

Center-Fuselage

2022-03-13



The center fuselage is a bit of a 3D puzzle. You need to cleco as far ahead as possible to see in which order parts can be riveted without interference. The KAI is not very helpful in this regard.

The center console is easy to build except for the park brake valve, which does not fit the supplied fittings. The 90° brake line fittings are NPT and the valve is BSPT. At least in Europe I was not able to find the valve with NPT threads. Fortunately the NPT/BSPT adapter fits under the cover. I connected the brake cylinder to the farther away fitting, which puts that short tube under less stress in my opinion .



park brake valve



brake cylinder



After installing the canopy and the parachute cables it was time to secure the engine mount. The lower bolts look fine. The upper bolts (AN5-10A left and AN5-7A right) are not long enough I think. I swapped the bolts with AN5-11A on the engine mount and AN5-10A on the parachute mount and I changed the direction to be able to check thenuts regularly.



lower engine mount bolt

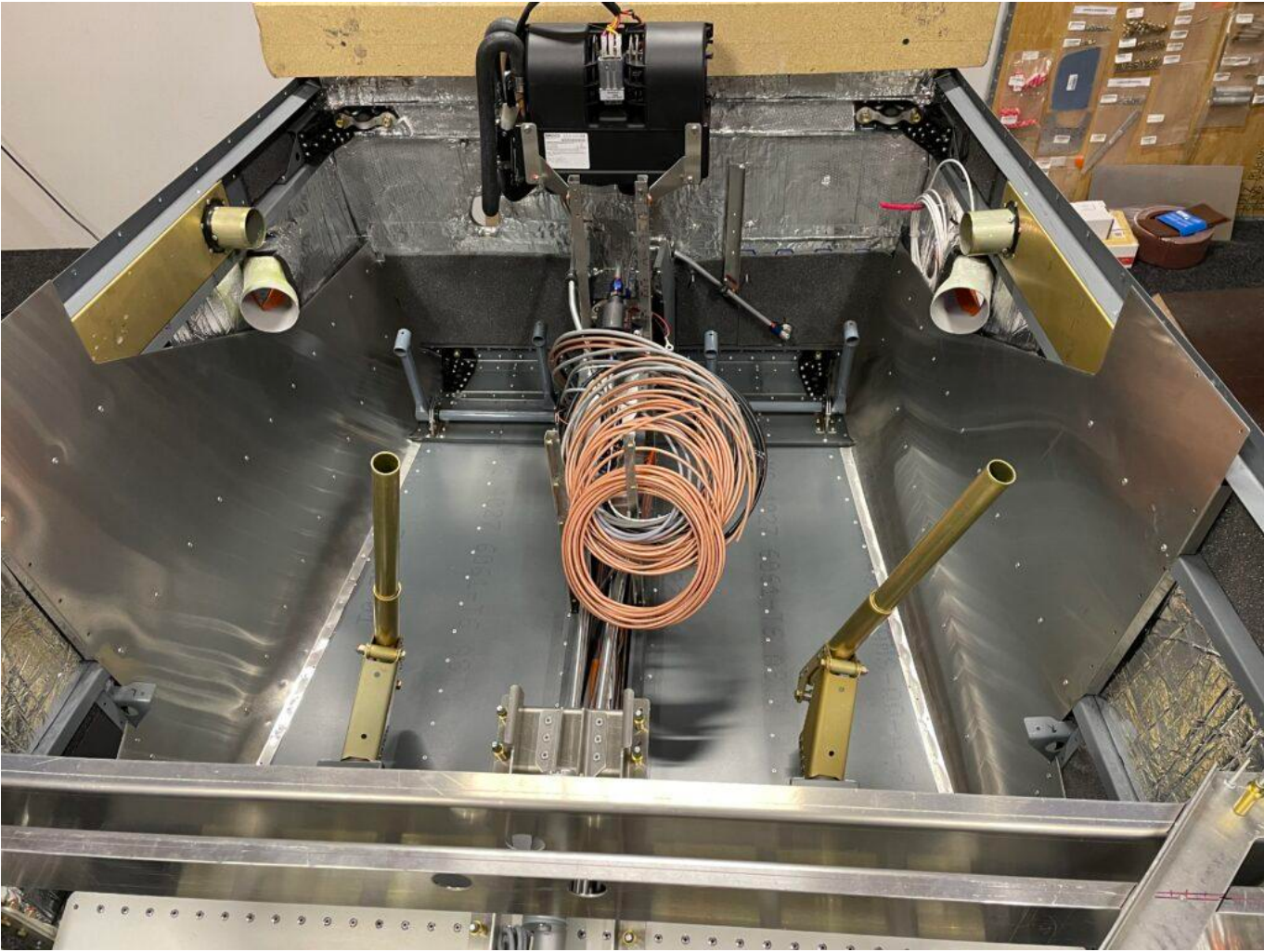


left side upper engine mount bolts are too short



new longer bolts ...

The interior skins need some trimming and drilling on the lower rivet holes and on the forward edge because I added insulation and fire protection on the inside of the firewall. The interior skins have foam on the back side for extra sound proofing. I installed an extra 1mm aluminum panel on the floor because the floor feels really flimsy and some more weight in the front is a good thing in the TSi.

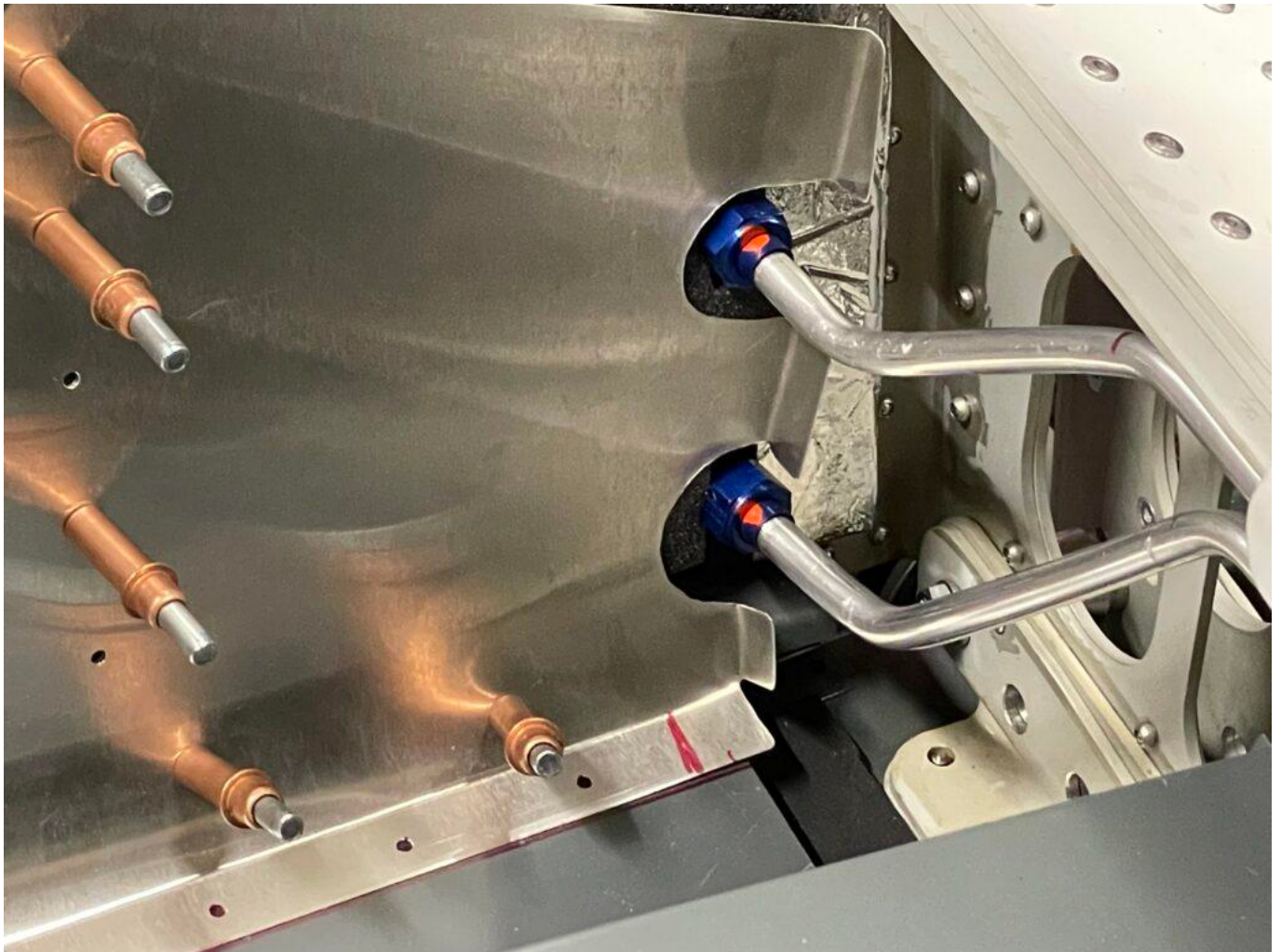




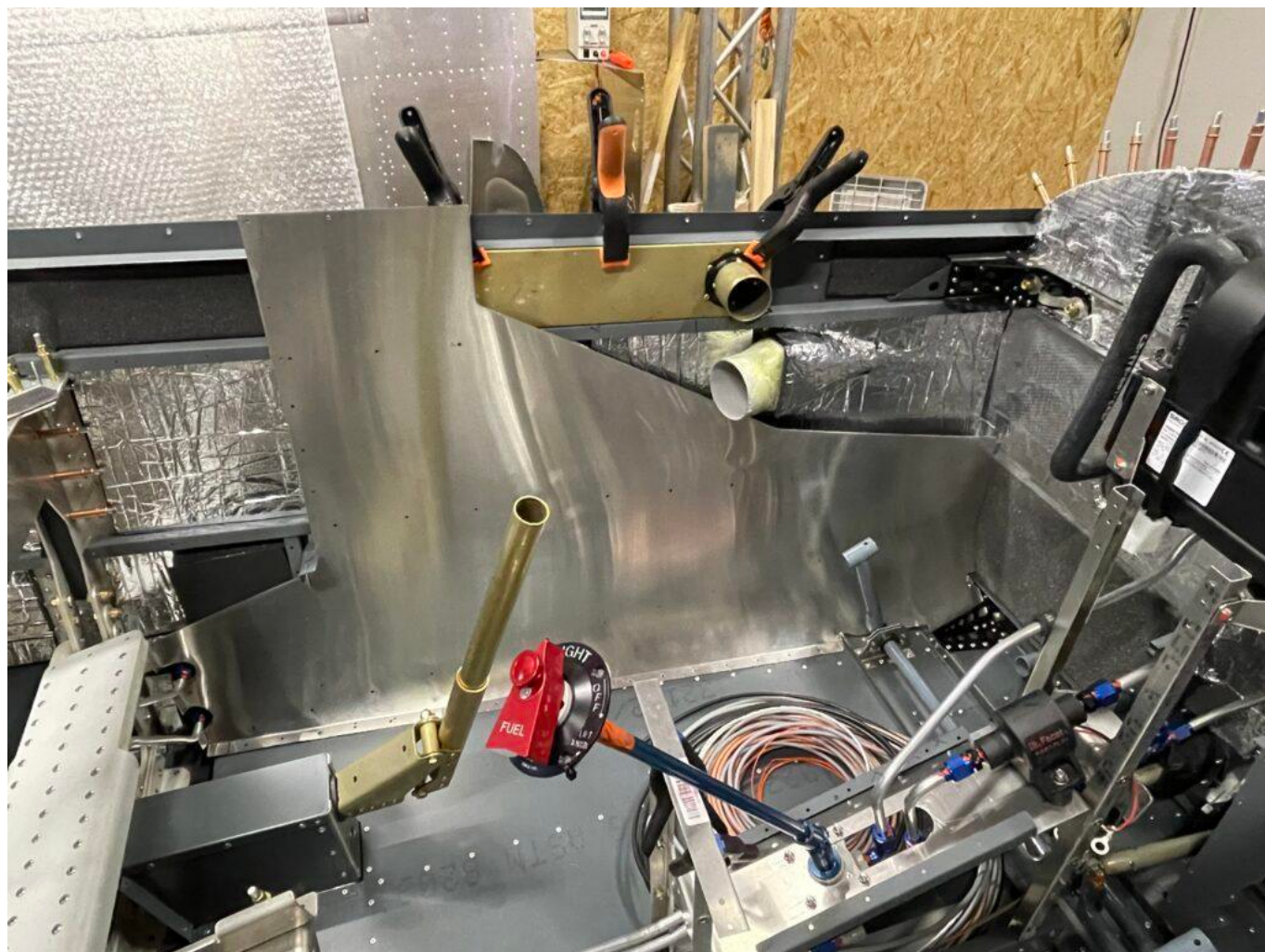




The interior skins need a bit of trimming because of the aluminum fuel lines and the extra insulation of the firewall. Almost none of the rivets connecting the floor to the interior skins did match and had to be drilled. I insulated the air duct to the rear seats with the thin foam from TAF to keep the air warm when the heater is needed.

