

Box Tang Bolster - 2015

Dr. Steve Bloom, Ironflower Forge

Determine the size of blocks of nickel silver needed for the blade. In this case, 0.5" x 0.7"



Transfer those dimensions to nickel silver (here a 3/8" thick plate).



Mill the front & back surfaces of both blocks together to make the width of the blocks identical to one another.



Go to the grinder and with a fine belt, remove the mill marks. Then use the buffer for a preliminary polish (with white rouge).



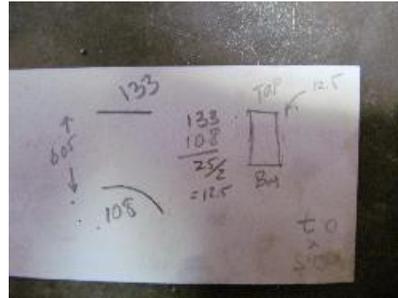
Label the front faces (F=front; L & R = right and left respectively of the knife with tip away and edge down).



Measure the thickness of the blade at the spine and the belly (here 0.133" & 0.108" respectively). This is a measure of the taper of the bevel at the bolster point.



The difference divided by two determines the shim amount needed to compensate for the bevel and to keep the outer surfaces of the blocks parallel to each other and the center line of the blade. Here it is 12.5 thousands.



When I said label – I mean all faces. It really helps to forestall opps later.



Then it is back to the mill to add the correct angle to the block's inner faces. We need 12.5 thousands & a business card is about 10. Shim the top face so that the mill will cut that face deeper than the bottom face.



To check, assemble the blocks in position and measure the total thickness top & bottom. Here, it is off by 5 thousands.



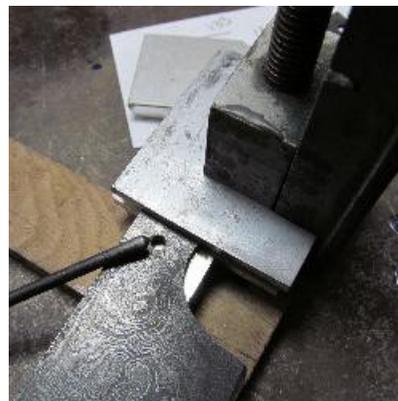
Next, block out bolster rear position by clamping something square across the shoulders.



Transfer that position to the machinist vise and alignment plates. The alignment plates are better shown in an image to follow.



Position the correct block (here the right side one) with the polished face forward and the milled angle face to the blade and use a transfer punch to mark the location for the rivet hole.



Once the positions are marked (indicated by the white arrows), it is off to the drill press to make 1/8" holes in the blocks. Since the marks are on the angles faces, the holes will be parallel to the outer faces (or as good as your drill press can do).



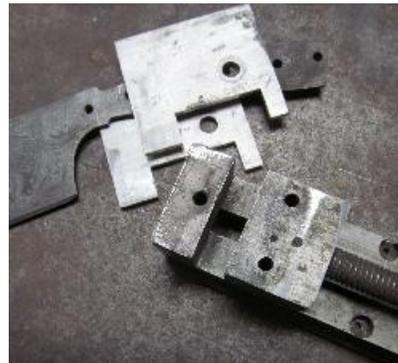
It is a good idea to chamfer the outer end of the hole to allow the rivet to spread and lock the blocks down when the rivet is hammered.



The front faces are given a final polish to remove any marks left by the drill press vise.



The alignment plates key over the vise on their lower horizontal surfaces and have machined parallel vertical edges. The blade tang will be sandwiched between the plates and will abut the rear surfaces of the bolster blocks.



The pin is run through one of the blocks sufficient to protrude on the other size. Clean all surfaces with acetone and install the vise/alignment plates such that the blocks are in contact with the edge of the alignment plates. Mix the JB Weld and apply to the mating surfaces.



Go to the anvil and set the rivet. If all is well, the bolsters are now level with the shoulders of the tang, are parallel to one another and are locked down to the blade. Remove excess JB Weld with acetone, paper towels and the edge of a tongue depressor (or Popsicle stick). Don't forget to clean the alignment plates.



If needed, grind off any rivet that protrudes and clamp the blade in a decent vise as shown. Depending on air temperature, expect to wait until the next morning before moving onto the pommel & handle tasks.

