

AUG 11 1968

Critical Item: Check Valve

Find Number: A108021

Criticality Category: 15

SAA No: 09GS05-003

System/Area: ECS/SLF/SLS

NASA

PMN/ S70-0534/

Part No: N/A

Name: Portable Purge Unit

Mfg/ Dunbar Bush/

Drawing/

Part No: IPT

Sheet No: 79K06061/1

Function: Maintains seal off reservoir in compressor.

Critical Failure Mode: Fails closed, FM No. 09GS05-003.019

Failure Cause: ^{due to} Contamination.

Failure Effect: Check Valve failing closed prevents cooled oil from flowing to seal. Oil temperature rises until high oil temperature switch (A125861) opens causing compressor shutdown. Interlocks cause blower shutdown. Loss of air flow results 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 Nominal operating pressure 150±10 psig - designed for 180 psig.
- o Spring-loaded swing type check valve mounted between compressor and seal oil cooler.
- o Commercially available component; used throughout industry.
- o Unit operating media is Mobil SHC 626 oil within a closed system.

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Check Valve A10B021 (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 50028 and 50026.

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 part malfunction. If any anomalies are observed, appropriate steps are taken to repair or replace the item.

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