

**SERVICE LETTER 6**

**SUBJECT:** CABIN FRESH AIR VENT INSTALLATION - For kits shipped after February 6, 1994

**APPLICATION:** Glasair Super II-S kits serial # 2298 and on until revision "S2-C" for FT/RG and "S2-A" for the TD.  
Glasair III kits serial # 3284 and on until revision "J".

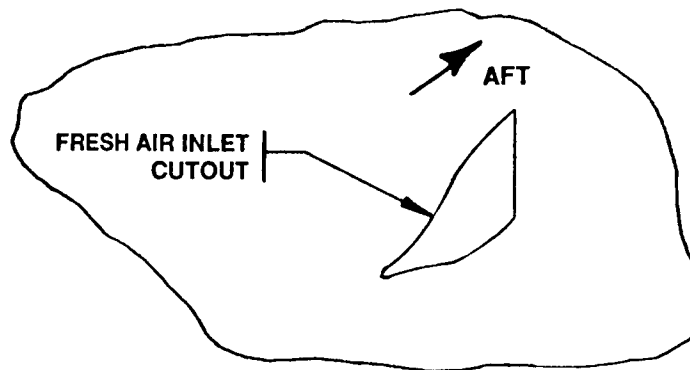
**DISCUSSION:** Because of past difficulties with our vacuum bagging process while fabricating the fuselage halves we have eliminated the NACA cabin fresh air scoops from our molds. Instead the scoops are now made in their own separate mold. This resulted in less weight due to the elimination of additional filler material that was necessary around the scoops during the vacuum bagging process. Use the information given below as the revision to your cabin fresh air vent installation instructions until the next manual revision is received.

**DESCRIPTION:** Cabin fresh air vents are provided for the cockpit area. NACA style inlet scoop locations are scribed into the exterior of the fuselage, one on each side of the fuselage on Glasair Super II-S's and one on the left side only on Glasair III's. Pre-molded inlet scoops and airboxes with "eyeball" vent valves must be installed on the inside surface of the fuselage to control the flow of fresh air into the cockpit. The fiberglass inlet scoops (302-0107-003) and airboxes (302-107-001) are supplied with the kit. The eyeball vent valves (662-0676-001), also called "air ventilators", are supplied with the Glasair III's and are available for the Super II S's from the Glasair Options Catalog.

There is only one (left side) inlet scoop on the Glasair III due to the proximity to the oil cooler air exiting to both ventilator valves on each side of the cockpit. Field reports indicate there is sufficient air volume available from the left inlet scoop to supply air vents on both sides. The required flanges, crossover hose and necessary hardware is included in option kit # 610-0107-501.


It is recommended that the builder read these instructions all the way through once before starting the installation procedure.

**STEP 1** CUTTING OUT THE VENT INLETS



**LEFT SIDE SHOWN**  
**OUTSIDE VIEW**

**FIGURE (1)**

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The outlines of the NACA fresh air vent inlet scoops are located on the forward end of the fuselage panels and must be cut out. Cut the openings by drilling a series of holes around the inside perimeters of the inlets, using a #10 drill bit. Complete the holes using a hacksaw blade. Keep the holes a little undersize for now.

