

United States of America
Department of Transportation -- Federal Aviation Administration
Supplemental Type Certificate

Number SA01945CH

This certificate issued to Hartzell Engine Technologies LLC
2900 Selma Highway
Montgomery, Alabama 36108

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified herein meets the airworthiness requirements of Part 3 of the Civil Air Regulations.
See Aircraft Specification No. 3A16 for complete certification basis.

Original Product- Type Certificate Number: 3A16
Make: Hawker Beechcraft
Model: 95, B95, B95A, D95A, E95, 95-55, 95-A55, 95-B55, 95-B55A
S/N TC-1 thru TC-1657, 95-B55B (T-42A), 95-C55, 95-C55A, D55,
D55A, E55, E55A S/N TE-1 thru TE-958, TE-960 thru TE-967,
56TC S/N TG-1 thru TG-83, A56TC S/N TG-84 thru TG-94 and
58 S/N TH-1 thru TH-436.

Description of Type Design Change:

Installation of C&D Associates Combustion Heater Kit 13 P/N CD14050K13, in accordance with C&D Associates heater Installation Instructions IN14050K13, Rev. C, dated September 11, 2007 or later FAA approved revision.

Limitations and Conditions:

1. Compatibility of this design change with previously approved modifications must be determined by the installer.
2. Check aircraft Weight and Balance.
3. Full compliance with the C&D Combustion Heater Airworthiness Limitations, MM10000 Maintenance Manual, Second Edition, Rev A, dated April 4, 2002, or later FAA approved revision, is required.
4. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: January 22, 2004

Date reissued: October 25, 2007; February 11, 2016

Date of issuance: March 3, 2004

Date amended: September 12, 2007

By direction of the Administrator




(Signature)
Timothy P. Smyth
Manager,
Chicago Aircraft Certification Office

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.



C&D ASSOCIATES, INC.

IN14050K13

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HEATER INSTALLATION INSTRUCTIONS FOR HEATER KIT #13, P/N CD14050K13

For Beech Baron 95, B95, B95A, D95A, E95, 95-55, 95-A55, 95-B55, 95-B55A, S/N TC-1 thru TC-1657, 95-B55B(T-42A) 95-C55, 95-C55A, 95-D55, 95-D55A, 95-E55, 95-E55A, S/N TE-1 thru TE-958, TE-960 thru TE-967, 56TC, S/N TG-1 thru TG-83, A56TC S/N TG-84 thru TG-94. 58, S/N TH-1 thru TH-436.

READ COMPLETE INSTRUCTIONS BEFORE BEGINNING INSTALLATION

This system has been built to be installed on an aircraft that conforms to that aircrafts original Type Certificate (TC). If aircraft has been modified from the original TC (modifications such as props, engines, fuel system etc.) contact C&D Associates, Inc. for possible adjustments to this 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. With nose cone still attached, transfer a mark to cone where right side (co-pilot side) of wheel well opening begins. Remove nose cone.
- B. Heater removal
 - 1) Follow the Beech Service manual for the appropriate aircraft. Remove Janitrol heating assembly including blower assembly, forward and aft plenum assembly, and Ignition unit with lead and mounting brackets.
 - 2) Fabricate and install a cover plate over the hole in the bulkhead created by the removal of the old ignition unit. Save the Iris valve assembly for installation on the front of the new heater.
 - 3) From the nose wheel well remove both fuel pumps, fuel filter, fuel shut off and fuel line to the heater. Return all items (except the Iris valve) to C&D for core refund.
- C. Electrical Preparation
 - 1) At the existing heater control switch identify the wire coming from the Iris valve switch. This main wire coming from the Iris valve to the heater blower switch can be identified by the following procedure.
 - a. Open the Iris with the air control.
 - b. Place the heater/blower switch in the off position.
 - c. With master switch on, check with a voltmeter as to which wire on the back of the heater/blower switch has power. The following wire marking should correspond to the finding.
 - i. Serial numbered aircraft TC-1 thru TC-190 wire marking "H2",
 - ii. TC-191 thru TC-420 wire marking "H6A12",
 - iii. TC-421 thru TC-954 wire marking "H6A14",
 - iv. TC-955 thru TC-1657 and TE-1 thru TE-767 wire marking "H33A14"
 - v. TE-768 thru TE-967 (except TE-959) and TH-1 thru TH-436 wire marking "H5B12"
 - d. This wire so identified will provide power from the 20-amp heater/blower circuit breaker though the Iris switch to the heater control switch.
 - 2) All other component wiring from the heater control switch to the old heater ignition, blower, fuel pumps, fuel shut off valve and temperature control switches should be removed or deactivated.

