

SAA09GS05-003  
REV. B  
B/L: 72.60  
SYS: ECS/SLF/SLS

JUL 1 1996

Critical Item: Check Valve

Find Number: A107996

Criticality Category: 1S

SAA No: 09GS05-003

System/Area: ECS/SLF/SLS

NASA

PMN/ 570-0534/

Part No: N/A

Name: Portable Purge Unit

Mfg/ Ellis Watts

Drawing/

Part No: CK-4A-8

Sheet No: 79K06061/1

Function: Prevents backflow of gaseous R-12.

Critical Failure Mode: Fails closed. FM No. 09GS05-003.011

Failure Cause: Contamination.

Failure Effect: High head pressure opens switch A107944, causing compressor shutdown. Interlock causes blower shutdown, resulting in loss of purge to Orbiter compartments. Loss of ability to monitor purge air for leaks. Possible loss of life or vehicle during a hazardous condition such as leakage of hazardous fluids or gases.

#### Acceptance Rationale

##### Design:

- o For use with pressurized R-12, operated at 160 psig max.
- o Commercially available component, used throughout industry.
- o Nominal operating pressure: 160±40 psig; design pressure: 350 psig
- o Unit operating media is R-12 within a closed system. Also, a dryer/filter is provided to prevent moisture or contaminants from entering the check valve.

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Check Valve A107996 (Continued)

Test:

- o Test to verify proper operation of the check valve is made during purge unit test run after valve replacement.
- o The OMRSD File VI requires that operation of the purge unit is verified prior to each use.

Inspection:

- o There is no inspection available that would not require the refrigerant system to be open to the atmosphere.

Failure History:

- o No PRACA failure history identified.
- o No GIDEP failure history identified.

Operational Use:

- o There is nothing that can be done immediately to mitigate the effect of the failure.
- o The purge unit is monitored for any indication of malfunction. If any anomalies are observed, appropriate steps are taken to repair or replace the item.