50 Caliber Parker Twist Pen

Tutorial

By Les Elm

Making pens using rifle casing and bullets is nothing new. I have seen photos of cartridge pens and read tutorials on various pen making forums and decided to try making a 50 Caliber Double Twist Pen using an actual Copper bullet for the Nib with a Parker style refill. The following instructions are what has worked for me. As you make your own pen you may find different ways to make this pen.

The Casing is a once fired 50 Caliber Military Brass with a spent primer which will be left in place. A spent primer will have an dimple in the end of the primer. Usually the neck on a once fired cartridge will be stretched enough so the bullet will turn freely inside the neck.

The bullet used to make the nib is a new Hornady .510 50 CAL 750 GR A-MAX. (Advanced Match Accuracy) with a copper jacket, aluminum tip and a lead core. One of the first jacketed bullets produced for non-military use.

A Cigar pen kit Lower and Upper Tubes along with the Transmission, Twist Holder and Cap Tube are used for the bullet nib assembly.

Military 50 Caliber Brass Casing

Hornady .510 50 CAL 750 GR A-Max

Preparing the Brass Casing

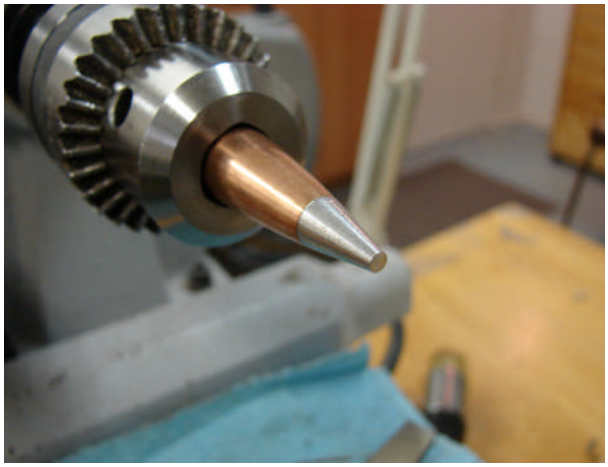
The cartridge is mounted on the lathe using a Dead Center in the head stock and a Live Center in the tail stock. The casing is mounted between centers with the tip of the live center in the dimple in the primer. **Don't over tighten the casing or the Dead Center will swage out the neck.**

Depending on how heavily the brass is tarnished, clean the brass starting with super fine steel wool and the finish cleaning and polishing with liquid Brasso. At this point clean the brass with lacquer thinner to remove any residue that may interfere with any final coating to be applied to avoid tarnishing. Some prefer no coating and can be cleaned with Brasso as the brass tarnishes.

Polishing and Cleaning Between Centers

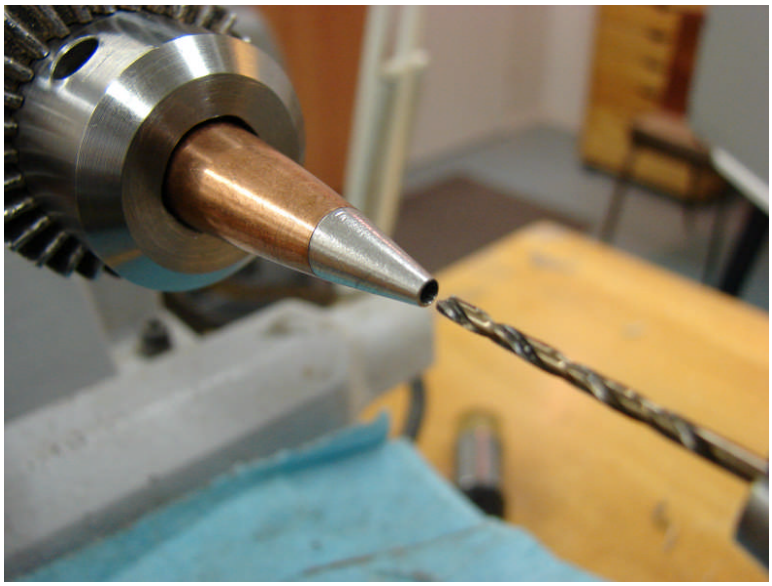
Preparing the Cross Refill Bullet Nib Assembly

