

SAA09FY093-023  
Rev. A

NOV 14 1997

5050234HP  
Attachment  
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**Critical Item:** Coupling  
**Total Quantity:** 2  
**Find Number:** None  
**Criticality Category:** 2

**SAA No:** 09FY093-023**System/Area:** Orbiter Antenna Hats and Cou-  
plers Access Platform/OPF 1  
and 2**NASA  
Part No:** None**PMN/  
Name:** A70-0886-01  
Orbiter Antenna Hats and Cou-  
plers Access Platform/OPF 1  
and 2**Mfg/  
Part No:** Boston Gear  
34210**Drawing/  
Sheet No:** 79K16117  
142D**Function:** Connects the universal joint output shaft to the Style "A" gearbox input shaft.**Critical Failure Mode/Failure Mode No:** Disengages/09FY093-023.004**Failure Cause:** Structural failure of components.**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:**

- Couplings are off the shelf items that slip over the shafts and are secured in place by keys.
- The key is made of 1018 steel. The applied shear load to the key is 3800 psi. the ultimate shear strength of the key is 34,600 psi, this gives an operational safety factor of 9 to 1 ultimate.
- The coupling is made of 1117 alloy steel. The applied shear load to the coupling is 480 psi. The ultimate shear strength of the coupling is 46,000 psi, this gives an operational safety factor of 96 to 1 ultimate.

**Test:**

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

**Inspection:**

- The keys and coupling are checked for damage or corrosion per OMI V6E47.

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**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.
- 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.