

HEATING AND DEFROSTING AIR DISTRIBUTION - MAINTENANCE PRACTICES

1. General

- A. This section deals with maintenance to heating and defrosting air distribution system. Maintenance is typically limited to removal/installation of components.

2. Heater Valve Removal/Installation

- A. Remove Heater Valve (Refer to Figure 201).

NOTE: Heater valve is located on aft side of firewall between pilot and copilot rudder pedals.

- (1) Remove clamps securing left and right ducts to wye.
- (2) Remove clamp securing upper duct to heater valve.
- (3) Remove ducts from heater valve and wye.
- (4) Remove hardware securing heater control valve cable to arm of flapper shaft.
- (5) Remove brackets securing heater control valve cable to heater valve and to firewall.
- (6) From forward side of firewall, remove screws securing heater valve to firewall.
- (7) Remove heater valve from airplane and place on bench.
- (8) On bench, remove pin from flapper shaft arm. Carefully remove arm from flapper shaft.
- (9) Remove nuts, washers and screws securing flapper to flapper shaft.

NOTE: Check flapper and grommets for condition. Replace seal and grommets if worn or damaged.

- B. Install Heater Valve (Refer to Figure 201).

- (1) Install flapper to shaft using nuts, washers and screws.
- (2) Install flapper shaft arm on flapper shaft and secure using pin.
- (3) Clean existing sealer from heater valve flanges and mating surfaces.
- (4) Apply GC-1900 sealant (or equivalent) to heater valve flanges.

NOTE: Cure time at 77°F and 50 percent humidity is 72 hours. Accelerated cure time at 150°F is 4 hours. Accelerated cure time at 300°F is 15 minutes.

- (5) Attach heater valve to firewall using screws.
- (6) Attach control cable to heater valve and firewall using applicable brackets.
- (7) Pull cockpit heater valve control knob open approximately one-eighth inch from closed position while applying sufficient pressure on flapper shaft arm to secure flapper closed.

WARNING: Minimum installed bend radii for wire supported heater ducts in plane of bend, measured from wall of duct, shall be one-third diameter of maximum duct dimension.

NOTE: When cutting heating system ducts to length, support wire should be cut back far enough to bend back (minimum bend radius one-eighth inch) under clamp and protrude one-quarter inch. Do not break the bond between wire and fabric. Before tightening clamps, make sure there is not twist or torque on the duct.

- (8) Connect all ducts to heater valve and heater valve body. Secure all ducts using clamps.

3. Defroster Valve Removal/Installation

- A. Remove Defroster Valve (Refer to Figure 201).

NOTE: Defroster valve is located on aft side of firewall above heater valve.

- (1) Loosen clamps at wye and at defroster nozzles.
- (2) Remove ducting between wye and defroster nozzles.
- (3) Remove screws securing left and right ducts to defroster valve. Remove left and right ducts.
- (4) Loosen clamps and remove heater to defroster duct.
- (5) Remove hardware and brackets securing control cable to primary arm.
- (6) Remove nut and washer on secondary arm. Detach control cable from clamp and remove clamp from secondary arm.
- (7) Remove screws securing defroster valve to firewall and place defroster valve on bench.
- (8) Loosen and remove bar connected to primary and secondary arms.

- (9) Remove pins from primary and secondary arms.
- (10) Detach arms from respective shafts.
- (11) Remove nuts, washers and screws securing primary flapper to primary shaft. Remove primary flapper from defroster valve body.
- (12) Remove nuts, washers and screws securing secondary flapper to secondary shaft. Remove secondary flapper from defroster valve body.

NOTE: Check flappers and grommets for condition. Replace seals and grommets if worn or damaged.

B. Install Defroster Valve (Refer to Figure 201).

- (1) Attach primary flapper and secondary flapper to primary shaft and secondary shaft. Align holes and secure flappers to shafts using screws, washers and nuts.
- (2) Attach primary arm and secondary arm to respective shafts. Secure to shafts using pins.
- (3) Attach bar between primary and secondary arms using washers and nuts.

NOTE: Let bar extend through clamp approximately three-eighths inch, and tighten nut and washers on secondary arm. Leave nut on primary arm loose.

- (4) Secure primary flapper and secondary flapper at 45 degree ends. Tighten nut on primary arm and release flappers.
- (5) Apply GC-1900 sealant (or equivalent) to heater valve flanges.

