



HEATER P/N CD14192-1

For Raytheon (Beech) Models 95-B55, S/N TC-1658 and up,
E55, S/N TE-959, TE-968 and up, 58, S/N TH-437 and up, 58TC.

READ COMPLETE INSTRUCTIONS BEFORE BEGINNING INSTALLATION

Accomplish all wiring in accordance with AC43.13-1B Chapter 11, Electrical Systems.
Accomplish all plumbing in accordance with AC43.13-1B Chapter 8, Section 2, par. 8-31.

1. Preparation:
 - a. Follow the Aircraft Service Manual or other FAA approved source for removal of the existing Combustion Heater.
 - b. Install the C&D Associates, Inc. TSO-C20 Approved Combustion Heater utilizing the existing Aircraft Service Manual or other FAA approved source where applicable.
2. Refer to page 3 of these installation instructions for some helpful installation tips.
3. HEATER OPERATIONAL TEST AFTER INSTALLATION
 - a. (Heater terminal strip numbered 1 2 3 4 5 6)
 - b. If the hoses need to be replaced, we recommend Scelet-6 (1 1/2") red from the blower to the heater and Ceet-6 (1 1/2") black from outside air to the blower.
 - c. Trim and smooth by filing, the "Combustion air inlet and the Exhaust pipe" scarf angle, (extending out of the aircraft) by at least 50% in order to provide proper balance between the combustion air and the exhaust in flight. Utilize template below for proper degree of angle. This will provide the proper balance between the combustion air and exhaust.
 - d. Install a temperature probe (min 0-500° F) in the outlet plenum 6-8" aft of the heater. A good location would be approx. 6" aft of the heater or near the thermostat sensor.
 - e. Place a jumper wire across the heater terminal strip numbers 2 and 3, which will bypass the aircraft thermostat. (Fig. 2)
 - f. Install the fuel pressure gauge (0-15). Tee into as shown. (Fig. 1)
 - g. With the heater running, verify fuel pressure. Preferred pressure is 8psi. (6.5psi min, 10psi max)
 - h. With the heater running, verify that the outlet plenum temperature is approx. 250°.
 - i. Remove the jumper wire and verify that the temperature is controlled by the aircraft thermostat from low (approx. 75° F) to medium to high (approx. 250° F)
 - j. Remove the temperature probe sealing the hole with high temperature silicone.
 - k. Remove the fuel gauge installed in step 3. Leave the "tee" fitting and cap off for future pressure readings if desired.
 - l. Verify proper installation is completed in accordance with the aircraft maintenance manual.

