



# **CESSNA CARAVAN 208 SERIES WITH PT6A-140 ENGINE**

**FAA-STC SA02546LA**

## **KIT SA02546LA-140**

THIS DOCUMENT IS SIMPLY AN OUTLINE OF THE STC INSTALLATION PROCESS *FOR PLANNING PURPOSES ONLY*. THE FAA APPROVED DOCUMENTS IDENTIFIED ON THE STC CERTIFICATE SUPERCEDE THIS DOCUMENT AND SHOULD BE USED FOR ALL INSTALLATION & OPERATIONAL PURPOSES.

### **AIRCRAFT APPLICABILITY:**

208: SERIAL NUMBERS; 2080001 TO 2080499

208B: SERIAL NUMBERS; 208B0001 TO 208B1189; 208B1191 TO 208A1215; 208B1217 TO 208B1999

AIRCRAFT EQUIPPED WITH GARMIN G1000 OR TKS DE-ICING ARE NOT ELIGIBLE

### **ELIGIBLE PROPELLERS:**

HARTZELL:

HC-B3TN-3AE(Y)/T10890CN(K)-2

NOTE: (K) INDICATES OPTIONAL DE-ICING AVAILABLE

(Y) INDICATES OPTIONAL START LOCKS AVAILABLE FOR FLOAT PLANES

### **MAJOR INSTALLATION TASKS REQUIRED:**

1. PRE-MOD AIRCRAFT PERFORMANCE EVALUATION (FLIGHT CHECK). COMPLETE THE PRE-MOD PERFORMANCE WORKSHEET, BH-013, AND PROVIDE BMI WITH A COPY.
2. PWC ACCEPTANCE OF EXISTING ENGINE CORE. COMPLETE THE ENGINE CORE QUALIFICATION WORKSHEET, BH-007, AND SUBMIT TO BMI.
3. AIRCRAFT DISASSEMBLY
  - A. REMOVE THE COWLING, PROPELLER, ENGINE AND ENGINE INSTRUMENTS
  - B. THE EXISTING COWL, INLET AIR DUCT/PLENUM AND EXHAUST WILL BE RE-USED
  - C. THE EXISTING ENGINE, PROPELLER, OVERSPEED GOVERNOR, STARTER/GENERATOR AND ENGINE INSTRUMENTS ARE EXCHANGE ONLY AND WILL BE RETURNED TO BMI AS CORES
4. CLEAN, INSPECT, REPLACE OR REPAIR THE;
  - A. FIREWALL
  - B. ENGINE MOUNT RING & TRUSS ASSEMBLY
  - C. COWL, INLET AIR DUCT/PLENUM, EXHAUST AND ALL OTHER COMPONENTS RETAINED FOR RE-USE
5. ASSEMBLY
  - A. BUILD-UP THE NEW ENGINE, INSTALL THE MOTIVE FLOW FUEL SHUT-OFF SOLENOID

