

COMPRESSOR BLEED AIR HEATER - MAINTENANCE PRACTICES

1. General

- A. This section covers maintenance practices and testing procedures for components of the compressor bleed air system.
- B. Compressor Bleed Air Heater Components Removal/Installation procedures are covered in this section. Refer to Figure 201.

NOTE: Components are removed in the following procedures. If individual components need to be disassembled, refer to Individual Component Disassembly/Assembly below.

2. Connector Tube Removal/Installation

- A. Remove the Connector Tube. Refer to Figure 201 Sheet 2, Sheet 3, Sheet 5, Sheet 6.
 - (1) Cut the safety wire and remove the bolts securing the bottom end of the connector tube to the mixer/muffler. Discard the gasket.
 - (2) Remove the bolts and washers securing the top end of the connector tube to the flow control valve. Discard the gasket and remove the connector tube from the airplane.

NOTE: On some airplanes the connector tube may be secured to the engine mount with a clamp. This clamp must be removed before the connector tube can come out.
- B. Install the Connector Tube. Refer to Figure 201 Sheet 2, Sheet 3, Sheet 5, Sheet 6.
 - (1) To install the connector tube for Airplanes 208B5000 and On, do the procedures that follow:
 - (a) Apply a layer of an approved anti-seize product on the bolt threads.
 - (b) Put the connector tube and new gasket in its correct position on the mixer-muffler.
 - (c) Install the bolts and washers that attach the connector tube to the mixer-muffler.
 - (d) Put the duct coupling with a new seal, in its correct position on the bottom of the flow control valve.
 - (e) Tighten the duct coupling to attach the duct to the valve.
 - (f) Safety wire the bolts.
 - (2) To install the connector tube for Airplanes 20800001 and On and Airplanes 208B0001 thru 208B4999, do the procedures that follow:
 - (a) Apply a layer of an approved anti-seize product on the bolt threads.
 - (b) Put the connector tube and new gasket in its correct position on the mixer-muffler.
 - (c) Install the bolts that attach the connector tube to the mixer-muffler.
 - (d) Safety wire the bolts.

3. Pressure Regulator Removal/Installation

- A. Remove the pressure regulator. (Refer to Chapter 36, Pneumatic Distribution - Maintenance Practices)
- B. Install the pressure regulator. (Refer to Chapter 36, Pneumatic Distribution - Maintenance Practices)

4. Compressor Duct Removal/Installation

- A. Remove the Compressor Duct. Refer to Figure 201 Sheet 5, Sheet 6.
 - (1) Loosen and remove the clamp securing the compressor duct to the top of the engine.
 - (2) At the top of the engine, remove the bolts attaching the flange seal to the compressor section cover. Discard the flange seal.
 - (3) With the flange seal removed, cut the safety wire and remove the screws/washers securing the compressor duct to the compressor section cover. Remove the compressor duct and gasket from the compressor section cover. Discard the gasket.
- B. Install the Compressor Duct. Refer to Figure 201 Sheet 5, Sheet 6.
 - (1) Attach compressor duct to compressor section cover using new gasket and new flange seal. Safety wire bolts attaching compressor duct to compressor section cover.
 - (2) Secure compressor duct to top of engine using clamp.

5. Mixer/Muffler Removal/Installation

- A. Remove the Mixer/Muffler. Refer to Figure 201 Sheet 3, Sheet 4.

- (1) Remove clamps securing flexible duct between mixer/muffler and cabin heating air valve.
- (2) Remove clamp between diverter valve and mixer/muffler.
- (3) Detach propeller control cable and clamp from mixer/muffler.
- (4) Remove nuts, bolts and washers securing mixer/muffler mounting bracket and clamp to engine mount.
- (5) Detach mixer/muffler with mounting bracket and clamp from airplane.

B. Install the Mixer/Muffler. Refer to Figure 201 Sheet 3, Sheet 4.

- (1) Place the mixer/muffler in the engine compartment and connect the mixer/muffler to the diverter valve using the clamp.
- (2) Secure the mixer/muffler to the engine mounting bracket using the clamp and hardware.
- (3) Install the duct between the mixer/muffler and the cabin heating air valve. Secure using the clamp.
- (4) Reattach the propeller control cable to the mixer/muffler using the clamp and hardware as required.

6. Diverter Valve Removal/Installation

A. Remove the Diverter Valve.

- (1) Disconnect the diverter valve. Refer to Figure 201 Sheet 3.

- (a) Disconnect the control cable at the diverter valve lower arm.

NOTE: It is not necessary to disconnect the turnbuckle between the upper and lower diverter valve arms.

- (b) Loosen the clamps securing the flexible duct to the diverter valve and remove the flexible duct from the diverter valve.
 - (c) Remove the hardware securing the diverter valve to the engine mount bracket.
 - (d) Remove the diverter valve from airplane.

B. Install the Diverter Valve.

- (1) Install the diverter valve. Refer to Figure 201 Sheet 3.

- (a) Install the diverter valve to the engine mount bracket.
 - (b) Connect the flexible duct between the diverter valve and the cabin return air valve. Attach the duct using clamps.
 - (c) Attach the control cable to the diverter valve. To rig the valve, do the following:
 - 1 Pull the diverter valve control knob open 0.125 inch from fully closed position. Hold the diverter door and recirculating door fully closed, then tighten the end of the control cable at the diverter valve lower arm using the locknut.

7. Cabin Return Air Valve and Cabin Heating Air Valve Removal/Installation

A. Remove the Cabin Return Air Valve and Cabin Heating Air Valve from the firewall. Refer to Figure 201 Sheet 3, Figure 203 Sheet 1.

- (1) Disconnect the electrical connector from the cabin heating air valve.
- (2) Remove the interconnecting rod between the cabin heating air valve and the cabin return air valve.
- (3) Disconnect the control cable from the cabin heating air valve.
- (4) Remove the bracket, clamp and spacer securing the control cable to the lower corner of the cabin heating air valve.
- (5) Remove the Cabin Return Air Valve and Cabin Heating Air Valve from the firewall.

B. Install the Cabin Return Air Valve and Cabin Heating Air Valve to the firewall. Refer to Figure 201 Sheet 3, Figure 203 Sheet 1.

- (1) Clean off existing sealant from the firewall and from valves.
- (2) Apply a 0.125 inch bead of RTV 103 (or equivalent) sealant to mating surfaces of firewall and valves.
- (3) Attach Cabin Return Air Valve and Cabin Heating Air Valve valves to firewall.
- (4) Reattach connecting rod between valves.
- (5) Attach control cable to corner of cabin heating air valve using bracket, clamp and spacer.
- (6) Rig the control cable by pulling the cabin heating air control knob open 0.125 inch from the fully closed position. Hold the cabin heating and return air doors fully closed, then tighten the end of the cable at the heating valve using a locknut.

- (7) Connect the electrical connector from the cabin heating air valve.

