

Replacement of A-22 windscreen

Required instruments and materials: hand drill, $\varnothing 3.1$ mm drill bit, $\varnothing 4.5$ mm drill bit, CLECO fasteners (15 pcs.), CLECO fastener tool, transparent acrylic sealant-adhesive (photo 01), pop-riveter, aluminium pop-rivets with aluminium cores and washers.

Photo 01



Photo 05



Photo 06

1. Dismantling the old windscreen.

- 1.1. Drill out the rivets attaching the windscreen. To secure the windscreen while doing it install CLECO fasteners in place of the removed rivets at a required distance.
- 1.2. Remove the old windscreen and clean the old sealant-adhesive from the areas of glass contact with the frame and from the outer glass edgings (photo 05-08).



Photo 07



Photo 08



2. Preparation of the new glass to the installation.

2.1. Remove 30-40 mm of the protective film along the entire glass edge from the inner and outer side of the glass.

2.2. On an even table put the old glass on top of the new one by aligning their edges as much as possible. Install CLECO fasteners along the upper glass edge and fix the new and old glass by pressing them down with several weights (photo 09-11).

Photo 09



Photo 10



Photo 11



2.3. Using the old glass as a pattern drill $\varnothing 3.1$ mm holes along the edges of the new glass (photo 12, 13).

Photo 12



Photo 13



2.4. Enlarge $\varnothing 3.1$ mm holes in the windscreen glass with $\varnothing 4.5$ mm drill bit.

2.5. If necessary trim the edges of the new glass until they fit to the old glass' edges.

3. Installation of the new windscreen glass on fuselage.

3.1. Apply the sealant-adhesive on the upper panel of fuselage along the rivet holes (photo 14, 15).

Photo 14



Photo 15



3.2. Apply the sealant-adhesive on the right and left wing root fairings ("wing fillets") from inside along the rivet holes (photo 16-20).

Photo 16

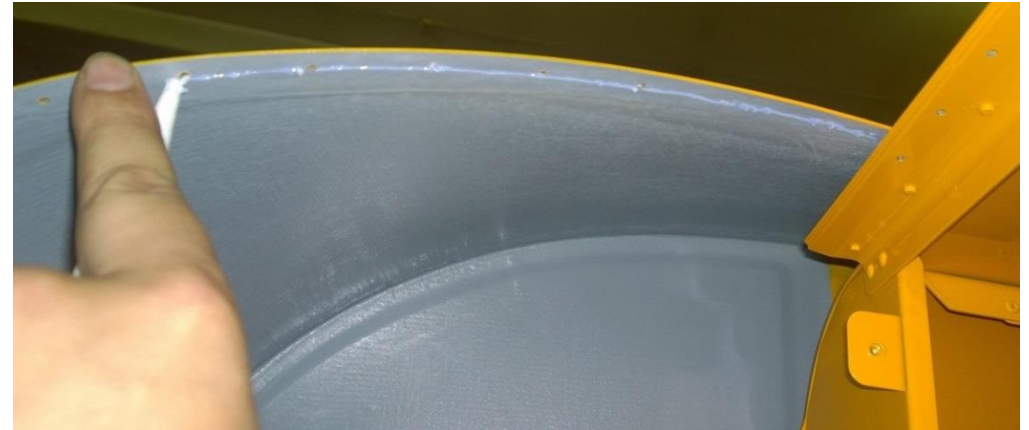


Photo 17

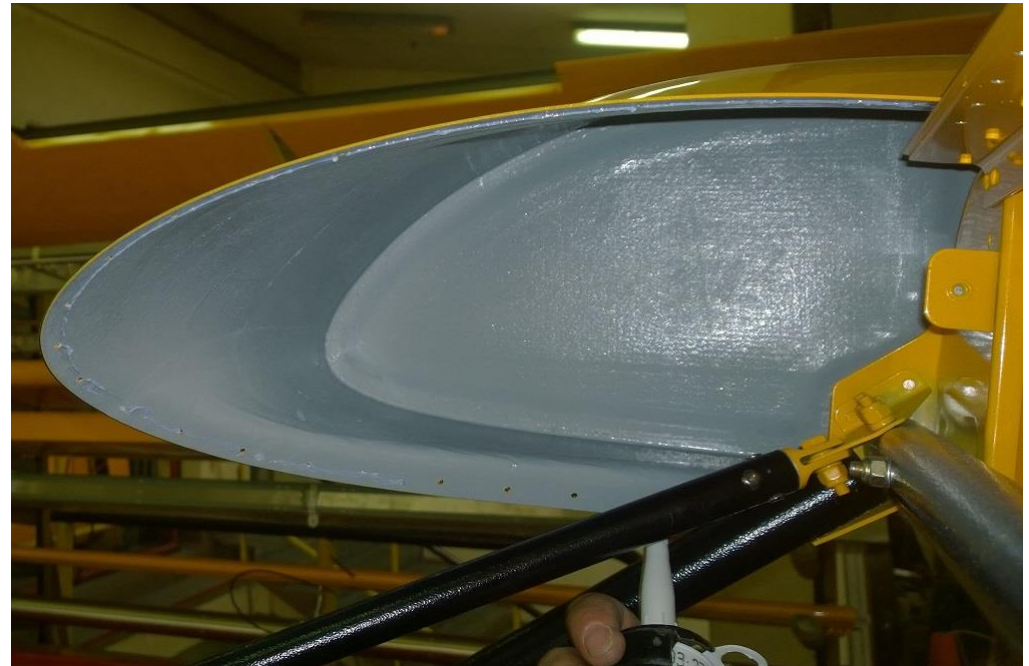


Photo 18



Photo 19

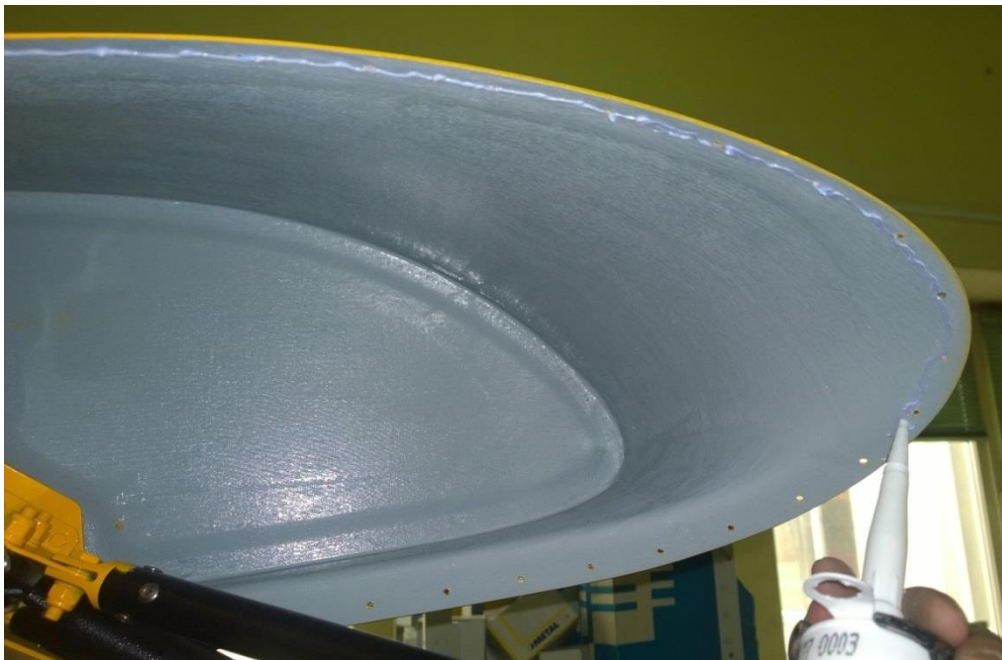


Photo 20



3.3. Carefully, trying not to smudge the sealant-adhesive, install the glass with the CLECO fasteners on top of the upper fuselage panel, side tubes, front frame and under the wing fillets (photo 21-29).

