



INSTRUCTION – PREHEAT KIT INSTALLATION

Subject: P/N: TSFC208B-3049-115, Preheat Kit – 115 Volt
TSFC208B-3049-230, Preheat Kit – 230 Volt
Textron/Cessna Caravan 208B with PT6A-140

Document No: TNF3049
Revision: D
Date: JUL-12-2019

RECORD OF REVISIONS

When updated, this document is changed in its entirety.

REV	DATE	DESCRIPTION	BY	CKD
D	JUL-12-2019	Add Textron to subject P/N description.	DNE	GDO
C	JUN-28-2019	Reformat with 1000 series documents.	DNE	GDO
B	APR-16-2015	Add flush plug installation description.	GDO	DNE

Current revision approval: _____

1. PURPOSE

This instruction provides guidance for installation of 115- and 230-volt kits listed above.

2. REQUIREMENTS

Subject kit top-level drawing, 03049-115 or 03049-230, parts and documents as listed.

- Tools, hardware, and consumables, power supply and extension cords, not supplied.
- Pad element bonding sealant supplied separately, refer to TN02788.
- Plug mounting requires sheet metal bracketing refer to this instruction and TNG1000 for addition plug options.

3. INSTALLATION

⚠ Caution: Energized elements can cause 2nd and 3rd degree burns. **Do Not** connect power to elements or system before completing Functional System Check, TNG1000.

Abbreviations: Alternating current (AC), Accessory gearbox (AGB), Center of gravity (CG), Circuit protection device (CPD), Fuel control unit (FCU), Maintenance Manual (MM), Original equipment manufacturer (OEM), Propeller reduction gearbox (PRGB), Removal and replacement (R&R), Section (§), Service Bulletin (SB), To be determined (TBD), Top-level drawings (TLD).

- Technicians and users of this instruction should be familiar with Installation Guide TNG1000 and related document listed in TLD.

3.1 Inventory

Start with parts and document inventory, refer to subject kit TLD for item list.

3.2 Weight and Balance

Weigh kit and intended installation hardware before installation. Approximate installed weight: 2.0 lb / 0.90 kg. When required use engine arm for calculations. Refer to TNG1000 for change requirements.

PROPRIETARY DATA

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3.3 Elements

Measure resistance of each element before installing, refer to § 4. Table 4.1.

- a) Locate elements with reference to narratives and examples in § 4.
- b) Battery element located perimeter of battery secured with cable-ties or lacing.
- c) Pad heat elements bonded to engine components with sealant, refer to TN02788.
- d) Should alternate or additional elements be required contact Tanis engineering.

3.4 Electrical

Locate electrical components with reference to narratives below and examples in § 4.

- a) Routing suggested final routing TBD by installing authority.
- b) Refer to cable kit wire diagram drawings, 03021 (engine) and installation guide TNG1000.
- c) Wire termination and tooling refer to instructions TN02793 and TN03012.
- d) Door kits and doublers supplied separately or field fabricated.
- e) Use 0.040 to 0.080, 2024-T3 or equivalent for field-fabricated doublers and brackets.

Shore power plug (inlet) and indicator light: Identify location and method for installing supplied plug TP02070-M-115 or TP02839-S-230 and light TLP3039-, refer to Figures 4.1. 4.2. and 4.4. Plug pinout refer to cable kit wire diagram drawing 03021.

Note: 230-volt kit supplied with extension cord plug adaptor (outlet) TP02829-230 refer to instruction TN02829.

Optional AV/Cabin Heater (THP3094-) firewall connector (TU03125) and door kits (single TD02840, dual TD03097) available separately. For additional options refer to TNG1000.

Cable Kit: Locate cable kit TCT3021 in engine compartment, secure junction and CPD on engine mount or firewall in serviceable area that allows leads to reach corresponding components, secure with cushioned clamps, cable-ties and/or appropriate lacing.

Suggest routing leads forward from junction with existing oil and drain lines, wiring, or along lower engine mount. Battery lead route to battery box on lower firewall and connect with thermal control cable assembly, refer to Figure 4.3. Additional cabling required for alternate battery locations and configuration and/or dual batteries.

