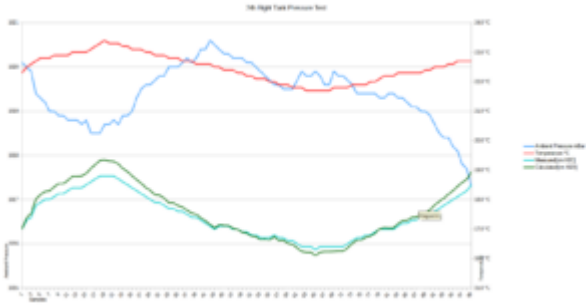
Tanks

2020-08-15



Both tanks are airtight now!

The tanks have been “quick-build” for me by the factory. I didn’t want to mess with Proseal. After buying a few AN6 hose fittings and a Schrader valve, I conducted a pressure test like Pascal Latten did it.

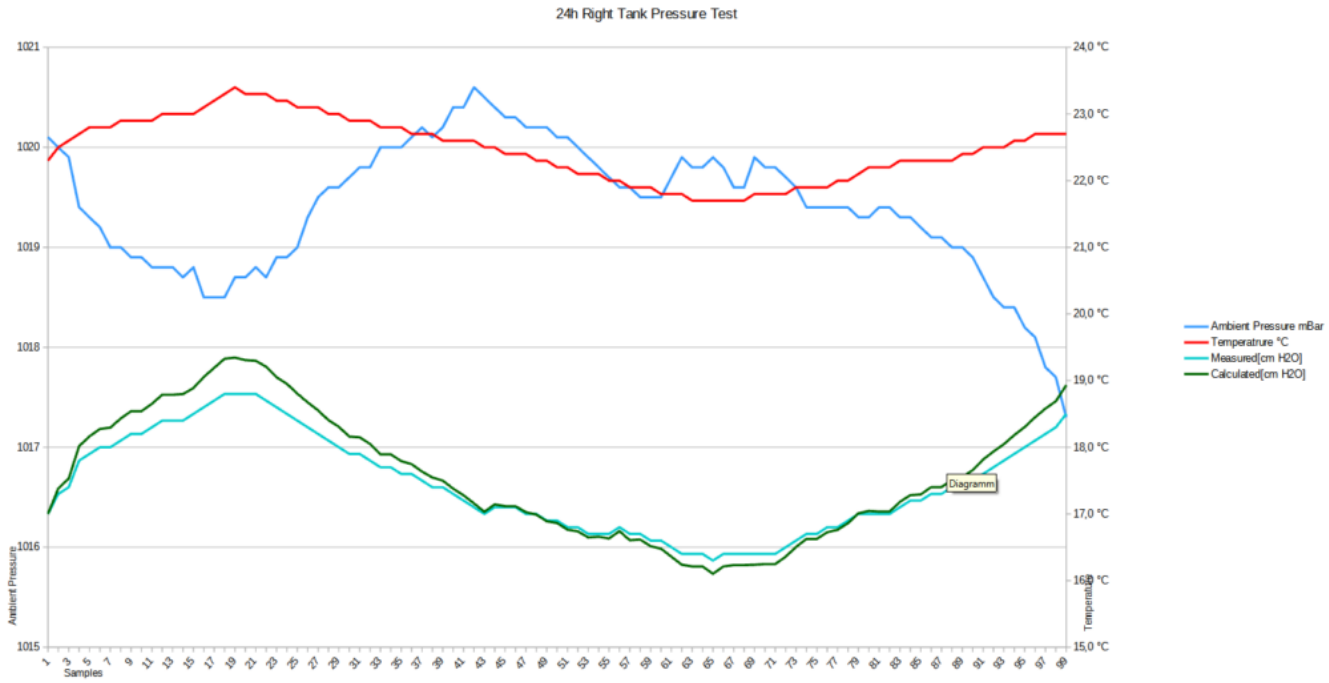
So far the left tank looks good. The right tank is loosing pressure so fast, I can see the water level change within minutes. Since the same hose fittings and AN6 end cap work fine on the left tank and the fuel cap passes the “bubble-test” I fear it’s a rivet…

Found the leak with a fluorescent fluid. On the left picture you can see the position of the failed rivet on a bracket outside the tank. The next two pictures show the rivet with and without UV light. It’s almost impossible to see the fluid without UV light.

