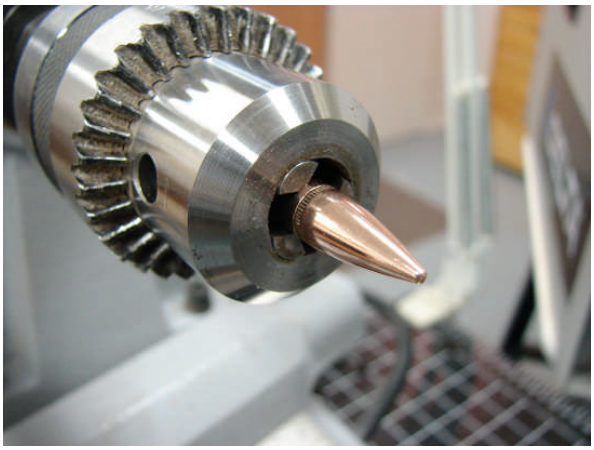
Making a Rifle Cartridge Pen Bullet Nib

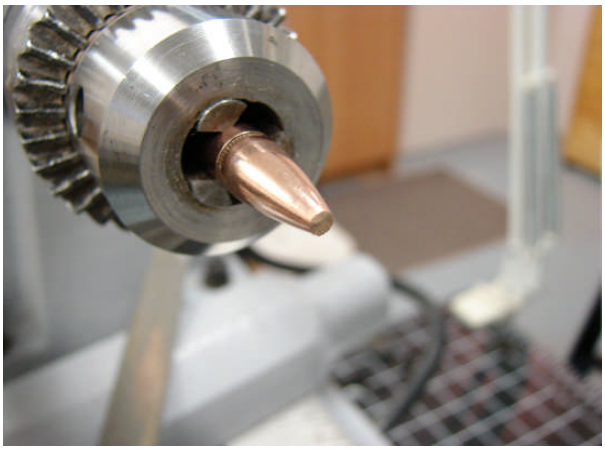
This tutorial was done using a 30 Caliber Copper Full Metal Jacket Bullet which has a lead core. Due to environmental and health issues associated with lead, a lot of bullet manufactures are now making Solid Copper Bullets.

Set lathe at 800 RPM to do the drilling and cutting. When drilling either a bullet containing lead or a solid copper bullet, go slow and drill shallow using Rapid Tap Cutting Fluid, cleaning the drill bits frequently to avoid plugging the hole. Drilling too fast the lead will get hot, melt and cause problems.

1. Install a drill chuck in the headstock and install the bullet with the point facing out. File 3/32nds of an inch from the point to get a square flat surface. **Always ensure the bullet is tightened on the surface that will not been seen when the bullet is seated into the cartridge neck.**

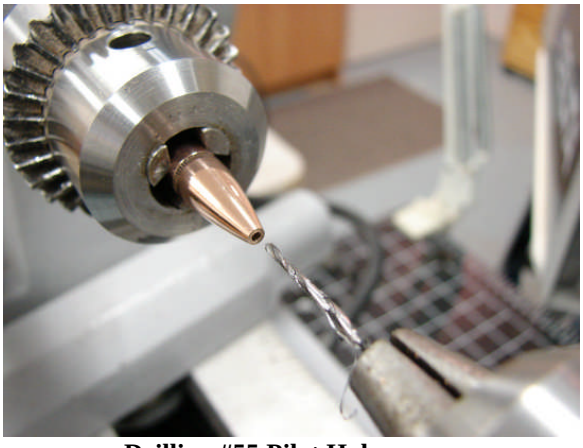


Bullet Installed In Drill Chuck

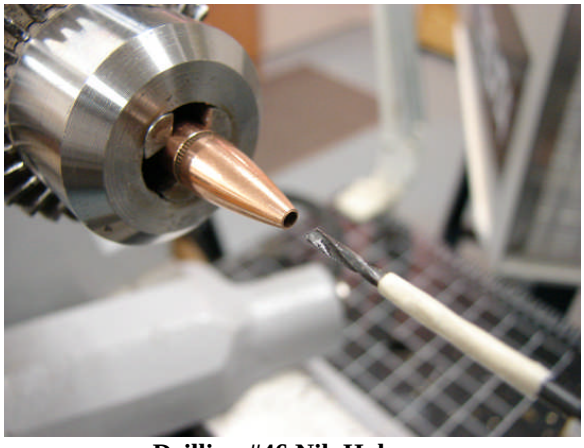


Bullet Tip Filed Square and Flat

2. Install a drill chuck in the tailstock and install a #55 drill bit to drill a pilot hole in the center of the flat bullet tip. Drill slowly using Rapid Tap Drilling Fluid and stop drilling once you hit lead. Remove the #55 bit and install a #46 bit and drill through the pilot hole using Rapid Tap Drilling Fluid to a depth of ½ an inch. I place a piece of tape on the #46 bit to act as a depth gauge.

