

SAA01FS030-013

MAY 27 1994

E/L: 245.00

SYS: APS

ROTATING

MECHANISM

Critical Item: Spool Valve (2 Items Total)

Find Number: None

Criticality Category: 2

SAA No: 01FS030-013

System/Area: APS Rotating Mechanism/
HMF Bldg. M7-961

NASA
Part No: None

PMN/
Name: H70-1262/Mechanism,
APS Rotating, HMF

Mfg/
Part No: Norgren/
P72KA00

Drawing/
Sheet No: 79K07781/M-1

Function: Provides directional control of the air motor.

Critical Failure Mode/Failure Mode No: Fails shifted in the clockwise or counterclockwise drive position. /FM No. 01FS030-013.003

Failure Cause:

- Mechanical failure.
- Contamination.

Failure Effect: The APS Pod/Cradle assembly will continue to rotate until a technician can close the compressed air supply/shutoff valve. The GSE electrical cables will wrap and stretch around the APS Pod/Cradle assembly and may cause damage to the TPS and/or the flight half electrical connectors. Detection method is visual and time to effect is 1-2 minutes.

ACCEPTANCE RATIONALE

Design:

- The Spool Valve is a 3-position valve, hand lever controlled to operate with a closed center mode in addition to the two supply/vent modes.
- The Spool Valve is rated at 150 PSIG and the Compressed Air System at the HMF provides 125 PSIG.
- A supply filter with a 50 micron rating is located in the compressed air supply to the Spool Valve.

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Test:

- Operation is verified during the operational check of the Speed Reducer performed annually per OMI V6C49. The Spool Valve is operated to control Speed Reducer rotation during the Speed Reducer operational check.

Inspection:

- OMRSD File VI requires annual verification, per OMI V6C49, of the following preventive maintenance inspections (visual):
 - Damage.
 - Corrosion.

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:**

Safety concerns preclude the presence of personnel in the immediate rotation area during rotation of the APS Pod/Cradle to working positions.

A technician would be required to traverse the test cell at floor level, enter the rotation area at the drive system support structure, climb the the vertical ladder on the side of the support structure, reach the compressed air supply/shutoff valve behind and to the side of the speed reducer, and close it.

- **Time Frame:**
3-5 minutes.