



ASSEMBLING THE CANOPY FRAME

INTRODUCTION:

The big plexiglass bubble is fragile and difficult to handle. The geometry is not always obvious. The fit must be correct to prevent aggravating air and water leaks. Take your time and work with patience and persistence.

PLEXIGLASS TIPS

The plexiglass canopy bubble is one of the most expensive and fragile components in the kit. Mishandling and cracking it is one of the most disappointing, gumption-robbing experiences a homebuilder can have.

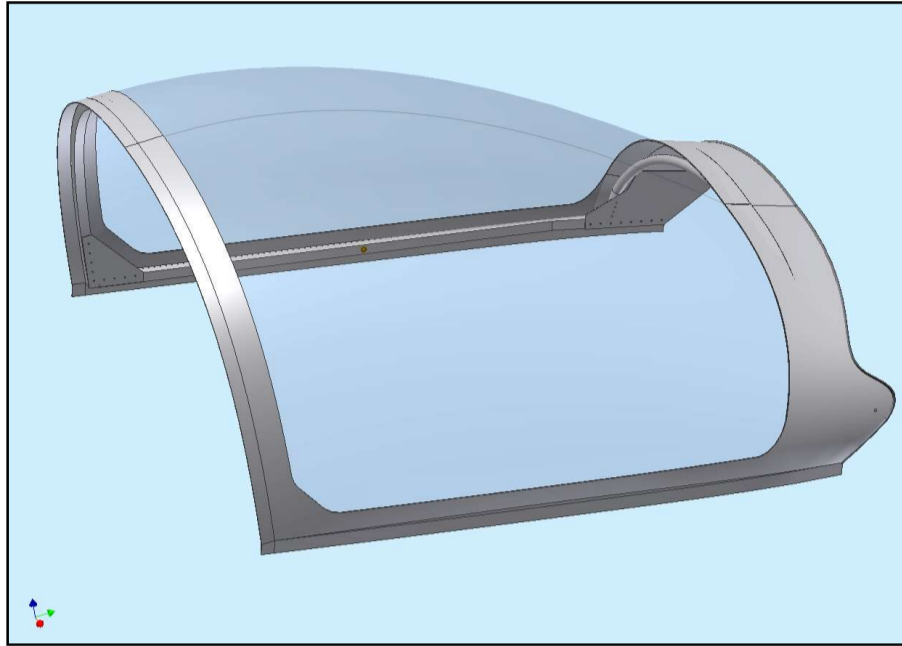
Here are a few plexiglass tips.

Plexiglass is dramatically less brittle when it is warm. Do not try and work on the canopy in a cold shop.

Cutting or drilling Plexiglass in temperatures under 60° F is asking for trouble. Heat the shop to 75-80° it may be uncomfortable to you, but your canopy loves it. Many builders will put a small space heater under the canopy when trimming, just as insurance.

Regular twist drills have tips that tend to fracture Plexiglass. Special Plexiglass drills are available from tool suppliers. We have also found that a small Unibit makes excellent holes in warm Plexi. Using a regular twist drill to enlarge a pre-drilled hole is almost guaranteed to crack a canopy.

Do NOT try and use a saw of any kind. You might get away with it once or twice, but eventually you will crack the bubble. Cutting discs do an excellent job when used in a high speed die grinder.



BUILDING THE CANOPY FRAME

See DWG: FASE 1 STEP1 - FASE2 – STEP 2 - FASE 3 – STEP 3

The canopy frame must be build when the fuselage is completed. Between the canopy frame and the fuselage you must put every 50/80 mm a spacer of ± 2 mm where you will put after, all around a rubber strip.

Take the ROLL BAR SL100000-01/00, place it as shown in the drawing, leaned 10° backwards; mark and trim the exceeding part, tighten the arc to the two squares SL104010-07/00 RH & LH; drill to 3,2 mm and Cleco.

Place the 2 Right & Left square tube SL104010-02-01 and SL104010-03-01 lined up with the two side angle of the fuselage, trim and Cleco them to the SL104010-07/00 RH & LH ; rivet spacing is ± 20 mm.

