

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

*Number* SA01949CH

*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 hereon meets the airworthiness requirements of Part 3 of the Civil Air Regulations.*

See Type Certification Data Sheet No. A-799 for complete certification basis.

*Original Product - Type Certificate Number:* A-799  
*Make:* Cessna  
*Model:* 170, 170A, 170B

*Description of Type Design Change:*

Installation of C&D Associates Combustion Heater Kit 12, P/N CD11214K12, in accordance with C&D Associates Heater Installation Instructions IN11214K12, Rev. -, dated April 15, 2003 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:* April 15, 2003

*Date reissued:* February 11, 2016

*Date of issuance:* March 23, 2004

*Date amended:*



*By direction of the Administrator*  
  
(Signature)

Timothy P. Smyth  
Manager,  
Chicago Aircraft Certification Office

(Title)

# C&D ASSOCIATES, INC.

IN11214K12

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Rev -

## HEATER INSTALLATION INSTRUCTIONS FOR MODEL CD25K KIT #12, P/N CD11214K12

For Cessna 170, 170A, 170B

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.

Preparation: The new heating system will be installed in the right floor area aft of the co-pilots seat tracks under the passenger seat. The new fuel pump will be located under the floor of the pilots seat. To facilitate installation remove all seats and floor covering. Place the fuel selector in the off position and drain all fuel from the left fuel tank.

1. Heater Floor Cavity: (See Figure 1)
  - a. Using the flooring edge just aft of the rivet line behind the front right seat tracks, and the right hand floor rivet line to measure as instructed in Figure 1 for the floor cut out.
2. Heater Mounting Brackets:
  - a. Use the forward bulkhead and center stringer in the heater cavity as measuring points. Measure along belly skin surface.
  - b. Position the new mounting brackets, P/N 21191E front, P/N 21191F back, into position and use as a templates to mark rivet locations.
  - c. Rivet into place using 3/16" rivets.
3. Combustion Air Inlet:
  - a. Knockout 1 1/2" hole as indicated in Figure 1.
  - b. Rivet into place using 5 evenly spaced 1/8" rivets.
4. Exhaust:
  - a. Knockout 2 5/8" hole as indicated in Figure 1 for the exhaust location. Use the forward bulkhead to measure along belly skin surface.
5. Combustion Air Blower:
  - a. Install four 10/32 rivnuts as indicated in Fig. 1 in the baggage area floor and install combustion air blower mount.
  - b. Position combustion air blower assembly with the air outlet at approximately in the 2 o'clock position. (See Fig. 2)
  - c. Fasten with two worm drive clamps. Connect the combustion air inlet installed in the belly to the combustion air inlet of the blower using two worm drive clamps.
6. Ignition:
  - a. Install four 10/32 rivnuts as indicated in Fig. 1 upper right. Install the ignition unit with lead connection forward. (See Fig. 1)
7. Fuel Line:
  - a. Ref. AC43.13-1B Chapter 8, Sect. 2, Paragraph 8-31.
  - b. Route the fuel line along the right side of the heater cavity under the floor (fastening to the floor stringer) as indicated using three clamps. (See insert of Fig 1)
  - c. Install a fuel line 90° bulkhead fitting through the bulkhead as shown and fasten with washer and nut. Fabricate fuel line from bulkhead over to the pump location.
  - d. Secure to bottom side of floor as indicated using Adel clamps.

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8. Fuel Pump:
  - a. Install the fuel pump under the pilot seat floor as indicated in Fig. 1.
  - b. Mount the removable fuel pump cap forward for ease of fuel filter access.
  - c. Connect inlet fuel line to the existing fuel line under the floor, outboard of the new fuel pump location. The existing fuel line has a "T" fitting installed for this purpose.
  
9. Electrical: Ref. AC43.13-1B Chapter 11
  - a. If using existing aircraft heater control switch install P/N 20667, controlling relays in accordance with Figure 3
  - b. If installing the new rotary heater control switch P/N 20654A, locate in a convenient location on the instrument panel. See wiring schematic Fig.4.
  - c. 15-amp circuit breaker for the new heating system is required.
  - d. Connect this circuit breaker to the red wire of the new switch. Secure the black wire to ground. Route the remaining wires of the switch to the new heater following an existing wire bundle.
  - e. The new switch has two relays in the wiring a short distance from the switch. Secure the relays in such a manner as to minimize movement.
  - f. Route fuel pump wire from pump to front side of bulkhead, over to heater wiring as indicated. Secure to terminal #2.
  - g. Secure wiring in accordance with AC43.13-1B. Chapter 1.
  
10. Heater Installation:
  - a. Place the new heater in the mounts and secure with the two worm drive clamps.
  - b. Make sure the exhaust shroud and drain clear the holes made for them.
  
11. Electrical connections: Figure 5
  - a. Connect the electrical wires as indicated. White wire to terminal #1, Blue wire to terminal #6, Fuel pump wire to terminal #2. Two yellow wires to the yellow wires of the thermostat.
  