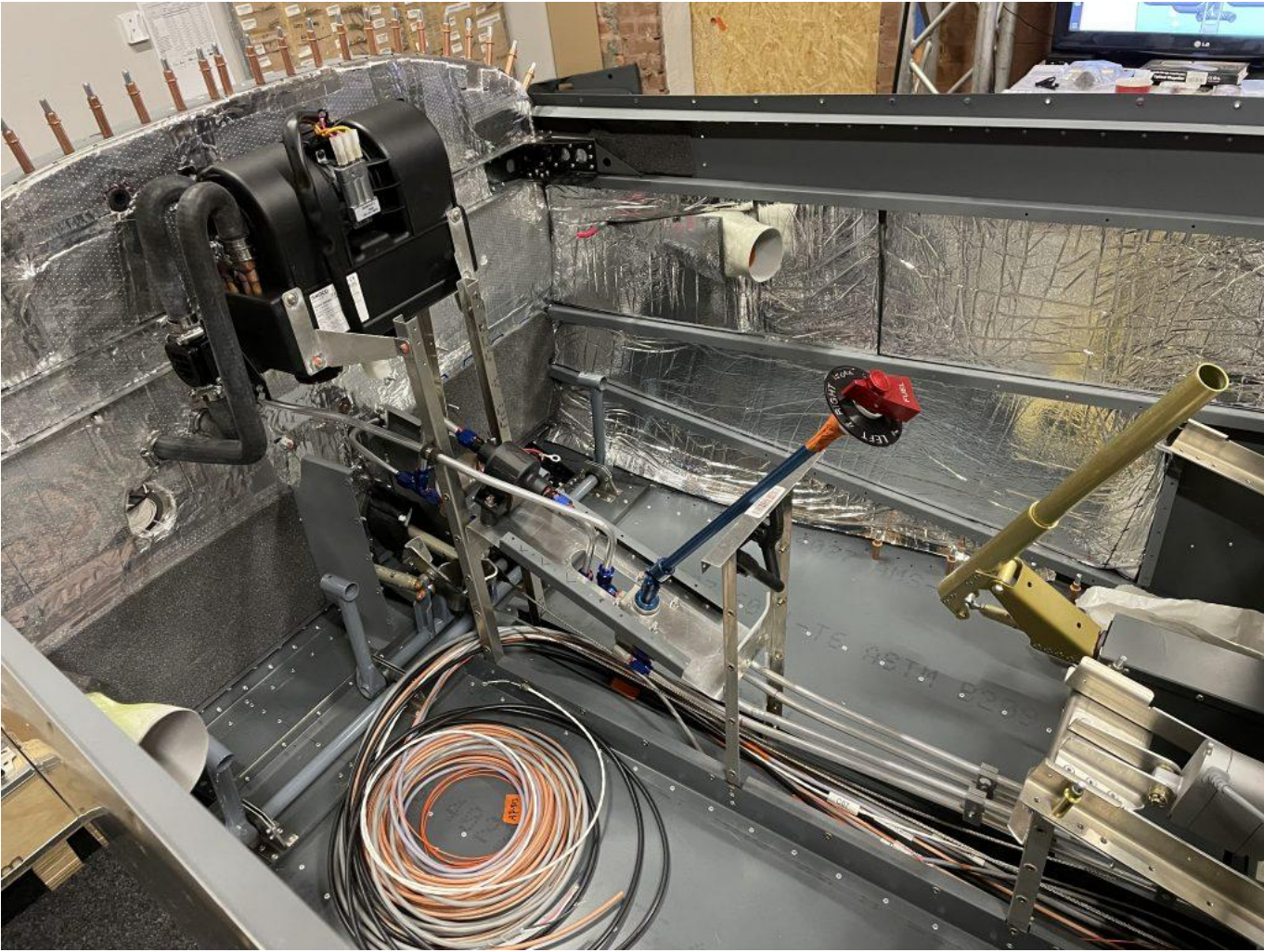


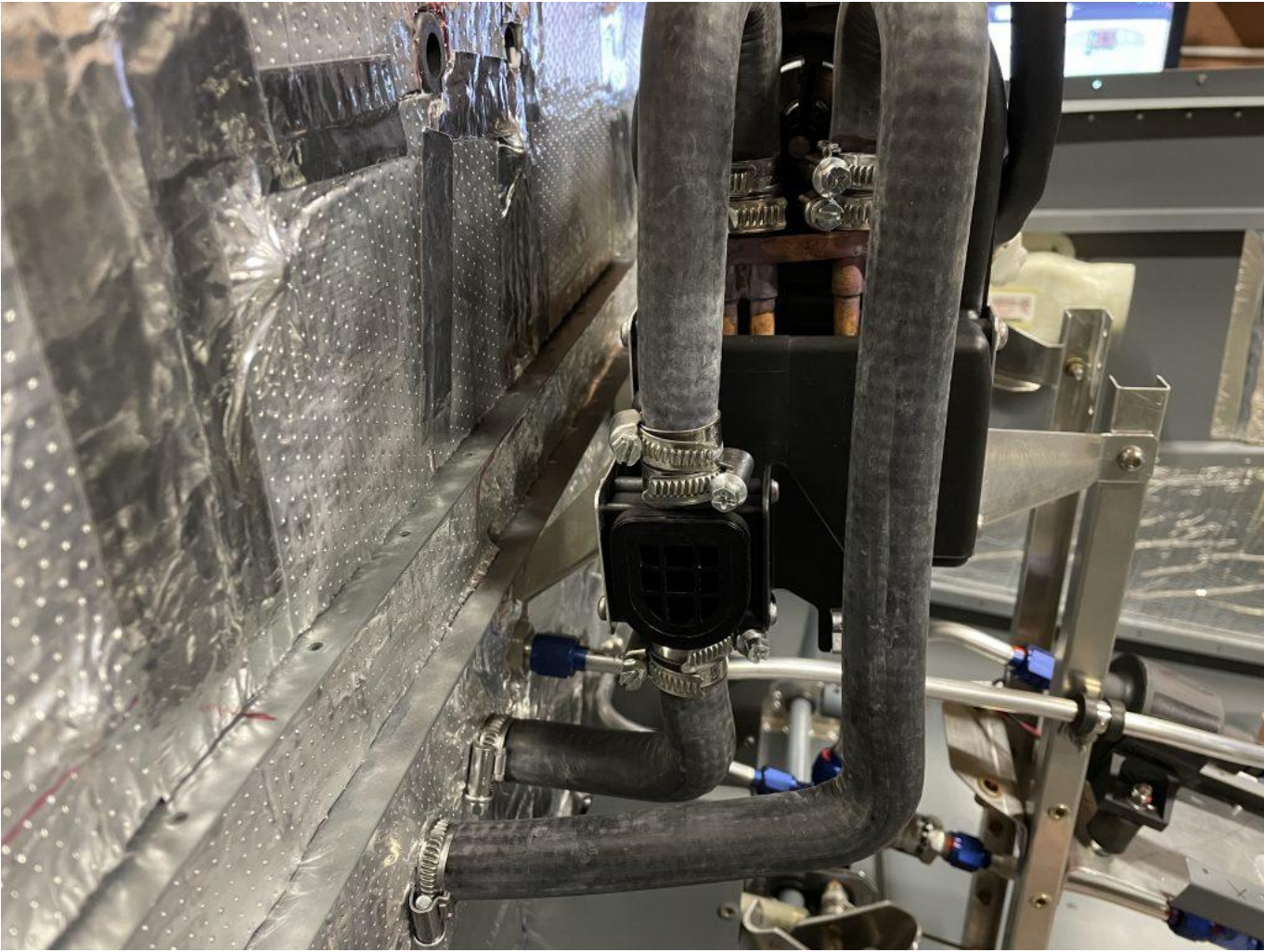
Fuel Lines Cutout

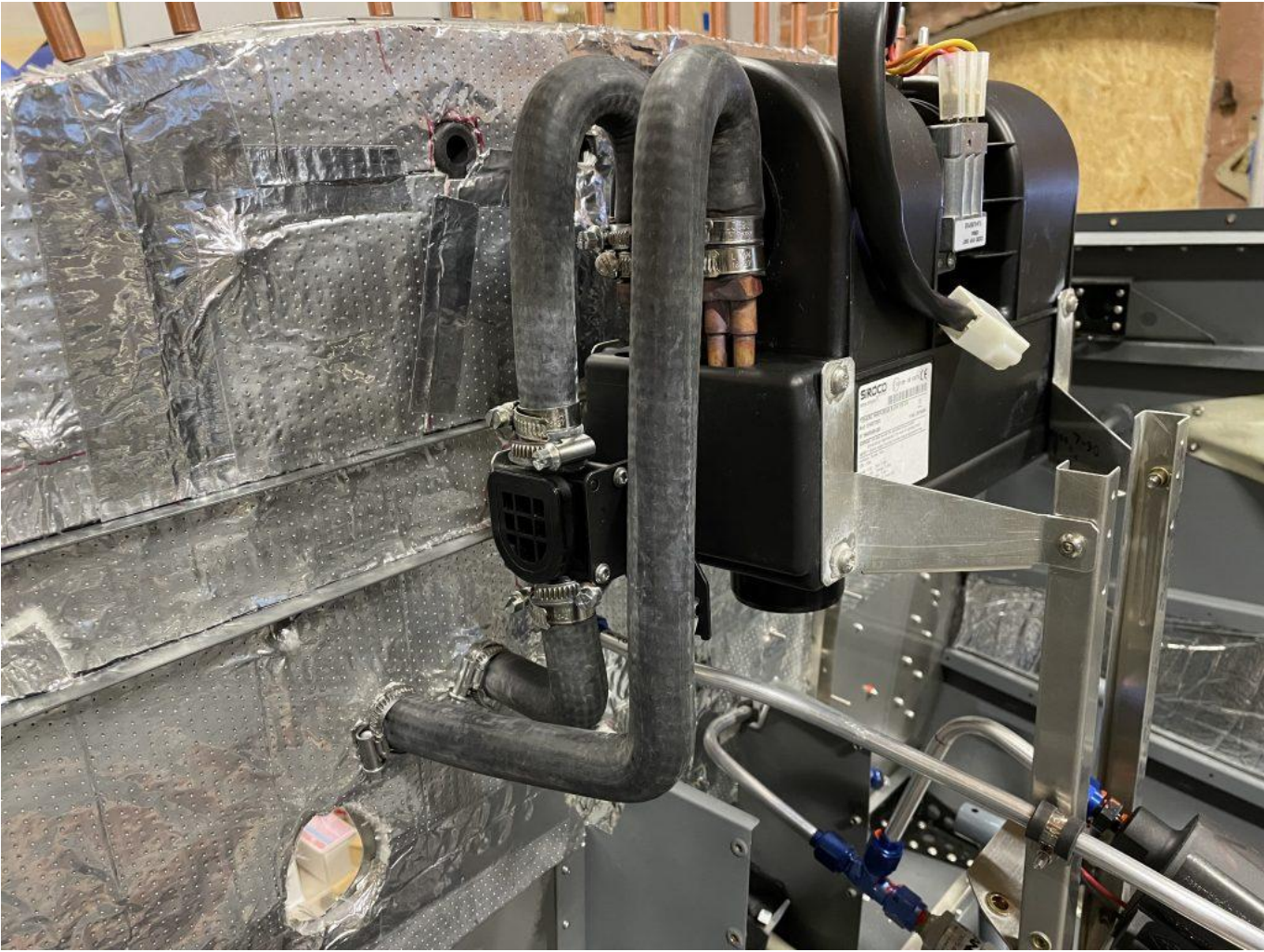




Heater installation is a straight forward process as described in the manual. Since I do not trust hose clamps too much, I installed self adjusting steel clamps like Rotax uses on the engine. (not shown on the pictures)







