

R134A AIR CONDITIONING SYSTEM - MAINTENANCE PRACTICES

PT6A-114/PT6A-114A (Airplanes 20800274 and On and Airplanes 208B0655 and On and Airplanes 20800001 thru 20800273 and Airplanes 208B0001 thru Airplanes 208B0654 Incorporating SK208-156)

1. General

- A. This section gives the R134a Air Conditioning System maintenance procedures for airplanes equipped with a PT6A-114 or PT6A-114A powerplant.

2. General Safety Precautions

- A. Handling R134a Refrigerant.

WARNING: Care must be taken to minimize the release of refrigerant into the atmosphere. The Environmental Protection Agency (EPA) requires recycling/recovery of R134a as of 11/15/95. All reclamation and recovery equipment must be EPA- and UL-listed. Use the R134a reclamation system per manufacturer's instruction.

WARNING: Observe safety precautions when handling refrigerant or servicing and performing maintenance on the air conditioning system.

WARNING: Liquid refrigerants at normal atmospheric pressure and temperature will expand and absorb heat. As a result, the refrigerant will freeze anything it contacts. Use of protective clothing, gloves, and goggles will protect the skin and eyes. The eyes are especially susceptible to damage, so safety glasses are an absolute minimum protection. Goggles are the preferred method of protection and must be worn at all times when servicing the system.

WARNING: If any liquid gets into the eyes, follow these instructions. Do not rub eye. Splash large quantities of cool water into the eye to raise the temperature. Apply a few drops of mineral oil to eye to wash it out, followed by a weak solution of boric acid to flush out all of the oil. Seek the aid of a doctor immediately. Do not attempt to treat it yourself.

- B. General System Notes.

NOTE: Cleanliness is of the utmost importance to avoid system contamination and useless wear to the compressor and other equipment items. All plumbing and hoses shall be cleaned and capped after fabrication and shall remain capped during storage and installation until connected to their mating components. All ports shall also be capped with clean caps or plugs. When components are open, extreme care shall be exercised to assure that no contaminating matter enters the parts or system. The receiver-dryer is easily contaminated with moisture from the atmosphere. All care shall be exercised to prevent moisture from entering the receiver-dryer.

- C. Removing Hoses Under Pressure.

NOTE: Discharge system and recover any refrigerant prior to removing hoses. Removing hoses under pressure is not recommended. Hoses removed with the system charged will spew vigorously and will whip end of hose if not restrained.

NOTE: The compressor assembly is shipped with a slight amount of internal pressure. Remove caps and vent slowly.

- D. Use of Intense Heat.

WARNING: To avoid an explosion, never weld, use a blow torch, or use excessive amounts of heat on or in the immediate area of any part of the air conditioning system or a refrigerant supply tank, while they are closed to atmosphere, charged or not.

- E. Proper Equipment Connection.

WARNING: Connection of low pressure equipment gages and refrigerant bottles to the high side of the compressor can result in personal injury or equipment damage. Always ensure valves on gages are closed when connecting gages and that hoses are properly connected.

- F. Equipment and Materials.

WARNING: A mercury thermometer cannot be used in airplanes due to hazard of possible mercury reaction with aluminum.

- G. Use of Nitrogen.

NOTE: All nitrogen pressure checks are to be made only with regulated nitrogen.

CAUTION: Do not connect nitrogen cart while service unit is installed. Damage to service unit could occur.

3. Compressor Removal/Installation

A. Remove Compressor (Refer to Figure 201).

- (1) Discharge system. Refer to Chapter 12, R134a Air Conditioning - Servicing.
- (2) Disconnect electrical connector from compressor.
- (3) Unscrew discharge service valve from compressor.
- (4) Cap discharge service valve and compressor fitting.
- (5) Unscrew suction service valve from compressor.
- (6) Cap suction service valve and compressor fitting.
- (7) Release tension on compressor by loosening nut and bolt at bottom of support plate.
- (8) Remove clips from turnbuckle and loosen turnbuckle.
- (9) Remove turnbuckle from compressor.
- (10) Remove nut, bolt and washer from bottom of support plate.
- (11) Remove belt from compressor.
- (12) Remove compressor from airplane.
- (13) If compressor is being replaced, perform following steps:
 - (a) Drain oil from old compressor and fill new compressor with an amount of oil equal to that drained from the old compressor plus one ounce.

B. Install Compressor (Refer to Figure 201).

- (1) Attach compressor to support assembly using nut, bolt and washer. Do not tighten.
- (2) Connect turnbuckle to adjuster plate using nut, washer and bolt.
- (3) Adjust compressor belt tension. Refer to Compressor Drive Belt Removal/Adjustment.
- (4) Remove protective caps from discharge and suction service valves and reconnect lines to compressor.
- (5) Connect electrical connector to compressor.
- (6) Charge system. Refer to Chapter 12, R134a Air Conditioning - Servicing.

C. If new compressor is being installed, perform following steps:

- (1) Drain oil from new compressor.

NOTE: Compressors are shipped from the factory with approximately 6.0 ounces of fluid. This fluid must be drained, discarded and replaced before compressor is attached to airplane.

CAUTION: Do not leave compressor oil containers uncapped. Refrigerant oil in open containers absorb moisture rapidly.

CAUTION: Do not operate system without refrigerant oil in compressor.

- (2) Determine amount of oil removed from old compressor and add 1.0 ounce to this measurement. Add this amount of new, uncontaminated compressor oil to new compressor. For a list of approved compressor oils, refer to Air Conditioning - General.
- (3) Reinstall drain plug.
- (4) Attach compressor to support assembly using nut, bolt and washer. Do not tighten.
- (5) Position compressor and install belt around compressor pulley.
- (6) Connect turnbuckle to adjuster plate using nut, washer and bolt.
- (7) Adjust compressor drive belt tension. Refer to Drive Belt Tension Adjustment.
- (8) Remove protective caps from discharge and suction service valves and reconnect lines to compressor.
- (9) Connect electrical connector to compressor.
- (10) Charge system. Refer to Chapter 12, R134a Air Conditioning - Servicing.

4. Compressor Drive Unit Removal/Installation

A. Remove the Compressor Drive Unit (Refer to Figure 202 and Figure 203).

- (1) Remove the drive belt. Refer to Compressor Drive Belt Removal/Installation.
- (2) Remove the compressor. Refer to Compressor Removal/Installation.
- (3) Cut the safety wire.
- (4) Disconnect the drain hose from the elbow at the bottom of the support assembly.
- (5) Remove the bolts, washers and shim(s) that attach the support assembly to the engine.
- (6) Carefully pull the support assembly aft to disengage the drive shaft from the engine.
- (7) Discard the gasket.

B. Install the Compressor Drive Unit (Refer to Figure 202 and Figure 203).

NOTE: Install the compressor drive unit before you install the compressor.

- (1) Put a new flange gasket in place.
- (2) Apply Plastilube (MIL W-G-632) lubricant to the forward splines of the Compressor Unit compressor drive shaft.

CAUTION: Apply Plastilube only to metal-to-metal surfaces.

- (3) Align the drive shaft on the support assembly with the engine drive pad.
- (4) Attach the support assembly with the bolts, washers and shim(s) as follows:
 - (a) Tighten the four bolts that attach the support housing flange and gasket to the engine with your hand.

NOTE: Do not tighten the bolts fully.
 - (b) Insert the two bolts that secure the support assembly to the compressor drive support, and engage two or three threads.
 - (c) Fully torque the four bolts that attach the support housing and gasket to the engine, in a diagonal step pattern.
 - (d) Remove the two bolts that attach the support housing to the compressor drive support.
 - (e) Install the shim(s) with the procedures that follow:
 - 1 Measure the space between the support assembly and the compressor drive support.
 - 2 If the space is less than 0.062 inches (1.57 mm), remove the necessary laminate layers from the shim to make the shim thinner.

NOTE: Each ply of the shim is 0.002 inch thick. It is important that the shim be no more than 0.002 inch less than the measured gap.
 - (f) When you determine the correct shim thickness, loosen all bolts enough to insert the shim.
 - (g) Install the shim and install bolts and washers.
 - (h) Fully step tighten the bolts that attach the support housing to the engine.
- (5) Use wire to safety the bolts on the support assembly. Refer to Chapter 20, Safetying - Maintenance Practices.
- (6) Connect the drain hose to the support assembly elbow with the shims in position.
- (7) Install the compressor. Refer to Compressor Removal/Installation.
- (8) Install the drive belt. Refer to Compressor Drive Belt Removal/Adjustment.

