

E01-SAA09FT06-030
SHEET 11 OF 16SAA09FT06-030
OCT 10 1990S040244
ATTACHMENT
Page 26 of 61**CRITICAL ITEM:** Solenoid valve**Find Number:** A124428**System:** Environmental Control Subsystem
for the Payload Canister, Set 2**Failure Category:** 1S**SAA No.:** 09FT06-030**NASA Part No.:** None**PMN/Name:** H70-1326**Mfr's Part No.:** Circle Seal Corp.
SV10532P4P**Drawing/Sheet No.:** 79K15271, Sheet 5**Function:** In normally open mode, the valve supplies GN2 to the pressure relief controller and pressure modulator for adjusting the relief vent. During smother mode the valve closes upon a signal from the I&CS.**Critical Failure Mode:** Fail open (FMN 09FT06-030.005)**Cause:** Internal part failure**Failure Effect:** Loss of smother mode capability. Loss of ability to contain a fire or payload hypergol leak. Possible loss of life or payload.**ACCEPTANCE RATIONALE:****Design:**

- o **Materials:** Body - type 303 stainless steel Seats - nylatron
Trim - type 303 stainless steel Seals - Buna N
Coil housing - aluminum alloy
- o **Specifications:**

	<u>Rated</u>	<u>Actual</u>
Pressure (psig)	3000 (max)	20
Temperature (°F)	-65 to +165	Ambient
- o Solenoid valve is 3-way, 2-position type for use with GN2, balanced poppet design with bubble tight shutoff, and hermetically sealed.
- o Life expectancy: 6000 cycles

Test:

Per File VI OMRSD requirements, the valve is checked at validation test, prior to each critical use, semiannually, and at component replacement as outlined in OMI E3005 and OMI E6401 and the addition of operations and maintenance instructions deviation sheets P004-P013.

Inspection:

Pressure gauge A124427 in ECS control panel can detect solenoid valve failure. This gauge is calibrated annually.

Failure History:

There is no MDAC PRACA failure history in the critical mode. Data on Set 1 from 1981 to present; data on Set 2 from 1984 to present.

Operational Use:

Systems are secured and personnel are evacuated in accordance with OMI E5506 (vertical) and OMI L5050 (horizontal), Appendix Z.