



## Drill Chuck Assembly:

**Read the instructions completely prior to starting assembly**

1. Prior to assembly remove all anti-rust coating from the arbor and the chuck. Brake Cleaner is recommended, as the less oil residue left on the mating surfaces the more secure the assembly will be. Pay particular attention to the short taper on the arbor and the receiving taper in the drill chuck as any oil film on these mating surfaces will cause the chuck and arbor to separate more easily.
2. (Optional Step - but produces the best results) Once the mating surfaces are thoroughly cleaned, wrap the arbor in a paper towel or newspaper and place in the freezer for at least 1-2 hours. Open the drill chuck all the way so that the jaws are within the body of the chuck, and place the drill chuck on an old cooking sheet or similar, with foil laid out under the chuck to catch any grease, with the taper pointing upwards so that any grease that seeps out does not get in the mounting taper. Set the oven to LOW (approximately 130° to 150° F) and allow the chuck to heat for 1-2 hours. **Please Note:** Should you opt to do the heating and freezing method mentioned above, be careful not to burn yourself with the hot chuck! You must work quickly to achieve the most benefit from using this method. Plan your moves ahead of time so that you waste as little time as possible going from freezer/oven to assembling.
3. If you choose to not use the optional heating/freezing process it is more likely that you're chuck may come off the arbor when exposed to vibration or lateral forces.
4. Lay a good wood board on a sturdy surface (anvil, bench, vise, concrete floor) and use a soft faced hammer such as a copper, brass, or lead headed hammer to firmly seat the arbor into the chuck body. You will want to hit the arbor with the hammer as straight on as you can, and with ample force. The phrase, " Don't force it, use a bigger hammer" truly does apply to this process. Use as large of a hammer as you have available. Be careful not to damage the drive tang on the back of the arbor. Seat the arbor into the chuck using firm smooth blows with the hammer. "Tapping" it in will not benefit your cause. Strike the arbor at least 2 or 3 times firmly. Use of a normal hardened steel hammer can easily damage the arbor.
5. Do not use the drill chuck/arbor assembly until the temperature of the two parts has equalized. (1-2 hours) Not allowing the temperature to stabilize between the two parts may affect the seating of the arbor.
6. Once temperatures have stabilized, mount the chuck in the spindle of your lathe or drill with a short drill bit, tighten the chuck, and turn the machine on. Observe the tip of the bit for any wobble. If wobble is present check the bit, and the spindle for straightness. If the bit and spindle are straight, take a large punch and hammer and knock the arbor out of the chuck from the front side, and repeat the process until the bit runs true. If you are

unable to achieve a true running assembly with a maximum run-out of .003" TIR, contact WEBFoot Custom Calls.

**Tips:**

- Get your hammer and board laid out while the parts are cooling/heating.
- Try to keep from having to carry the parts a long distance to where you will assemble them.
- USE A HOT PAD for the chuck if you heat it. It can easily burn you!
- When seating the arbor, you will hear a change in pitch as the arbor is seated fully.
- It is best to wipe the mating surfaces clean with brake cleaner immediately prior to assemble to insure there is not any oil on the surfaces from finger prints, seeping oil, etc.
- Work quickly if using the optional thermal method. You are using thermal expansion and contraction to your advantage in this situation. The greater the temperature differential between the parts at the time of assembly the better your assembly will be.