Ironflower Tips-Alignment Guide for Bolsters

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When placing bolsters on a full-tang blade, you want to perfectly align the bolsters with each other (edges exactly the same left to right). Having a clamp like the one shown makes this a whole lot easier. Ignore the hole in the clamp – that's another story.

Start with two pieces of steel (here ¾" x 3/8" x 2.0"). They just have to be thick enough not to bend easily (small angle iron would do), wide enough to drill and tap the bolt holes, and long enough to span the actual blade height plus room for the bolts. The bolts here are 8x32 socket cap screws. I used them because I have a box of a 100. I would not do lighter and anything over ¼ is way overkill.

Clamp the pieces together with a vise-grip and head over to the drill press.

The first step is to drill two holes close to each end, hopefully near the center line and perpendicular to the surface. A cross-vise on the drill press makes this a whole lot easier. The size of the hole is controlled by the bolt selection. In this case a 8x32 bolt requires a #27 bit.

One of the pieces needs to be drilled so that the bolt passes easily through the piece. A free fit for an 8x32 bolt requires a #16 bit, so that is what is used here. As an additional benefit, the slop in the hole allows the camp to accommodate a taper in the blade profile.

If you don't want to have to tap a deep hole, you can use the #16 bit to partially bore out the holes in the other piece. Just leave enough meat to tap – say 1/4 " or so.

There are charts you can down load that give you the critical information needed. I have found it very helpful to print one out, put it in a plastic sleeve and stick it on the wall next to the drill press . See www.shender4.com/thread_chart.htm.

The last thing to do is chamfer the holes. I used a ¼" bit here. While you don't have to do this, it goes get rid of the nasty burrs left from the drilling and helps the tap get started.

Tap the holes for the 8x32 bolt. While the tap guide shown here has gotten expensive (~$75 from useenco,com #325-4924), if you do much tapping with ¼ or smaller taps, it pays off eventually in far fewer broken taps. Also, buy decent USA made taps. Trust me, they are worth the slight increase in cost over the CCC* equivalents

*CCC=Cheap Chinese Crap

Next - bolt the pieces together and discover just how well you did in aligning the surfaces. You can fix any problems with a bit of care on the grinder or with a file but….

I have a mill (Series 1 Bridgeport clone) with a flood coolant system, so it's over to the mill to run a shallow cut to insure that both the front and back surfaces are precisely aligned.

While not necessary, I tossed the unit on my surface grinder to remove the milling marks. Why? -because I can,

The freshly cut surfaces will almost instantly rust in the humidity typical of Florida. While I could paint the unit, I prefer to use hot bees wax. A cheap heat gun, a loaf pan of wax, tongs to fish the hot metal out of the molten wax makes a pretty good anti-rust system.

Here is the Alignment Guide ready for use. Note that one corner has been ground down to make an index. I can guarantee that if you don't do this, there will come a time when you will assemble the unit incorrectly. If you are lucky, you will catch the problem before putting a set of bolster on out of alignment.