5. Compressor Drive Unit Disassembly/Assembly

A. Disassemble Compressor Drive Unit (Refer to Figure 202 and Figure 203).

- (1) Remove the end cap.
- (2) Remove the drive shaft, bearings and pulley from the support assembly.
- (3) Remove the outer bearing from the pulley.
- (4) Remove the retaining rings that hold the drive shaft and splined coupling outboard of the pulley.
- (5) Remove the pulley from the splined coupling.
- (6) Remove the retaining rings that hold the splined coupling to the drive shaft and retain the pulley.
- (7) Remove the oil seal from the support housing.

B. Assemble Compressor Drive Unit (Refer to Figure 202 and Figure 203).

- (1) Apply turbine engine oil to the new oil seal and to the drive shaft surface that the seal is against.
- (2) Install the new oil seal into the support housing.

- (3) Install one bearing into the support housing and another in the end cap.
- (4) Install a retaining ring on the inner groove of the drive shaft.
- (5) Install a retaining ring on one end of the splined coupling and put that end on the drive shaft.
- (6) Install the pulley on the splined coupling, then secure the splined coupling and pulley with the retaining rings.
- (7) Install the end cap with the bolt that does not pass through the spacer.
- (8) Remove the lamination from the shim(s) as necessary to install the closure disc.

NOTE: It is necessary to have the shim(s) to keep the closure disc in the correct position.

6. Compressor Drive Belt Removal/Installation.

- A. Remove the Drive Belt (Refer to Figure 201, Figure 202 and Figure 204).
 - (1) Loosen bolt at bottom of compressor.
 - (2) Remove and discard turnbuckle clip from turnbuckle.
 - (3) Loosen turnbuckle enough to pass belt over compressor pulley.
 - (4) Remove bolts securing spacer between end cap and support assembly.
 - (5) Remove belt through opening where spacer was removed.
- B. Install the Drive Belt (Refer to Figures 201, Figure 202 and Figure 204).
 - (1) Insert belt through opening between end cap and support housing.
 - (2) Reinstall spacer. Secure spacer between end cap and support assembly using bolts and washers.
 - (3) Position compressor to allow belt to slip over compressor pulley.
 - (4) Connect clevis end of turnbuckle to compressor.
 - (5) Adjust compressor drive belt tension. Refer to Drive Belt Tension Adjustment.

7. Drive Belt Tension Adjustment

- A. Adjust the Drive Belt Tension (Refer to Figure 204).
 - (1) Tension can be checked by using either of the two following methods:
 - (a) A spring scale hooked under the belt at a point midway between compressor drive unit pulley and compressor clutch pulley, pulling perpendicular to the belt.
 - (b) Using a Gates 150 tensiometer or equivalent.
 - (2) Correct belt tension is a 0.12 inch (3.048 mm) deflection when a load force of 2.0 pounds (0.907 kg) is applied to the belt.
 - (3) If belt tension is not correct, adjust as follows:
 - (a) Loosen bolt at bottom of compressor to allow compressor to pivot.
 - (b) Remove and discard clips on turnbuckle.

Table 201. Turnbuckle Adjustment Length Range

ADJUSTMENT RANGE	NORMAL	MAX (REF)
MS21252-5LL and MS21252-5RS	4.55 To 5.55 Inch	5.70 Inch
MS21252-5LL and MS21252-5RL	5.40 To 6.40 Inch	6.60 Inch

- (c) Adjust turnbuckle in or out to obtain correct belt tension.

NOTE: A maximum of three threads must be exposed on adjustment arm clevis. Replace MS21252-5RS clevis with MS21252-5RL. Refer to Table 201 for turnbuckle adjustment ranges.
- (d) Install new clip on turnbuckle.
- (e) Tighten bolt at bottom of compressor.

8. Condenser Removal/Installation

- A. Remove Condenser (Refer to Figure 205).
 - (1) Remove lower left engine cowl. Refer to Chapter 71, Engine Cowling and Nosecap - Maintenance Practices.
 - (2) Discharge system. Refer to Chapter 12, R134a Air Conditioning - Servicing.

- (3) Loosen clamps and remove hoses leading into condenser. Cap all hoses and fittings.
- (4) Remove bolt securing aft end of condenser to condenser support bracket.
- (5) Remove bolts, clamps and spacers securing compressor to engine mount.
- (6) Remove inlet duct and condenser from airplane.
- (7) Remove bolts and washers securing inlet duct to condenser. Separate inlet duct from condenser.
- (8) If required, remove seal assemblies from condenser.

B. Install Condenser (Refer to Figure 205).

NOTE: Point hoses on air compressor to keep clearance from inertial separator exit duct.

- (1) If required, install seal assemblies to condenser.
- (2) Attach condenser to inlet duct using bolts and washers.
- (3) Attach condenser to engine mount using clamps, spacers and hardware as required. Do not tighten at this time.
- (4) Align holes in right aft corner of condenser with holes in condenser support bracket. Attach using washers and bolts.
- (5) Tighten clamps, spacers and hardware on engine mount.
- (6) Reinstall hoses to condenser. Tighten with clamps.
- (7) Charge system. Refer to Chapter 12, R134a Air Conditioning - Servicing.
- (8) Install lower left engine cowl. Refer to Chapter 71, Engine Cowling and Nosecap - Maintenance Practices.

9. Receiver-Dryer Removal/Installation

A. Remove Receiver-Dryer (Refer to Figure 206).

NOTE: Anytime air conditioning system has been exposed to atmosphere for any length of time, or when any major components of the system have been replaced, the receiver-dryer must also be replaced.

- (1) Discharge system. Refer to Chapter 12, 134A Air Conditioning - Servicing.
- (2) Disconnect fitting at manifold pressure switch housing.
- (3) Remove tie-straps and disconnect electrical connector.
- (4) Remove pressure switch from receiver-dryer. Discard packing and cap open lines.
- (5) Disconnect fitting from OUT end of receiver-dryer.
- (6) Loosen clamps and remove receiver-dryer from engine mount.
- (7) Remove unions from both ends of receiver-dryer. Discard packing and receiver-dryer.

B. Install receiver-dryer (Refer to Figure 206).

- (1) Install union fittings and new packing to both ends of new receiver-dryer.
- (2) Attach receiver-dryer to engine mount and secure clamps.
- (3) Attach fittings to both ends of receiver-dryer unions.
- (4) Attach pressure switch with new packing to receiver-dryer.
- (5) Connect housing cap to housing plug and secure wire using tie-straps.
- (6) Charge system. Refer to Chapter 12, 134A Air Conditioning - Servicing.

10. Pressure Switch Removal/Installation

A. Remove Pressure Switch (Refer to Figure 206).

- (1) Discharge system. Refer to Chapter 12, 134A Air Conditioning - Servicing.
- (2) Remove tie-straps from electrical wiring.
- (3) Disconnect electrical connector.
- (4) Remove pressure switch and packing from receiver-dryer. Discard packing.
- (5) Cap manifold pressure switch housing to preclude entry of moisture and/or contaminants into system.
- (6) Check pressure switch for proper operation. Refer to Pressure Switch Functional Test.

B. Install Pressure Switch (Refer to Figure 206).

- (1) Install pressure switch in receiver-dryer, using new packing.

- (2) Connect electrical connector.
- (3) Secure electrical wiring using tie-straps.
- (4) Charge system. Refer to Chapter 12, R134a Air Conditioning - Servicing.

11. Air Conditioning Plumbing Removal/Installation

A. Remove Air Conditioning Plumbing (Refer to Figure 207).

- (1) Discharge system. Refer to Chapter 12, R134a Air Conditioning - Servicing.

NOTE: Refrigerant lines in the engine compartment, under the floorboards and in the fuselage sidewalls interconnect the compressor, condenser, receiver-dryer and evaporators.

- (2) Gain access to high and low pressure service valves by removing access panel 232AC located between the pilots seats. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.
- (3) Disconnect plumbing and remove as necessary.
- (4) Cap all lines and fittings to preclude entry of moisture and/or foreign particles into system.

B. Install Air Conditioning Plumbing (Refer to Figure 207).

NOTE: Point hoses on air compressor to keep clearance from inertial separator exit duct.

- (1) Remove previously installed caps from lines and install plumbing.

NOTE: It is recommended that all straight thread fittings and O-rings be lubricated with clean refrigerant oil and all taper (pipe) threads be serviced with Teflon tape. Make sure that Teflon tape does not get closer than one to one-half threads from the end of the fitting. If a piece of Teflon tape gets into the system, it can block small orifices.