Now I’m waiting on instructions how to fix it… TAF told me to use Proseal or Chemseal CS3204 B2 and seal it from the inside. The Chemseal (Flamemaster) cartridge was too small to fit in a standard caulking gun. I had to 3D-print two adaptor rings make it fit. This stuff is not nice to work with. Even worse to work inside the tank without direct sight. I hope the leak is sealed now, but I need to wait 30 hours for the Chemseal to cure before the next leak test.

The tank is pressurized to 1.5 PSI which corresponds to ~105cm water

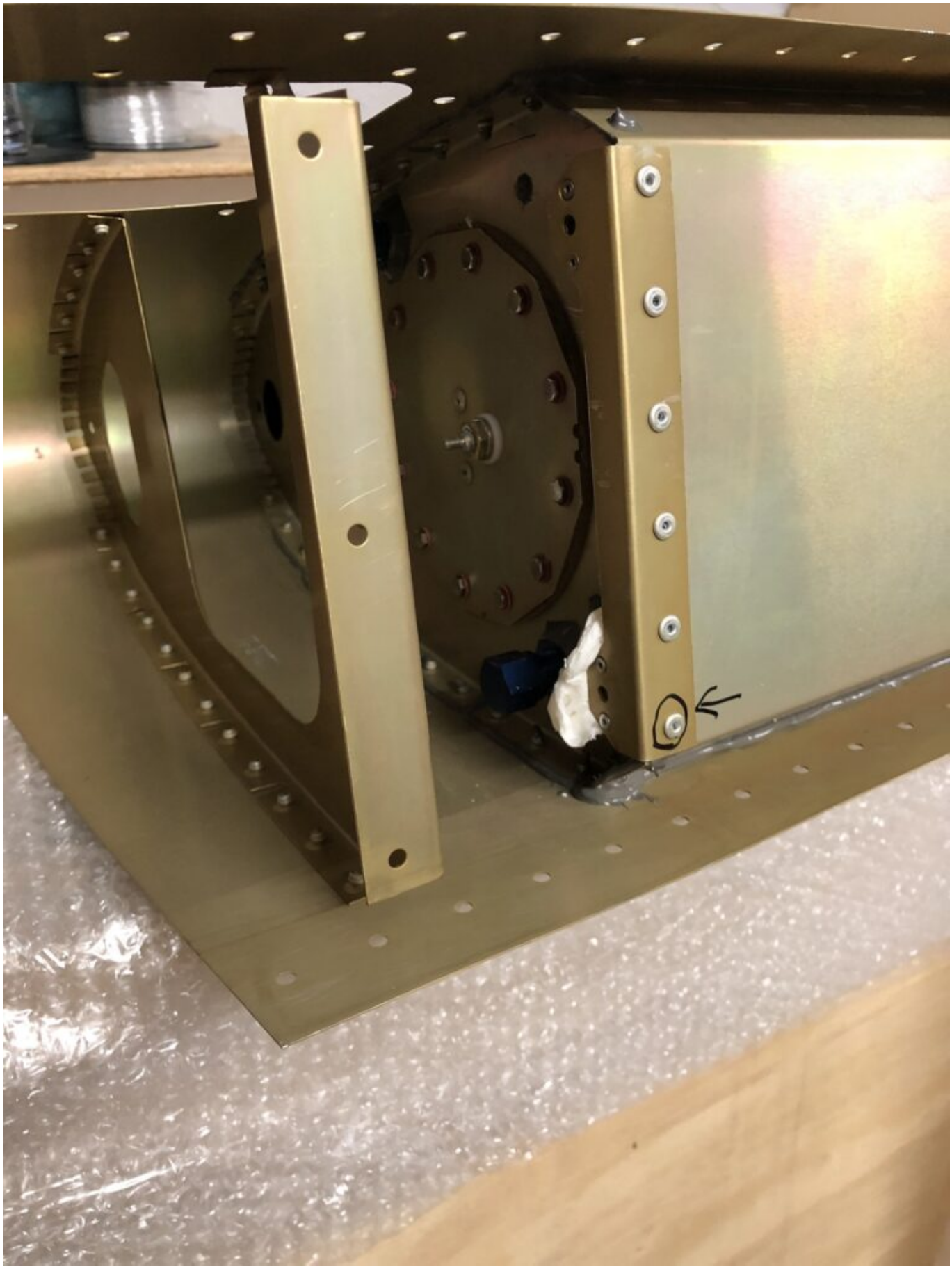
level in the tube. With the U shaped tubing I need ~52cm rise on one side of the U-tube. The RasperryPi records temperature, ambient pressure and takes a photo of the water level in the tube every 15min for 24h. The resulting diagram should show a constant air mass (not pressure) inside the tank when normalized against ambient pressure and temperature changes. Came out pretty good as you can see on the diagram (lower 2 lines).