Ground wire: Verify OEM engine/airframe bonding strap is installed. Attach ring crimp end of green 22759-181 to existing ground lug or other applicable ground location on airframe and terminate in shore plug. Connection not to exceed .003 ohms, refer to TNG1000.

Placard: Affix supplied TU02615- placards or placard with equivalent stating at a minimum "Tanis", and the system voltage near both shore power plugs refer to Figures 4.1 and 4.2.

3.5 Completion

1. Inspect: Visually inspect and verify components are connected and secure.
2. Check: Perform Functional System Check, refer to Installation Guide TNG1000.
3. Record: Retain data and record as indicated in Instructions for Continued Airworthiness TCA1000 and Operating Guide TPG1000.

4. TABLES AND FIGURES

This section contains technical information and examples of typical installations, actual installation may vary due to existing equipment or operating requirements.

Table 4.1. Electrical Values.

System and individual element value tolerances, +/- 10%.

* Battery heater circuit normally open, closed below +5°C / 41°F (freezing) refer to TN03046 and Functional System Check located in Installation Guide TNG1000.

115-volt system total			Total:	4.8 Amps	555 Watts	23.8 Ohms
* Without battery heater				4.2 Amps	481 Watts	27.5 Ohms
Qty	Element Part Number	Element Location		Watts	Ohms	
* 1	TBP2648-38-115/74	Battery	each:	74	178.7	
1	TEP2673-115/28	Engine oil cooler	each:	28	472.3	
1	TEP2682-115/13	FCU	each:	13	1017.3	
1	TEP3035-115/220	PRGB	each:	220	60.15	
1	TEP3050-115/200	AGB LH side	each:	200	66.1	
1	TEP3070-115/20	Heat Exchanger	each:	20	661.0	

230-volt system total			Total:	1.7 Amps	555 Watts	95.3 Ohms
* Without battery heater				2.1 Amps	481 Watts	110.0 Ohms
Qty	Element Part Number	Element Location		Watts	Ohms	
* 1	TBP2648-38-230/74	Battery	each:	74	714.0	
1	TEP2673-230/28	Engine oil cooler	each:	28	1889.3	
1	TEP2682-230/13	FCU	each:	13	4069.2	
1	TEP3035-230/220	PRGB	each:	220	240.2	
1	TEP3050-230/200	AGB LH side	each:	200	264.5	
1	TEP3070-230/20	Heat Exchanger	each:	20	2645.0	



Figure 4.1. Overview of preconditioning kit.



Figure 4.2. Examples of shore plug, TP02070-M-115 or TP02839-S-230, and indicator light TLP3039-, located in left aft lower corner of cowl with field fabricated backing plate fitted with quarter-turn fasteners, cowl match drilled, exposed edges potted following OEM procedures (example Hylos EA9392, EA934NA, EA9394, or Magnabond 6398). Refer to Figure 4.5 for example of optional circular plug located on left engine mount with cushioned clamps (supplied separately), refer to TNG1000 for additional plug options.

Plug assembly may be located without removable backing plate using supplied 3 contact connector kits for cowl removal, refer to cable kit wire diagram 03021.

Affix system placard TU02615- in visible location adjacent to shore plug.

