

**CHAPTER 11**

**HEATING AND VENTILATION**

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## CHAPTER 11

## HEATING AND VENTILATION

11.000 Heating and Ventilation11.001 Introduction

This section contains the procedures necessary for removal, installation and replacement of the heater and ventilation systems.

11.002 Description

The cabin heater system consists of an electric blower on left side of the engine compartment, a heat shroud over the muffler, a control valve on the firewall inside the pilot's baggage compartment, and the interconnecting ducts between components. The blower switch and heat control cable are located on the ledge just forward of the pilot's seat. The switch turns the blower on and the heat control actuates a valve which directs the heat either into the cabin or out an overboard discharge on the underside of the cabin.

11.100 Cabin Heater (See Figure 11-1)11.110 Cabin Heater Removal

- a. To remove the electric blower assembly, disconnect the electric power lead at quick disconnect. Disconnect duct from blower housing and cap duct opening. Remove four attaching screws holding blower to side skirt. Remove blower attaching bolt at frame.
- b. To remove heater shroud, disconnect duct from heater covers inside pilot's baggage compartment. Disconnect ducts from front and aft of firewall at the valve and cap duct openings. Remove the attaching screws holding the valve assembly and aft inlet to the vertical firewall.
- c. To remove heater valve assembly, remove heater covers inside pilot's baggage compartment. Disconnect ducts from front and aft of firewall at the valve and cap duct openings. Remove the attaching screws holding the valve assembly and aft inlet to the vertical firewall.
- d. If heater system is to be removed permanently, reinstall exhaust system per § 6.520. Install covers A674-1 and A675-1 and seal with RTV102 G.E. Silicone Rubber. Remove the jumper wire from the aft C.B. bus bar. If the wires are disconnected from the switch, they should have heat shrink installed over the terminals and loose wires ty-rapped securely. Remove blower switch and cable and install DP375 and DP437 plug. Remove ducts and insulation.

### 11.120 Cabin Heater Installation

- a. If not already drilled, drill a 2 O.D. inch hole in bottom of right baggage compartment as follows: Drill a #40 hole, 5.30 inches to the right of the keel panel and 1.75 inches forward of the aft firewall. Enlarge hole to 2 O.D. inch diameter using fly cutter.
- b. Install the inlet to the back of the vertical firewall and the valve assembly to the front, inside the baggage compartment.
- c. If necessary, match drill the attachment holes .170 D from the A625-1 and A753-1 covers into the fuselage.
- d. Route the cable through the pre-drilled forward braces and around the upper right side of the baggage compartment. Use 4 each AN742-3 clamps.

**NOTE**

Install the control cable with the core wire removed to prevent kinks of cable. Tighten clamps securely so cable will not move.

- e. Lube inner wire with A257-1 Moly Grease 101 and install cable. Use caution not to kink wire.
- f. Install control cable to valve assembly. Adjust cable to give 1/16 inch spring back at full closed position. Cut excess cable approximately 1/2 inch from nut and bend cable 90 degrees to nut.
- g. Install the A625-1 box.
- h. Install duct hose wrapped in insulation from the cabin outlet to the firewall valve.
- i. Temporarily install the heater blower to the side skirt and mark the blower arm through the A020-1 frame assembly. Remove blower and drill .25 O.D. hole in blower arm. Position scoop facing forward on side skirt. Drill .170 D (2 places) top and bottom, if not already drilled.