Place and clamp the RH & LH brackets SL104010-06-01 to the RH and LH SL104010-02-01 and SL104010-03-01. Check the position of the rotation holes M6. Drill 3,2 mm, deburr and rivet 4 mm countersunk with Avex 1604-0514.

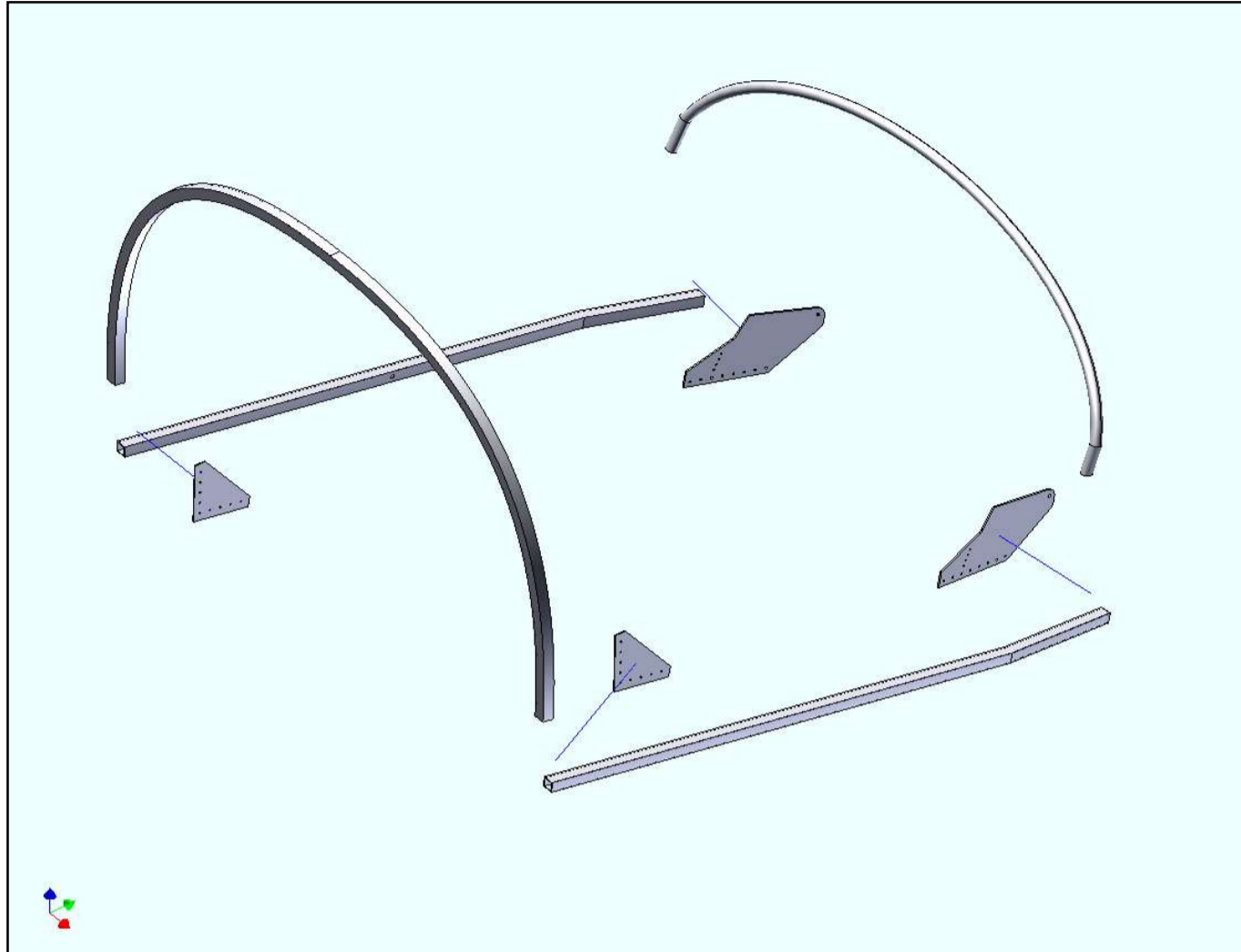
Locate the Forward arc SL1040-04-00 adjust and trim it , be sure it copy the shape of the composite fairing SL101320-01-01 between them the same spacers of ± 2 mm. Clamp and rivet with 3 rivets on each, countersunk 3,2 mm Avex 1604 –0412.