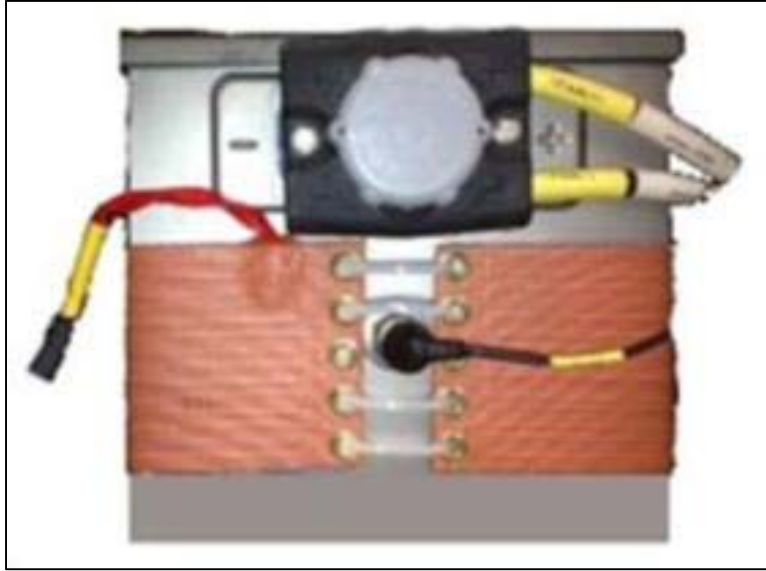


Figure 4.3. TBP2648-38- Battery element (generic example shown). Secure around battery position clear of bracketing, connectors, and chafe points. Use cable ties or appropriate lacing. Gently lace in place alternating tension between ties. Excessive tension may cause damage or result in pulling grommets out. Note: Due to varying battery configuration and/or location alternate elements and adaptor panels available.

Thermal control cable assembly, secure with existing wiring, on battery cables or as required. Position element connector for disconnect during maintenance, locate thermal control TLP3046- 6 to 18 inches from battery with anchor TU02782 or secure with existing cabling, refer to instructions TN03046.

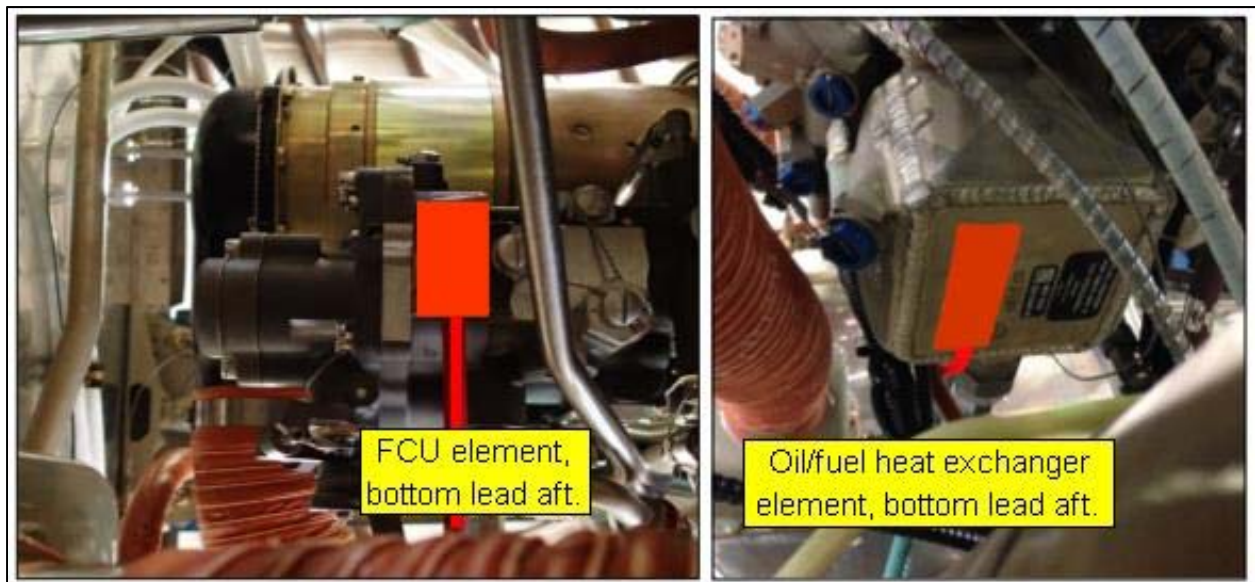


Figure 4.4. TEP2682- Bottom mid-section of FCU (lead orientation may vary). TEP3070- Bottom of oil/fuel heat exchanger, lead to follow lines.