Photo 21



Photo 22

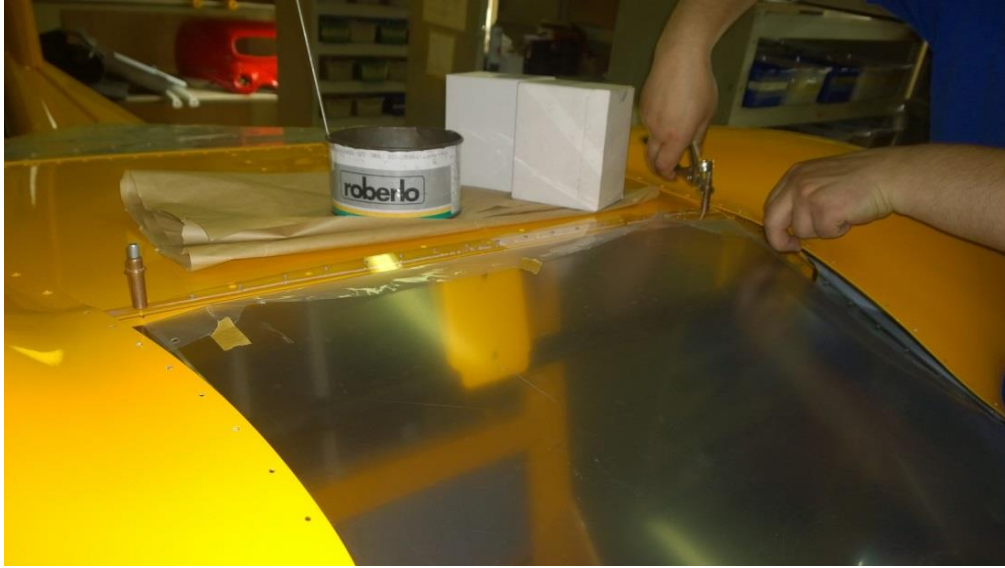


Photo 24



Photo 23

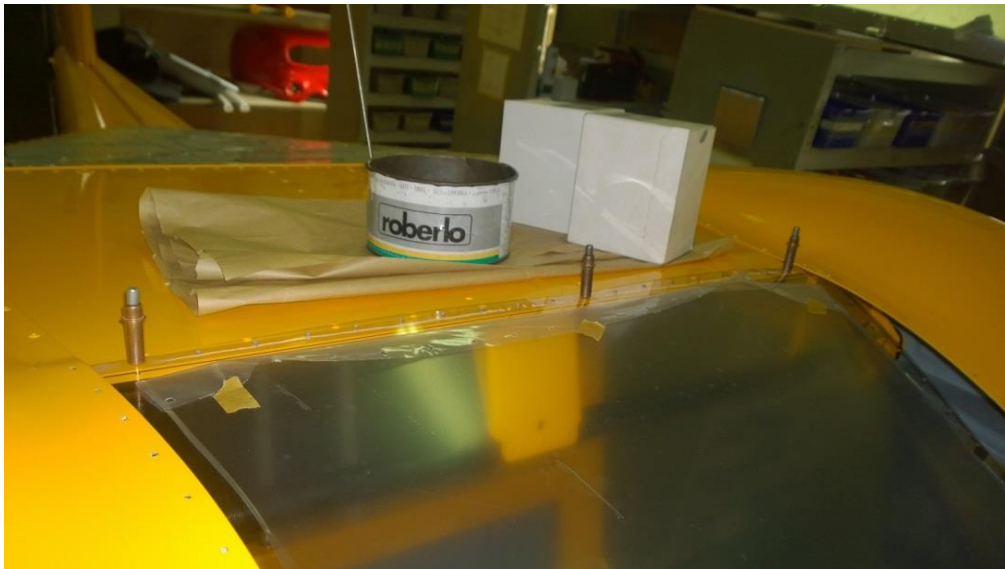


Photo 25



Photo 26



Photo 27



Photo 28

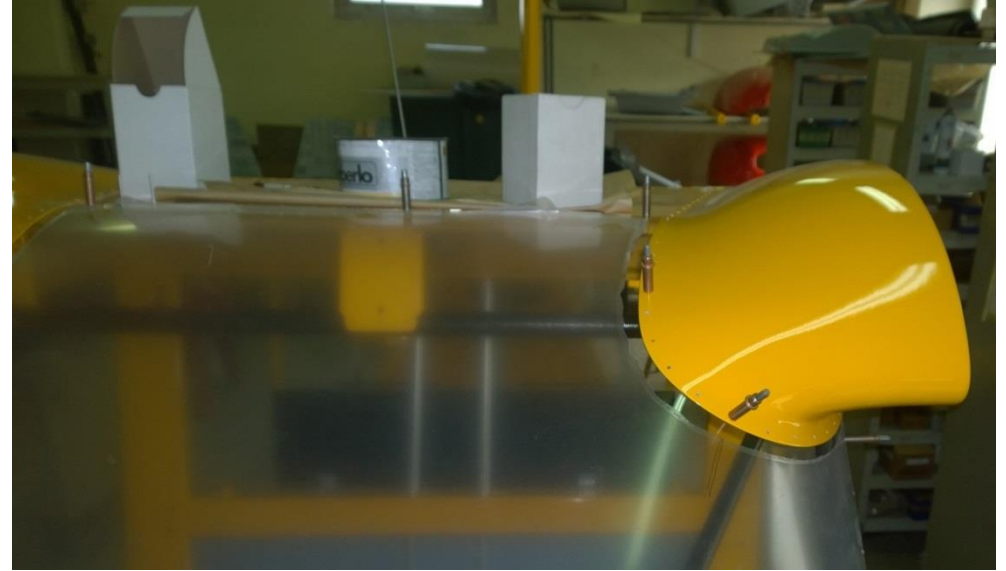
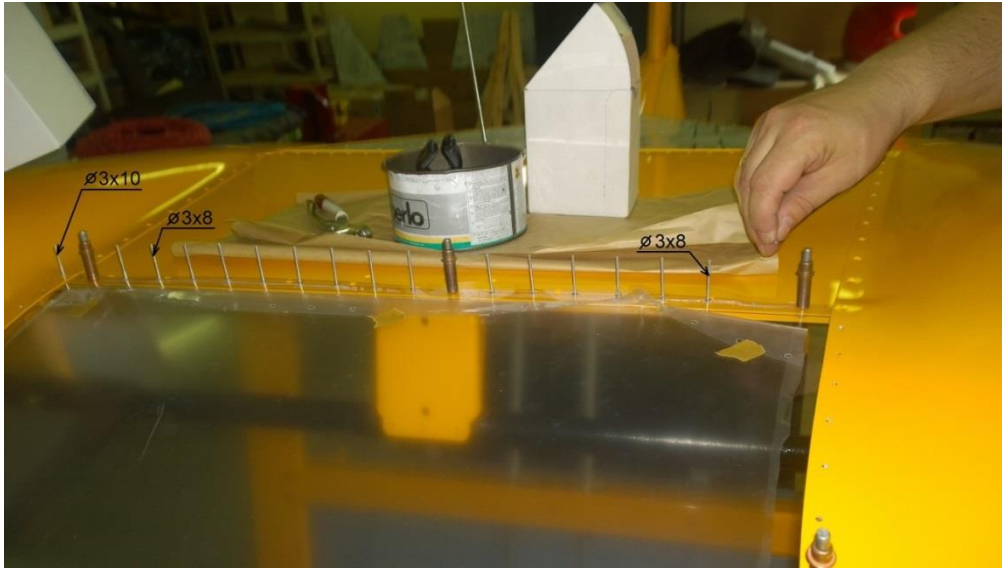