302 POST ROAD, BUCHANAN, MI 49107 USA

PH: 269-695-7469 FX: 269-695-6004 WEB: www.cdaircraftheaters.com EMAIL: sales@aircraftheater.com



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2. Heater Installation

- A. Remove the 4" heat outlet from the side of the new heater and the 90 degree drain fitting.
- B. Insert the 4" heat outlet into the aircraft heat ducting and position for line up with the new heater when installed. Use a small coating of high temperature silicone sealant on the mating surfaces of the aircraft duct and the heater outlet duct for sealing surfaces.
- C. With the fuel cover off, insert the new heater in through the nose into the wheel well lining up the 4" side hole of the heat outlet.
- D. Reinstall the 90-degree drain fitting and secure the old drain line.
- E. Position the heater for alignment with the 4" heat outlet adapter. Secure using the five 8/32 screws provided.
- F. Secure the front adapter ring to the airframe using the six mounting holes.
- G. From the nose wheel well, secure the heater to the heater mount using the 6" worm drive clamp making sure the spacers are properly positioned between the heater and the upper mounting bracket.
- H. Reinstall the old Iris valve on the front of the new heater.
 - 1) It may be necessary to remove some material from the bottom of the shelf above the Iris valve control arm attachment bracket in order to provide enough clearance for proper operation of the Iris as the control is moved open and closed.
 - 2) Screen wire mesh P/N 20680 should be positioned on the very front of the Iris valve and mounting screws securing screen and Iris to heater adapter ring. Make sure Iris control moves freely and fully from open to close positions once installed.

3. Combustion Air Blower:

- A. Locate the new blower on the outboard side of the right vertical brace, under the radio shelf just forward of the front bulkhead.
- B. Measure 1-½ inches forward and 1-½ inches down. This identifies top left corner of mount.
- C. Using the mount as a template locate and drill four ¼" holes.
- D. Secure the four rubber mounts and brackets using eight 10/32 kep nuts.
- E. Mount the blower assembly with motor aft and housing forward, air outlet nozzle positioned toward combustion air inlet adapter on heater in such a way as to allow connection of the red 1 ½ diameter sceet hose to the blower outlet and heater inlet. Air inlet should be pointed straight down at this point.
- F. Secure the hose with two worm drive clamps.
- G. Secure blower with two hose clamps.
- H. Black wire to airframe ground. Red wire to terminal #1 on heater.
- I. Connect one end of 16" x 1 1/2" black ceet hose to air inlet and secure with clamp.
- J. Loop black ceet hose back and over the top of red sceet hose down along firewall.

4. Combustion air Inlet Scoop Installation

- A. From step 1.a. locate transferred mark on nose cone.
- B. Measure forward from mark and aft edge of cone 3 ½", mark this location. This will be the centermark.
- C. 3 ½" from cone edge, center and knockout 1 1/2" hole. File slightly larger and clean edges.
- D. Utilize combustion air inlet adapter p/n 21356. Install in nose cone with scarfed end out and short end of scarf forward. Rivet or bolt in place as pictured.

