



INSTRUCTION – PREHEAT KIT INSTALLATION

Subject: P/N: TSTPT6A-2157-115, Engine Preheat Kit – 115 Volt
TSTPT6A-2157-230, Engine Preheat Kit – 230 Volt
PWC PT6A-50 Turbo-Prop Engine

Document No: TNT2157
Revision: A
Date: JUL-18-2019

RECORD OF REVISIONS

When updated, this document is changed in its entirety.

REV	DATE	DESCRIPTION	BY	CKD
A	JUL-18-2019	Initial Release (replaces TN02157)	DNE	GDO

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, 2157-115 or 2157-230, parts and documents as listed.

- Requires one kit per engine additional kits and interconnect components supplied separately.
- Tools, hardware, and consumables, power supply and extension cords, not supplied.
- Pad element bonding sealant supplied separately, refer to TN02788.

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), Fireproof grommet (FPG), Fuel control unit (FCU), Maintenance Manual (MM), Original equipment manufacturer (OEM), Removal and replacement (R&R), Scavenger (SCV), 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.
- Due to aircraft configuration and/or operational requirements alternate plug, CPD, or system interconnect may be desirable. When interconnecting kits verify load limitations of components refer to § 3.4 this instruction and installation guide TNG1000.

3.1 Inventory

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

PROPRIETARY DATA

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3.2 Weight and Balance

Weigh kit and intended installation hardware before installation. Approximate installed weight: 1.5 lb / 0.7 kg. When required use engine arm for calculations. Refer to TNG1000 for change requirements.

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) Pad heat elements bonded to engine components with sealant, refer to TN02788.
- c) Should alternate or additional elements be required contact Tanis engineering.

3.4 Electrical

Routing suggested final routing TBD by installing authority.

- a) Locate electrical components with reference to narratives below and examples in § 4.
- b) Refer to cable kit wire diagram drawing 02812 and installation guide TNG1000.
- c) Wire termination and tooling refer to instructions TN02793 (junction instruction TN03012).
- d) Electrical values and circuit limitations refer to Table 4.1. and cable kit drawing 02812.
- e) Kits may be interconnected calculate and size components accordingly.

Shore power plug (inlet) and indicator light: TP02070-M-115 or TP02839-S-230 and light TLP3039-. Plug type, location and mounting method TBD by installing authority refer to Figure 4.7. and TNG1000 of additional options.

CPD: TU03141-B dual fuse kit. Locate in serviceable area near plug, refer to drawing 03141 and 02812 refer to TNG1000 for CPD and breaker options.

Cable Kit: TCT2812, secure with cushioned clamps, cable-ties and/or appropriate lacing. Locate junctions J-A and J-B on aft side of accessory firewall barrier with existing wiring or on engine in serviceable area that allows leads to reach corresponding components refer to Figure 4.5.

Fireproof Grommet: TG01056 use as needed for routing of PRGB leads, locate in lower right corner of forward fire barrier refer to Figures 4.4. and 4.6.

Ground wire: 22759-181 green ground wire, verify OEM engine/airframe bonding strap is installed. Attach ring crimp end of ground wire on existing ground lug or other applicable ground location on airframe or engine 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 shore plug, refer to Figure 4.7.

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%.

115-volt system total			Total:	5.5 Amps	635 Watts	20.8 Ohms
Qty	Element Part Number	Element Location			Watts	Ohms
1	TEP2693-115/50	AGB SCV PUMP		each:	50	264.5
2	TEP2694-115/50	AGB RH		each:	50	264.5
2	TEP2695-115/100	AGB RH FILTER		each:	100	132.3
2	TEP2696-115/180	PRGB UPPER		each:	180	73.5
2	TEP2697-115/120	PRGB LOWER		each:	120	110.2
2	TEP2698-115/15	FCU		each:	15	881.7
1	TEP3181-115/120	AGB LH		each:	120	110.2

230-volt system total			Total:	2.8 Amps	635 Watts	83.3 Ohms
Qty	Element Part Number	Element Location			Watts	Ohms
1	TEP2693-230/50	AGB SCV PUMP		each:	50	264.5
2	TEP2694-230/50	AGB RH		each:	50	264.5
2	TEP2695-230/100	AGB RH FILTER		each:	100	132.3
2	TEP2696-230/180	PRGB UPPER		each:	180	73.5
2	TEP2697-230/120	PRGB LOWER		each:	120	110.2
2	TEP2698-230/15	FCU		each:	15	881.7
1	TEP3181-230/120	AGB LH		each:	120	110.2

