so the threads don't start right at the lip of the Cap.

The Cap will cover some of the Barrel past the threads and be pretty.



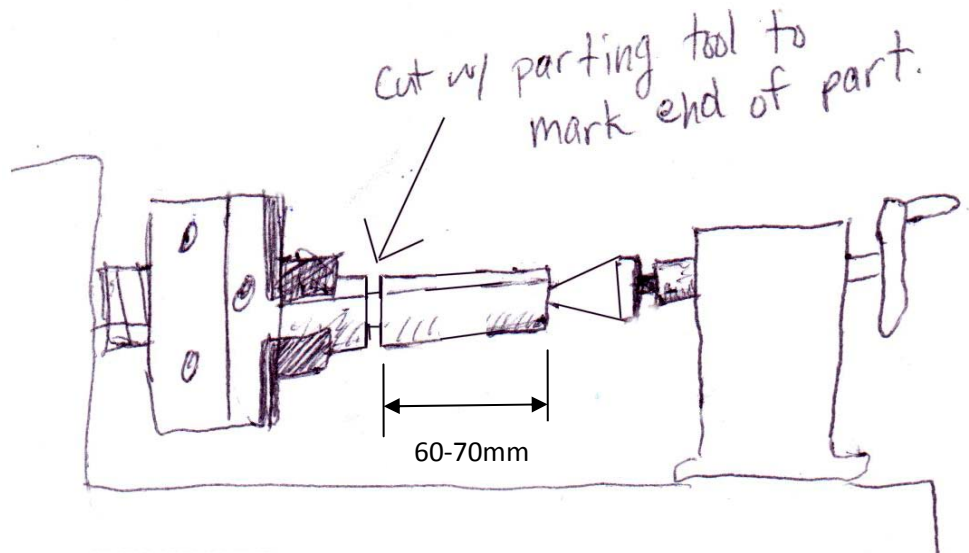
Snug the large 'live center' against the Cap blank.



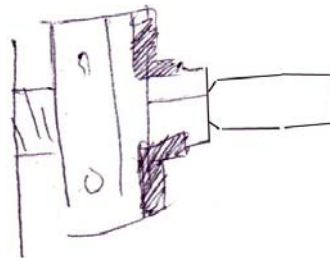
Remember the Cap hole was drilled 55-65mm deep.

Using a shallow cut, part to the left of the squared end, 60-70mm for the cap.

Then simply turn your Cap to shape and size, sand and polish to make it pretty.



Cut Cap off of blank.



Wrap the middle of the Cap with 1 layer of masking tape.
Place this in an appropriate collet.
Clean up the end of the Cap with a cutting tool
Then sand and polish the Cap to make it pretty.

Now wrap the middle of the Barrel with 1 layer of masking tape.
Place this in an appropriate collet.
Clean the end of the Barrel with a cutting tool.
Then sand and polish the Barrel to make it pretty.

DONE!

Final Sand and Polish of Cap and Barrel