12. Operation:
  - a. After installation, complete the operation and heat output tests specified in the C&D Associates, Inc. MM10000 Maintenance Manual for aircraft combustion heaters Second Edition dated 4-4-02. 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."
  - b. NOTE: Follow the 'Combustion Heater PREFLIGHT/OPERATIONAL CHECK AND SHUTDOWN PROCEDURE' outlined within the Combustion Heater "Instructions for Continued Airworthiness", Second Edition, Revision: none, dated 04-04-02, 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.
  
13. Documentation:
  - a. If this is a new installation (no heater installed) a 337 noting STC# XXXX is required and a copy forwarded to the FAA. If this kit is used as a replacement of existing heating system, a log book entry noting FAA/PMA Supplement # XXXX Dated XX/XX/XX is required.
  - 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 Continued Airworthiness", Second Edition, Dated April 4, 2002, Revision: none or later FAA approved revision."
  - c. NOTE: Installation of the C&D Associates Products TSO-C20 approved heater kit will require an electrical load of approximately 15 amps.
  - d. NOTE: Total weight of kit is 25 lbs at station 70.

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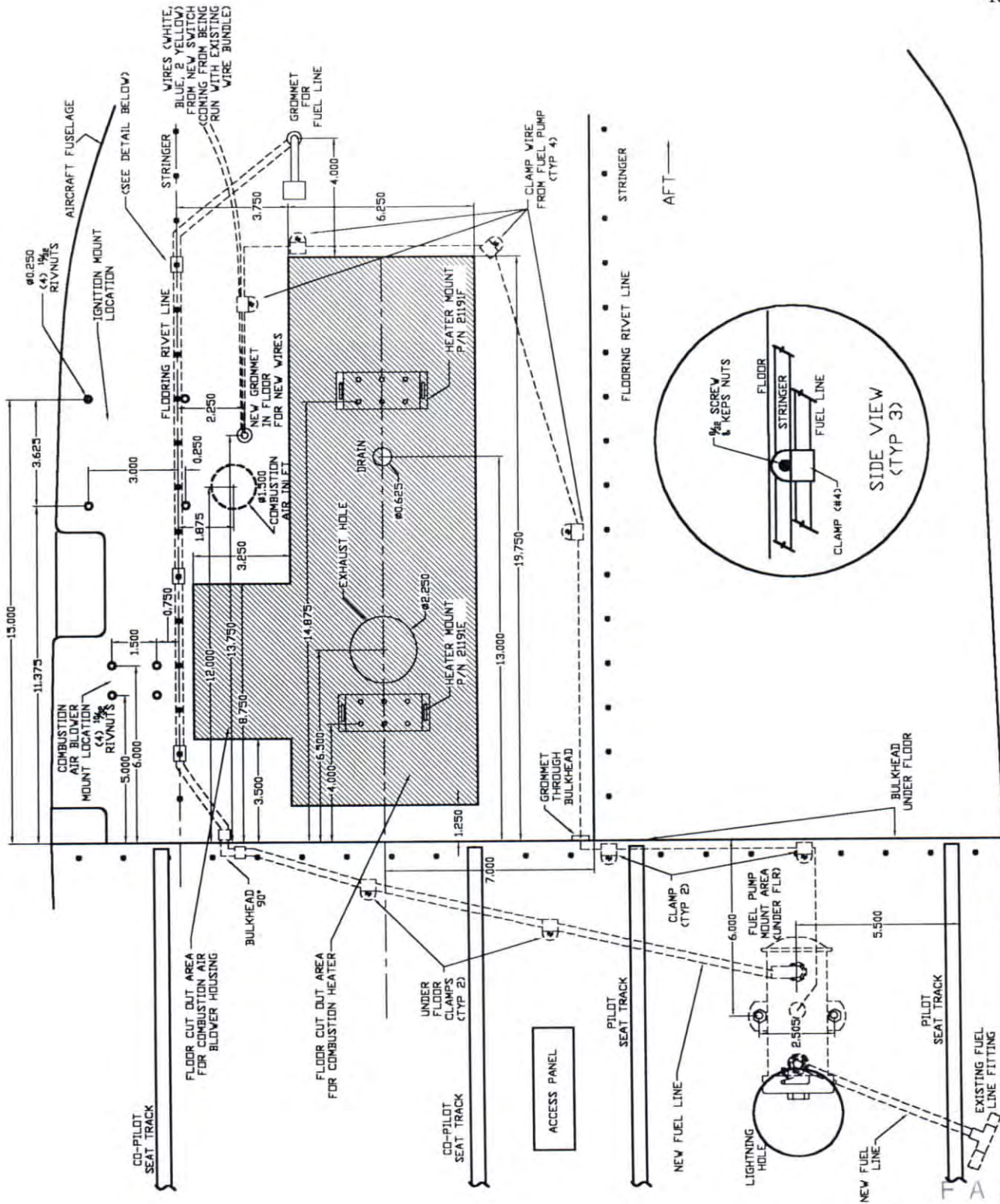