Your Canopy frame is now completed, connect SL104010-06-01 and SL101320-02-01 fitting a bolt M6 and check the movement.



CANOPY TRIMMING AND FITTING

The STORM RG canopy has been vacuum molded for precise dimension and contour control. It should be trimmed and fitted to approximately the final position. Because the canopy is large, and expensive we recommend enlisting a helper during the trimming and fitting stages.



For cutting the plexiglass, we recommend using the 75/80 mm cutting discs. Mounted on a 6mm mandrel and used with a high speed hand held drill or a die grinder, plexiglass cutting can be fast, clean, and safe. Because it is possible for the cut-off tool to slip, we suggest that the builder cover the plexiglass with thick electrical tape along the line to be cut. Thus, if the cutting disk should slip and cut in too deep, the mandrel will not be as likely to damage the plexiglass.

Now the canopy can be fitted on its frame

With a felt-tip pen, mark where you must trim the outside of the structure; with a lapper and a special disk for plastic start contouring by following the marking. **Protect your eyes, nose and mouth with glasses and a faceplate.**

Remove the canopy and trim in the areas where it seems necessary. Trim less than you feel is needed and fit the canopy on the fuselage again. You should be able to notice the effects of this trimming, and mark the canopy again for further trimming.

Reassemble the structure on the frame and lay the windshield on it. Make sure that the front pipe and the back arc are in the right position, make some tacking holes.



CAUTION:
THE DRILL MUST HAVE A VERY STRAIGHT ANGLE
135-140° AND AN ALMOST NULL RAKE.
THE DRILLING MACHINE MUST BE OPERATED
BEFORE TOUCHING THE ACRILIC WINDSHIELD WITH A HIGH
ROTATION NUMBER AND WITH A LOW FEEDING.

