

One more remaining task before the drilling of the vertical stabilizer is completed.

3 bolts that connect the bottom rear spar of the vertical stabilizer to the F-712 bulkhead and on the other side the back of the WD-409 tail spring mount.

The bottom middle bolt is quite easy. Just locate the center line and measure the distance as given on the plans, pilot drill and then upsize bit at a time #40, #30, #19, #12 and finally to 1/4" for an AN4 bolt.

The top ones are a bit more tricky. You need enough edge distance on the VS-401PP hinge bracket and also on the other side on the WD-409 tail spring mount back plate.

Easier said than done. There is not an easy way to measure this so there's a lot of guessing involved.

What is really bad is that on DWG27, all measurements given are relative to the WD409 top which is not visible nor accessible.

How I did it:

I measured the 2" 27/32 from the top of the tube above and drew a line there. To double check I measured with a cardboard the more or less height of the wd409 by placing the cardboard on the bottom tube and making a mark at the top. Even that is limited access and not as easy. Then took the cardboard to the back and held it in the same place on the tube of the tail wheel spring mount. Even that is not precise because the tube tilts slightly down so there will be a displacement, but as it goes down, your displacement will be on the safe side. The black line drawing of WD409 is the one with the cardboard. It more or less reassured me that I had enough edge distance on the front side if I would measure exactly.

Instead of measuring from the top line, I recalculated all distances from the bottom tube and went from there. That gave me the prescribed distance on the VS-410PP hinge and according to measurements also to the top of the WD409.

Then I worried again about the positioning from the sides and decided to very slightly move them inwards.

Measured and measured again and reassured myself I was going to be fine.

Drilled the first pilot hole and was very happy that the positioning came out very good.

First I drilled for AN3 and only later notices on the plans that these are AN4 bolts.

The top bolts are at 5/8" from the bottom of the hinge bracket which is according to plans.

They make this big exclamation mark on check for edge distance on the plan but this is really bullshit : there is no way you can get edge distance for an AN4 bolt.

My guess, this was originally designed for AN3 bolts and there all distances are ok for having edge distance. But for an AN4 there is absolutly no way you can achieve edge distance on the parts given all the dimensions on the plans.

Remind from previous article that I lowered my vertical stab rear spar all the way to the bottom of the tail spring tube, meaning, you can't get any lower and believe me, it's much much lower than the 7 11/32 from hinge to longeron as on DWG27A. That gave me more overlap on the VS410PP and WD409. So if you work with the dimension on the plan, be prepared that your error margin will be even smaller.
I'm very glad it came out this way.

Here the 3 AN4 bolts are drilled and installed



Look from inside



This is the look on the back of the WD-409, couldn't be better in my opinion.

07/08/2019 - Drilling 3 remaining bolts bottom vertical stabilo - 2H

Category: 3.11. Empennage mounting

Published: Friday, 30 August 2019 07:07

Hits: 1137

