

R-04

ELECTRICIAN TRAINING

TRAINER'S GUIDE

Duty R: Magnetic Controls (120V and below)

R-04: Troubleshoot Machine Grounds

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Instructions To The Trainer

1. The Learner will contact you when ready to practice troubleshooting machine grounds.
2. Be prepared to demonstrate the steps for this task.
3. Ask the Learner to contact the Evaluator when ready for the Skill Check.



Skill Objective

Given a machine that an operator indicates has a blown fuse(s) or a tripped circuit breaker, a grounded switch or other peripheral, or water is in the cabinet or peripheral, troubleshoot the machine grounds.

Task Standards

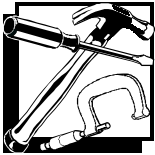
1. The machine ground is identified.
2. The machine ground is cleared.
3. When tested, the machine operates normally according to the machine operator.

What The Learner Will Need

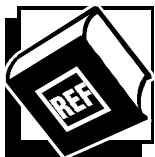
This section contains the safety information, tools, and resources you will need before troubleshooting machine grounds.



- You will be working with potentially hazardous electricity. Caution must be exercised. Machines or parts of machines may still be moving.
- Knowledge of the machine you are working on is pertinent to your safety and the safety of those in the area.
- Follow all Caterpillar safety standards.



- digital volt-ohmmeter (DVM)
- megger
- standard electrical handtools



- ZMS for repair after locating problem
- blueprint of machine



Practice Set-Up

The Learner may perform the following practice to help prepare for the Skill Check. Set up the practice for the Learner. Assist the Learner during the practice, if necessary; answer any questions concerning the task; and be prepared to demonstrate the task to the Learner. Make sure the Learner follows safe work practices while practicing the task.

Practice 1

Ask the Learner to practice reading electrical prints and identifying the inputs and outputs for the machines in the area.

Practice Objective 1

The Learner must identify where a given fuse or circuit breaker is identified on a machine print and locate it in the plant. Ask the Learner to explain Safe work practices while performing this activity.

Practice 2

Practice segregating a grounded wire from a cluster of wires.

Practice Objective 2

Using a DVM, the Learner should be able to segregate a grounded wire from a cluster of wires. Ask the Learner to demonstrate the safe work practices while performing this task.

Next Step

Allow the Learner to continue practicing and developing skills needed to demonstrate the task. The Learner should ask the Evaluator to schedule a Skill Check whenever he or she is ready to demonstrate the task unaided and meet all the task standards and safe work practices.