

SAA01FS030-013

MAY 27 1994

BL: 245.00

SYS: APS

ROTATING
MECHANISM

Critical Item: Remote Control Mechanism (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: 79K07781

PMN/

Name:

H70-1262/Mechanism,
APS Rotating, HMF

Mfg/

Part No: None

Drawing/

Sheet No:

79K07781/M-9

Function: Provides remote control of the directional Spool Valve to drive the horizontal rotation air motor.

Critical Failure Mode/Failure Mode No: Seizes in the drive position. /FM No. 01FS030-013.004

Failure Cause:

- Mechanical failure.
- Corrosion.

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 damage the TPS and/or the flight half electrical connectors. Detection method is visual and time to effect is 1-2 minutes.

ACCEPTANCE RATIONALE

Design:

- A flexible steel cable, sliding freely and protected in a flexible steel sheath secured to the test stand structure, connects the spool valve control handle to a control handle mounted on the 12 foot level.
- The minimum cable bend radius is 6 inches.
- The force required to move the remote control handle is minimal.
- Structural components are fabricated from ASTM A-36 steel and the fasteners used conform to MS standards.

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Test:

- None is performed.

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 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.