NOTE: Cure time at 77°F and 50 percent humidity is 72 hours. Accelerated cure time at 150°F is 4 hours. Accelerated cure time at 300°F is 15 minutes.

- (6) Locate heater valve on firewall and secure to firewall using screws.
- (7) Attach ducts between wye and defroster nozzles. Attach defroster to heater duct.
- (8) Secure all ducts using clamps.
- (9) Attach control cable to defroster valve and firewall using clamps and hardware.
- (10) Attach end of control cable to primary arm and finger tighten nut.
- (11) Pull defroster valve control knob open approximately one-eighth inch from closed position. Apply sufficient force on primary arm to keep primary and secondary flappers closed. Tighten nut on primary arm.

4. Defroster Nozzle Removal/Installation

A. Remove Defroster Nozzle (Refer to Figure 201).

- (1) Loosen clamps and remove duct between defroster nozzles and wye.
- (2) Remove bolts and spacers from insulation blanket. Detach nozzle from glareshield.

B. Install Defroster Nozzle (Refer to Figure 201).

- (1) Attach defroster nozzle to glareshield using bolts and spacers.
- (2) Install duct between nozzle and wye. Secure duct using clamps.

5. Return Air Duct Removal/Installation

A. Remove Return Air Duct (Refer to Figure 201).

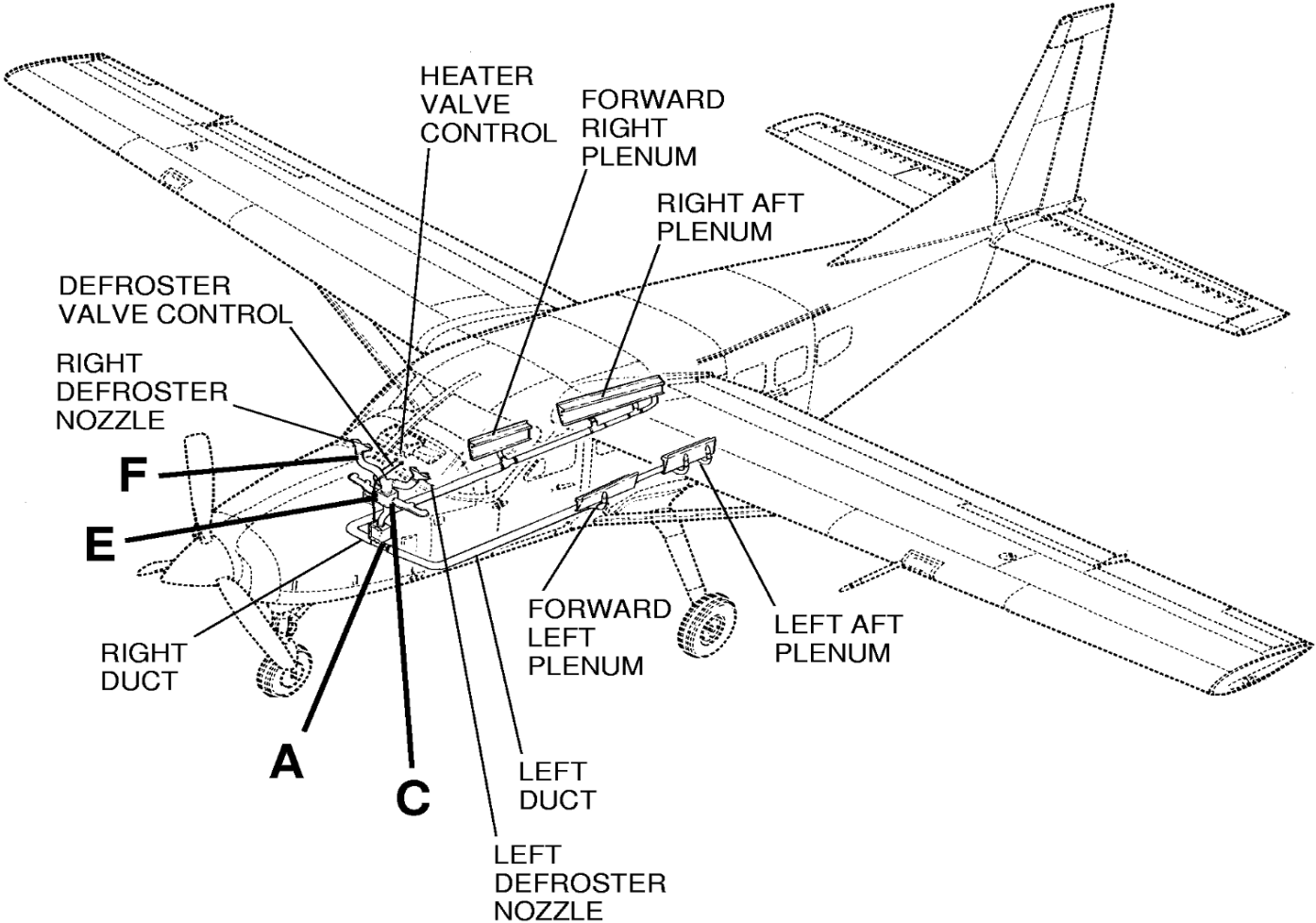
- (1) Remove bolts and washers to allow return air mount to be removed from airplane.
- (2) Remove screws and spacers securing flange and cap to return air mount.