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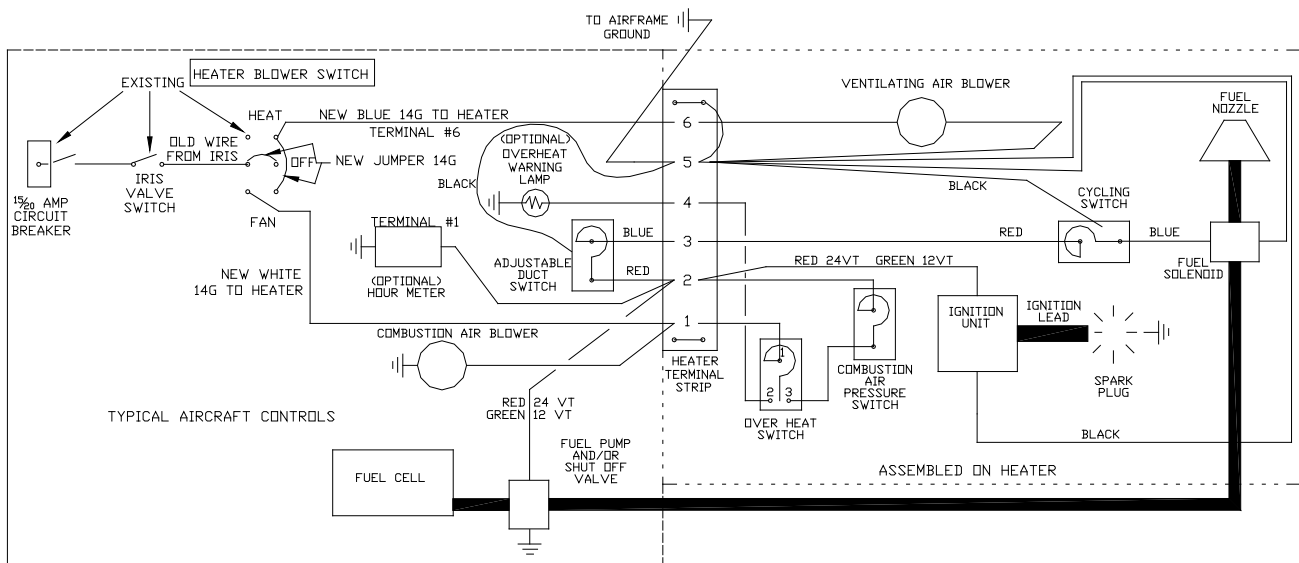


5. Fuel Pump Installation (Nose wheel well)
 - A. Install the new fuel pump P/N CD21184, with the removable filter cap down using the old hardware. Location is in the same place as the old removed aft pump in the nose wheel well. Only one pump will be used.
 - B. Connect the old fuel supply line to the lower elbow "in" port of the pump.
 - C. Route 16-gauge wire to the heater terminal #2 along with the existing aircraft wiring.

6. Fuel Line (Nose wheel well)
 - A. Fabricate a new fuel line from the upper fuel "out" port of the pump to the new heater.
 - B. Secure along the route by installing two adell clamps. Recommended location for the clamps would be at one of the old mount holes of the removed fuel shut off valve and the forward mount stud of the old forward pump that had been removed.

7. Thermostat, Electronic (In front of copilot pedals)
 - A. Remove the old thermostat and install the new electronic sensor.
 - B. Route the red wire to the heater terminal #2, and the blue to terminal #3. Black to airframe ground.
 - C. Follow the installation instructions included with the switch CD21253 and the linear rheostat control P/N CD21399.

8. Electrical Connections





- A. Route two 14-gauge wires along existing wire bundles from the new heater terminals #1 and #6 to the heater/fan control switch.
- B. The new heater control switch (P/N 21600) is a double pole double throw switch. Install two jumper wires on the back of the switch. One across from the two center posts and one from top post to bottom post on right side. Wiring should be created as directed to evenly distribute amp draw through contacts. Proper switch operation can be checked by placing the switch in the fan position and check for continuity to the wire routed to the heater terminal #6 for ventilation fan operation. With the switch in the heat position, continuity to heater #6 terminal and #1 terminal would be indicated.

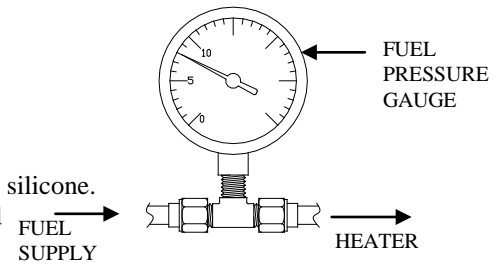
CAUTION: Verify that when the air control is in the full off position (Iris valve closed) that the Iris valve micro switch is “open” not allowing current to the heater control switch.

- C. Combustion air blower red wire to heater terminal #1 and black to ground.
- D. Optional hour meter connection to terminal #2.

9. HEATER OPERATIONAL TEST AFTER INSTALLATION:

IMPORTANT!! Please complete the followings steps after the new heater is installed in the aircraft.

- A. 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.
- B. Install the fuel pressure gauge (0-15). Tee into as shown.
- C. With the heater running, verify fuel pressure. Preferred pressure is 8psi. (6.5psi min, 10psi max)
- D. With the heater running, verify that the outlet plenum temp. is approx. 250°.
- E. Remove the temperature probe sealing the hole with high temperature silicone.
- F. Remove the fuel gauge installed in step B. Leave the “tee” fitting and cap off for future pressure readings if desired.
- G. Verify proper installation is completed in accordance with the aircraft maintenance manual.



