PNEUMATIC DISTRIBUTION - MAINTENANCE PRACTICES

1. General

A. This section gives procedures and data which apply to the pneumatic distribution system. This includes how to remove and install the components in the distribution system, connect the pneumatic system to shop air, clean, adjust, and test the pressure regulator.

CAUTION: When you replace a pneumatic system component, make sure all the connections are correct to prevent damage to the gyro system.

CAUTION: Do not use teflon tape, pipe dope, or thread lubricants of any type on the fitting threads. Do not tighten the connections too much.

(1) When a component is removed, identify and use a cover on all open lines, hoses, and fittings to prevent dirt or foreign material from entering the system. Make sure installation is correct. When you replace a component, examine all the hoses carefully to make sure they are clean and free of debris, oil, solvent, collapsed inner liners, or external damage. Replace the hoses that are old, hard, cracked, or brittle.

2. Pressure Regulator Removal/Installation

A. Remove Pressure Regulator (Refer to Figure 201).

(1) Open the right engine cowling door to gain access to the pressure regulator.

(2) Detach the tube nut from the pressure regulator and cap tee.

(3) Disconnect the pneumatic line from the pressure regulator.

(4) Remove the pressure regulator.

B. Install Pressure Regulator (Refer to Figure 201).

(1) Position the pressure regulator in the engine compartment and connect the pneumatic line to the regulator.

NOTE: Install with dome clocked down and inboard to clear the engine frame.

(2) Remove the cap from tee and attach the tube nut to the pressure regulator.

(3) Close the engine cowling door.

3. Pneumatic Distribution Line Removal/Installation

A. Remove Pneumatic Distribution Line (Refer to Figure 201).

(1) Open left and right engine cowling to gain access to pneumatic line.

(2) Loosen clamps securing pneumatic line to engine mount and firewall.

(3) Remove pneumatic line.

(a) Airplanes 20800001 thru 20800143 and 208B0001 thru 208B0143, remove pneumatic line from pressure regulator and union or deice line tee, if installed, at ejector.

(b) Airplanes 20800144 and On and 208B0144 and On, and Airplanes 20800001 thru 20800143 and 208B0001 thru 208B0143 incorporating CAB90-14, remove line from pressure regulator and cross fitting at ejector.

(c) Airplanes 20800222 and On and 208B0317 and On, and Airplanes 20800001 thru 20800121 and 208B0001 thru 208B0316 incorporating CAB93-2, remove line from pressure regulator and cross assembly at ejector.

B. Install Pneumatic Distribution Line (Refer to Figure 201).

(1) Install pneumatic line.

(a) Airplanes 20800001 thru 20800143 and 208B0001 thru 208B0143, position and install pneumatic line to pressure regulator and union or deice line tee, if installed, at ejector.

(b) Airplanes 20800144 and On and 208B0144 and On, and Airplanes 20800001 thru 20800143 and 208B0001 thru 208B0143 incorporating CAB90-14, position and install pneumatic line to pressure regulator and cross fitting at ejector.

(c) Airplanes 20800222 and On and 208B0317 and On, and Airplanes 20800001 thru 20800121 and 208B0001 thru 208B0316 incorporating CAB93-2, position and install pneumatic line to pressure regulator and cross assembly at ejector.

(2) Secure pneumatic line to engine mount and firewall using clamps.

(3) Close left and right engine cowling doors.

4. Connecting Shop Air to Pneumatic System

NOTE: The pneumatic system may be operated without running the engine if a source of compressed air is available. Shop air must be filtered, regulated from 15 to 18 PSI, and equipped with a control valve.

A. Connect Air to Pneumatic Distribution Line (Refer to Figure 201).

(1) Remove pneumatic line from pressure regulator. Cap open fitting on pressure regulator.

(2) Connect regulated shop air to pneumatic line and turn control valve on.

B. Disconnect Air from Pneumatic Distribution Line (Refer to Figure 201).

(1) Turn control valve off and disconnect pneumatic line from regulated shop air.

(2) Remove cap from pressure regulator fitting and connect pneumatic line.

5. Component Cleaning/Servicing

A. Pressure Regulator Cleaning Procedures.

NOTE: Use this procedure when pressure regulator output is too high, too low, erratic, diaphragm is intact, as shown by an absence of flow from vent hole in the dome and from around joint between dome and body, or no other obvious condition exists.

NOTE: This procedure provides pressure regulator adjustment. However, pressure regulator adjustment should not be accomplished independently, as it may mask an internal problem, allowing condition to worsen.

(1) The procedures to clean the pressure regulator are found in the vendor maintenance manual. Refer to the List Of Publications found in the introduction section of this manual for the applicable vendor maintenance manual.

6. Pressure Regulator Output Adjustment

A. Adjust pressure regulator output.

(1) Loosen locknut and turn adjustment screw clockwise to increase pressure or counterclockwise to decrease pressure. Begin with one turn of adjustment screw, adjusting as required, until 18 PSIG, +1 or - 1 PSIG, is obtained.