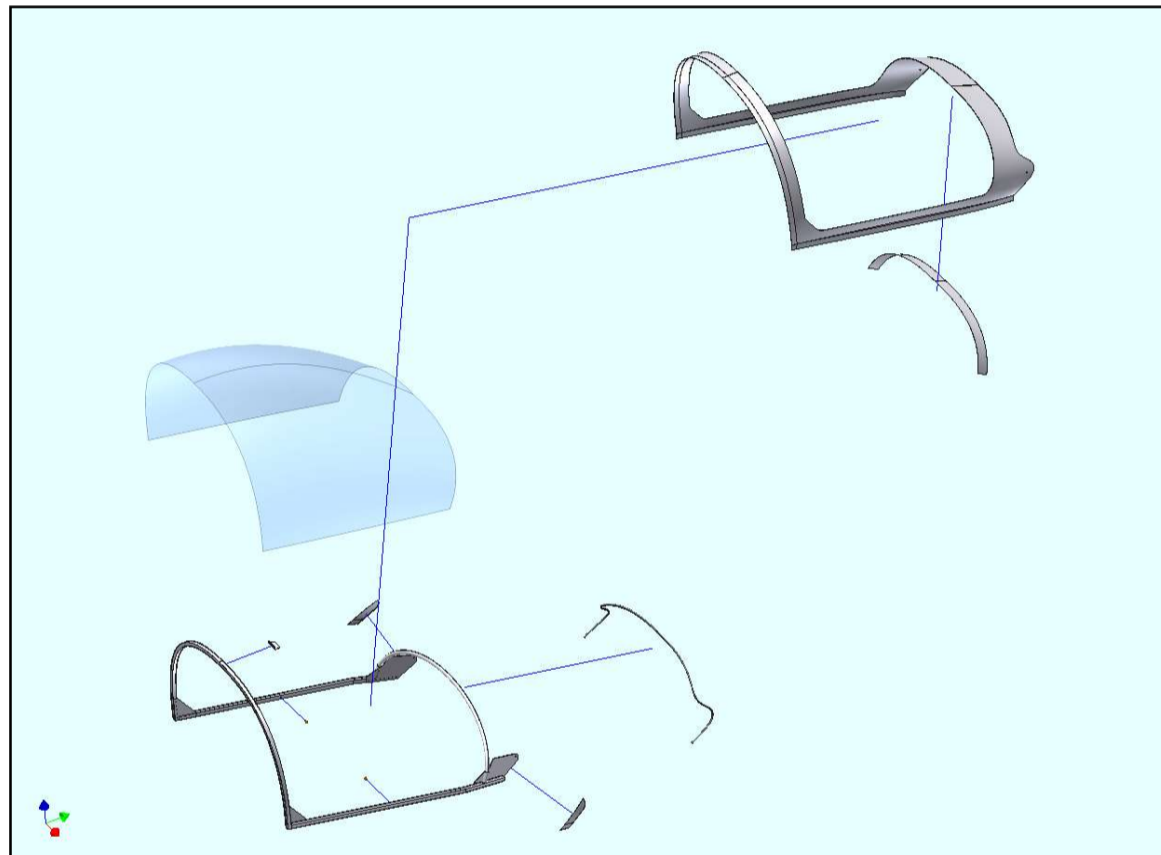
Place the two side strips SL104010-08/00 and SL104010-09/00, mark the drilling with a 80 mm hole spacing and centered with the underlying structure; drill and tack to 3,2 mm.