8. Flow Control Valve Removal/Installation

- A. Remove the flow control valve (Airplanes 208B0001 thru 208B4999, and Airplanes 208B5000 thru 208B5003, 208B5005 thru 208B5009, and 208B5011 thru 208B5015, not incorporating Service Bulletin CAB-21-01). Refer to Figure 201 Sheet 2, Sheet 5, Sheet 6.
 - (1) Disconnect the temperature control tube assembly from flow control valve (VN001).
 - (2) Cut the safety wire and disconnect the electrical connector (JN014) from flow control valve (VN001).
 - (3) While you hold the valve, loosen the bottom coupling on the valve assembly.
 - (4) Loosen the coupling that attaches the bleed air inlet tee to the top side of the flow control valve.
 - (5) Remove the upper valve coupling and remove the tee from the valve.
 - (6) Remove flow control valve from airplane.
 - (7) Remove the seal between the flow control valve and top of the connector tube.
- B. Remove the flow control valve (Airplanes 208B0001 thru 208B4999, and Airplanes 208B5000 thru 208B5003, 208B5005 thru 208B5009, and 208B5011 thru 208B5015 incorporating Service Bulletin CAB-21-01). Refer to Figure 201 Sheet 2, Sheet 5, Sheet 6.
 - (1) Disconnect the temperature control tube assembly from the flow control valve.
 - (2) On Airplanes 208B5000 to 208B5314 not incorporating CAB-21-05, cut the safety wire and disconnect the electrical connector (PN043) from flow control valve (VN010).
 - (3) On Airplanes 208B5000 to 208B5314 incorporating CAB-21-05, or 208B5315 and On, cut the safety wire and disconnect the electrical connector (PN043) from flow control valve (VN011).
 - (4) Remove the couplings that attach the ends of the flow control valve to the bleed air inlet tee and P₃ line.
 - (5) Remove the flow control valve from airplane.
- C. Install the flow control valve (Airplanes 208B0001 thru 208B4999, and Airplanes 208B5000 thru 208B5003, 208B5005 thru 208B5009, and 208B5011 thru 208B5015, not incorporating Service Bulletin CAB-21-01). Refer to Figure 201 Sheet 2 Sheet 5, Sheet 6.
 - (1) Using new seal, attach flow control valve to top of connector tube.
 - (2) Safety wire the bolts.
 - (3) Connect flow control valve (VN010) to the bleed air inlet tee using the coupling. Tighten the coupling to install the flow control valve. Refer to Chapter 20, Torque Data - Maintenance Practices.
 - (4) Attach pneumatic line to side of flow control valve (VN001).
 - (5) Connect electrical connector (JN014) to flow control valve (VN001) and safety wire.
 - (6) Do an inspection of the P₃ line to make sure there is sufficient clearance and that there is no rubbing.
 - (7) Remove the maintenance warning tags and connect the battery.
 - (8) Do the following checks:

CAUTION: Obey the starter motor operating limits. Refer to the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual.

 - (a) Start the engine.
 - (b) While doing a normal engine run, move the power control lever to IDLE
 - (c) Do a check for leaks.
 - (d) Move the BLEED AIR HEAT toggle switch on the cabin heat control panel, below the instrument panel, to the ON position.
 - (e) Turn the TEMP ON knob to the right until the temperature control valve is fully open.
 - (f) Look at the vacuum standby gyro on the instrument panel.
 - (g) Make sure that the flag on the vacuum standby gyro stays stowed.
- D. Install the flow control valve (Airplanes 20800001 and On and Airplanes 208B0001 thru 208B4999, and Airplanes 208B5000 thru 208B5003, 208B5005 thru 208B5009, and 208B5011 thru 208B5015 incorporating Service Bulletin CAB-21-01). Refer to Figure 201 Sheet 2 Sheet 5, Sheet 6.

- (1) Loosen the B-nut between the bleed air inlet tee and the pressure regulator as needed to allow positioning of the cabin heat bleed air flow restrictor.
- (2) Position the cabin heat bleed air flow restrictor between the bleed air inlet tee and the flow control valve.
NOTE: Make sure that the tapered holes in the restrictor are facing towards the flow control valve.
- (3) Put the coupling in installation position between the bleed air inlet tee and the flow control valve.
 - (a) Tighten the B-nut between the bleed air inlet tee and the pressure regulator.
 - (b) Tighten the coupling to install the cabin heat bleed air flow restrictor in the P₃ line. Refer to Chapter 20, Torque Data - Maintenance Practices.
 - (c) Tighten the coupling to install the flow control valve to the P₃ line. Refer to Chapter 20, Torque Data - Maintenance Practices.
 - (d) On Airplanes 208B5000 to 208B5314 not incorporating CAB-21-05, connect the electrical connector (PN043) and safety wire to the flow control valve (VN010).
 - (e) On Airplanes 208B5000 to 208B5314 incorporating CAB-21-05, or 208B5315 and On, connect the electrical connector (PN043) and safety wire to the flow control valve (VN011).
 - (f) Do an inspection of the P₃ line to make sure there is sufficient clearance and that there is no rubbing.
 - (g) Remove the maintenance warning tags and connect the battery.
- (4) Do the following Bleed Air Leak Checks:
 - (a) Start the engine. Refer to the applicable Model 208 or Model 208B Pilot's Operating Handbook and Approved Airplane Flight Manual.
 - (b) Operate the engine at IDLE for at least 5 minutes to let the engine bleed air temperature stabilize.
 - (c) Do a check for leaks.
WARNING: Do not use unprotected hand to confirm a bleed air leak. Bleed air is very hot and severe burns may result.
 - (d) Move the BLEED AIR HEAT toggle switch on the cabin heat control panel, below the instrument panel, to the ON position.
 - (e) Turn the TEMP HOT knob to the right to operate the temperature control valve.
 - (f) Look at the standby attitude indicator on the instrument panel.
 - (g) Make sure that the orange low-vacuum warning flag on the standby attitude indicator stays stowed.
 - (h) Stop the engine in accordance with the applicable Pilot's Operating Handbook.

9. Individual Component Disassembly/Assembly

A. Disassemble Diverter Valve (Refer to Figure 202 Sheet 1).

- (1) Remove rivets from end cap. Detach end cap from valve body.
- (2) Remove hardware securing turnbuckle and connectors to upper and lower arms.
- (3) Remove hinge rivets from diverter door. Detach door from diverter wall.
- (4) Remove pins and detach arms and from shaft adapters.
NOTE: If diverter door seal or hinge is worn or damaged, replace diverter door and hinge.
- (5) Remove rivets from wall and detach wall from diverter valve body.
- (6) Remove seals from shaft adapters. Discard seals.
- (7) Remove rivets and detach spacer, hinge, hinge shaft, and recirculating door from diverter valve body.

NOTE: If recirculating door or hinge is worn or damaged, it should be replaced.

B. Assemble Diverter Valve (Refer to Figure 202 Sheet 1).

- (1) Rivet spacer and recirculating door hinge to diverter valve body.
- (2) Rivet diverter wall to diverter valve body.

NOTE: Before assembling diverter wall to body, clean all existing sealant from mating surfaces. Seal sides and ends of diverter wall with Silastic E. Clean excessive sealant from diverter wall in areas covered by diverter door. Let sealant cure four hours at 77°F before proceeding to the

next step.

- (3) Rivet diverter door hinge to wall.

NOTE: Check that diverter door is in line and fits flat on opening in wall. Ensure this area is free of sealant.

- (4) Clean existing sealant from mating surfaces of end cap and diverter valve body.

NOTE: Before assembling end cap on body, apply a 0.15 inch wide bead of Silastic E, approximately 0.40 inch from end of body. Let sealant cure four hours at 77°F before operating heating system.

- (5) Slide end cap into body, line up with diverter door and rivet to body.

- (6) Install new seals on shaft adapters.

NOTE: Before assembling seals, clean mating surfaces of seal and body. Prime with DC-1200 and apply RTV-157 silicone sealant to seals.

- (7) Attach upper and lower arms to shaft adapters. Install and safety wire pins.

- (8) Attach turnbuckle and connectors to upper and lower arms using hardware and new cotter pins.

C. Disassemble Cabin Return Air and Cabin Heating Air Valves (Refer to Figure 203).

- (1) Remove pins from shaft adapters. Detach arms, seals and switch actuator.

- (2) Remove four rivets from base. Detach body from base.

- (3) Remove three rivets from base. Detach spacer, spring and hinge assembly from base.

D. Assemble Cabin Return Air and Cabin Heating Air Valves (Refer to Figure 203).

- (1) Attach spacer, spring, and hinge assembly to base. Install three rivets in base.

NOTE: During installation, compress spring 90 degrees and slip over end of hinge shaft. Thread short end of spring through mounting hole in base, and bend short end to hold spring in place when door is actuated. Before installation, clean mating surfaces of valve bodies and base and apply a 0.125 inch bead of RTV-102, RTV-103, or equivalent to mating surfaces.

- (2) Slip shaft adapter through hole in valve body. Attach body to base and install four rivets.

- (3) Install new seals on shaft adapter.

NOTE: Before installing seals, clean mating surfaces of seal and body. Prime with DC-1200 and apply RTV-157 silicone sealant to seals.

- (4) Attach arms and switch actuator to shaft adapters. Install and safety wire pins.

10. Component Cleaning/Serviceing Airplanes

A. Flow Control Valve Cleaning Procedures (Refer to Figure 204 Sheet 1).

NOTE: These procedures are applicable for Airplanes 20800001 and On and Airplanes 208B0001 through 208B4999.

