



INSTRUCTION – PREHEAT KIT INSTALLATION

Subject: TSHS269-2508-115 and TSHS269-2508-230
Heli-Preheat Kits, Sikorsky/Schweizer 269/300 series
w/Lycoming 360 series engine

Document No: TNH2508

Revision: D

Date: JUL-01-2019

RECORD OF REVISIONS

When revised document changed in its entirety.

REV	DATE	DESCRIPTION	BY	CKD
D	JUL-01-2019	Format kit for 1000 series docs and add plug bracket.	DNE	GDO
C	JUN-20-2014	Update P/N's, kit and element configurations	GDO	DNE
B	NOV-29-2011	ECR2011-0019	DNE	RCK

Current revision approval: _____

1. PURPOSE

This instruction provides guidance for installation of subject kits listed above.

2. REQUIREMENTS

Subject kit Top-Level Drawing, 2508-115 or 2508-230, parts and related documents as listed.

- Tools, hardware, consumables, power supply and extension cords, not supplied.
- Pad element bonding sealant supplied separately, refer to TN02788.
- Threaded element installation requires tools and OEM torque specs, refer to TN02771.
- Avionics/cabin and battery heater options supplied separately, refer to TNG1000 and cable kit wire diagram 2507.

3. INSTALLATION

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

Abbreviations: Alternating current (AC), Center of gravity (CG), Circuit protection device (CPD), Main rotor gearbox (MRGB), Original equipment manufacturer (OEM), Section (§), Service Bulletin (SB), Tail rotor gearbox (TRGB), 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 inventory and document review, refer to top-level drawing item list.



3.2 Weight and Balance

Weigh kit before installation. Approximate installed weight: 1.5 lb. / 0.7 kg. Use engine arm for Weight and Balance calculations. Refer to TNG1000 for change requirements.

PROPRIETARY DATA

Tanis Aircraft Products proprietary rights are included in the information disclosed herein. The recipient by accepting this document agrees that neither this document nor the information disclosed herein, nor any part thereof will be reproduced or transferred to other documents or used or disclosed to others for manufacturing or for any other purpose except as specifically authorized in writing by Tanis Aircraft Products - 952-224-4425.

3.3 Elements

-  Pad element: *Only use* approved bonding sealant. Refer to instruction TN02788 for sealant options and bonding procedures.
-  Threaded elements: Replace one intake tube flange fastener on each cylinder head. **Do Not** use any spacers or washer of any type. Torque to OEM specification for location of installation. Refer to instruction TN02771 for additional installation procedures.

Secure element leads 3 inches / 8 centimeters or less from element.

- Should operational procedures or environment conditions require alternate or additional elements, contact Tanis engineering.
- Measure resistance of each element with ohmmeter before installing, refer to Table 4.1.

3.4 Electrical

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

- Electrical routing suggested finial routing TBD by installing authority.
- Wires and cables are to be supported by suitable cable ties, clamps, grommets, or other devices at intervals of not more than 6-inches / 15.25-centimeters, except when contained in ducts or conduits. Refer to TNG1000 and AC 43.13-1 (as amended) Chapter 11.
- Refer to cable kit wire diagram drawing 2507 and installation guide TNG1000.
- Only connect power after completing Functional System Check with ohmmeter, § 3.5.

Shore Power Plug (inlet), TP02770-115 or TP02980-230, and Indicator Light TLP3039-:

Hard mount plug in accessible area. Use supplied plug bracket kit TU01062 or cushioned clamps, suggest right aft airframe tubing/strut or on engine oil filler tube, refer to TN01062. For additional plug and mounting options refer to TNG1000.

Indicator light, locate with plug using light bracket TU03145 supplied with plug bracket kit TU01062, refer to instruction TN03039 and TN01062.

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

Cable-Kit TCH2507 with CPD: Refer to cable kit wire diagram drawing 2507, route and terminate accordingly. Secure with cable-ties and/or clamps, adjusting length by looping or race-tracking. Leads may be cut and re terminated. Avoid attaching wires to fuel or fuel primer lines.

Junction J-A and CPD locate near shore plug on strut or in serviceable area that allow leads to reach corresponding components. Secure connectors for TRGB jumper with clamps.

Junction J-B locate on engine ignition leads near magnetos, routing cable leads to corresponding elements. **Do Not** transition engine element leads from engine to airframe and back again.

Verify OEM engine/airframe bonding strap is installed. Attach ground wire from plug to engine or aircraft structure, connection not to exceed .003 ohms, refer to TNG1000.

Placard TU02615: Affix supplied or field fabricated placard in visible location adjacent to shore power plug. Alternate field fabricated placard with *Tanis Preheat* and voltage requirement (115-Volt or 230-Volt) may be used.