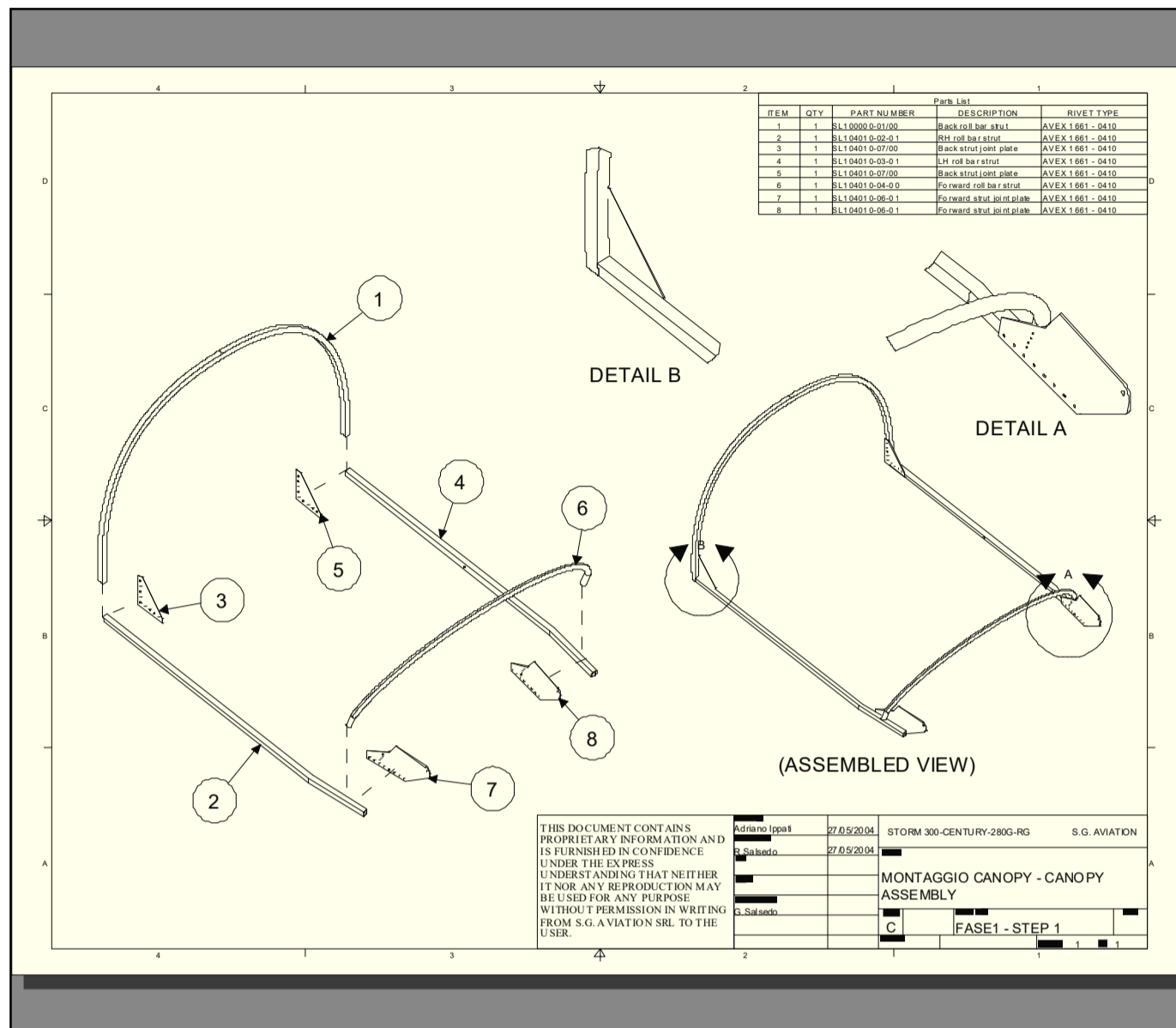
Lay the rear strip SL104010-11/00 on the PLEXIGLASS and drill starting from the upper center and coming down along the sides.

