

Kelly Aerospace  
Willoughby, OH  
NC-08-005, Rev. H

FAA APPROVED  
AIRPLANE FLIGHT MANUAL SUPPLEMENT  
FOR  
CESSNA 182Q, 182R, 182S, 182T AND T182T  
AIR CONDITIONING SYSTEM

Aircraft SN: \_\_\_\_\_

Aircraft Registration Number: \_\_\_\_\_

This supplement must be attached to the FAA approved flight manual when the Kelly Aerospace Air Conditioning system is installed in accordance with STC SA02006CH. The information contained in this document supplements or supersedes the basic manual only in those areas listed. For limitations, procedures, performance, and loading information not contained in this supplement, consult the basic FAA Airplane Flight Manual.

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LOG OF REVISIONS

REV.	PAGES	DESCRIPTION	APPROVED BY	DATE
G	1 - 9	Added provisions for CB-1 Climate Controller	E.M. Ward For Steven L. Lardinois	Nov 21 2013
H	5-7 8	Added provisions for CB-2 Climate Controller Added altimeter correction card to Section 6 Per ECN 15-011	<i>EW</i> ACE-117C	JAN 12 2017

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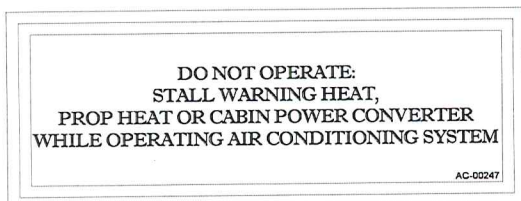
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### SECTION 1 GENERAL

This supplement supplies information necessary for the operation of the airplane when the optional Air Conditioning System is installed in accordance with FAA Approved Data, either STC or Original Equipment.

### SECTION 2 LIMITATIONS

When the Air Conditioning system is in operation some load shedding is needed. The items that cannot be turned on while the Air Conditioning is operating are not typically needed in flight conditions where the Air Conditioning system is needed. The Propeller Heat, Stall Warning Heat and 12 Volt Cabin Power Converter cannot be used when the air conditioning system is running. The following placard is installed in the cockpit for the pilot's reference and applies to the 182Q, 182R, 182S, 182T and T182T.



### SECTION 3 EMERGENCY PROCEDURES

#### AIR CONDITIONING SYSTEM EMERGENCY PROCEDURES

- 1) If Air Conditioning fails to operate correctly or is exhibiting abnormal behavior turn the air conditioning system to the off position performing the following: If equipped with CB-2 climate controller; push and hold the bottom right button on the Climate Controller for three seconds. If equipped with CB-1 Climate Controller; push and hold the upper left button for three seconds. If equipped with A1235 climate controller; push the center button on the Climate Controller until "AC" is no longer displayed.
- 2) If an overload condition occurs, the air conditioning unit circuit breakers may trip. These breakers are located on the hat rack on the rear of the aircraft and should not be reset until the aircraft returns to the ground. The plastic block off panel can be removed to access these breakers. The 60 Amp breaker controls power to the compressor. The 7.5 Amp breaker controls power to the condenser fan. The 10 Amp breaker controls power to the evaporator blower.

## SECTION 4

### NORMAL PROCEDURES



CB-2 Climate Controller

#### AIR CONDITIONING SYSTEM NORMAL CHECKLIST CB-2 CONTROLLER

##### Prior to Engine Start

- 1) Ensure Air Conditioning is OFF by verifying that there is nothing displayed on the CB-2 climate controller LCD screen.
- 2) Follow normal procedures for engine start-up.

##### Air Conditioning AC Mode

- 1) Press the lower right button on the CB-2 Climate Controller, the display will first show the logo and software version; then it will show temperature set point, fan speed bar graph, and mode display.
- 2) Press the bottom left button and toggle between modes with the middle right button.
- 3) After selecting AC mode, either press the bottom right button to enter or wait 3 seconds and the display will return to the main screen. The snowflake symbol in the bottom center of the display will indicate Air Conditioning mode

##### Air Conditioning Fan Only Mode

- 1) Press the bottom left button and toggle between modes with the middle right button.
- 2) After selecting fan mode, either press the bottom right button to enter or wait 3 seconds and the display will return to the main screen.

##### To Control Fan Speed

- 1) Press the middle left button to bring up the fan speed screen.
- 2) Toggle the fan speed up or down using the middle and upper right buttons. Speed Range is 1 to 3.
- 3) After selecting desired fan speed press the bottom right button to enter or wait 3 seconds and the display will return to the main screen. The fan speed bar graph on the right side of the screen will show selected fan speed. Fan speed can be controlled in both AC and Fan Only modes.

### Changing Temperature Set Point

- 1) Press the top or middle right buttons to adjust the temperature set point up or down.
- 2) The set point temperature will be displayed with an SP indication. The CB-2 display will default to the temperature set point.

### To display cabin temperature

- 1) Press and release the bottom right button, the cabin temperature will be displayed with a TEMP indication. After a few seconds the temperature set point will be displayed again.

### To turn air conditioning system off

- 1) Press and hold lower right button.