CAUTION: The use of other thread lubricants, including  Lock-Tite  or other commercial refrigerant lubricants such as  Leak-Lock, is positively prohibited.

C. Torque lines to valves listed in Table 202 below.

NOTE: All plumbing fittings must be torqued to prevent R134a leakage and must be rechecked after performing an air conditioning leak test.

Table 202. Valve Plumbing Torque Specifications

TUBE DIAMETER	TORQUE VALUE
0.250 inch	55 to 65 inch-pounds
0.375 inch	100 to 125 inch-pounds
0.500 inch	200 to 250 inch-pounds
0.750 inch	400 to 500 inch-pounds

- D. Perform leak test of system. Refer to Chapter 12, R134a Air Conditioning - Servicing.
- E. Charge system. Refer to Chapter 12, R134a Air Conditioning - Servicing.
- F. Perform an operational test of the system. Refer to System Operational Test.
- G. Reinstall removed floorboards and panels. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.
- H. Reinstall interior equipment. Refer to Chapter 25, Floor Covering/Control Column Cover - Maintenance Practices.

12. Wing-Mounted Evaporator Removal/Installation

NOTE: Evaporator removal and installation for both the left and right wing evaporators are typical.

A. Remove Wing-Mounted Evaporators (Refer to Figure 208).

- (1) Discharge system. Refer to Chapter 12, R134a Air Conditioning - Servicing.
- (2) Remove wing root access panel 511AB and 611AB. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.
- (3) Disconnect electrical connector.
- (4) Disconnect evaporator drain hose from drain tube.
- (5) Disconnect elbow fitting from bottom of evaporator and cap line.

- (6) Disconnect expansion valve from evaporator and cap line.
 - (7) Disconnect duct at blower assembly.
 - (8) Remove four bolts and nuts securing evaporator assembly to duct.
 - (9) Pull evaporator assembly far enough aft to allow studs to clear duct. Remove evaporator assembly from airplane.
- B. Install Wing-Mounted Evaporators (Refer to Figure 208).
- (1) Position evaporator assembly in wing root area with forward studs through holes in duct. Secure evaporator assembly to duct using nuts and bolts.
 - (2) Reconnect and tighten duct at blower assembly.
 - (3) Connect expansion valve to evaporator.
 - (4) Connect elbow fitting to bottom of evaporator.
 - (5) Connect evaporator drain hose to drain tube.
 - (6) Connect electrical housing cap to housing plug.
 - (7) Charge system. Refer to Chapter 12, R134a Air Conditioning - Servicing.
 - (8) Install wing root access panel 511AB and 611AB. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

13. Wing Mounted Return Air Check Valve Removal/Installation

- A. Remove and Disassemble Wing-Mounted Return Air Check Valve (Refer to Figure 208).
- (1) Remove wing root access panel 511AB and 611AB. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.
 - (2) Remove clamp and flexible duct from outboard duct assembly.
 - (3) Remove screws securing outboard duct assembly to inboard duct assembly.
 - (4) Remove outboard duct assembly from airplane.
 - (5) Disassemble check valve in the following steps:
 - (a) Remove nut at bottom of hinge pin and withdraw hinge pin from outboard duct assembly. This will allow check valve halves and spring to be removed from outboard duct assembly.
 - (b) Remove nut at bottom of pin and withdraw pin from outboard duct assembly.
- B. Assemble and Install Wing Mounted Return Air Check Valve (Refer to Figure 208).
- (1) Reassemble check valve in the following steps:
 - (a) Assemble check valve halves and spring in outboard duct assembly. Insert hinge pin through duct, valve halves and spring. Secure hinge pin using nut.
 - (b) Insert pin through outboard duct assembly and secure using nut.
 - (c) Make sure check valve operates smoothly and seats fully.
 - (2) Install outboard duct assembly to inboard duct assembly using screws.
 - (3) Attach flexible duct to outboard duct assembly using clamp.
 - (4) Reinstall wing root access panel 511AB and 611AB. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

14. Forward Evaporator Return Air Grill

- A. Remove Grill Assembly (Refer to Figure 208).
- (1) From cabin area, remove screws securing grill to inboard duct assembly.
- B. Install Grill Assembly (Refer to Figure 208).
- (1) Align holes in grill with holes in headliner and inboard duct assembly.
 - (2) Install screws to secure grill to inboard duct assembly.

15. Tailcone Mounted Evaporator Removal/Installation

- A. Remove Aft Evaporator (Refer to Figure 209).
- (1) Discharge system. Refer to Chapter 12, R134a Air Conditioning - Servicing.

- (2) Remove aft cabin partition to gain access to evaporator unit. Refer to Chapter 25, Rear Cargo Compartment Wall - Maintenance Practices.
 - (3) Disconnect electrical connector.
 - (4) Disconnect evaporator drain hose from bottom of evaporator.
 - (5) Remove recirculated air ducts from duct assembly.
 - (6) Remove fitting from expansion valve. Cap open line.
 - (7) Remove fitting from union on suction hose leading into evaporator. Cap open line.
 - (8) Remove screws securing evaporator to brackets.
 - (9) Remove flexible distribution duct from blower motor and remove evaporator assembly from airplane.
- B. Install Aft Evaporator (Refer to Figure 209).
- (1) Install evaporator to aft cabin area using screws and washers as required.
 - (2) Attach flexible distribution duct to blower motor.
 - (3) Install suction hose to evaporator.
 - (4) Connect drain line to evaporator.
 - (5) Attach recirculated air ducts to duct assembly.
 - (6) Connect electrical connector.
 - (7) Recharge system. Refer to Chapter 12, R134a Air Conditioning - Servicing.
 - (8) Install aft cabin partition. Refer to Chapter 25, Rear Cargo Compartment Wall - Maintenance Practices.

16. Aft Evaporator Distribution and Return Air System Removal/Installation

- A. Remove Aft Evaporator Distribution and Return Air Ducts (Refer to Figure 209).
- (1) Remove the aft cabin partition to get to the evaporator unit. Refer to Chapter 25, Rear Cargo Compartment Wall - Maintenance Practices.
 - (2) Loosen the clamps that attach the recirculated air ducts to the elbow assemblies.
 - (3) Remove recirculated air ducts from airplane.
 - (4) Loosen the clamp that attaches the flexible distribution duct to the wye duct.
 - (5) Remove the flexible distribution duct from wye duct.
 - (6) Remove the screws that attach the wye duct to distribution duct and remove wye duct from airplane.
 - (7) Remove the screws that attach the distribution duct to the airplane and remove the duct from the airplane.
- B. Install Aft Evaporator Distribution and Return Air System (Refer to Figure 209).
- (1) Install distribution duct to airplane using screws.
 - (2) Attach wye duct to distribution duct.
 - (3) Attach flexible distribution duct to wye duct using clamp.
 - (4) Attach recirculating air ducts to elbow assemblies using clamps.
 - (5) Install aft cabin partition. Refer to Chapter 25, Rear Cargo Compartment Wall - Maintenance Practices.

17. System Operational Test

- A. Air Conditioning System Operational Test.

NOTE: Perform system check at ambient temperatures of 55°F or higher.

- (1) Engage the following circuit breakers:
 - (a) LEFT VENT BLWR.
 - (b) RIGHT VENT BLWR.
 - (c) AFT VENT BLWR.
 - (d) AIR COND CONT.
- (2) Move fan switches from HIGH to LOW and note a change in evaporator fan speed.
- (3) Place air conditioner switch to COOL and activate compressor.
- (4) Temperature differential across evaporators must be at least 20°F. Measure temperatures at evaporators with dial

type thermometers. If evaporators do not cool, refer to 134a Air Conditioning - Troubleshooting.

18. Pressure Switch Functional Test

- A. Test the Pressure Switch (Refer to Figure 206).
- (1) Discharge the system. Refer to Chapter 12, R134a Air Conditioning - Servicing.
 - (2) Remove the pressure switch and packing from the top of the receiver-dryer. Refer to Pressure Switch Removal/Installation.
 - (3) Do a check for the electrical continuity through the switch.
 - (a) The switch must open between a rising pressure of 350 PSIG to 412 PSIG.
 - (b) When the pressure is lowered 265 PSIG +30 or -30 PSIG below the opening pressure, the switch must close and engage the compressor clutch.
 - (4) Remove the switch and packing from the pressure switch manifold.
 - (5) Apply 355 PSIG to 412 PSIG dry nitrogen pressure to the pressure switch. The switch must open fully.
 - (a) If the switch is closed or does not operate correctly, replace the switch.
 - (b) If the switch opens with the correct pressure, decrease the pressure and make sure the switch closes at 265 PSIG +30 or -30 PSIG.
 - (6) Do a check of the low pressure setting.

