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**Critical Item:** Swing Reducer  
**Total Quantity:** 2  
**Flnd Number:** RA2  
**Criticality Category:** 2

**SAA No:** 09FY02-017

**System/Area:** Cendor 86 Aerial Work Platform/  
KSC

**NASA  
Part No:** None

**PMN/  
Name:** K60-1015/  
Cendor 86 Aerial Work Platform

**Mfg/  
Part No:** Calavar/  
32762

**Drawing/  
Sheet No:** 80618/  
1

**Function:** Rotates the turret. Worm input gear powered by hydraulic motor that rotates an output planet gear which rotates the turret.

**Critical Failure Mode/Failure Mode No:** Gear disengagement/09FY02-017.001

**Failure Cause:** Broken gear teeth, cracked gear case.

**Failure Effect:** Possible for the turret to continue to swing. The platform may impact flight hardware causing loss (damage) to a vehicle system. **Detection Method:** Visual. **Time to Effect:** Seconds.

#### ACCEPTANCE RATIONALE

##### Design:

- The swing reducer is designed in accordance with AGMA, AISI and ASTM standards.
- The worm is steel bar with a BHN of 400-450.
- The output gear (worm gear) is Aluminum Bronze with a BHN of 180-192.
- The output shaft is steel bar with a BHN of 270-300.
- The keys are steel bar with a BHN of 280-290.
- The output pinion gear is steel with a BHN of 315-345.

##### Test:

- Operational check of the turret rotation is performed before use per "Pre-Operations Maintenance Mobile Equipment Checklist" KSC Form 28-528 or "Startup Procedures" as outlined in the Vendor Operator's Manual.
- OMRS File VI requires annual performance of an operational test.

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**Inspection:**

- Inspection of the hydraulic system and controls for leaks and integrity is performed before use per "Pre-Operations Maintenance Mobile Equipment Checklist" KSC Form 28-528 or "Startup Procedures" as outlined in the Vendor's Operator's Manual.

**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 that can be taken to mitigate the failure effect.

- Timeframe:

None.