Photo 29



3.4. Insert $\text{Ø}3\times 8$ pop-rivets into the rivet holes in the upper fuselage panel and $\text{Ø}3\times 10$ pop-rivets into the rivets holes in the wing fillets and upper panel (photo 30).

Photo 30



3.5. Insert Ø3x8 pop-rivets into the holes in the wing fillets and Ø3x10 pop-rivets into the holes in the Ø30 side tube (photo 31-34).

Photo 31

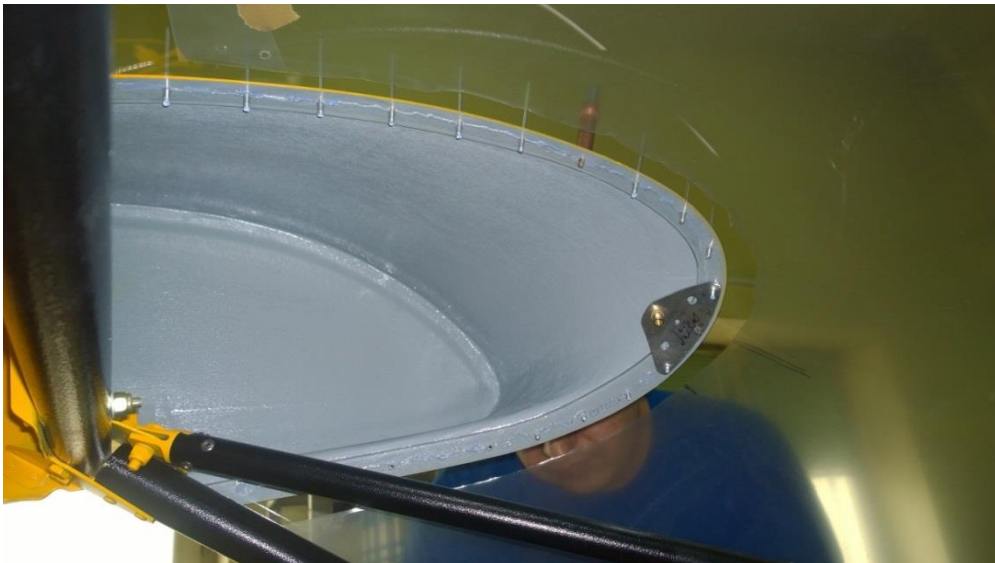


Photo 32

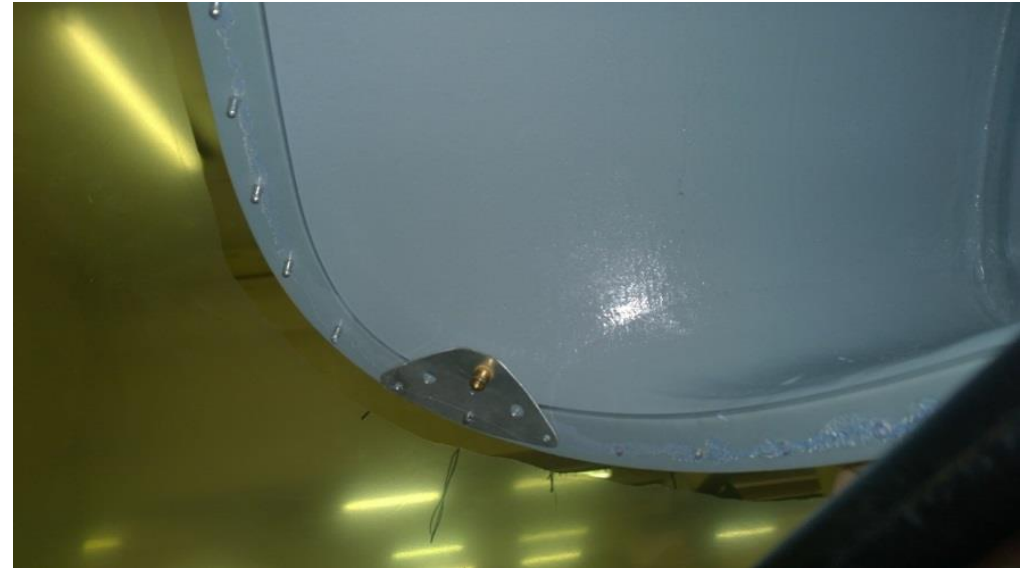


Photo 33

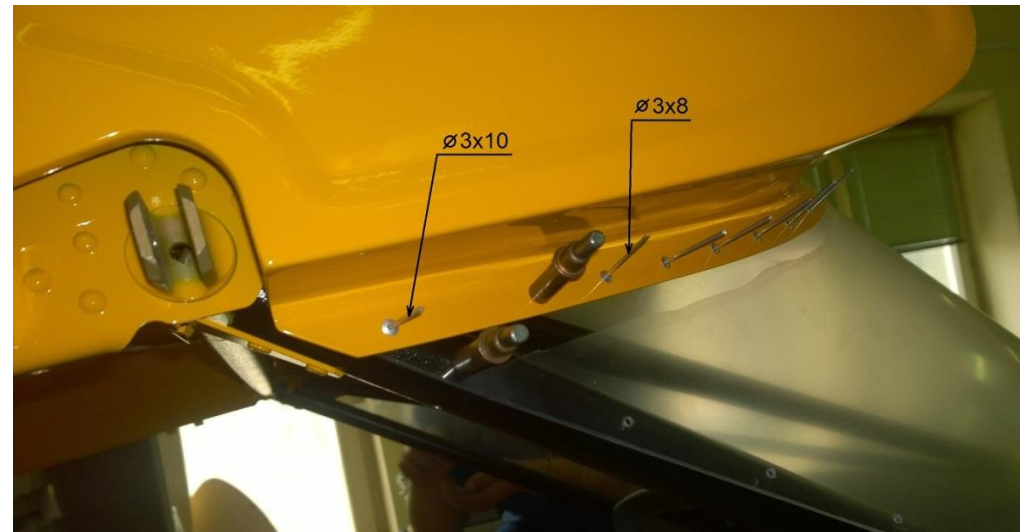
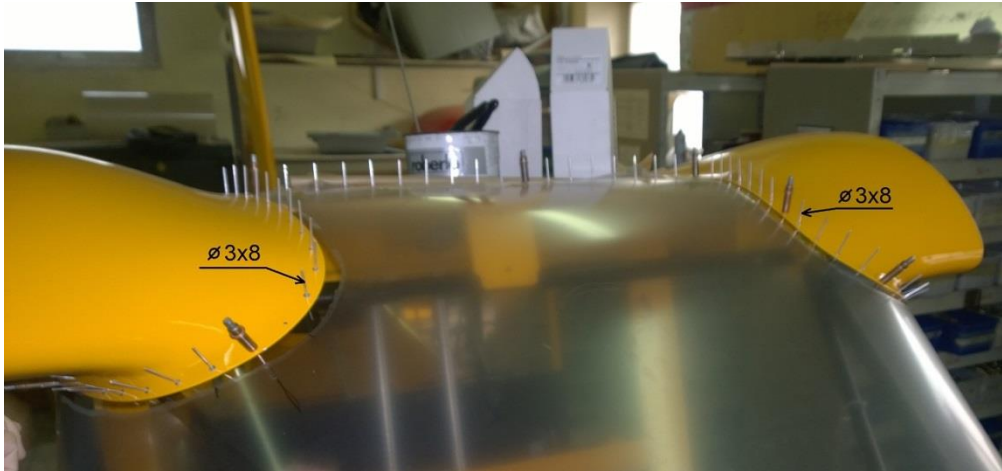


