

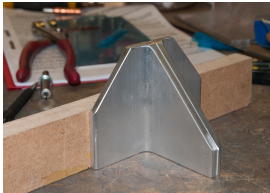
Category: 3.1. Firewall

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I got a bit tired in last session of all the filing to do on the F-601J part that I left the left angle for the next session.

First think I did today was finishing of the left angle. Both F-601J angles are now ready. As you can see in the image below, they are nicely deburred and exactly the same in size. Only the opposite direction.



Finally clecoed all together and started matchdrilling all the components. Before doing this, make sure you grind away some of the corner material on some parts (as the plans instruct). It will make the parts mate better.



Here's my setup for matchdrilling the F-601P spacers underneath WD-602-L-1. The #30 hole is pre-drilled under the bench drill, just align the spacer with F-601D-L-1.



The setup below shows how I clamped the F-601J angle for matchdrilling. This is actually the most difficult part on the firewall.

The angle needs to be clamped to F-601N-R and then pushed down on the doubler plates F-601G and F-601H.

This makes the alignment a bit difficult as the doublers "float" underneath. I used a pin punch to align the holes before clamping.

Another difficulty is that the angle needs to sit 3/32" above F-601M bottom stiffener angle.

You can do this very easily without measuring by using a 12" drill of #40 and lay it underneath the angle. #40 drill gives you exactly 3/32" spacing. (see image)

Purists among you will discuss that you actually need to use a #42 or #41 drill to be exact but I don't have such a long angle, and in the end. It doesn't really matter.



Drilled in place and clecoes installed. The holes are quite close to the bent. This is normal but it already tells me setting the AN470 rivets in there will be fun again.



Fabricated F-601E-1stiffener. Piece of cake. Just locate the right stock angle bar of AA6-063-3/4-3/4 and cut a part of. (there is only one such bar provided so can't really make a mistake, it's quite obvious the very long ones are the longerons and whatever you do: don't cut those !). I still wonder why I have to make this piece by myself. All other parts come pre-made and with prepunched holes. Only this little part has to be made from stock. Maybe related to the 51% rule. Well, it was very easy to make.



Clamped in place aligned with the square opening for the firewall recess and matchdrilled through the prepunched holes in the firewall.



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Drilling the firewall recess. All went fine except the two holes on the top side. I found no way in which I could make the prepunched holes align. I straightened the part as much as I could but it's simply not possible looking at the cut made by Vans to make this work. In the end drilled them which made the holes in the top a little oval on the firewall recess. No big deal, but it's a place where vans could move the hole slightly taken into account the stress by the bends.



Countersunk all the angles. I started by going 2 clicks under flat but had to redo all of them again with 2-3 clicks more. The steel dimples are quite thick and it requires you to go even deeper in the countersink as normal.

I guess it has to do with depth + thickness of material in the dimple and I'm sure there are all kind of mathematical formula's and discussions going around about this, but I just eyeballed this and got a good result where the dimples doesn't wobble in the countersink hole but also makes the stiffener sit flat against the firewall. Even that is not really so important and my buddy builder called it : 'me being anal again'



As you can see, there's a whole lot of them.



After matchdrilling, you deburr the holes. Deburring holes is more difficult in steel. I installed the deburring bit in my electrical drill and set it to 'vise' speed (very slow).

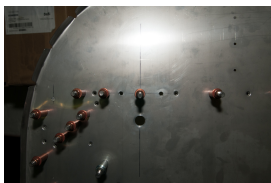
Then used the drill to deburr the holes. Worked like a charm.



One of the things you can already do with the firewall flat on your workbench is drilling the 2 inch hole for the heater bypass box. Doing this with the firewall mounted on the fuselage is quite difficult so I decided to do it now. Took out the 2inch hole saw drill and cutout at the given location on the plans.



Did the same for the oil reservoir. There is a big pass-through hole in the bottom which you align with a prepunched hole on the firewall. Extend the centerline and locate the depth of the hole so that the two an3 bolts holding the reservoir will be on the same height as the rivets on the F-601L stiffener. Once the big hole is made with the step drill, drill the 2 #12 holes for the AN3 bolts that attach the oil reservoir to the firewall.



Here is how it looks with the oil reservoir clecoed on.



The firewall clecoed back together.

More firewall work - 28/12/2012

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All parts are ready for priming now before rivetting.

To save time in priming, I decided to finish all bulkheads first before priming parts so will continue now on the next bulkhead.