NOTE: Perform this procedure when the following conditions exist: Flow control valve output is too high, too low, erratic, or sluggish; and solenoid operation/dome pressure variation with power changes and temperature control knob changes are normal.

- (1) Remove flow control valve from airplane.

- (2) Remove screws holding lower housing assembly to housing. Remove poppet valve, spring retainer and spring.

- (3) Remove and discard O-ring.

- (4) Remove poppet screw holding bal-seal on poppet valve. Remove and discard bal-seal.

- (5) Thoroughly clean poppet parts and interior sliding surface of lower housing assembly with Stoddard solvent (P-D-680 Type III), Methyl n-Propyl Ketone or isopropyl alcohol. Use a soft, nonmetallic bristle brush if necessary. Rinse with clean water and dry with a clean, lint free cloth and/or clean shop air.

NOTE: Use the minimum necessary amount of scrubbing or wiping to avoid removing dry film lubricant finish. Presoaking parts in solvent should aid in softening baked on deposits.

- (6) Apply 113A10010 Silicone Lubricant to new bal-seal. Ensure open edge of bal-seal is toward top of poppet valve and install bal-seal on poppet valve. Retain with poppet screw. Torque poppet screw to 85 inch-pounds, +5 or -5 inch-

pounds.

- (7) Lubricate new O-ring with 113A10010 Silicone Lubricant and install on lower housing assembly.
- (8) Put the spring, spring retainer and poppet assembly in the lower housing.
- (9) Apply 26316503 Anti-Seize compound to screws and install lower housing assembly to regulator housing using screws. Torque to 32 inch-pounds, +2 or -2 inch-pounds.
- (10) Reinstall flow control valve on airplane.
- (11) Perform an engine run and check flow control valve for proper operation.

B. Flow Control Valve Solenoid Replacement (Refer to Figure 204 Sheet 1).

NOTE: These procedures are applicable for Airplanes 20800001 and On and Airplanes 208B0001 through 208B4999.

NOTE: Use this procedure when solenoid is stuck open or closed, as shown by absence of an audible click when the cabin heat switch is operated, or is electrically defective, (open or short through pins combined with the absence of the click. Airplane circuitry provides 28.0 VDC with cabin heat switch ON, and 0.0 VDC with switch OFF.

- (1) Remove electrical connector from solenoid.
NOTE: It is not necessary to remove valve from airplane to perform the following procedure.
- (2) Remove screws attaching solenoid to housing.
- (3) Remove and discard O-ring.
- (4) Inspect mating surface of valve body. Clean as required with Stoddard solvent, Methyl n-Propyl Ketone or isopropyl alcohol. Dry with a clean, lint free cloth.
- (5) Install new O-ring on housing. Put the new solenoid on the housing and attach with screws.
- (6) Connect electrical connector and safety wire.
- (7) Check solenoid operation by noting an audible click each time heater switch is turned on or off (or power is applied or removed using a jumper). Repeat approximately twenty times to check for intermittent sticking. If satisfactory, check flow control valve during engine run.

C. Temperature Control Valve Knob Replacement (Refer to Figure 205).

- (1) Remove knob by loosening two set screw attaching knob to shaft.
NOTE: Do not move the adjustment screw under the knob.
- (2) Install knob on shaft. Adjust knob so it is pointing downward when shaft is rotated fully counterclockwise (clocking may be varied based on operator preference) and tighten setscrews.
NOTE: Friction may be varied by adjusting setscrews in valve body to provide desired amount of friction.

11. Cabin Heat Functional Test (Airplanes 20800001 Thru 20800179 and 208B0001 Thru 208B0209 Except Airplanes Incorporating CAB90-9)

A. Functional Test Procedures.

- (1) Set controls in the following positions:
 - (a) Firewall Shutoff Valve - OPEN
 - (b) Temperature Control Valve - FULL HOT (clockwise)
 - (c) Bleed Air Heat Switch - ON
 - (d) Mixing Air - FLT PUSH
 - (e) Aft Cabin/Fwd Cabin - FWD CABIN PUSH
 - (f) Defrost/Fwd Cabin - FWD CABIN PUSH
- (2) Set power lever for 60 percent N_G .
- (3) Check for unrestricted flow at both forward cabin heat outlets (above pilot's and copilot's rudder pedals) and for minimal or no flow through defroster outlets.
- (4) Set Defrost/Fwd Cabin Push/Pull Control in DEFROST position. Check for unrestricted flow through both defroster outlets and for minimal or no flow through forward cabin outlets. Return control to FWD cabin push position.

- (5) Set Aft Cabin/Fwd Cabin control in AFT CABIN PULL position and check for unrestricted flow from all cabin outlets. Return control to FWD CABIN PUSH position.

NOTE: On 208B and Cargomaster, check flow from floor mounted outlets, just aft of pilot/copilot seats.

- (6) Set mixing air control GRD PULL position and check for a substantial increase in cabin heat flow.
- (7) Set bleed air heat switch to OFF position. Increase power to above 90 percent N_G and return mixing air control to FLT PUSH position. Reset bleed air heat switch to ON position.
- (8) Rotate temperature control knob counterclockwise until cabin flow heat ceases and return it to FULL HOT position. Flow should gradually reduce to zero or a minimal amount in approximately 270 degrees of counterclockwise knob rotation from FULL HOT. Return temperature control knob to FULL clockwise position.
- (9) Power remaining at 60 percent N_G , pull firewall shutoff valve control to PULL OFF position and ensure cabin heat flow ceases, indicating that gate valve has closed.
- (10) Switch bleed air heat switch to OFF position, wait approximately 30 seconds to allow back pressure against shutoff valves to dissipate, push control to OPEN position and return switch to ON position.
- (11) Disengage BLEED AIR HEAT circuit breaker and ensure cabin heat flow ceases.
- (12) Engage BLEED AIR HEAT circuit breaker.

12. Cabin Heat Functional Test (Airplanes 20800180 and On and 208B0210 and On and Airplanes 20800001 Thru 20800179 and 208B0001 Thru 208B0209 Incorporating CAB90-9)

A. Functional Test Procedures.

- (1) Set controls in the following positions:
 - (a) Firewall Shutoff Valves - OPEN
 - (b) Temperature Control - FULL HOT (clockwise)
 - (c) Bleed Air Heat Switch - ON
 - (d) Mixing Air - FLT PUSH
 - (e) Aft Cabin/Fwd Cabin - FWD CABIN PUSH
 - (f) Defrost/Fwd Cabin - FWD CABIN PUSH
- (2) Set power lever for 60 percent N_G .
- (3) Check for unrestricted flow at both forward cabin heat outlets, above the pilot's and copilot's rudder pedals, and for minimal or no flow through the defroster outlets.

NOTE: If flow is restricted, refer to Compressor Bleed Air Heater - Troubleshooting.

- (4) Set the defrost/fwd cabin control in the DEFROST position. Check for unrestricted flow through both defroster outlets and for minimal or no flow through the forward cabin outlets. Return control to the FWD CABIN PUSH position.
- (5) Set aft cabin/fwd cabin control to AFT CABIN PULL position and check for unrestricted flow from all cabin outlets. Return control to FWD CABIN PUSH position.

NOTE: On 208B and Cargomaster, check flow from floor mounted outlets, just aft of pilot/copilot seats.

- (6) Set the mixing air control in the GRD PULL position and check for a substantial increase in cabin heat flow.
- (7) Set bleed air heat switch to OFF position. Increase power to above 90 percent N_G and check for a reduction in cabin heat flow, indicating compressor bleed valve ($P_{2.5}$ air supply) has closed. Reduce power to 60 percent N_G and return mixing air control to the FLT PUSH position. Reset bleed air heat switch to ON position.
- (8) Increase power to approximately 75 percent N_G , rotate temperature control knob counterclockwise until cabin flow heat ceases and then return it to the FULL HOT position. Flow should gradually reduce to zero in approximately 270 degrees of counterclockwise knob rotation from FULL HOT. Return the temperature control knob to the FULL clockwise position.
- (9) Reduce power to 60 percent N_G , pull firewall shutoff valve control to the PULL OFF position and ensure cabin heat flow ceases, indicating microswitch has de-energized the flow control valve solenoid preventing P_3 air flow.
- (10) Switch bleed air heat switch to OFF, wait approximately 30 seconds to allow back pressure against the shutoff valves

to dissipate, push control to the OPEN position and return switch to the ON position.

