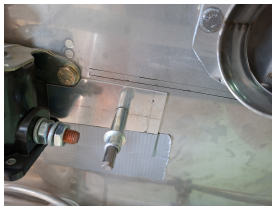
05/07/25 - Fuel pass through doubler plate - 6h30

Category: 6.1. Firewall FFW
Published: Tuesday, 22 July 2025 10:58
Hits: 608

Some more firewall work. I have been postponing the fuel penetration pass through for a while as I though this would be something I would do after hanging the engine. However, now that I have fysically seen the engine and have seen the location of the mechanical fuel pump, I'm pretty sure that the location as it is indicated on the plans on OP-32 "IO-360 fuel system" will work fine.

One problem though is that the fuel firewall doubler plate doesn't fit the as the leg of the starter contactor is in the way.
Started looking on the forums for images of how others have done it and at first I was committed on keeping the original doubler shape and placing the fuel opening about half an inch lower. That way, the left side rivets would match with the firewall stiffener rivets.
As usual, these are the things that keep you awake at night and you keep thinking about it.
I finally decided to keep the original location as on the plan, but slightly modify the shape of the doubler so that it could still be mounted on the lower rivets on the stiffener.

I started by drilling out the rivets from the stiffener and then cut a very rough oversized shape. From this rectangle I first cut out the clearnence for the starter contactor leg.
Once the plate would fit, I measured carefully the location of the firewall passthrough for the AN fitting and drilled a pilot hole #40.



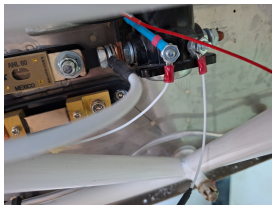
Once the hole was defined, drilled the two right side rivet locations on the fuel doubler plate.

Then needed to drill the other 2 holes in the firewall stiffener. I could back drill one hole from the cockpit side through the existing hole, but the new one was a bigger problem.
Ideally I had to drill this from the front side.
This is where a lot of additional work surfaced. The contactors are seriously in the way and it's not possible to drill while the start

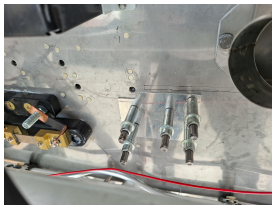
Phoca PDF

Category: 6.1. Firewall FFW
Published: Tuesday, 22 July 2025 10:58
Hits: 608

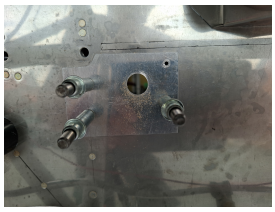
contactor is on. Same issue for rivetting them so it had to come off anyway. Typical airplane building stuff, when you think something is mounted for eternity, it will have to come of two or three more times.



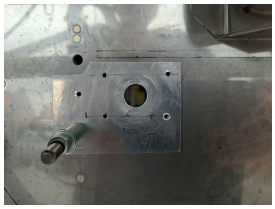
All removed and the 2 holes through the firewall vertical angle drilled.



Then I used a rota-cut drill from the inside to upsize the hole for the AN fitting and sanded it to smooth edges. After all, this is your life line.



Then countersunk the holes on the doubler. The doubler stays on the front side as it won't fit from the back due to the firewall stiffener angle.
Next I drilled 2 additional holes next to the stiffener for extra strength.

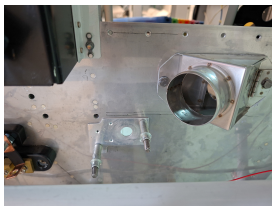
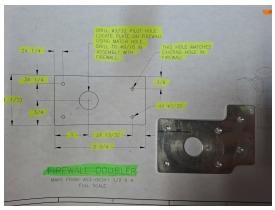


Then finally, I started grinding and reducing the size from the sides to match the dimensions of the plans. The funky tab on the left side makes the doubler a bit larger than according to the plan

Phoca PDF

05/07/25 - Fuel pass through doubler plate - 6h30

Category: 6.1. Firewall FFW
Published: Tuesday, 22 July 2025 10:58
Hits: 608



Here's the comparision.