

## A32 (A32L) windscreen glass replacement instructions

The instructions were prepared on the basis of the conducted work done to replace the pre-installed windscreen PET glass of 2 mm thickness (Fig.1) for acrylic glass of 3 mm thickness.



Fig.1

### 1. Preparation of the jigs and tools

1.1 Using the threaded studs and bolts with nuts assemble the jigs for windscreen glass installation as shown in Fig.2.



Fig.2

Initially the distance between the frames must be 30 mm (Fig.3)

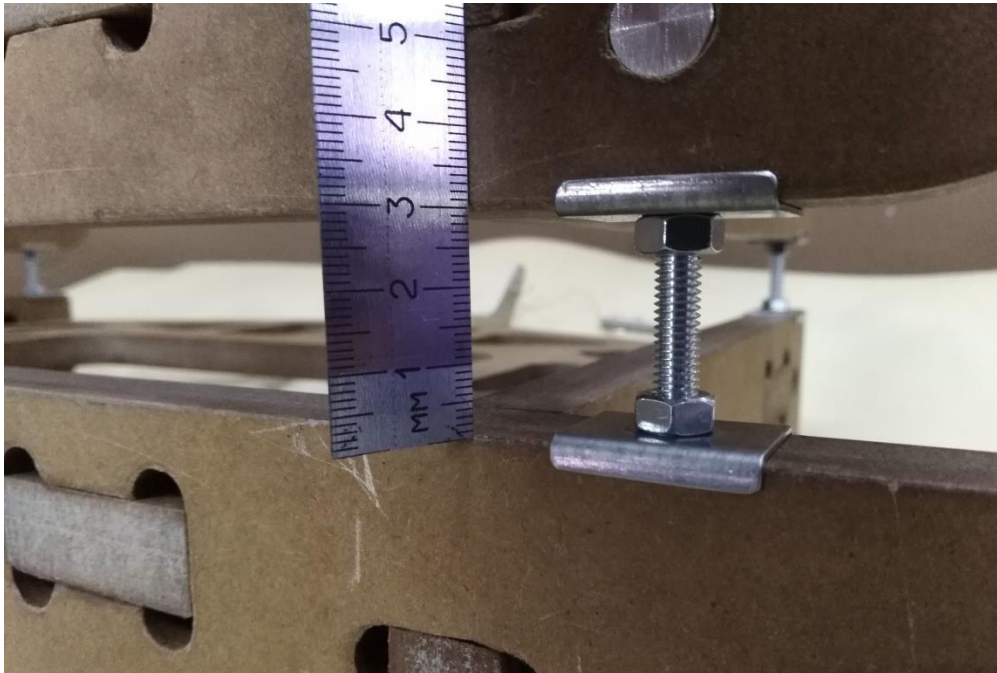


Fig.3

## 1.2 Installation of the jigs (the windscreen is omitted for clarity)

1.2.1 Suspend the jigs by its bracket to the longitudinal beam of the flap extension mechanism on fuselage passing the fixing pin through the  $\varnothing 6.0$  mm mounting hole (Fig.4 and 5).