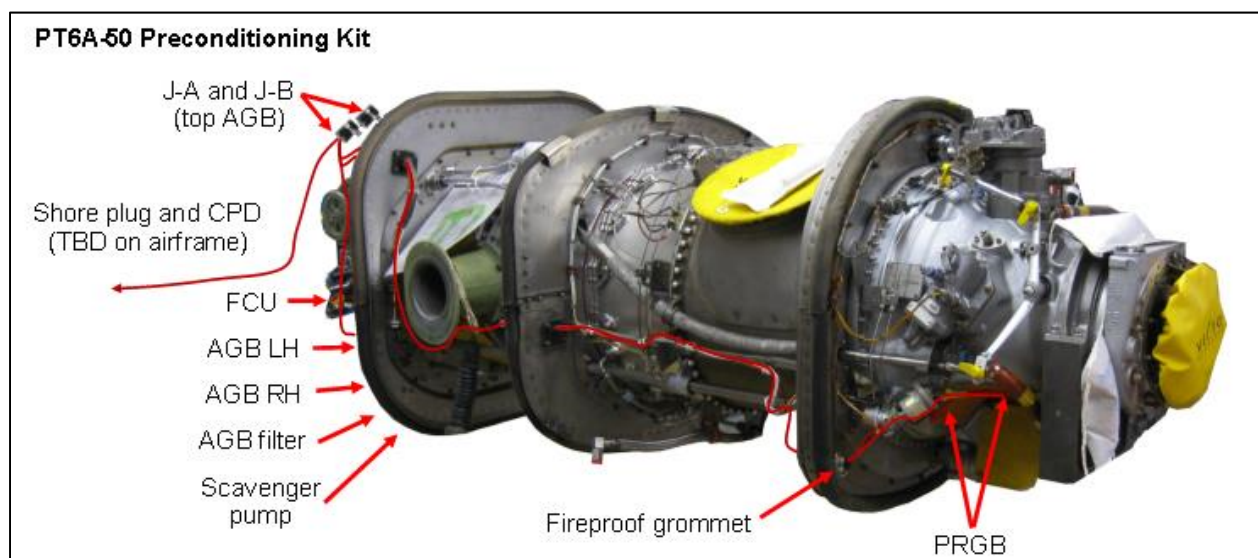


Figure 4.1. Overview of preconditioning kit layout.

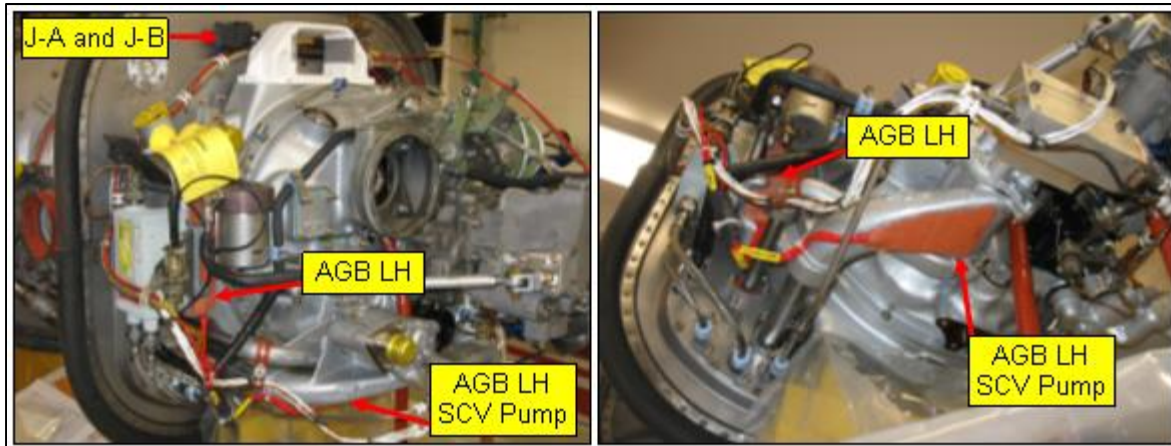


Figure 4.2. Left side AGB elements:
TEP2693- AGB LH scavenger pump sump.
TEP3181- AGB LH engine case aft side of tank section behind igniter box.

