

SAA09FY093-023  
Rev. A

**Critical Item:** Universal Joint  
**Total Quantity:** 2  
**Find Number:** None  
**Criticality Category:** 2

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 5050234HP  
 Attachment  
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SAA No: 09FY093-023

**System/Area:** Orbiter Antenna Hubs and Cou-  
 plers Access Platform/OPF 1  
 and 2

**NASA  
 Part No:** None

**PMN/  
 Name:** A70-0886-01  
 Orbiter Antenna Hubs and Cou-  
 plers Access Platform/OPF 1  
 and 2

**Mfg/  
 Part No:** Boston Gear  
 08440

**Drawing/  
 Sheet No:** 79K16117  
 142D

**Function:** Connects the motor gearbox output shaft to coupling.

**Critical Failure Mode/Failure Mode No:** Disengagement/09FY093-023.003

**Failure Cause:** Structural failure, Pin disengagement.

**Failure Effect:** The failure would cause the platform to backdrive resulting in possible loss (damage) to a vehicle system. **Detection Method:** Visual. **Time to Effect:** Seconds.

#### ACCEPTANCE RATIONALE

##### Design:

- Universal Joint is an off-the-shelf item made of 4140 Alloy Steel. It is rated for 1680 in-lbs of torque. The applied load is 634 in-lbs giving an operational safety factor of 2.7 to 1.
- Per the manufacturer, the design safety factor of the component is 5 to 1.

##### Test:

- OMRS File VI requires annual performance of operational test, which includes raising, lowering, extending and retracting the platform per OMI V6E47.

##### Inspection:

- The pins and universal joint are checked for damage or corrosion per OMI V6E47.

##### Failure History:

- Current data on test failures, unexplained anomalies, and other failures experienced during ground processing activities can be found in the PRACA database. The PRACA database was researched and no failure data was found on this component in the critical failure mode.

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Attachment

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- The GIDEP failure data interchange 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.