COMPRESSOR BLEED AIR HEATER - TROUBLESHOOTING

1. General

- A. Troubleshooting of the compressor bleed air heater and/or flow control valve should be performed anytime output flow falls below normal parameters.
- B. Troubleshooting charts have been prepared to aid the maintenance technician in system troubleshooting. Refer to Figure 101 for compressor bleed air troubleshooting diagram. Refer to Figure 102 for flow control valve troubleshooting diagram. Refer to Figure 103 and Figure 104 for cabin heating and windshield defrosting troubleshooting diagrams.

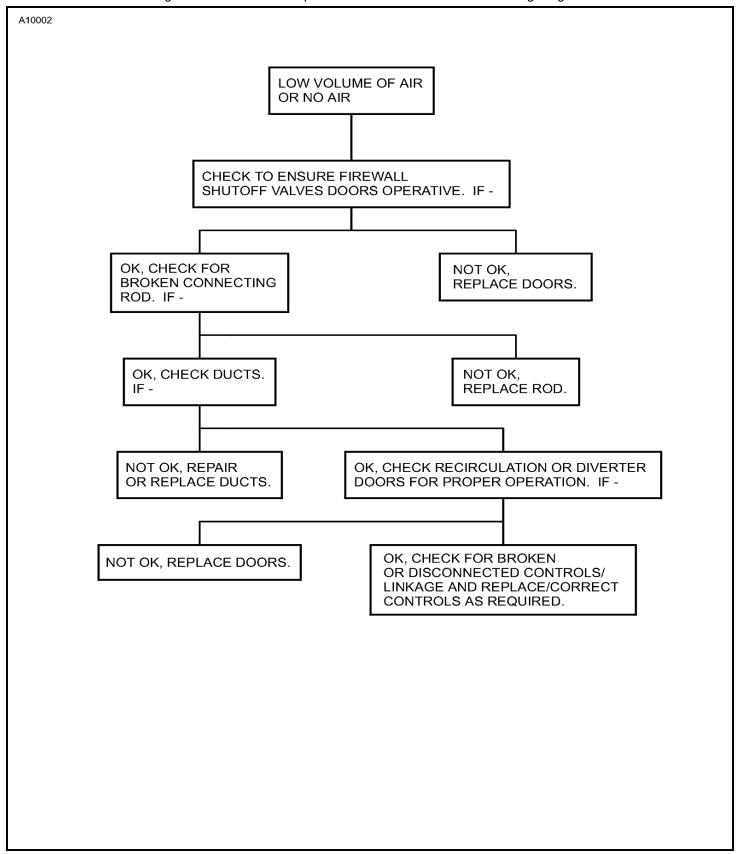


Figure 101: Sheet 1: Compressor Bleed Air Heater Troubleshooting Diagram

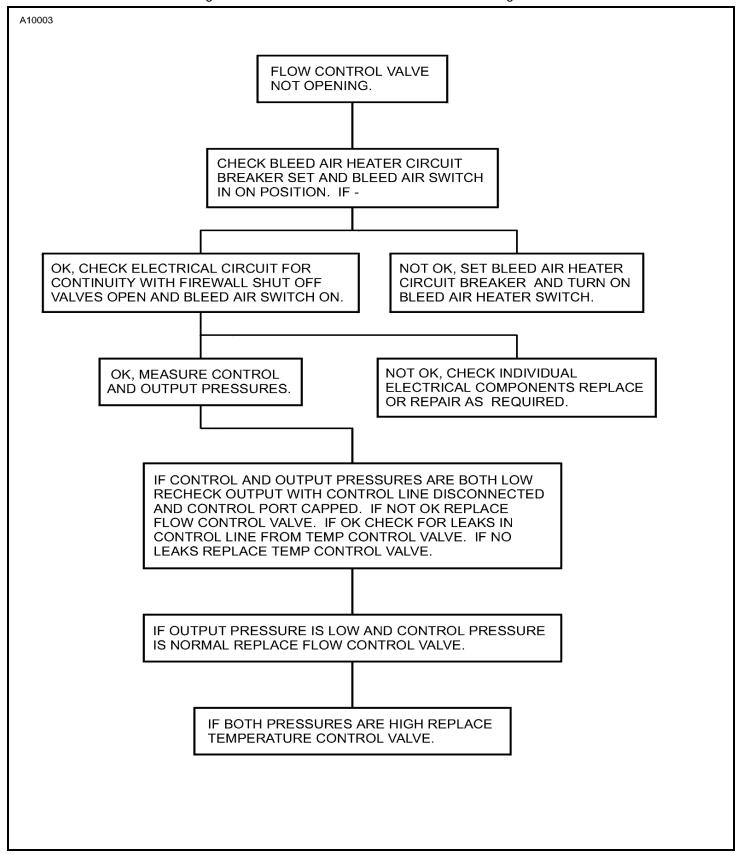
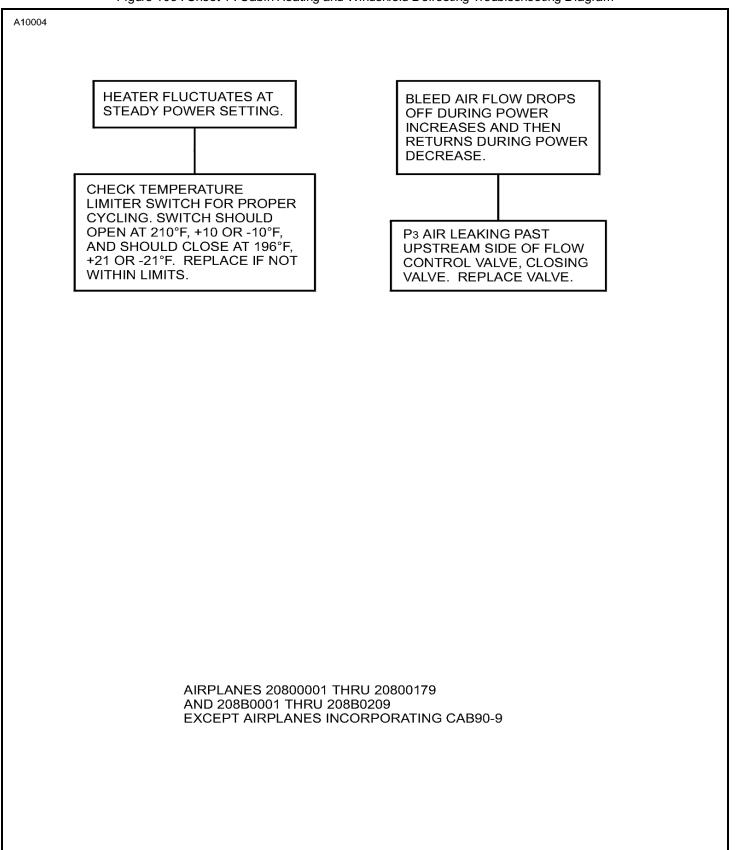


Figure 102: Sheet 1: Flow Control Valve Troubleshooting Chart

Figure 103: Sheet 1: Cabin Heating and Windshield Defrosting Troubleshooting Diagram



A10005 TOO MUCH HEAT NO CABIN HEAT CHECK TEMPERATURE CHECK PRESSURE IN CONTROL LIMITER SWITCH FOR LINE FROM REGULATOR TO PROPER OPERATION. CONTROL VALVE. IF SWITCH SHOULD OPEN HIGHER THAN 