

PROCEDURE 4.100

INSTALLING CABIN DOOR

In this procedure...

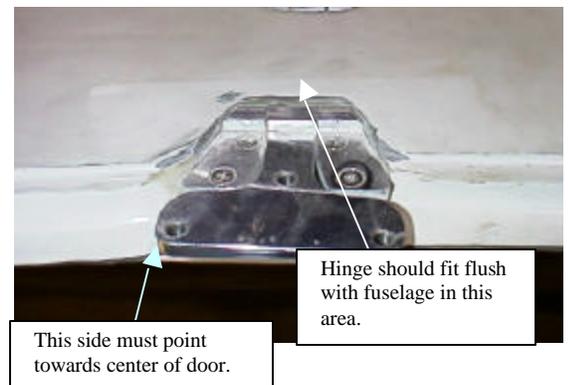
The cabin door hinges will be installed in the recessed areas of the fuselage; the cabin doors will be fit and attached to the hinge assembly.

MATERIAL SUPPLIED:

<u>Part No.</u>	<u>Qty.</u>	<u>Description</u>
212-12-052	1	Cabin Door Right
212-12-051	1	Cabin Door Left
212-12-050L	2	Hinge, Cabin Door LF/RR
212-12-050R	2	Hinge, Cabin Door RF/LR
MS24694-S56	16	Screw, Hinge to Fuselage
MS24694	12	Screw, Hinge to Door
212-12-50-01	2	Doubler, Door Hinge LF/RR
212-12-50-02	2	Doubler, Door Hinge RF/LR
212-12-055	2	Gas Strut
212-12-055-01	2	Gas Strut Mount, Door
212-12-055-02L	1	Gas Strut Mount, Fuselage Left
212-12-055-02R	1	Gas Strut Mount, Fuselage Right
212-12-055-03	4	Strut Mount Ballstud
212-12-082	2	G10 2" x 2" Block
MS24693C294	12	Mount Screws, Door
MS24693C56	16	Mount Screws, Fuselage

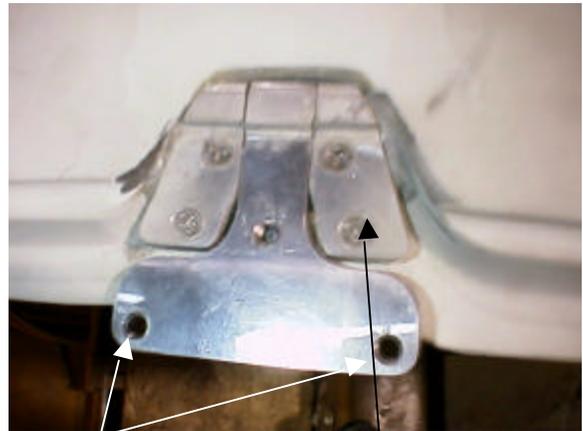
Step 1. Position the hinge assembly.

The cabin door hinge assembly is designed to fit into the recessed area of the fuselage. The hinge is designed with a 7° slant to the hinge pin to facilitate proper hinge pin alignment. Make sure that the thicker side of the hinge, points to the center of the door. (Note: On kits shipped prior to 1 January 2001 the inboard side of the recessed area must be ground out to allow for the hinge to fit flush with the top of the fuselage.



Step 2. Drill attachment screw holes.

With the hinge in position on the fuselage, drill the aft outboard hole on the front hinge and the forward outboard hole on the rear hinge. Insert a # 10 screw and tighten down snug. Check to insure proper hinge pin alignment by clamping a straight edge to the flat surface on the door side of the hinge. Align the straight edge with the two mounting holes. Rotate the hinge from the closed to open position to make sure there is no binding in the hinge. Once you are satisfied that the hinge alignment is correct, tighten the screw and drill and insert the remaining screws.

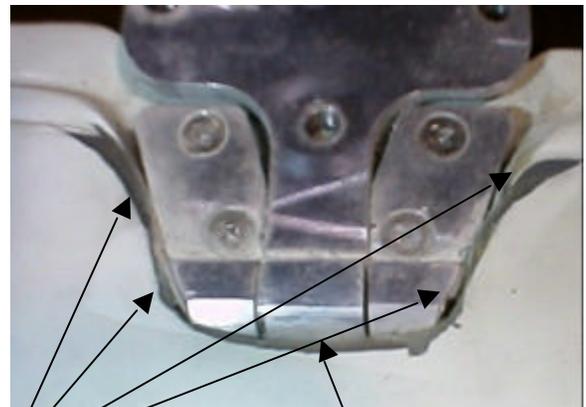


Place straight edge from front and rear hinge aligned with these two holes.