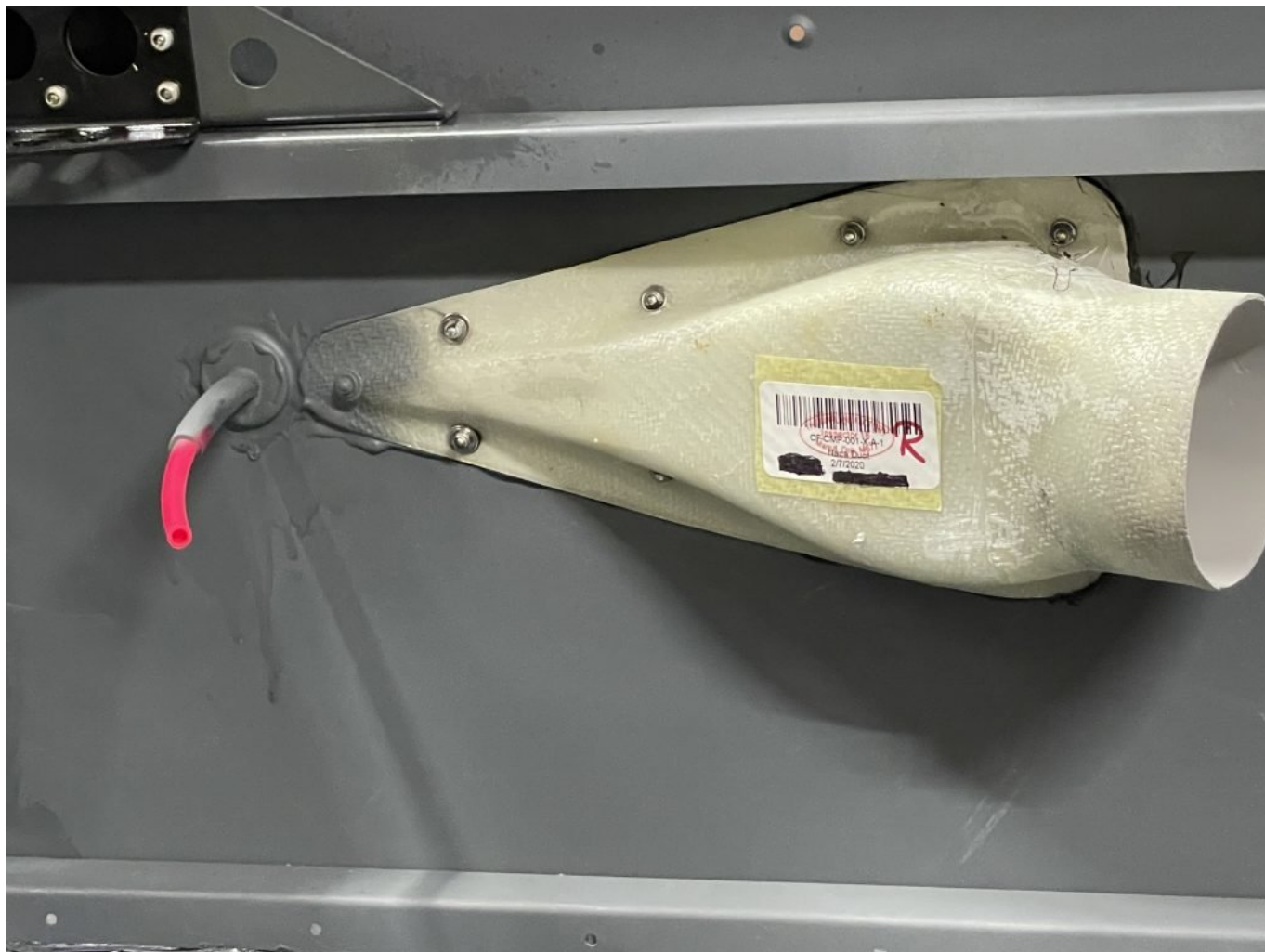


steel clamp

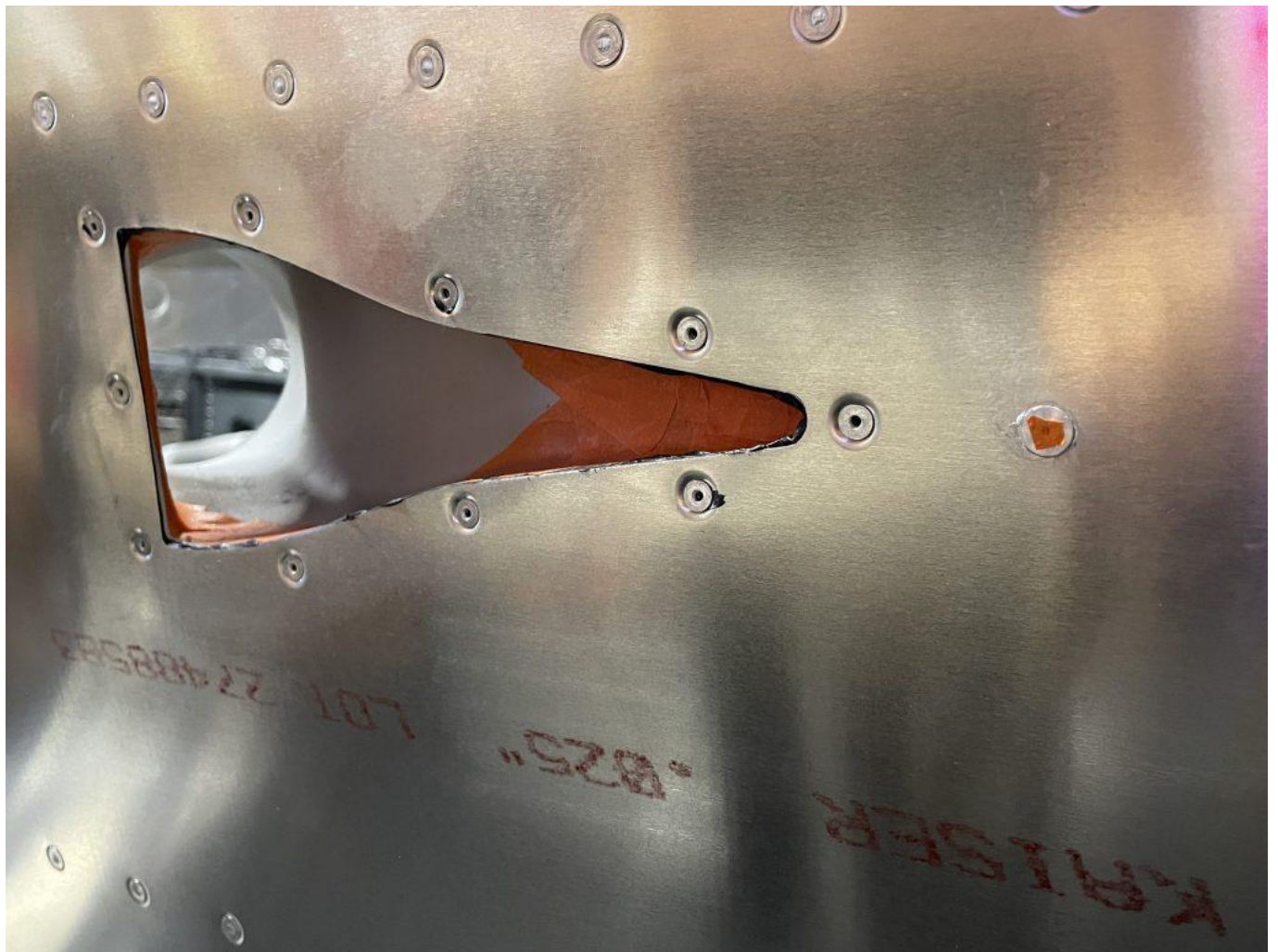
I added M4 washers to the naca duct rivets to spread the load. The inside of the firewall has been insulated with the same material as the engine side. Hopefully this will aid noise reduction.