Photo 34



3.6. Set the pop-rivets using the pop-riveter starting from the rivet in the middle of the upper fuselage panel (photo 35, 36).

Photo 35

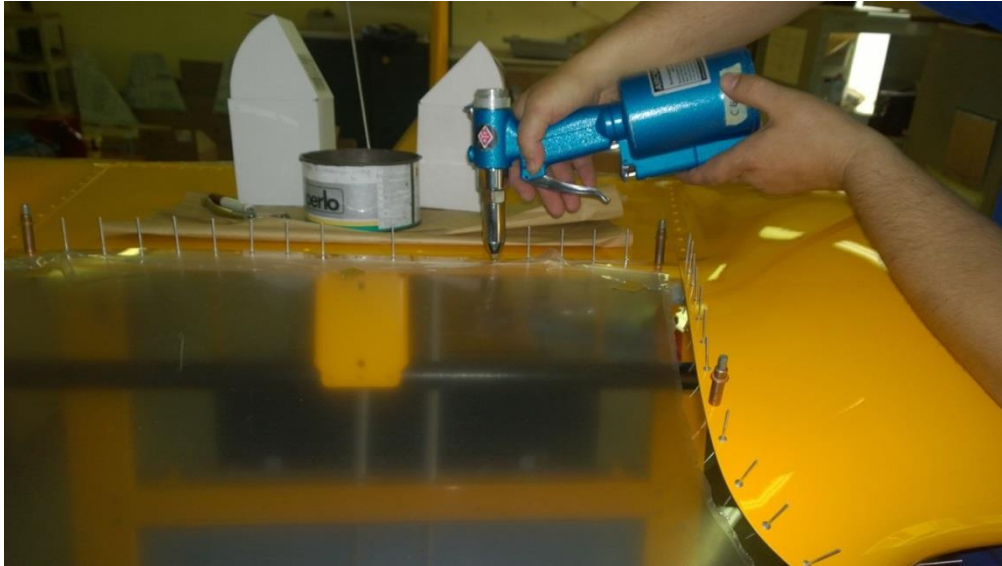
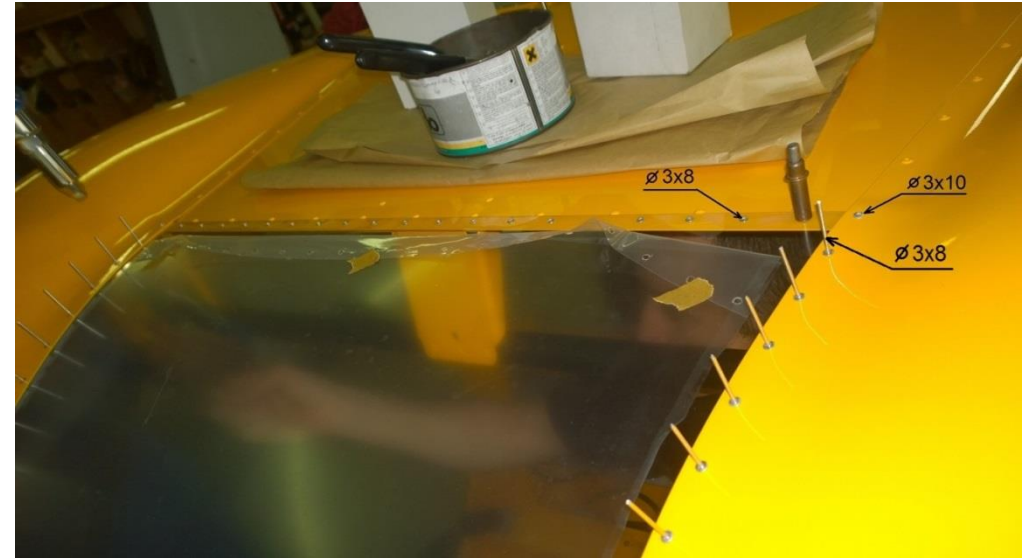


Photo 36



3.7. Set with the pop-riveter the pop-rivets in the wing fillets placing washers under the locking ends of the rivets (photo 37-44). Attach with pop-rivets the fitting for interior panel, if it is installed in the airplane (photo 42).