Fig.4



Fig.5

1.2.2 Rotate the jigs up and forward between the longitudinal beams and set the jig hooks on the beams (Fig.6).



Fig.6

1.2.3 Fix with bolts the hooks set on the longitudinal beams (Fig.7)

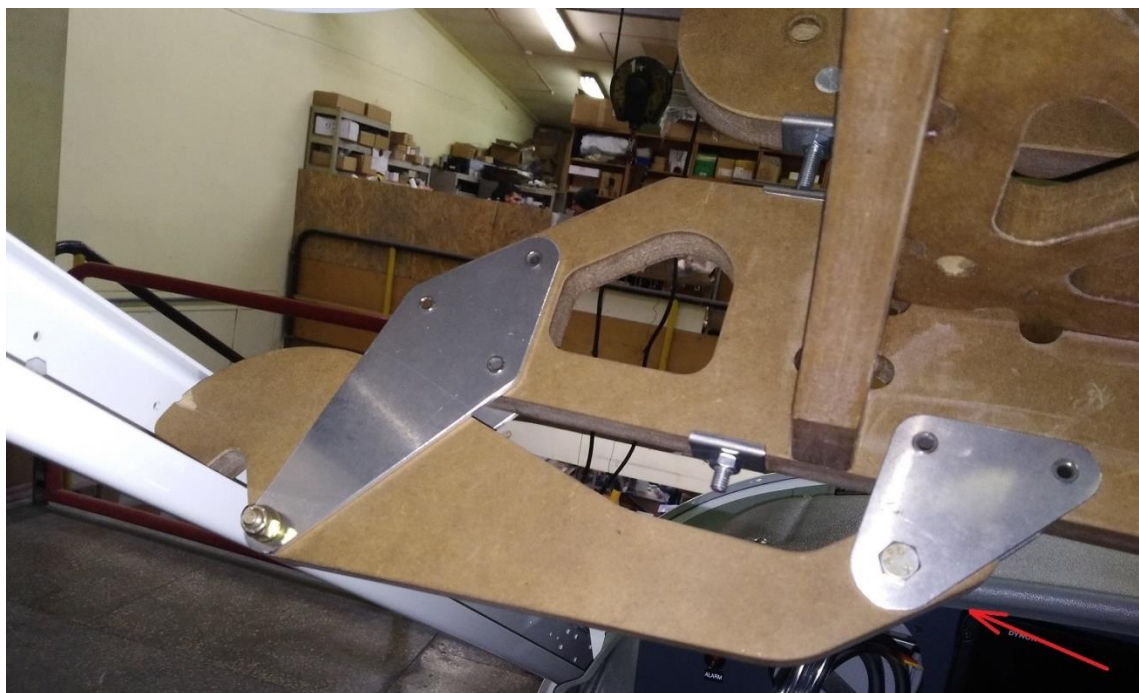


Fig.7

1.2.4 The jigs set into proper position (Fig.8).



Fig.8

1.3 It is recommended to use a conic cutter with straight cutting edges of 1.5 mm tip radius (Fig.9) for drilling holes. Cutter speed during drilling 450-550 rev/min. A electrical screwdriver is well suited for this. For your convenience put the drilling depth limiter at 7-10 mm distance from the cutter tip. This will make  $\varnothing 3.5-4.0$  mm holes.



Fig.9

## 2. Removal of the old glass

2.1 Drill out the rivets and remove the planks along the perimeter of the old glass.

2.2 Remove the old glass and clean the fuselage of sealant.

2.3 Clean the planks from sealant as they will be reused.

### 3. Installation of the new glass

- 3.1 Remove the fixing bolts, rotate the jig hooks and lower the jigs down (so as not to interfere with installation of the glass).
- 3.2 Remove the protective film from the both sides of the glass along its perimeter at 30 mm distance from the glass edges.
- 3.3 Put the glass under the wing root fairings (Fig.10) and fix it to fuselage roof with CLECOs (Fig.11).



Fig.10

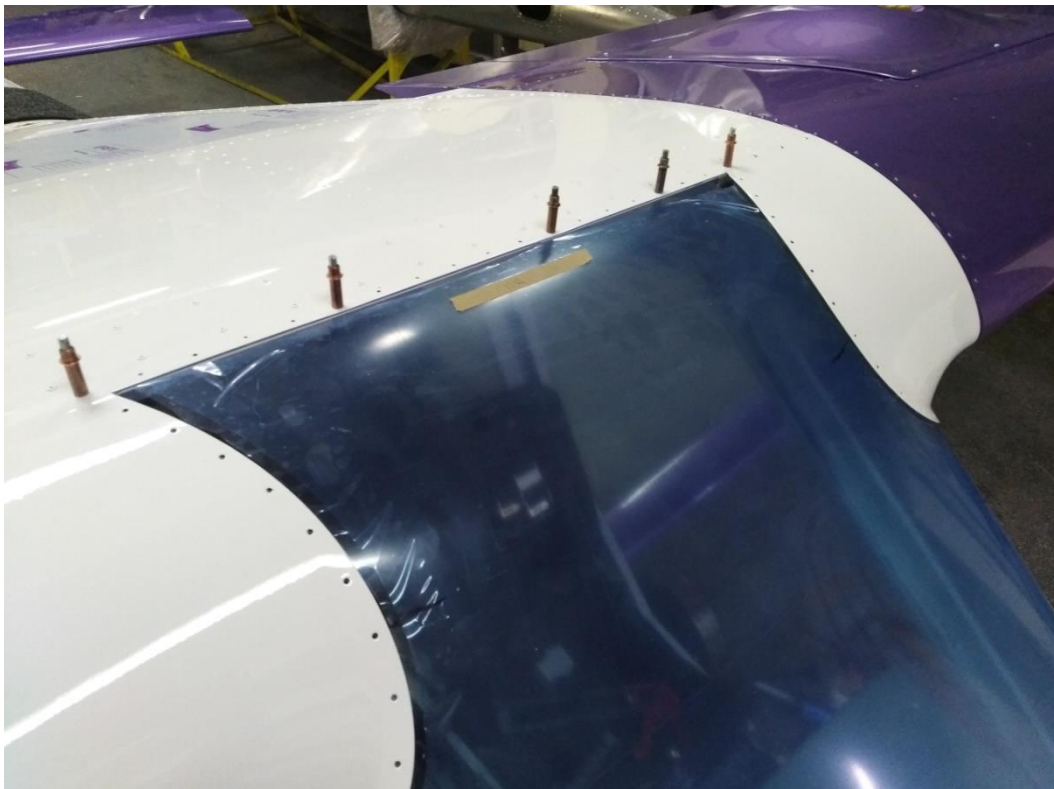


Fig.11

3.4 Set the jigs under the glass as described in instruction 1.2 (Fig.22 and Fig.12).



Fig.12

3.5 Press the glass to the jigs (you may use a belt for that) and pay attention to the clearance between the wing root fairings and the ends of the wings (Fig.13). If necessary adjust the jigs (Fig. 14) to achieve the required clearance (3 mm) between the fairings and wings and ensure good fit of the windscreen glass to the fairings. For convenience put a temporary spacer between the wings and fairings.



Fig.13



Fig.14

3.6 Make sure that the installed glass does not cover the holes for attaching rivets it (Fig.15). If necessary enlarge the glass holes after marking the required hole size to ensure rivets passing to their holes. Use the conic cutter to enlarge the hole in the glass so that the glass does not cover the rivet hole.



Fig.15



3.7 Install back the planks using as many CLECOs as possible (Fig.17).

3.8 Install the forward plank starting from its middle (Fig.16). If necessary correct the rivet holes with  $\varnothing 3.1$  mm drill bit.