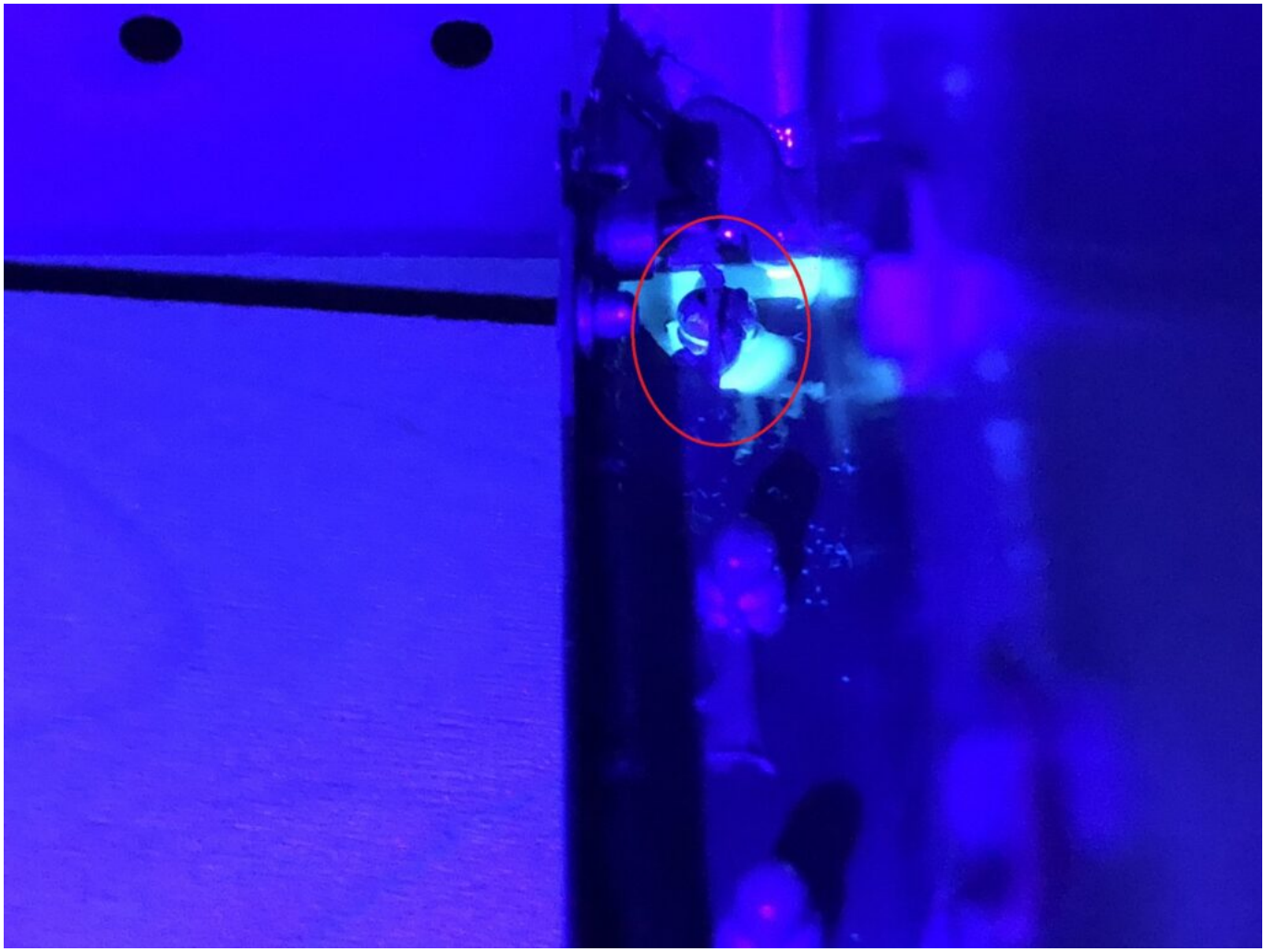
Temperature and ambient pressure change the water level in the tube. The water level will rise when the air gets warmer or the ambient pressure drops. The green line is the calculated water level corrected by temperature and ambient pressure. The video shows the water level change due to the changing ambient pressure and temperature.