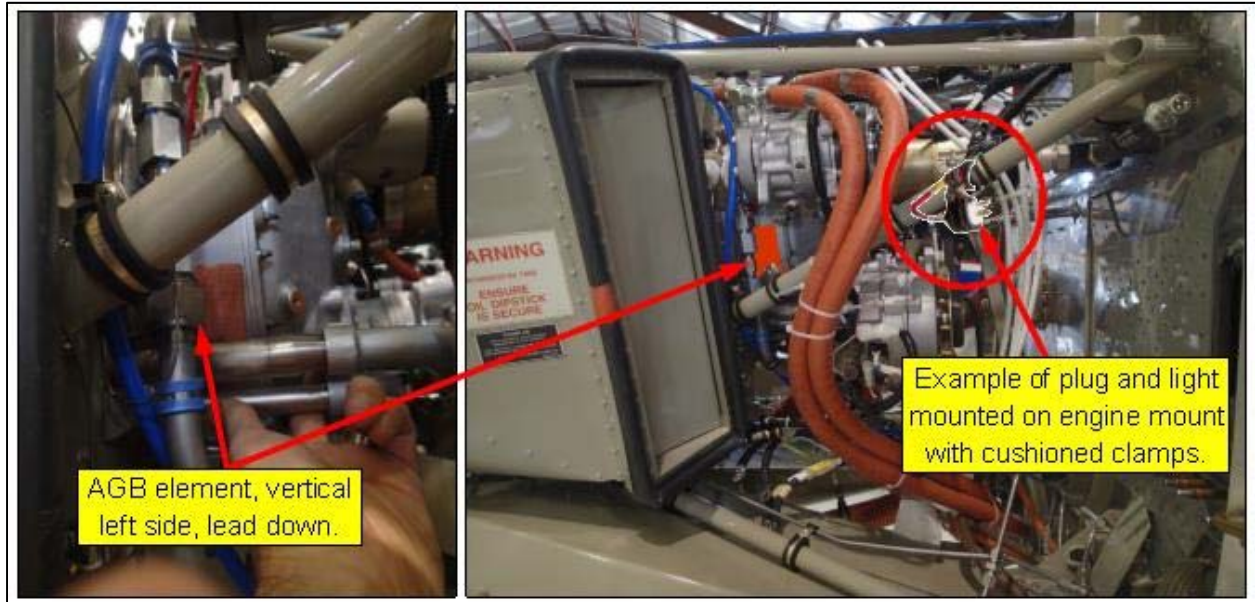


Figure 4.5. TEP3050- Left side of AGB tank. Example of optional circular plug secured with cushioned clamps on left engine mount engine mount.

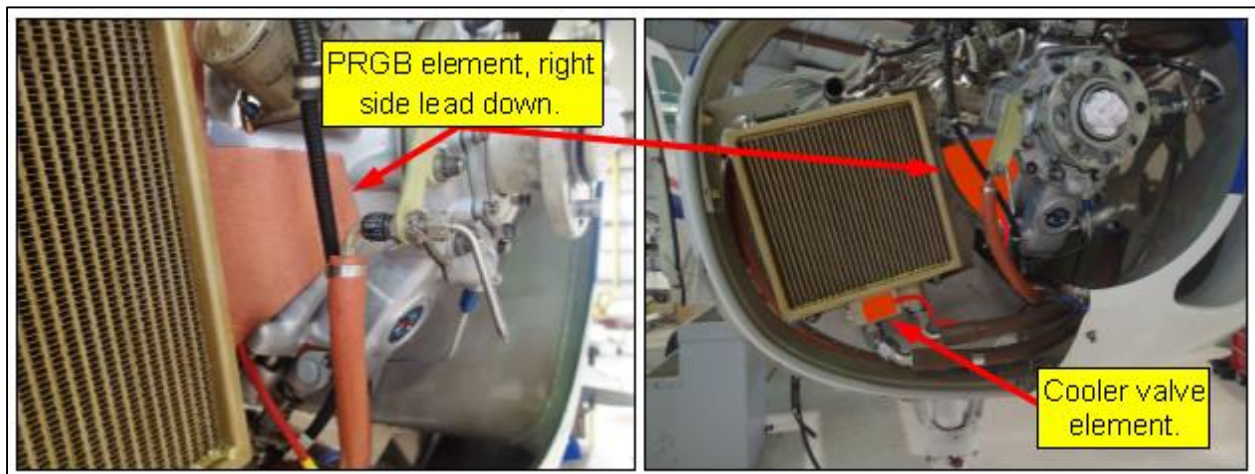


Figure 4.6. TEP3035- Right forward side of PRGB conical. TEP2673- Forward surface of oil cooler vernatherm valve housing.

***** NOTHING FOLLOWS *****