Fig.16



Fig.17

3.9 Using the tool described in the instruction 1.3 drill the holes in the glass outside cockpit through the holes in the wing root fairings (Fig.18). While drilling set the CLECOs in every second hole (Fig.19).



Fig.18

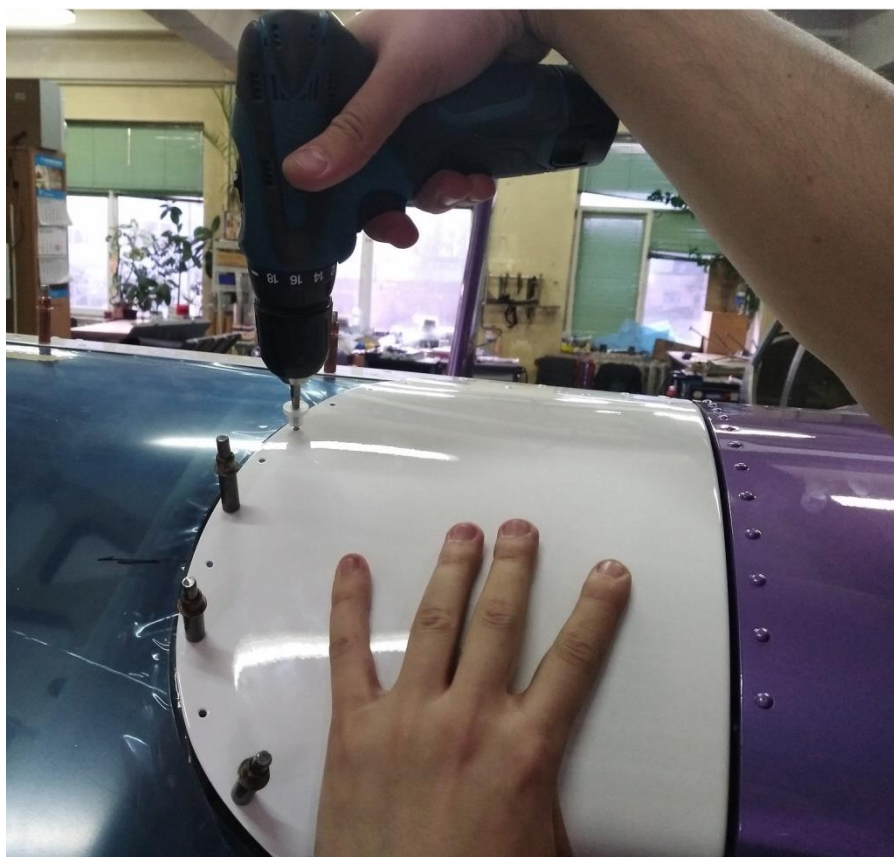


Fig.19

3.10 In the areas with restricted access drill the holes from inside the cockpit (Fig.20) or just mark them.

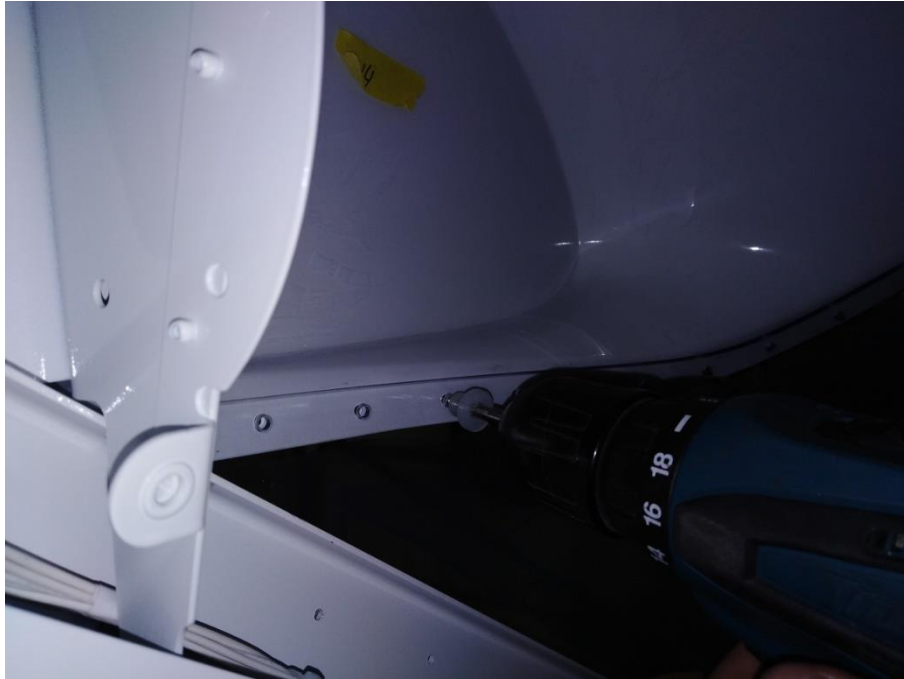


Fig.20

3.11 Take out the glass from fuselage and drill the missing holes using the marking.

3.12 Blunt sharp edges of all holes from both sides (Fig.21)

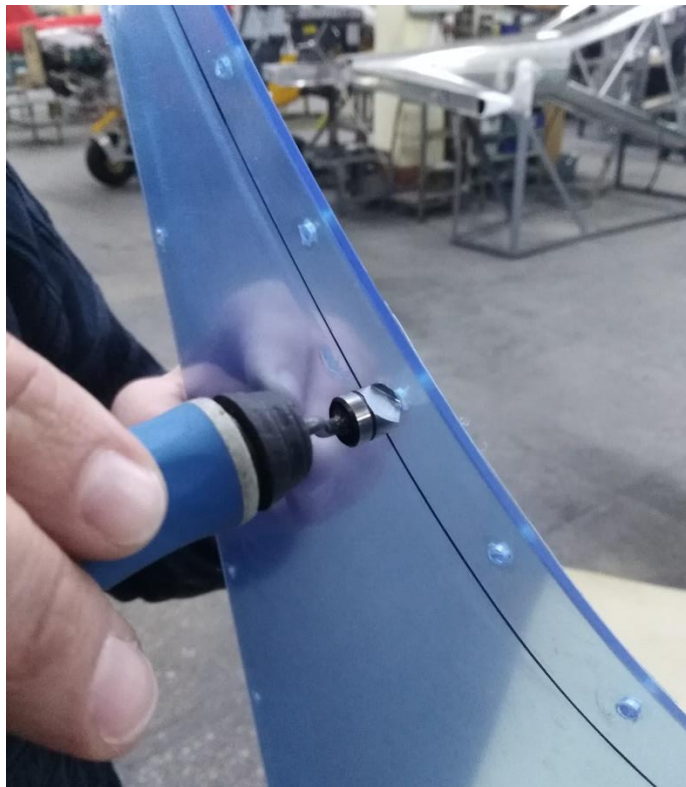


Fig.21

3.13 Install the glass with planks without the jigs while checking the clearance between the wing root fairings and wing ends.

3.14 Remove the inner plank from the roof, apply sealant (Fig.22 and Fig.23) and install rivets on the roof starting from the middle (Fig.24).

