B/L: 72.06
72.63
SYS: Fuel Cell
Deservicing

MAY 19 1992

Critical Item: Check Valve (1 Item Total)

Find Number: A106656

Criticality Category: 1S

SAA No: 29PP129-001

System/Area: Fuel Cell Detank & Safing SLS, SLF and CLS

NASA Part No: 220T-8B8

PNN/ Name: S70-1225-03 Pressure Gas Valve Pnl

Mfg/ Part No: James, Pond and Clark 220T-8B8

Drawing/ Sheet No: 79K15491 - Pg 1-2 79K15493 - Pg 1-2

Function: Prevent reverse flow from the vehicle tanks into the GHe supply system.

Critical Failure Mode/Failure Mode No: Fail Closed/29PP129-001.006

Failure Causes: Contamination/Corrosion

Failure Effect: Possible loss of the LH2 vent stack purge. Loss of purge when flowing H2 could result in an explosive mixture in the vent line, causing a fire or explosion with loss of life and/or vehicle. There is no method to detect loss.

Time to Effect: Immediate

Acceptance Rationale

Design:	Rated:	Actual:
Operating Pressure	- 3000 PSI	275 PSI
Proof Pressure	- 4500 PSI	-
Burst Pressure	- 12000 PSI	-
Operating Temp	- 40°F to +250°F	Ambient
Body Material	- 300 Series SST	-
Spring Material	- 302 SST	-
Seal Material	- Buna N and Teflon	-

All material in this Check Valve is compatible for use with dry air, helium, hydrogen and nitrogen.

U.S. Gov't

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A106656 (Continued)

This Check Valve is designed to allow flow to occur with a maximum cracking pressure of 8 PSI and to remain bubble tight in the reverse flow direction over the entire range of inlet and outlet pressures.

Test: The manufacturer performs the following tests:

- Proof pressure test
- 8 PSI max. cracking pressure test
- Leakage test

Inspection:

- OMRS 79K16224, requires this Check Valve to be leak checked at component replacement.
- File VI requires the vent stack purge flow to be verified audibly, prior to starting H2 drain operations.

Failure History:

- The PRACA database was queried and no failures in the critical failure mode were found.
- The GIDEP failure data interchange system has been researched and no failures of this component were found.

Operational Use:

- Corrective Action:

  There is no action which can be taken to mitigate the failure effect.

- Timeframe:

  Since no corrective action is available, timeframe does not apply.