

USA Ground Operations CIL Sheet

Critical Item: Hoist Gearbox
NASA Part No: None
Mfg/Part No: Tadano / 997-073-07-188
System: 130 Ton Tadano Mobile Crane

Criticality Category: 1
Total Quantity: 2

| Find No. | Qty | Area | PMN | Baseline | Drawing / Sheet |
|----------|-----|------|----------|----------|-----------------|
| 1 | 2 | KSC | H72-1500 | 330.00 | 6020-01 / 1 |

Function:

Transfer torque from the hydraulic motor to rotate the cable drum. There are two hoist, one main and one auxiliary.

| Failure Mode No. Failure Mode | Failure Cause Failure Effect | Detection Method Time to Effect | Crit Cat |
|----------------------------------|--|------------------------------------|-------------|
| 00004.003 Gear disengagement | Structural failure of the gears. Torque for stopping drum rotation will be lost. Load will continue to drop until an object stops it. Possible loss of life or loss (damage) of a vehicle system. | Audible, Visual Immediate | 1 |

ACCEPTANCE RATIONALE

Design:

- Each hoist system is rated at 130 Tons.
- The gears in the motor, pinion and ring gear are designed to DIN 3990 standard. The DIN standard has been verified to be equivalent to AGMA-2001.
- The design is in accordance with NSS/GO 1740.9.

Test:

- Operational check of the winches is performed before use per "Pre-Operational Maintenance Mobile Equipment Checklist" KSC form 28-528 or Startup procedures as outlined in the Vendor's Operators Manual.
- OMRSD File VI requires performance of an annual rated load test.

Inspection:

- None

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 data was found on this component in the critical failure mode.

Operational Use:

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