

A-22LS (A-22L2) Windscreen Glass Replacement Instructions

These instructions describe the process of replacing the initially installed 2 mm PET windscreen glass (fig. 1) for the 3 mm acrylic glass.



Fig.1

1. Preparation of the jigs and tools

1.1 Using the threaded studs, bolts and nuts assemble the windscreen glass installation jig as shown in Fig.2. The initial distance between the frames – 70 mm (Fig.3).



Fig.2

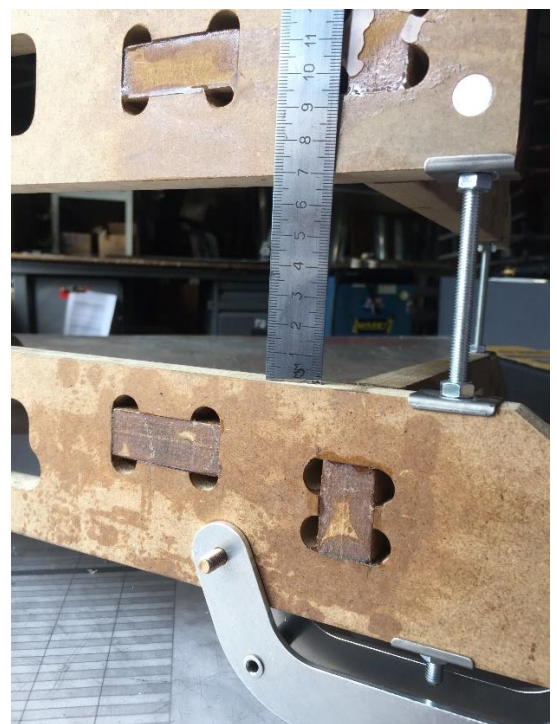


Fig.3

1.2 Installation of the jig (the windscreen glass is omitted for clarity):

1.2.1 Suspend the jig by its hooks on the fuselage carry-through-tube (Fig.4).



Fig.4

1.2.2 Rotate the jig forward and up between the side tubes and put the jig retainers in place (Fig.5).



Fig.5

1.2.3 Fix with bolts the jig retainers set on the side tubes (Fig.6).

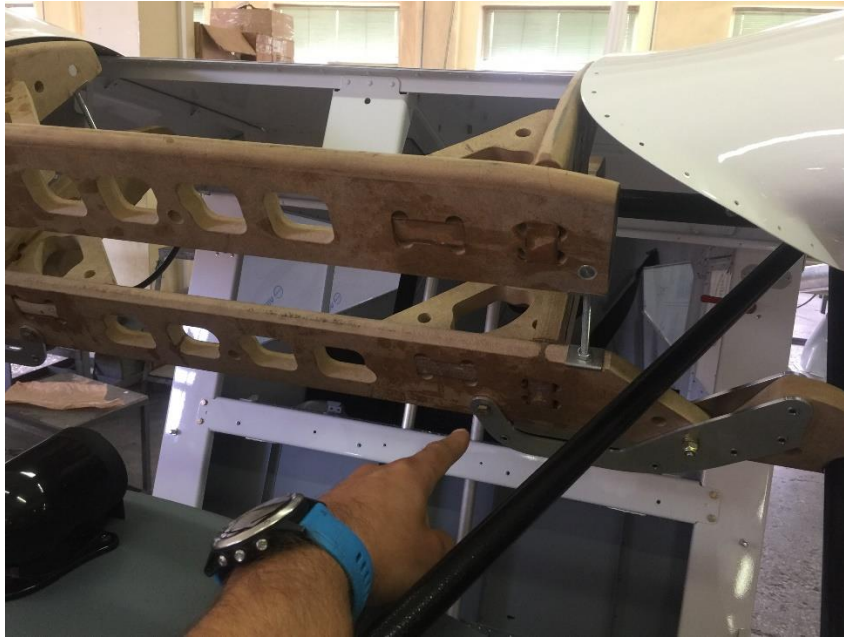


Fig.6

1.2.4 The jig in the intended position (Fig.7).



Fig.7

1.3 It is recommended to use the straight cutting edge conic cutter with 1.5 mm radius end (Fig.8). Speed of rotation 450-550 rpm. An electric screw driver is a good solution for this. For convenience put a drilling depth limiter at 7-10 mm distance from the cutter end. This will ensure $\varnothing 3.5-4.0$ mm holes.



