

SEP 11 1995

B/L: 072.09

SYS: SSME GSE

Critical Item: Pressure Regulator (Manual) (1 Item Total)**Find Number:** A524637**Criticality Category:** 1S**SAA No:** 29SL01-026**System/Area:** SSME Purge GN2 and GHe
System/SLS-1**NASA****Part No:** 79K80002-3**PMN/****Name:**

S70-1247-01

SSME DFRF GN2 DRYING
PANEL**Mfg/** Grove Valve and Regulator**Part No:** Co./Model 15L Figure
10927CL2A**Drawing/****Sheet No:**

80K57234

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Function: Reduce 1500-2700 psig panel inlet pressure to 45 ± 5 psig for hazard purge of panel electrical component enclosures (heater and heater controller) and cooling of the heater controller.**Critical Failure Mode/Failure Mode No:** Regulate low/29SL01-026.001**Failure Cause:** Structural Failure.**Failure Effect:** Loss of or inadequate hazard purge of panel electrical component enclosures. Possible fire and/or explosion if hazardous gases are present in the vicinity of the Orbiter during postlanding servicing. Potential loss of life and/or vehicle. This failure is detectable by low pressure reading on gage A524640 and/or loss of flow at electrical component enclosure purge bleed ports. Time to effect: 30 seconds.

ACCEPTANCE RATIONALE

Design:

- This component was procured in accordance with NASA Dwg. 79K80002-3.
- This component is used within the design specifications.
- Component specifications:

	Rated	Actual
• Pressure (psig)	6000/0-150	1500-2700/45 \pm 5
Flow (scfm)	185	34.88
Temperature (°F)	-65° to +165°F	Ambient at SLS-1

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- **Material:**

- Body and trim - 300 Series Stainless Steel
 - Seats - 300 Series Stainless Steel
 - Diaphragm - Mylar
 - Valves - Nylon

- **Burst pressure:** Four times rated pressure.
- **Discharge characteristic:** Rise in outlet pressure with decreasing inlet pressure shall not exceed .3 psig per 100 psig inlet pressure decrease.
- **No creep in outlet pressure allowed after lockup.**

Test:

- **Manufacturer's Certification Test per 79K80002-3**
 - Proof
 - Operational
 - Leak

Inspection:

- **OMRSD File VI requires:** verification that the hazard purge is applied to heater A524615 and Controller Panel 4112 by verifying audible purge is present at fitting A524653 and silencer A524645 prior to application of GN2 Heater Electrical Power.

Failure History:

- **Current data on test failures, unexplained anomalies, and other failures experienced during ground processing activities can be found in the PRACA database. The PRACA database was researched and no failure data was found on this component in the critical failure mode.**
- **The GIDEP failure data interchange system was researched and no failure data on this component was found.**

Operational Use:

- **Correcting Action:** OMI V1038 Appendix Z (Emergency Instructions) turns S70-1247-01 GN2 heater AC power off in event of an emergency.
- **Timeframe:** Immediately, on detecting failure of the hazard purge of the electrical enclosures.