3.15 Install the rivets in the wing root fairings. Put washers under the locking heads of the rivets (Fig.25-27).



Fig.22

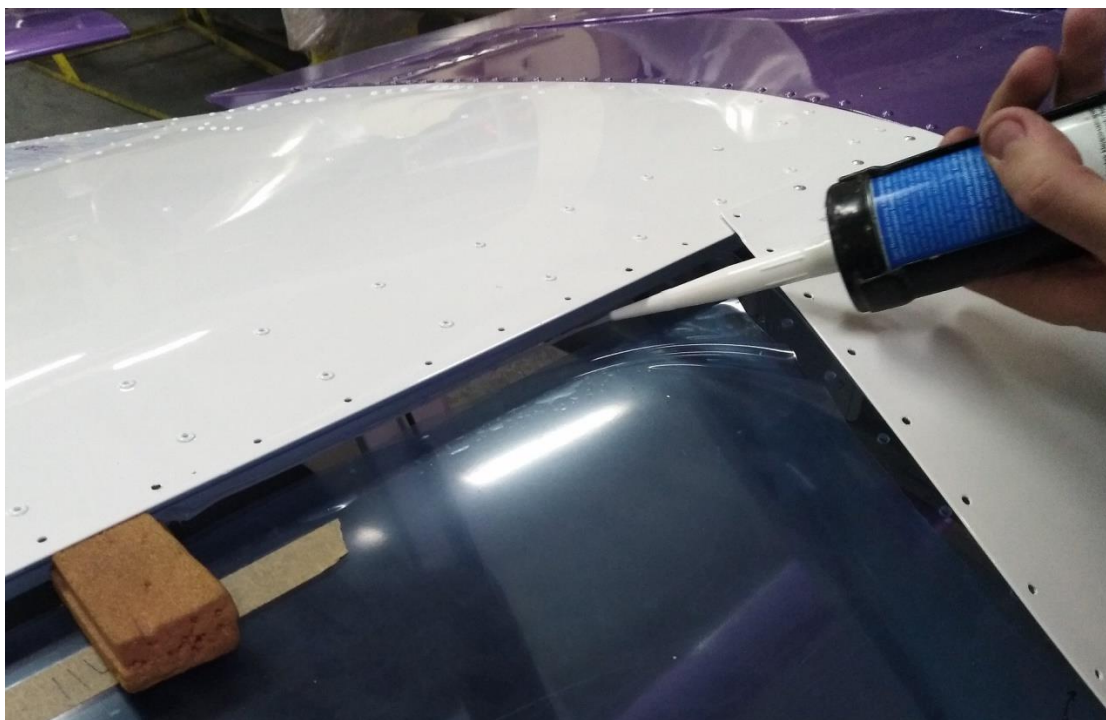


Fig.23

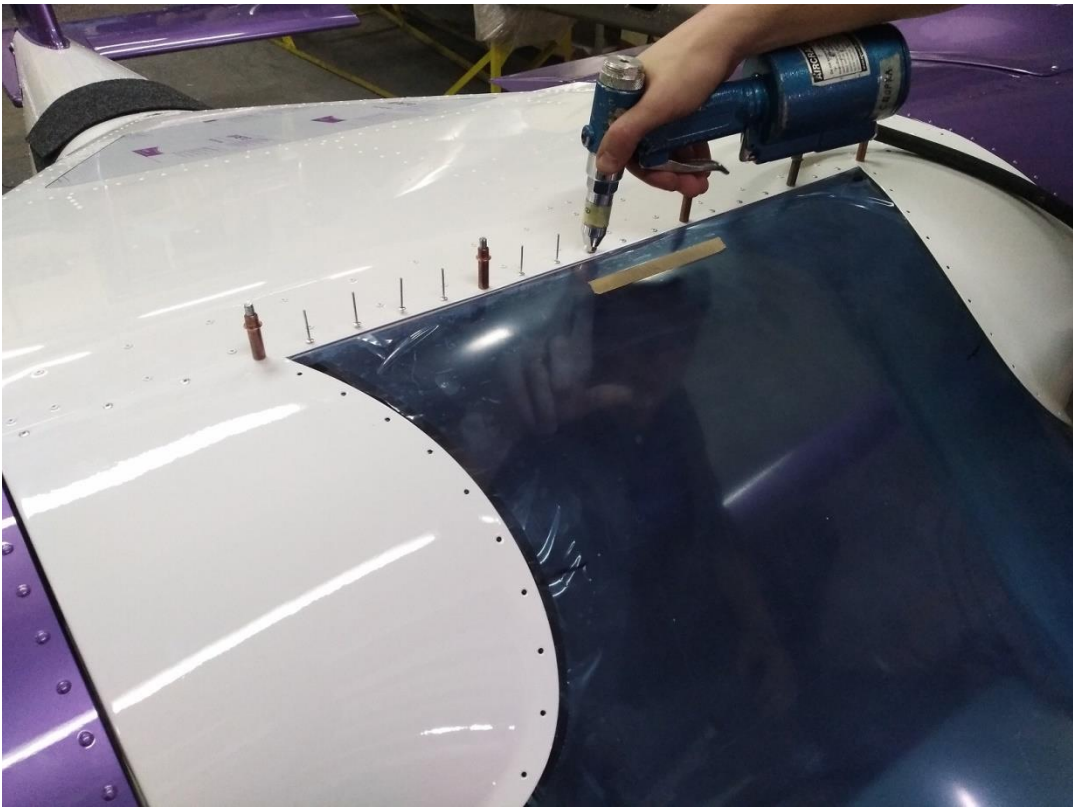


Fig.24

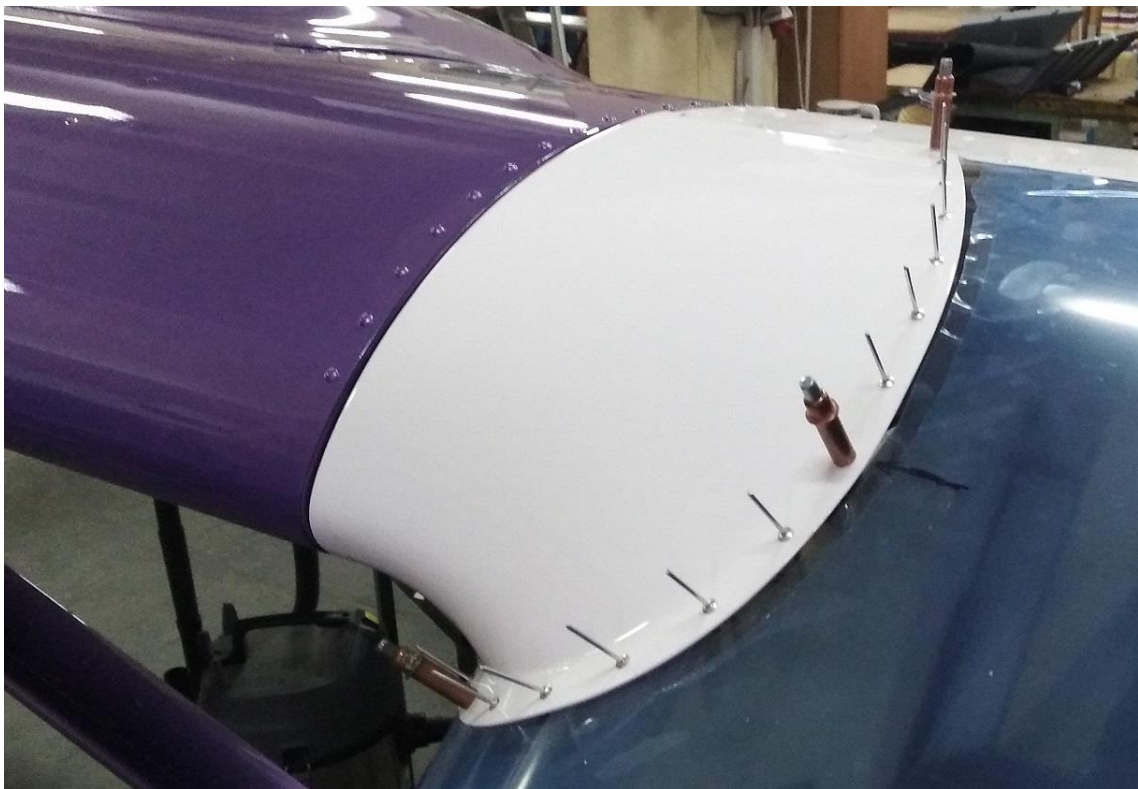


Fig.25



Fig.26

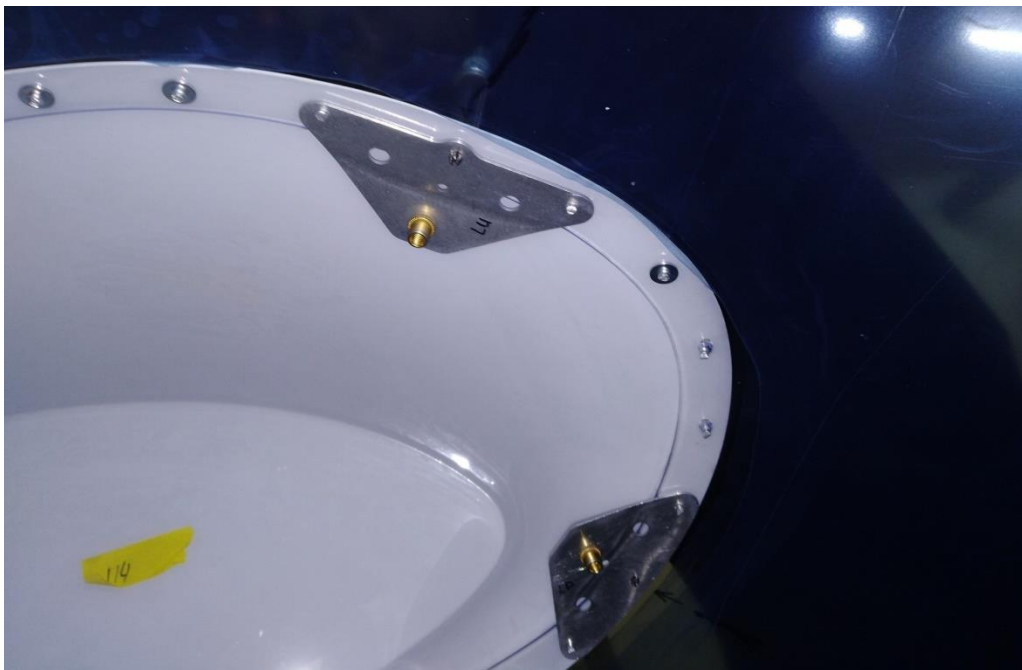