(2) Apply 26416351 Gasoila adhesive to adjustment screw and locknut when adjustments are completed.

7. Pressure Regulator Functional Test

A. Functional Test Procedures (Refer to Figure 202).

(1) Remove relief valve or cap from union, tee, cross fitting or cross assembly, located near vacuum ejector.

(2) Connect hose and pressure gage to uncapped fitting. Ensure hose length is sufficient to allow gage to reach cockpit. Refer to Figure 202.

(3) Run engine and check regulator discharge pressure. Discharge pressure shall range from 17.0 to 20.0 PSIG over a power range of 70 percent N_g to momentary full power (as limited by the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual) with both increasing and decreasing power.

(4) Check for proper operation of pneumatic system, vacuum system, deice system and heater system. Refer to Chapter 37, Vacuum - General, Chapter 30, Ice and Rain Protection - General, and Chapter 21, Compressor Bleed Air Heater - Maintenance Practices.

NOTE: The 17.0 to 20.0 PSIG pressure range is greater than the normal 18.0 PSIG pressure regulator setting to allow for the lesser precision of airplane testing, compared to bench testing, and to allow for the pressure drop at union, tee, cross fitting or cross assembly at vacuum ejector .

NOTE: Other than a pressure regulator problem, low output may be caused by pressure leakage in plumbing downstream of pressure regulator, particularly deice plumbing; whereas, high output may be caused by blockage to the vacuum ejector nozzle, which could produce a low vacuum indication combined with the high regulator pressure.

(5) Upon completion of test and adjustment, remove pressure gauge and recap union, tee, cross fitting or cross assembly.