Fig.8

2. Removal of the old glass

- 2.1 Drill out the rivets and remove the edging strips around the glass perimeter.
- 2.2 Remove the old glass and clean the fuselage from the remaining sealant.
- 2.3 Clean the side edging strips from sealant for re-use.

3. Installation of the new glass

- 3.1 Remove 30 mm of the protective film from the glass along its edges
- 3.2 Put the glass under the wing root fairings (Fig.9) and secure it on fuselage with CLECO fasteners (Fig.10).



Fig.9

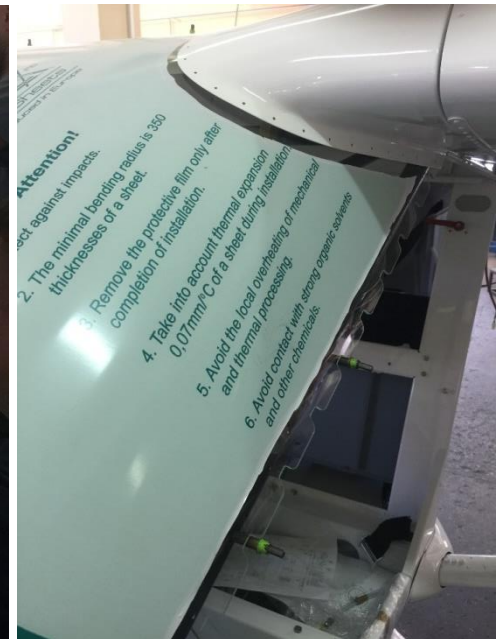


Fig.10

3.3 Set the jig under the glass as described in the instruction 1.2 above (Fig.11 and Fig.12).



Fig.11



Fig.12

3.4 Press the glass to the jig (you may use a belt) and pay attention to the clearance between the wing root fairings and wing root butt (Fig.13). If necessary, adjust the jig to ensure the required clearance (3 mm) between the fairings and wings, and ensure good fit of the fairings to the windscreen glass (Fig. 15). For convenience put a temporary spacer between the fairings and wings (Fig.16).