Static Port

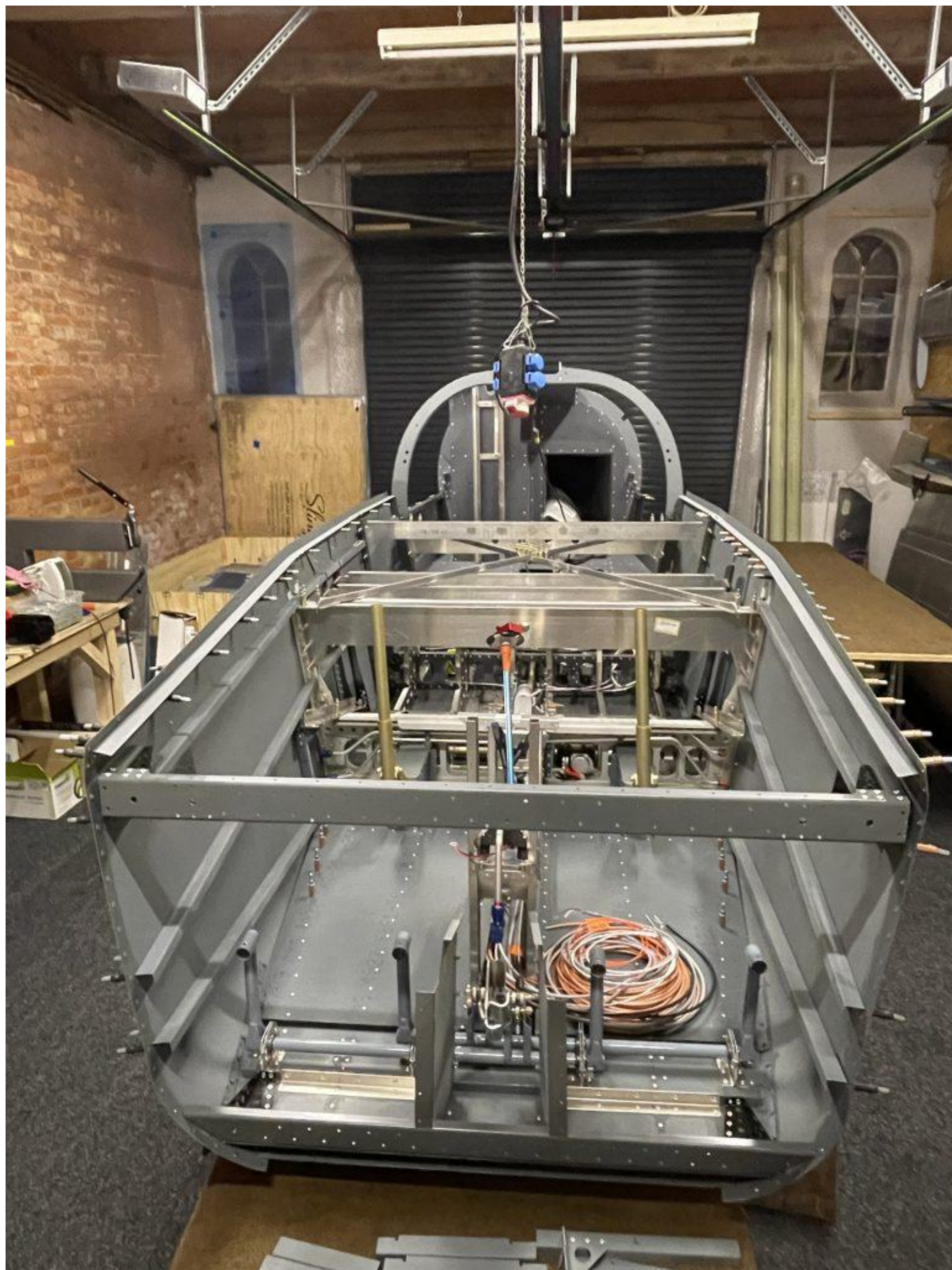


Installing the side skins and the naca ducts. The Sika sealer needs to be removed.





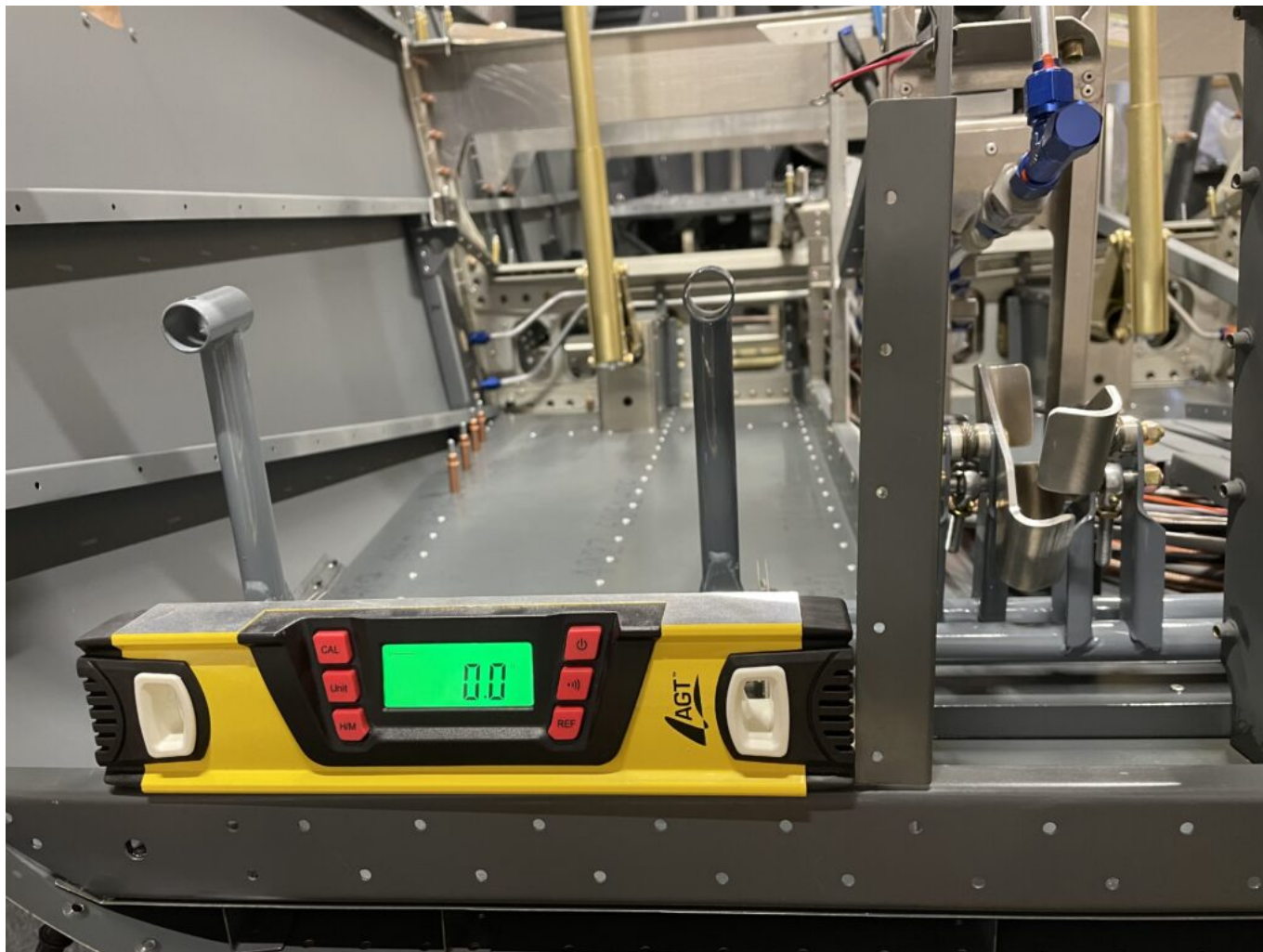












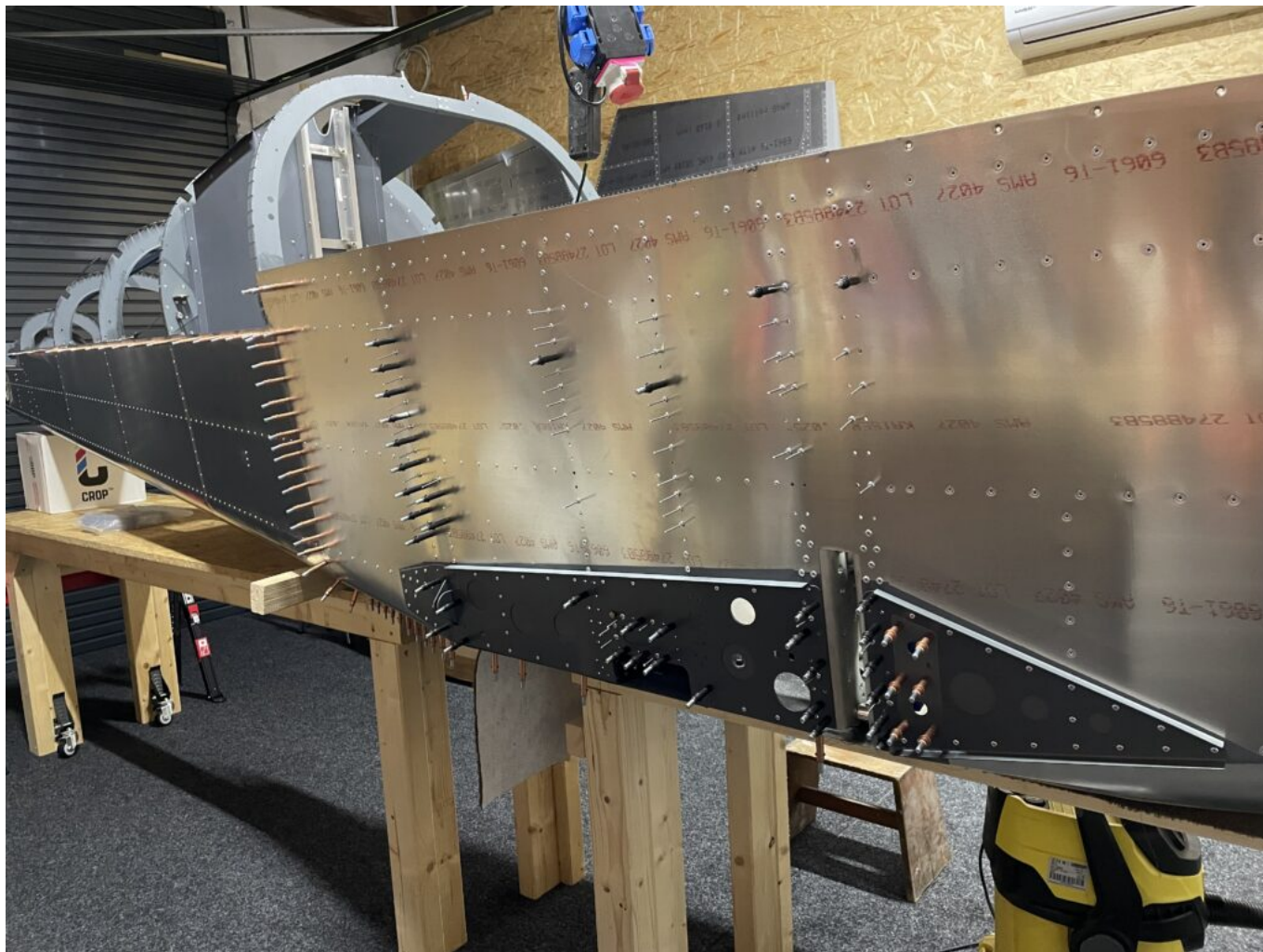
Before mounting the side skins I made sure that everything is level.