KIT SA02546LA-140

Rev. B APR/16

**Blackhawk Modifications, Inc.**

7601 Karl May Dr · Waco, TX 76708

(254) 755-6711



- B. INSTALL THE FIREWALL MOUNTED COMPONENTS
- C. MODIFY THE RIGHT NOSE COWL WITH PARTS PROVIDED, REQUIRED ADHESIVE IS INSTALLER PROCURED
- D. BUILD-UP THE NEW PROPELLER (IF REQUIRED)
- 6. INSTALL NEW ENGINE INDICATORS & MODIFY FUEL CIRCUIT WIRING
  - A. REMOVE ALL EXISTING INDICATORS & EYEBROW LIGHTS
  - B. PROVIDE POWER CIRCUITS AS NEEDED FOR TQ, NP, NG INDICATORS
  - C. ROUTE NEW WIRING AS NEEDED INTO ENGINE COMPARTMENT
  - D. INSTALL ALL NEW WIRE CONNECTORS
  - E. RELOCATE FUEL & OIL PRESSURE SWITCHES
  - F. INSTALL FUEL PUMP TIMER RELAY
- 7. INSTALL NEW 325 AMP STARTER/GENERATOR
  - A. REPLACE EXISTING START/GEN, BATTERY POWER & GROUND CABLES WITH NEW
  - B. REPLACE THE EXISTING POWER DISTRIBUTION BUSS
  - C. REPLACE THE EXISTING VOLT/AMMETER, GENERATOR, BATTERY & STAND-BY ALTERNATOR SHUNTS
- 8. FINIAL AIRCRAFT ASSEMBLY
  - A. INSTALL THE ENGINE AND PROPELLER
  - B. INSTALL THE INDUCTION AIR PLENUM, INLET AIR DUCT/IPS
- 9. ENGINE RIGGING & PRE-FLIGHT CHECKS
  - A. DRY RIG THE ENGINE & PROP CONTROLS
  - B. DE-PRESERVE THE ENGINE FUEL SYSTEM & CHECK FOR POSITIVE FUEL CUT OFF
  - C. START THE ENGINE AND PERFORM PRELIMINARY ENGINE & AIRFRAME SYSTEMS CHECKS
  - D. INSTALL THE COWLING
  - E. COMPLETE WET RIGGING ADJUSTMENTS AND FILL-IN THE POST-MOD GROUND RUN CHECK SHEET BH-014
- 10. AIRCRAFT RETURN TO SERVICE
  - A. PERFORM A POST-MODIFICATION TEST FLIGHT AND COMPLETE THE TEST FLIGHT CHECK SHEET BH-006. PROVIDE BMI WITH COPIES OF ALL POST-MOD CHECK SHEETS
  - B. RE-WEIGH THE AIRCRAFT TO REVISE THE WEIGHT & BALANCE DATA AND THE EQUIPMENT LIST
  - C. COMPLETE THE REQUIRED LOG BOOK ENTRIES AND MODIFICATION RECORDS

**NOTES:**

- 1. THIS INSTALLATION REQUIRES AN OPERATIONAL AGB/RGB CHIP DETECTOR WARNING ANNUNCIATOR. IF NOT CURRENTLY EQUIPPED, PARTS TO INSTALL THIS CIRCUIT ARE NOT INCLUDED BUT ARE CUSTOMER SUPPLIED



2. DUE TO ITS COMPLEXITY, BMI RECOMMENDS THAT THE ENGINE INDICATOR, START/GENERATOR INSTALLATION AND FUEL SYSTEM WIRING CHANGES BE PERFORMED BY AN AIRCRAFT ELECTRICIAN, AVIONICS TECHNICIAN OR AN EXPERIACNED WIRING SAVY MECHANIC
3. THE ENGINE, PROPELLER, OVERSPEED GOVERNOR, STARTER/GENERATOR, OIL COOLER, ENGINE INDICATORS AND TRANSDUCERS ARE SUPPLIED ON AN EXCHANGE BASIS AND REQUIRE CORES RETURNED TO BLACKHAWK
4. THE CORE RETURN ENGINE MUST BE ACCEPTED BY PRATT & WHITNEY CANADA PRIOR TO REMOVAL OR ADDITIONAL CHARGES MAY BE INCURRED
5. **IF ANY DIFFICULTIES, QUESTIONS OR CONCERNS ARISE DURING THE INSTALLATION, PLEASE DON'T HESITATE TO CALL BLACKHAWK CUSTOMER SUPPORT: (254)755-6711 OR EMAIL [SUPPORT@BLACKHAWK.AERO](mailto:SUPPORT@BLACKHAWK.AERO)**

**REQUIRED STC DOCUMENTS:**

DESCRIPTION	NUMBER
STC CERTIFICATE WITH SIGNED LIMITED USE LICENSE	SA02546LA
AIRPLANE FLIGHT MANUAL SUPPLEMENT	AFMS 201321-208 OR -208B
INSTRUCTION FOR CONTINUED AIRWORTHINESS	201321-30
INSTALLATION DRAWINGS	201321-000 TO -003, -005, -008 TO -010, -012, -014
ENGINE CONTROL RIGGING INSTRUCTION	201321-800
ENGINE CORE QUALIFICATION INSTRUCTIONS	BH-007
PRE-MODIFICATION PERFORMANCE WORKSHEET	BH-013
POST-MODIFICATION PERFORMANCE WORKSHEET	BH-006
CARAVAN GROUND RUN CHECK SHEET	BH-014

**BLACKHAWK SUPPLIED PARTS:**

QTY.	PART DESCRIPTION	PART NUMBER
1	ENGINE, TURBO PROPELLER	PT6A-140 (BS 1341)
1	PROPELLER	HC-B3TN-3AE(Y)/T10890CN(K)-2
3	KIT, ENGINE INSTALLATION	KIT -002, -005 & -012
1	KIT, INDICATOR INSTALLATION	KIT -003
1	KIT, ELECTRICAL	KIT -009
1	KIT, COWL MODIFICATION	KIT -014