B. Install Return Air Duct (Refer to Figure 201).

- (1) Attach flange and spacers to cap using screws, spacers and nuts.
- (2) Attach cap and flange to return air mount using screws.
- (3) Locate and align return air mount to firewall. Secure using screws.

Figure 201 : Sheet 1 : Heating and Defrosting System Installation

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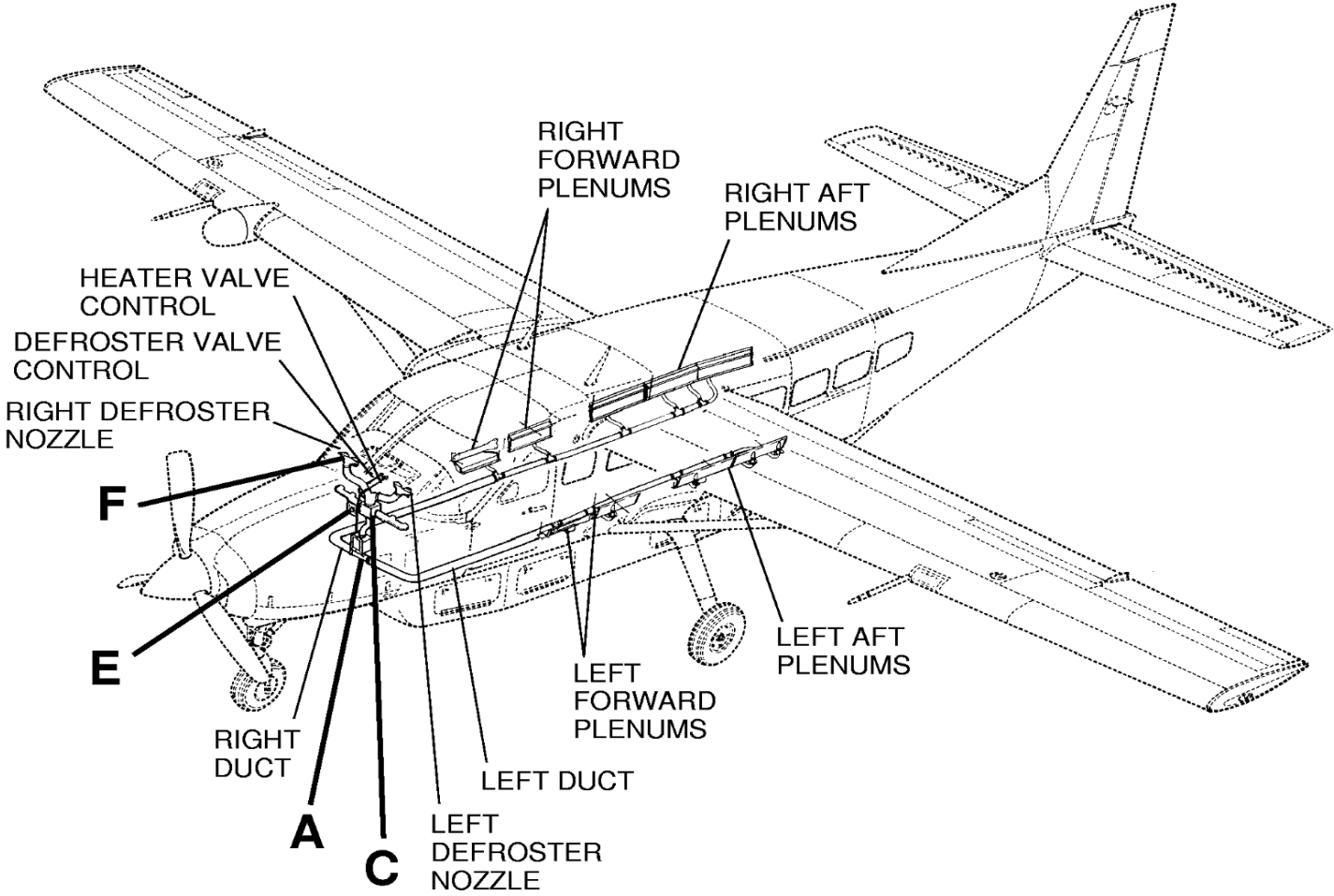