Fig.13



Fig.14

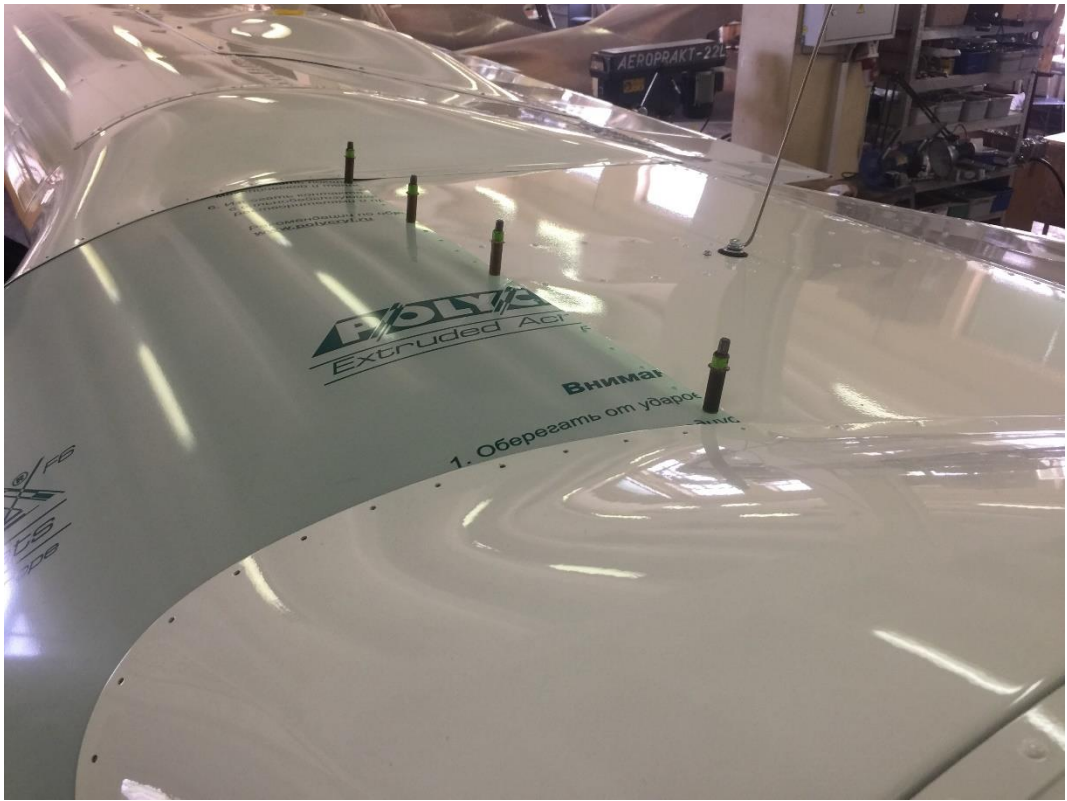


Fig.15



Fig.16

3.5 Make sure that the glass does not cover the holes for attachment rivets. If necessary, modify the cut-outs the glass after marking the material to be removed to ensure proper distance to the rivet holes (Fig.17). Cut the same amount of glass from its side edge (Fig.18) to ensure proper position of the side edging.



Fig.17



Fig.18

3.6 To install a thicker glass enlarge to $\varnothing 4.5$ mm the two holes on the lower flange of each side edging (Fig. 19). If it is not sufficient elongate the holes to the required direction using a fine round file (Fig.20). Put each side edging in its place using as many CLECO fasteners as possible (Fig.21).

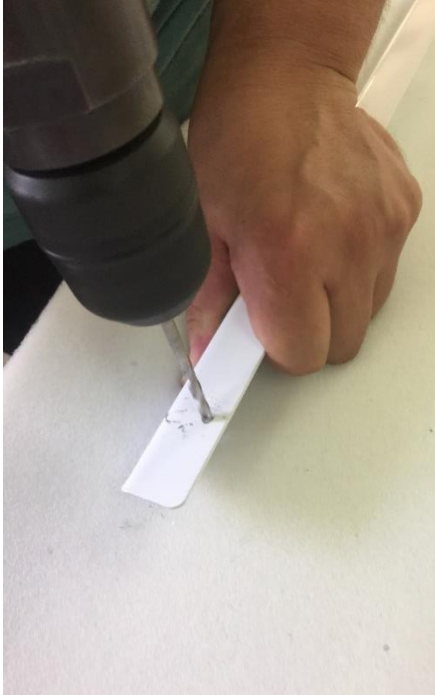


Fig.19

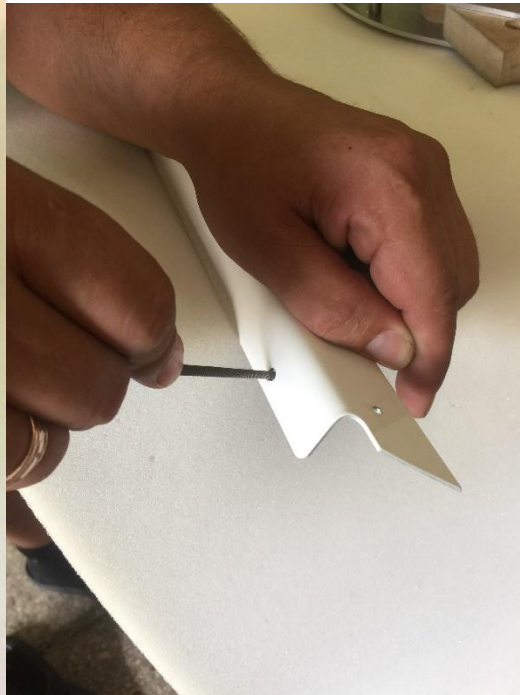


Fig.20

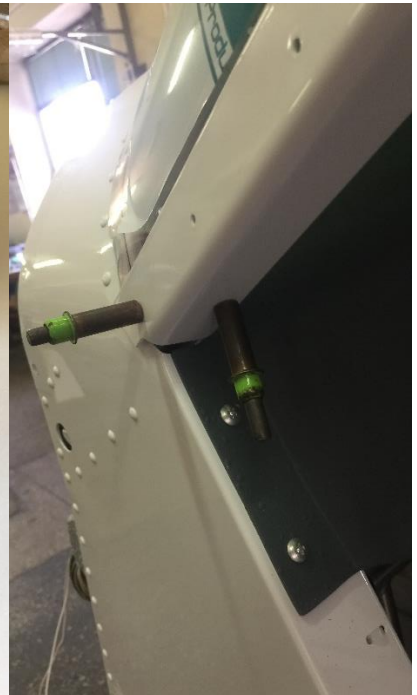


Fig.21

- 3.7 Using the tool described in instruction 1.3 drill, from inside the cockpit, the holes in the windscreen glass aligned with the holes in wing root fairings (Fig.22). Set CLECO fasteners in every second hole (Fig.23).



