

Kelly Aerospace Thermal Systems LLC  
Willoughby, OH  
NC-04-027, REV B

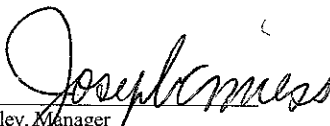
FAA APPROVED  
AIRPLANE FLIGHT MANUAL SUPPLEMENT  
FOR  
CESSNA 182 P, Q, R  
AIR CONDITIONING SYSTEM  
&  
AUXILIARY BUSS WITH HIGH OUTPUT ALTERNATOR

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.

TABLE OF CONTENTS	PAGE #
SECTION 1 GENERAL	2
SECTION 2 LIMITATIONS	2
SECTION 3 EMERGENCY PROCEDURES	2
SECTION 4 NORMAL PROCEDURES	2
SECTION 5 PERFORMANCE	3
SECTION 6 LOADING INFORMATION	3
SECTION 7 DESCRIPTION AND OPERATION	3

*for* FAA-Approved   
Charles L. Smalley, Manager  
Systems & Flight Test Branch  
Chicago Aircraft Certification Office  
ACE-115C, Federal Aviation Administration

DATE 18 DEC 2008

Kelly Aerospace Thermal Systems LLC  
Willoughby, OH  
NC-04-027, REV B

FAA APPROVED  
AIRPLANE FLIGHT MANUAL SUPPLEMENT  
FOR  
CESSNA 182 P, Q, R  
AIR CONDITIONING SYSTEM  
&  
AUXILIARY BUSS WITH HIGH OUTPUT ALTERNATOR

**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**

None

**SECTION 3  
EMERGENCY PROCEDURES**

There is no change to the standard airplane emergency procedures when the air conditioning system is installed.

**AIR CONDITIONING SYSTEM EMERGENCY PROCEDURES**

If Air Conditioning fails to operate correctly or is exhibiting abnormal behavior, pull the 5 amp circuit breaker to cut power to the system and take the aircraft in for service.

**SECTION 4  
NORMAL PROCEDURES**

**PRE-FLIGHT**

Inspect condenser inlets and outlets for abnormal obstructions. Clear obstructions if any are found.

**GROUND OPERATING, ENGINE OFF**

This system may be used on the ground prior to engine start. Plug an approved external power source into the ground service plug receptacle. The ground power unit must be capable of supplying more than 45 amps of current to the aircraft. Touch the small piezo switch above the ground power receptacle near the windshield to turn the system on. The fan speed can be adjusted by using the arrows on the right hand side of the climate controller. If air conditioning is desired then touch the "AC" switch in the center of the climate controller to switch from "FAN" mode to "AC" mode. The arrows on the left hand side of the climate controller can be used to set the desired cabin temperature.

**GROUND OPERATING, ENGINE RUNNING or IN FLIGHT**

After engine start, the system can be turned on while on the ground as long as there is ample power. This means that the engine RPM will need to be at 800 – 1000 RPM to allow the alternator to output enough current to power the air conditioning system and the rest of the aircraft. The pilot should monitor the

Kelly Aerospace Thermal Systems LLC  
Willoughby, OH  
NC-04-027, REV B

FAA APPROVED  
AIRPLANE FLIGHT MANUAL SUPPLEMENT  
FOR  
CESSNA 182 P, Q, R  
AIR CONDITIONING SYSTEM  
&

AUXILIARY BUSS WITH HIGH OUTPUT ALTERNATOR  
charging system for any signs of excessive charge or low volt indication. If this situation occurs, increase the engine RPM until enough power is being produced.

The air conditioning climate controller will automatically turn on when the aircraft battery master switch is turned on. The fan speed can be adjusted by using the arrows on the right hand side of the climate controller. If air conditioning is desired then touch the "AC" switch in the center of the climate controller to switch from "FAN" mode to "AC" mode. The arrows on the left hand side of the climate controller can be used to set the desired cabin temperature.

**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.

**SECTION 6**

**LOADING INFORMATION**

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 via two vents located near the rear of the baggage compartment. The cool air is supplied through an evaporator mounted above 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 instrument panel. The climate controller is used to set fan speed and desired air temperature. Power is supplied to the system through a high output alternator which replaces the lower output alternator originally supplied with the aircraft.

The higher output alternator creates an auxiliary buss not tied to the rest of the aircraft system which is dedicated to powering the air conditioning system. The rest of the aircraft is protected with a 60 amp current limiter to allow no more current than what was originally intended by the aircraft designers on the main aircraft buss.