

# **B-03**

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## **ELECTRICIAN TRAINING**

### **SKILL CHECK GUIDE**

**Duty B: Power Distribution (600V and below)**  
**B-03: Troubleshoot 480V System**

Issued 06/01/98

## Rationale

This Skill Development Guide provides the knowledge a Learner needs to troubleshoot a 480V system. The Learner must be able to diagnose the problem and isolate the component failure efficiently to restore power quickly. The troubleshooter must also be able to diagnose the conditions that caused the problem and recommend corrections to prevent recurrence.

## Skill Check Set-Up

Provide the tools, materials, and resources needed to demonstrate the task. The main requirement is an unused but powered section of the 480V distribution system for the Learner to troubleshoot. You will need to insert a fault, and the Learner may have to shut off power at various points. Be sure the section to be used in this Skill Check is not powering any essential equipment.

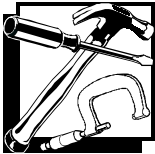
The fault you insert can be as simple as opening a circuit breaker or pulling a good fuse and inserting a blown fuse. Somewhere on the load side of the open circuit, you might also connect a jumper between two phases or between one phase and ground to simulate a line or ground fault. The jumper should be inconspicuous.

## What The Learner Will Need

This section contains the safety information, tools, and resources you will need before troubleshooting a 480V system.



- Follow all Caterpillar facility safety standards when performing this task.
- Lock out and tag the power disconnect supplying a section of distribution equipment before testing it for ground and line faults.
- Appropriate electrician's gloves are required when working on live circuits of 50V or more.
- A ladder or manlift and harness is necessary to work on overhead distribution equipment.



- Electrician's pouch, with wiggy and DVM



- prints of power distribution equipment
- persons who may have been present and/or involved when the system problem occurred
- service records on tripped circuit breakers



## Skill Check

Given a problem in a 480V power distribution system, troubleshoot the system to identify the component at fault and the conditions that caused the problem.

Needs  
Mastered Practice

### Safe Work Practices

- |       |       |  |
|-------|-------|--|
| _____ | _____ | 1. Follow all Caterpillar facility safety standards when performing this task.   |
| _____ | _____ | 2. Lock out and tag the power disconnect supplying a section of distribution equipment before testing it for ground and line faults. |
| _____ | _____ | 3. Appropriate electrician's gloves are required when working on live circuits of 50V or more.                                       |
| _____ | _____ | 4. A ladder or manlift and harness is necessary to work on overhead distribution equipment.  |

### Task Standards

- |       |       |   |
|-------|-------|---|
| _____ | _____ | 1. Power is restored to all circuits quickly. |
| _____ | _____ | 2. All safety requirements are demonstrated.  |



## Evaluator's Sign-Off

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

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

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

