

### **Purpose of the 709SK Ground Fault Circuit Interrupter.**

709SK is used to protect the SAFE-HEET and engine from any ground fault (insulation failure) situation. The Ground Fault Circuit Interrupt will open the circuit if more than 5mA is detected not returning through the GFCI. This prevents lethal electrical shocks to the operator and electrical arcing between the engine and the heat pad. Insulation failure of the heat pad could be caused by lightning, electrical surge or mechanical damage. Arcing between the heat pad and the engine pan could cause oil leakage and subsequent engine failure.

### **709SK Installation and Use Instructions:**

#### **Installation Instructions:**

1. Attach the Part Number 870 Cord Placard to the SAFE-HEET pre-heater cord, near the plug using the supplied cable ties.
2. Plug the Part Number GFCI into the power outlet used to power the SAFE-HEET heater.

#### **Use Instructions:**

1. P/N 870 GFCI must be plugged directly into a grounded 110V power outlet before any other equipment is installed. The GFCI will not function properly if a 707 Variable Temperature Controller is used between the grounded wall outlet and the GFCI.
2. Connect the SAFE-HEET engine heater to the GFCI by either using an extension cord with grounding capabilities or with the SAFE-HEET Model 707 Variable Temperature Controller.
3. Press and release the reset button on the GFCI.
4. Verify that the red band at the base of the reset button is not visible. (NOTE: This denotes the normal operating mode and output power is available). If the red band is visible, the GFCI has shut-off the power indicating a failure. Proceed to the Trouble Shooting Instructions.
5. Press the test button. Verify that a click is heard and that the red band is visible.
6. Press and release the reset button.
7. Verify that the red band is not visible.

**NOTE:** SAFE-HEET Service Kit 709SK detects and prevents continued arcing between a damaged SAFE-HEET and the engine oil pan. However, the service kit does not prevent initial damage due to lightning, power surges or mechanical damage.

### **Trouble Shooting Instructions**

1. Verify that there is power available at the outlet.
2. With the GFCI plugged into an outlet with nothing plugged into the GFCI, press and release the reset button on the GFCI.

**It the red band is visible.** Then the GFCI is damaged. Obtain a new SAFE-HEET 709SK. (**NOTE: this does not exclude the possibility that the SAFE-HEET and/or Temperature Controller is also damaged**). After installing a new 709SK, complete the Use Instructions starting at Step 1.

**If the red band is not visible.** Then the GFCI is good, proceed to step 3.

3. Start replacing components between the GFCI and SAFE-HEET. But sure to use known good components and replace only one component at a time. Once a component is replaced, test the GFCI for proper operation. If all the components between the GFCI and SAFE-HEET have been replaced with known good components and the system still faults the GFCI, the SAFE-HEET must be damaged. Comply with McFarlane Service Bulletin SB-3 before the next flight.

**NOTE:** *If a known good GFCI won't reset when plugged into the heat pad, then the heat pad is damaged. Comply with McFarlane Service Bulletin SB-3 before the next flight. The Service Bulletin can be found at [www.mcfarlane-aviation.com](http://www.mcfarlane-aviation.com) in the information and reference section.*