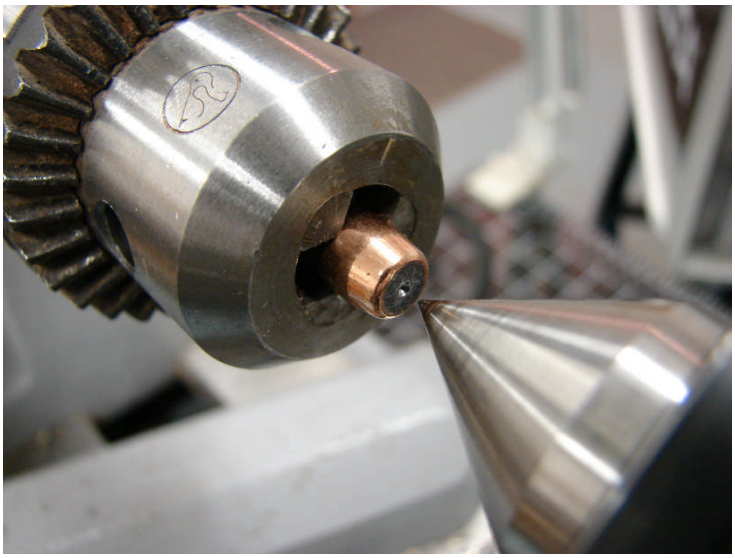


Drilling #55 Pilot Hole



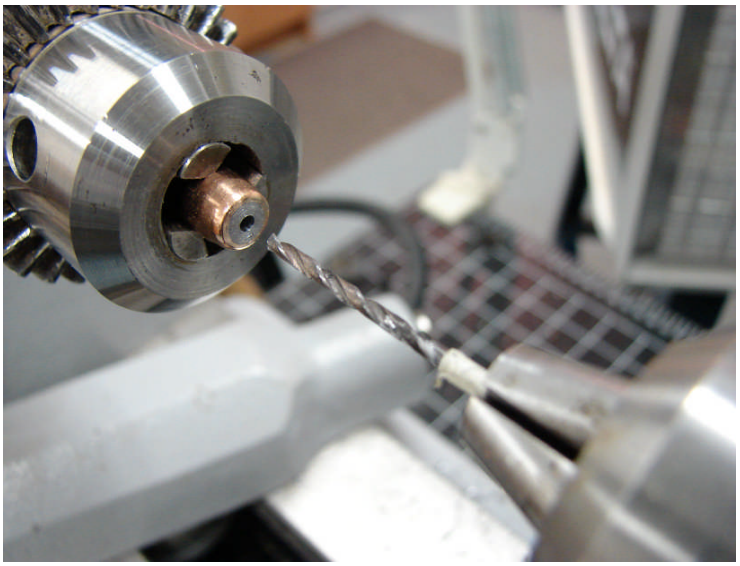
Drilling #46 Nib Hole

3. Reverse the bullet in the drill chuck with the large end facing out. Install a live center into the tailstock and mark the center of the boat tail end of the bullet.



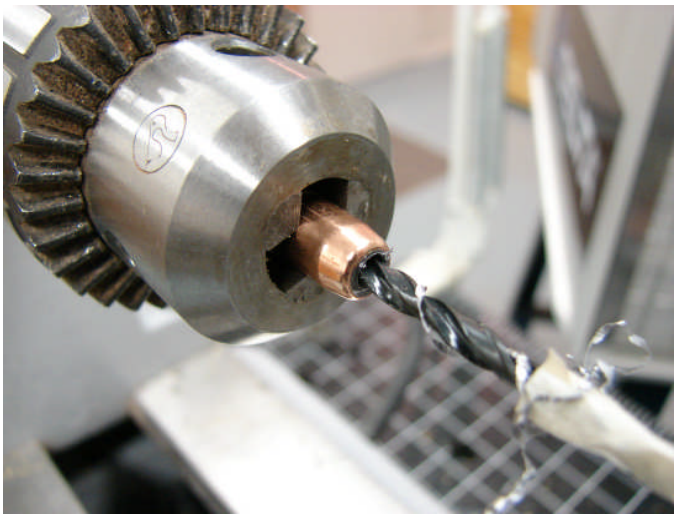
Marking The Center Of The Bullet Boat Tail

4. Install a drill chuck in the tailstock with a 5/64^{ths} bit and drill a pilot hole to a depth of 15/16ths of an inch. I place a piece of tape on the 5/64^{ths} bit to act as a depth gauge. Drill slowly using Rapid Tap Drilling Fluid and clean the hole and bit frequently. De-bur and clean up around the hole.