Fig.27

3.16 Remove the side plank and apply sealant (Fig.28).



Fig.28

3.17 Install the side plank in place and rivet starting from its middle (Fig. 29)



Fig.29

3.18 Remove the forward plank. Apply sealant under the forward edge of the windscreen glass (Fig.30).

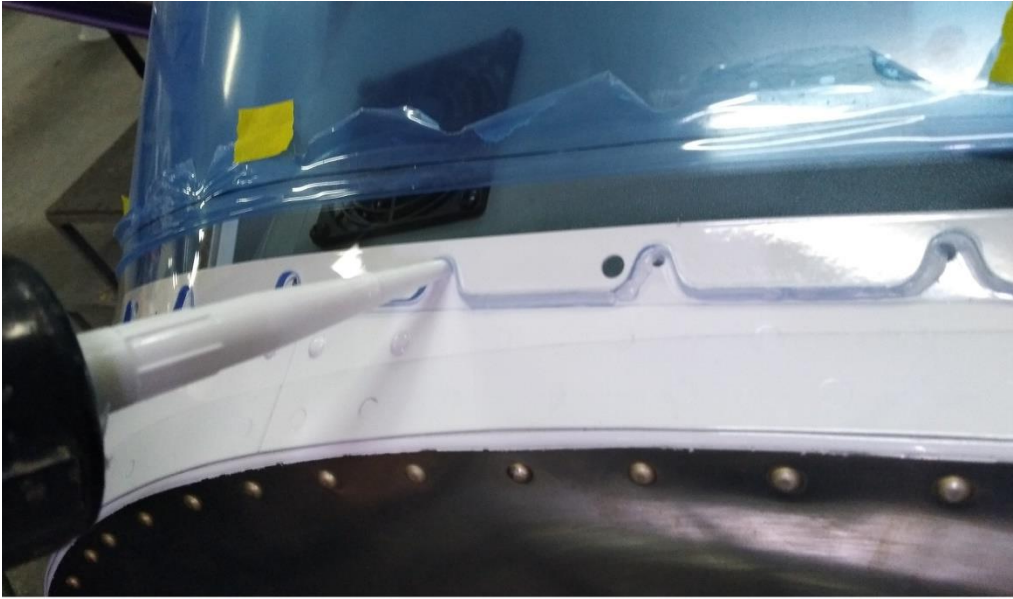


