

# K-10a

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## ELECTRICIAN TRAINING

### SKILL CHECK GUIDE

Duty K: PLC (Allen-Bradley)

K-10a: Replace Processor

Issued 01/01/98

## **Rationale**

This Skill Development Guide provides the knowledge a Learner needs to replace a processor. Knowing how to select, configure, and safely install the replacement processor helps to ensure that the PLC program will operate properly when the machine is cycled. Understanding the hazards associated with ESD is also essential to the task. Processor damage could occur if the Learner does not observe ESD precautions.

## **Skill Check Set-Up**

Select a PLC location for the Skill Check. Check the crib to make sure that there is a replacement unit available for the PLC designated for the Skill Check. Contact the Operator where the PLC is located to schedule a convenient time for the Skill Check.

Check the configuration of the PLC that the Learner will replace. Set the switches on the replacement unit so the settings are not identical to the switch settings on the original unit. Ask the Learner to set the switches as a part of the Skill Check. Also, inform the Electrical Technician responsible for the PLC that the Learner will ask for a copy of the current program for the reloading portion of the task.

After the Learner has installed the replacement unit and reloaded the program, ask him or her to cycle the machine to ensure that the processor is operating properly.

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 a processor.

### SAFETY FIRST

DON'T TAKE  
CHANCES

- 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 input/output (I/O) chassis.
- Guard against ESD damage. Remain in contact with an approved ground point while handling the module. Do not touch the backplane connector or connector pins.
- The power to the chassis must be off before removing the processor. Check to ensure that the status indicators are not illuminated.
- Be careful when working near moving or rotating machinery.
- Wear safety glasses and hearing protection in assembly and production areas.



- PC equipped with PLC software
- PLC replacement unit
- Interconnect cable
- Processor Keyswitch Key (if the processor is not in the REM position)
- Password (if necessary)
- Basic electrical hand tools
- Copy of current PLC program
- Floppy disk (to back up the program if a current copy is not available)
- Electrostatic grounding device



- User's Manual for replacement processor



## Skill Check

If a processor is faulty or if a new installation is required, replace the processor.

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 input/output (I/O) chassis.              |
| _____ | _____ | 3. Guard against ESD damage. Remain in contact with an approved ground point while handling the module. Do not touch the backplane connector or connector pins. |
| _____ | _____ | 4. The power to the chassis must be off before removing the processor. Check to ensure that the status indicators are not illuminated.                          |
| _____ | _____ | 5. Be careful when working near moving or rotating machinery.   |
| _____ | _____ | 6. Wear safety glasses and hearing protection in assembly and production areas.   |

### Task Standards

- |       |       |  |
|-------|-------|--|
| _____ | _____ | 1. The Learner configures the replacement processor's DIP switches to match the original unit.         |
| _____ | _____ | 2. The program that the Learner reloads is identical to the program running prior to the installation. |
| _____ | _____ | 3. The machine operates within specifications and meets production requirements.                       |



## Evaluator's Sign-Off

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

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

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