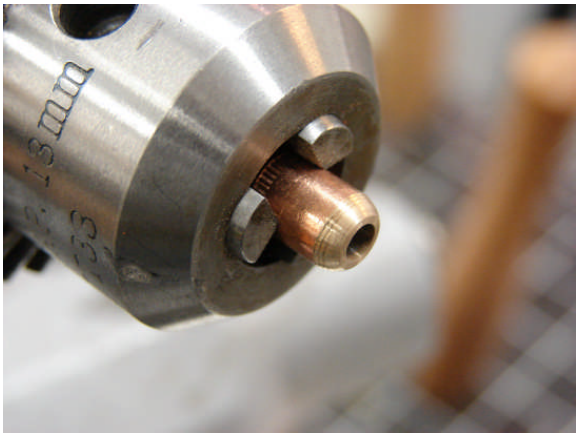
Drilling 5/64ths Pilot Hole

5. Remove 5/64^{ths} bit and install a 9/64^{ths} bit and using Rapid Tap Drilling Fluid, drill through the 5/64^{ths} pilot hole stopping frequently to clean hole and bit. Drill to a depth of 15/16ths of an inch to avoid drilling through the sides of pointed end. This will vary depending on the caliber of bullet I am using. A piece of masking tape on the 9/64^{ths} bit will act as a depth gauge.

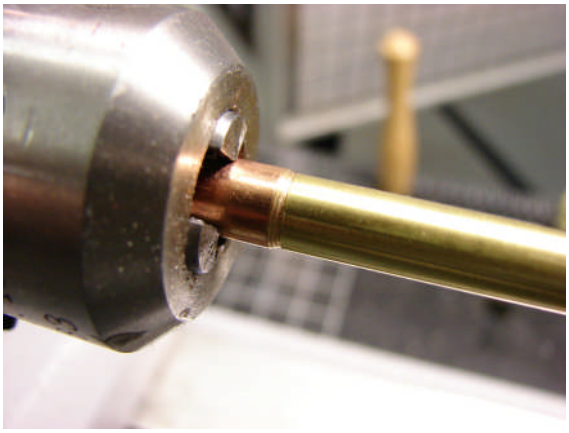


Drilling 9/64ths Pen Refill Hole

6. After drilling 9/64^{ths} hole use a file to taper the bullet enough to allow the 7mm brass tube to fit over the taper and then de-burr and clean up.

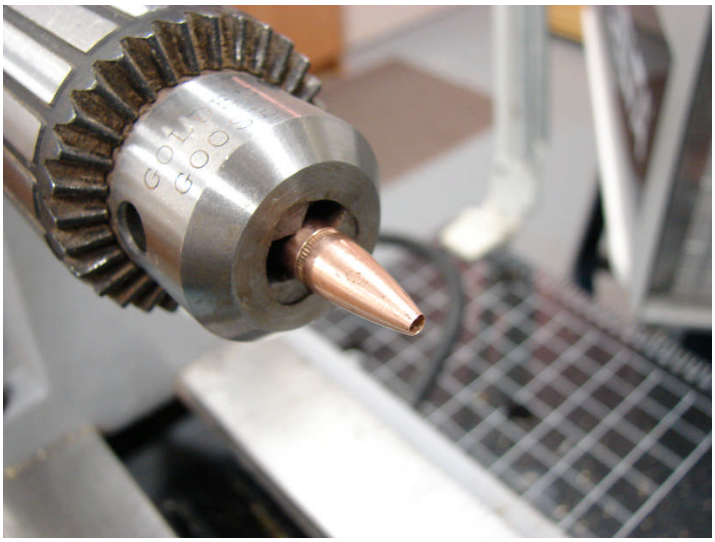


Bullet Tail Tapered For 7mm Brass Tube



Checking Taper With 7mm Tube

7. Reverse bullet in the chuck, de-burr and clean up the #46 nib hole.



Finished Bullet Nib Hole

8. Check the #46 nib hole to ensure the refill slides in freely and that there is enough 9/64^{ths} hole depth to get the proper amount of refill tip reveal through the bullet nib hole.

Checking Nib Refill Hole For Reveal