NOTE: This is the low pressure setting that protects the compressor.

 - (a) Decrease the pressure and make sure the switch opens with a pressure of 25 to 35 PSIG.
 - (b) If the switch opens, then slowly increase the pressure. Make sure the switch is closed by 35 PSIG.
 - (c) If the switch does not operate correctly at the low pressure setting, replace the switch.
 - (7) Install the pressure switch with a new packing in the top of the receiver-dryer. Refer to Pressure Switch Removal/Installation.
 - (8) Charge the system. Refer to Chapter 12, R134a Air Conditioning - Servicing.

Figure 201 : Sheet 1 : R134a Compressor Installation

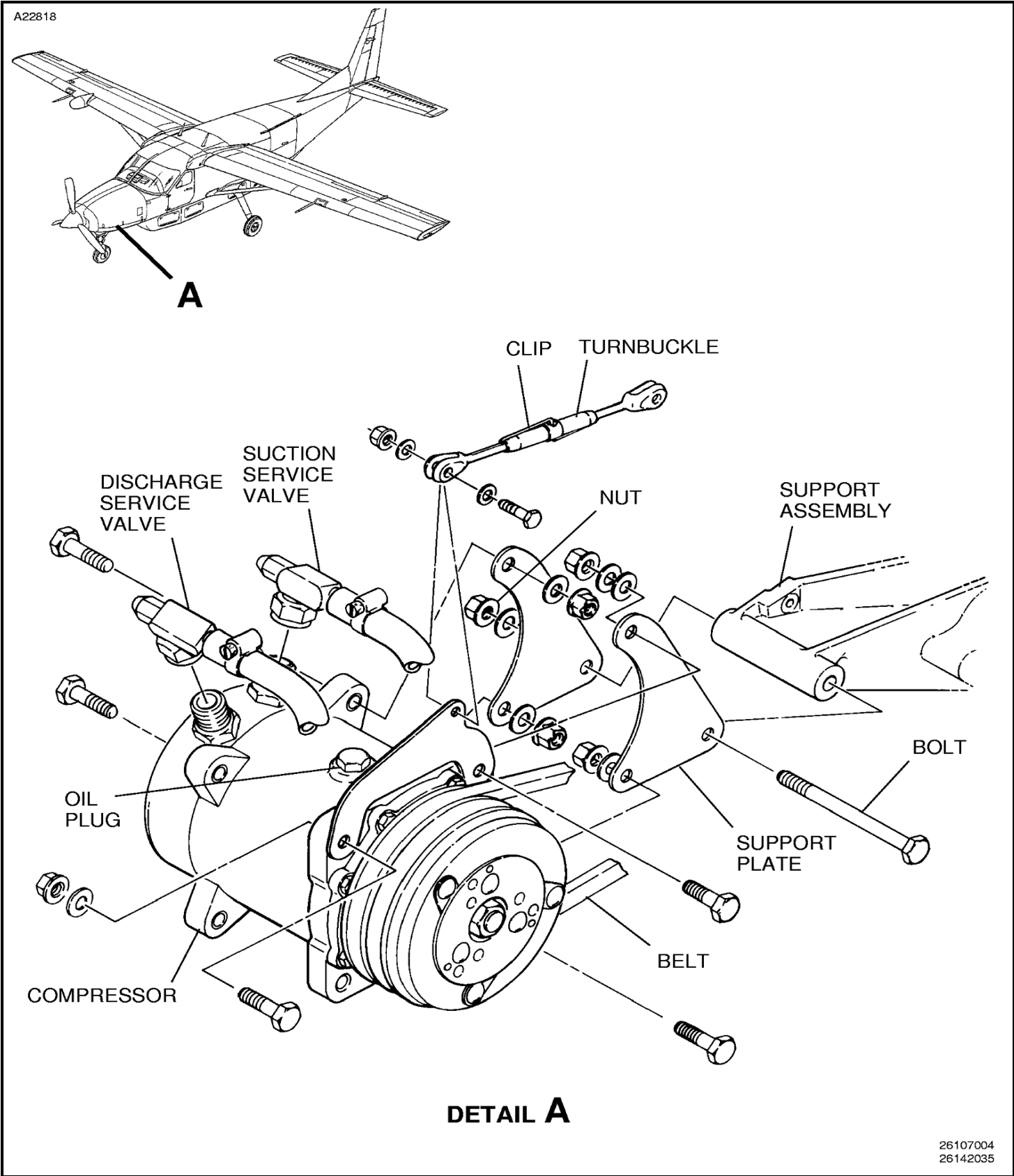
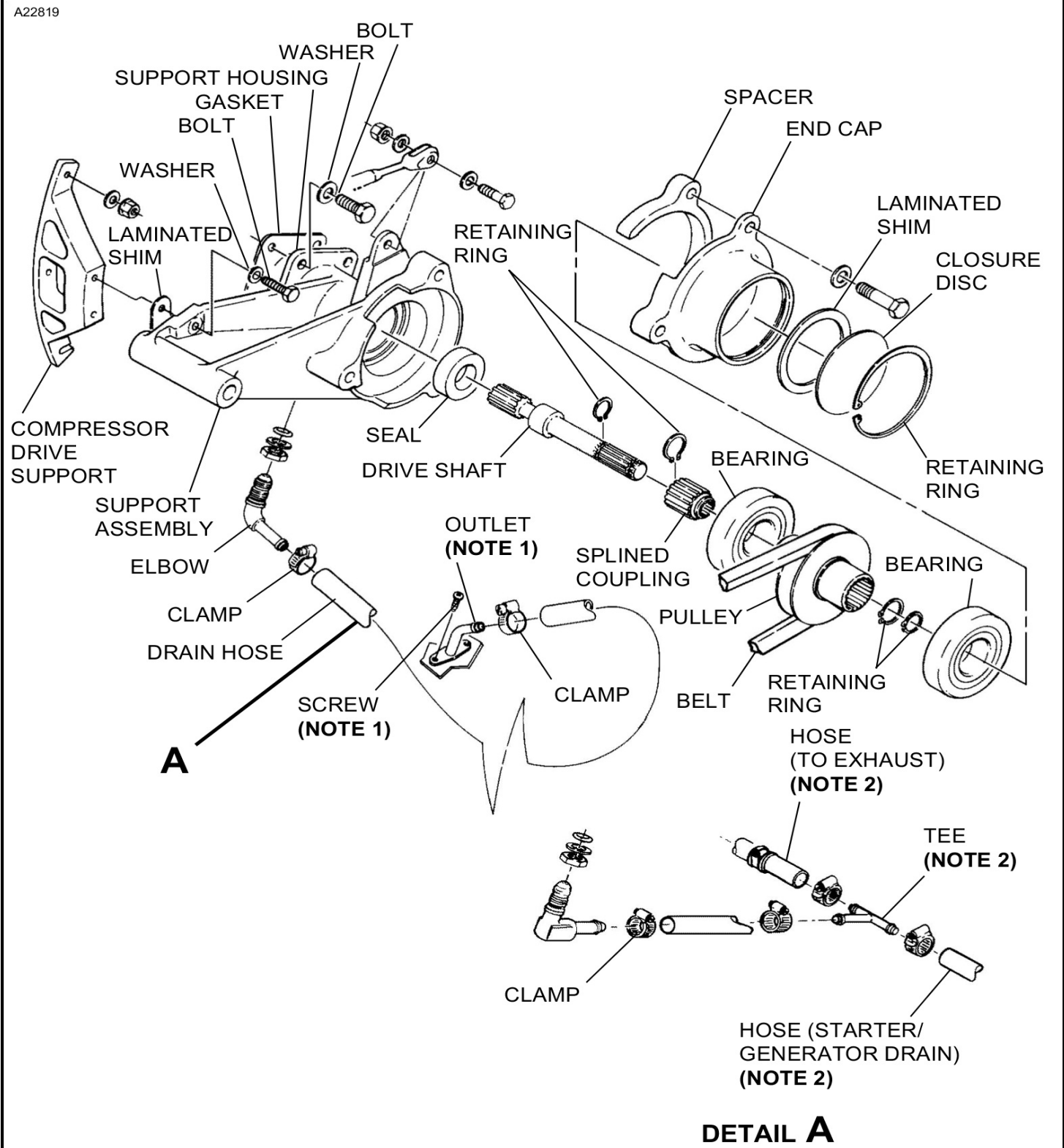