CB-1 Climate Controller

## AIR CONDITIONING SYSTEM NORMAL CHECKLIST CB-1 CONTROLLER

### Prior to Engine Start

- 1) Ensure Air Conditioning is OFF by verifying that there is no temperature displayed on the CB-1 climate controller.
- 2) Follow normal procedures for engine start-up.

### Air Conditioning AC Mode

- 1) Press the upper left button on the CB-1 Climate Controller, the display will first show fan speed, then will show temperature set point.
- 2) Press the Upper or Lower right button to adjust temperature set point low enough to cause AC to run.

### Air Conditioning Fan Only Mode

- 1) Press the upper or lower right button to adjust temperature set point high enough to cause AC to shut off.

### To Control Fan Speed

- 1) Use the left hand selector arrows on the CB-1 Climate Controller to increase or decrease fan speed.
- 2) Speed Range is 1 to 3.

### To Display Cabin Temperature

- 1) Press and release the upper left button, the cabin temperature will be displayed with a dot in the lower right hand corner indicating that cabin temperature is being displayed. After a few seconds the temperature set point will be displayed again.



### To Turn Air Conditioning System Off

- 1) Press and hold upper left button.



A1235 Climate Controller

### AIR CONDITIONING SYSTEM NORMAL CHECKLIST A1235 CONTROLLER

- 1) Prior to engine startup ensure Air Conditioning is OFF by verifying that the AC annunciator is not illuminated if equipped with A1235 controller. The Air Conditioning system will normally be off if the Avionics Bus Master is in the off position as well.
- 2) Follow normal procedures for engine start-up
- 3) To operate Air Conditioning if equipped with A1235 Climate Controller; depress the center button AC button on the Climate Controller until "AC" is seen on the display.
- 4) For FAN ONLY operation use right hand selector arrows on the A1235 Climate Controller to increase or decrease fan speed. Speed Range is 1 to 5.
- 5) For Air Conditioning use the left hand selector arrows on the A1235 Climate Controller and set the desired cabin temperature. Fans will automatically adjust speed to allow for less or more airflow.

**SECTION 5**  
**PERFORMANCE**

During maximum operating condition of the air conditioning system no more than 1.65 Horsepower will be pulled off the engine.

The performance change of the aircraft is negligible with the Air Conditioning System Installed. The air conditioning system can be operated at any point during the flight.

When the static pressure alternate source valve is pulled on, a change in static pressure supplying the static source instruments is introduced. The altimeter will react to this pressure change by indicating 30 to 100 feet lower than the aircraft's actual altitude. See Figure 1.

**Altimeter Correction**  
Alternate Static Source

Conditions:

Power required for level flight or maximum power descent cruise configuration.  
Altimeter corrections for takeoff configuration are less than 50 feet.

<b>ALTERNATE STATIC SOURCE ERROR CORRECTION</b>				
<b>Alternate Static Source ON</b>				
<b>60 KIAS</b>	<b>80 KIAS</b>	<b>100 KIAS</b>	<b>120 KIAS</b>	<b>140 KIAS</b>
<b>+30 Feet</b>	<b>+40 Feet</b>	<b>+60 Feet</b>	<b>+85 Feet</b>	<b>+100 Feet</b>

Add correction to indicated altitude to obtain actual altitude of the aircraft. Windows and ventilators closed, air conditioning off, cabin heater, cabin air and defroster on maximum.

**Figure 1**

Example: Level flight using alternate static source at 100 KIAS and 3000 feet MSL indicated altitude, actual altitude is 3060 feet MSL.



## SECTION 6 LOADING INFORMATION

### CESSNA 182Q, 182R, 182S, 182T and T182T

The addition of the evaporator to the Hat Rack limits the baggage capacity of the hat rack to 5 pounds of baggage.

### CESSNA T182T Only

The oxygen bottle has been removed from the rear empennage and moved into the baggage compartment. The baggage compartment is limited to 190 pounds maximum baggage weight. 120 pounds maximum baggage FWD of baggage door latch and 70 pounds maximum baggage AFT of baggage door latch.

No more than 30 pounds of baggage can be placed on top of the Oxygen Bottle cover.

Factory installed or aftermarket installed optional equipment is listed in the weight and balance section of this Pilots Operating Handbook, or Aircraft Flight Manual.

## SECTION 7 DESCRIPTION AND OPERATION OF THE AIRCONDITIONING SYSTEM

### Description

The Air Conditioning system ducts cool dry air through the headliner and out vents near the pilot, co-pilot and passenger seats. The cool air is supplied through an evaporator mounted on the hat rack. The condenser and compressor for the system are mounted in the tail cone aft of the hat rack. A climate controller is located on the co-pilots side of the instrument panel. The climate controller is used to set fan speed and desired air temperature. Power is supplied to the system through an auxiliary bus off the primary alternator mounted on the right side of the engine.

### Operation

The Air Conditioning system should be turned off during engine startup. The system can then be turned on when the aircraft is brought up to idle. The system is turned on when the avionics switch is in the on position and the AC switch is activated on the climate controller. Desired cabin temperature is set in the climate controller.

### Oxygen System (Applicable to T182T Models Only)

The oxygen bottle fill port is now located in the baggage compartment. The fill port in the rear empennage is no longer operational. The fill port hole is an air intake for the air conditioning

The rear seat oxygen mask ports are now located on the oxygen bottle cover in the baggage compartment. They are no longer located in the headliner.