Fig.30

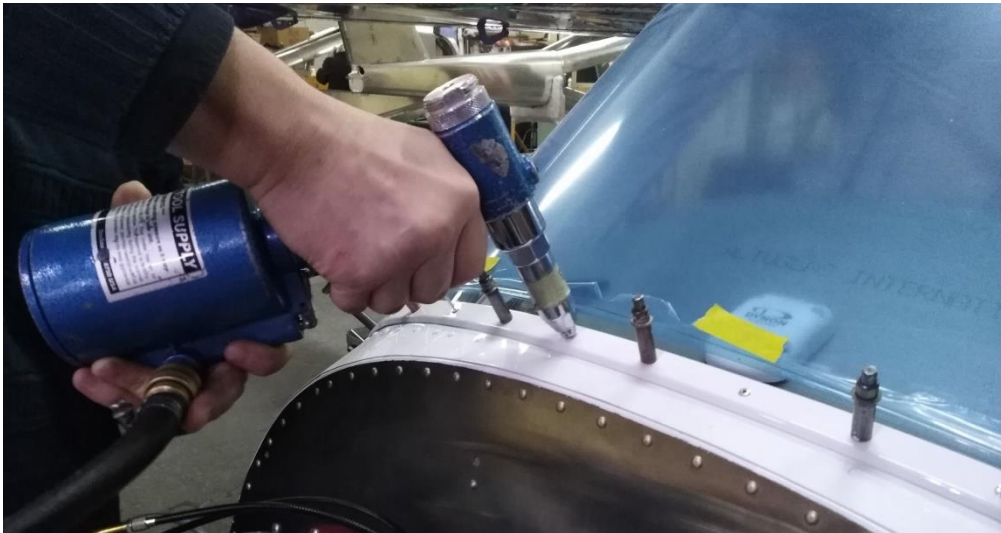


Fig.31

3.19 To seal the gaps between the wing root fairings and wings do the following:

3.19.1 Stick the narrow sharp edge masking tape on the fairings along their edges.

3.19.2 Stick the narrow sharp edge masking tape on the glass along the fairing edges at 1,5 mm distance (Fig.32).