Figure 202 : Sheet 1 : R134a Compressor Drive Unit Installation



NOTE 1: AIRPLANES 20800001 THRU 20800143

NOTE 2: AIRPLANES 20800144 AND ON

26142039
 26142039A

Figure 203 : Sheet 1 : R134a Compressor Drive Unit Cutaway View

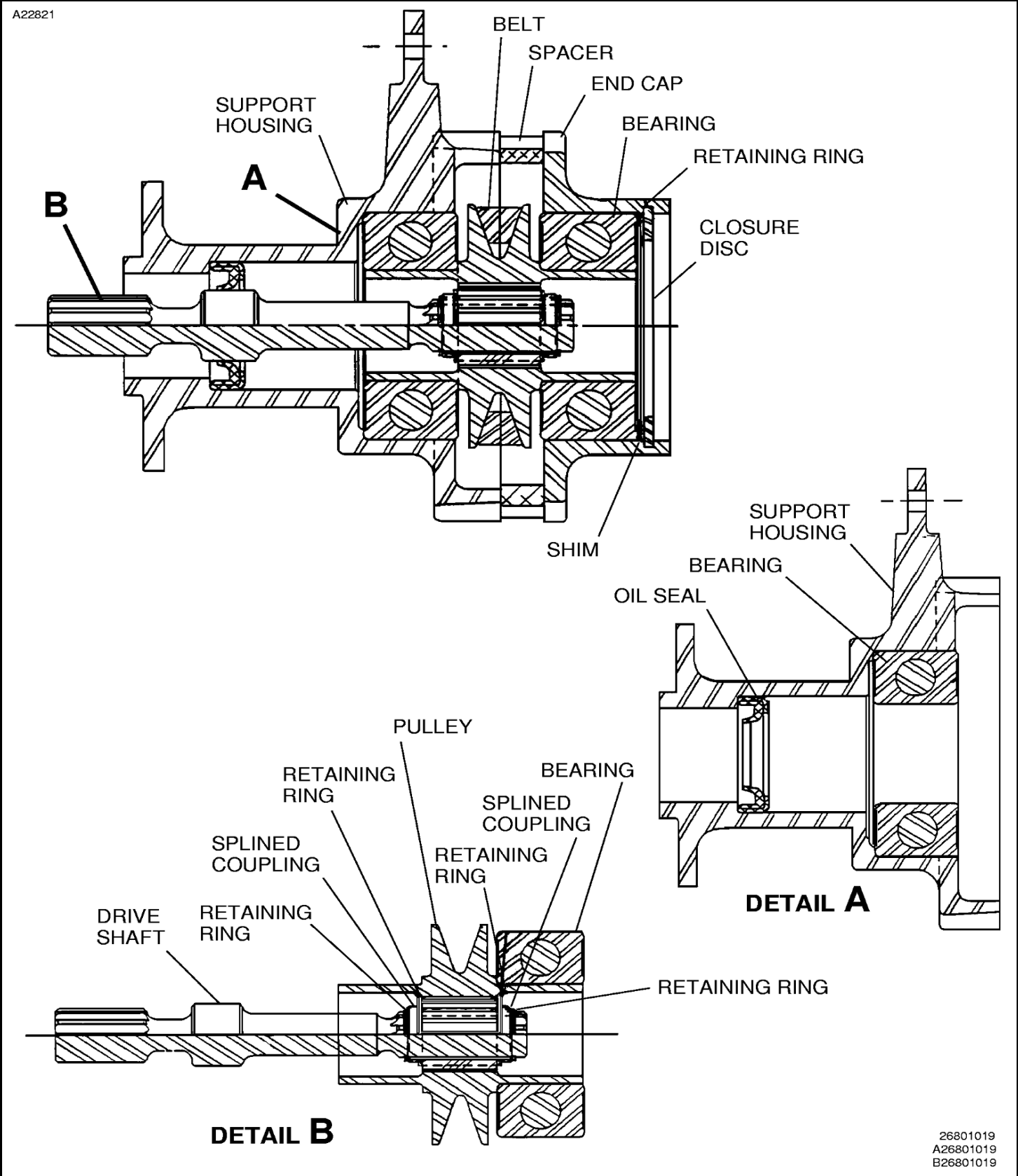
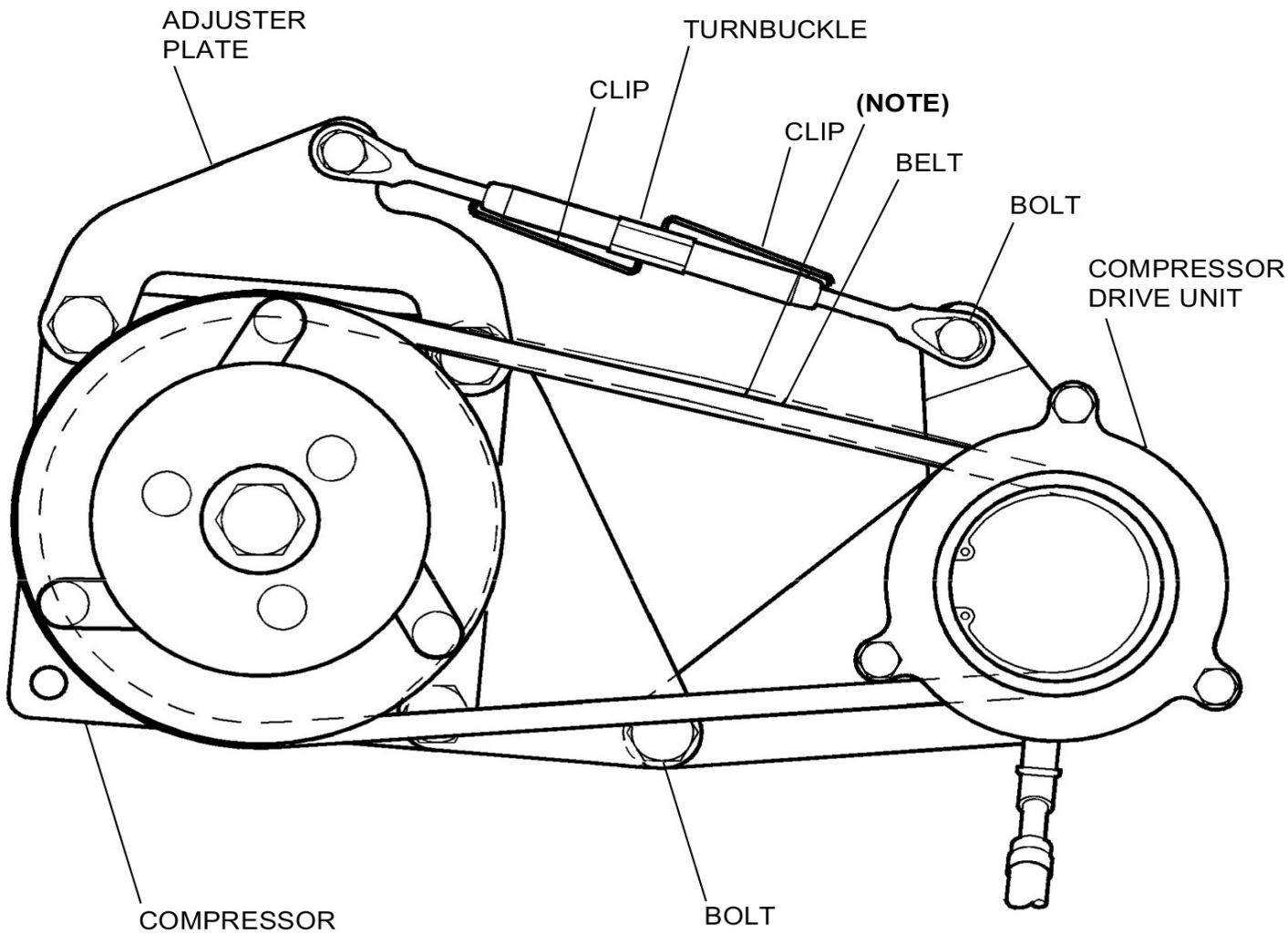


Figure 204 : Sheet 1 : R134a Compressor Drive Belt Adjustment

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NOTE: BELT TENSION REQUIREMENT
LOAD FORCE $\hat{\approx}$ 3.6 TO 4.4 POUNDS
DEFLECTION $\hat{\approx}$ 0.12 INCH

