

SAA09SY03B-001  
REV. C

B/L: 7.00  
SYS: PAD B WATER,  
MLP-1, -2

JUL 31 1992

**Critical Item:** Adjustable Flow Control  
Valve with a Bypass Check Valve, Pneumatic  
(2 Items, 1 per MLP)

**Find Number:** A88278/A88270

**Criticality Category:** 1S

**SAA No:** 09SY03B-001, Rev. C

**System/Area:** Pad Water/Pad B, MLP-1,  
MLP-2

**NASA  
Part No:** N/A

**PMN/  
Name:** K60-0046-01/MLP-1 Firex  
System  
K60-0046-02/MLP-2 Firex  
System

**Mfg/  
Part No:** Parker-Hannifin Corp./  
PCK-600-0.6/C600-B10

**Drawing/  
Sheet No:** 79K40019/ 2

**Function:** Flow control valve reduces venting air flow rate from open side of the actuator on water valve V-18 (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)/09SY03B-001.019,  
09SY03B-001.085

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

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

**ACCEPTANCE RATIONALE**

**Design:**

	<u>Rated</u>	<u>Actual</u>
Operating pressure	3,000 psig	125 psig

- Stainless steel floating ball bypass check
- Upstream filtration protects against flow control/bypass check valve from contamination.

SAA09SY03B-001  
REV. C

JUL 31 1992

**Test:**

- System pre-mission validation (OMI M2082) requires cycling of MLP water valves to verify proper operation. Valve timing is verified by observation of full water flow at nozzles. Expected time is stated and verified.
- OMRSD, File VI requires verification of the operational function of the water valve in all modes of operation with each shuttle processing flow and at replacement. (Note: Water valve operational function verification ensures valve opens within design opening rate which also verifies check valve has not failed.)

**Inspection:**

- Preventative Maintenance of the MLPs' Firex Distribution System (OMI M6110) requires inspection and leak check of this pneumatic valve annually.

**Failure History:**

- The PRACA database was researched and no failure data was found on this component in the critical failure mode.
- The GIDEP failure data interchange system was researched and no failure data was found on this component in the critical failure mode.

**Operational Use:**

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