Fig.22



Fig.23

3.8 In areas with poor access (Fig. 24) mark the holes outside before drilling (Fig.25).



Fig.24



Fig.25

3.9 Remove the glass from fuselage and make the remaining holes using the marking (Fig.26).



Fig.26

3.10 Blunt sharp edges on all holes from both sides (Fig.27)



Fig.27

3.11 Install the glass with edging strips using CLECO fasteners on fuselage without the jig. Fix the glass with the rivets to the wing root fairings while ensuring the required

clearance between the fairings and wings Put washers under the locking heads of the rivets.

3.12 Remove the edging strips one by one, apply the sealant (Fig.28) and set rivets along windscreen perimeter as shown in Fig.29 – Fig.38.



Fig.28



Fig.29



Fig.30



Fig.31



Fig.32



Fig.33

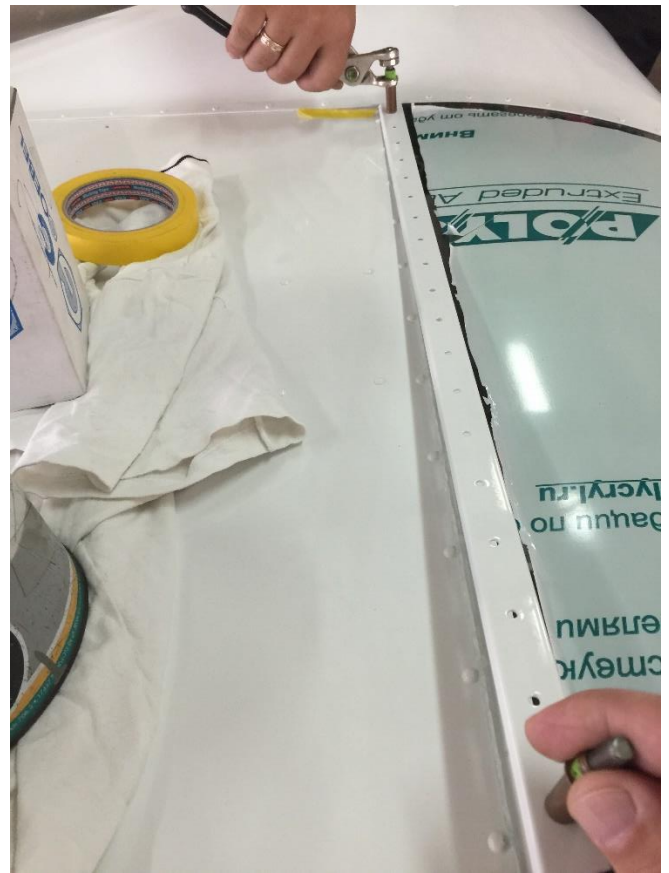


Fig.34

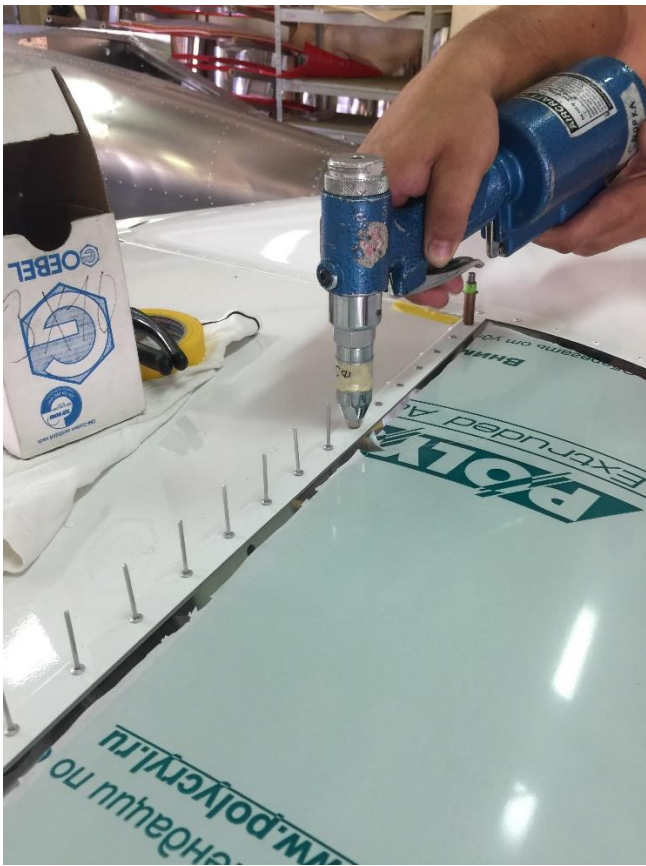


Fig.35



Fig.36



Fig.37

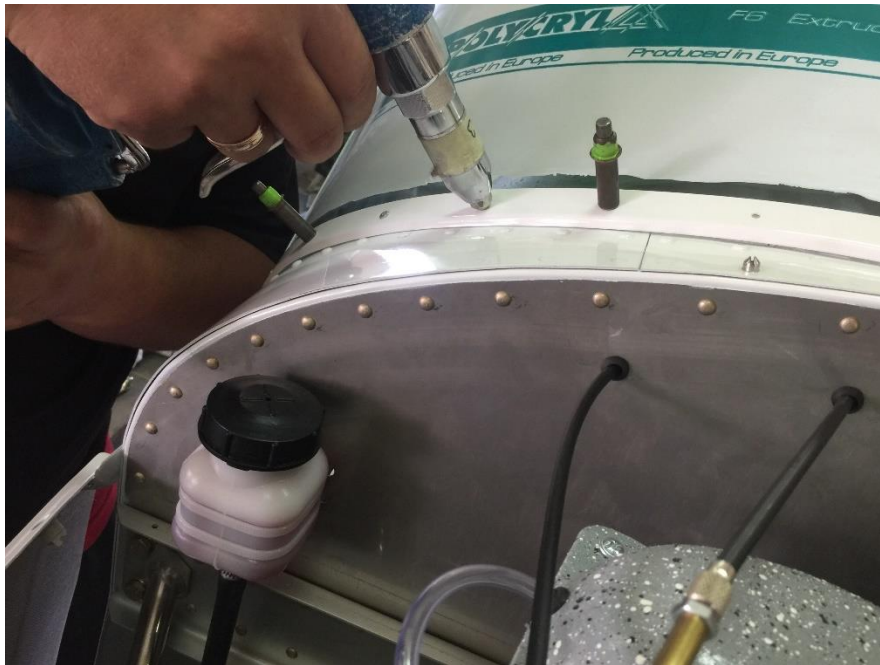


Fig.38

3.13 To seal the joints of the windscreen glass to the wing root fairings (Fig. 39) do the following:

- 3.13.1 Apply a sharp paint line (6 mm wide adhesive vinyl tape) on the fairings along their edges.
- 3.13.2 Apply the sharp paint line on the glass along the fairing edges at 1.5 mm distance.
- 3.13.3 Additionally cover the glass and fairings with a masking tape (18 mm wide adhesive paper tape).
- 3.13.4 Apply the sealant along the edges of the fairings.