17.0 PSIG, AT 210°F, +10 OR -10°F, CHECK TEMPERATURE VALVE. AND SHOULD CLOSE AT IF -196°F, +21 OR -21°F. REPLACE IF NOT WITHIN LIMITS. NOT OK, REPLACE OK, CHECK PRESSURE CONTROL **REGULATOR AND** VALVE. REPLACE AS REQUIRED. AIRPLANES 20800001 THRU 20800179 AND 208B0001 THRU 208B0209 **EXCEPT AIRPLANES INCORPORATING CAB90-9**

Figure 103: Sheet 2: Cabin Heating and Windshield Defrosting Troubleshooting Diagram

A10006 SUSTAINED WHISTLE NO P3 AIR FLOW AT ANY POWER SETTING REMOVE GATE VALVE ASSEMBLY AND CHECK ELECTRICAL CIRCUIT FOR VISUALLY INSPECT FOR CONTINUITY WITH FIREWALL FULLY CLOSED. IF NOT, SHUTOFF VALVES OPEN AND BLEED AIR HEAT SWITCH ON. REPLACE GATE VALVE ASSEMBLY. CONTINUITY EXISTS, CHECK NO CONTINUITY EXISTS, CHECK INDIVIDUAL ELECTRICAL GATE VALVE ASSEMBLY SOLENOID FOR CONTINUITY. IF -COMPONENTS AND REPLACE AS REQUIRED. CONTINUITY EXISTS, REMOVE NO CONTINUITY IN GATE AND CAP CONTROL PRESSURE VALVE ASSEMBLY SOLENOID, LINE. APPLY 18.0 PSIG, +1 OR REPLACE VALVE ASSEMBLY. -1 PSIG, TO SOLENOID INLET PORT AND ENERGIZE SOLENOID. VALVE SHOULD OPEN. IF NOT, REPLACE VALVE ASSEMBLY.