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: Record and retain data 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: 4.0 Amps	465 Watts	28.4 Ohms
Qty	Element Part Number	Element Location		Watts	Ohms
1	TEP2740-115/120	MRGB	each:	120	110.2
1	TEP2741-115/25	TRGB	each:	25	529.0
3	TEP3179-115/40	Engine oil, sump and oil coolers	each:	40	330.6
4	TTP2771-115/50	Cylinder head intake	each:	50	264.5

230-volt system total			Total: 2.0 Amps	465 Watts	113.8 Ohms
Qty	Element Part Number	Element Location		Watts	Ohms
1	TEP2740-230/120	MRGB	each:	120	440.8
1	TEP2741-230/25	TRGB	each:	25	2116.0
3	TEP3179-230/40	Engine oil, sump and oil coolers	each:	40	1322.5
4	TTP2771-230/50	Cylinder head intake	each:	50	1058.0

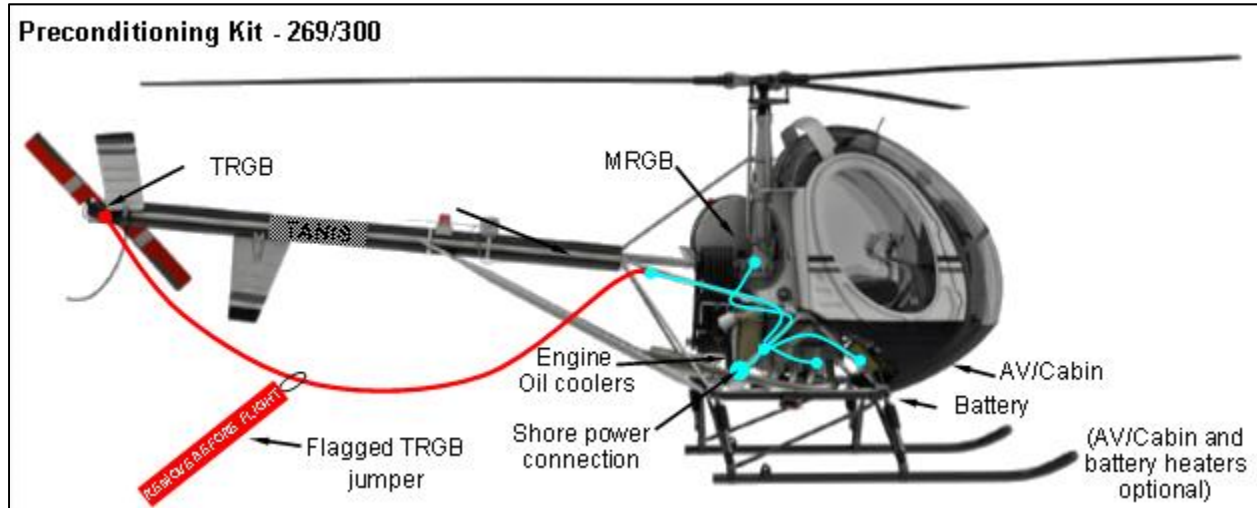


Figure 4.1. Overview of preconditioning kit. (jumper lead flagged for removal before flight).

Note: When applicable, copy page add as appendix in operating guide TPG1000.

