

Pre-Paint>Fuselage>Pre-fit doors

Objectives of this task:

In this task you will size and pre-fit the doors to the fuselage and pre-fit the striker plate, all of which will be finally fitted after the fuselage has been painted.

In the photos that follow the pilots door is shown, however the exact same technique is used for each door.

Materials required:

Card # J1 'Doors'

5-minute Araldite and flock

Size the door

The door may require a slight trim to fit the opening: either tape the door in place or have a friend hold it firmly in place. Working from the inside, make sure that the door is centred in the opening and mark the inside of the door around the edge of the opening.

Remove the door and use a sanding disc to trim the door to the mark. Hold the door in the opening and carefully mark and sand as required until the door is a good snug fit all round.

Fit the hinges

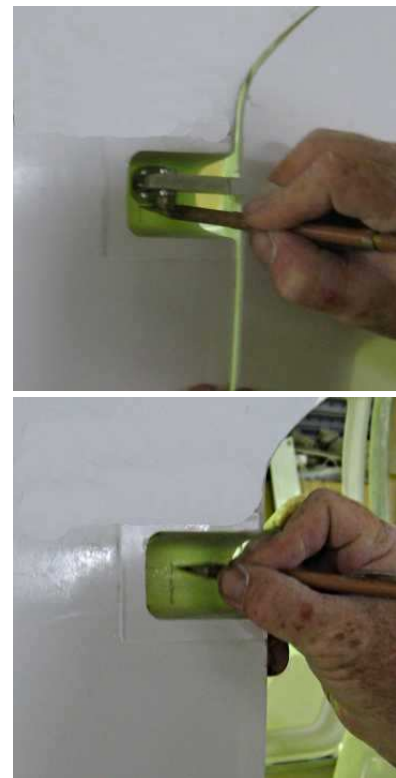
Fit the top and bottom hinges to the arms on the door, then tape the door back into position and mark the centreline (vertically and horizontally) of each hinge screw. Remove the door and extend the marks to locate and drill each hole.

Trial fit the door with the hinge screws fitted and check that the door is sitting flush with the fuselage. If it requires adjustment outwards then an Araldite/flock mixture will be used to pack the hinges out the required amount.

Remove the door and roughen the area around each hinge screw hole to provide a good key for the Araldite/flock mixture. Apply wax to the hinge and screw to prevent them sticking to the flock and refit the door.

Loosely fit the hinge screws, then mix up a small batch of 5-minute Araldite and flock and pack the flock mixture behind the hinges as required, check that the alignment of the door and the fuselage is correct and leave the flock mix to cure.

Open and close the door a few times and mark any points that are binding then use a long sanding block to remove those points – the door should open and close smoothly with nothing rubbing at any point right around the opening.



Pre-fit the striker plate

Hold the outside door latch in the open (forward) position and close the door until the rear of the door is sitting flush with the fuselage and with an even gap top and bottom and, working from the inside of the cabin, carefully mark the vertical position of the latch pin on the door jamb.

Open the door and measure the horizontal distance from the outer door skin to the centre of the latch pin and mark that on the door jamb then drill a ½” hole at the point where the 2 lines cross.

Temporarily tape the striker plate to the door so that the latch pin is just through the hole in the plate then close the door carefully and, working from the inside of the cabin, mark the top and bottom of the striker plate onto the door jamb.

Remove the striker plate from the door and pre-fit it to the door jamb as shown in the photo above, with the plate sitting against the lip of the door jamb.

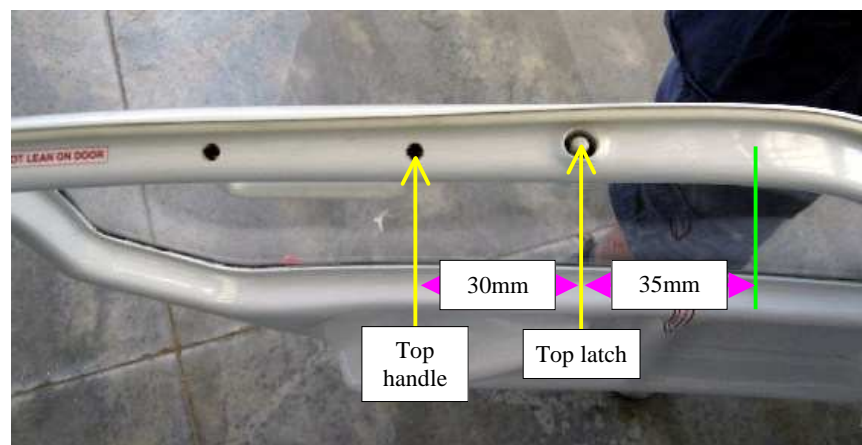
Do not rivet the striker plate into place; it will be finally fitted after the painting is complete.