Photo 37

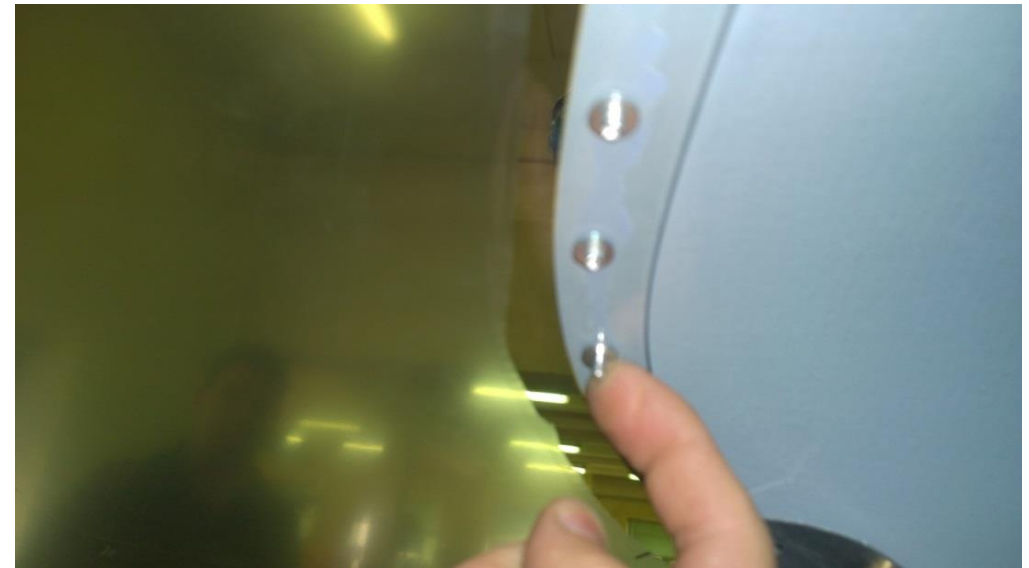


Photo 38

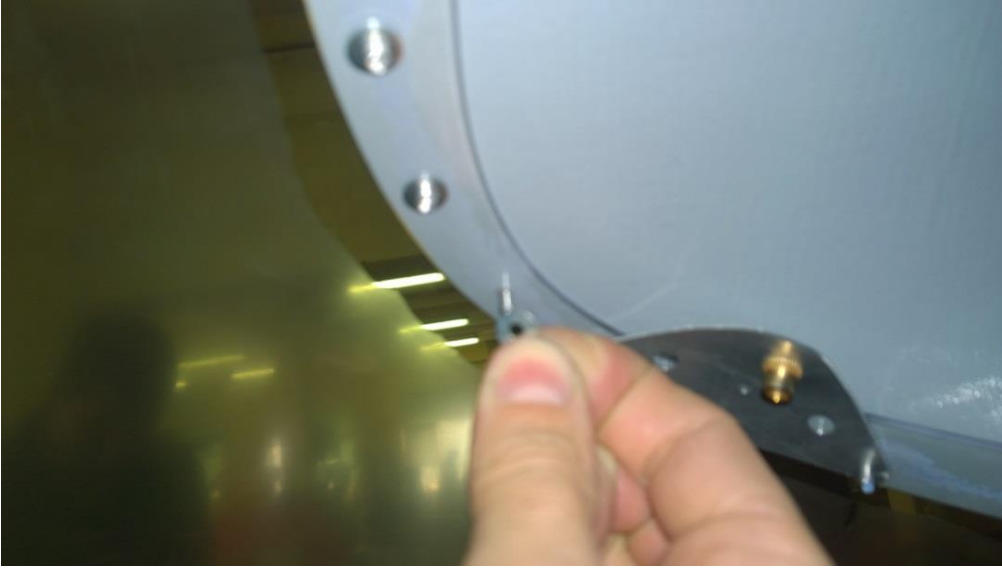


Photo 40

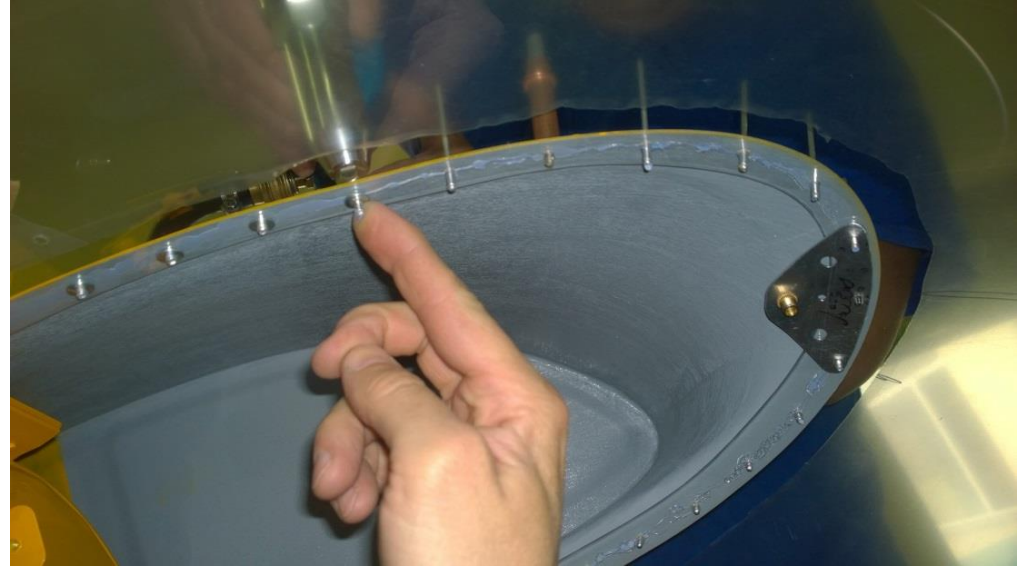


Photo 39

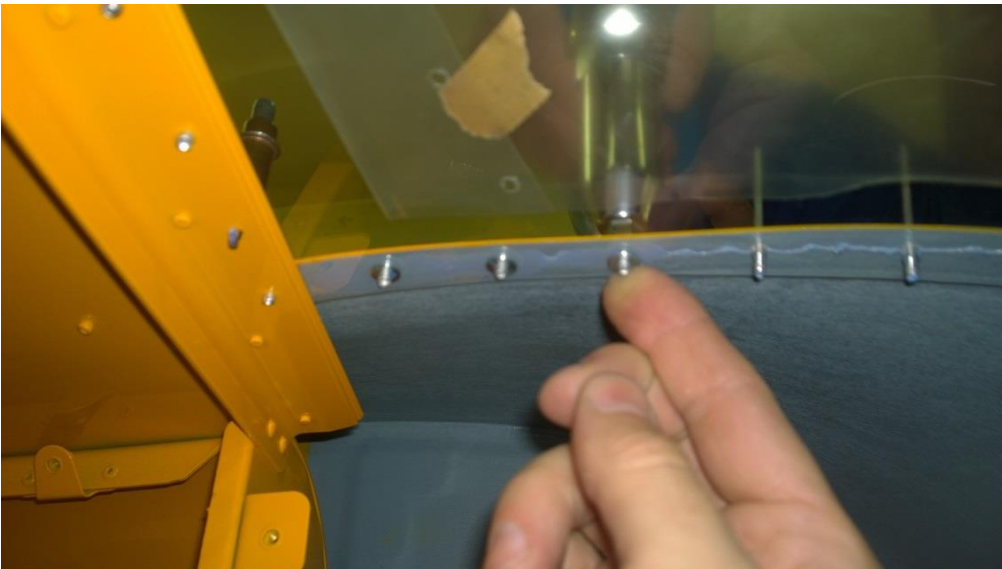


