

SAA09FY12-005
REV. B

MAR 11 1994

B/L: 389.00
SYS: 250-TON
BRIDGE
CRANE, VAB

Critical Item: Cable Reel Assembly (2 Total, 1/Crane)
Find Number: 79K16831-27 (M-16)
Criticality Category: 2

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|---|--|
| SAA No: 09FY12-005 | System/Area: 250-Ton Bridge Crane (#1 & #2)/VAB |
| NASA Part No: NA | PMN/ Name: K60-0533, K60-0534/ 250-Ton Bridge Crane (#1 & #2)/VAB |
| Mfg/ Part No: Industrial Electric/ FC59 | Drawing/ Sheet No: 79K16831/2 |

Function: Provides constant tension on hook swivel motor control cable that provides power from trolley to load block.

Critical Failure Mode/Failure Mode No:

- a. Fails to provide torque/09FY12-005.002
- b. Brake solenoid fails to engage/09FY12-005.003

Failure Cause:

- a. Open/shorted motor winding, chain drive mechanical failure.
- b. Binding mechanism

Failure Effect:

- a. Loss of torque to cable reel. Cable will unwind off cable reel when brakes are released possibly falling onto flight hardware resulting in possible damage to Vehicle System (TPS). Time to effect: seconds.
- b. Cable will unwind off cable reel when hoist stops possibly falling onto flight hardware resulting in possible damage to Vehicle System (TPS). Time to effect: seconds.

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ACCEPTANCE RATIONALE

Design:

- 1 HP torque motor
- 15 ft-lb brake
- This was designed for crane use and selected by the crane manufacturer for this application.

Test:

- OMRSD File VI requires verification of proper performance of hoist operational test annually.
- OMI Q3008, Operating Instructions, requires all crane systems to be operated briefly in all speeds to verify satisfactory operation before lifting operations.

Inspection:

- OMI Q6003 Maintenance Instructions, requires the following:
 - Annual inspection of the cable reel motor, brake and chain drive for wear and deterioration of parts;
 - Annual inspection of idler pulley for secureness of shaft;
 - Annual inspection of chain drive for tendency to bind;
 - Semi-annual inspection of motor windings for signs of insulation deterioration from heating, chafing, or aging, and for dirt or grease build-up;
 - Semi-annual inspection of housing for cracks, missing or loose bolts, and obstructions that may interfere with rotation or ventilation.
- OMI Q3008 Pre-Operation Setup Instructions require inspection of main hoist cable reel assembly.

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:
There is no action which can be taken to mitigate the failure effect.
- Timeframe:
Since no correcting action is available, timeframe does not apply.