

REV. _____ A _____

DATE March 25, 1988
(Revised May 31, 1988)

FMEA #: 60-S70-0790-03-FL7, 8, 9-01
-FL23, 24, 25, 26-01

END ITEM EFFECTIVITY:
X X X
OV102 OV103 OV104

MODEL NO: S70-0790-03

SUBSYSTEM: ECLSS

PART NUMBER:	PART NAME:	REFERENCE DESIGNATION:
ME286-0069	In-Line Low Pressure Filter Assembly	FL7, FL8, FL9 FL23, FL24, FL25, FL26

CRITICALITY NUMBER: 2

FUNCTION: To filter Freon 21 prior to vehicle input.

CRITICAL FAILURE MODE: Pass Contaminants

CAUSE: Structural degradation.

FAILURE EFFECT ON:

- (A) END ITEM: Loss of filtration would preclude the servicing of the pump/freon lines.
- (B) INTERFACING SUBSYSTEM(S): GSE freon 21 pump package servicing components would be rendered inoperative.
- (C) ORBITER: Possible discharge of debris into flight hardware or downstream GSE.
- (D) PERSONNEL: No effect on personnel.

HAZARDS: Contamination of flight hardware.

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ACCEPTANCE RATIONALE

DESIGN:

Review of assembly documents and Specification Material Document (SMD) ME286-0069 has provided design data points to be complied with for acceptance rationale.

Design data points:

A delta pressure of 400 psig with no filtration breakdown. Static proof pressure test of 1.5 times normal, burst pressure in excess of 4 times operational pressures encountered. No external leakage at 400 psig helium. Maximum of 25 micron filtration, and not to exceed 12 psig pressure differential across filtration element with any loss of filtration.

TEST:

PRE-OPERATIONAL: Gas sampling of assemblies for debris (level 500 clean) prior to freon 21 coolant loop servicing.

INSPECTION:

PRE-INSTALLATION: Per ME268-0069: Acceptance test:

The filter shall be examined to determine conformance to SCD in material, dimensions, construction and identification marking. The filter element weave pattern shall be in accordance with the manufacturer's drawing.

AGE LIFE: Per OMI S6013 (V6F22), the assembly is inspected annually for compliance to the material and assembly specifications.

OPERATION: No operations apply to risk reduction.

DETECTION:

Pre-use and post servicing inspection of filters for possible loss of integrity or signs of wear.

CORRECTION: Isolation and replacement.

FAILURE HISTORY:

Review of PRACA Data Base has provided failure history on item ME286-0069, in the ECLSS Operations.

EICN: S70-0790-03-023-0005

Problem Description:

The following filters failed bubble point

- (A) G070-582445-001 S/N 0107 ME286-0069-0008,
- (B) G070-582-445-002 S/N 0121 ME286-0069-0008,
- (C) G070-582436-003 S/N 0116 ME286-0069- 0009,
- (D) G070-582436-004 S/N 0155 ME286-0069-0009,
- (E) G070-582447-002 S/N 068 ME286-0069-0011.

All exceeded bubble point max of 10 microns.