2614R1071

Figure 205 : Sheet 1 : R134a Condenser Installation

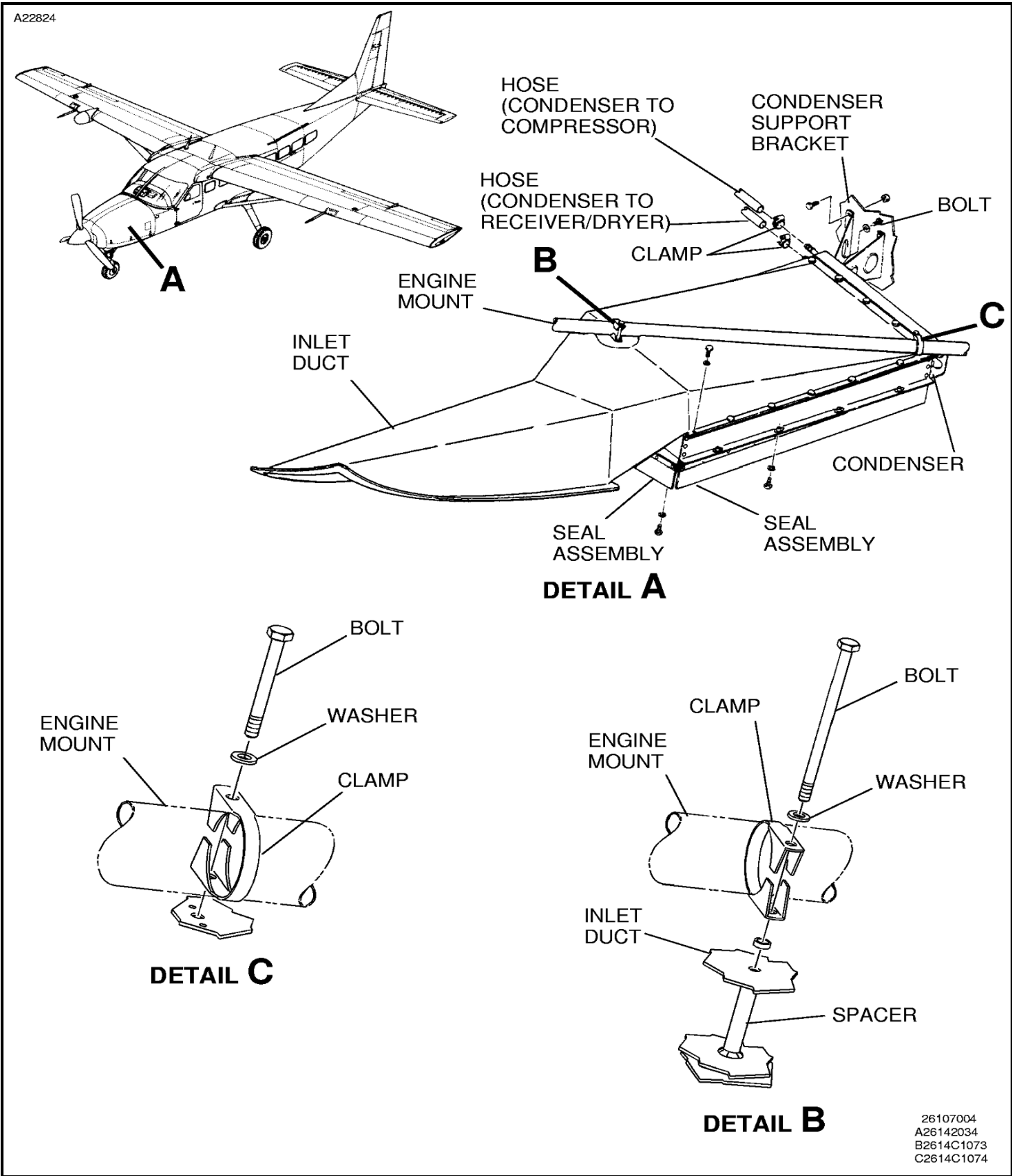
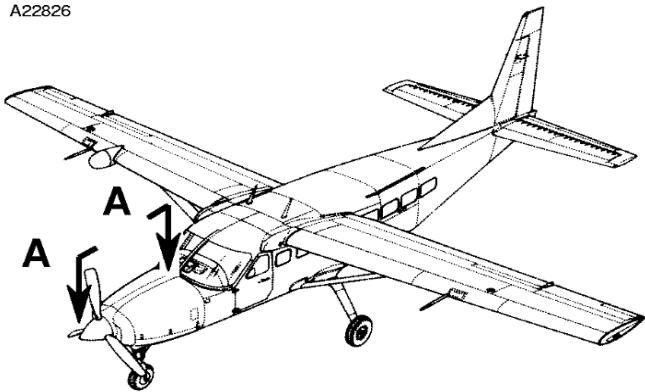
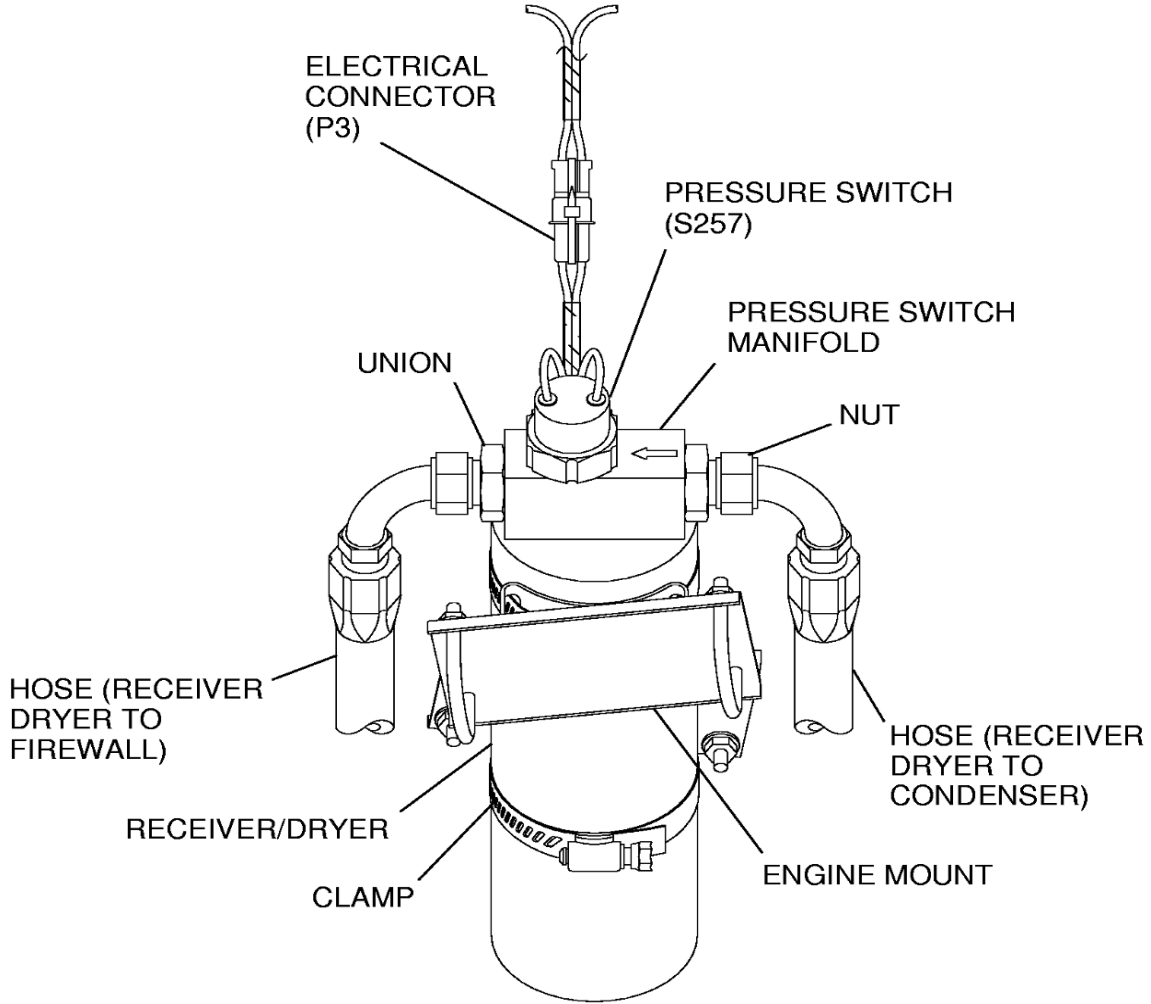


Figure 206 : Sheet 1 : R134a Receiver-Dryer Installation

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NOTE: AIRPLANES 2080274 AND ON AND 208B0655 AND ON