**STEP 2 "EYEBALL" VENT VALVE CUTOUTS**

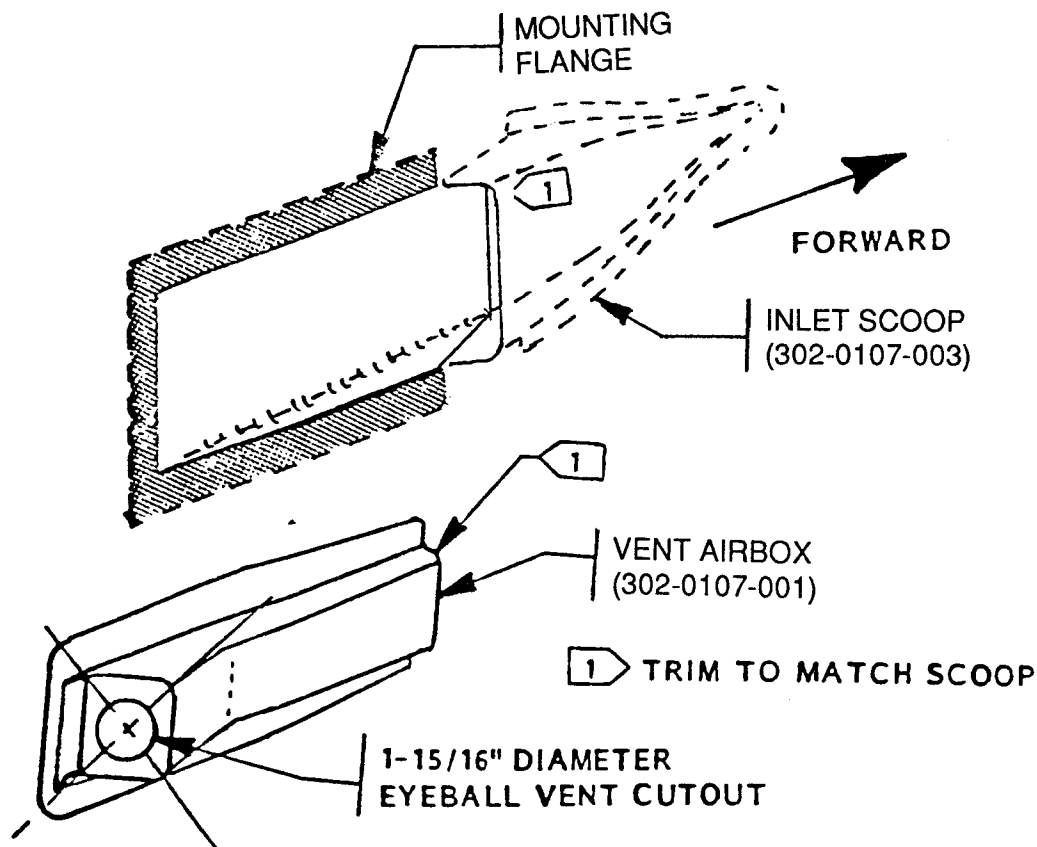



FIGURE (2)

The eyeball valves are fit to the airboxes before installing the airboxes on the fuselage sides. Locate the center of the flat eyeball valve mounting surface of each airbox by drawing lines from opposite corners across the surface, as shown in FIGURE (2). The intersection of the two lines is the center of the mounting surface. Use a 1-15/16" diameter hole saw or a series of holes drilled inside a 1-15/16" diameter circle to make a circular cutout centered at the intersection of the two lines. Use a half-round file or sandpaper wrapped around a wooden dowel to enlarge and smooth the mounting hole so that the eyeball valve fits snugly.

					
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**STEP 3 MOUNTING THE "EYEBALL" VALVE TO THE AIRBOX**

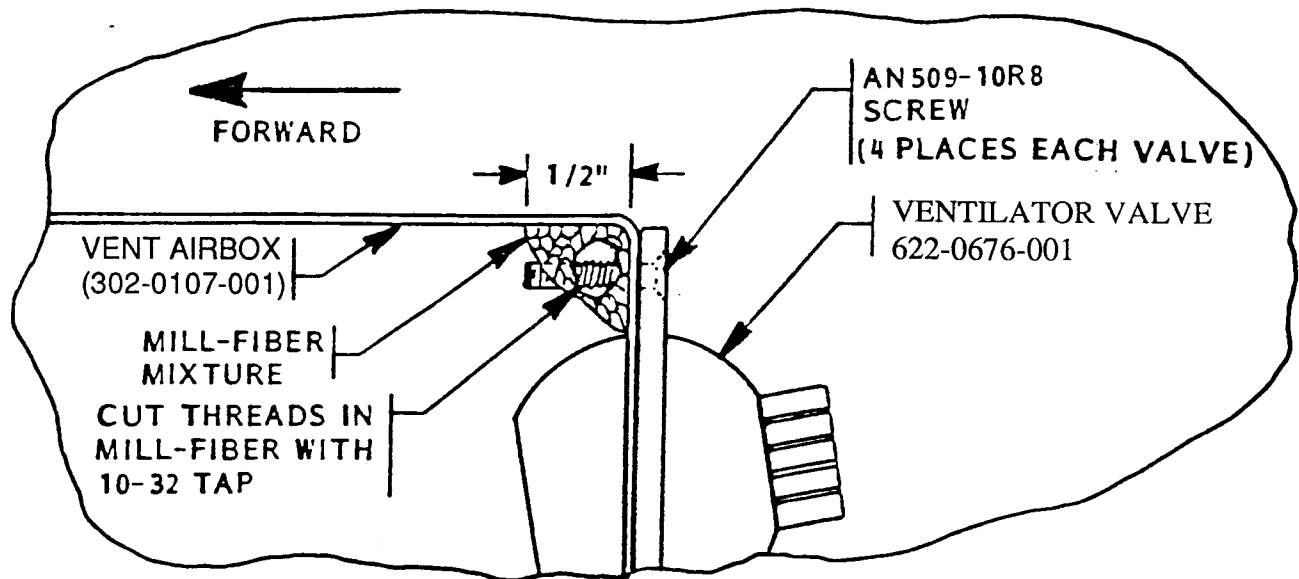


FIGURE (3)

The aft corners on the inside of the airboxes must be built up with a mill-fiber/resin mixture, as shown in FIGURE (3), to provide sufficient material thickness to drill and tap holes for the AN509-10R8 eyeball vent mounting screws.