ambient pressure changes

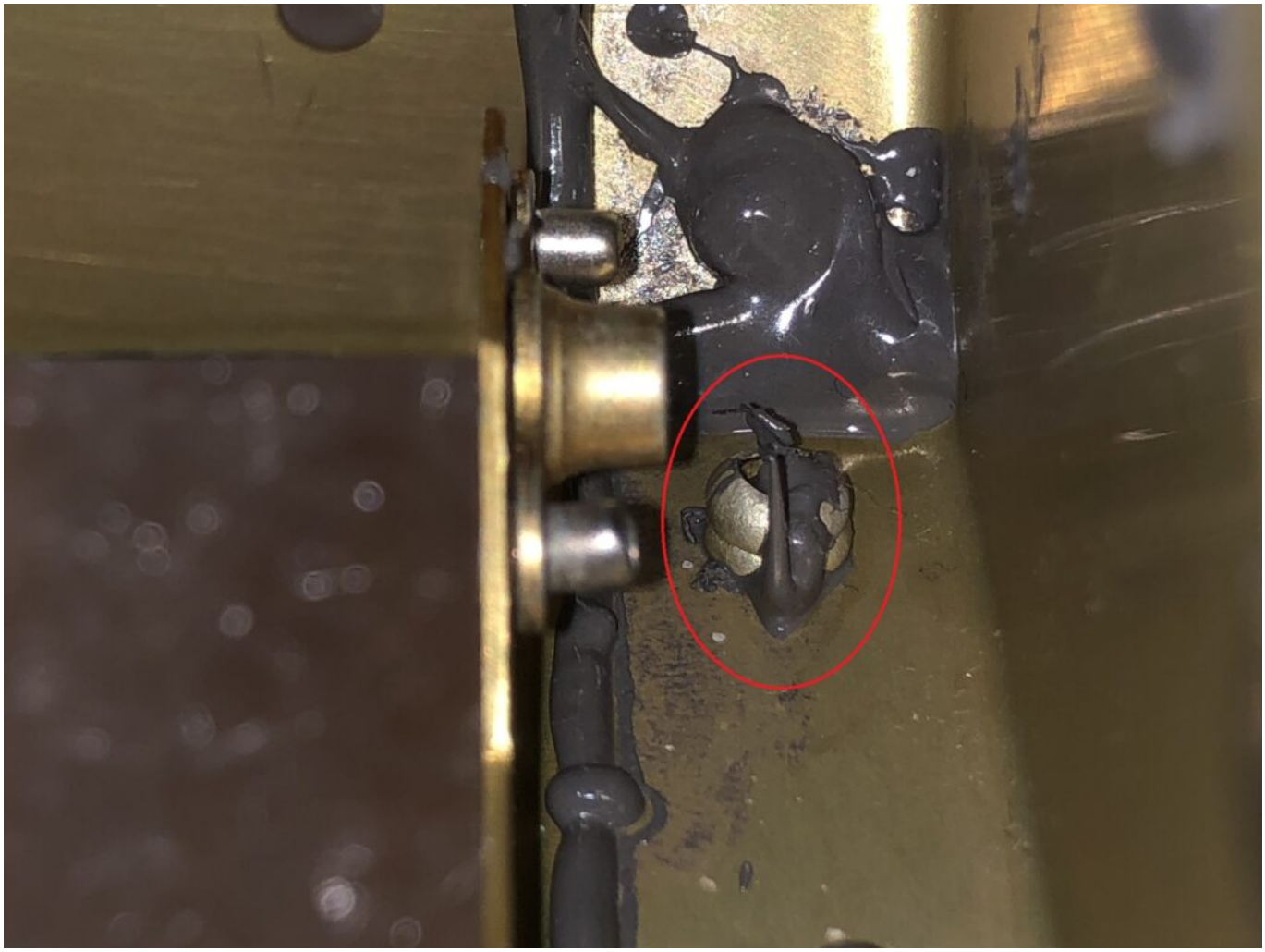
This is my DIY Raspberry Pi controlled pressure gauge:



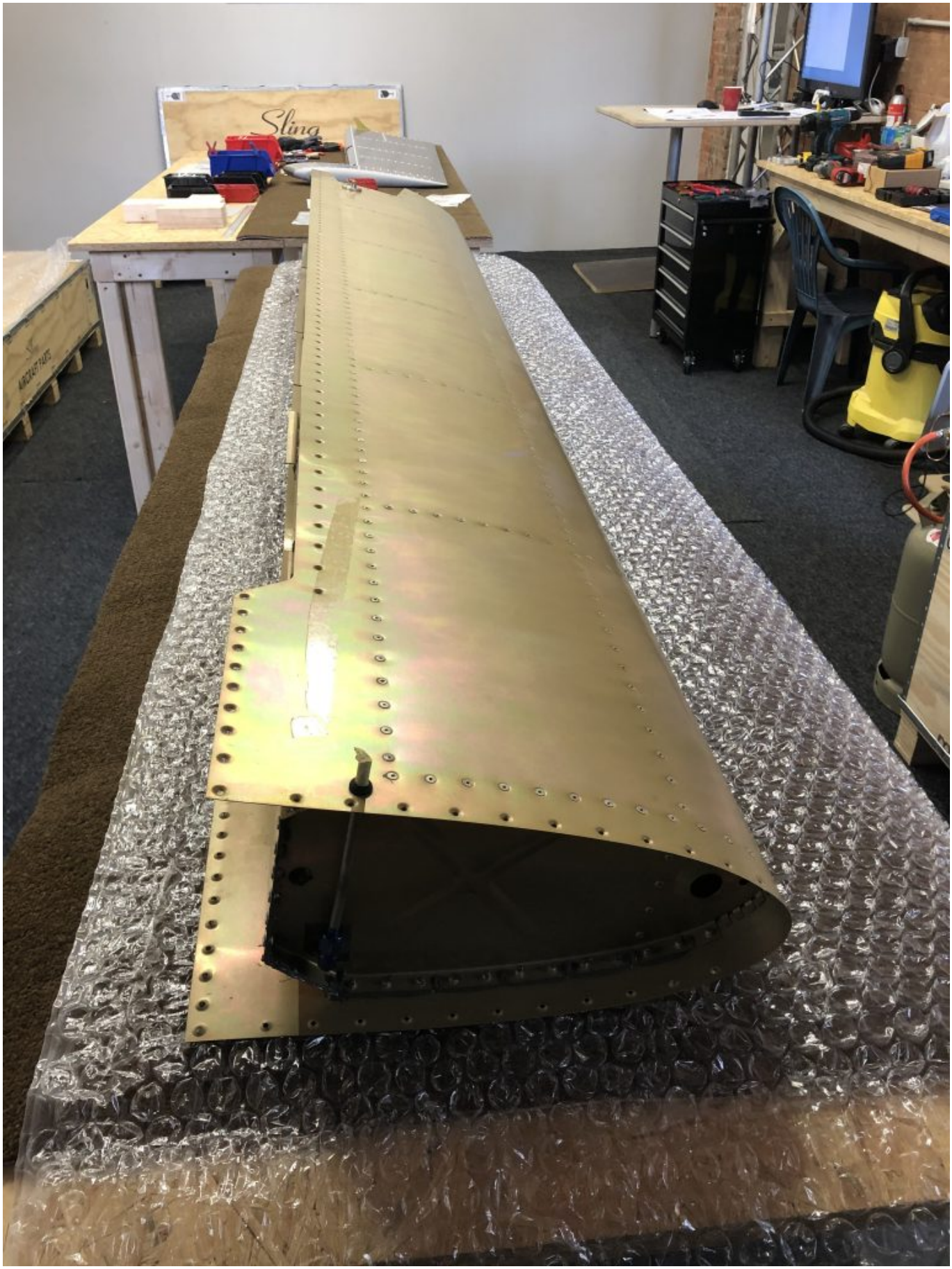
Leak position

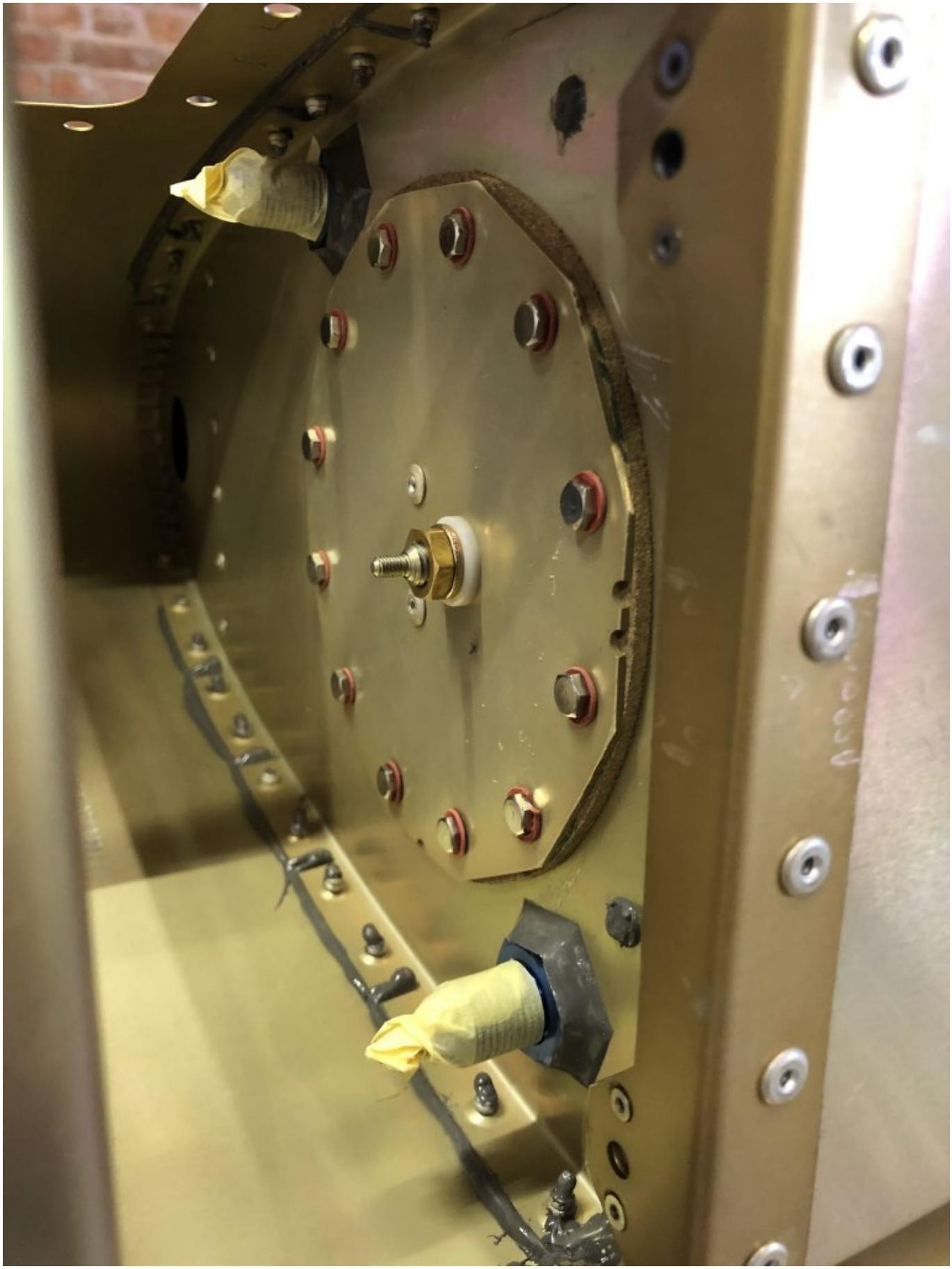