3.19.3 Additionally protect the surfaces of the glass and fairings with a paper masking tape (Fig.33).

3.19.4 Apply the sealant along the fairings' edges (Fig.34).



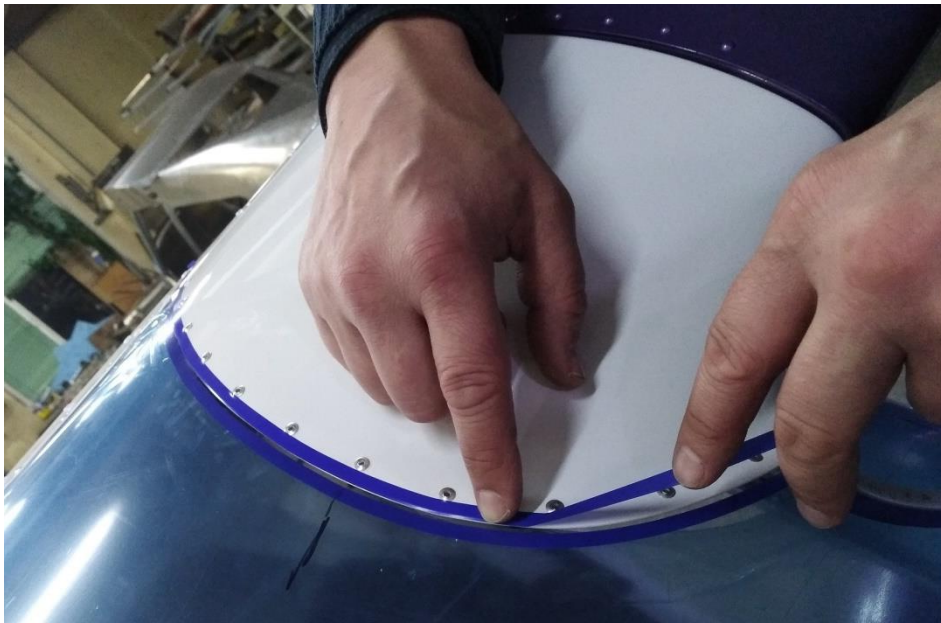


Fig.32

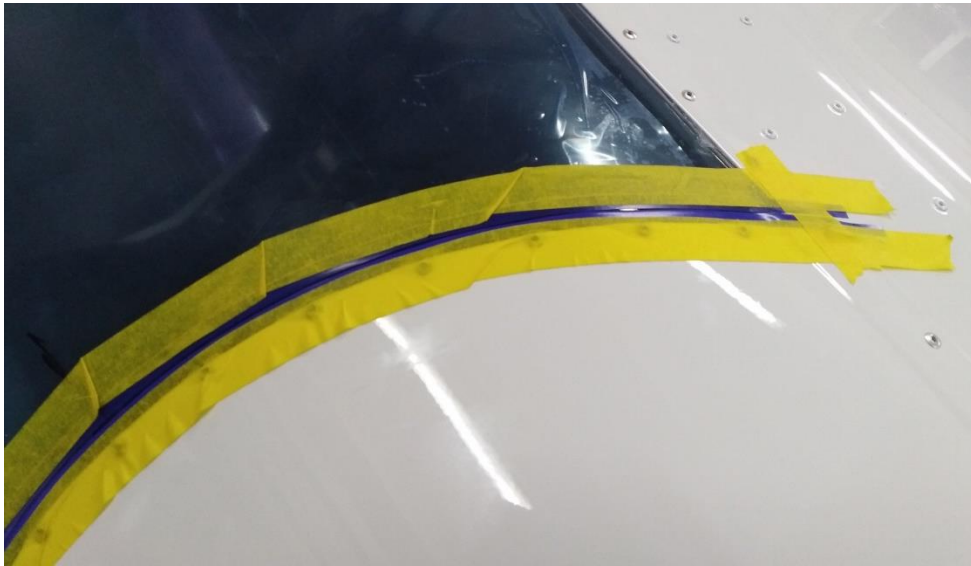


Fig.33

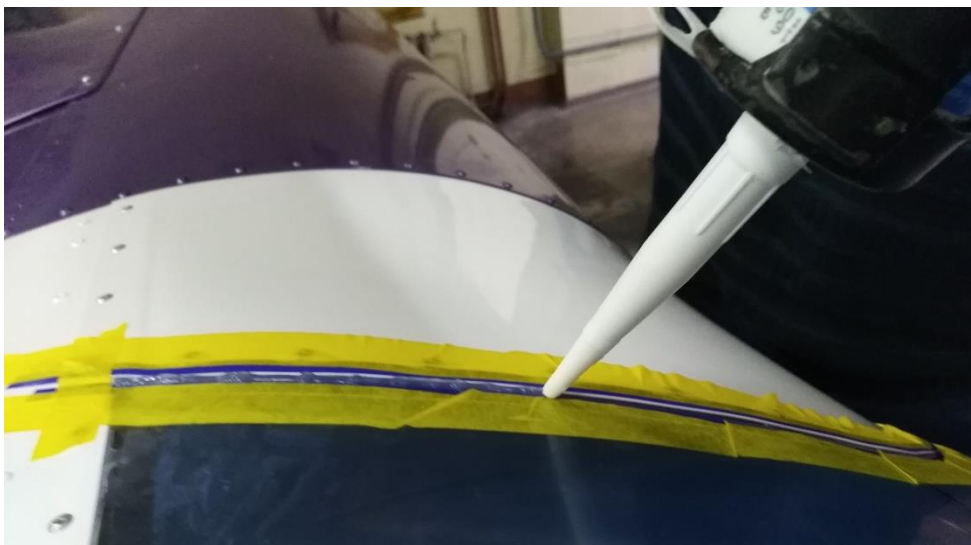