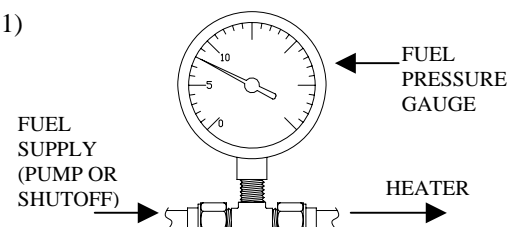


Figure 1

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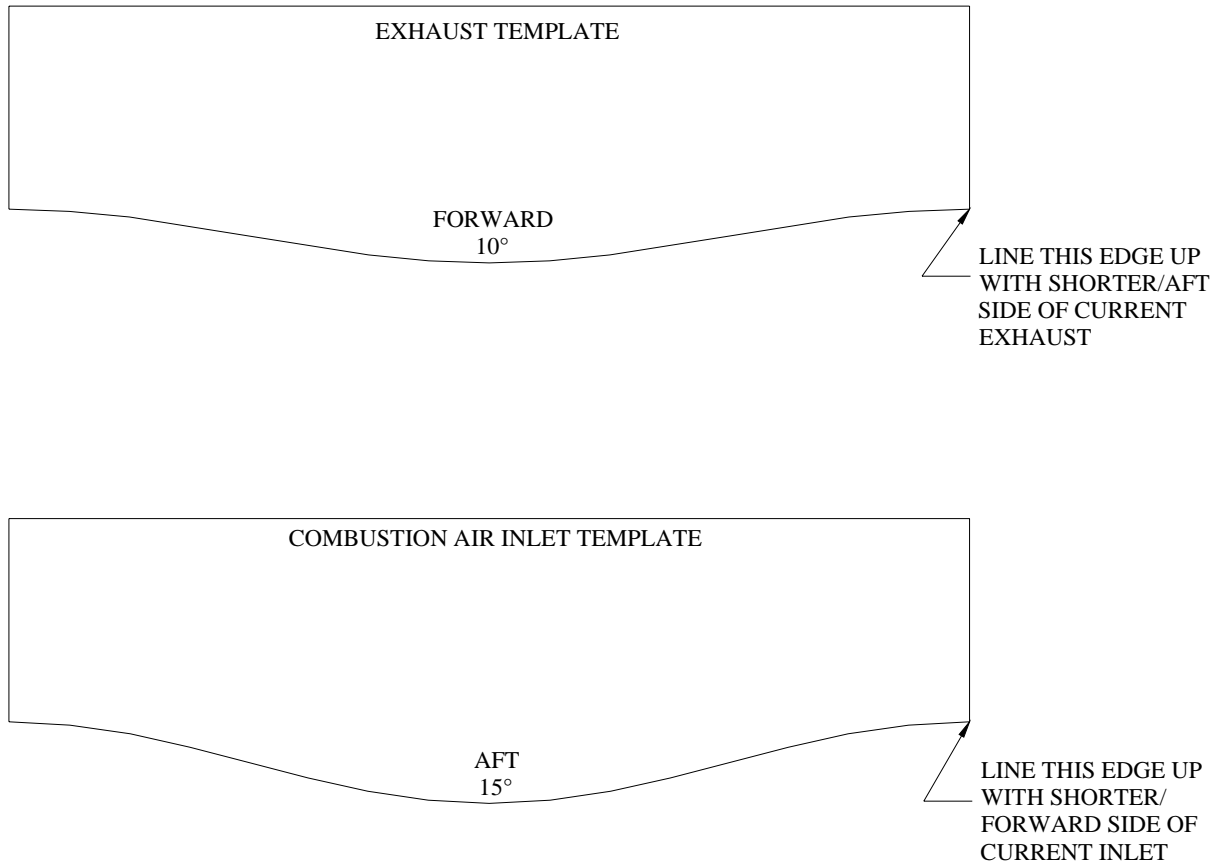
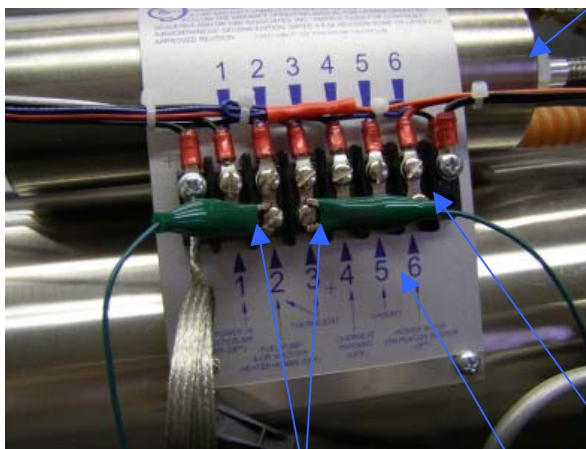


Figure 2

For additional information see the “maintenance manual (MM10001)” included with this heater under “Testing after installation or overhaul.”

IGNITION UNIT

Figure 3



JUMPER WIRE BYPASSING THERMOSTAT SENSOR (AIRCRAFT WIRES NOT INSTALLED)

NUMBER PLATE



TERMINAL STRIP

Figure 4



3. Full compliance with the enclosed FAA approved C&D Associates Inc. 'Combustion Heater Airworthiness Limitations' is required. Follow the C&D Associates Inc. 'Combustion Heater PREFLIGHT/OPERATIONAL CHECK AND SHUTDOWN PROCEDURE' outlined within the combustion heater "Airworthiness Limitations", First Edition, Revision B, dated 1-1-00 or later revision, included with these instructions. This FAA-approved Airworthiness Limitations must become a permanent part of the Aircraft Operations and Procedures manual.
4. NOTE: Janitrol AD96-20-07 Combustion Heater Airworthiness Directive does not apply to the C&D Associates, Inc. Combustion Heater.
5. NOTE: Removal of the Combustion Heater and the installation of the C&D Associates Products TSO-C20 approved heater will have no net effect on weight and balance or electrical load requirements.
6. NOTE: Insert the attached label, 21503, into the aircraft flight manual in the heater operating section. Correct equipment list to reflect new C&D Associates, Inc. heater and part number.
7. NOTE: Utilize existing aircraft combustion heater operating instructions or other FAA approved combustion heater operating instructions where applicable.