If the hoses need to be replaced, we recommend Scelet-6 (1 ½”) red from the blower to the heater and Ceet-6 (1 ½”) black from outside air to the blower.

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

- H. After installation, complete the operation and heat output tests specified in the C&D Associates, Inc. MM10001 Maintenance Manual for aircraft combustion heaters dated 1/1/08. Tests should be accomplished in accordance with section IX ‘C’ operational test, and ‘D’ for heat output, steps 1 and 2. Also in accordance with the “Instructions for Continued Airworthiness” step #1 “Preflight/Operational check and Shutdown Procedure.”
- I. While reinstalling nose cone, connect with clamp. Black ceet hose to air inlet scoop.
- J. NOTE: Follow the ‘Combustion Heater PREFLIGHT/OPERATIONAL CHECK AND SHUTDOWN PROCEDURE’ outlined within the Combustion Heater “Instructions for Continued Airworthiness”, Second Edition, Revision: D, dated 10-03-11, or later revision, included with these instructions. This FAA-approved Instructions for Continued Airworthiness must be complied with and become a permanent part of the Aircraft Operations and Procedures manual.
- K. Verify all wires are secure and free of obstruction and chaffing.

10. DOCUMENTATION:

- A. Weight & Balance. Remove old heater of 35 lbs. Install new heater kit of 37.5 lbs at 15” forward of datum. The aircraft requires a weight and balance and a 337 must be completed and a copy of the STC attached. The logbook entry should contain the STC and PMA Supplement #. Original heater replacement is authorized by way of FAA form 337. Alteration of aircraft by way of STC and PMA supplemental number and date must be recorded in the appropriate aircraft records.

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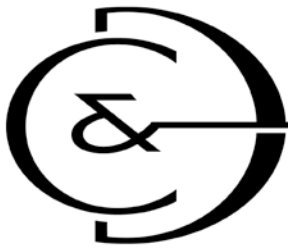
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- B. Note: Insert the following statement (label 21503 provided) in the aircraft flight manual: "C&D Associates Inc. Combustion heater has been installed in this aircraft. Please follow the aircraft-operating manual for combustion heater operating sequence and/or C&D Associates Inc. Instructions for airworthiness." "Second Edition dated April 4, 2002 revision: none, or later FAA approved revision."
- C. Electrical requirements: 24VDC at 15Amp.
- D. Fuel consumption: Maximum operation 1.5 gal/hour.

DOCUMENTATION AND PARTS REQUIREMENT TABLE

DOCUMENTATION	Quantity
1. FAA/PMA Supplement #37	_____
2. Installation Instructions IN14050K13	_____
3. Label for flight manual	_____
4. MM10001 Maintenance Manual	_____
5. Quality Assurance Certificate of Compliance #527	_____
6. STC #SA01945CH	_____
7. 337 Form	_____

PARTS	S/N
1. (1) Heater	CD14050-1 _____
a. (1.5") Fiber Tape	60501 _____
b. (1") Fiber Tape	60502 _____
c. (3) Rubber Straps	21410 _____
d. (3) Wire Ties	60503 _____
e. (1) Adapter Ring	23600 _____
f. (2) Worm Drive Clamp (7")	60900-104 _____
2. (1) Fuel Pump	21184 _____
a. (2) 90° Elbow	60144 _____
3. (1) Thermostat Sensor Sw.	21253 _____
4. (1) Linear Reostat	21399 _____
5. (31") Fuel Line	20715 _____
a. (2) Adell Clamps	60519 _____
6. (1) Wire Mesh Screen	20680 _____
7. (1) Blower	21415 _____
a. (1) Blower Mount	21191B _____
b. (4) Isolation Mount	21520 _____
c. (8) Nuts	60172 _____
d. (8) Washers	60177 _____
8. (10") Drain Line	20653 _____
a. (1) Nut	60141 _____
b. (1) Sleeve	AN819-4D _____
9. (1) Switch, Heater Control	21600 _____
10. (1) Combustion Air Inlet	21356D _____
11. (1) Black Ceet Hose	60198 _____
a. (2) Clamps 1 1/2"	60900-20 _____
12. (1) Red Sceet Hose	60199 _____
a. (2) Clamps 1 1/2"	60900-20 _____



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Initials: _____

Date: _____

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