Fit the top latch

Measure back 35mm from the top of the curve at the front of the door and drill a pilot hole and then a ¾” hole down through the door frame. Refer to photo at right:

Fit the latch barrel up through the hole until it is about 2mm above the top of the door jamb and mark that position, then flock the barrel into position with 5-minute Araldite and flock.



Make sure that the open end of the barrel faces upwards as shown in the photo above. Smooth the flock to a uniform radius around the top and bottom of the barrel and leave to cure.

With the door closed, hold the top front of the door flush with the fuselage and drill a 3/8” hole up through the latch-pin hole in the barrel and through the door jamb.

Open the door and fit the latch pin to the barrel from the bottom with the rubber sleeve and circlip fitted from the top as shown above. Test the latch for free but firm movement.

Fit the top handle 30mm behind the top latch – mark and drill the screw holes through both surfaces then drill the top holes to ½” for access to the screws.

Final fit the door

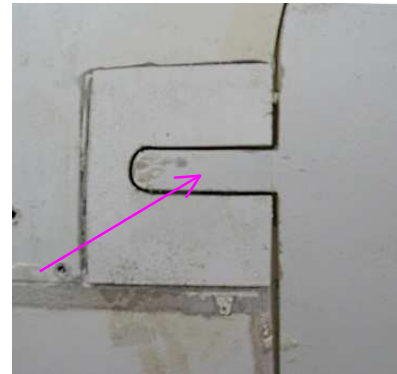
Shut the door using both latches and check right around the door to see if there are any areas that need final adjustment, for example if the door does not fit easily inside the opening, and sand to fit as required.

Fit the fairing to the top hinge

Centre the fairing on the top hinge and tape it in place then test that the door can open and close freely and make adjustments to the hinge arm slot as required then fix in place with 5-minute Araldite and flock.

Test that the door can open and close freely and adjust the clearance of the hinge arm slot if required.

Cut and fit a section of glass sheet to the hinge arm (arrowed at right) to suit the opening in the fairing and fix to the hinge arm with an Araldite/flock mixture and leave to cure.

