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www.Tanisaircraft.com

**TCA0002**  
**Revision: A**  
**Date: 10-20-2010**

## **Instructions for Continued Airworthiness**

### **Tanis 200 series battery heat system**

PREPARED by Dirk Ellis

CHECKED by Glen Olin

APPROVAL by \_\_\_\_\_

The installation is to be inspected in accordance with the following criteria or equivalent operator's Approved Airworthiness Inspection Program:

#### **1.0 INTRODUCTION**

These Instructions for Continued Airworthiness contain the necessary information for carrying out the ongoing maintenance and inspections on the Tanis battery preheat installation.

#### **2.0 DESCRIPTION**

The 200 Series Battery heat systems are for both Lead Acid and Ni-Cad Batteries.

This system may be installed as an independent system or as an accessory to an existing Tanis engine preheat system. It is powered by ground/shore power. The battery heat system is thermostatically controlled, permanently installed, and is not operational in flight.

The battery heat system consists of battery heat element(s) and a cabling assembly.

The element wraps around the vertical surface of the battery(s), in a belt like fashion. The cabling incorporates connectors for power, thermostat, and circuit protection with a 5 amp fuse. Amperage draw varies from less than a tenth of an amp to no more than 4 amps.

There are both 115V, with North American NEMA 5-15P plug type and 230V, with Europe CEE 7/7 plug type. Country of operation may install certified power plugs that meet regional requirements.

Installed weight varies from less than one pound to upwards of two pounds.

Individual component weights are negligible, a complete system should be considered for weight and balance calculations.

#### **3.0 CONTROL, OPERATION INFORMATION**

The Tanis 200 series battery heat system is permanently installed, thermostatically controlled, operates on the ground using ground/shore power while in standby status. It does not operate in flight.

See TPG0002 for more operational information.

#### **4.0 SERVICING INFORMATION**

N/A.

#### **5.0 MAINTENANCE INSTRUCTIONS**

While the Tanis battery heater system is in regular use, check fluid levels on lead acid batteries a minimum of once a week.

Inspect the Tanis battery heat system at each annual or equivalently scheduled inspection. A seasonal fall inspection is suggested. A minimum of 1 check per 12-month cycle is required. This is a complete visual and operational inspection requiring a single logbook entry. Inspections shall

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be accomplished by an appropriately rated mechanic assigned to this aircraft. Inspections and other maintenance requirements are to be performed under 14 CFR AC 43.13-1B Chapter 11 of the Federal Aviation Regulations unless an alternative FAA approved program is in force.

1. Initial inspection and any repairs are performed with the system disconnected from ground/shore power.
2. Power up operational checks will require the systems thermostat to be below freezing. See section 6.0.
3. Examine the system, inspecting the element, cable leads, and connections for security of attachment, breaks and abrasions.
4. If no anomalies are found and the thermostat is in a sub zero condition, 32°F/0°C, plug in the system and check the surface of the element for warmth. The system will not be operational if the thermostat is at or above 45°F/7°C.
5. Cabling that is loose, shows signs of fatigue, chafing, or flexing, due to airflow, vibration etc., are to be re-secured and/or repair as required conforming to AC 43.13-1B.
6. Battery heat element(s) with small abrasions and/or tears to the surface of the elements, one inch or less, can be repaired using Tanis bonding sealant AC-1230. If any of the element wire is exposed the element should be returned to the manufacturer for repair or replacement.
7. Before performing repairs to the element, disconnect from the system and check continuity. Values can be found in the installation instruction for the system or by contacting Tanis Aircraft.

For more information, refer to manufacturer's installation and maintenance instructions and Tanis Service Bulletins, available on line at [www.tanisaircraft.com](http://www.tanisaircraft.com).

## **6.0 TROUBLESHOOTING**

For wiring diagrams and resistance values see installation instruction TN02800.

Simple test: Plug the system into appropriate ground shore power, and keep the thermostat in a freezing condition after a period of approximately ten minutes the surface of the element should feel warm to the touch.

For a general wiring schematic refer to instructions TN02800. With power source disconnected and the battery heat system thermostat below freezing, the system can be checked with a continuity light or ohmmeter. There should be no continuity between either of the power contacts and the engine ground. Resistance should exist between the hot and neutral contacts.

Individual heating elements can be tested with an ohmmeter. Disconnect the element from the wiring harness and measure resistance across the elements contacts

With the system connected to a power source and the thermostat at freezing, there should be power at the heating element(s). If not, check the circuit protection in the power lead (fuse or circuit breaker). Any time circuit protection is found to be tripped, determine the cause of the fault, implement repairs and retest.

To test the thermostat, cool the skin temperature sensor to below 32° F, using an ice pack, circuit cooler spray or other appropriate means. When the temperature sensor is below freezing, an ohmmeter should read proper resistance across the power contacts. When the thermostat is in a condition above 55°F, the circuit should read open.

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#### **7.0 REMOVAL AND REPLACEMENT INSTRUCTIONS**

Refer to Tanis's installation instructions TN02800.

#### **8.0 DIAGRAMS**

For a general wiring schematic, refer to instruction TN02800 (Figure 2). For Tanis preheat systems see Tanis drawing 2576.

#### **9.0 SPECIAL INSPECTION REQUIREMENTS**

N/A.

#### **10.0 APPLICATION OF PROTECTIVE TREATMENTS**

N/A.

#### **11.0 STRUCTURAL DATA**

N/A.

#### **12.0 LIST OF SPECIAL TOOLS**

N/A.

#### **13.0 FOR COMMUTER CATEGORY AIRCRAFT**

N/A.

#### **14.0 RECOMMENDED OVERHAUL INTERVALS**

No additional overhaul time limitations.

#### **15.0 AIRWORTHINESS LIMITATIONS**

No additional airworthiness limitations.

#### **16.0 REVISIONS**

A letter will be submitted to the FAA with a copy of the ICA. The representative accepts the change by sending a letter back including the following statement: "The attached revised/new Instructions for Continued Airworthiness (date\_\_\_\_\_) for the aircraft \_\_\_\_\_ or component major alteration have been accepted by the FAA, superseding the Instructions for Continued Airworthiness (date\_\_\_\_\_)."

No additional airworthiness limitations.

#### **REVISION HISTORY:**

"A" Initial Release \_\_\_\_\_

10-20-2010 Dirk Ellis

\*\*\*\*\* NOTHING FOLLOWS \*\*\*\*\*