Install the bullet into a 5/8 drill chuck with the point facing out, tighten by hand and file 6/32" off of the tip to a square flat surface. **Don't over tighten the chuck or it will mark the copper bullet surface.**



Aluminum Tip Filed Flat

Install a drill chuck in the tailstock with a #36 drill bit and drill hole in the center of the flat bullet tip to a depth of 1/2” drilling slowly using Rapid Tap Drilling Fluid.



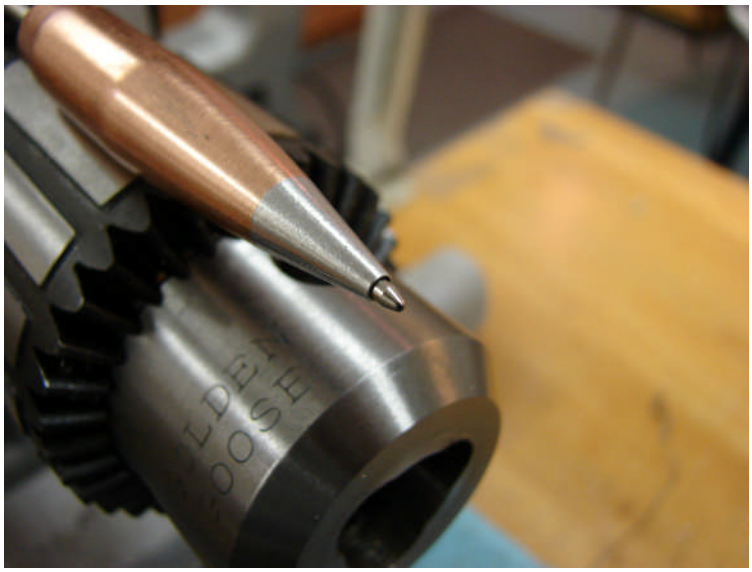
Drill to 1/2 Inch With # 36 Bit

Reverse the bullet in the drill chuck and drill a pilot hole in the center using #36 bit drill. Install a 1/4” bit and using Rapid Tap Drilling Fluid drill to a depth of 1-7/8” to avoid drilling through the sides of the bullet tip. Stop frequently to clean the hole and bit.

#36 Pilot Hole Drilled

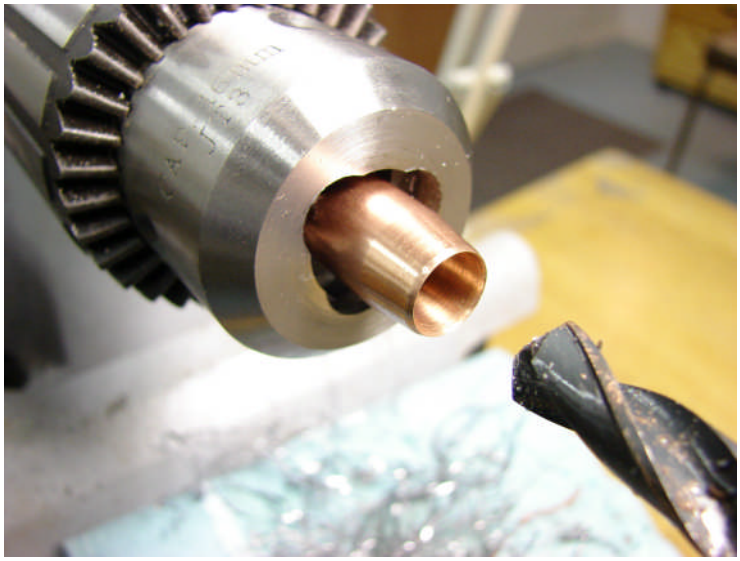
Drilled 1/4 Inch Parker Refill Hole

Remove the bullet from the chuck and take a Parker refill, insert through the 1/4” hole and check for the correct amount of refill tip reveal.