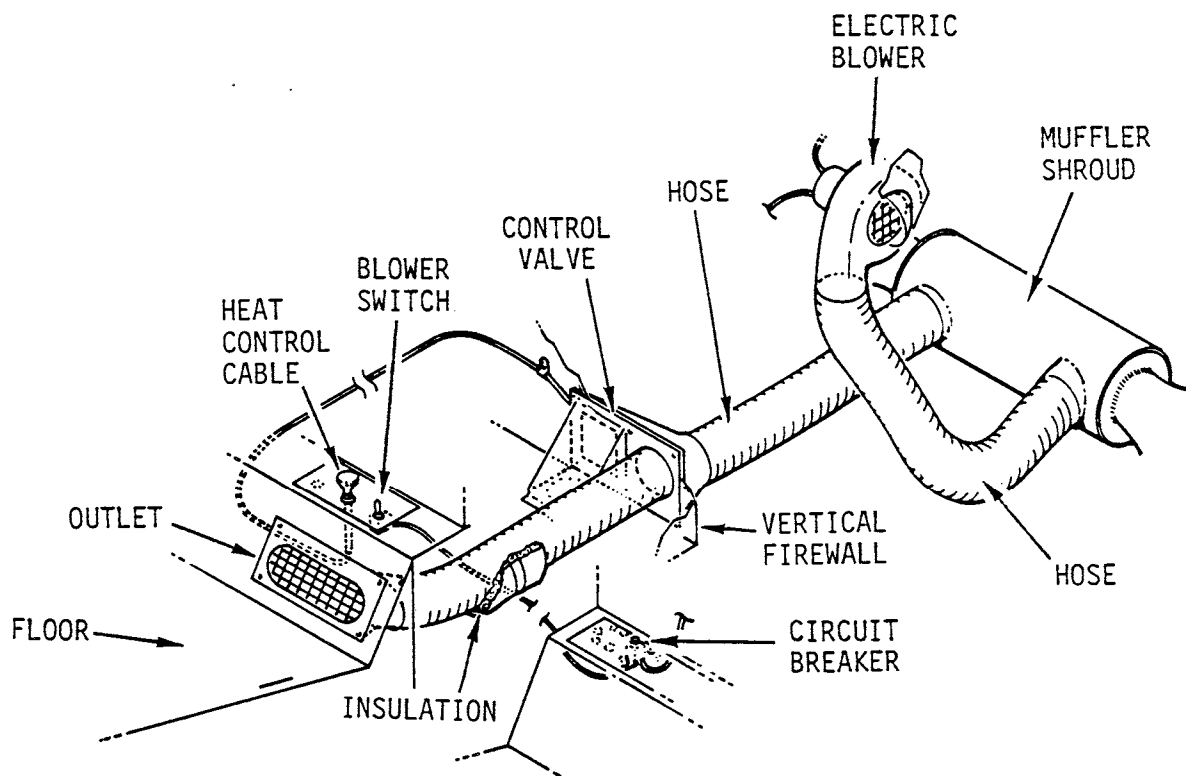


FIGURE 11-1A CABIN HEAT SYSTEM - AFT OUTLET (S/N 001 Thru 499 except 484)

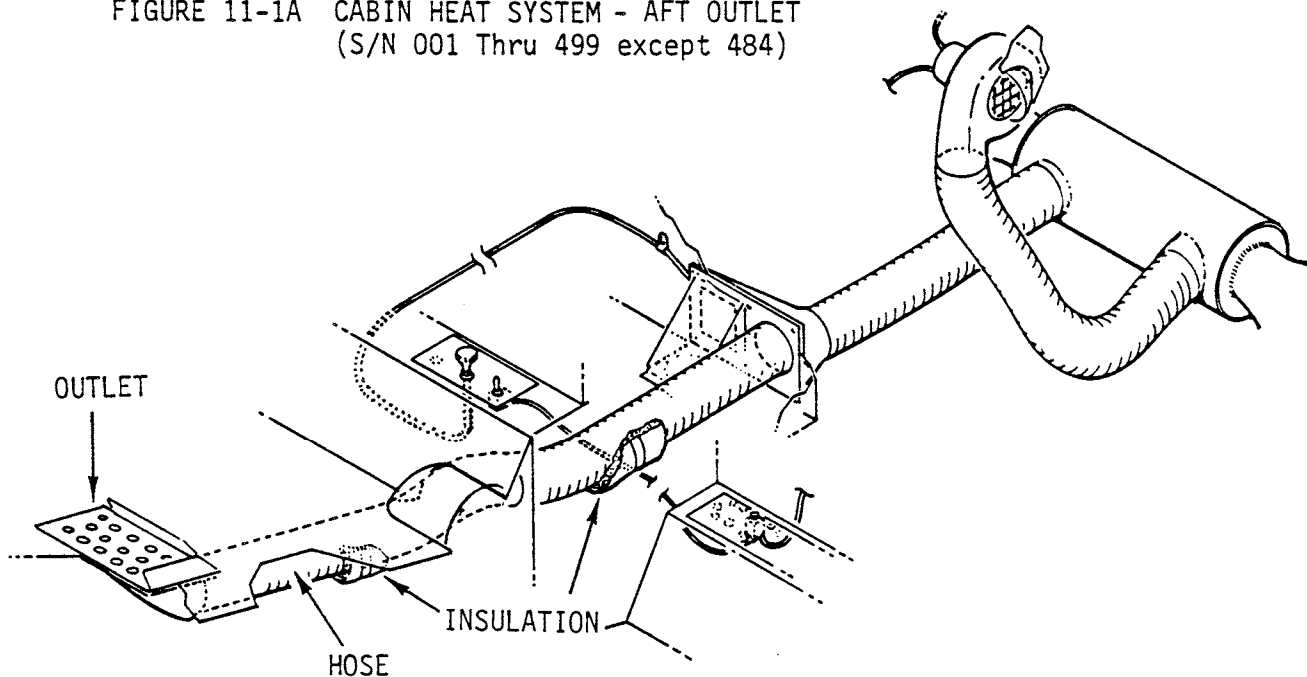


FIGURE 11-1B CABIN HEAT SYSTEM - FORWARD OUTLET (S/N 484, 500 & On)

FIGURE 11-1 CABIN HEATER

11.120 Cabin Heater Installation (cont'd)

- j) Install blower, side scoop and align screen to be positioned horizontally with seam of side skirt.