- (11) Disengage BLEED AIR HEAT circuit breaker and ensure cabin heat flow ceases. Engage BLEED AIR HEAT circuit breaker.
- (12) Check for normal instrument vacuum and deice function. A quick check of pressure regulator output is that at low idle, the low vacuum annunciator will normally be off with no P₃ bleed air heat and will come on with full heat.

13. Heater Output Check (Airplanes 20800180 and On and 208B0210 Thru 208B4999)

A. Check heater output.

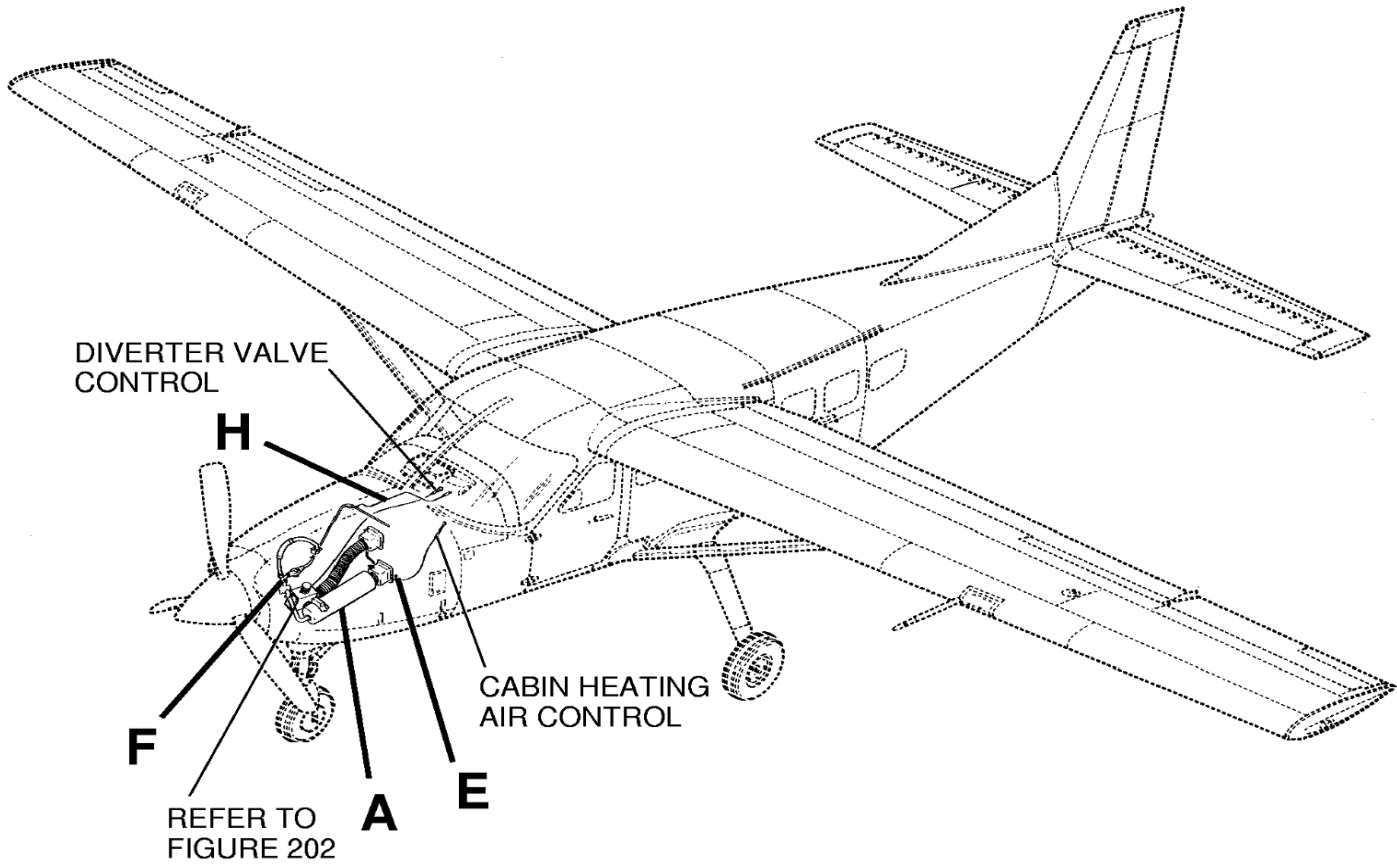
- (1) Connect hoses and gauges to measure heater output at the pressure tap between the flow control valve and the mixer/muffler, and to measure control pressure at the tee where the control line connects to the flow control valve.
- (2) Check that maximum heater output is 15.0 to 20.0 PSIG at 70 percent N_G and above, and that control pressure is approximately 0.0 to 5.0 PSIG above output pressure. Check that heater output is approximately 5.0 to 7.0 PSIG at low 52 percent N_G, and 10.0 to 13.0 PSIG at 65 percent N_G.

CAUTION: When operating with the control port capped, gradually advance power until an output pressure of 15.0 to 20.0 PSIG is reached. Do not increase power further, as an overpressure/overtemperature condition can occur.

- (3) If output and control pressures are both low, recheck heater output with control line disconnected and control port capped at flow control valve tee. If not OK, replace flow control valve. If OK, check for leaks in control line from flow control valve to temperature control valve. If there are no leaks, replace temperature control valve.
- (4) If output pressure is low and control pressure is normal, replace flow control valve.
- (5) If both pressures are high, replace temperature control valve.

Figure 201 : Sheet 1 : Compressor Bleed Air Heater Installation

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Figure 201 : Sheet 2 : Compressor Bleed Air Heater Installation

