

X-02: Prepare Furnace for Entry (Induction Melt)

SAFETY FIRST

- Follow all Caterpillar facility safety standards when performing this task.
- A key and locking mechanism is built into the induction furnace breaker and entry door system.

EQUIPMENT

- hand radio

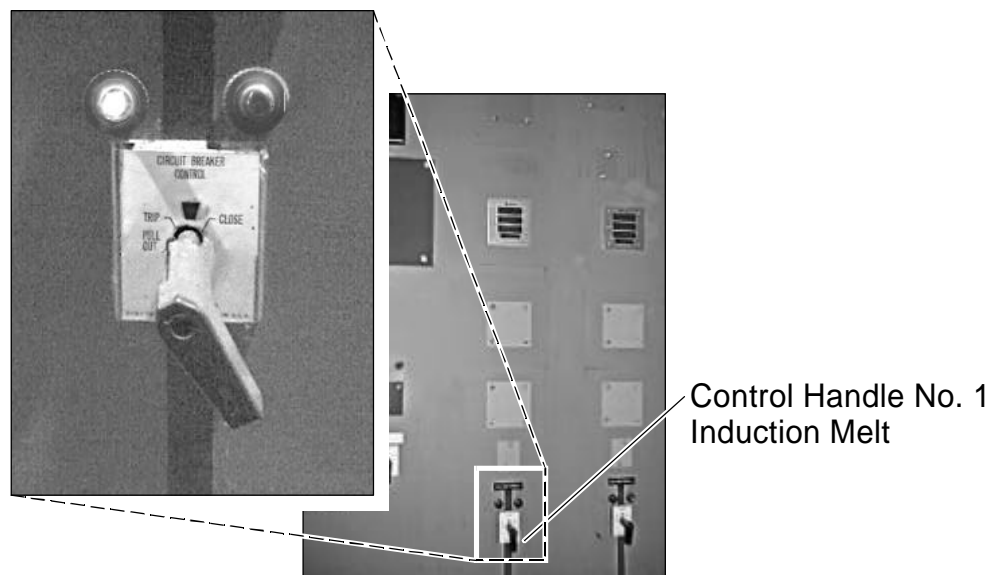
RESOURCES

- none

Prepare Furnace for Entry (Induction Melt)

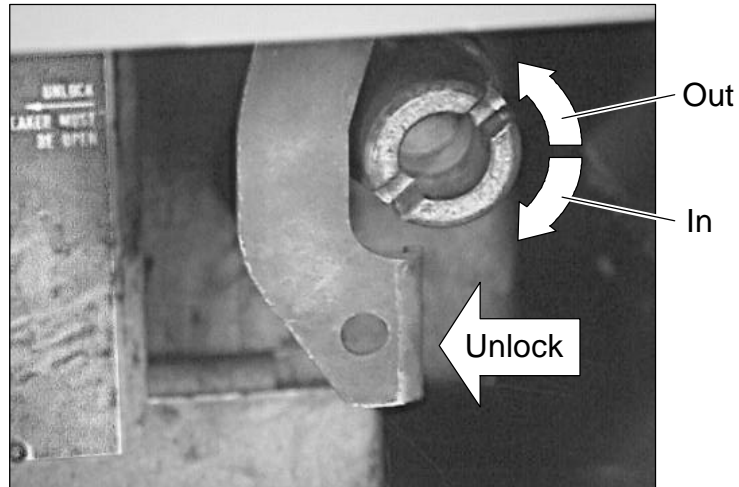
Part A: Disconnect Power

1. Disconnect electrical power to the furnace in building QQ.
 - Notify the control tower that the power will be disconnected.
 - Pull out the appropriate furnace control handle, and turn it counterclockwise on the control panel. See the figure below.



Induction Melt Control Panel

2. Rack out the induction furnace breaker.
 - Locate the breaker crank.
 - Open the lower breaker door.
 - Rotate the locking lever clockwise. See the figure below.



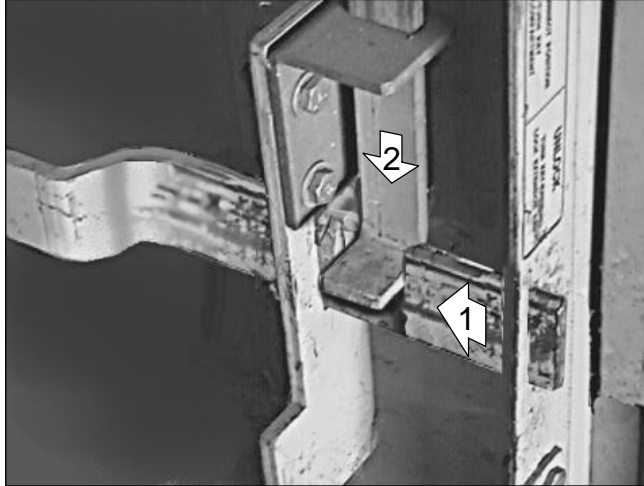
- Rotate the crank counterclockwise to rack out the breaker.