Photo 41

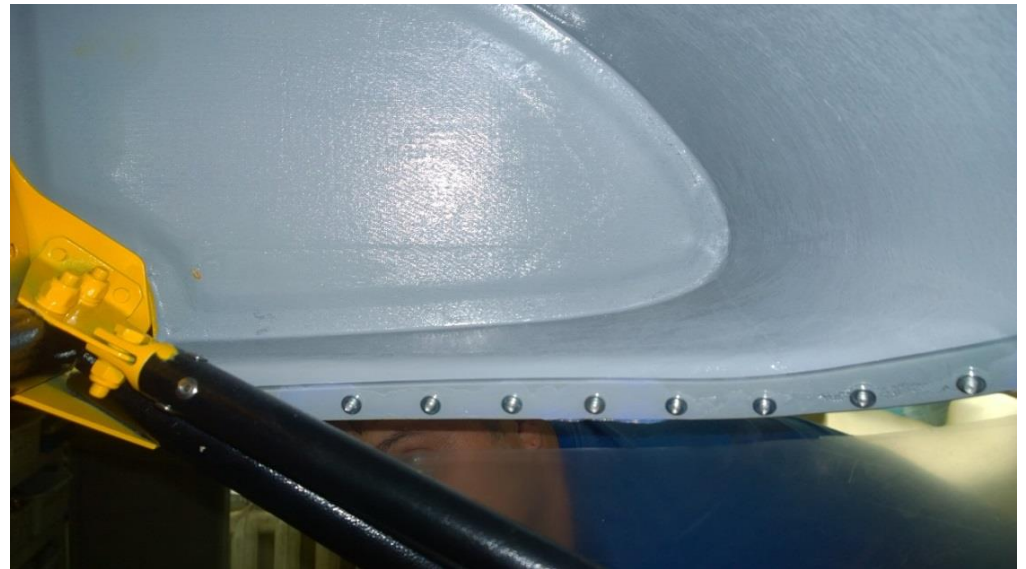


Photo 42

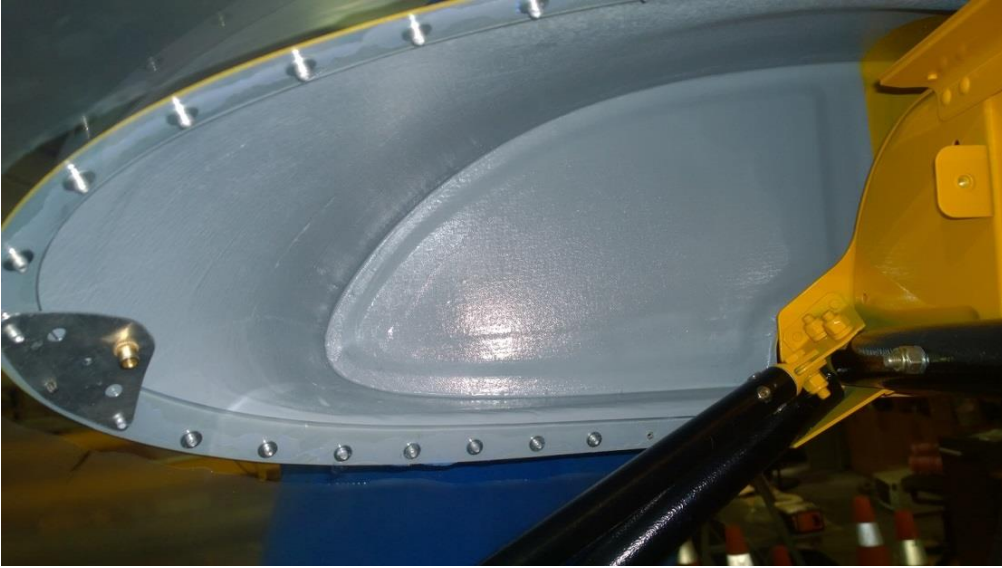


Photo 43

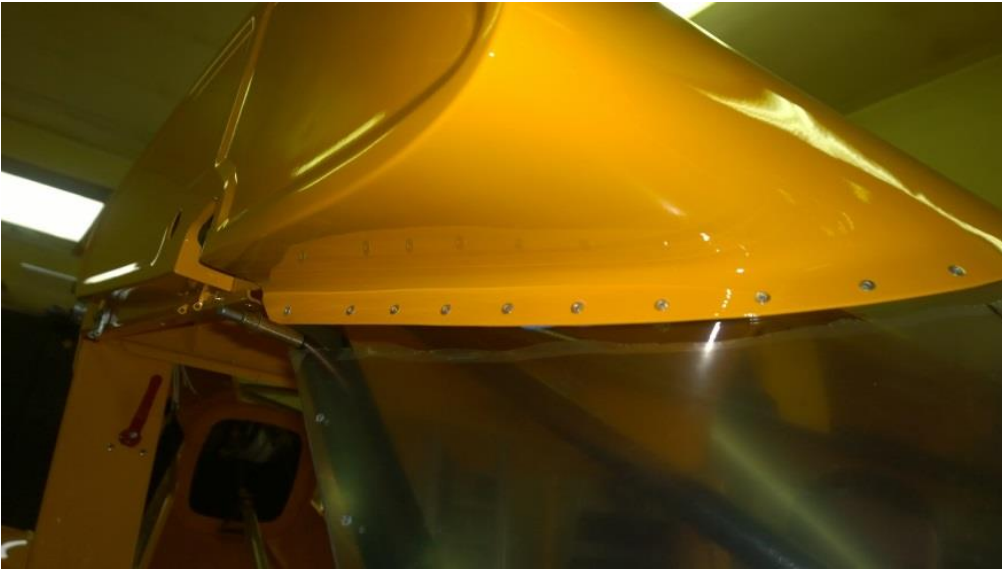
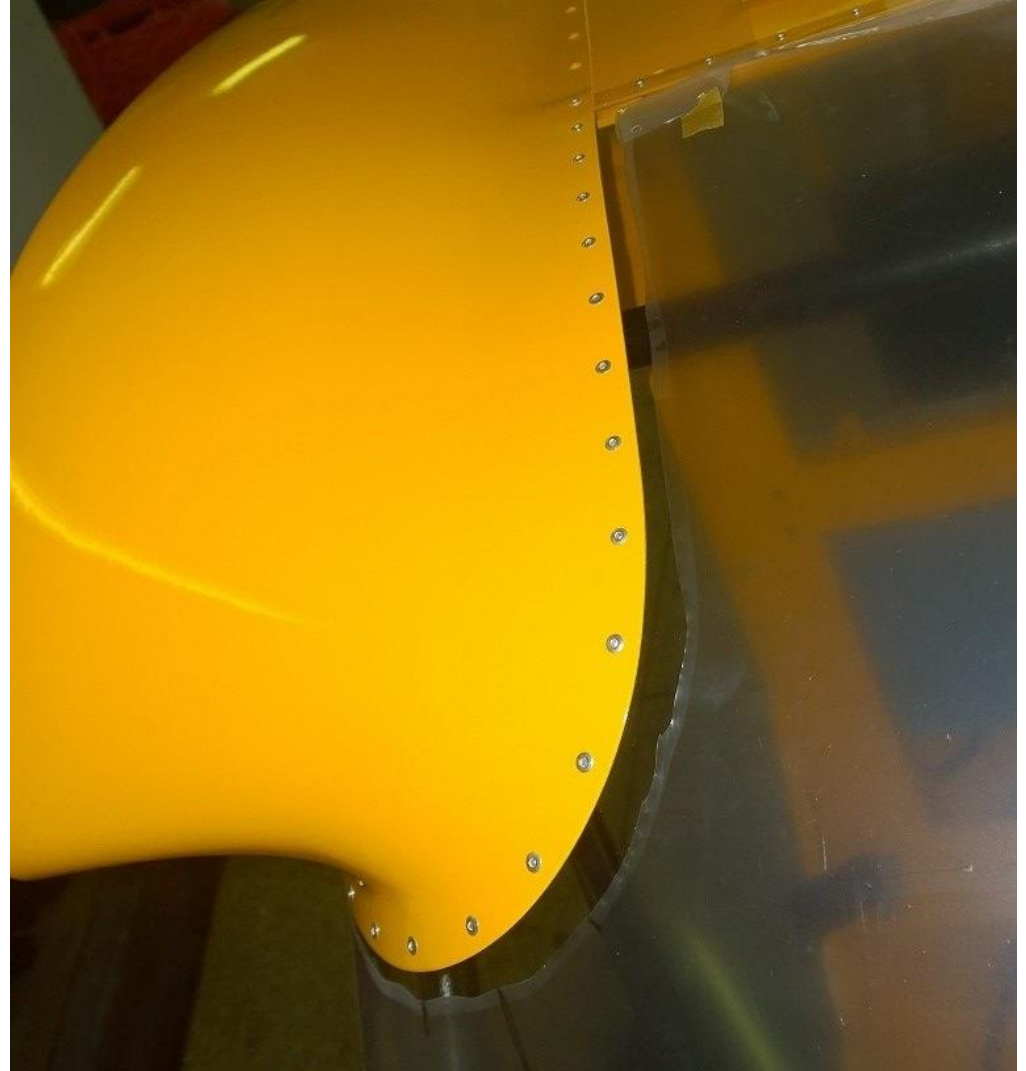