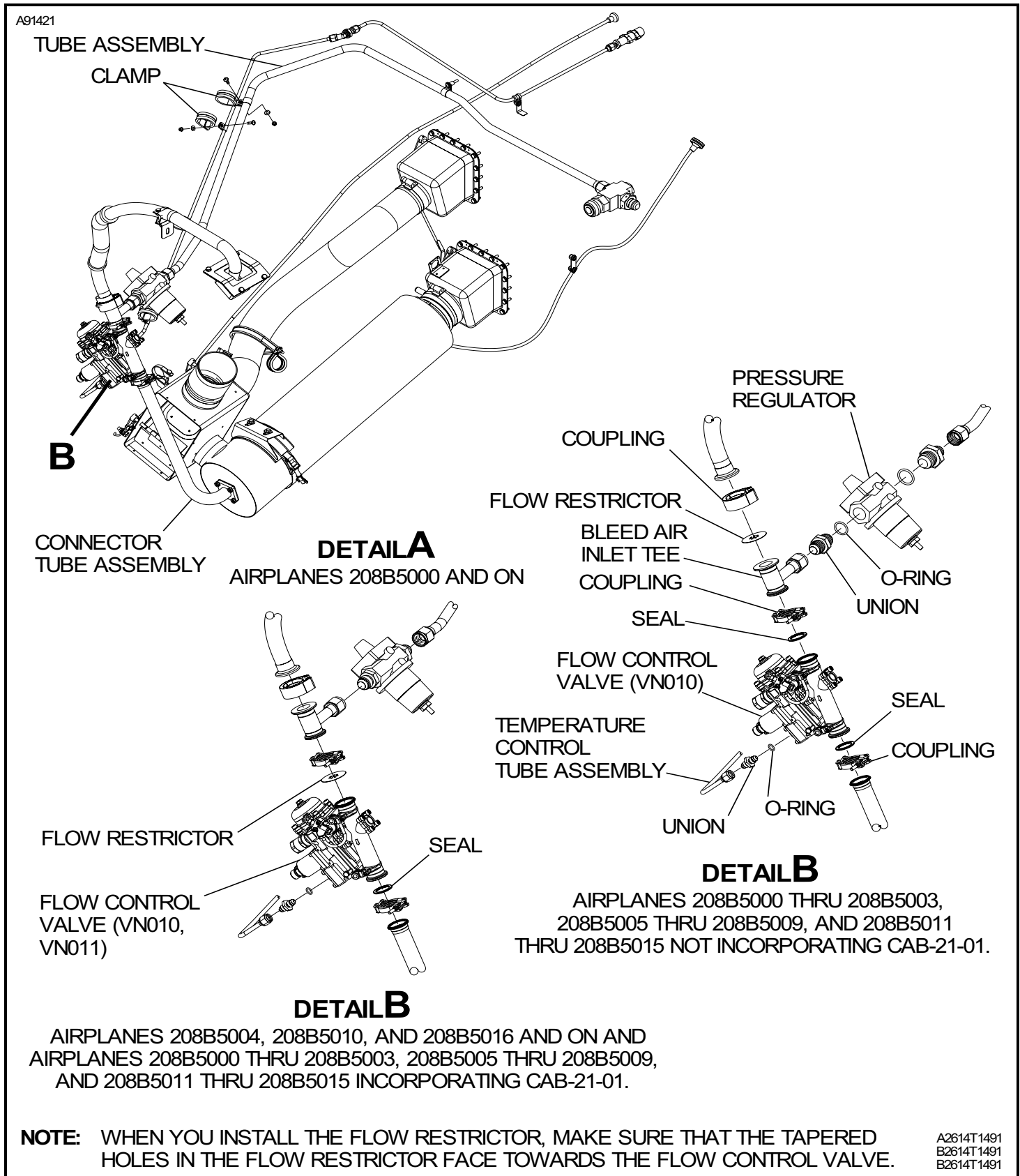
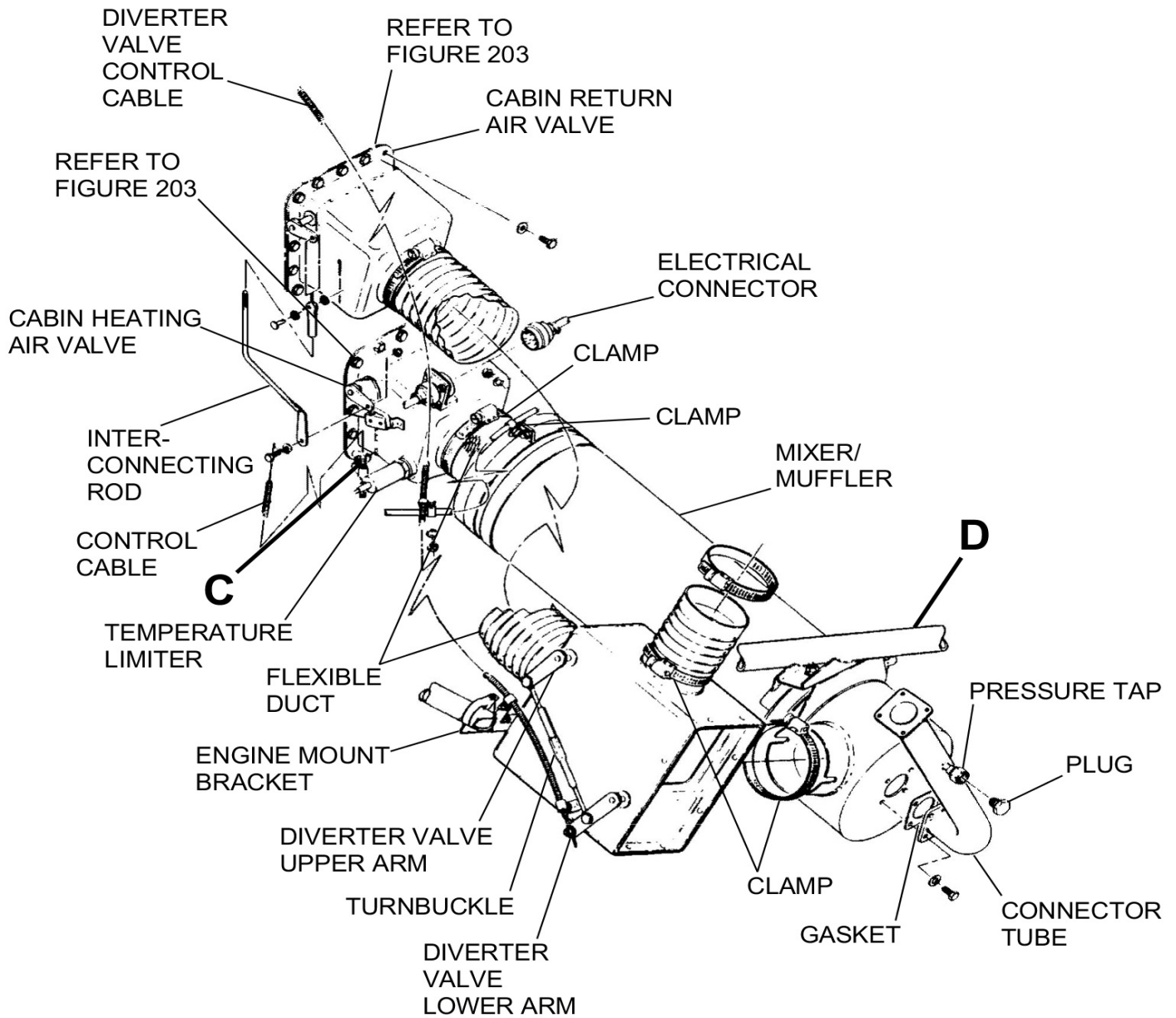


Figure 201 : Sheet 3 : Compressor Bleed Air Heater Installation

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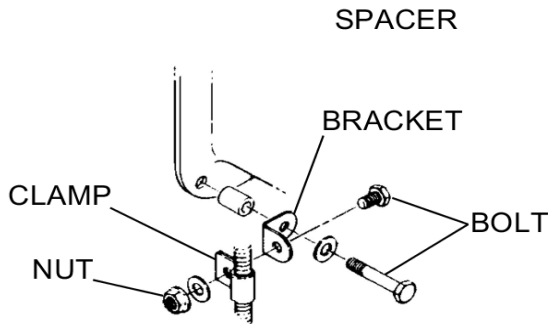
DETAIL A

AIRPLANES 20800140 AND ON
AND 208B0106 THRU 208B4999

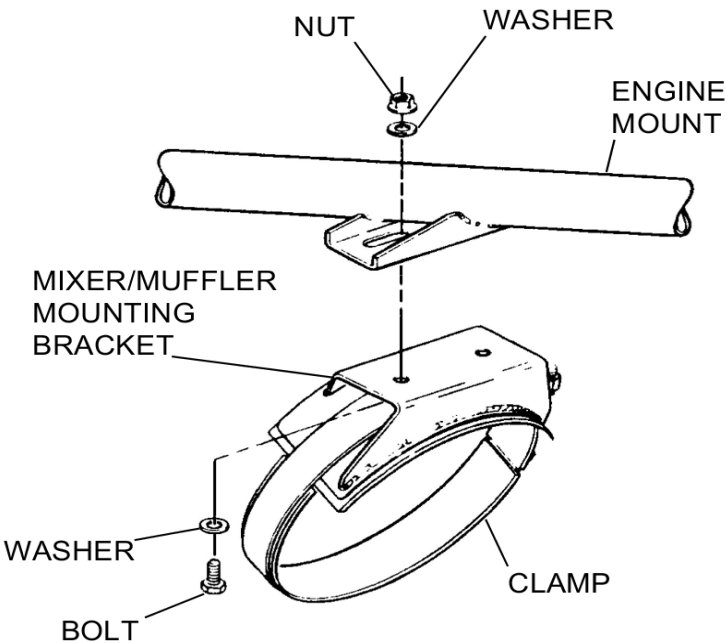
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Figure 201 : Sheet 4 : Compressor Bleed Air Heater Installation

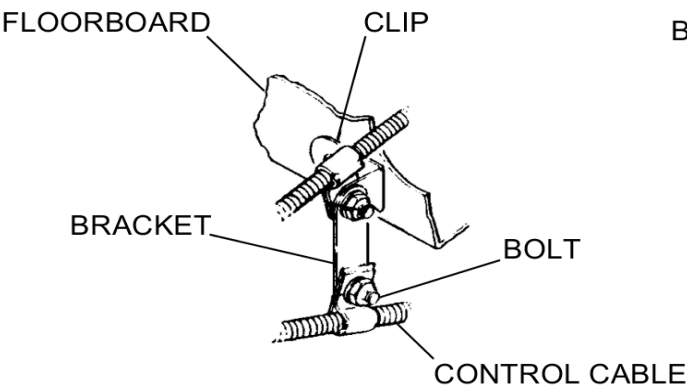
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DETAIL C