MODEL 208 ONLY

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Figure 201 : Sheet 2 : Heating and Defrosting System Installation

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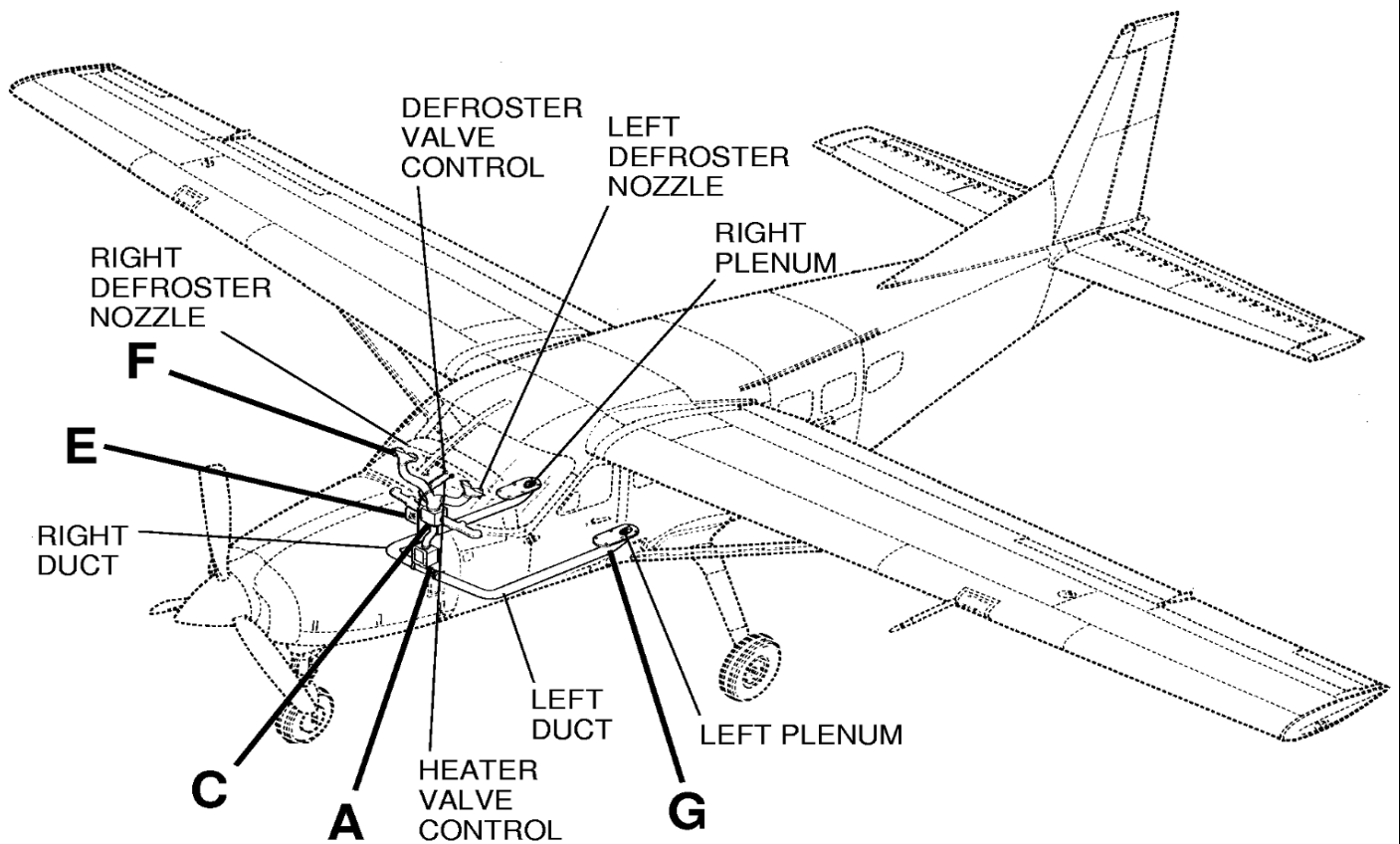