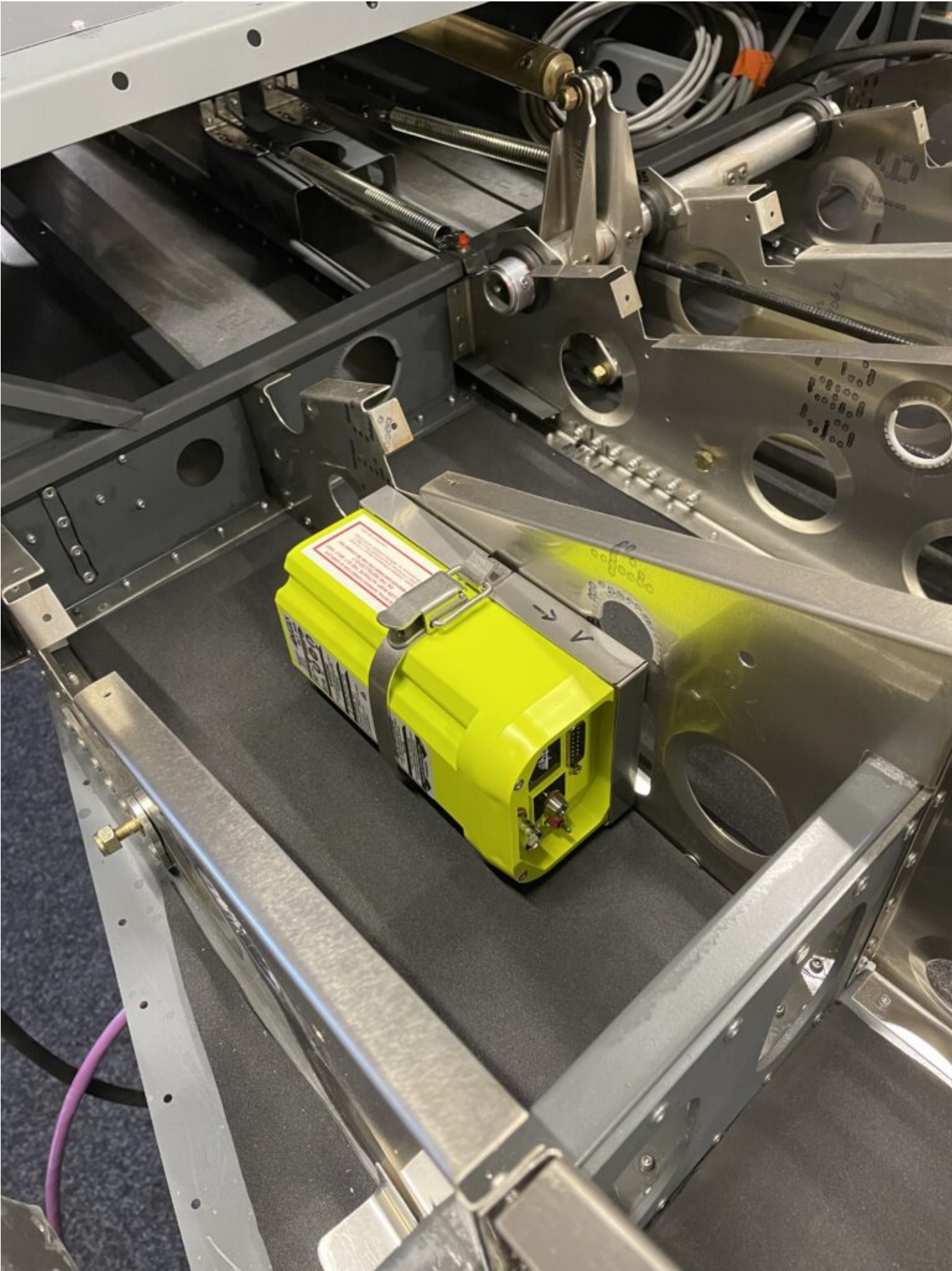




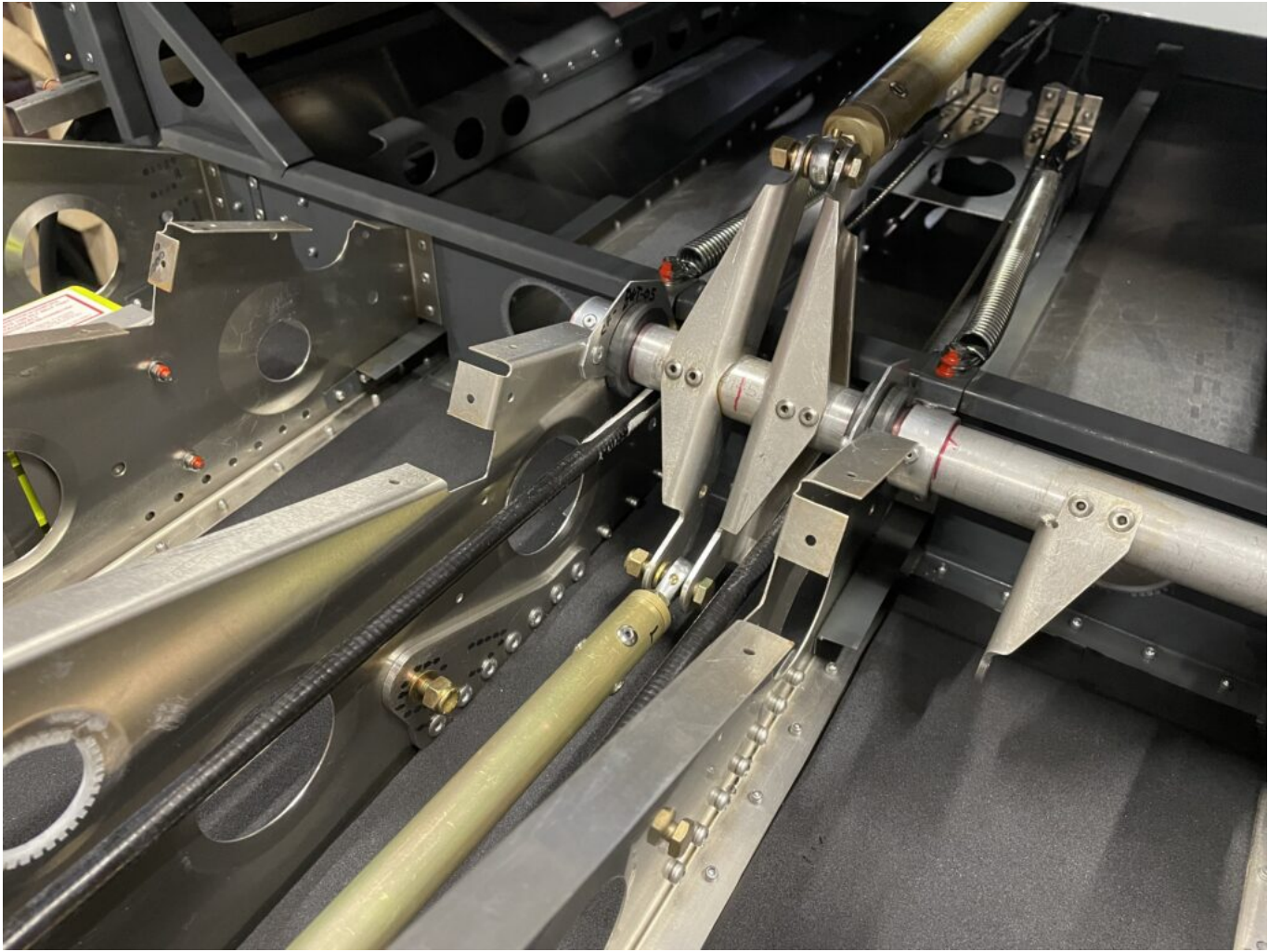
The new elevator autopilot bracket “feels” 5 times more rigid than the old one :

