

# Q-01b

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## ELECTRICIAN TRAINING

### SKILL CHECK GUIDE

Duty Q: Cranes and Hoists

Q-01b: PM/Troubleshoot/Repair Crane (15 Ton)

Issued 01/01/99

## **Rationale**

This Skill Development Guide provides the knowledge a Learner needs to perform a preventive maintenance, troubleshoot, or repair a crane. The Learner must be able to perform a preventive maintenance, troubleshoot, and repair a crane.

## **Skill Check Set-Up**

Identify a crane that requires a preventive maintenance check. Check to ensure the availability of replacement parts.

The Evaluator provides the tools, materials, and resources needed to demonstrate the task.

## What The Learner Will Need

This section contains the safety information, tools, and resources you will need before performing a preventive maintenance, troubleshooting or repairing a crane.

### **SAFETY FIRST**

**DON'T TAKE  
CHANCES**

- Follow all Caterpillar facility safety standards when performing this task.
- The electrical power to the crane must be locked and tagged after the power on checks have been completed during the PM check. An electrical hazard exists inside the electrical cabinet and at the power connection.
- A tripping hazard exists when moving around catwalk. Pay attention while moving around and inspecting the various components and when getting in and out of the cab.
- A heat hazard exist during the summer months when working within 10-20 feet of the ceiling. Be sure to drink plenty of water before spending an extended amount of time in the area.



- flashlight
- Electrician's hand tools
- lock and tag
- replacements parts
- feeler gauge (nickel)



- Crane Preventive Maintenance Checklist



## Skill Check

Given a Crane Preventive Maintenance Checklist, perform preventive maintenance, troubleshoot, and repair a crane.

Needs  
Mastered Practice

### Safe Work Practices

- |       |       |  |
|-------|-------|--|
| _____ | _____ | 1. Follow all Caterpillar facility safety standards when performing this task.   |
| _____ | _____ | 2. The electrical power to the crane must be locked and tagged after the power on checks have been completed during the PM check. An electrical hazard exists inside the electrical cabinet and at the power connection. |
| _____ | _____ | 3. A tripping hazard exists when moving around catwalk. Pay attention while moving around and inspecting the various components and when getting in and out of the cab.  |
| _____ | _____ | 4. A heat hazard exist during the summer months when working within 10-20 feet of the ceiling. Be sure to drink plenty of water before spending an extended amount of time in the area.                                  |

### Task Standards

- |       |       |   |
|-------|-------|---|
| _____ | _____ | 1. The main hoist, trolley, and bridge brakes must show no visible signs of wear.   |
| _____ | _____ | 2. The minimum thickness of the main hoist, trolley, and bridge brakes must not be less than 3/16-inch.                       |
| _____ | _____ | 3. The air gap must be approximately the thickness of a nickel.   |
| _____ | _____ | 4. The oil level in the dashpot overload relay must be within 1/8-inch from the top of the oil basin, just below the threads. |
| _____ | _____ | 5. The up/down limit switches must operate as specified.  |

- \_\_\_\_\_ 6. The collector mechanical components must be in good condition, and the shoes must display no visible signs of wear.
- \_\_\_\_\_ 7. The Main Control Panel connections must be snug; wiring and terminals must show no signs of damage.
- \_\_\_\_\_ 8. All required safe practices must be demonstrated.



## Evaluator's Sign-Off

The Learner has demonstrated safe work practices and competent performance of the task.

Evaluator: \_\_\_\_\_ Date: \_\_\_\_\_

Learner: \_\_\_\_\_ Clock No: \_\_\_\_\_