VIEW A-A

MODEL 208 AND 208B PASSENGER

26107004
AA2614T1303

Figure 207 : Sheet 1 : Air Conditioning Plumbing Installation

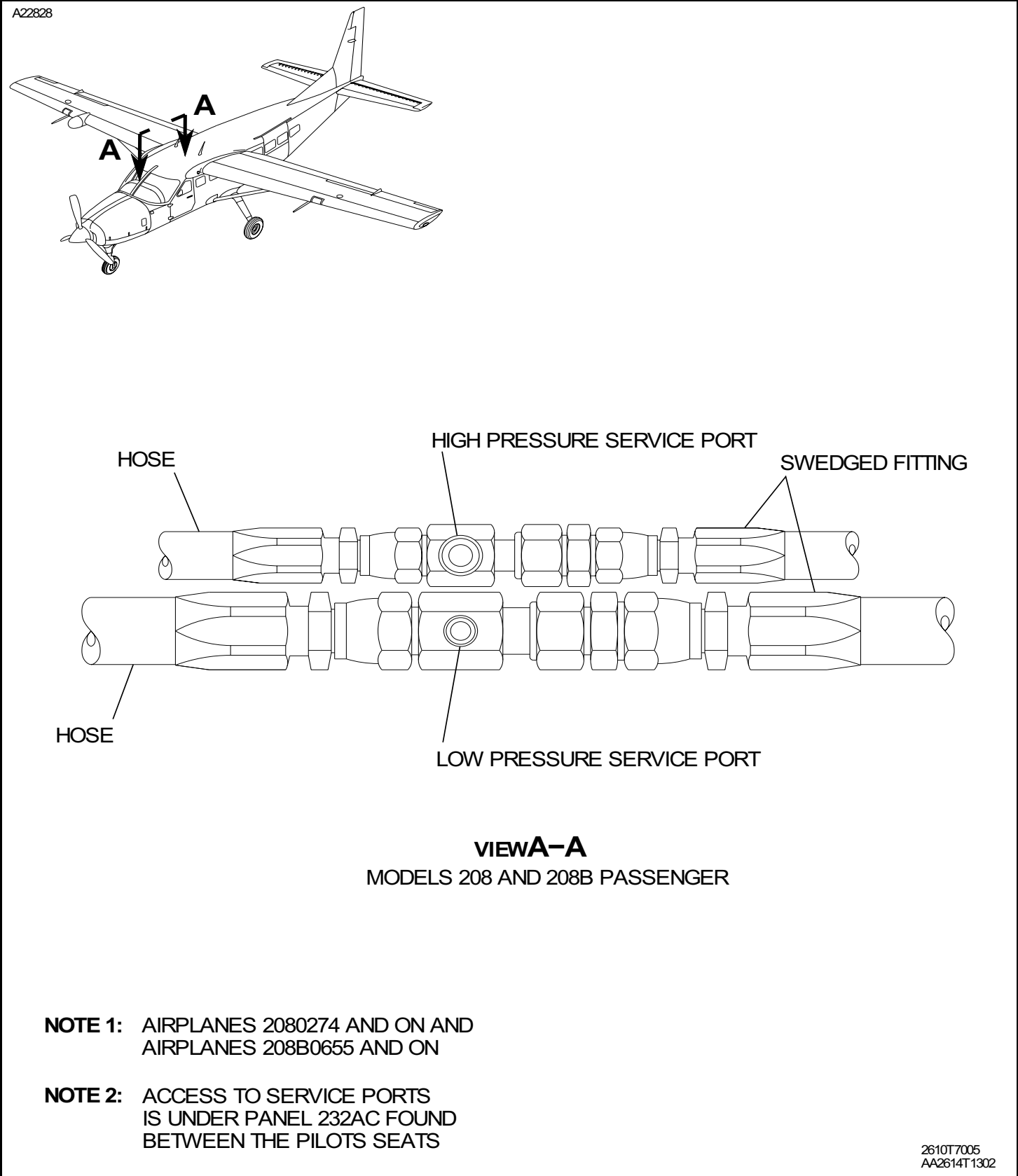
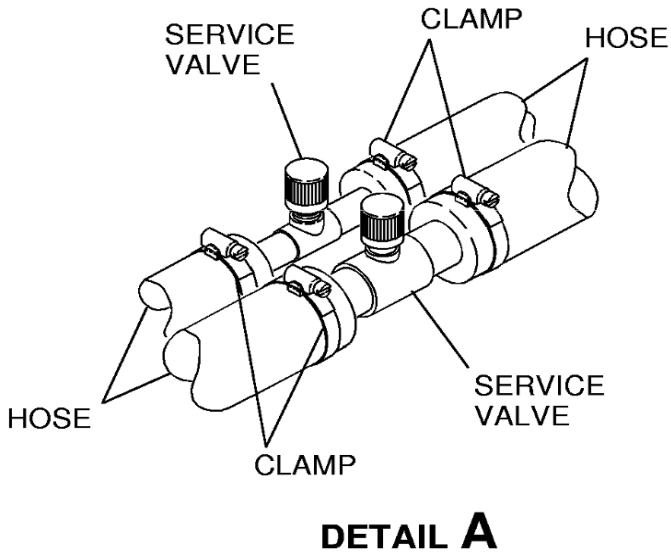
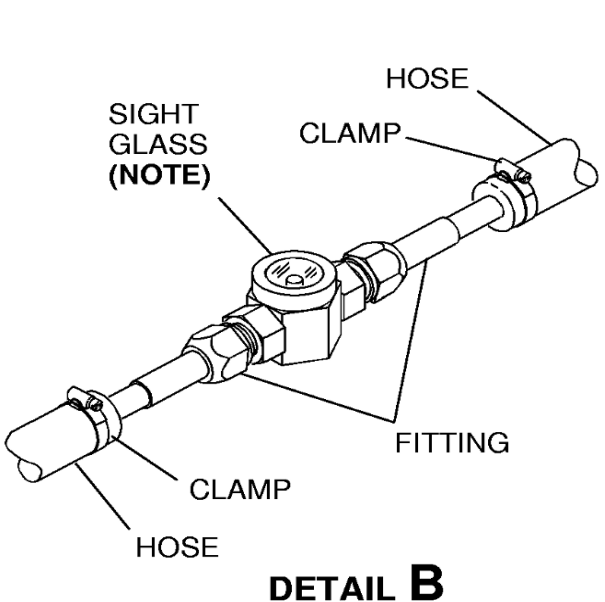
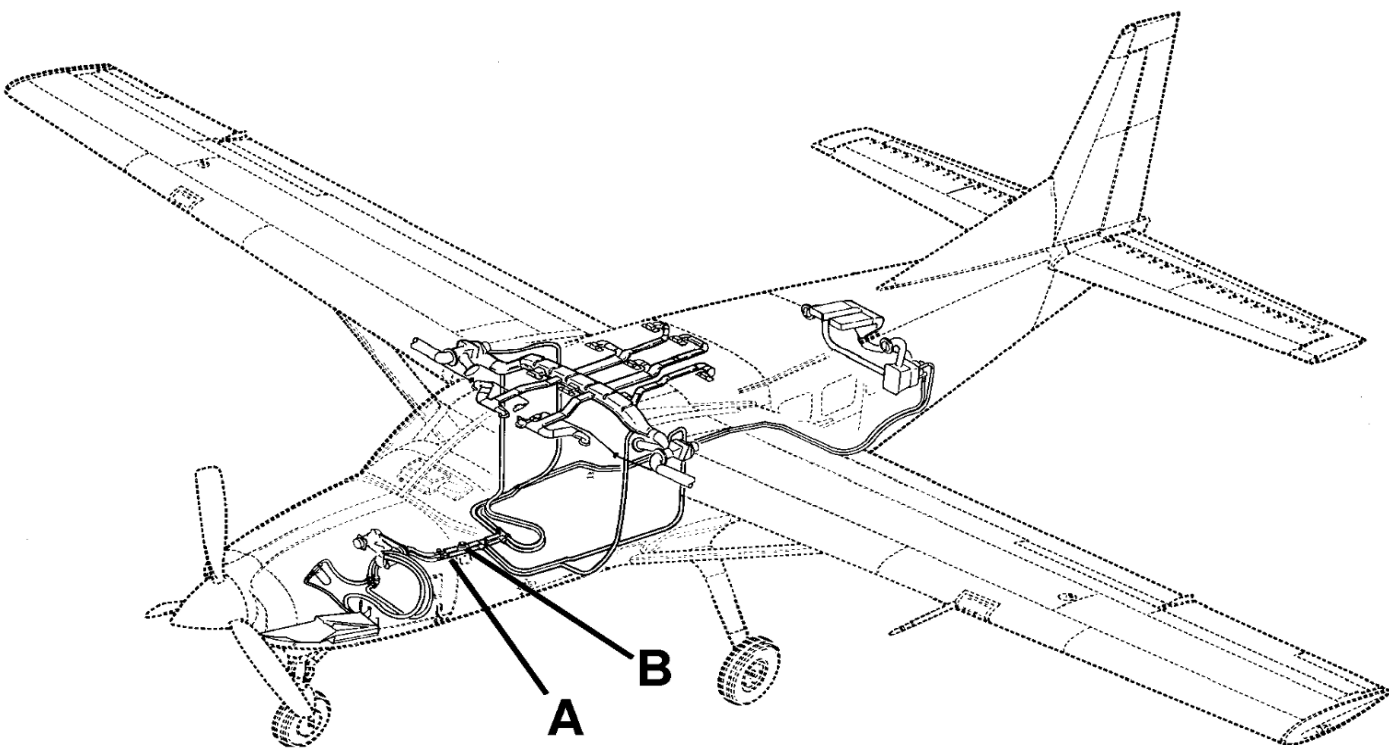