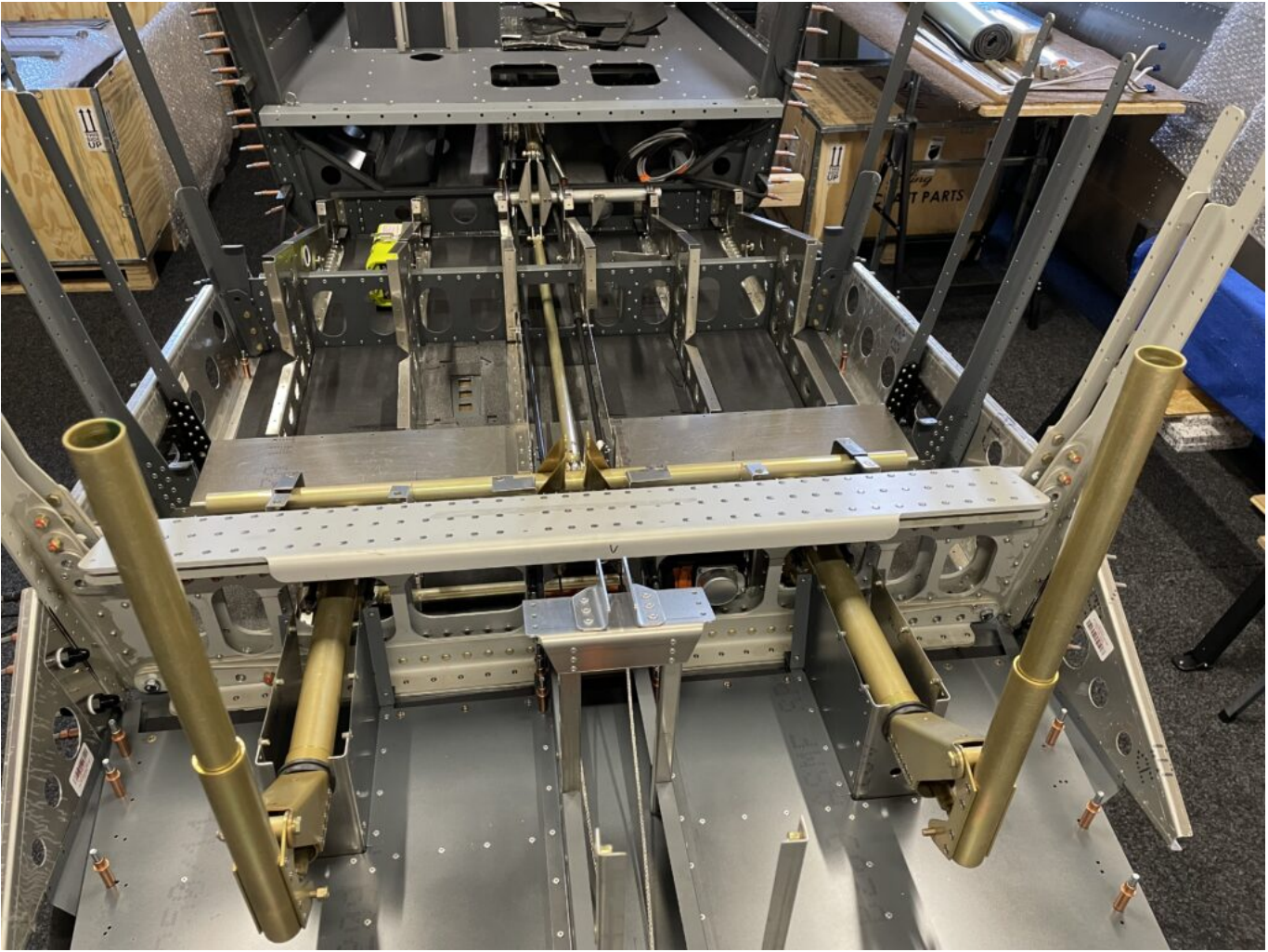


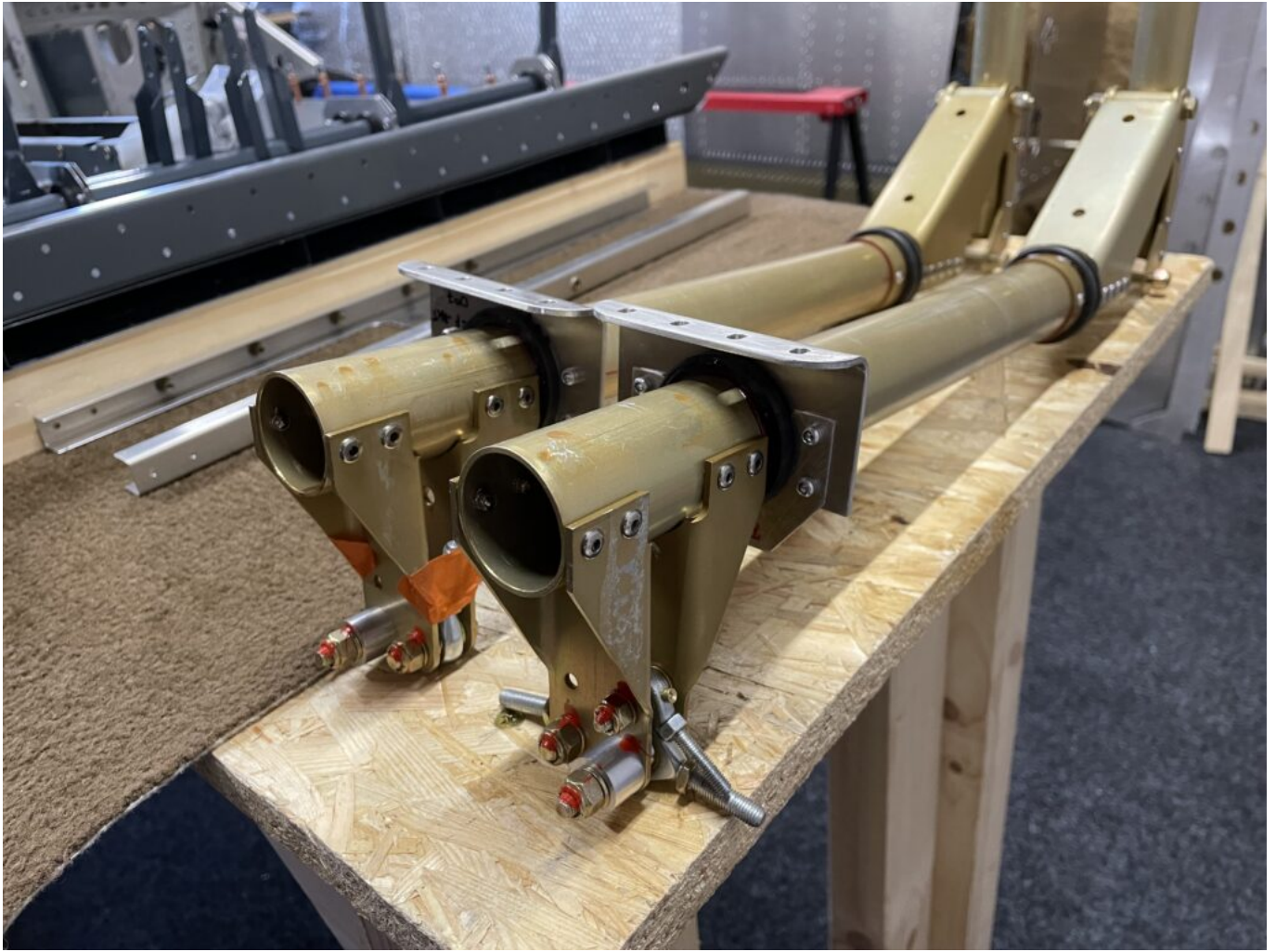
I mounted the Artex 345 ELT on one of the ribs under the rear seats. Using two existing holes, I had to drill only two new holes. Test fitting the control linkages looks good so far. I'll mount the eye-bolts on the control stick before inserting them. Much easier to work outside the fuselage with all the washers and bolts.