**INSTALLER PROCURED PARTS:**

QTY.	PART DESCRIPTION	PART NUMBER
14 qts	OIL, TRUBINE ENGINE	PER PWC MM SEC 72-00-00 TABLE 13 & 14
AR	ADHESIVE, HYSOL	EA 9394

KIT SA02546LA-140  
Rev. B APR/16

**Blackhawk Modifications, Inc.**  
7601 Karl May Dr · Waco, TX 76708  
(254) 755-6711



AR	SEALANT, FIREWALL	PER 208 MM SECTION 20-30-00
1	FILTER, CHIP DETECTOR ANUNCIATOR <sup>(1)</sup>	25-0890-432
AR	MISC. HARDWARE, TIES, CLAMPS, SHOP SUPPLIES, ETC.	AS NEEDED

NOTES: (1) NOT REQUIRED IF CURRENTLY EQUIPPED

**PARTS TO RETAIN FOR RE-INSTALLATION:**

QTY.	PART DESCRIPTION	PART NUMBER
1	MOUNT RING & TRUSS, ENGINE	PER THE 208 IPC FOR THE AIRCRAFT S/N
ALL	COWL, ENGINE	PER THE 208 IPC FOR THE AIRCRAFT S/N
1	EXHAUST, ENGINE	PER THE 208 IPC FOR THE AIRCRAFT S/N
1	STANDBY ALTERNATOR SYSTEM	PER THE 208 IPC FOR THE AIRCRAFT S/N
ALL	INDUCTION AIR PLENUM & FIRESEAL PARTS	PER THE 208 IPC FOR THE AIRCRAFT S/N
1	COMPRESSOR & DRIVE, A/C	PER THE 208 IPC FOR THE AIRCRAFT S/N
1	CONDENSER, A/C	PER THE 208 IPC FOR THE AIRCRAFT S/N
2	GENERATOR, Np & Ng TACH	PER THE 208 IPC FOR THE AIRCRAFT S/N
ALL	DRAIN PLUMBING, ENGINE	PER THE 208 IPC FOR THE AIRCRAFT S/N
ALL	CONTROL CABLES, BRACKETS, LEVERS, ENGINE	PER THE 208 IPC FOR THE AIRCRAFT S/N
ALL	FIRE DETECTION LOOP, SUPPORT BRACKETS & CLAMPS	PER THE 208 IPC FOR THE AIRCRAFT S/N
2	GROUND STRAPS, ENGINE	PER THE 208 IPC FOR THE AIRCRAFT S/N
1	BETA SWITCH IF EQUIPPED	PER THE 208 IPC FOR THE AIRCRAFT S/N
1	VENT ASSY, ENGINE CASE OVERBOARD	PER THE 208 IPC FOR THE AIRCRAFT S/N
ALL	BLEED AIR CONTROL & CABIN HEAT SYSTEM	PER THE 208 IPC FOR THE AIRCRAFT S/N
1	VACUUM FLOW CONTROL VALVE, VACUUM LINE	PER THE 208 IPC FOR THE AIRCRAFT S/N
1	CAN, EPA OIL COLLECTOR IF EQUIPPED	PER THE 208 IPC FOR THE AIRCRAFT S/N

**CORE PARTS TO BE RETURNED TO BLACKHAWK**

QTY.	PART DESCRIPTION	PART NUMBER
1	ENGINE, TUBRO PROPELLER	PT6A-114(A)
1	PROPELLER	PER THE 208 IPC FOR THE AIRCRAFT S/N
1	STARTER/GENERATOR w/QAD & CLAMP	PER THE 208 IPC FOR THE AIRCRAFT S/N
1	VOLT/AMPMETER	PER THE 208 IPC FOR THE AIRCRAFT S/N
1	TUBE, S/G COOLING	PER THE 208 IPC FOR THE AIRCRAFT S/N
6	INDICATORS ENGINE (ITT Tq Np Ng FF Otp)	PER THE 208 IPC FOR THE AIRCRAFT S/N
3	TRANSDUCERS, INDICATOR (Tq FF Op)	PER THE 208 IPC FOR THE AIRCRAFT S/N
1	GOVERNOR, PROP OVER-SPEED	PER THE 208 IPC FOR THE AIRCRAFT S/N
1	OIL COOLER	PER THE 208 IPC FOR THE AIRCRAFT S/N