DETAIL D

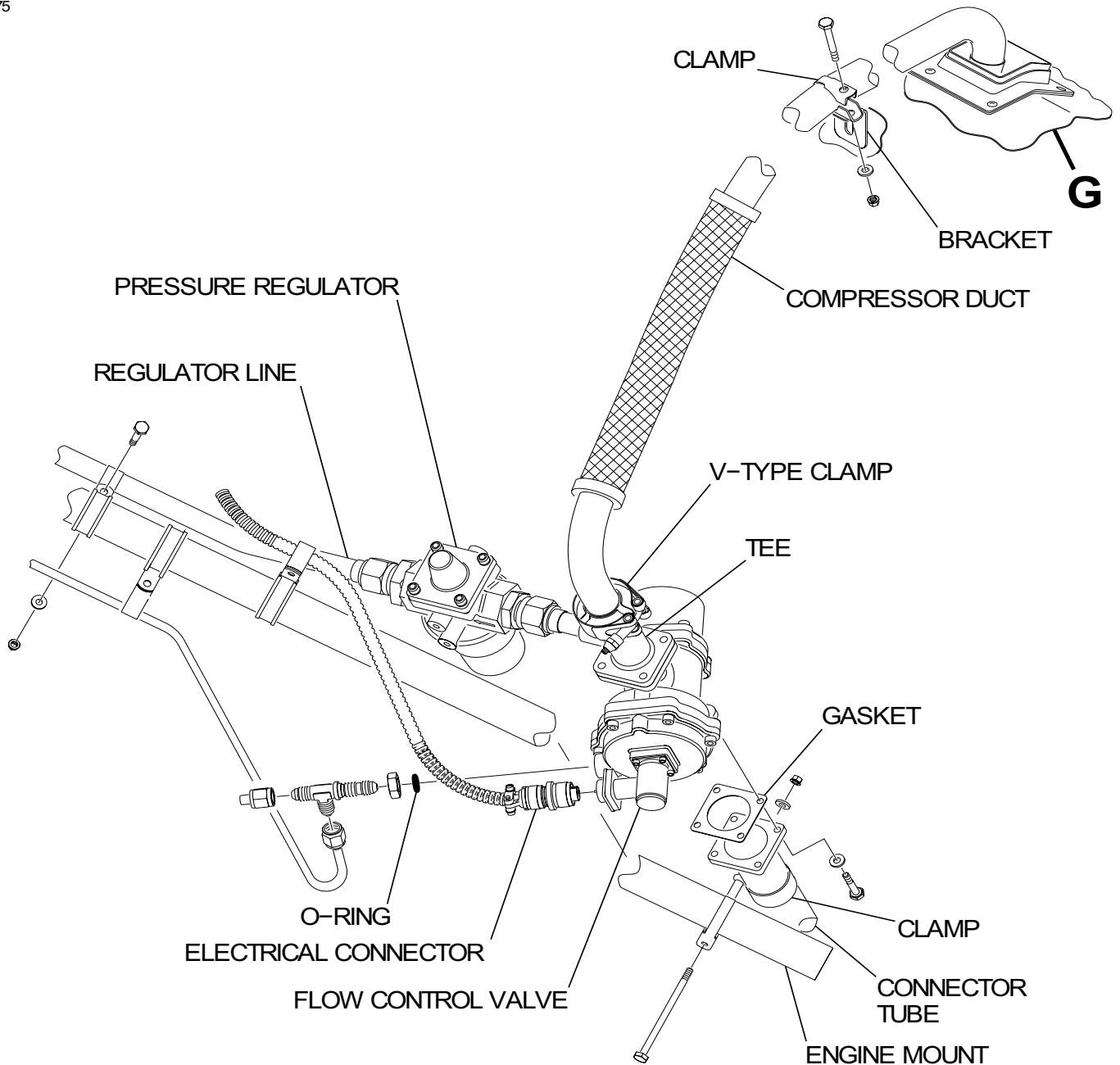


DETAIL E

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D2614R1105
E2614R1121

Figure 201 : Sheet 5 : Compressor Bleed Air Heater Installation

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DETAIL F

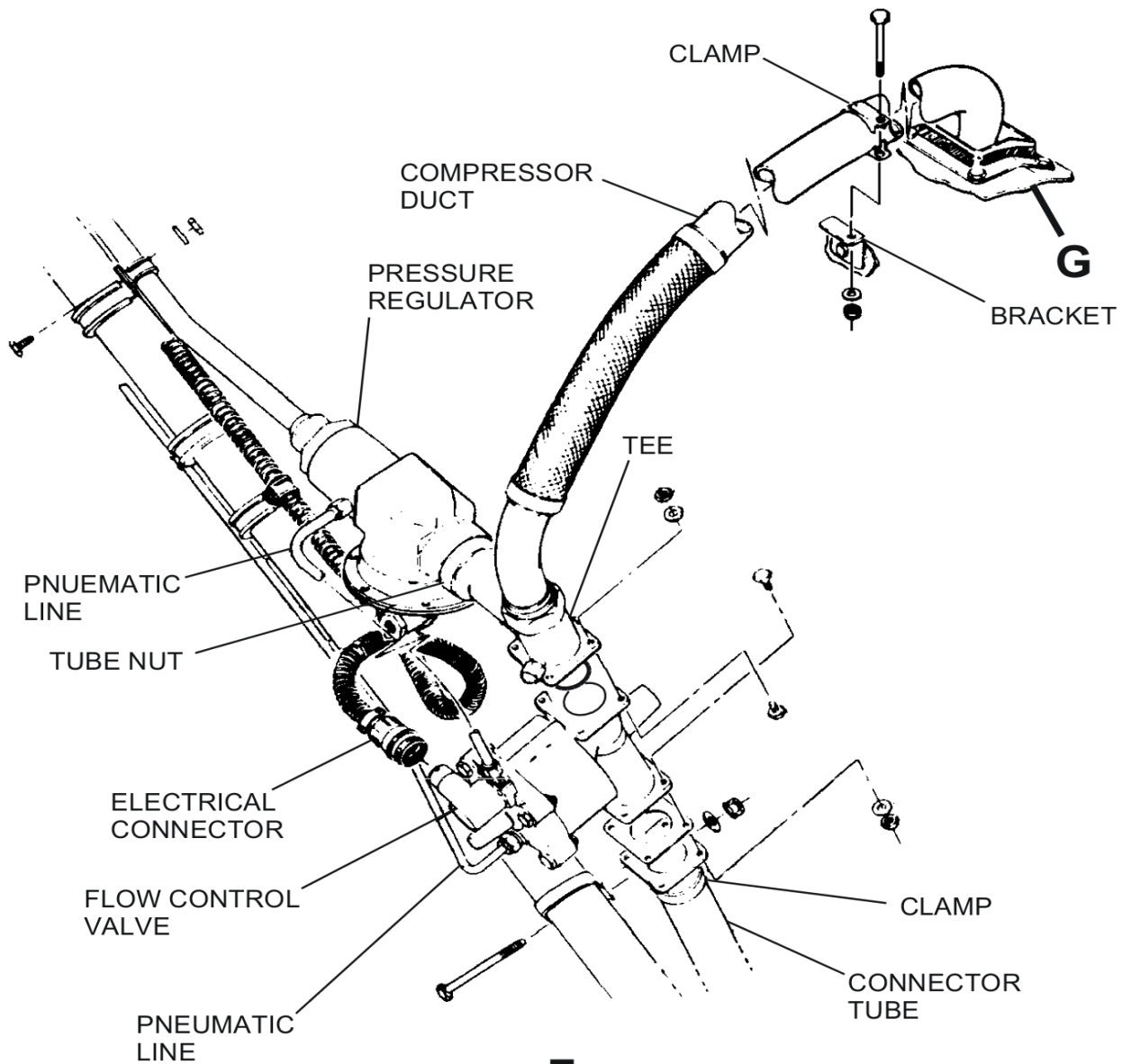
AIRPLANES 20800180 AND ON AND
AIRPLANES 20800001 THRU 20800179
INCORPORATING CAB90-9