MODEL 208B PASSENGER

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Figure 201 : Sheet 3 : Heating and Defrosting System Installation

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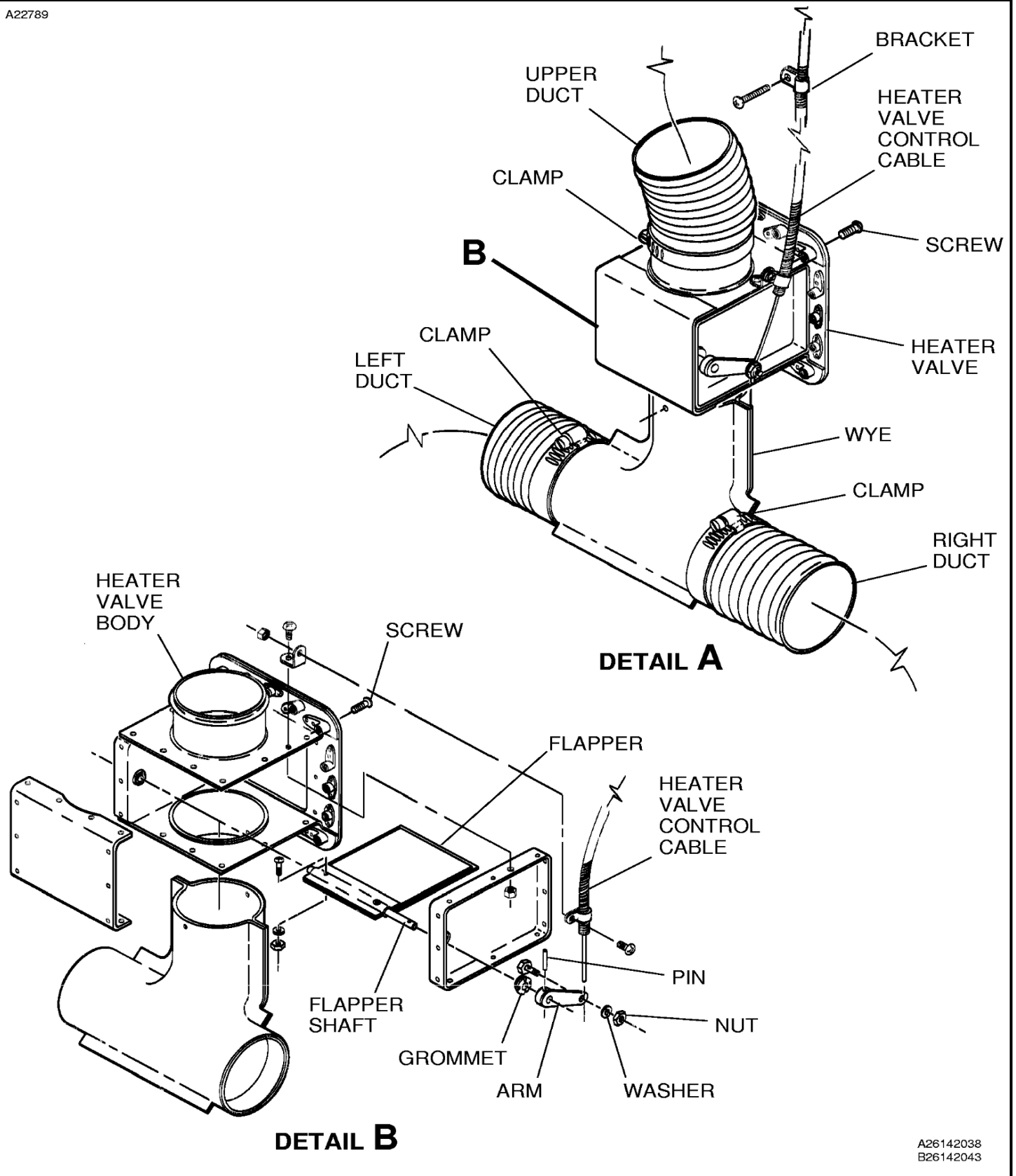