Figure 103: Sheet 3: Cabin Heating and Windshield Defrosting Troubleshooting Diagram

A10007 DEICING AND/OR VACUUM NO P2.5 AIR FLOW SYSTEMS INOPERATIVE **BELOW 89 PERCENT** Ng. CHECK REGULATOR ASSEMBLY FOR ESCAPING AIR FROM CHECK TO ENSURE SMALL SCREENED PORT ON FIREWALL SHUTOFF SIDE OF REGULATOR. IF AIR VALVE IS IN OPEN LEAK EXISTS, REFER TO PRATT POSITION. IF -AND WHITNEY MAINTENANCE MANUAL FOR VALVE REPLACEMENT PROCEDURES. NOT OK, OPEN OK, CHECK TO ENSURE FIREWALL SHUTOFF MIXER VALVE IS IN GRD POSITION. IF -VALVE. NOT OK, PLACE OK, CHECK COMPRESSOR MIXER VALVE BLEED VALVE FOR PROPER IN GRD OPENING. IF NOT OK, REFER POSITION. TO PRATT AND WHITNEY MAINTENANCE MANUAL. AIRPLANES 20800001 THRU 20800179 AND 208B0001 THRU 208B0209 **EXCEPT AIRPLANES INCORPORATING CAB90-9**

Figure 103 : Sheet 4 : Cabin Heating and Windshield Defrosting Troubleshooting Diagram

A10008 DEICING AND/OR VACUUM NO P3 AIR FLOW AT SYSTEMS INOPERATIVE ANY POWER SETTING CHECK ELECTRICAL CIRCUIT FOR CONTINUITY WITH TROUBLESHOOT DOWNSTREAM FIREWALL SHUTOFF VALVES OPEN AND BLEED AIR SYSTEM. IF -HEAT SWITCH ON. IF -NO CONTINUITY NOT OK, OK, CHECK PRESSURE CONTINUITY EXISTS, CHECK REPAIR. REGULATOR FOR EXISTS, CHECK INDIVIDUAL PROPER OPERATION. FLOW CONTROL **ELECTRICAL** REMOVE RELIEF VALVE VALVE ASSEMBLY **COMPONENTS** AND REPLACE WITH SOLENOID. IF -AND REPLACE FITTING HOSE AND GAGE. PRESSURE AS REQUIRED. SHOULD BE 16.0 TO 20.0 PSIG AT 70 PERCENT Ng. IF -OK, CHECK FLOW DEFECTIVE, CONTROL VALVE REPLACE. ASSEMBLY FOR PROPER OPENING. REFER TO NOT OK, OK AND VACUUM/ **COMPRESSOR BLEED** REPLACE DEICING SYSTEM AIR HEATER-MAINTENANCE PRESSURE OPERATION OK, PRACTICES (21-41-00); REGULATOR. REPLACE RELIEF HEATER OUTPUT CHÉCK. VALVE. AIRPLANES 20800180 AND ON AND 20800001 THRU 20800179 **INCORPORATING CAB90-9** AIRPLANES 208B210 AND ON AND 208B0001 THRU 208B0209 **INCORPORATING CAB 90-9**

Figure 104: Sheet 1: Cabin Heating and Windshield Defrosting Troubleshooting Diagram

A10009 **HEATER FLUCTUATES** TOO MUCH OR NO P2.5 AIR FLOW AT STEADY POWER TOO LITTLE HEAT BELOW 89 PERCENT Ng **SETTING** CHECK TO ENSURE REFER TO COMPRESSOR FIREWALL SHUTOFF BLEED AIR HEATER -CHECK VALVE IS IN OPEN MAINTENANCE PRACTICES **TEMPERATURE** POSITION. IF -(21-41-00); HEATER LIMITER SWITCH **OUTPUT CHECK.** FOR PROPER CYCLING. SWITCH SHOULD OPEN AT 210°F, +10 OR -10°F, AND SHOULD CLOSE AT 196°F, +21 OR -21°F. NOT OK, OPEN OK, CHECK TO ENSURE REPLACE IF NOT FIREWALL SHUTOFF MIXER VALVE IS IN WITHIN LIMITS. GRD POSITION. IF -VALVE. NOT OK, PLACE OK, CHECK COMPRESSOR MIXER VALVE **BLEED VALVE FOR PROPER** IN GRD OPENING IF NOT OK. REFER POSITION. TO PRATT AND WHITNEY MAINTENANCE MANUAL. AIRPLANES 20800180 AND ON AND 20800001 THRU 20800179 **INCORPORATING CAB90-9** AIRPLANES 208B210 AND ON AND 208B0001 THRU 208B0209 **INCORPORATING CAB 90-9**

Figure 104: Sheet 2: Cabin Heating and Windshield Defrosting Troubleshooting Diagram