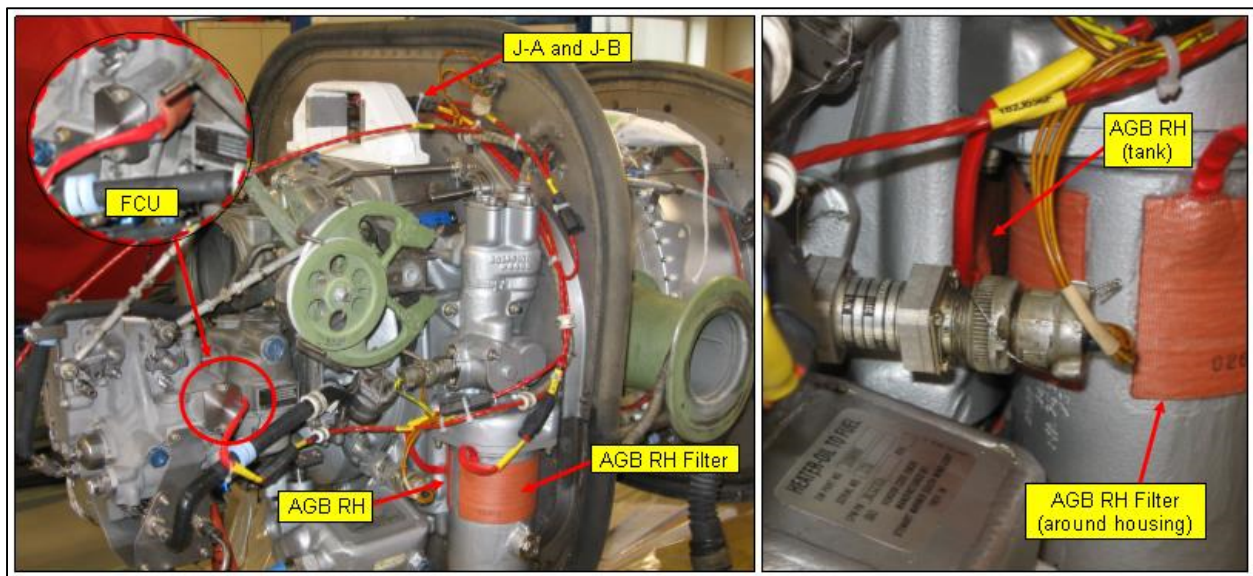


Figure 4.3. FCU and right side AGB elements:
TEP2694- AGB RH engine case outboard side of tank section behind oil filter housing.
TEP2695- AGB RH Filter around oil filter housing.
TEP2698- FCU forward side of housing lead right.

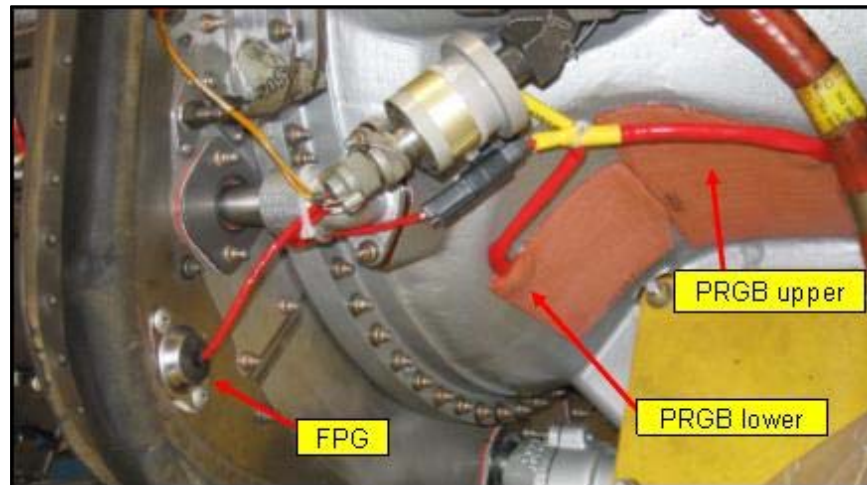


Figure 4.4. PRGB elements:
TEP2696- PRGB upper forward section.
TEP2697- PRGB lower aft sloped section.



