

X-05: Replace Capacitor (Induction Melt)

SAFETY FIRST

- Follow all Caterpillar facility safety standards when performing this task.
- A key and locking mechanism is built into the capacitor vault.
- The capacitor weighs approximately 100 pounds. Practice safe lifting techniques when replacing the unit.

EQUIPMENT

- Electrician's hand tools
- flashlight
- grounding cables

RESOURCES

- none



Replace Capacitor (Induction Melt)

1. Disconnect the power to the capacitor vault.
 - Rack out the furnace breaker, see the procedures for preparing the furnace for entry.
 - Remove one of the three keys from the key block.
 - Pull down on the handle to disconnect the power at the control panel and perform a lock and tag. See the figure below.

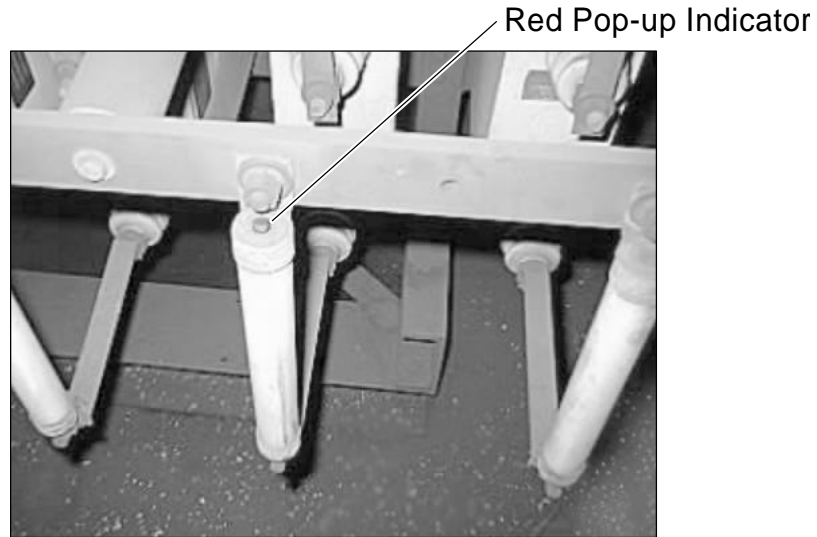


Move Handle Down
to Disconnect Power

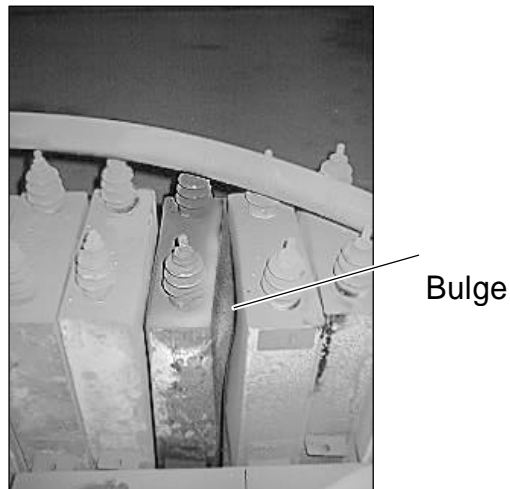
Note: The disconnect for the #1 Induction Melt furnace is located outside the capacitor vault. The disconnect for the #2 Induction Melt furnace is located inside the capacitor vault.

- Unlock and open the door using the key from the key block. The key stays in the lock.

2. Locate the defective capacitor.
 - Check the capacitor's fuse for a red pop-up indicator. If the indicator is in the up position, the capacitor may be defective. See the figure below.

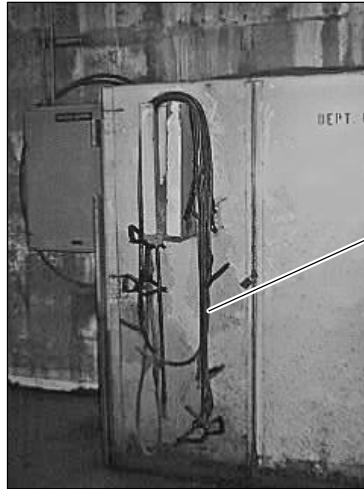


- Visually check the outside appearance of the capacitor. If the case is bulging, the capacitor is defective. See the figure below.



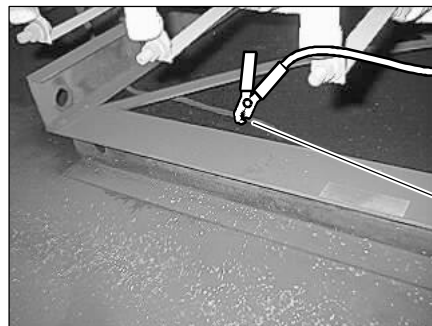
3. Ground the capacitor bank.

- Retrieve the grounding cables hanging on the cabinet. This cabinet is located either outside #1 Induction Melt capacitor vault or inside #2 Induction Melt capacitor vault. See the figure below.

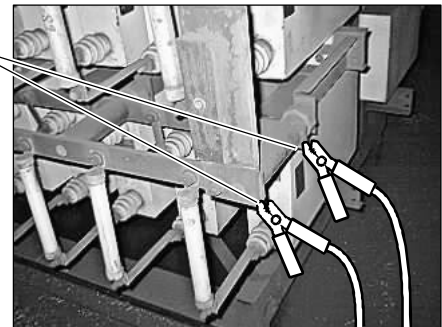


Grounding Cables

- Connect one end of the grounding cable to the grounding strap. See the figure below.
- Connect the opposite end of the grounding cable to the inside and outside power bars on the capacitor bank. See the figure below.



Ground from Here



Ground to Here



4. Remove the defective capacitor.
 - Remove the bolts that connect the fuse to the capacitor and the power bar using an adjustable wrench and channel lock pliers.
 - Remove the fuse.
 - Remove the strap which connects the top connector of the capacitor to the power bar.
 - Remove the bolts, both top and bottom, that hold the capacitor to the rack.

Caution: The capacitor weighs approximately 100 pounds. Practice safe lifting techniques when handling the unit.

- Pull the capacitor out of the rack.
5. Install the new capacitor.
 - Push the new capacitor into the appropriate space in the capacitor bank.
 - Install the top and bottom bolts wrench-tight to secure the capacitor to the rack.
 - Install the strap to the capacitor's top connector and the power bar.
 - Install the fuse.
 - Install the bolts that connect the fuse to the capacitor and the power bar wrench-tight.
 6. Restore power to the capacitor vault.
 - Remove the grounding cables and hang them on the cabinet.
 - Remove the lock and tag.
 - Push up on the handle to restore power at the control panel.
 - Close and lock the capacitor vault door, and remove the key.
 - Return the key to the key block.