Figure 207 : Sheet 2 : Air Conditioning Plumbing Installation

A22820



NOTE: AIRPLANES
208B0001 THRU
208B0654

MODEL 208B PASSENGER

26142036
A2614C1068
B2614C1069

Figure 208 : Sheet 1 : R134a Wing Mounted Return Air Check Valve Assembly

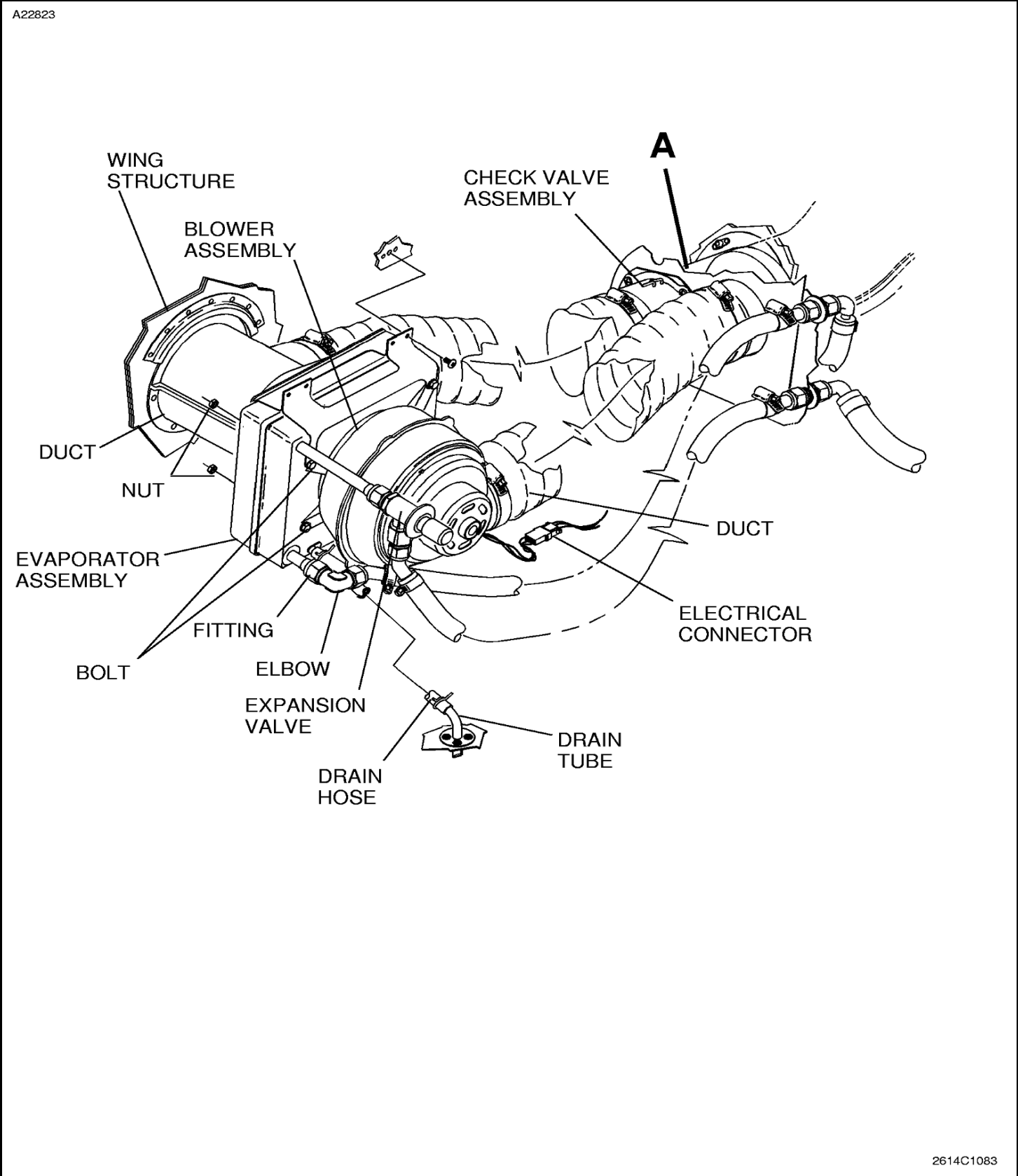
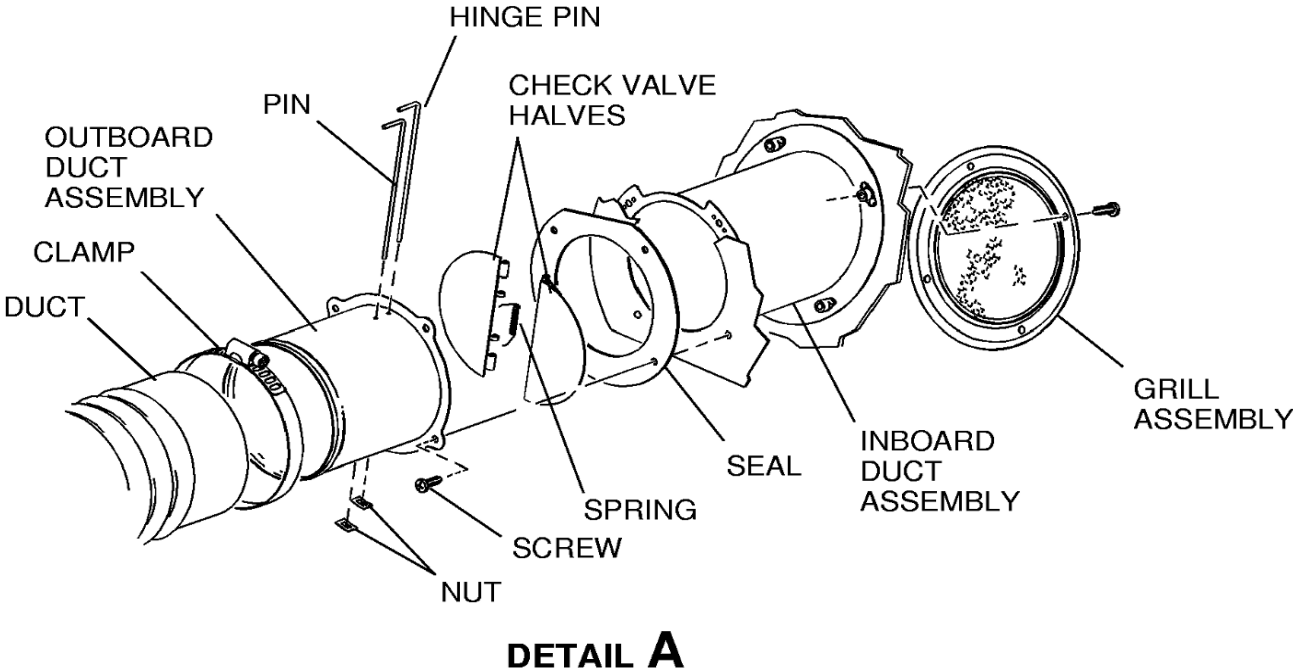


Figure 208 : Sheet 2 : R134a Wing Mounted Return Air Check Valve Assembly

A22825



2614C1077

Figure 209 : Sheet 1 : R134a Tailcone Mounted Evaporator Installation