Cross Refill Tip Reveal

Reinstall the bullet into the 5/8 drill chuck and drill to a depth of 1-10/32” with a 10mm drill bit being careful not to drill through the tapered side wall of the bullet.



Drilled to 1-10/32 inches With 10mm Bit

Completing The Parker Refill Bullet Tip Assembly

Remove the bullet and clean all the drilling fluid and filings from inside the 10mm hole.
Cut the Lower Cigar tube to measure 2.0” in length and insert into the 10 mm hole. There should be 22/32” of tube extension above the bullet tail. **These measurements are based on using a Hornady .510 50 CAL 750 GR A-MAX. bullet.**

Note: If a different type of bullet is used mark the 10mm tube to get the amount of extension required above the bullet tail so the overall length of the tube and bullet are the same as a Cigar nib and tube. Insert the tube into the 10mm hole with the mark on the tube flush with the bullet tail.

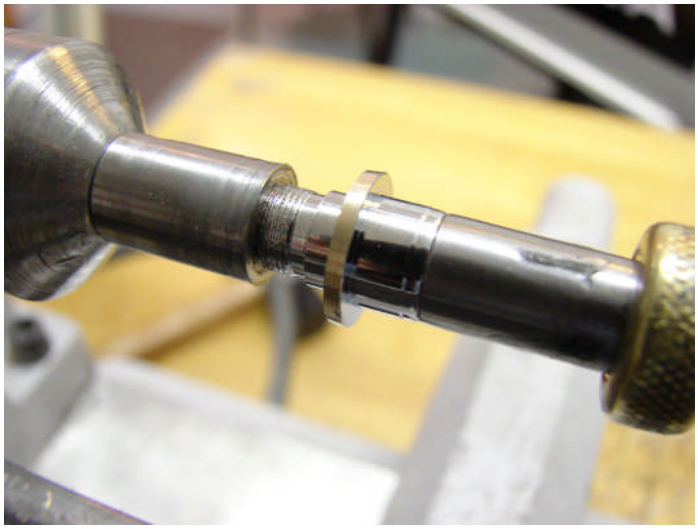
Mark Tube For Extension Above Bullet End

Remove the tube and rough up with 220 grit sand paper. Place some Medium CA around the tube, insert the with a twisting action and remove any CA from around the tube extension and bullet tail.. **Lay the bullet on it’s side to avoid CA running into the nib hole.** Let the Medium CA cure over night.

Tube Installed In Bullet With 22/32” Extension

Insert a Parker refill through the 10mm hole to ensure that the refill tip will come through the bullet nib hole and is not plugged with glue. If there should be glue plugging the hole run the #36 bit through the tip and insert the 1/4” bit through the tube and clean out.

In order to install the Transmission the Twist Holder Flange has to be turned down the fit inside the neck of the casing.



Twist Holder Turned Down

Press the turned down Twist Holder into the tube so the flange seated against the top of the tube. Install the Parker refill and Twist Mechanism and check the double twist operation to ensure the refill smoothly extends and retracts through the bullet tip.

Completed Parker Refill Bullet Tip Assembly

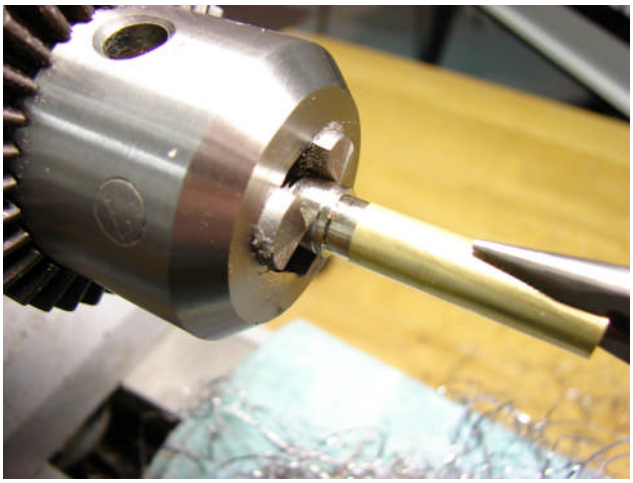
Cleaning and polishing the of the Copper and Aluminum is done by removing the refill from the transmission and installing the completed bullet tip assembly into a drill chuck and hand tighten the chuck. **To avoid damage to the tube and transmission do not over tighten.**