Use 80 grit sandpaper to remove the gloss from the (4) aft inside corners of each airbox. Mix a small amount of mill-fiber/resin mixture and use this to build up (4) approximately 1/2" deep mounds of this mixture on the aft, inside corners of each airbox, as shown in FIGURE (3). Do not allow the mill-fiber mounds to protrude into the area occupied by the eyeball valve. Let the mill-fiber mixture cure.

Insert the eyeball valve into its mounting hole in the airbox, align the square mounting flange of the valve with the edges of the valve mounting surface, and carefully drill #20 holes in the airbox and mill-fiber mounds, using the 3/16" holes in the eyeball valve as a drill guide. Remove the valve from the airbox so that the circular eyeball valve cutout can be used for access during airbox installation.

Use a 10-32 tap to cut threads in the (4) #20 holes in the vent box and mill-fiber mounds.

**NOTE:** Some builders prefer to pot in (4) 10-32 hardware store nuts instead of tapping the mill-fiber mixture.



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#### STEP 4 POSITIONING THE INLET SCOOP AND AIRBOX ON THE FUSELAGE SIDE

The inlet scoop and airbox mounting flanges are contoured to match the inside shape of the fuselage. Before positioning them on the fuselage, trim their mounting flanges. Trim the inlet scoop flanges to about 1/2" and the airbox flanges to a 3/4" width on the upper, lower, and aft sides of the box. Round the corners of the mounting flanges.

Position the inlet scoops in place by aligning them visually from the outside. The scoops are molded an inch too long to allow sufficient material for trimming to fit at the aft end where the fuselage foam core tapers down. Remove the flanges and as much of the scoop sides as necessary in this area to fit the fuselage. The inside contours of the scoop should about match the scribe lines. File or grind the holes in the fuselage sides until they fit. Do not relocate the aft edge of the scoop opening, trim it to the scribe line. Mark around the scoop perimeter and tack in place with a few dabs of hot glue.

**NOTE:** When installing the airboxes, position them so that the lowest point inside the box is at the inlet of the air vent scoop. This will prevent any rain or condensation which may enter the vent box from collecting inside.

Level the fuselage longitudinally using the Waterline 100 marks on the sides. With the fuselage in this position, use a small level on the lower edge of the airbox to ensure that the lower forward corner (at the scoop inlet) is the lowest point on the lower edge of the box. Trim the mating edges of the airbox or scoop as necessary until they blend together smoothly, as shown by Flag #1, FIGURE (2). The over all length of the two pieces joined should be approximately 16-1/2". Holding the airbox in this position, mark the outline of its mounting flanges onto the inside of the fuselage.

**NOTE:** The airbox should be approximately centered over the tapered ramp aft of the scoop cutout.

#### STEP 5 INSTALLING THE AIRBOX

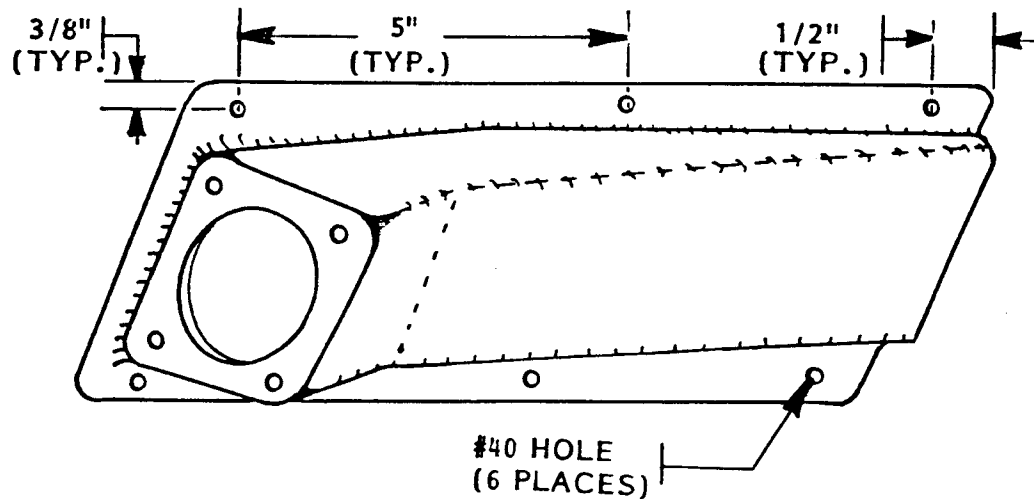


FIGURE (4)



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Drill #40 holes through the airbox mounting flanges and through the inside laminates of the fuselage, as shown in FIGURE (4). These holes are for clecos used to reposition the airbox and clamp it during bonding.

