

Critical Item: Hydraulic Actuator (8 Items Total)
Find Number: A125401, A125402, A129580, A129581 (1 ea HB1 and HB2)
Criticality Category: 2

SAA No:	09FY093-007	System/Area:	Orbiter Main Access Platform HB1 and 2
NASA Part No:	None	PMN/ Name:	A70-0658 Orbiter Main Access Platform
Mfg/ Part No:	Parker Hannafin/Rotary Actuator Div. RDS44-10	Drawing/ Sheet No:	79K08118 EQ-9

Function: Raise and lower platforms 17-4, 17-5.

Critical Failure Mode/Failure Mode No: Internal leakage./09FY093-007.005

Failure Cause: Broken vane or worn components

Failure Effect: Platform free falls under its own weight down to the hard stops causing the hinges to fall allowing the platform to fall on the Orbiter. The failure would be visually detected and the time would be immediate.

ACCEPTANCE RATIONALE

Design:

Pressure	
Rated	Actual
1200 psi	1000 - 1200 psi
Torque Each Actuator	
Rated	Actual
@1200 psi 14,400 in-lb	@1000 psi 12,000 in-lb
Degree of Rotation	
Designed	Actual
100°	90°

*Attachment
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Test:

- Actuator was tested by the manufacturer at twice the working pressure at the rated load with no seal failure.
- Per OMI V6C46 tests are performed every 5 years to calibrate the regulator valves that supply pressure to the actuator.
- OMRSD File VI requires verification of annual platform descent rate check.

Inspection:

- Per OMI V6C46 visual inspections are performed annually on each hydraulic platform to check for leaking hydraulic fluid.

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:

- **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.

*Attachment
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