

AUG 11 1968

Critical Item: Check Valve

- Find Number: A108007 (*refrigerant flow line*)

Criticality Category: IS

SAA No: 09GS05-003

System/Area: ECS/SLF/SLS

NASA

PMN/ 570-0534/

Part No: N/A

Name: Portable Purge Unit

Mfg/ Dunham Bush/

Drawing/

Part No: VAL 140

Sheet No: 79K06061/1

Function: Prevents backflow of gaseous refrigerant from compressor.

Critical Failure Mode: Fails closed. FM No. 09GS05-003.002

Failure Cause: Contamination.

Failure Effect: Loss of refrigerant flow causes shutdown of compressor and interlock causes loss of blower, 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 Spring-loaded swing type check valve mounted in the horizontal run.
- o Commercially available component 4" outside diameter designed for use with R-12 refrigerant.
- o Operating pressure: 25 ± 3 psig designed for use at 30 psig max reverse leak.
- o Unit operating media is R-12 and a closed system, also, a dryer/filter is provided to prevent moisture from entering the check valve.

Check Valve A108007 (Continued)

Test:

- o The OMRSD, File VI will require that operation of the purge unit is verified prior to each use.
- o The purge unit is powered up and verified operational approximately three hours prior to Orbiter landing per OMI S0028 and S0026.

Inspection:

- o There is no inspection available for the check valve 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.