208 CARGOMASTER, 208B
AND 208B SUPER CARGOMASTER

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Figure 201 : Sheet 4 : Heating and Defrosting System Installation

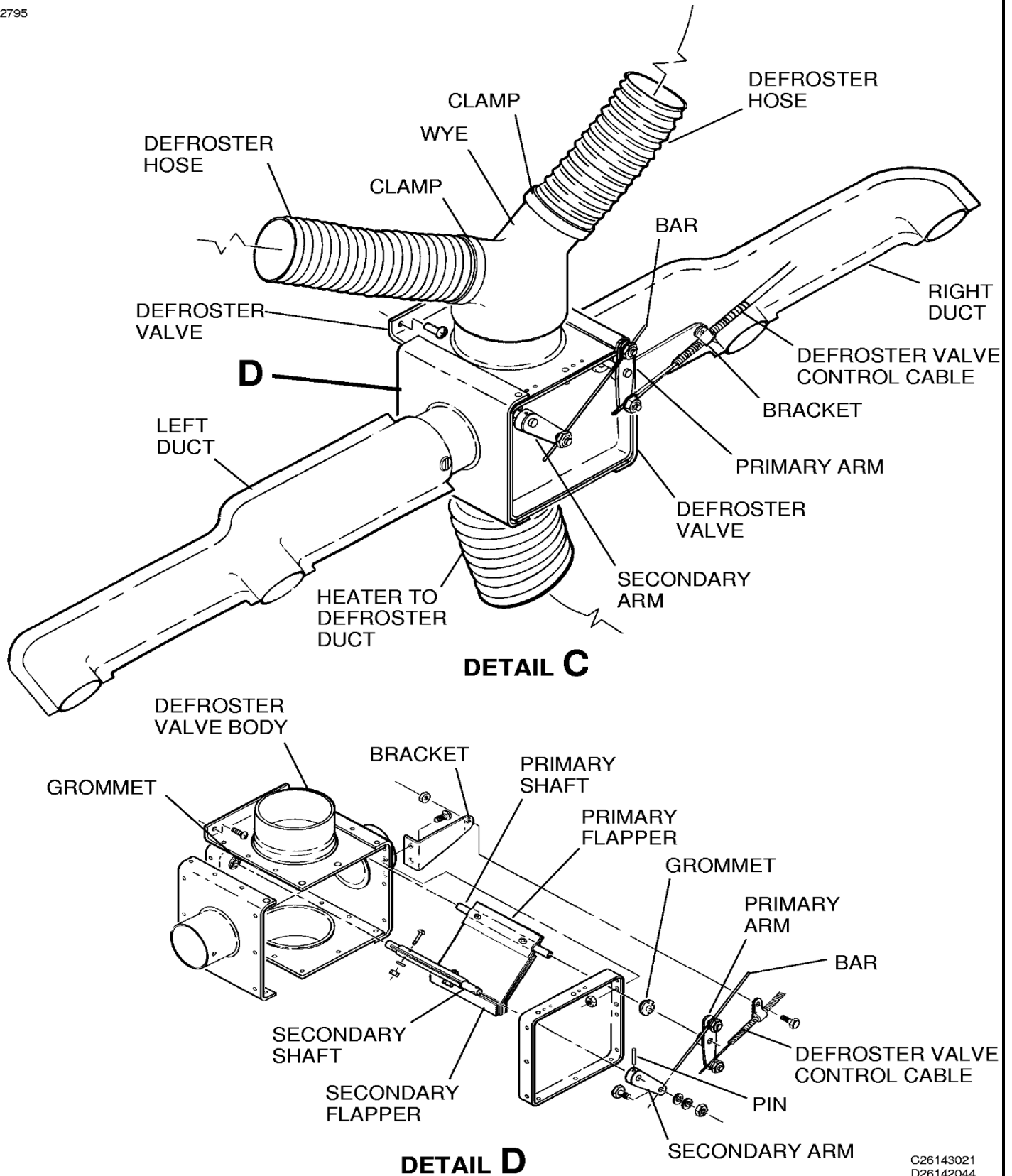
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Figure 201 : Sheet 5 : Heating and Defrosting System Installation

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Figure 201 : Sheet 6 : Heating and Defrosting System Installation