Place the fore strip SL104010-12/00 after having put the front RUBBER strip KR104010/00, making it follow the front cowling profile inside its seat.

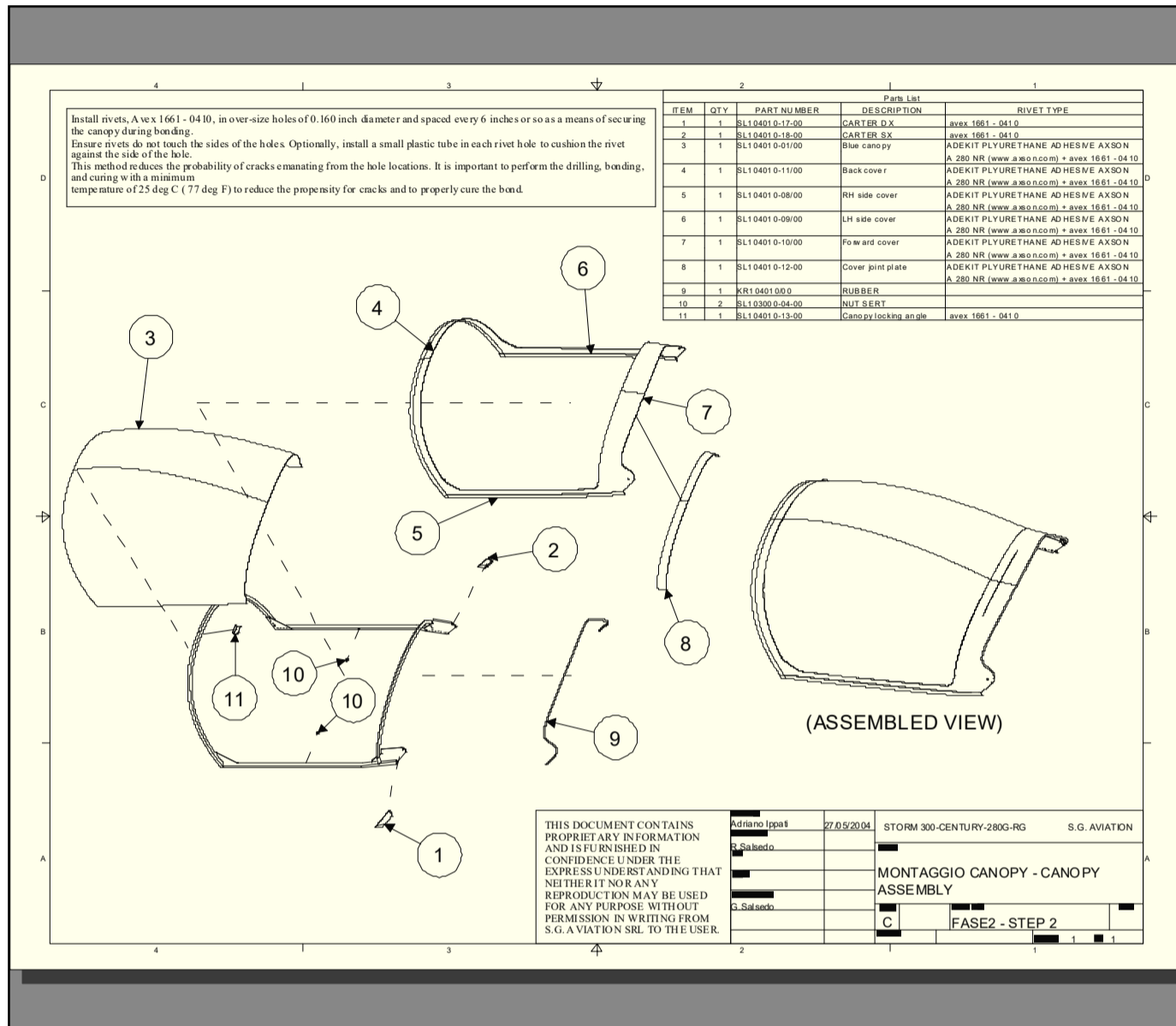
Mark the center of the Aluminium tubing and drill as you did for the rear arc with a 50 mm hole spacing.

Mark, trim, smooth and adjust the strips the best way you can. Now strip everything; you can make everything ready for the final painting. Widen the 3,2 mm holes of the plexiglass to 8,4 mm so that the rivet expansion does not work on the plexiglass sheets.

