

T-06: Replace Drive

SAFETY FIRST

- Follow all Caterpillar facility safety standards when performing this task.
- Use lock and tag to avoid electrical hazard. There is 440 VAC inside the control cabinet.

EQUIPMENT

- 1391 Allen Bradley Axis Drive (replacement)
- 1391 Allen Bradley Axis Drive (original)
- Electrician's hand tools
- 7/16" socket with extension

RESOURCES

- electrical prints
- Allen Bradley Instruction Manual for the 1391 AC Servo Drive



Replace Drive

1391 Allen Bradley 8000b Control for an Axis Drive

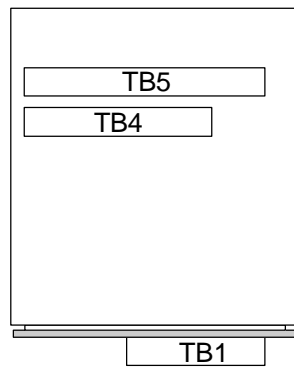
1. Perform a lockout and tagout on the machine.
2. Locate the drive you are replacing.
 - Check to ensure that you locate the drive requiring replacement. See the figure below.



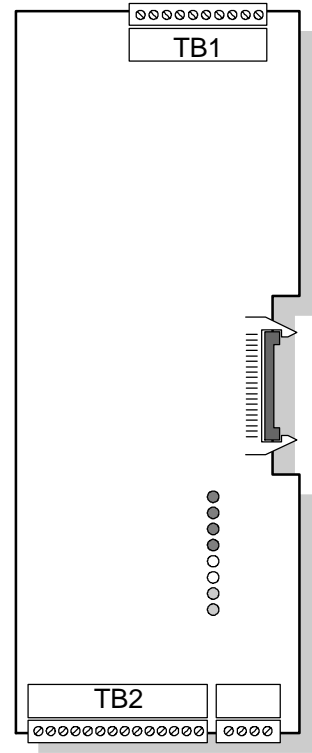
Drive Identification

3. Remove the front cover.
 - Loosen the knurled knob on the top, left (if present).
 - Grasp the front cover and lift up and out, then set the cover aside.

- Note the wire terminal connections, and disconnect the terminal wires at TB1, TB2, TB4 and TB5. Unplug TB1 and TB2; disconnect TB4 and TB5 at the terminal board. See the figure below.



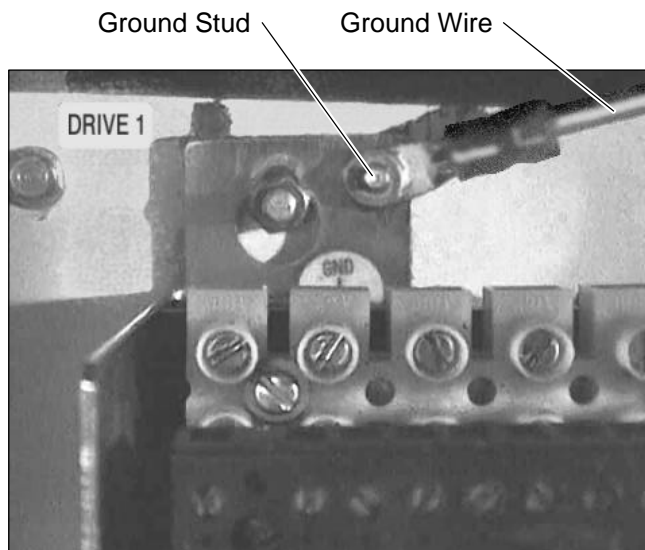
Top View



Front View

Drive Wiring Terminal Connections

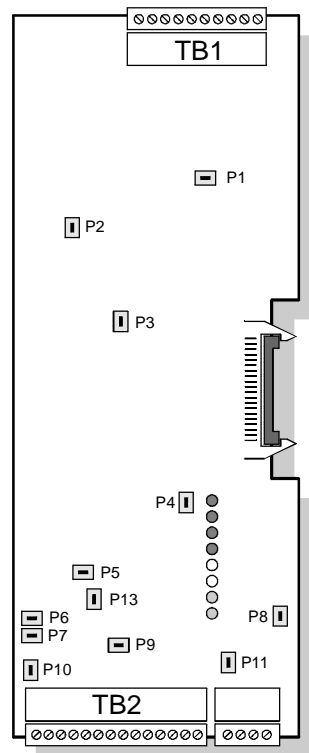
- Remove the ground wire from the ground stud. See the figure below.