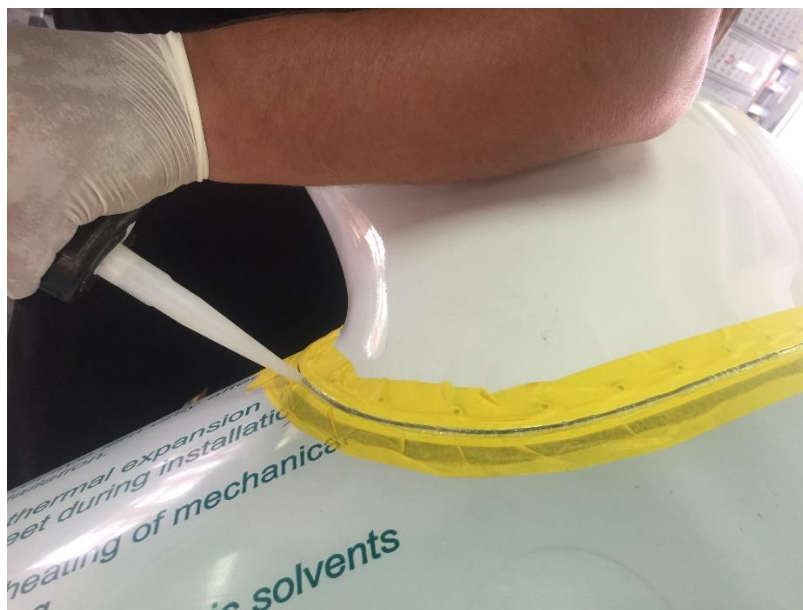


Fig.39

3.14 While forcing the sealant under the fairing remove the excessive sealant (Fig. 40).

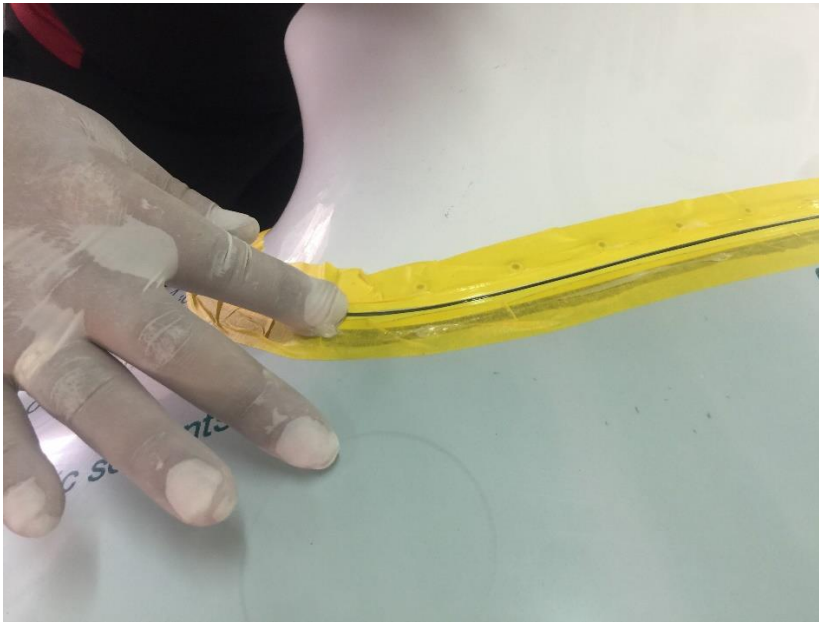


Fig.40

3.15 Remove the masking tape and sharp paint line while the sealant is still wet (Fig. 41).

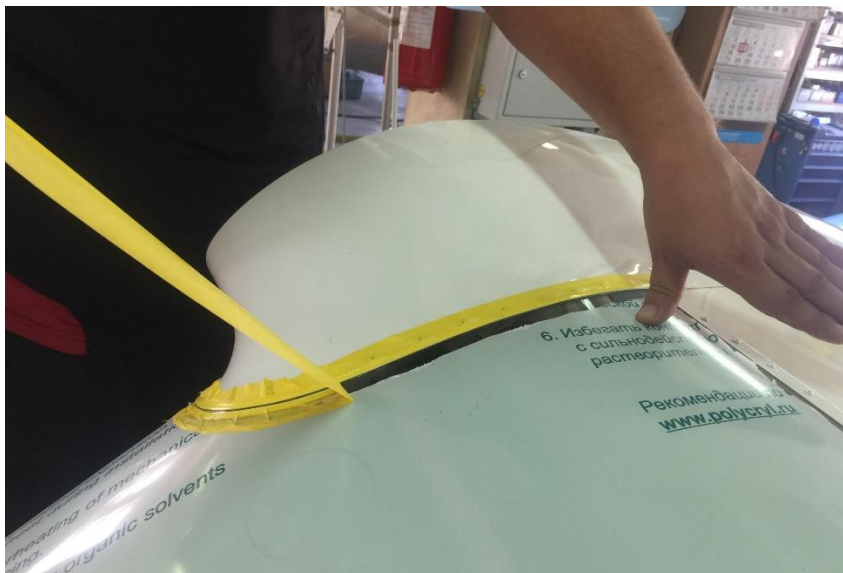


Fig.41