

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

Number SA01660CH

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 * of the * Regulations. **

Original Product - Type Certificate Number: * *See attached FAA Approved Model List

Make: * (AML) No. SA01660CH for list of approved airplane

Model: * models and applicable airworthiness regulations

Description of Type Design Change:

Remove Janitrol P/N C15C54 or Twin Commander P/N 88035-5 combustion heater and install C&D Associates, Inc. Model CD35K heater kit 10 P/N CD12043K10 in accordance with C&D Associates, Inc. Installation Instructions as listed on AML No. SA01660CH, 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. FAA approved Airplane Flight Manual Supplement, Rev. -, dated March 4, 2002, and Instructions for Continued Airworthiness/Maintenance Manual MM10000, Second Edition, Rev. none, dated April 4, 2002 or later FAA approved revision are required.
3. Check aircraft Weight and Balance.
4. A copy of this certificate and FAA Approved Model List (AML) No. SA01660CH, dated June 24, 2002, or later FAA approved revision must be maintained as part of the permanent records for the modified aircraft.
5. 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 8, 2002

Date reissued: February 11, 2016

Date of issuance: June 24, 2002

Date amended:



By direction of the Administrator

(Signature)
Timothy Smyth
Manager, Chicago Aircraft Certification Office

(Title)

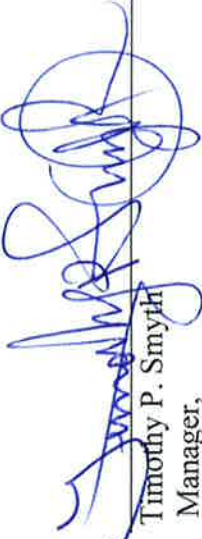
FAA APPROVED MODEL LIST (AML) NO. SA01660CH
 HARTZELL ENGINE TECHNOLOGIES LLC

FOR INSTALLING COMBUSTION HEATER MODEL CD35K KIT 10 P/N CD12043K10

Date of Issuance: June 24, 2002

| ITEM | AIRCRAFT MAKE | AIRCRAFT MODEL | ORIGINAL TYPE CERTIFICATE NUMBER | CERTIFICATION BASIS FOR ALTERATION | INSTALLATION INSTRUCTIONS | | AFM SUPPLEMENT NUMBER/DATE | AML AMENDMENT DATE |
|------|----------------|---|----------------------------------|------------------------------------|---------------------------|--|------------------------------|--------------------|
| | | | | | NUMBER | REVISION & DATE | | |
| 1. | Twin Commander | 500, 500-A, 500-B, 500-S, S/N 0131 and up, 500-U, 520, 560, 560-A, 560-E | 6A1 | CAR 3 | IN12043K10 | REV. -- Dated 1/8/2002 or later FAA approved revision | Rev. -, date: 3/4/2002 | |
| 2. | Twin Commander | 560-F, 680, 680-E, 680-F, 680-FL, 680FL (P) | 2A4 | CAR 3 | IN12043K10 | REV. A Dated 1/8/2002 or later FAA approved revision | Rev. -, date: 3/4/2002 | 6/20/2000 |

Date reissued: February 11, 2016

FAA Approved: 
 Timothy P. Smyth
 Manager,
 Chicago Aircraft Certification Office

C&D ASSOCIATES, INC.

IN12043K10

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Rev -

REAR HEATER INSTALLATION INSTRUCTIONS FOR MODEL CD35K KIT #10, P/N CD12043K10

For Twin Commander Models L-3805, 500, 500-A, 500-B, 500-S S/N 0131 and up,
500-U, 520, 560, 560-A, 560-E, 560-F, 680, 680-E, 680-F, 680-FL, 680-FL(P)

