12/02/2017 countersinking F704A, side skins and continued assembly - 3h

Category: 3.9. Forward and Center fuselage
Published: Tuesday, 14 February 2017 14:26
Hits: 1683

In this session, I countersunk some remaining drilled holes.

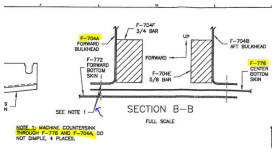
4 of them are located in the bottom flange of the F704A. If you dimpled the skin before - which you obviously did - then the remaining undimpled ones are the ones you are looking for.
To cross check, count the holes on DWG28 (bottom left).

The holes to be countersunk are the ones where the bottom floor stiffeners meet the F704A.

I was a bit confused at first since I saw lot of different ways of doing this on builder sites. Some people countersink through bottom skin into the F704A.

The correct procedure is however described on DWG28 on the top in section B-B :

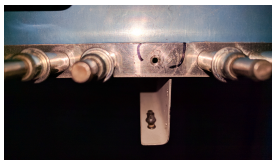
Note that the arrows only point to the centerbottom skin and the F704A flange.



It clearly states to countersink through F776 and F704A. That means that you first take the F772 forward bottom skin off before you countersink. Then you countersink the center bottom skin in assembly with F704A.

The F772 forward bottom skin must be dimpled at those locations and nest in the countersinks. (to make sure I verified with VANS support and that's what they do as well).

Here is how it looks without the bottom skin.



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That was fairly easy. Next step was to countersink for the screw that goes through the side skin, bottom skin and lower longeron.

This is described in the plans on DWG38.

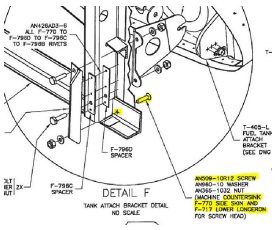
This is a bit confusing at first because the plans call for a rivet at this location on DWG28 so it's a bit unclear.

Called Vans support with the question if the rivet is indeed a small error on the plan and if I need to follow here the same principle as with the countersinks in the F704.
The answer was that the screw is indeed correct and that countersinking bottom skin and lower longeron, dimpling the side skin is a workable solution.

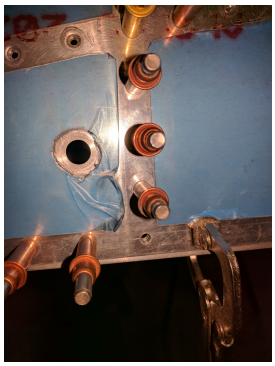
However they also stated that almost all builder countersink through all 3 parts (side skin F770, forward bottom skin and F717 lower longeron) and that that is also what they do on the quickbuilds.

A small note here: look at the plan below : machine countersink F770 and F717 for screw head). They don't mention the bottom skin here !

Make sure you install the bottom skin before you machine countersink for the screw or you are up for a surprise later.



I took the next picture before I realised something was wrong and the bottom skin needed to be on. This one is just to show you the location of the hole. The clamp will not be possible once the bottom skin is on.



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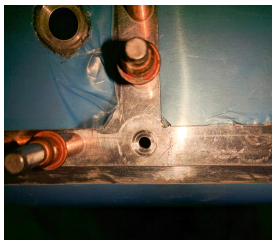
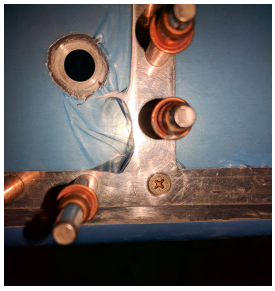
Here is a shot of the left side with the countersink made.

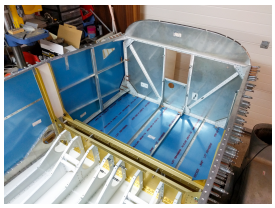


The screw now goes in and sits flush.

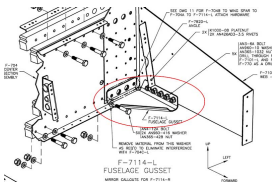


Did the same on the right side with good result

Then continued assembly of all the last parts including longerons and doublers.



Feels good to see her all together again.



Important update 9/12/2018 : This is a great point to final fit the

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F-7114 fuselage gussets. They are never mentioned in the manual when to install and when you realise you need them, it will be a more difficult fit.
If you read my earlier notes while mating the F-7101, you already edge deburred the F-7114 L and R and checked the fit on the mating with the F-704 wing mount holes and the F7101 gear attach webs. (I started mine when the bottom skin and side skin where already fitted on and had a lot of work getting them in good alignment). Do yourself a favor and fit them again now and matchdrill the 5 AN3 bolt holes through F-7101 and side skin.

Off course... I found some more stuff to do which I missed earlier. This proofs that it's a good idea to take the time to put it back together again before priming.

Reminder to self:

- last 2 holes on tail cone not dimpled both sides
- check open hole in bottom of tail cone
- trim away part of seat rib at F706 bulkhead
- enlarge hole to 1 inch for fuel line pass through in gear attach doubler both sides

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