Easy V-Bit Bolt Jaw Tongs

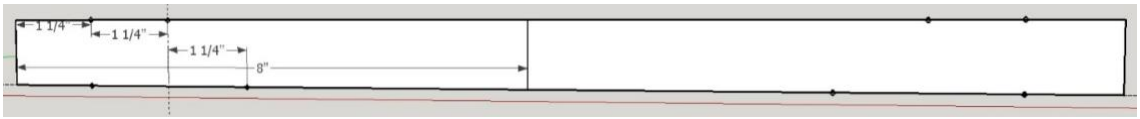
Good tongs are an extension of your hands, allowing you to securely hold pieces that would otherwise be to hot to handle. There are a larger variety of tongs than any other tool, each size being sized to hold primarily one size and shape of material.
Note: The word “Tongs” is a noun and is the proper way to refer to one or many pair of these stock holding tools. The word “Tong” is a verb and refers to the act of using the “Tongs” or to “tong or pick up a piece of material.”

Properly forged tongs need to hold work securely… or they are dangerous!

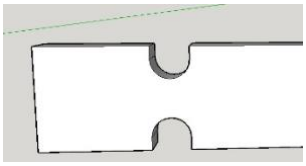
V-Bit tongs are very good for holding square and/or round stock of a certain size and can be adjusted slightly for holding different size of stock.

These tongs are made from flat bar with a twisted jaw and can be modified slightly to hold many different sizes and styles of stock. With a slight modification to the jaws they can be used for holding flat bar which will be indicated later on.

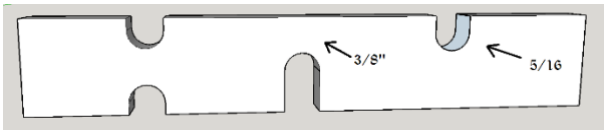
- Start with 16” of 3/8” X 1” laying out the jaws with a center punch on both ends.
  Note: Holding the center punch as close to the edge as possible will cause a small dimple to protrude from the side of the flat bar making it easier to locate the mark when the stock is hot.



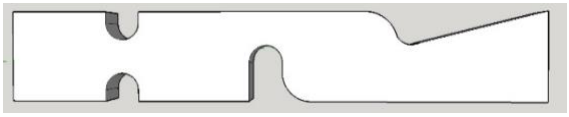
- Take a good yellow heat and using a guillotine style tool (or the reins of a set of tongs) fuller in from both sides at the first punch marks down almost 3/8” deep. Do this and the following fullers in multiple steps, using the fuller for 3-4 hammer blows then flatten the sides that spread out.



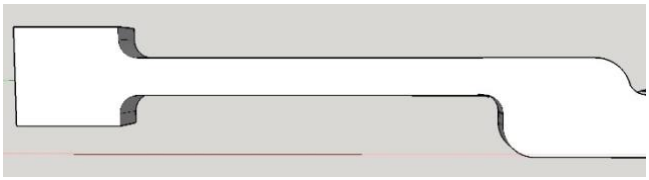
- Using a piece of 3/8” round bar or fuller, drive it down at the second punch mark leaving about 3/8”. Turn it over and at the third punch mark drive it down about 5/16” deep.



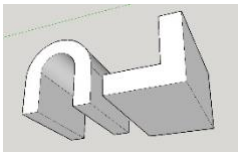
- Draw down behind the third fuller mark to start the reins tapering down gradually for about 4” or so down to approximately 3/8” square ending up close to 10” total for each rein. Also round off the corners of the section between the 2nd and 3rd fullers or the “boss.”
  Note: Forge down to the bottom of the fullers carefully as to not leave a cold shut where the bottom of the fuller meets the drawn down section.
  Note: At the point of forging in the illustration, the stock can be cut then drawn down and scarfed for forge welding on 3/8” round bar for reins.



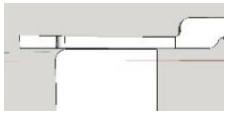
- Now draw out the section between the 1st and 2nd fullers to approximately 3/8" square, then forge off the corners to octagon, then those corners to hexadecagon, then those corners to a triacontadigon (or basically round.)