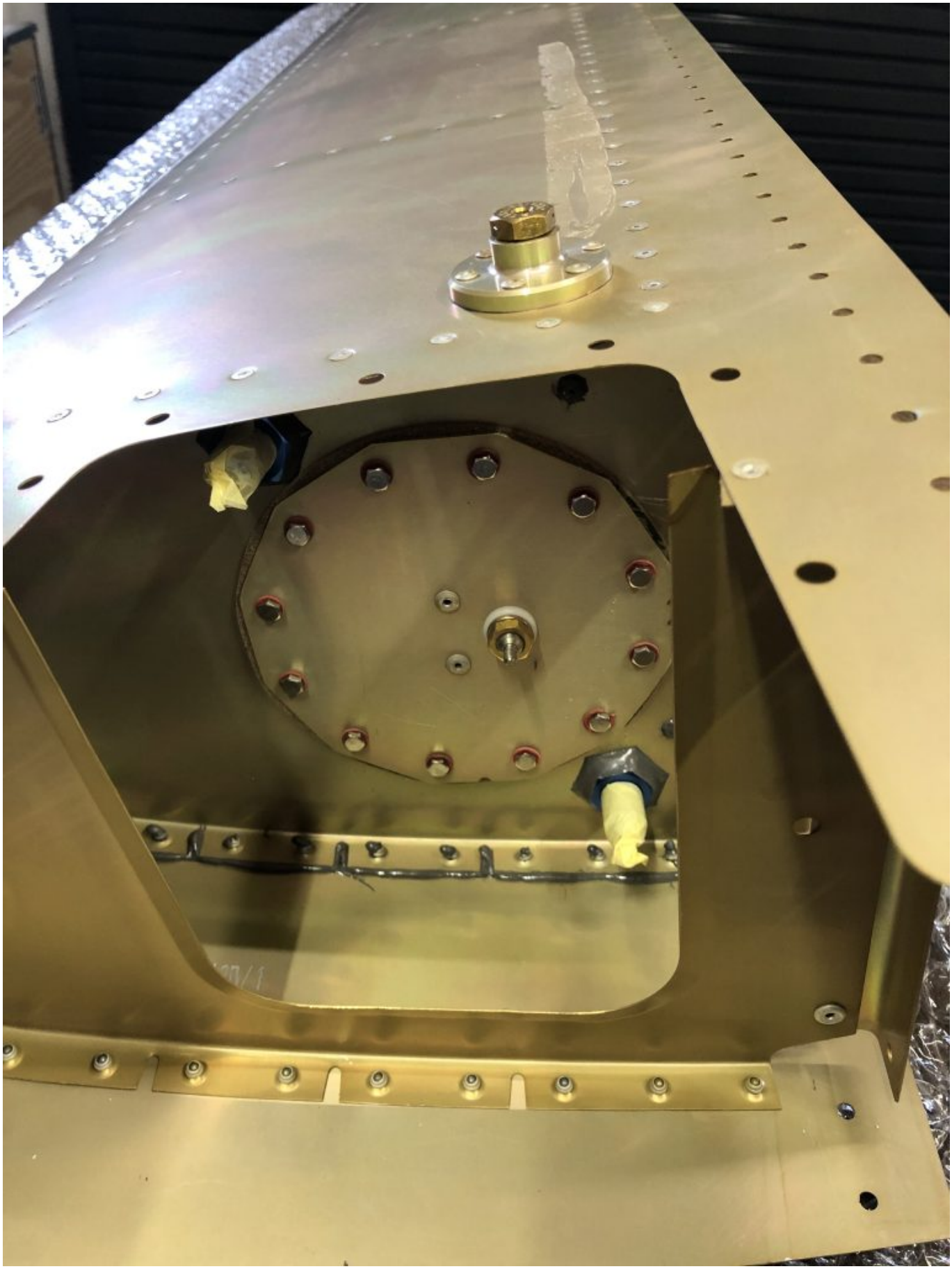
with UV light



same picture without UV light, no leak visible


Sling





One of the fiber washers from the fuel-sender bracket needs to be replaced.