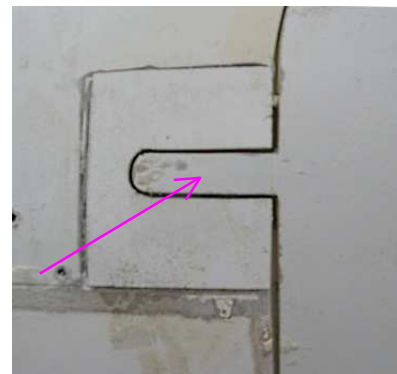


Fit the fairing to the bottom hinge

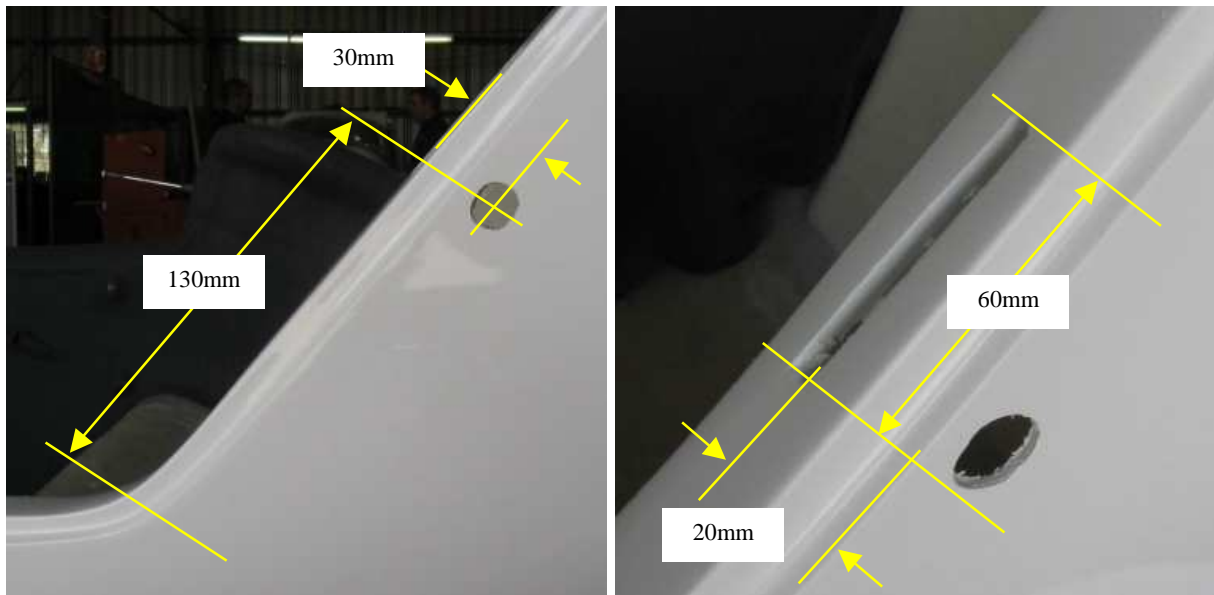
Centre the fairing on the bottom hinge and tape it in place then test that the door can open and close freely and make adjustments to the hinge arm slot as required then fix in place with 5-minute Araldite and flock.

Test that the door can open and close freely and adjust the clearance of the hinge arm slot if required.

Cut and fit a section of glass sheet to the hinge arm (arrowed at right) to suit the opening in the fairing and fix to the hinge arm with an Araldite/flock mixture and leave to cure.

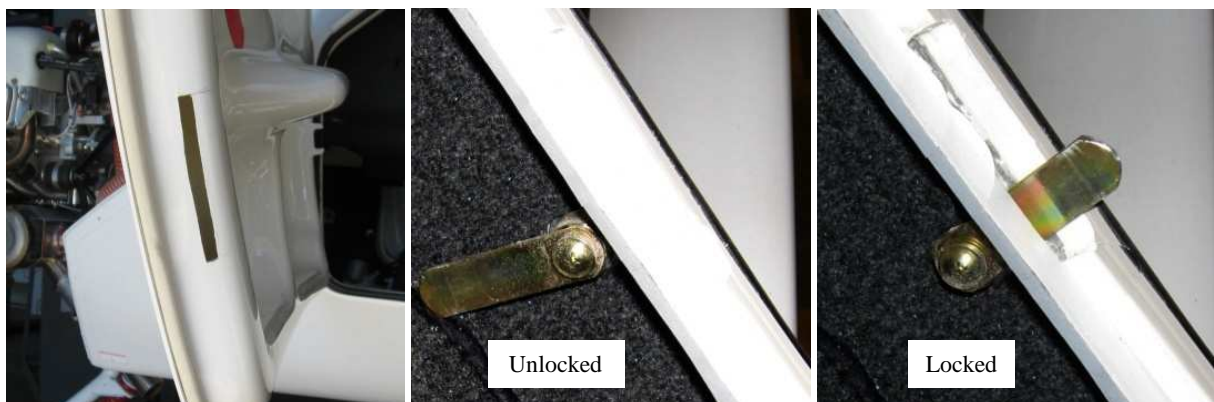


Fit the key lock



Mark a position 30mm out from the rear of the opening and 130mm up from the bottom of the opening and drill a pilot hole, then drill out to 18mm and elongate the hole with a round file until the door lock barrel can be mounted snugly into the hole.

Now mark and cut a slot 60mm long and 6mm wide 20mm in from the fuselage skin in the door opening, with the bottom of the slot square with the bottom of the lock hole. This is the slot that the lock arm will operate through. Close and latch the door and mark the slot onto the back of the door – use a builder's pencil or any similar thin marker and mark through the slot.



Cut the slot in the back of the door and check that it matches the slot in the door opening.

Fit the lock barrel into the 18mm elongated hole and secure with the large nut, then fit the lock arm, which will need to be bent slightly in order to swing freely into the slot.

Turn the key so that the top of the key moves forward and fit the arm in the locked position.

Test that the door can be locked and unlocked with no binding of the lock arm.

Leave the doors fitted for now, they will be removed later in *Painting > Pre-paint disassembly*.

This completes the *Pre-Paint > Fuselage > Pre-fit doors* task.