Figure 201 : Sheet 1 : Pneumatic System Installation

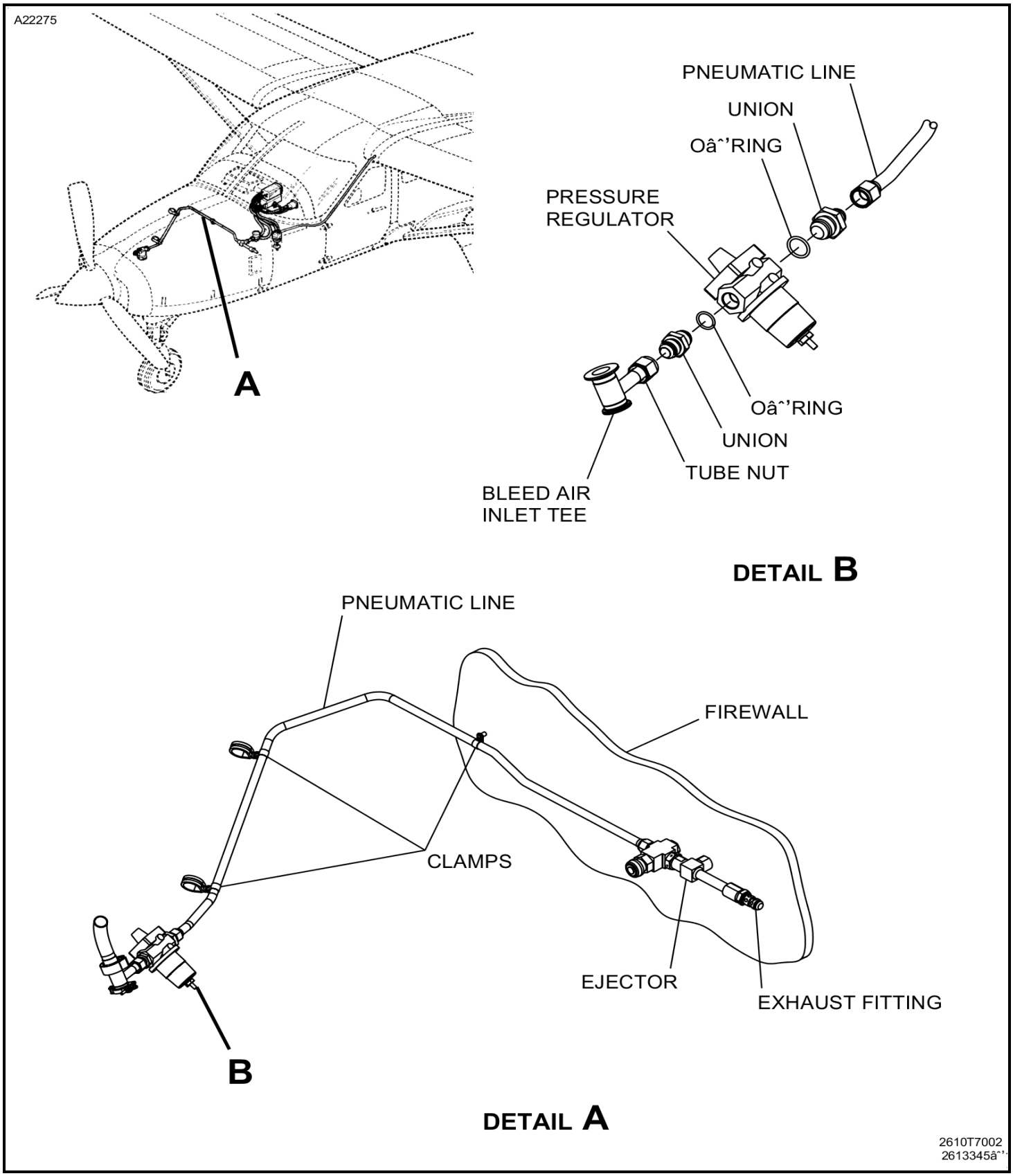

Figure 201 : Sheet 2 : Pneumatic System Installation

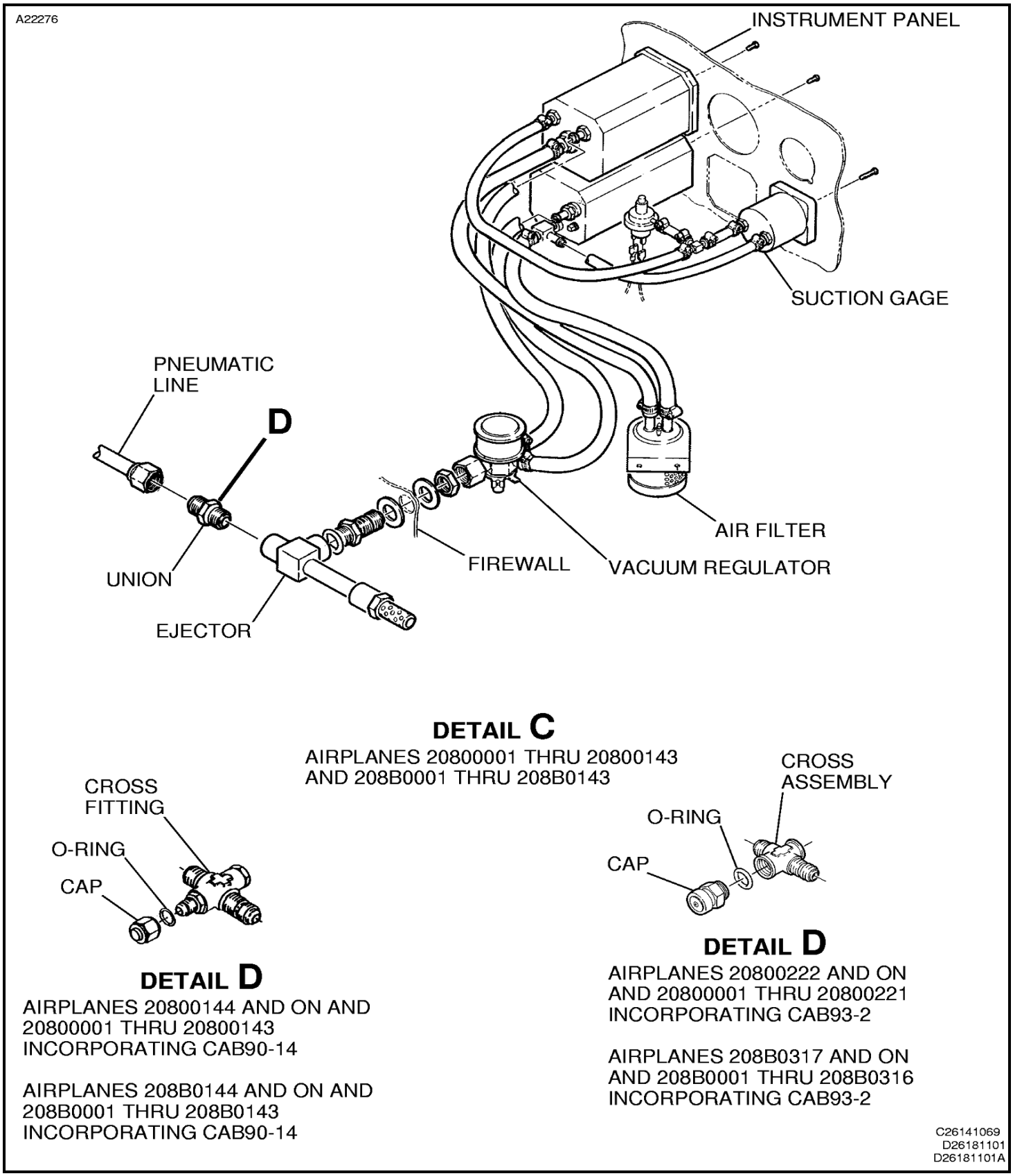

Figure 202 : Sheet 1 : Bleed Air Pressure Regulator Discharge Inspection