U.S. Gov't





Critical Item: Check Valve (1 Item Total)

Find Number: A106627

Criticality Category: 1S

SAA No: 29PP129-001

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

NASA Part No: 220T-8BB

PMN/ S70-1225-02
Name: LH2 Horiz. Drain Pnl

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

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

Function: Prevent reverse flow from the vent line into the GHe supply system.

Critical Failure Mode/Failure Mode No: Fail Closed/29PP129-001.007

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.

A106627 (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.



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21 of 22