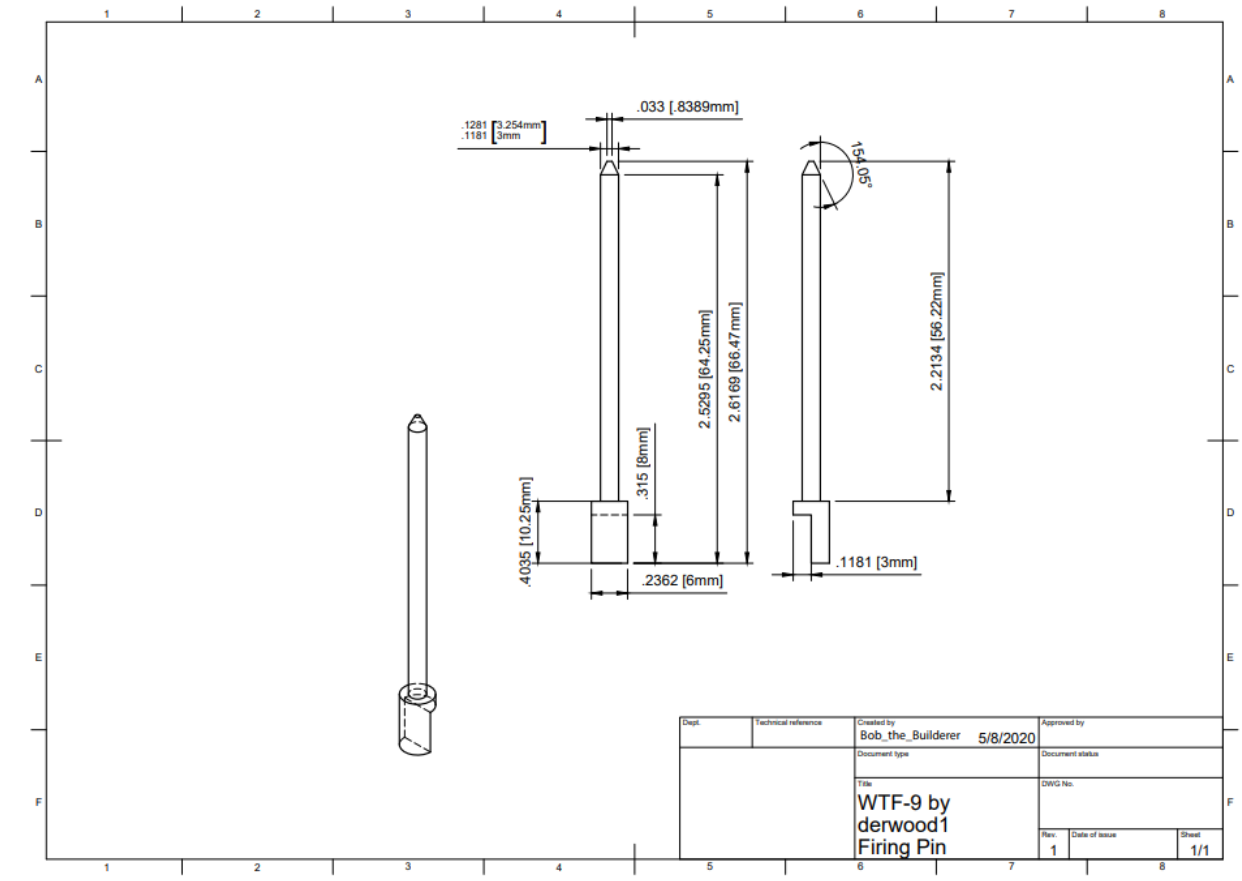
How to Make a WTF-9 Firing Pin



Materials and tools

- Round Steel Rod, 3mm HSS Lathe Bar Stock Tool 100mm Long https://www.amazon.com/gp/product/B07KY8GK5W/ref=ppx_yo_dt_b_asin_title_o00_s00?ie=UTF8&psc=1
- ¼" diameter W1 drill rod https://www.amazon.com/Water-Hard-Drill-Rod-0-25/dp/B00V4L1EEA/ref=sr_1_2?dchild=1&keywords=w1+drill+rod+1%2F4%22&qid=1593294300&s=industrial&sr=1-2
- 1/8" drill bit
- Center drill
- Chamfer bit
- Cutting fluid or motor oil
- Lathe (if you don't have a lathe skip step 1 and buy a drill bushing from McMaster Carr https://www.mcmaster.com/8486A25)
- MAP gas and torch
- Brass braze rod
- Sand paper 220 and 400 grit
- Metal file
- Vice
- Dremmel with cutoff wheel
- Belt sander
- Sharpie
- Digital calipers

Process

1. Make a bushing out of the W1 drill rod.
   If you don't have a lathe, buy a drill bushing and skip this step, see parts list.
   - Set speed to 1200RPM
   - Drill a 1/8" hole 15mm deep in the ¼" drill rod
   - Cut to 10.25mm with a parting tool
   - If you don't have a lathe you can buy a drill bushing https://www.mcmaster.com/8486A25

2. Braze the HSS and W1 together
    - Lightly clamp the HSS rod in the vice so that about 2mm extends past the W1 bushing
    - Place the bushing on to the HSS rod

    - Heat the bushing with the map gas until it glows red while preheating the brass rod
    - Touch the brass rod to the assembly and heat it until it wets

    - Let it cool down for a min then cool it down in water

3. Sand the bushing to shape
    - Using the belt sander, sand the back to shape
    - I found holding the firing pin with pliers near the bushing and using my other hand to hold the tip of the firing pin worked really well

    - Frequently cool by dipping the firing pin in water. You don't want the metal to change color
    - As you sand away the W1 bushing, look for a vein of brass. That way you know the 2 pieces were successfully brazed

4. Trim to length and shape the firing pin
    - Measure 57mm with a pair of calipers and cut the firing pin with a cutoff wheel. Make sure to go slow to keep the metal from changing colors
    - Sand the tip of the firing pin on the belt sander. Cool the tip with water and check the length frequently
    - Sand the chamfer in the tip
5. Clean up the firing pin with sandpaper
    - Using sandpaper clean off the carbon buildup on the firing pin with sand paper