

SAA09SY03-001 JAN 24 1992
REV. D
B/L: 7
SYS: PAD A WATER,
MLP-3

Critical Item: Adjustable Flow Control Valve with a Bypass
Check Valve, Pneumatic (1 Item)

Find Number: A88278/A88270 (MLP-3)

Criticality Category: 1S

SAA No: 09SY03-001, Rev. D

System/Area: Pad A Water/Cryo Skid
MLP-3 Side 1 Area

NASA
Part No: None

PMN/
Name: K60-0046/System, Firex MLP-3

Mfg/
Part No: Parker-Hannifin Corp./
PCK-600-0.6, 3/8 in.

Drawing/
Sheet No: 79K06011/2

Function: Flow control valve reduces venting air flow rate from open side of the actuator on associated water control valve. (Allow adjustment of valve close rate.) Bypass check valve allows full flow to open side of actuator in the opening mode.

Critical Failure Mode/Failure Mode No: Fail closed (bypass check)/
09SY03-001.011

Failure Causes: Caused by contamination, corrosion or mechanical failure of internal piece part.

Failure Effect: Failure mode would reduce assigned water valve opening rate well below design open rate. Loss of timely flow of Firex water at MLP-3 Cryo Skid (V-18). Possible loss of life or vehicle during a hazardous condition.
Time to effect: Immediate.

Acceptance Rationale

Design:

- o Design specification

	<u>Rated</u>	<u>Actual</u>
Operating pressure	3,000 psig	125 psig
- o Stainless steel floating ball bypass check
- o Upstream filtration protects against flow control/bypass check valve contamination.

Adjustable Flow Control Valve with a Bypass Check Valve, Pneumatic (1)
A88278/A88270 (Continued)

Test:

- o System pre-mission validation (OMI M2075) requires cycling of water valves to verify proper operation. Valve timing is verified by observation of full water flow at nozzle. Expected time is stated and verified.

Inspection:

- o OMRSD, File VI will require verification of the operational function of the water valve in all modes of operation semiannually and at replacement. (Note: Water valve operational function verification ensures valve opens within design opening rate which also verifies check valve has not failed.)

Failure History:

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

Operational Use:

- o An operational failure can be detected by monitoring associated water valve position switch function designators.
- o Correcting Action:
There is no action which can be taken to mitigate the failure effect.
- o Timeframe:
Since no correcting action is available, timeframe does not apply.