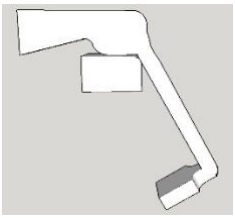
- Take a good yellow heat on the shank of the bit (between the bit and boss) and twist the bit 90 degrees. At this time the direction does not matter.
- Now using either the step of the anvil or a V-Swage and a cross peen hammer forge the bits into a V shape unless you are opting for the U-shaped bits to hold flat stock. For those forming the bits will come after setting the rivet.



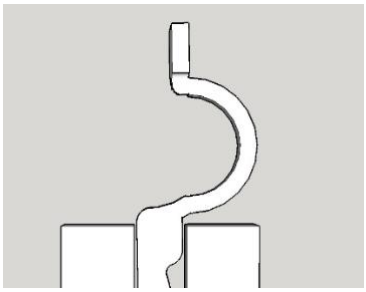
  As 3/8" is fairly thick for the bits, they can be drawn out either lengthwise to make a longer bit or in width to make a wider v-bit. They can also be widened out and then forged into a U=Shape around the size of stock wanting to be held for use holding flat bar as was mentioned above.
- Next using a rounded edge on the far side of the anvil forge the bit over at a right angle.



- Next using the same rounded edge on the far side of the anvil set the bit just past the edge and using a rounded face hammer forge the shank of the bit down.



- Then holding the boss in the jaws of a vice and holding the bit with a pair of tongs, strike the shank of the bit with a rounded face hammer shaping it into an arch.
- Take a good yellow heat and in the center of the boss punch and drift a 3/8" hole. (Or to what ever size of rivet that will be used.)



- Perform all of the above steps on the opposite end of the original stock then draw out the rein area completely.
- Cut the reins in at the mid point.
- At this point make sure each half of the tongs are formed identical.
- Then rivet the two halves together.
- Using the size of stock that these tongs will hold align and forge to fit that stock.

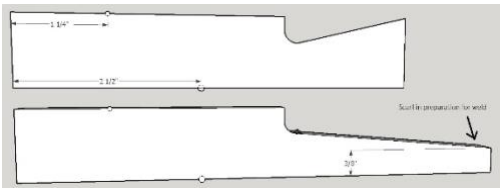
Welding on reins

As is stated above, after drawing out from the fuller at the back end of the boss you can weld on reins. I prefer 3/8” round bar for reins and for these tongs I use a 10” length. You can size these to whatever length you like, maybe longer for using around a gas forge or shorter if you prefer shorter tongs.

A couple of things I have found that helps me is 1, I start my forging on the bits at the final punch mark or at the back end of the boss then draw this down and get it ready for welding. This helps ensure that the small areas of the forged down bits don’t get damaged when reaching welding heats in the fire. (It also is easier to scrap the piece when I mess it up since I haven’t done all of the bit forging already.) Also 2nd a piece of 10” long 3/8” round bar is approaching to hot to hold when forge welding onto the bit so to not need to use two sets of tongs for the weld I leave the 3/8” stock 20” long and then cut it at the mid-point when I’m ready to finish up the tongs prior to riveting.

As these instructions are not meant to state how to forge weld, I will not elaborate on the finer points such as how to scarf.

- Step one is to take a short heat on each end of the 3/8” round bar and upset the ends to prepare them for the weld unless the reins are in two pieces then of course just upset the end being welded on to the bit.
- After upsetting scarf each end in preparation of the weld.
- On the section of the bit just behind the boss, draw the stock down from the fuller to a width of just about 3/8”. This section should draw out to about 3” or so. Then scarf that end also.



- Bring both the rein and bit to a welding heat and good luck.
- Perform the same steps to the other bit and then continue with your forging.

If the V-Bit was used and drawn out to make the bit longer at this time a square file can be used to file a V-Notch across the bit so that stock can be held at a right angle to the tongs.

Now use these tongs to make more tongs.!