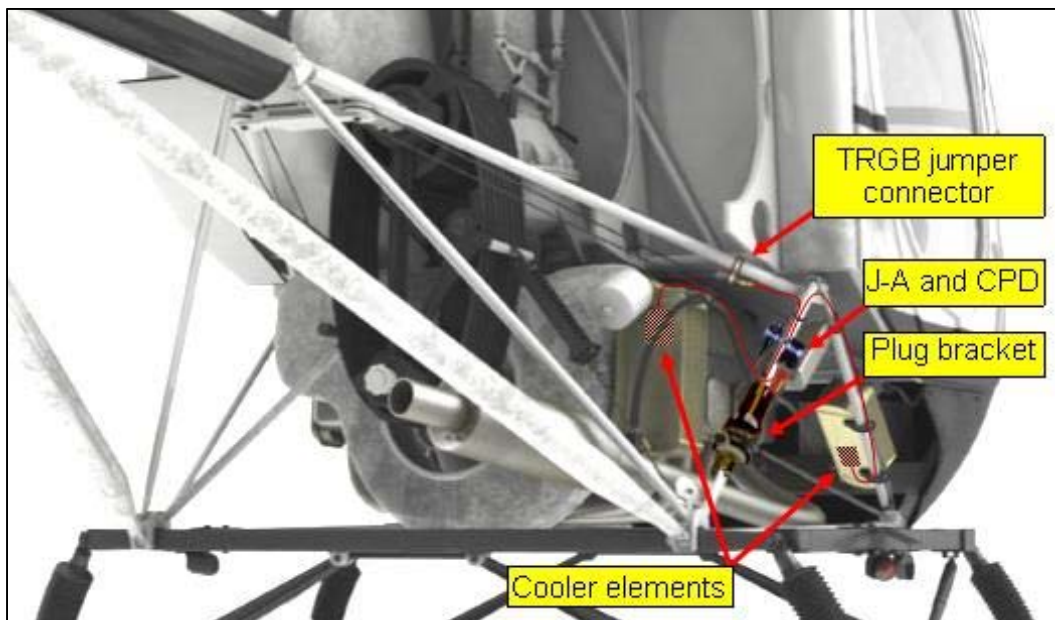


Figure 4.2. Example of suggested locations for shore power plug (mounted with TU01062 bracket assembly), junction J-A, CPD and tail rotor jumper cable connector, hard mounted in accessible location.

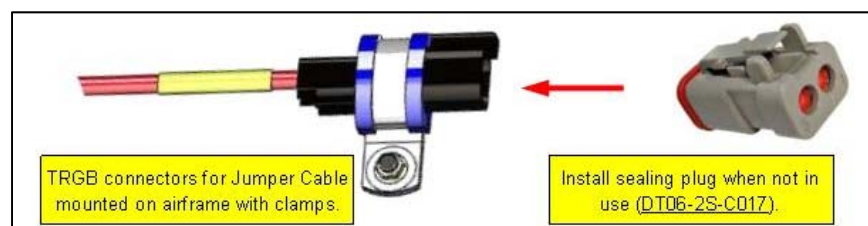


Figure 4.3. TRGB jumper connectors sealed with supplied plug when not in use.



Figure 4.4. Examples of TRGB jumper connectors hard mounted with clamps on airframe.

Left: Aft TRGB element connector located with clamp and tail skid attachment bolt. Right: TRGB harness side connector located on rear right frame member near shore plug. Actual locations may vary from depictions, TBD by installer. Connectors to be hard mounted in accessible locations clear of controls.

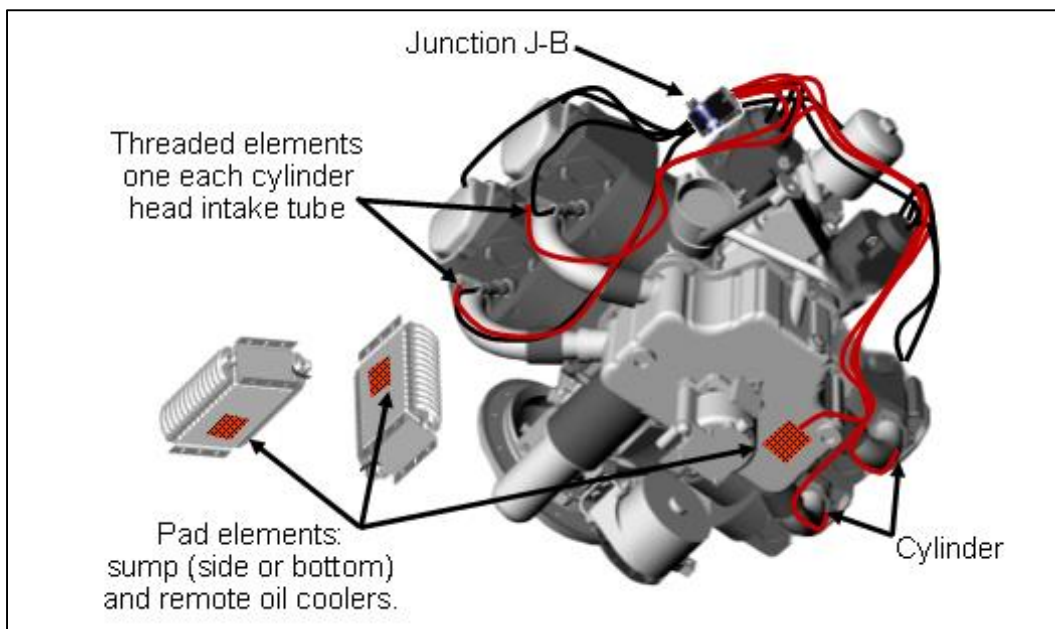


Figure 4.5. General engine layout. Refer to § 3.3 for applicable element installation instructions. Locate junction J-B on and route cable leads with ignition leads to corresponding elements, secure with cable-ties.

TTP2771- threaded element (4), one per head replacing intake fastener secure lead to intake tube 2 to 3 inches from element.

Do Not use spacers or washers when replacing intake tube fasteners. Verify elements do not bottom out., torque to Lycoming OEM specification for location of installation.