AIRPLANES 208B0210 THRU 208B4999 AND
AIRPLANES 208B0001 THRU 208B0209
INCORPORATING CAB90-9

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Figure 201 : Sheet 6 : Compressor Bleed Air Heater Installation

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DETAIL F

AIRPLANES 20800001 THRU 20800179
AND 208B0001 THRU 208B0209
EXCEPT AIRPLANES INCORPORATING CAB90-9

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Figure 201 : Sheet 7 : Compressor Bleed Air Heater Installation

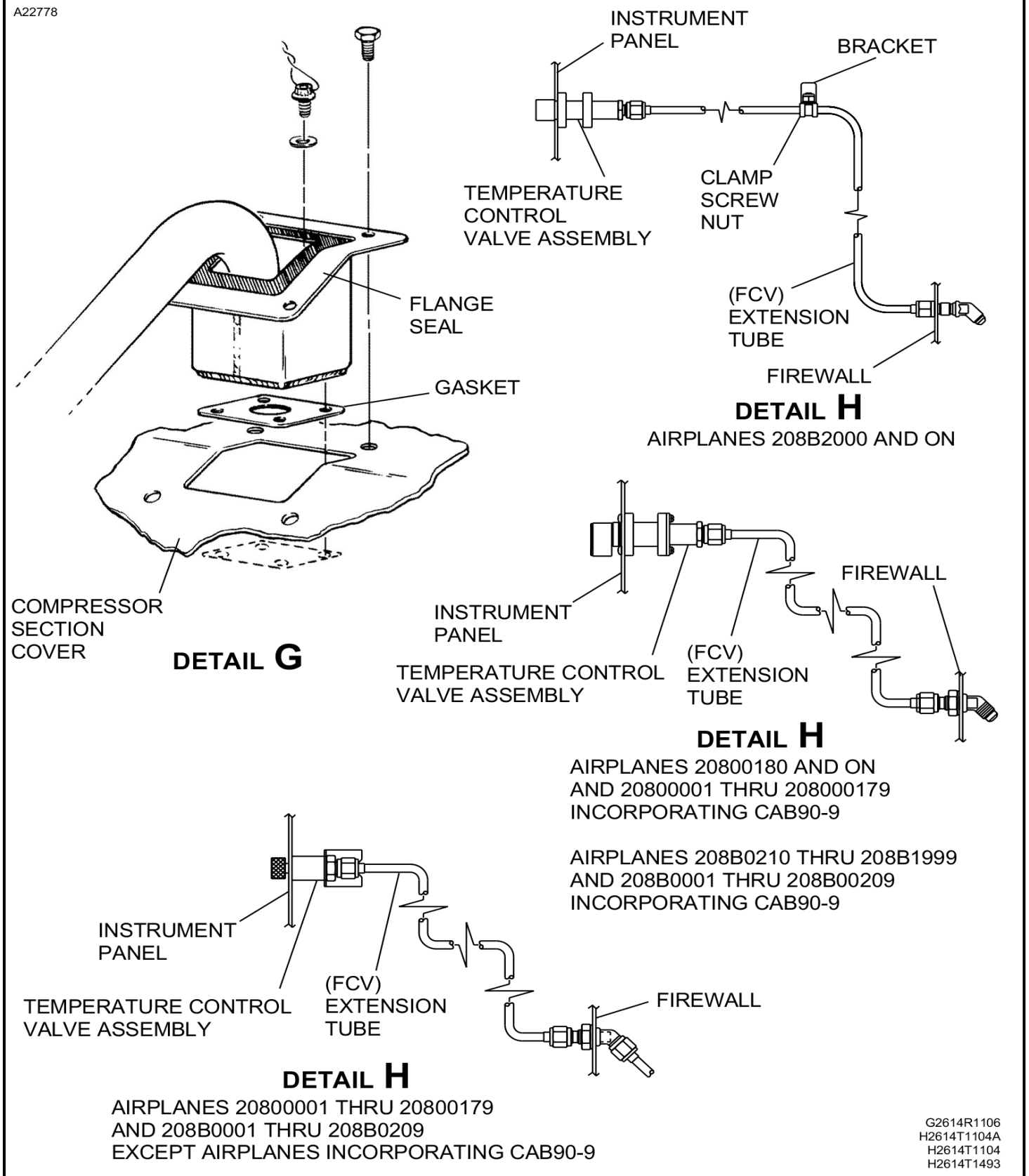
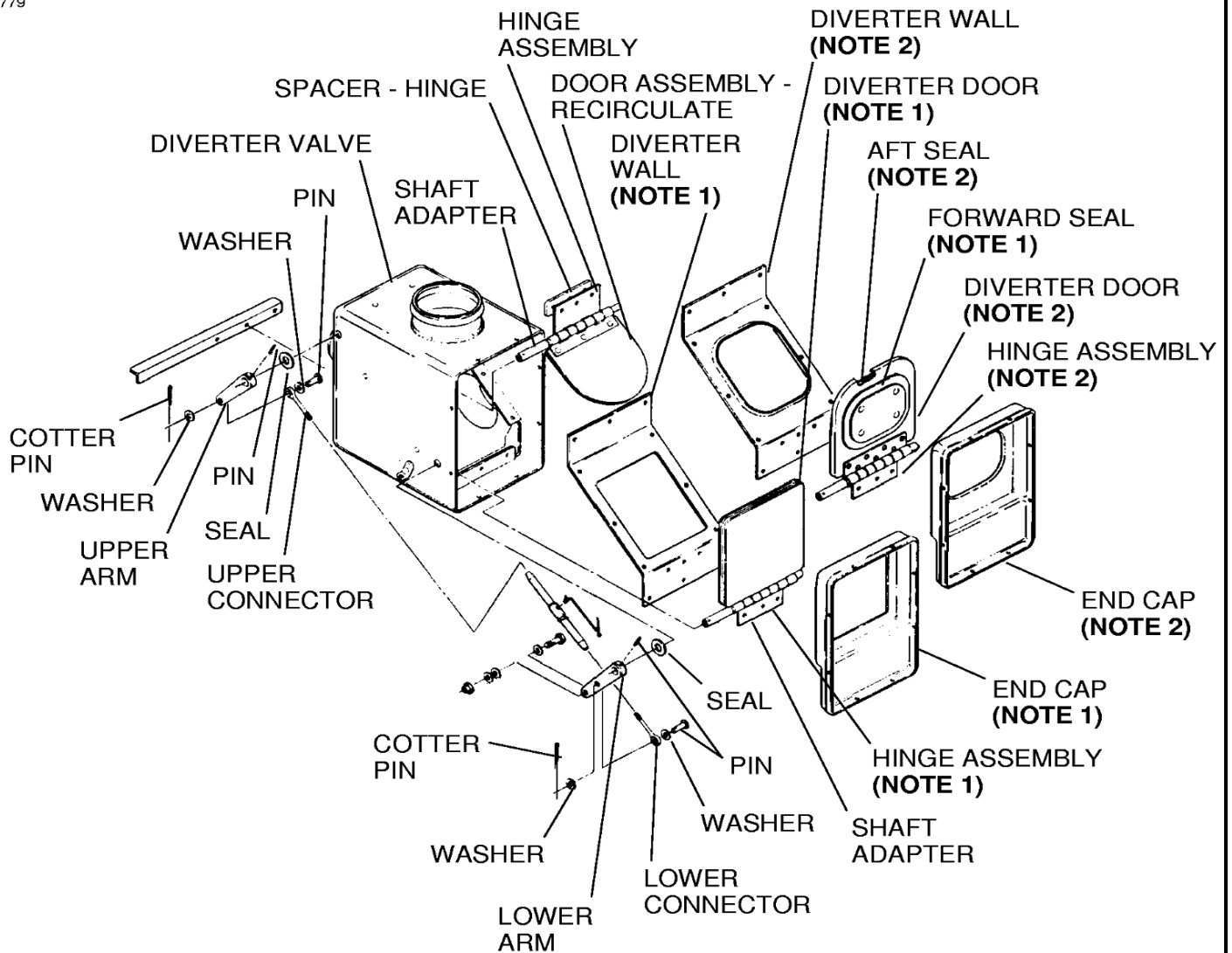


