

W-05: Replace Board

SAFETY FIRST

- Follow all Caterpillar facility safety standards when performing this task.
- Electrical hazard exists when working with over 600 volts AC/DC.
- The high KW inverters may have an explosive hazard if short circuits exist.

EQUIPMENT

- Volt-ohmmeter (DVM) capable of reading over 600 volts AC/DC
- replacement firing board, digital board, and/or analog board
- basic Electrician hand tools

RESOURCES

- manufacturer's manual and operating guides

Replace Board

1. Acquire the replacement board.

- Verify the replacement has the same model number and version number.
- Check the manufacturer's manual for setup instructions specific to the type of module that you are replacing.

Note: An Electrician replaces three main types of boards: the firing board (scr's), digital boards, and analog boards. Each inverter has one of the three, but the boards vary from combined analog/digital boards to the components installed on a board. Careful attention must be given to the board, the model and version numbers, and the components installed.

Warning: Ask an experienced Journeyman for assistance if there is any question regarding the zero energy chart (ZEC).

2. Perform lockout/tagout.

- Follow the ZEC for the machine.
- Verify that there is no power at the three phases and to ground.



- Check the DC buss bar for discharge of capacitance.
- Attach your lock and a tag to the main disconnect noting the reason for shutting off the power.

3. Mark and map the wires.

- Check the inside of the cabinet door for an existing map of the board wiring.



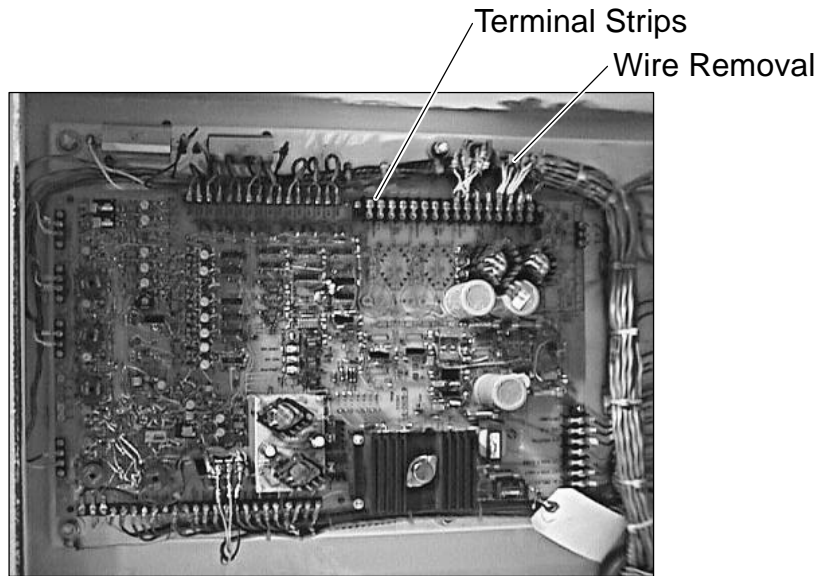
Wiring Map



Existing Wiring Map

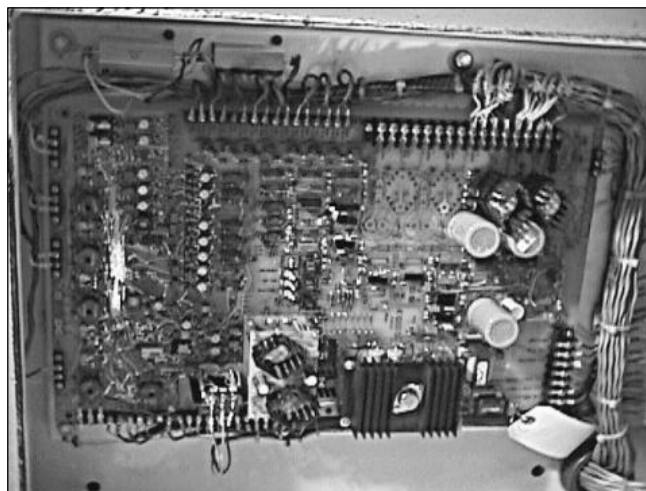
- Verify the accuracy of the map or create a map, as needed.
- Mark any wires not currently marked or not legible.

4. Remove the old board.
 - Remove the wires from the terminal strips.



Board Removal

- Remove the mounting screws from the mounting bracket.
5. Match all jumpers, switches, and components from the new board with the old board.
 - Compare the new board with the old board, and follow any additional steps required in the manufacturer's setup documentation.



Set Jumpers and Switches

6. Install the replacement board.
 - Reattach the wires to the new terminal strips according to the wiring map.
7. Follow the manufacturer's setup procedures.
 - Perform the static test, add jumpers, or perform any additional setup steps required in the manufacturer's documentation.
8. Verify induction heating.
 - Check for proper machine operation.