Figure 4.5. Example of routing for cable kit TCT2812 with junctions J-A and J-B located on back side of rear baffle above AGB, cabling routed with exiting wiring to elements. PRGB cable leads routed forward through fire barrier with existing wiring to forward barrier.

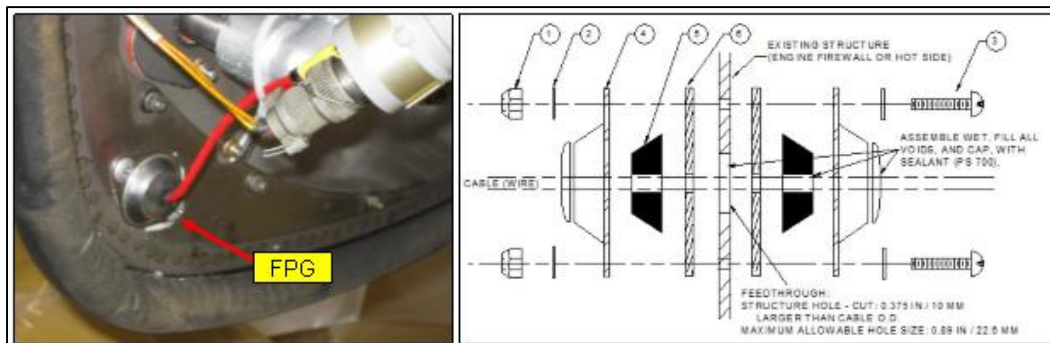


Figure 4.6. PRGB cable leads routed through forward barrier using TG01056 Fireproof grommet (FPG) supplied for use as needed refer to instruction TN01056.

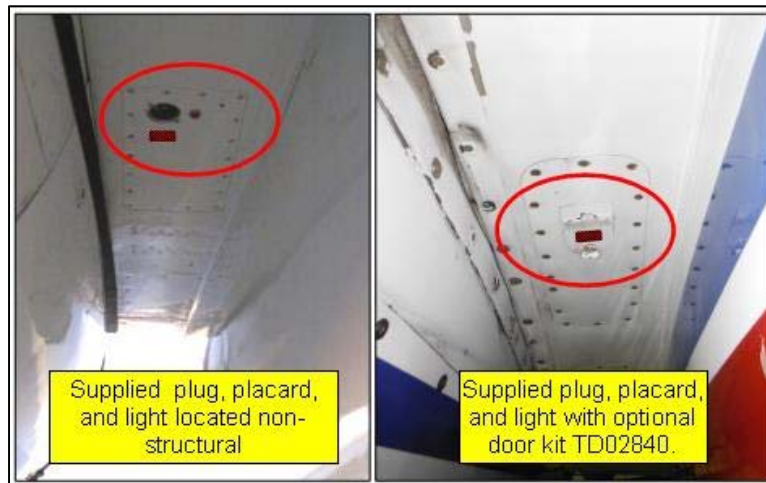


Figure 4.7. Examples of supplied plug and light located in non-structural inspection panel. Install with reference to instructions: plug TN02070, light TN03039, CPD drawing 03141.

Left: plug without door. Right plug with optional door kit TD02840. Locate CPD in serviceable area near plug. Refer to installation guide TNG1000 for additional options and examples.

Plug configuration and mounting TBD by installing authority. Kits may be interconnected calculate and size components accordingly.

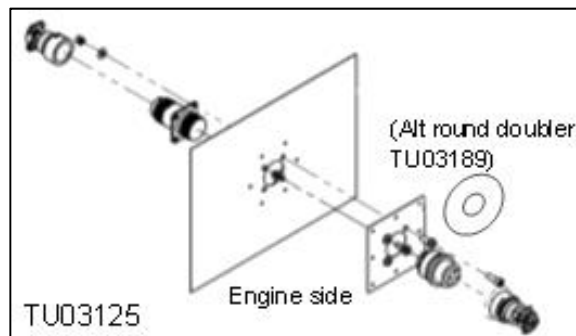


Figure 4.8. Routing of power lead to plug may require penetration of firewall, route with existing wiring and penetration when available or use approved alternate, firewall connector kit TU03125 available separately. Location and method of routing TBD by installing authority.

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