Note: The breaker will stop in the TEST position.

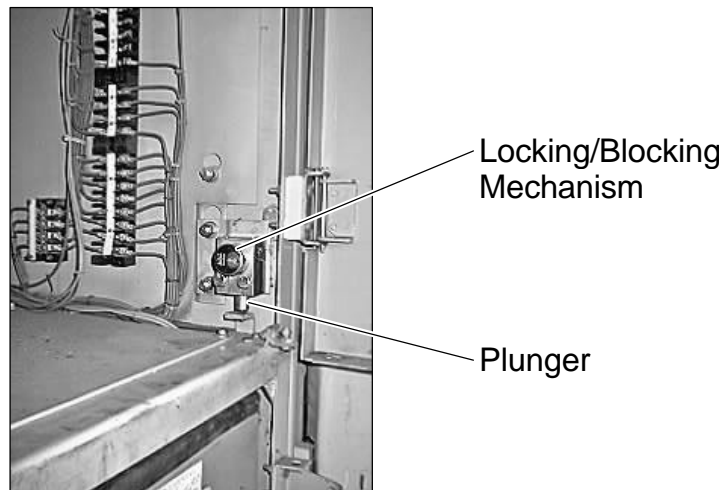
- Rotate the locking lever clockwise and continue racking out the breaker until it stops in the DISC position. See the figure below.



- After the breaker is in the disconnect position, push in on the interlock bar located at the bottom right corner of the cabinet. See the figure below.



- Lock the locking/blocking mechanism, make sure the plunger is fully extended, and remove the key. See the figure below.



3. Unlock the appropriate furnace entrance door.
 - Locate the appropriate door.
 - Insert the key in the top slot of the key block and unlock the key block. See the figure below.



Key from Induction Furnace Breaker

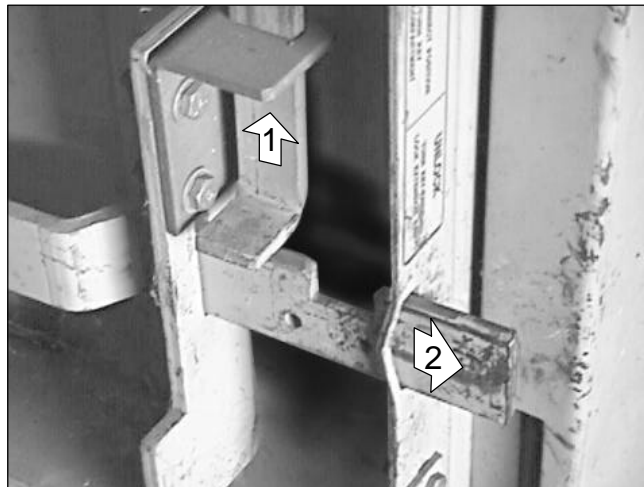
- Remove one of the four keys.
 - Unlock the main entrance door with that key.
4. Disconnect power from the capacitors to the furnace.
 - Open the gates (one on each side of the room).
 - Get the handle located in the knife switch room.
 - Push up on the handle to disengage each knife switch.
 - Visually inspect all switches to ensure that they are in the open position. See the figure below.



Knife Switches in the Open Position

Part B: Restore Power

1. Engage the capacitors to the furnace.
 - Pull down on the handle to engage each knife switch.
 - Visually inspect all switches to ensure that they are in the closed position.
Close both gates.
2. Lock the entrance door.
 - Close and lock the main entrance door and remove the key.
Insert the key in the bottom slot on the key block.
 - Lock the key block.
Remove the top key from the key block.
3. Restore electrical power to the furnace in building QQ.
 - Insert the key (from the key block) in the locking/blocking mechanism and unlock the mechanism. Ensure the plunger is fully retracted.
 - Lift up on the vertical bar and pull out on the interlock bar. See the figure below.



Rack in the induction furnace breaker.

Caution: If the breaker is hard to rack in, its binding. Rack the breaker out, realign, and restart the rack in process.

- Notify the control tower that the furnace is ready to be restored.
- Rotate the induction melt handle clockwise and push it in, on the induction melt control panel.
- Verify with the melt tower that they have control power in the tower.