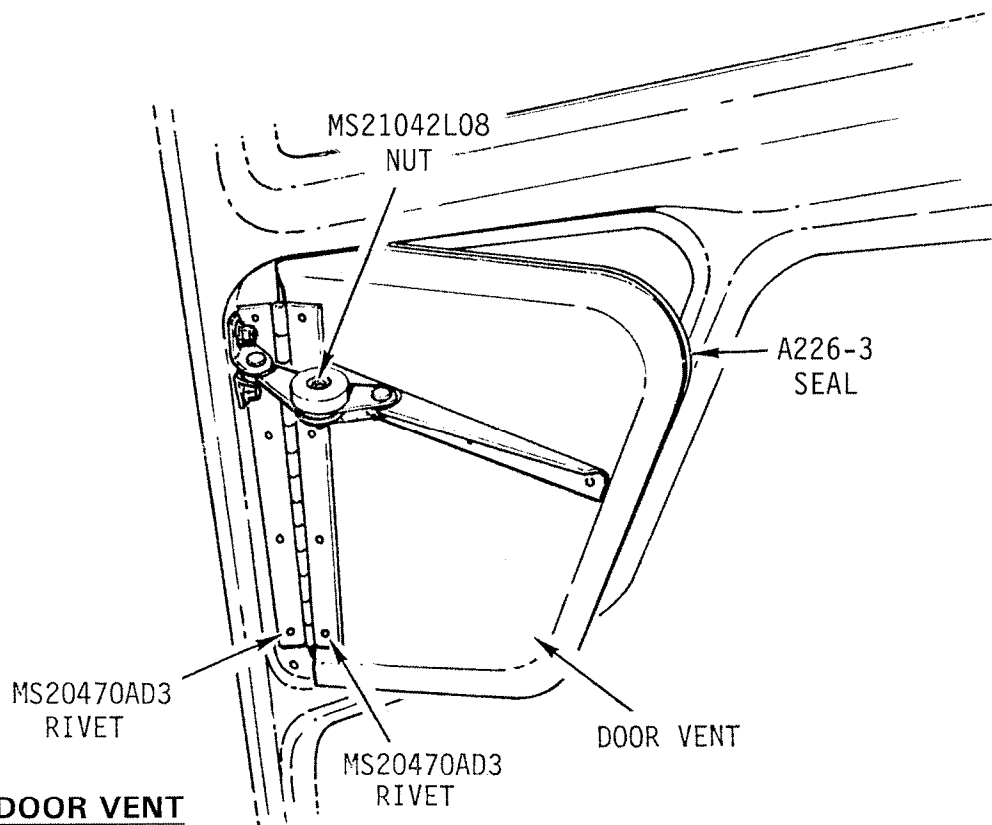
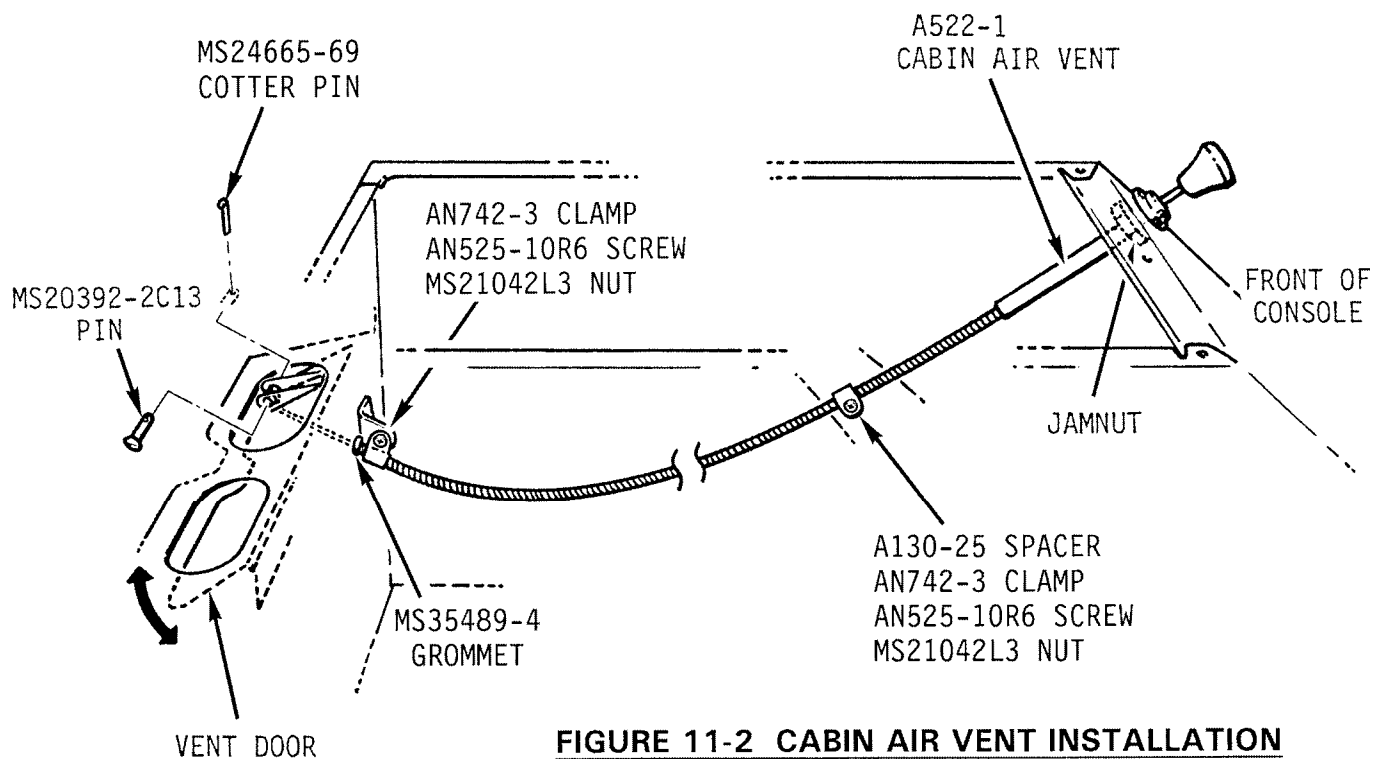
## NOTE