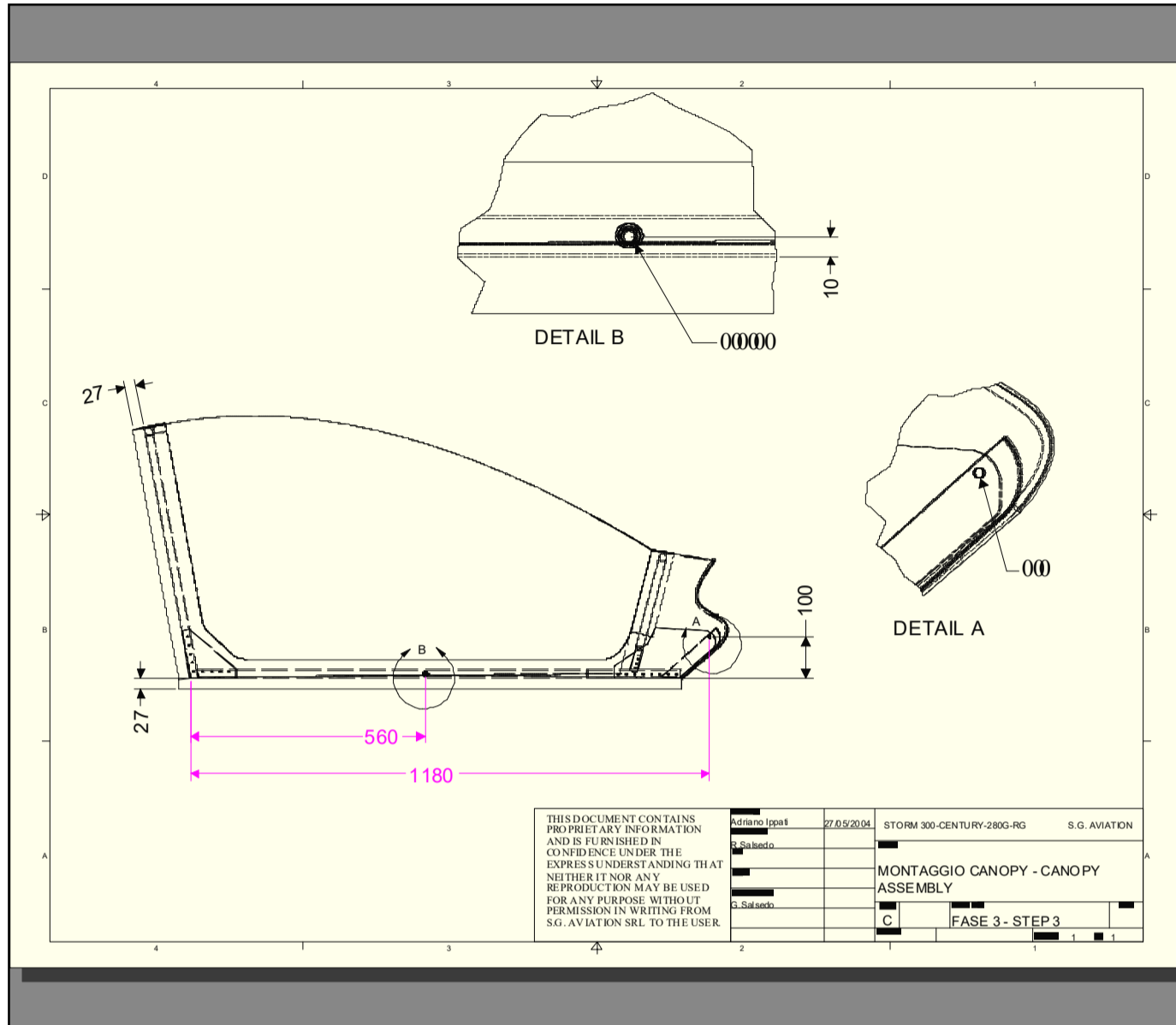




DWG FASE 1 – STEP 1



DWG FASE 2 – STEP 2



DWG FASE 3 – STEP 3



INSTALLING REAR WINDOWS

Take the two side windows, warm them with a hairdryer and try to cut them fit for their seat; protect them with rags and prepare the wooden saddle to keep their shape; the temperature must be 80-100° and indirect. It is a long operation but, if you do it with care and patience, you will obtain excellent results.

They must be kept in shape for at least one day with the painted frame .

Place the plexiglass centered on the sheet and reproduce on it the two central holes that are already on the frame. **Remember all the given suggestions.**

Now with the help of your friend who will hold the plexiglass and push it outwards, start drilling one hole after the other on plexiglass and frame, tacking with clecos and making sure that no buckling are produced on the sheet.

Now strip everything, widen the holes on the plexiglass the same way you did for the canopy.

After having painted the cell into the final colour, you can rivet the two side windows and the canopy. Smear a transparent silicone layer on the inside of the sheet, around the window openings and in the frame part in touch with the plexiglass; remove the protective film from the surface to be riveted.

Tack all the holes with 3,2 mm clecos so as to obtain a complete sticking, remove one cleco after the other and rivet with AVEX1661-0410 starting from the center and following the same sequence of the drilling. Clean the exceeding silicone with alcohol.

Follow the same procedure for the canopy.

Smear a uniform silicone layer on the structure; position the plexiglass and tack some holes to keep it steady.

Put a uniform and continuous layer on the inside of the strips; starting from the central side, lay the strips in the same way as the drilling, tack the holes 100% and rivet with AVEX1661-0410.

Fill the inner parts of the fore part of the structure with silicone, so as to obtain a good sealing.

Try the openings and the closings more than once so as to adjust and remove profiles and interferences.