Photo 44



4. Installation of the side edgings.

4.1. Apply sealant-adhesive on the inner surface of the side edging along the rivet holes (photo 46-47).

Photo 46



Photo 47



4.2. Install the side edging using the CLECOs (photo 48).

Photo 48



4.3. Insert $\varnothing 3 \times 10$ pop-rivets into the holes (photo 49).

Photo 49



4.4. Set the $\varnothing 3 \times 10$ rivets in the door opening first, then all remaining rivets (photo 50-54).

Photo 50



Photo 51



Photo 53



Photo 52

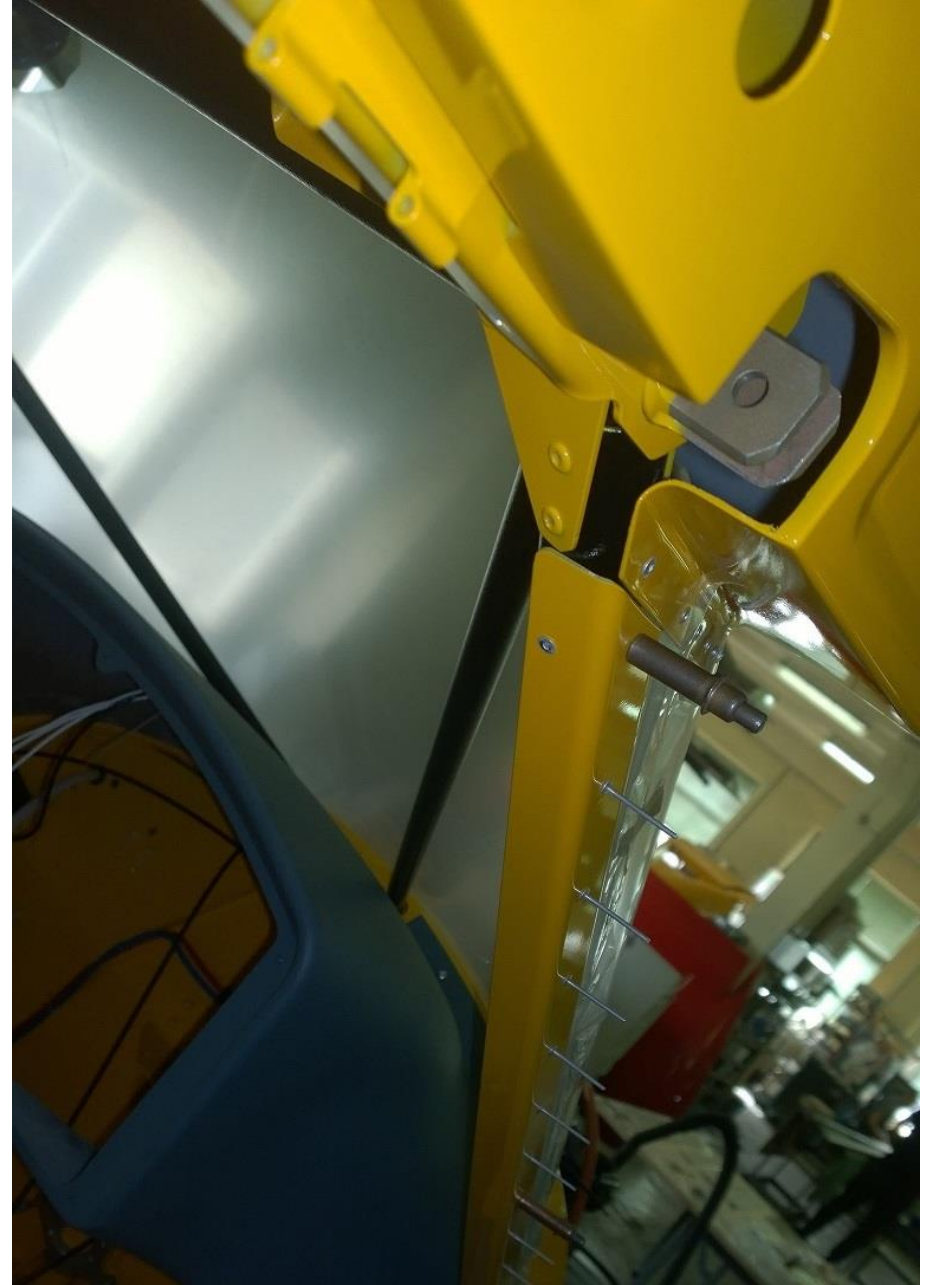


Photo 54



4.5. Repeat steps 4.1-4.4 for the opposite side.

5. Installation of the edging on the front frame.