Fig.34

3.20 Pressing the sealant under the fairing, remove its excess (Fig.35).

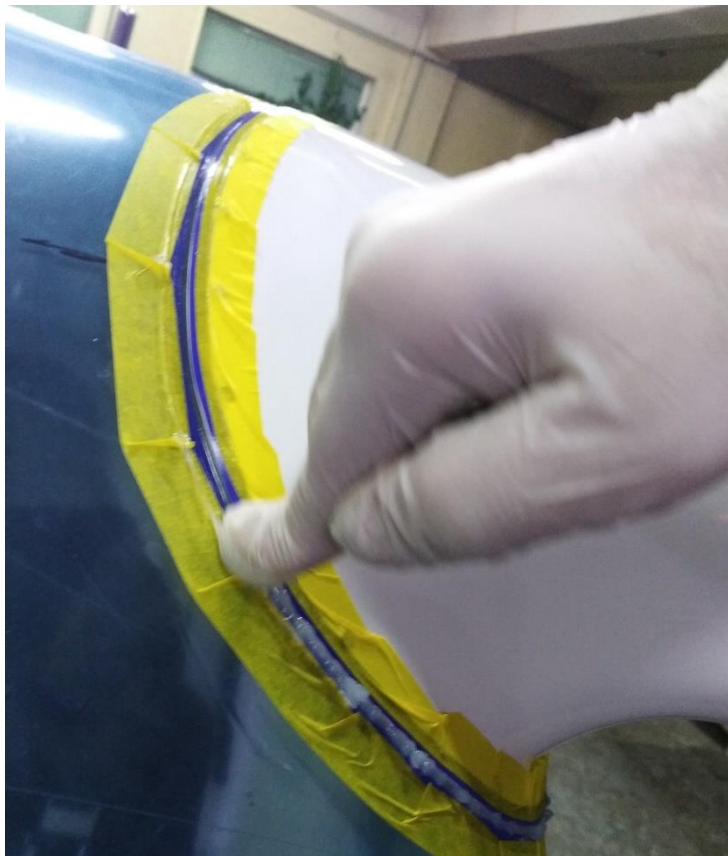


Fig.35

3.21 While the sealant has not dried remove the masking tapes from the from the surfaces of the fairings and glass (Fig.36).

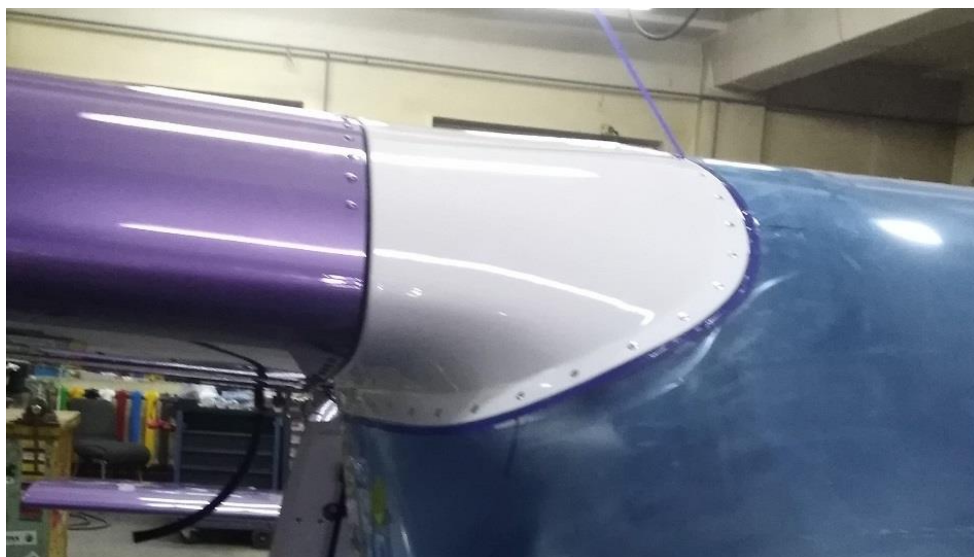


Fig.36