FIGURE 1  
(FROM TOP)

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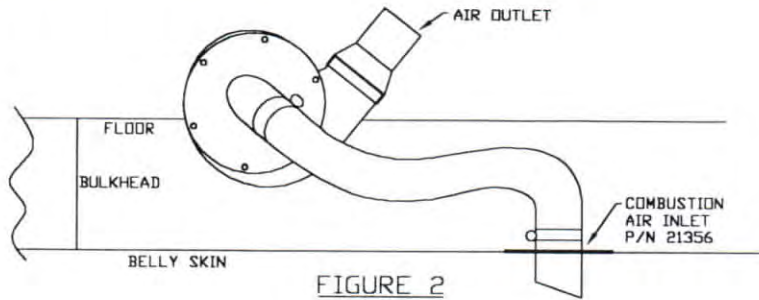


FIGURE 2

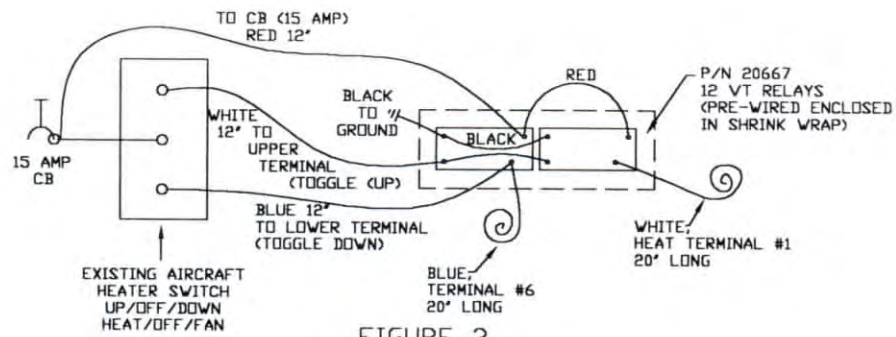


FIGURE 3  
EXISTING HEATER SWITCH

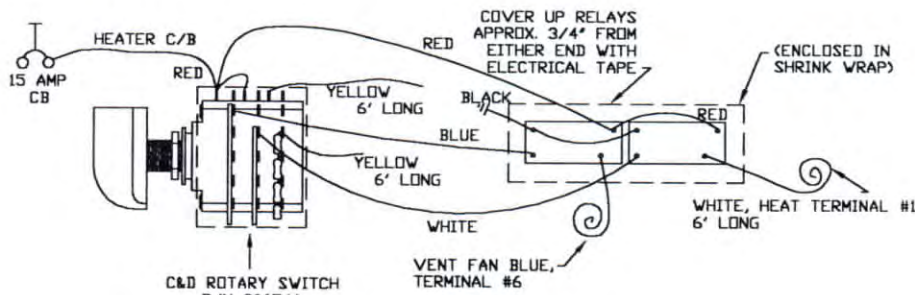


FIGURE 4  
NEW ROTARY SWITCH

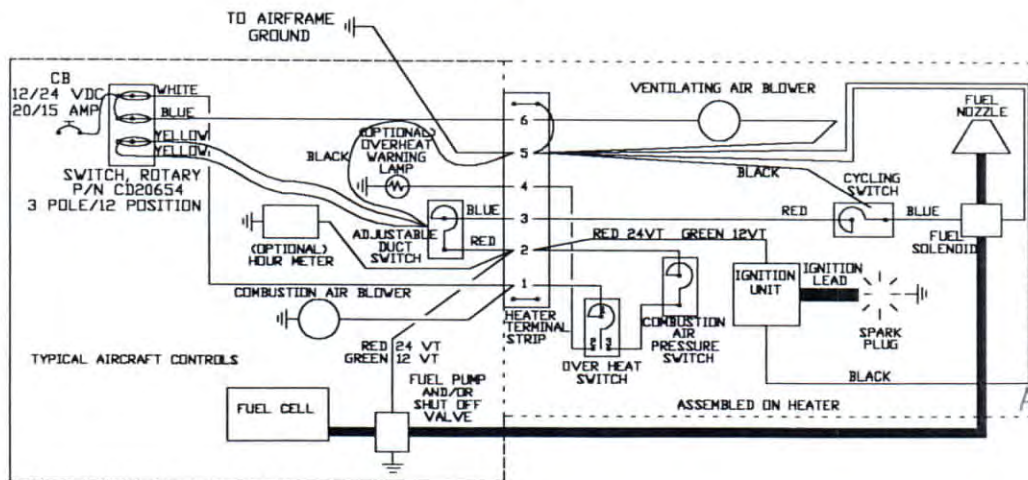


FIGURE 5

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