**CAUTION:** Do not drill the holes all the way through the sides of the fuselage.

Remove the scoops and airboxes from the fuselage.

**NOTE:** If you are installing the Cabin Air Crossover Hose Kit on a Glasair III (610-0107-501), this would be a good time to mount the flanges to the airboxes for attaching the crossover hose to.

Use 60 grit sandpaper to roughen the bonding surfaces of the scoop and airbox flanges and the fuselage side panels.

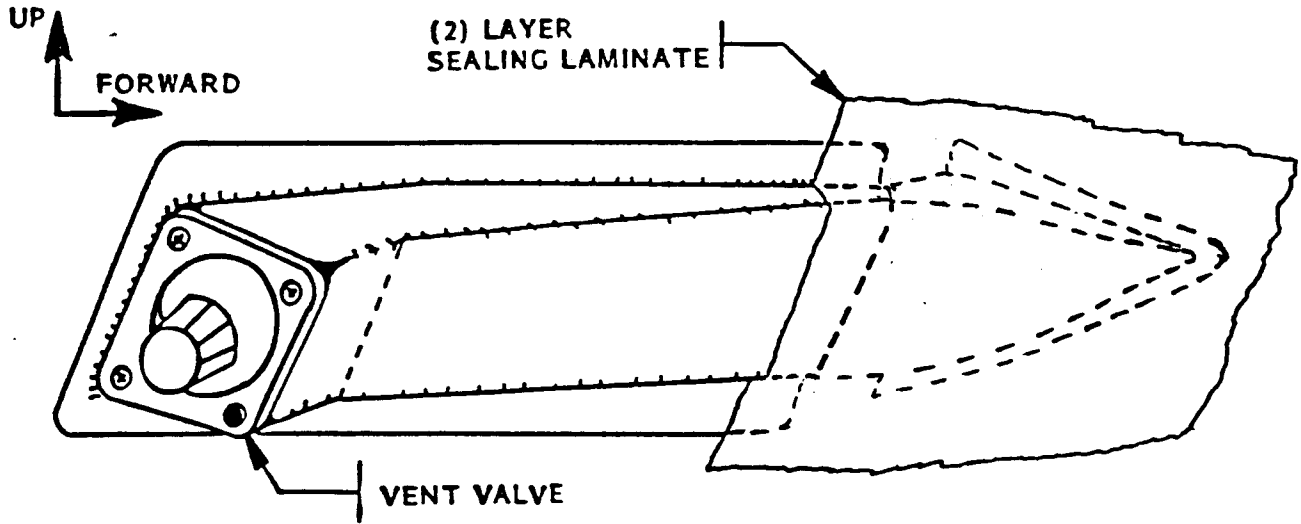
Mix a thick mill-fiber/resin mixture and apply this to the airbox mounting flanges. Place the airbox on the inside of the fuselage in its marked position, and use waxed #40 clecos in the previously drilled holes to secure the airbox in place until the mill-fiber/resin mixture cures.

Bond on the scoop in a similar manner, except use hot glue or masking tape to hold the scoop in place. **CHECK THE FIT BETWEEN THE SCOOP AND THE FUSELAGE CUTOUT FROM THE OUTSIDE.** Fair out any bonding mixture which squeezes out from between the mounting flanges and the fuselage side, both inside and outside the scoop and airbox. Use any extra mill-fiber/resin mix to radius any junctions between the fuselage and scoop. Let cure.



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**STEP 6 INLET SCOOP AND AIRBOX SEALING LAMINATES**



**FIGURE (5)**

Cut (2) pieces of 6" x 10" bi-directional cloth for each scoop, on the 45° bias, and use these pieces to form a two-layer sealing laminate between the airbox and the scoop on the inside of the fuselage, as shown in FIGURE (5). The idea is to bond the scoop to the fuselage and airbox and provide an airtight seal.

Install the eyeball vent valve on the mounting surface of the airbox with (4) AN509-10R8 screws. Do not over-tighten the screws and crack the mounting flange of the eyeball vent or strip the threads on the mill-fiber threaded areas.

**NOTE:** The builder may wish to incorporate a screen in the air vent system to prevent the entry of bugs into the cockpit. We will leave it to the individual builder to devise the installation of the screen.

COMPLETED [ ]

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