

Matchdrill seat skins and install F715 - 02/08/2014

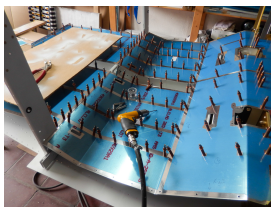
Category: 3.8. Center Fuselage

Published: Tuesday, 05 August 2014 09:25

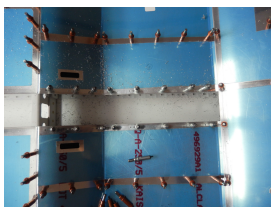
Hits: 2052

Time for a new step in the building process. After rivetting of the bottom center fuselage skin, a couple of small remaining tasks have to be completed before you can join the aft and center fuselage.

First, I needed to install the seat and baggage skins on the assembly and matchdrill them to the seat and baggage ribs. Quite straightforward. I completed this job with the #30 reamer for the LP4-3 pop rivets that will be installed here. The upper part of the seat skins does not have to be matchdrilled as the predrilled holes for the 8R8 screw are already large enough.



Next, drilled the holes for the mid cover between the seats. Here you need the #19 drill for the 8R8 screws that will be installed and the #40 for the nut plate ear attach rivets. Pay special attention as there are some variations in the type of nut plates used. Also had to edge deburr the baggage cover.



Same job on the baggage cover nutplates. you drill each time through the baggage skin and baggage rib. Don't forget to add the baggage cover plate to matchdrill the #19 holes.



Once all drilling was done, I removed all parts and deburred the holes on all plates and ribs.

I also spotted some rivets that I forgot to set when attaching the F7045 bulkhead to the ribs. I remember telling myself I would do these with the pneumatic squeezer and then completely forgot about it after rivetting the center fuselage. Kind of scary thinking you may miss

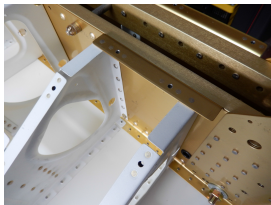
Category: 3.8. Center Fuselage

Published: Tuesday, 05 August 2014 09:25

Hits: 2052

rivets :)

Anyway, squeezed those suckers and now we have the seat ribs fully attached to the top flange of the aft F704 bulkhead.



Next job is drilling the F715 seat side ribs to the bottom center fuselage skin and F704 bulkhead.

It's kind of tricky and the manual doesn't say too much about it. Just that you need to flute the rib to match the holes.

First draw a centerline on the the F715 bottom flange.

I started by marking the hole locations of the center fuselage bottom skin on the F715 rib. That way, I 'm sure to flute right in the middle on the correct locations.

It takes a bit of an artist to flute so that the rib matches the curve on the skin. I did it slowly and regularly checking if the curve formed by the inner side of the rib matched the locations of the holes on the bottom skin. (holding edge of the flange against the predrilled holes and checking where I'm going off curve needing more or less fluting). That worked great. Once the curve matches the skin holes line, you can move on and gently to the same on the top flange so that the rib makes a nice and even curve. (mark the hole locations of seat skins first).

The picture below show how much the F715 is actually curved



One of the things you definitely need to do (and that the manual doesn't mention) is that you need to trim away a part of the front side of the F715 rib.



Matchdrill seat skins and install F715 - 02/08/2014

Category: 3.8. Center Fuselage

Published: Tuesday, 05 August 2014 09:25

Hits: 2052

Most websites mention about 3/16" inch to be taken off but I also saw some people taking away too much leaving them with insufficient edge distance and having to buy a new part. So I played it safe and slowly grinded away little by little using the scotchbrite wheel, regularly mating the part with the assembly. Marked the 3/16" line so definitely not to go over that.

The picture below shows the amount I left before actually drilling. My thoughts were: I'll grind away just enough so the web sits flush on the F704 flange and then see how it comes out when the holes are drilled. Then I can take away some more material to the end of F715 doesn't hit the curve in the corner of F704 but I still can now, more precisely monitor the edge distance on the already drilled holes.

In the picture below, F715 is clamped to the F704 for matchdrilling



Before matchdrilling to F704, I decided to drill the bottom row through the center fuselage skin first.

The curve made was already pretty close. When clamping the F715 in position on F704 (cleco clamps) and F705 bulkhead (clecoes), you can already see the center line on F715 bottom hole through the predrilled holes in the skin.

The match was not perfect at first, but after adjusting a little, I could see the center line. While drilling, I slightly adjust the rib bit at a time so that each time, the second next hole was clearly centered over the centerline on the flange of F715. Continued all the way to the end and it came out nice. The first picture shows the positioning at the start, and the next picture further on more near the end of the drilling.



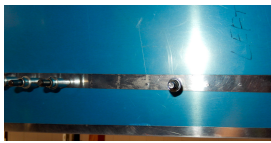
nicely centered

Matchdrill seat skins and install F715 - 02/08/2014

Category: 3.8. Center Fuselage

Published: Tuesday, 05 August 2014 09:25

Hits: 2052



The only really annoying thing about this is that you need to be with your back on the ground and drilling upwards. Wear those safety glasses ! Aluminum shavings will be all over your hair and face. In the picture below, the matchdrilling of the bottom is completed



Next verified the positioning again on the side flange towards F704



Started drilling #30 and inserted clecoes as I went up



Next step will be to cleco the seat skins on and drill the top row of holes but after a first fit, I saw that I don't really have the 0.032" required spacing near start and end and I'm questioning if the top fluting is insufficient or if I need to take away a bit of the side of the seat skin. I'll discuss it with Hugo to see how he did this and had the same issue.

Matchdrill seat skins and install F715 - 02/08/2014

Category: 3.8. Center Fuselage

Published: Tuesday, 05 August 2014 09:25

Hits: 2052

calling it a day for now.