5.1. Apply sealant-adhesive along the front edge of the windscreen glass (photo 55-57).

Photo 55

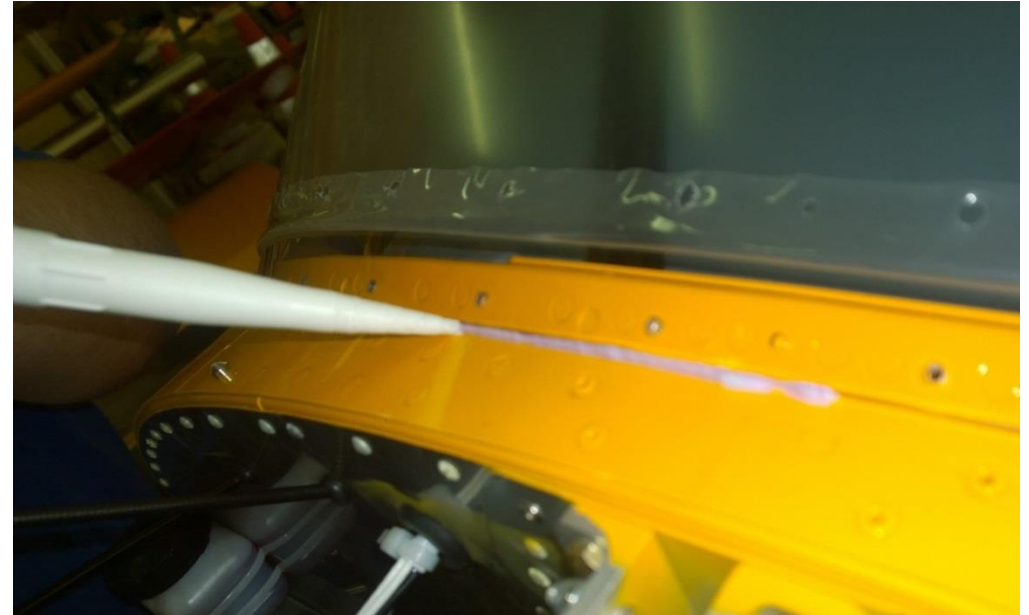


Photo 56

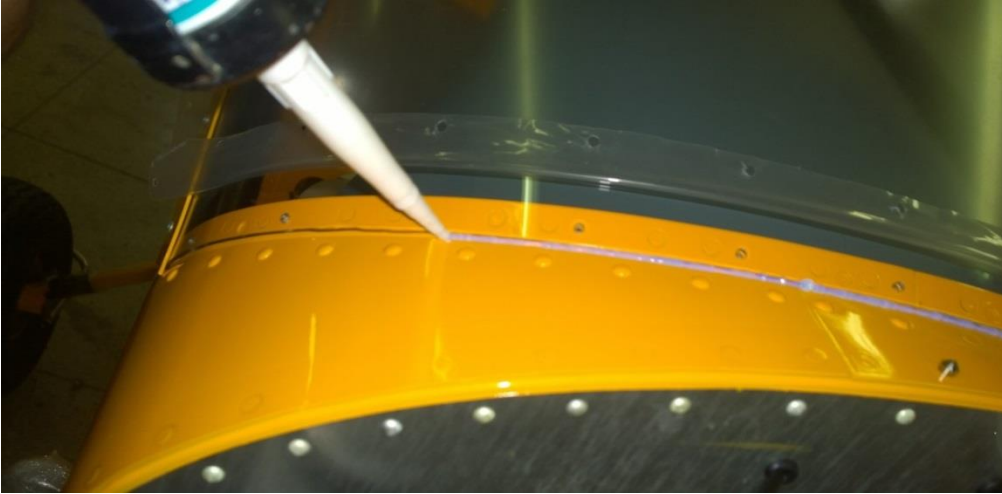


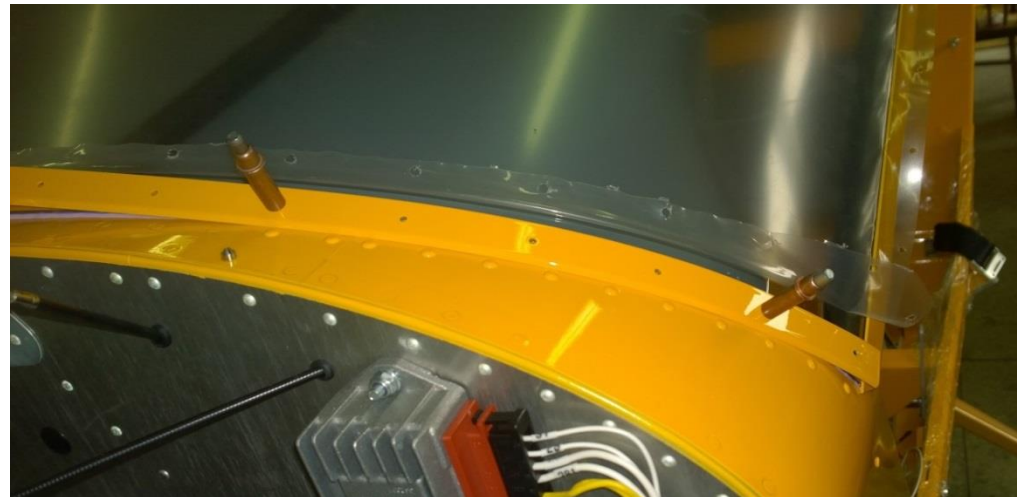
Photo 57



Photo 58

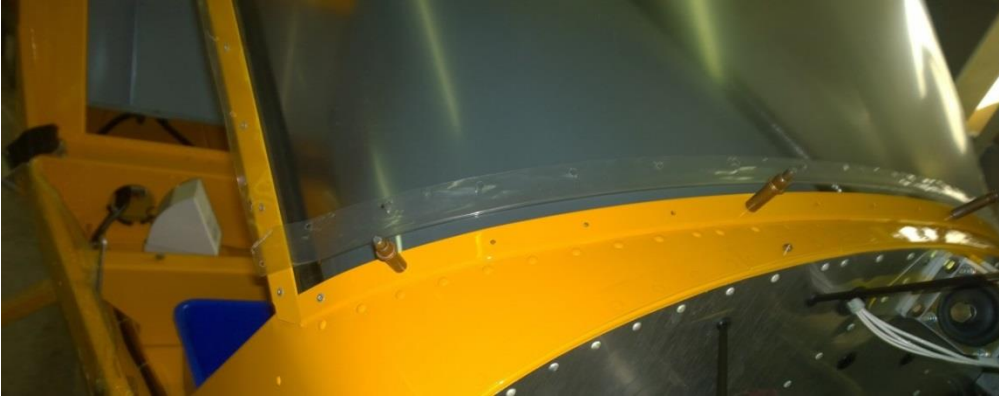


Photo 59



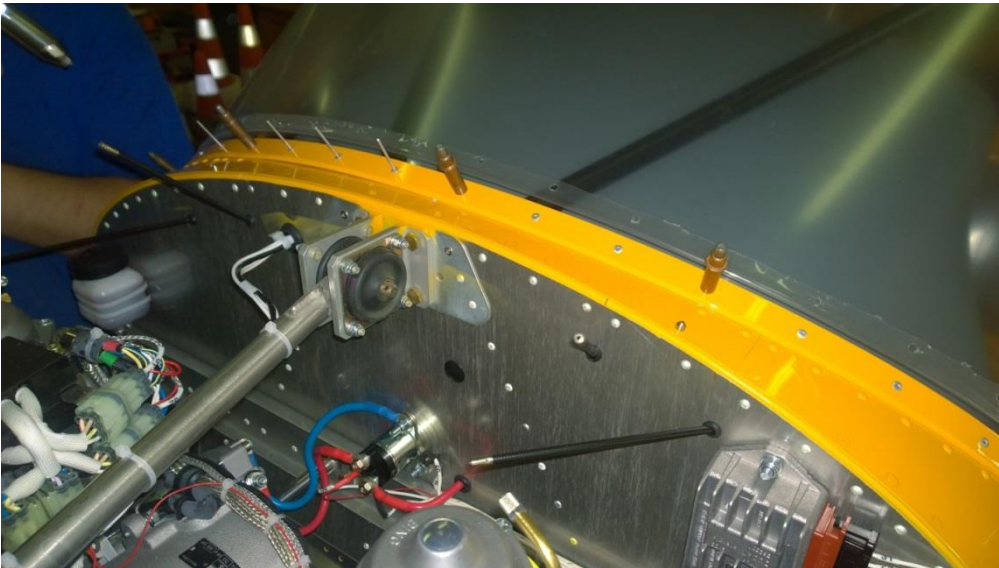
5.3. Install the front edging using the CLECOs (photo 58-60).

Photo 60



5.4. Insert $\varnothing 3 \times 10$ rivets into the holes (photo 61).

Photo 61



5.5. Set the rivets starting from the one in the middle (photo 61-63).

Photo 62



Photo 63



6. Remove the outer and inner protective film from the glass.