With the lathe running clean up with super fine steel wool. Finish cleaning and polishing with liquid Brasso. At this point clean the brass with lacquer thinner to remove any residue that may interfere with any final coating to be applied to avoid tarnishing. Some prefer no coating and can be cleaned with Brasso as the copper tarnishes.

Cleaned and Polished Bullet Nib Assembly

Completing The Parker Refill Dowel Insert

Take the upper Cap tube which slides over the transmission and install the threaded end into a drill chuck and pull the tube off of the fitting.



Remove Cigar Cap Tube From Fitting

Insert the completed bullet tip assembly into the casing neck to allow a total of 1-5/8” extension above the neck and mark with a felt tip marker.

Mark the Bullet At The Casing Neck

Insert a piece of 1/2” inch dowel into the casing as far as it will go to bottom out on the inside casing head. Mark the end of the neck on the dowel and remove. Place the bullet tip assembly beside the dowel with the mark lined up with the mark on the bullet. This is where the tail of the bullet will sit when completed. Place a mark on the dowel to line up with the Bottom of the Twist Holder Flange and cut the dowel on this mark.

Cutting the Parker Dowel Insert to Length

Install the dowel in 1/2” collet and drill a “0” sized hole through the center of the dowel. Drill a 3/8” recess a 1/4” deep. Slide Cap tube over the transmission and slide the dowel onto the Cap tube and cut so the tube is flush with the bottom of the 3/8” recess. Glue the tube into the dowel insert. Insert a short piece of 3/8” dowel and glue it into the recess to seal the hole and cut the dowel flush with the end of the insert.

Insert With Tube Installed Flush

Insert Recess Plugged

Completing The Casing

Check that the length of the insert is correct by seating the bullet tip assembly into the dowel insert and check that the refill smoothly retracts in and out of the bullet tip.

Dowel Insert Installed on Bullet Tip Assembly

Place the dowel insert and bullet tip assembly into the casing to check for correct length of bullet extension above the casing neck. Remove the insert and bullet tip assembly from the casing.

Place 15-20 large drops of Medium CA into the bottom of the casing. **Ensure that no CA gets on the casing neck.** Push the insert and bullet tip assembly down to the bottom of the casing into the Medium CA. Push and twist to ensure and even spread of CA around the bottom of the insert. The bullet tip assembly will center the insert in the casing. Stand upright and let cure overnight.

Dowel Insert and Bullet Tip Assembly in Casing

After the CA has cured check the twist action to extend and retract the Parker refill and the Bullet Tip Assembly should rotate smoothly inside the casing neck. If the Bullet Nib Assembly dose not rotate smoothly in the casing neck remove the Bullet Tip Assembly from the dowel insert and sand the inside of the casing neck with some 220 grit sand paper.

You will notice that the dowel insert will be centered the casing just below the casing neck. No extra support around the top of the Dowel Insert should be required with the Dowel Insert securely glued into the bottom of the casing.

Dowel Insert Glued Into Casing Bottom

Insert the Bullet Tip Assembly into the Casing and Dowel Insert. To Change the refill unscrew the bullet Tip counter clockwise and change refill and spring. Reinstall by pushing bullet tip into casing against spring tension and screw in clockwise until transmission engages to retract refill tip. Check double twist action.

Changing Parker Refill

Completed 50 Caliber Parker Double Twist Pen