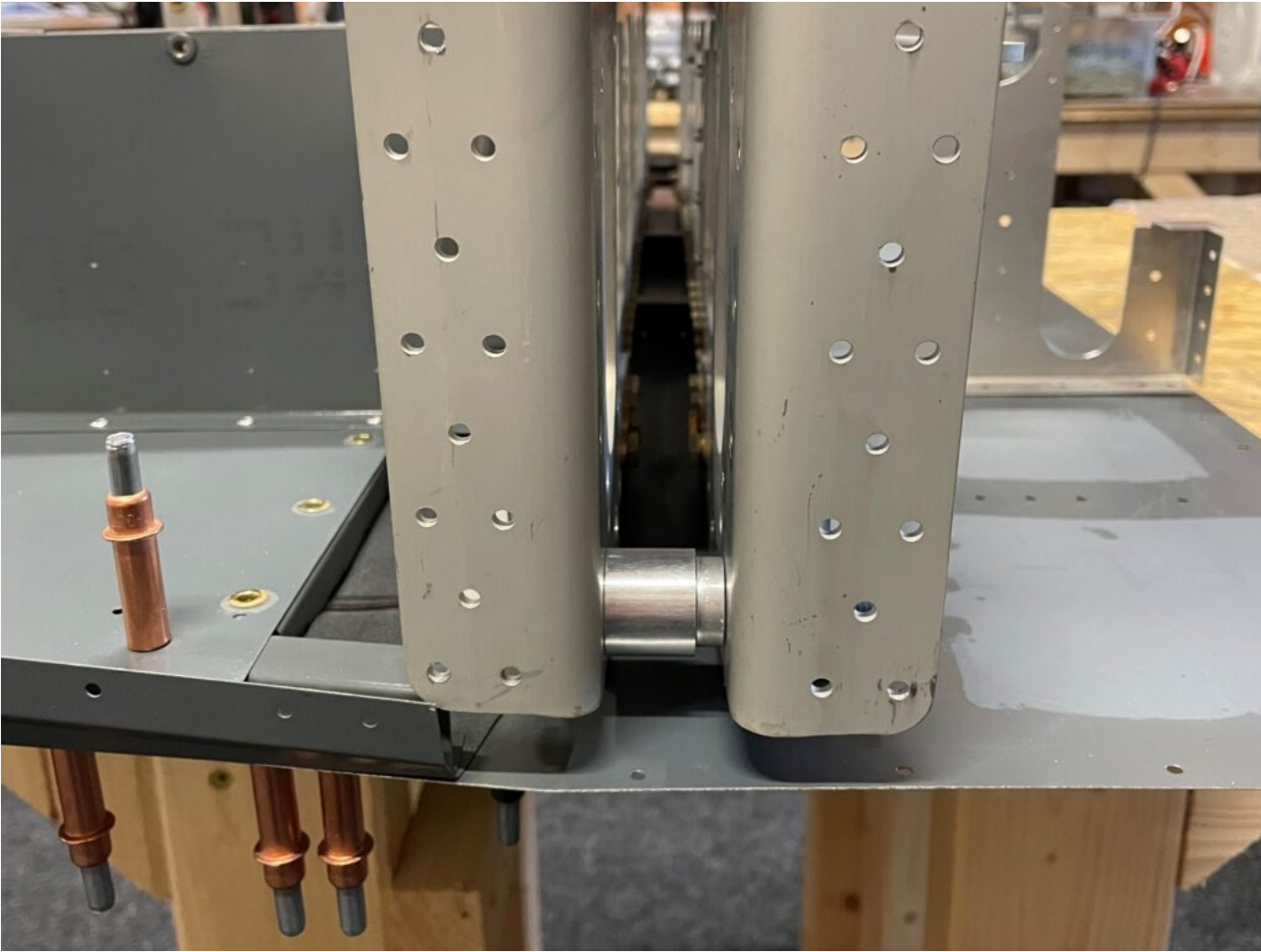




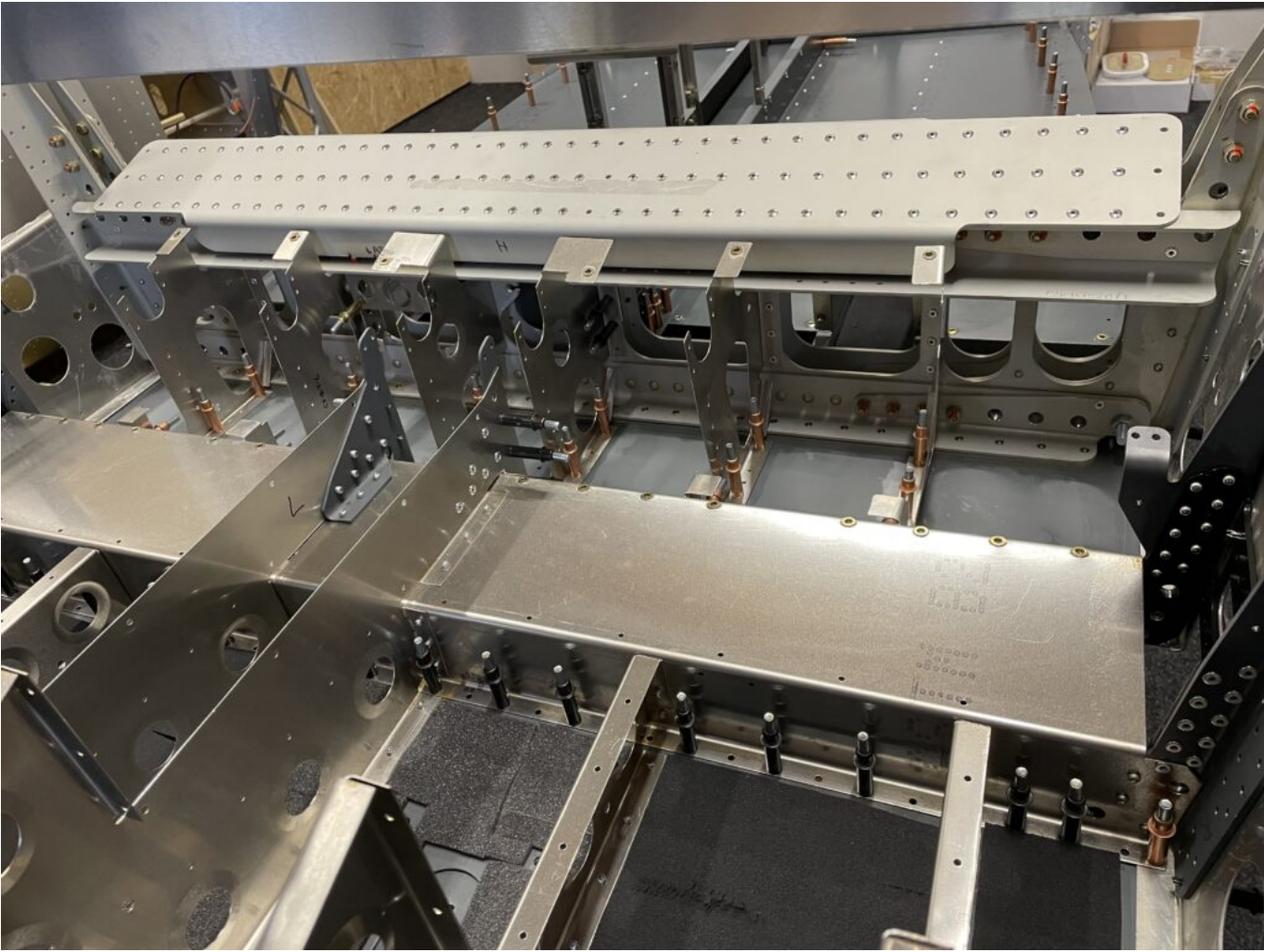


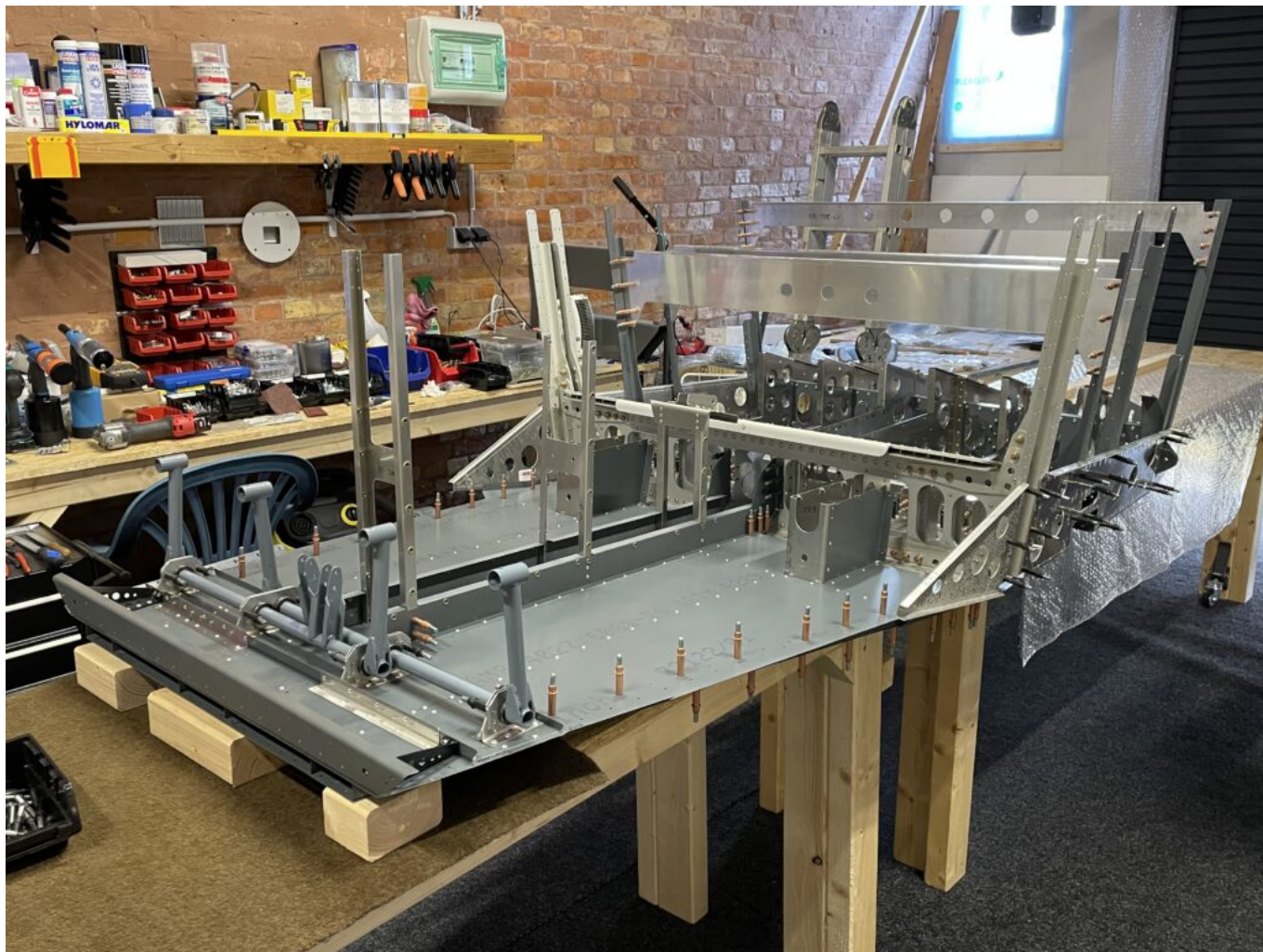


The main spar carry through has an aluminum spacer of the exact size of the main spar. The stainless steel rivets for the main spar carry through are dipped in CoreBan23 before riveting for corrosion protection.

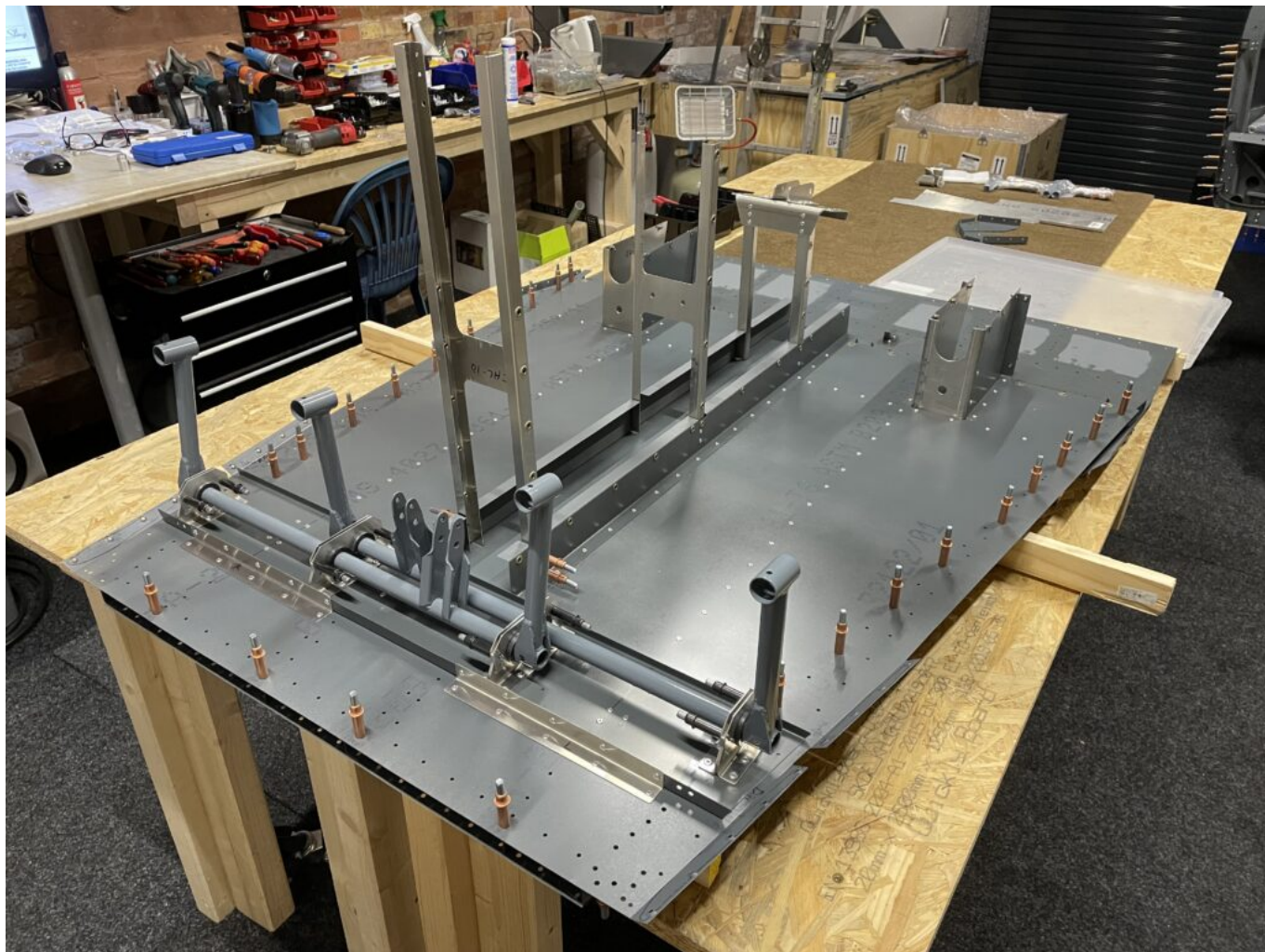


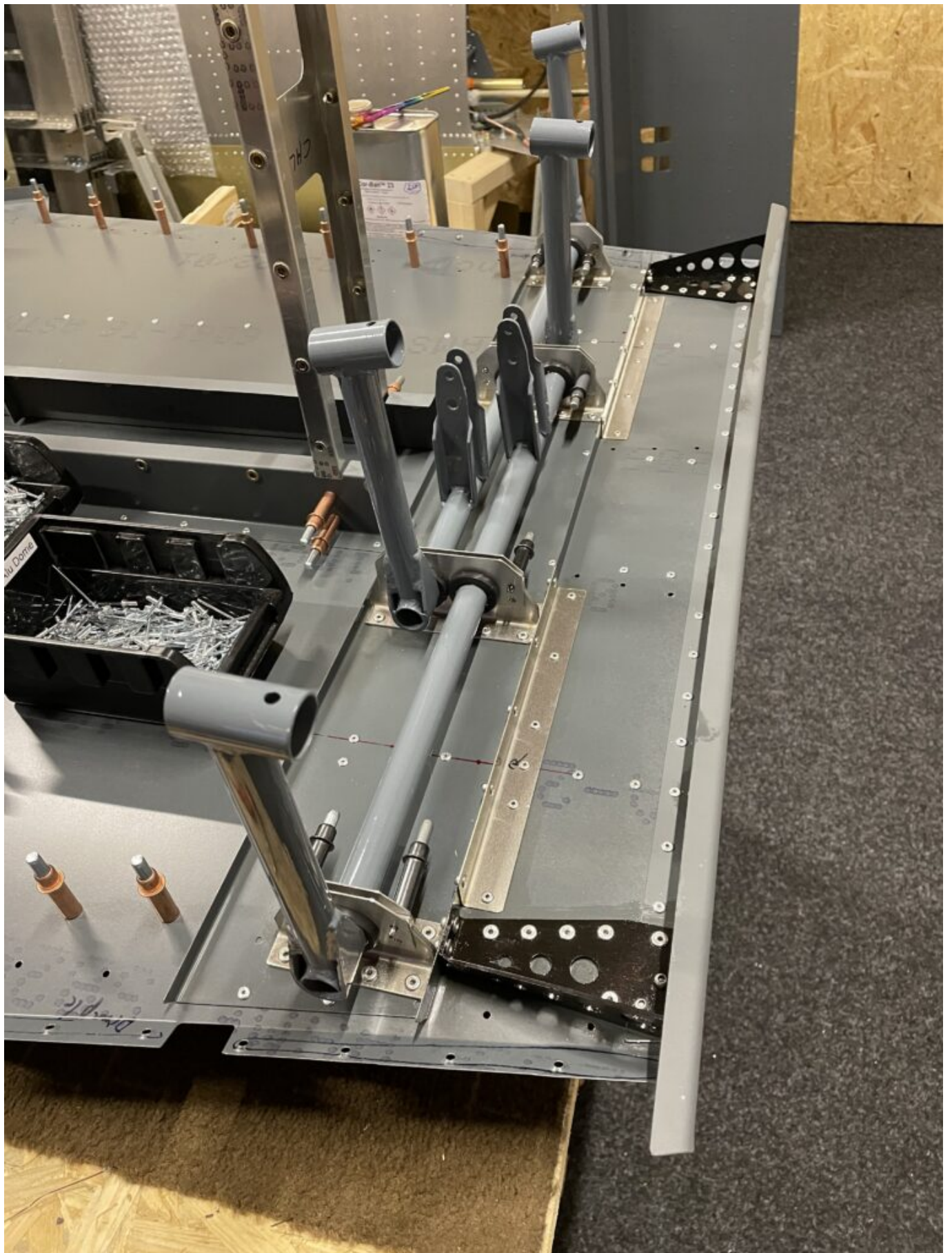






After waiting 4 weeks on a new u-channel for the center fuselage floor, I could install the floor skin and continue with the rudder pedals.



