

# **K-05b**

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## **ELECTRICIAN TRAINING**

### **SKILL CHECK GUIDE**

**Duty K: PLC (Modicon)**

**K-05b: Modify PLC Program**

**Issued 01/01/98**

## **Rationale**

This Skill Development Guide provides the knowledge needed to modify a PLC program. At Caterpillar, typical PLC problems such as machine or part breakdowns occur. Extreme caution must be exercised when modifying a program. Modifying the Ladder Diagram incorrectly could result in unexpected movement of the machinery or damage to a part.

## **Skill Check Set-Up**

Select a part on a machine to modify in the machine program for the Skill Check. Contact the Operator where the PLC is located to schedule a convenient time for the Skill Check. Before the Learner begins, enter the program and change the part you have selected. As a part of the modification, provide the Learner with the part number from the machine and have the Learner identify the part you have selected and locate it in the Ladder Diagram printout. Ask the Learner to enter the Ladder Diagram and find the change you made earlier. Have the Learner make the correct modification to the part to put the machine back to its original condition. 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 modifying a PLC program.



- Follow all Caterpillar Facility Safety Standards when performing this task in the plant.
- You will perform this task online. Perform the steps carefully; mistakes could result in injury to personnel or damage to the equipment.
- 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.



- 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
- Tape Loader Tape (P190 only)
- Program Loader Tape (P190 only)
- Modicon Bus Plus (Used with all processors.)



- Basic Help Keys, available on programmer software
- Modsoft Programmer User's Manual (GM-MSFT-001 Rev. F)
- Modicon P230 Quick Key reference card
- Ladder Diagram printout
- Modbus Plus Data Highway Chart
- Machine Print



## Skill Check

Upon notification of the need for a permanent or temporary modification to a machine program, modify the program.

Needs  
Mastered Practice

### Safe Work Practices

- |       |       |   |
|-------|-------|---|
| _____ | _____ | 1. Follow all Caterpillar Facility Safety Standards when performing this task in the plant.   |
| _____ | _____ | 2. You will perform this task online. Perform the steps carefully; mistakes could result in injury to personnel or damage to the equipment. |
| _____ | _____ | 3. 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.         |

### Task Standards

- |       |       |  |
|-------|-------|--|
| _____ | _____ | 1. Modification of the program results in the machine running according to specifications.                 |
| _____ | _____ | 2. Temporary modifications are removed, and the program is modified or returned to the original condition. |



## Evaluator's Sign-Off

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

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

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