TEP3179- pad element (3), one on flat surface of each oil cooler and one on engine oil sump below nominal oil level (side or bottom). Note: **Do Not** locate two elements on engine oil sump.

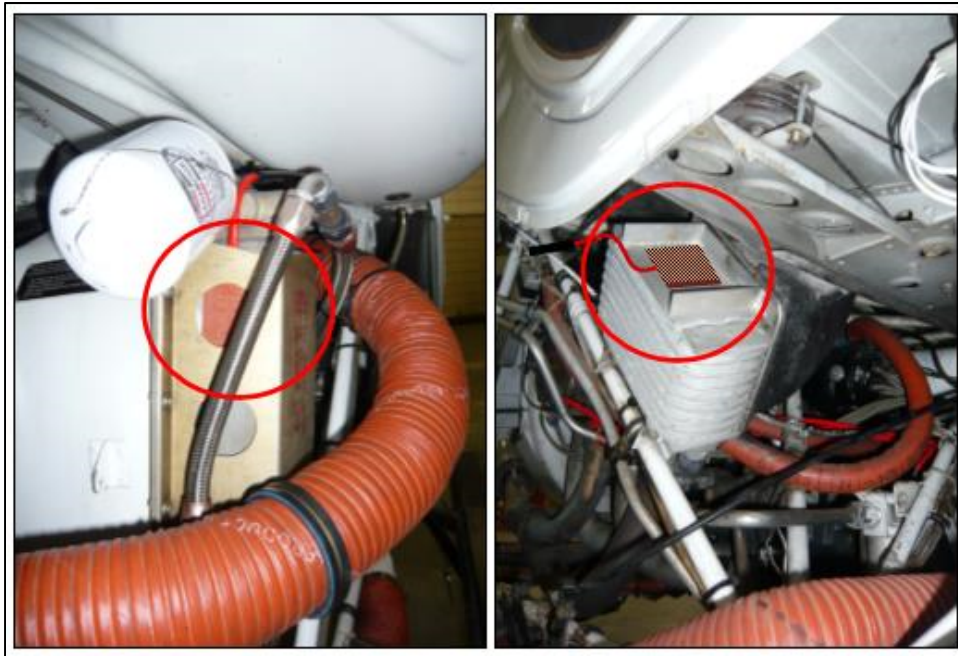


Figure 4.6. TEP3179- pad elements. Locate one on engine cooler and when equipped with remote oil cooler locate second element on this cooler.

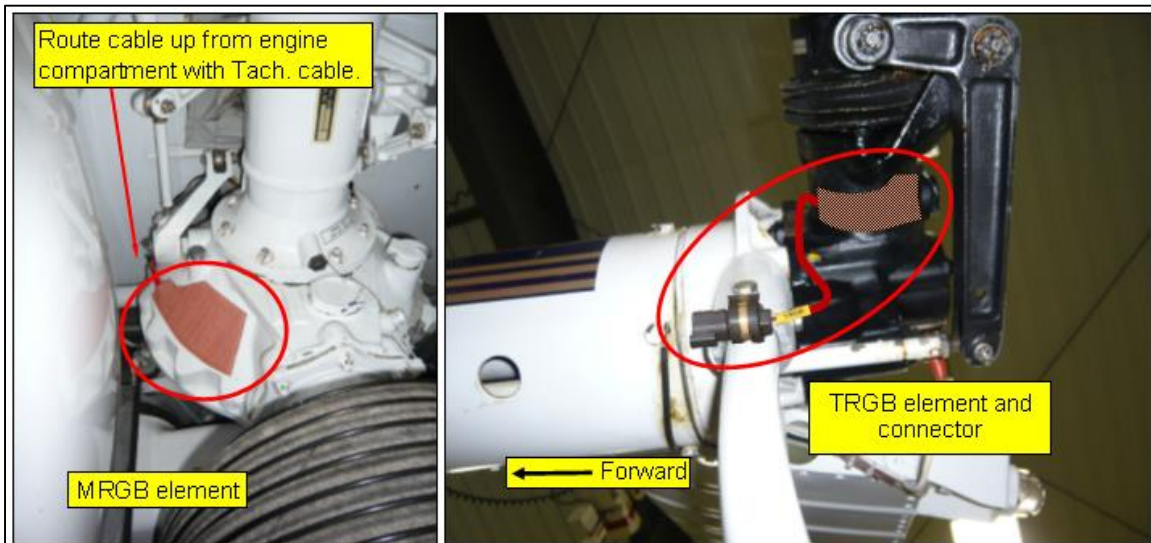


Figure 4.7. TEP2740- MRGB element locate on open area or conical, lead forward to follow tach cable. TEP2741- TRGB element locate on bottom lead forward, hard mount connector clear of control arm with clamp for connection with jumper cable.

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