Figure 202 : Sheet 1 : Diverter Valve Installation

A22779



NOTE 1: AIRPLANES 2080001 THRU 20800129
AND 208B0001 THRU 208B0067

NOTE 2: AIRPLANES 20800130 AND ON
AND 208B0068 AND ON

I26143013

Figure 203 : Sheet 1 : Cabin Return Air and Cabin Heating Air Valves Installation

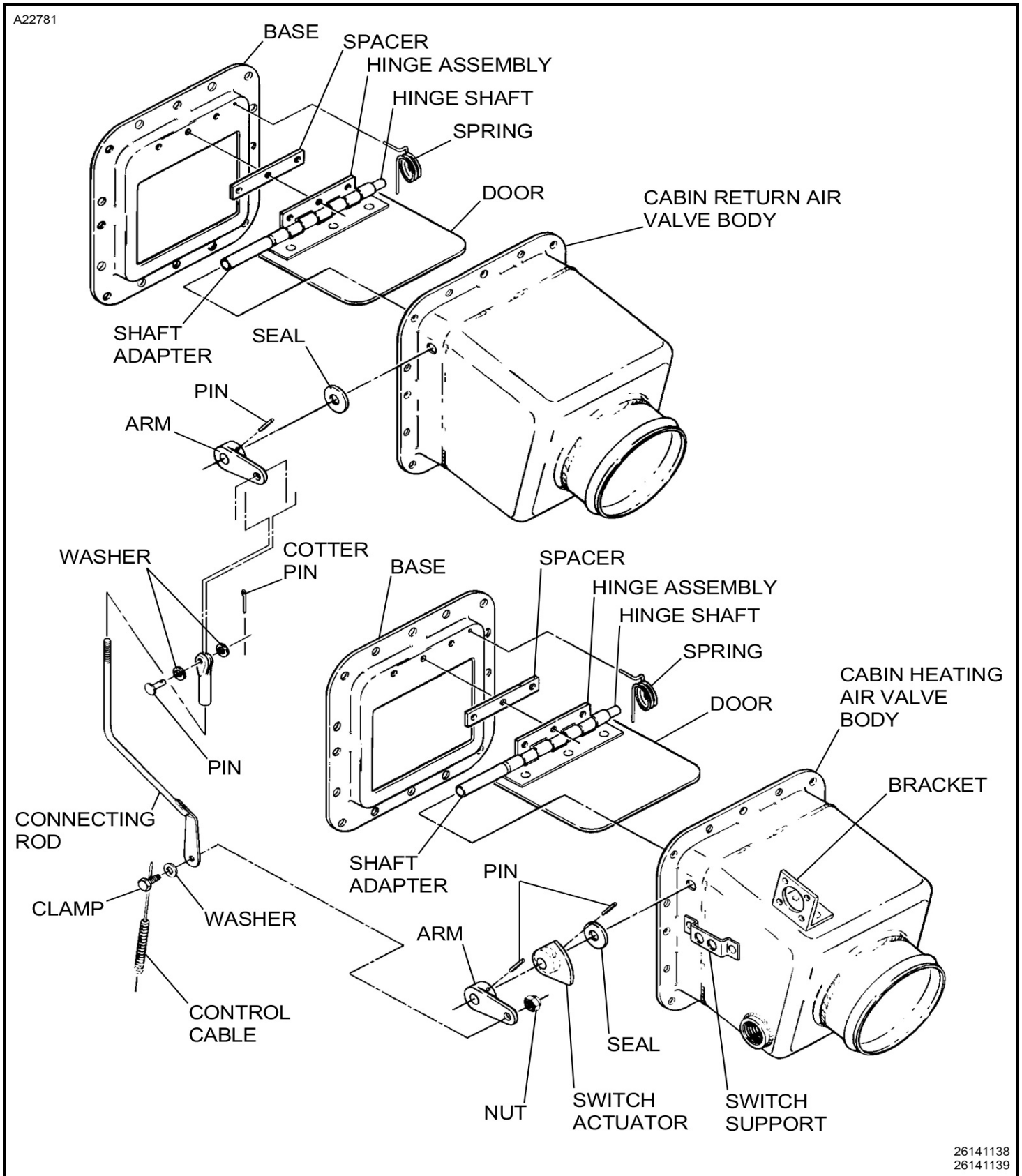


Figure 204 : Sheet 1 : Flow Control Valve Installation

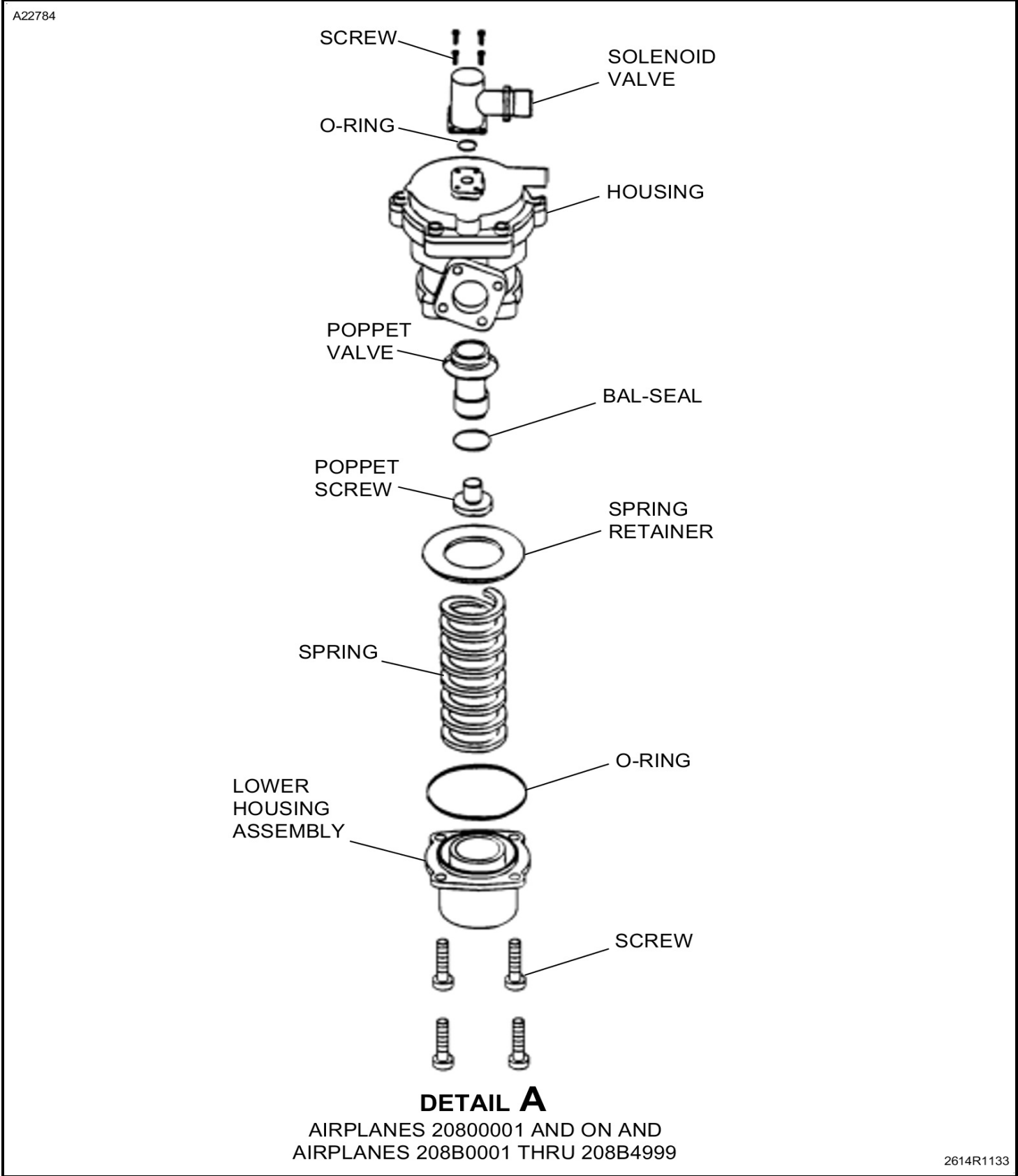


Figure 205 : Sheet 1 : Temperature Control Valve Installation

A22768

