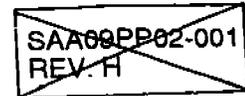


EO5-SAA09PP02-001  
Sheet 2 of 10



CIL199701  
Attachment 2  
Sheet 2 of 6

B/L: 9 and 32  
SYS: LOX MPS

**Critical Item:** Heater (1 Per Pad)

APR 30 1997

**Find Number:** A106447

**Criticality Category:** 2

**SAA No:** 09PP02-001

**System/Area:** LOX MPS/LOA

**NASA**

**PMN/** S72-0694-17

**Part No:** 80K57363

**Name:** GN2 Anti-Ice Panel

**Mfg/** Chromalox/

**Drawing/** 79K06064/2

**Part No:** 053-146879-008

**Sheet No:** 79K40027/2

**Function:** Provides heated GN2 for the ET nose cone anti-icing system.

**Critical Failure Mode:** No output (elements open/shorted). FM No. 09PP02-001.008

**Failure Cause:** Structural.

**Failure Effect:**

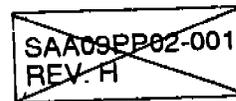
The inability to provide adequate heated GN2 to the ET nose cone. This could result in a violation of the lower calibration limit of 5°F for the ET LO2 ullage pressure transducers, with a resulting loss of visibility of ET pressure. Overpressure or underpressure could result in damage to the ET. Failure is detectable by temperature transducers A106532 and A106533.

### **Acceptance Rationale**

#### **Design:**

- This component is operated within all design specifications. Heater rated at 480V 3 phase 25 KW. Heater has 6 heat elements.
- Rated for 3500 psig working pressure.
- Actual working pressure 3000 ± 300 psig.
- Rated for 4500 psig proof pressure.
- Heat transfer capability is 325°F at 16 lbs/min of GN2 flow.

EO5-SAA09PP02-001  
10 of 10



CIL 199701  
Attachment 2  
Sheet 3 of 6

B/L: 9 and 32  
SYS: LOX MPS

APR 30 1997

#### Heater (Continued)

- Thermal covers are moisture-resistant.
- Unit is SERMETAL "W" coated except the elements, terminals, and jacket.

#### Test:

- Acceptance testing was in accordance with the requirements of NASA Specification 80K57363.

#### Inspection:

- OMRSD file VI requires the following:
  - Functional operation of the heater at each flow and at component replacement.
- Operational procedure perform a functional electrical check of each heater element.
- Manufacturing/assembly (source) inspection is in accordance with the requirements of NASA Component Specification 80K57363.

#### Failure History:

- The GIDEP failure data interchange system was researched, and no failure data on this component was found.
- The PRACA data base was queried and no failure history on this component was found.

#### Operational Use:

- This component is a six (6) element heater. functional operation of the heater is performed prior to each LOX flow; also, at this time, each heater element is electrically checked.
- Corrective Action: Initiate scrub procedure.
- Timeframe: T-minus 6 hours to completion of operation.