Ensure ground wire and power lead pin are installed before blower installation.

- k) Attach blower ground wire terminal (#132) under bolt-head of the blower attaching bolt to frame. Torque attaching bolt.
- l) Install heater shroud onto muffler and reinstall muffler per Section 6.520.
- m) Install heater ducts from the blower to shroud and the shroud to the valve assembly at the vertical firewall.
- n) Install a 10-amp breaker to the circuit breaker assembly. Connect wire (#130) (16 gauge) to the heater breaker and connect a 16 gauge wire (#153) jumper from the aft circuit breaker bus bar to the heater breaker.
- o) Install the heater switch on the right side in front of the pilot seat. Connect (16 gauge) wire (#130 and #131) to the heater switch and connect the blower motor to wire (#131) located by the oil pressure sender and low pressure switch.
- p) Install the heater duct covers and insulation inside the right baggage compartment.

11.200 VENTILATION11.210 Cabin Air Vent Removal (See Figure 11-2)

- a) Open upper console.
- b) Remove battery and battery box.
- c) Remove cotter pin and MS20392-2C13 pin at the forward cabin vent.
- d) Remove attaching clamps.
- e) Remove attaching screws holding cable cover to the console and remove the cable assembly from the ship.
- f) Remove the cover from the cable by removing the cable jam nut.



11.220 Cabin Air Vent Cable Installation (See Figure 11-2)

1. Insert A518-1 cover on A522-1 control cable by removing jamnut on A522-1 cable, insert cable through hole in the A518-1 cover and replace jamnut securely on the A522-1 control cable.
2. Insert MS35489-4 grommet in bulkhead.
3. Secure the A522-1 cable to fresh air vents using one MS20392-2C13 clevis pin and one MS24665-73 cotter pin.
4. Attach the A522-1 cable to the right side of console with AN742 clamps, AN525-10R6 screws, AN960-10L washers and NAS679-A3 nuts.
5. Adjust A522-1 cable to insure proper operation of fresh air vent. Then tighten clamps securely to insure cable does not move when operating fresh air vent control knob.
6. Install battery box, battery, and connect battery leads. Secure battery cover and vents.
7. Close and secure upper console.

11.230 Door Vent (See Figure 11-3)

The door vent hinge is riveted in place and can be replaced, if damaged, by drilling out rivets and replacing vent door and/or hinge as required.

Seal on vent door can be replaced if damaged. Use A226-3 seal on hinge side of door and A226-7 seal for other three sides.

The friction can be adjusted on the door vent by tightening MS21042L08 nut holding the knob on the center pivot of double arm linkage.