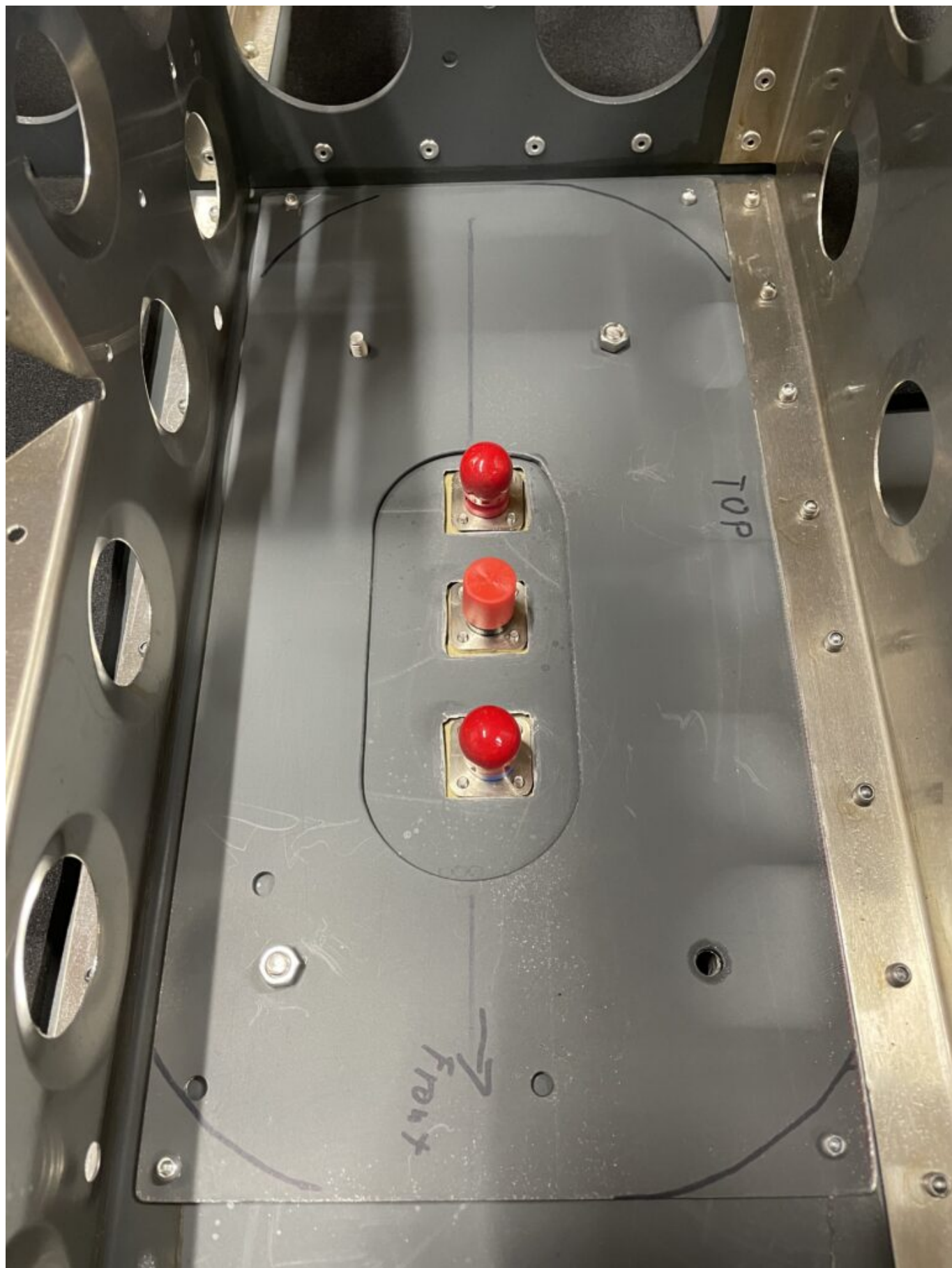




The directional antenna for the Lynx NGT-9000 is quite big, so I mounted it on the center fuselage just behind the gear channel. The doubler plate is made from the wing jig. That's why the oval hole is not centered (used to be the handle hole).

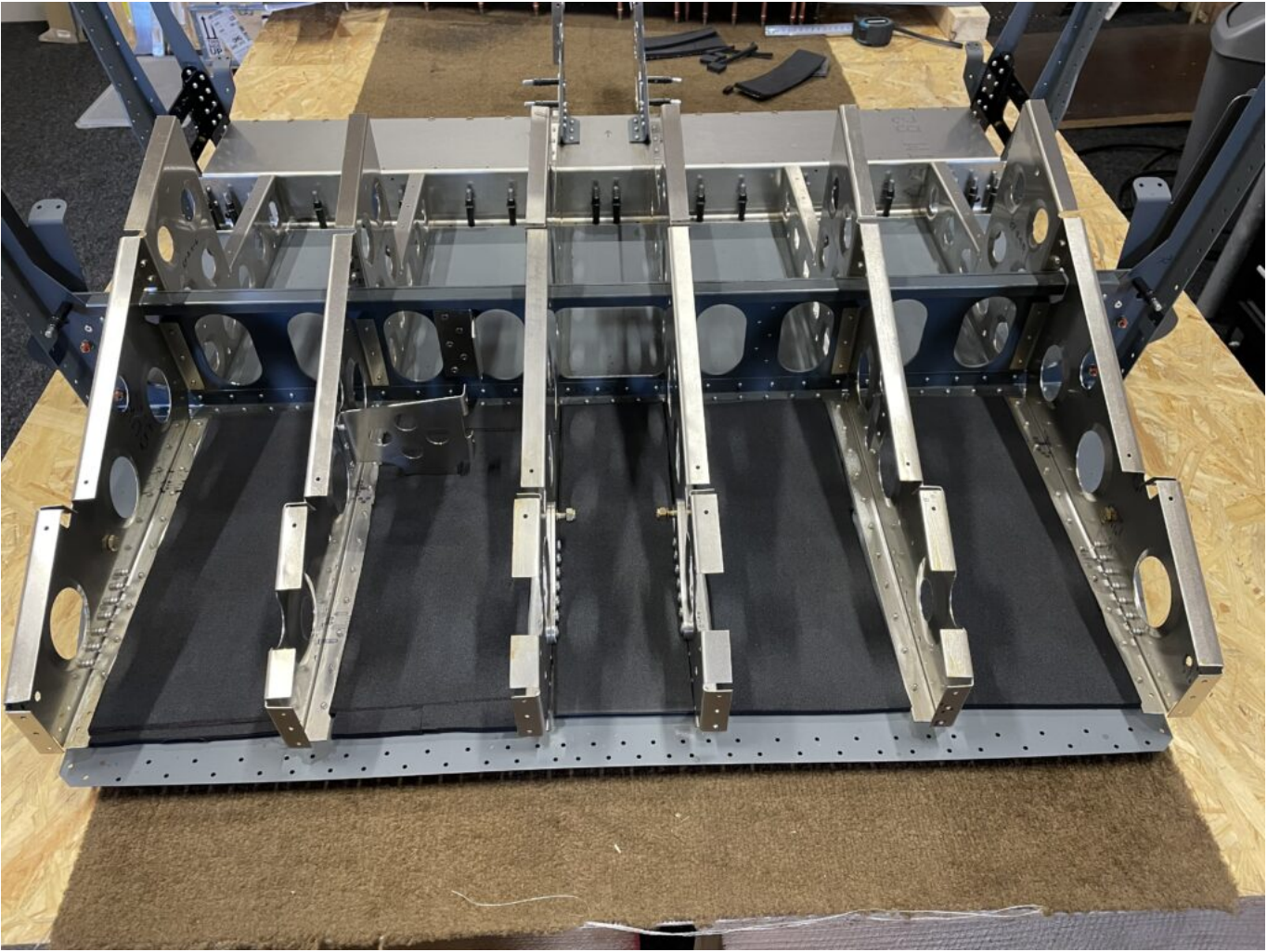












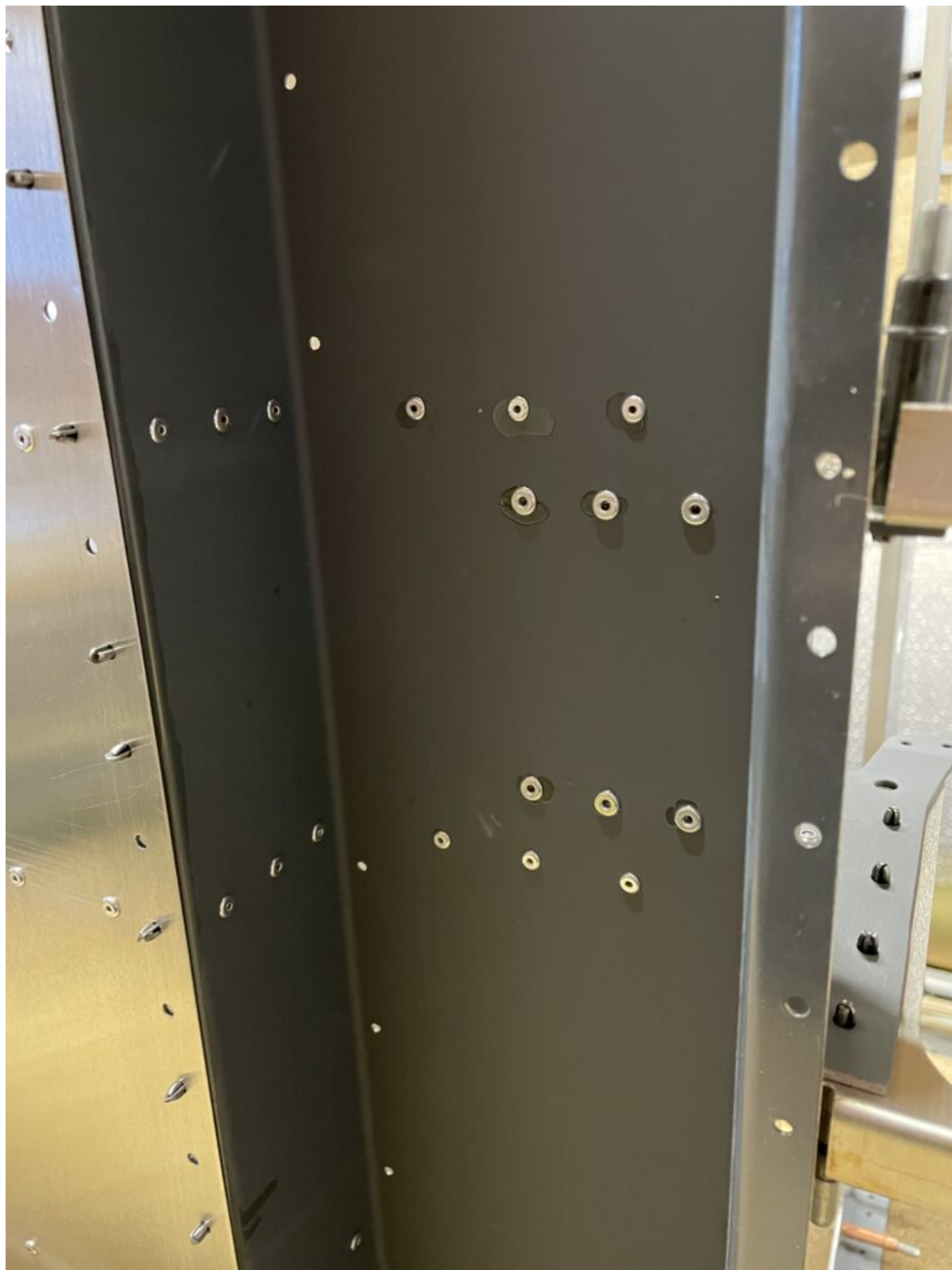


Center Fuselage Insulation









From some factory photos you can see that most of the rivets in the landing gear channel are installed from the inside of the gear channel to avoid interference with the landing gear. The KAI shows the rivets to be installed from the outside.