READ COMPLETE INSTRUCTIONS BEFORE BEGINNING INSTALLATION

1. Remove the old heater, ignition unit, lead assembly, and combustion air hose.
2. Combustion Blower:
 - A. Mount the new combustion air blower on the floor to the outboard side of the heater location use the mounting clamp as a template.
3. Heater:
 - A. Install the new heater using the original mounting clamps.
4. Drain Line Installation:
 - A. Drill a 7/16" hole 2" inboard of the exhaust hole.
 - B. Route the drain line, with the "y" extension outboard, through the floor hole just forward of the exhaust shroud. Bend as needed to insert the drain line through the grommet.
 - C. Cut the drain line with a 20° scarf aft and approximately 1" extruding out past the grommet.
 - D. Attach the drain hose, from the fuel line housing drain to the new drain line "y" extension, with two small cable ties.
5. Fuel Line:
 - A. Route the new fuel line from the existing 90° elbow, located in the floor under the aft end of the heater, to the heater fuel connection.
6. Combustion Air Blower Hook-up:
 - A. Connect the new combustion air blower to the heater.
 - B. Run the 1 ½" red scet hose from the blower outlet under the heater and in front of the drain line to the combustion air inlet adapter on top of the heater.
 - C. Install the black 1 ½" Ceet hose from the blower inlet to the inlet plenum.
 - D. Clamp both hoses using hose clamps.
7. Wiring:
 - A. Option 1: Using existing switching
 - a. Replace cabin heat circuit breaker switch with 10-amp circuit breaker switch.
 - b. Remove relay access panel located to the right of nose gear door.
 - c. Identify the outboard (first) lower safety relay.
 - d. Remove the wire coming from the heater control switch identified with numbers 451A-18, 463-16-5, 463-18, or 5451A-18 connected to X1 on the relay. Identification can also be made by locating the smaller terminal (X1) stud containing a jumper wire that goes to a larger stud on the same solenoid. Confirm choice by removing wire and with master on check for voltage at the removed wire when heater switch is activated. Re-route this wire to the new heater terminal strip, terminal #1.
 - e. Connect a 16G wire from the heater terminal strip #2 to the safety relay X1 position where the switch wire had been removed.
 - f. Re-route the old ignition wire numbered 455A-18, 469-16-4, 469-18 or 5455A-18 to the new heater terminal strip #3.
 - B. Option 2: Using new rotary switch and electronic thermostat.
 - a. Install new rotary switch in a convenient location for the new heater control. Provide 10-amp circuit breaker protected power to the red wire of the new switch.
 - b. Route white wire from new switch to new heater terminal #1.

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- c. Remove the wire coming from the old heater control switch identified in option 1 step 2. Tape this wire off, as it will not be used.
 - d. Route 16G wire from the new heater terminal #2 to X1 location on the safety relay where the old switch wire had been removed.
 - e. Thermostat: Install the thermostat board in the heat distribution box forward of the pilots knee area.
 - f. From the safety relay, remove from large terminal A1, wire 453A-18, 461-16-5, 461-18, or 5453A-18. This terminal can be identified as not having a jumper to smaller terminal and has two wires. Tape the removed wire off, as it will not be used. Connect the blue wire from the new rotary switch to the A1 terminal of this safety relay where the old wire was removed.
 - g. Connect yellow wires from the thermostat board to the yellow wires on the switch.
 - h. Red wire from the thermostat board to terminal #2 on the heater.
 - i. Blue wire from the thermostat board to terminal #3 on the heater.
8. Follow the 'Combustion Heater PREFLIGHT/OPERATIONAL CHECK AND SHUTDOWN PROCEDURE' outlined within the Combustion Heater "Air-worthiness Limitations", First Edition, Revision B, dated 01-01-00, or later revision, included with these instructions. This FAA-approved Airworthiness Limitations must become a permanent part of the Aircraft Operations and Procedures manual.
9. NOTE: Full compliance with the enclosed 'Combustion Heater Airworthiness Limitations' is required.
10. NOTE: Removal of the combustion heater and the installation of the C&D Assoc. Products TSO-C20 approved heater will increase total electrical load by 5 amps.
11. NOTE: No weight and balance change.