Additional Installation tips for CD14192

VERY IMPORTANT – Read through entire R&R instructions before beginning heater removal

Step 1: Remove Ray Dome, disconnecting the radio antenna if installed. Gain access to Combustion Air Switch and exhaust by removing nose baggage, left side floor.

Step 2: With fuel selectors in the off position, disconnect fuel line from heater and plug line. Mark heater terminal strip (airframe side) wires per insulator numbered 6-1 so as to reconnect on new heater in the same manner as removed.

Step 3: Disconnect exhaust extension by removing 6 screws from external cover plate. Carefully extract exhaust extension by "wobbling" off heater from inside nose baggage compartment. Set aside.

Note: Remove Combustion Air Pressure Switch/vacuum lines and wires to heater. Switch is part of old core to be returned. A new combustion Air Switch is attached to the new C&D Ignition Assembly. Cover hole in firewall with a suitable patch.

Step 4: Remove the clamp attaching heater to Airframe in nose gear wheel well. Disconnect cabin air hose, which extends into right side of Airframe from the heater.

Step 5: Remove drain lines as well as combustion air inlet and outlet hoses, remove Combustion Air Blower Assembly, by extracting 8 bolts from combustion air blower airframe bracket. Disconnect lead wire & slide entire assembly down and out. Set aside for later reworking.

Note: Combustion air hose routing -- new hose must follow original path.

Step 6: Heater now is held in place by 3 screws connecting sliding IRIS valve to heater front and a 2-part bulkhead clamp plate. Remove lower half of bulkhead clamp only. Disconnect heater fuel line from "out" port of fuel pump in nose wheel well. Fuel line and lower firewall clamp plate now can be rotated and guided forward and out. Set aside.

Step 7: Heater Removal: Remove complete Ignition Assembly from heater including Igniter Plug. Remove Fuel Solenoid/Shut Off, fuel drain box and cover. Remove combustion air inlet adaptor located kitty corner from igniter plug position.

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Note: Rotate heater for ease of disassembly

Step 8: To remove heater from nose gear wheel well, rotate heater core clockwise and counter clockwise pulling back and down gently.

Note: The less you force it the easier this process will be. When heater core hangs up, try rotating and pulling back the opposite way, heater core should rotate from airframe easily.

Step 9: Carefully familiarizing yourself with new unit (i.e. directions parts face, where gasket sealer is used, etc.) Prep new heater by removing Ignition Assembly, including Igniter Plug along with new style Combustion Air Inlet adapter, Remove Fuel Solenoid Assembly.

*Remember heater should be able to rotate freely for ease in the reassembly process.

Step 10: Before installing Igniter Plug, be sure ceramic insulator is free and clear of debris.

-Ignition assembly must be installed first.

-Combustion Air Switch, now located on the right side of Ignition Unit leg, has two black neoprene hoses attaching it to combustion air inlet adaptor. These hoses must be unrestricted. Reassemble per unit's original state. Install the Fuel Solenoid/Filter and fuel drain box applying a film of permatex form-a-gasket to all fitting threads. **DO NOT USE TEFLON TAPE OR COMPARABLE** to seal threads. Use caution when reassembling Fuel Solenoid Assembly, so as not to over tighten. Use just enough torque so as to seal/secure connections.

Step 11: Utilize supplied CD21402, 24v motor to replace OEM unit used in Combustion Air Assembly. Before OEM dismantling, notice the gap between the blower housing and combustion air blower assembly airframe bracket. This gap must be transferred when new motor is installed. Also make note of Blower Housing rotational direction for reassemble transfer.

Step 12: Reconnect heater fuel line to fuel pump in nose gear wheel well. Because of the addition of the fuel filter on new unit, the fuel inlet sits approx. 2 1/2" forward of its original position. Adjust the old fuel line to fit the new heater.

DOCUMENTATION AND PARTS REQUIREMENT TABLE

DOCUMENTATION	Quantity
1. FAA/PMA Supplement #46	_____
2. Label for flight manual (21503)	_____
3. MM10000 Maintenance Manual	_____
4. Combustion Heater Airworthiness Limitations	_____
5. Quality Assurance Certificate of Compliance #527	_____
PARTS	S/N
1. (1) Heater	CD14192-1 _____
2. (1) Fuel Pump	21184 _____
3. (1) Motor	21402 _____
4. (1ea) Spacer Strap	21410 _____

Initials: _____ Date: _____

For warranty information see website www.aircraftheater.com

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