Drill this attachment hole first on both the front and rear hinge

Step 3. Fill and body work the gaps around the hinge assembly.

Use a body filler to fill the gaps between the hinge assembly and the fuselage. Use caution not to get body filler into the hinge rotating area. Rotate the door section of the hinge to the open position and make sure you maintain clearance for the rotating side of the hinge.



Fill these areas.

Do not fill this area.

Step 4. Attach the Cabin Door to the Hinge Assembly.

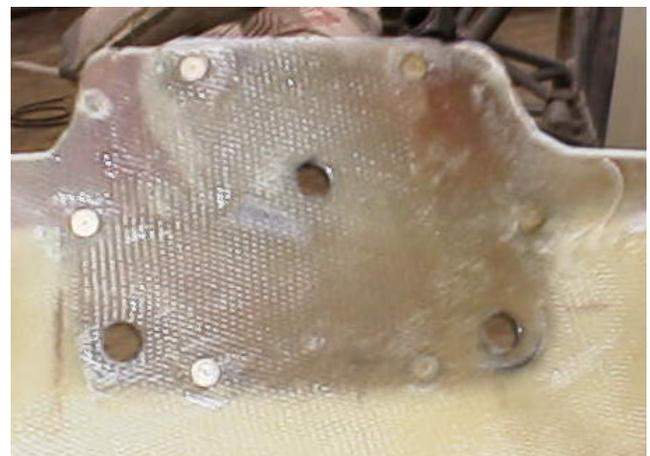
Position the cabin door on the fuselage. Make sure you have a constant gap around the door and that the door is sitting down in the fuselage door joggle. Once you are sure that you have a satisfactory fit. Back drill the holes up from the inside of the fuselage using the door hinge as a drill guide

Step 5. Install the Cabin Door Hinge Doublers.

Place the Cabin Door Hinge Doublers on the topside of the door and install the attach bolts. Drill $3/32$ " holes and cleco the doubler in place. Remove the door and countersink the 6 holes to a depth of about half that used for a flush rivet installation.



Turn the door over and countersink the fiberglass on the door to the normal countersink depth. Install the $3/32$ rivet with the manufactured head on the fiberglass side. Buck the rivet so that the shop head fills the countersink on the aluminum doubler. Sand the excess rivet material off to a flush finish.

**Step 6. Install Cabin Door Gas Strut Mounting Brackets.**

Install the Cabin Door Gas Strut Mounting Bracket hardpoint (2 x 2 x $1/2$ " G10 Block) centered on a point $6\ 1/2$ " from the rear cabin door hinge line and $4\ 1/2$ " forward from the aft side of the door. Cut a 2" square from the inner fiberglass and remove the foam core. Mill Fiber the G10 Block in place and laminate 2 plies (4" Square) of 7781 over the hardpoint.



When cured, place the Cabin Door Strut Mount Bracket (with the beveled edge forward) in the center of the hardpoint and locate the two 5/15 holes. Drill these holes and install 5/16–24 helicoles into the holes. Use caution not to drill through the door skin.



Step 7. Installation of Fuselage Strut Mount Bracket.

The fuselage mount bracket attaches to the fuselage door joggle flange approximately 15” down from the top door joggle. To locate the exact position install the cabin door and attach the gas strut to the ball stud on the door mounting bracket. Position the door in the open position so that the bottom side of the door is horizontal. Attach the fuselage mount bracket to the gas strut and hold in position. Mark the mount location, drill and install the two flush mounting screws.



Attach the gas strut and check the door for proper operation.



Note: Cabin door ship in kits prior to 1 January 2002 will require stiffing between the door hinge and the strut mount plate. This is accomplished by adding a metal plate, which attaches under the mount bracket and the rear hinge assembly. The metal plate is constructed of .063" 4130 steel. The plate is 4" wide and approximately 7" long. Bend the 45 Degree bevel in the metal strip so that it matches the contour of the door. If the foam is too close to the door hinge remove some of the foam so that bevel can be obtained. Weld two gussets onto the plate. See photo at right. Machine .062" off the hinge arm to compensate for the addition of the plate.

