

K-07b

ELECTRICIAN TRAINING

SKILL CHECK GUIDE

Duty K: PLC (Modicon)
K-07b: Replace I/O Module

Issued 01/01/98

Rationale

This Skill Development Guide provides the knowledge needed to replace an I/O module. At Caterpillar, when a part on a machine fails to operate, the corresponding input or output module may be bad. After troubleshooting to verify that the module is bad, the Learner must replace the module. The Learner may also replace a module after a machine installation or modification.

The Learner must exercise caution when replacing the module. Failure to lock out and tag out could result in electrical hazard, machine damage, or personnel injury due to sudden machine movement. Failure to follow the steps to replace the module correctly could result in further downtime or damage to the machine.

Skill Check Set-Up

Select an 800 or 200 series input or output module to replace for the Skill Check. Contact the Operator where the module is located to schedule a convenient time for the Skill Check. As a part of the Skill Check, have the Learner talk you through the steps for replacing the module with a new one or repaired one from the crib. If you have a processor that needs to be replaced, then have the Learner carry out all steps of this task (e.g., removing the original module, demonstrating how to set the DIP switches on 984 and 884 processors, and reinstalling the module). Ask the Learner to explain all safety measures. Have the Learner verify that the module communicates with the PLC and that the machine is running according to the original specifications. You must make available 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 replacing an I/O module.



- Follow all Caterpillar Facility Safety Standards when performing this task in the plant.
- Use caution when working around the PLC; high voltage is present on the inside of the PLC cabinet door and near the I/O chassis.
- Wear safety glasses and hearing protection in assembly and production areas.



- P190 programmer (Typically used with the 184, 384, 484, 584, 884, and 984 processors.)
- P230 programmer (Used with the 984 processor and the 184, 384, 484, 584, and 884 processors in the P190 emulator mode.)
- PLC communication cable
- Wiggy voltage tester



- Basic Help Keys, which are available on programmer software
- Modsoft Programmer User's Manual (GM-MSFT-001 Rev. F)
- Lockout/Tagout Procedures



Skill Check

When an I/O module is faulty or when a new machine installation has occurred, replace the I/O module.

Needs
Mastered Practice

Safe Work Practices

- | | | |
|-------|-------|---|
| _____ | _____ | 1. Follow all Caterpillar Facility Safety Standards when performing this task in the plant. |
| _____ | _____ | 2. Use caution when working around the PLC; high voltage is present on the inside of the PLC cabinet door and near the I/O chassis. |
| _____ | _____ | 3. Wear safety glasses and hearing protection in assembly and production areas. |

Task Standards

- | | | |
|-------|-------|--|
| _____ | _____ | 1. The replaced module is identical to the original module. |
| _____ | _____ | 2. The replaced module communicates with the processor, allowing the machine program to run according to specifications. |
| _____ | _____ | 3. The Learner must cycle the machine to verify that the module is functioning within specifications. |



Evaluator's Sign-Off

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

Evaluator: _____ Date: _____

Learner: _____ Clock No: _____

