

# **K-10b**

---

## **ELECTRICIAN TRAINING**

### **TRAINER'S GUIDE**

**Duty K: PLC (Modicon)  
K-10b: Replace Processor**

**Issued 01/01/98**

## **Instructions To The Trainer**

1. The Learner will contact you when ready to practice replacing a processor.
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**

When a processor has been determined as faulty, replace the processor.

### **Task Standards**

1. The Learner ensures that the replacement processor matches with the original processor identically before replacing it.
2. The replaced processor communicates with the programmer, which allows the Learner to reinstall the machine program.
3. After replacing the processor, the Learner cycles the machine to verify that the processor is functioning within specifications.

## What The Learner Will Need

This section contains the safety information, tools, and resources you will need before replacing a processor.



- 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
- Tape Loader Tape (P190 only)
- Program Loader Tape (P190 only)
- Wiggy voltage tester



- Basic Help Keys, which are available on programmer software
- Modsoft Programmer User's Manual (GM-MSFT-001 Rev. F)
- Modicon P230 Quick Key reference card
- Modbus Plus Data Highway Chart
- Lockout/Tagout procedures



## **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**

Contact the Operator of a machine with an 884 or 984 processor to schedule a time when the Learner can practice installing removing and installing the processor. Have the Learner install the processor into the housing with your supervision. Ask the Learner to practice seating the processor into the slot and verifying that the pins are not bent before installing. Make sure the Learner does not force the unit into the housing but is sure that the unit is seated completely into the housing. Ask the Learner to discuss safety issues regarding the removal and installation of the processors.

### **Practice Objective**

The Learner should remove and install the 884 or 984 processor. With your supervision, the Learner should perform all of the steps to remove and reinstall the processor. The Learner should discuss the safety issues with you regarding the removal and installation of the processor. These issues include performing lockout and tagout procedures, installing the correct processor with the correct configuration, and all issues associated with restarting the machine.

## **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.