Ground Wire Removal

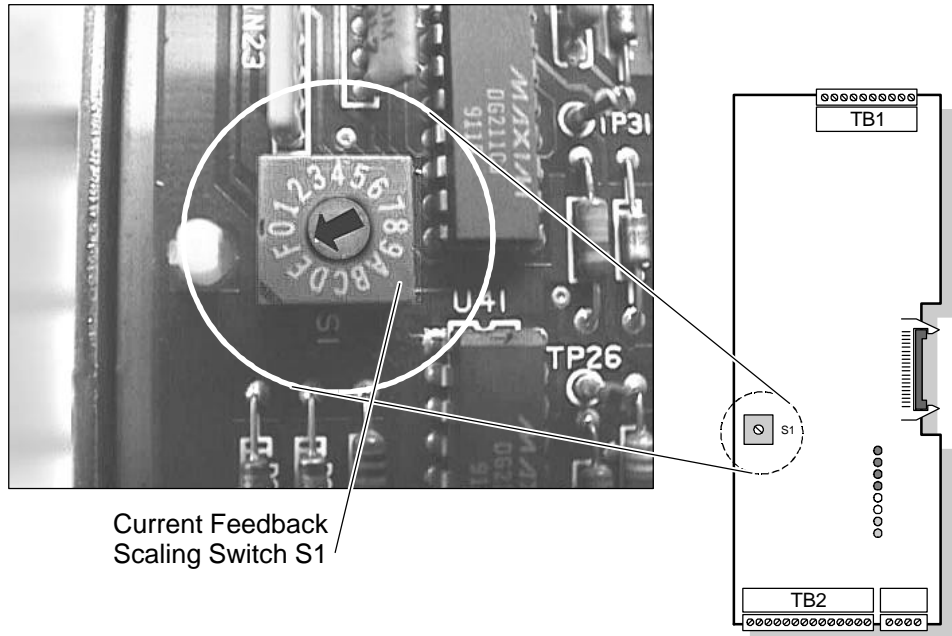


6. Dismount the defective drive from the sub-panel mount.
 - Remove the mounting nuts with a 7/16" socket with extension.
 - Lift the drive off the mounting hardware and set aside.
7. Verify that the configuration of the new drive logic board is identical to the logic board removed.
 - Match the P1-P13 jumper plug settings on the new drive logic board with the settings on the defective drive, as necessary. See the figure below for jumper plug locations.



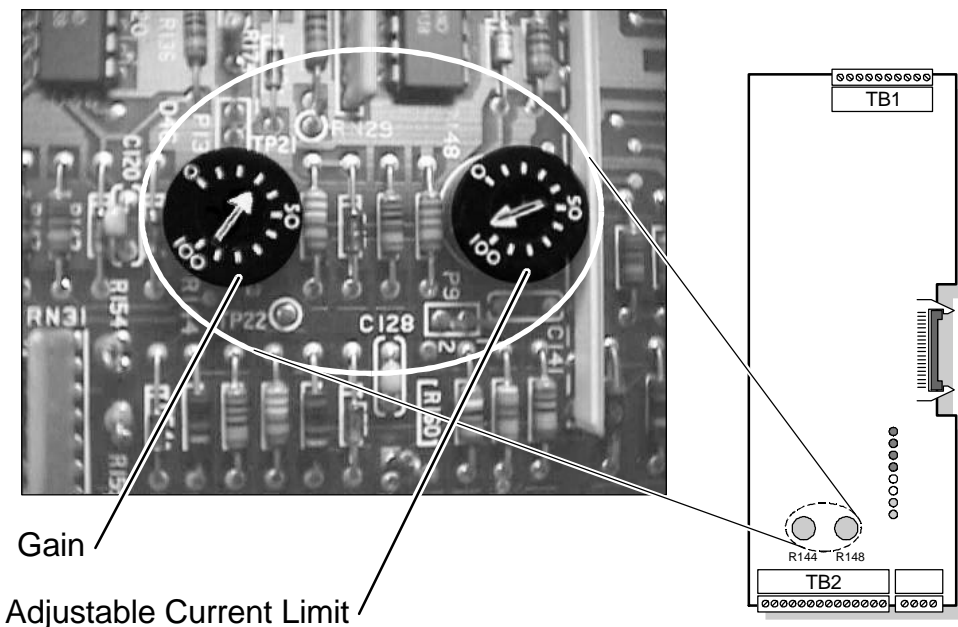
Jumper Plug Locations

- ❑ Set the Current Feedback Scaling Switch (S1) settings on the new board to match the setting on the defective board, as necessary. This setting can be verified by referring to the Allen Bradley Instruction Manual for the 1391 AC Servo Controller. See the figure below.



Current Feedback Scaling Switch S1

- ❑ Set the Gain (R144) and the Adjustable Current Limit Switch (R148) on the new board to match the defective board, as necessary. See the figure below.



Gain
Adjustable Current Limit

Gain (R144) and Adjustable Current Limit (R148)

Note: The Scale Pot (R132) will be adjusted during the setup procedure.

- Reconnect the ground wire.
- Connect the wires to locations TB1, TB2, TB4 and TB5. Plug in TB1 and TB2; reconnect TB4 and TB5.

8. Replace the cover.

- Tighten the knurled knob hand-tight.

9. Remove the lock and tag.

10. Clean up the work area.

11. Take the defective drive to the electrical shop.

- Tag the part with the proper information for repair (include as much information as available).

12. Document the work history.

