



Quincy Lab Inc

# Models 20, 30 & 40 GC & AF Temperature Control Replacement Instructions

Hydraulic Thermostat PN 101-2223L

## Required Tools

No.2 Phillips screwdriver  
5/64 Allen key or driver  
Flat (blade) screwdriver  
Pencil or fine point marker  
Wire cutter & crimp tool or Pliers\*

1/4 Electric Drill  
.156 (5/32) Drill bit (enclosed)  
.093 (3/32) Drill bit (enclosed)

## Important Note about Your New Replacement Thermostat

The enclosed replacement thermostat may be different than the original thermostat that was supplied with the oven. The mounting bracket on the replacement thermostat may require that additional mounting holes be drilled in the panel to align with the bracket of the replacement thermostat. A hole locating template is enclosed to help with locating new mounting holes. The proper sized drill bit is also enclosed for your convenience.

## Thermostat Replacement Instructions

**⚠ FIRST: Disconnect the power, unplug the unit at the wall outlet.**

1. Unplug unit and confirm that it is at room temperature. Remove any shelves and the fixed bottom shelf (2 to 3 screws). (FIG 1)

2. For GC models it may be necessary to remove the perforated heat shield (4 screws) to gain access to the thermostat's sensing bulb & capillary. Earlier AF models incorporated the bulb and capillary above the heat shield. With a pencil or marker, circle the location of each screw head on the shield to aid in reassembly. Some earlier models did not incorporate heat shields. (FIG. 2)

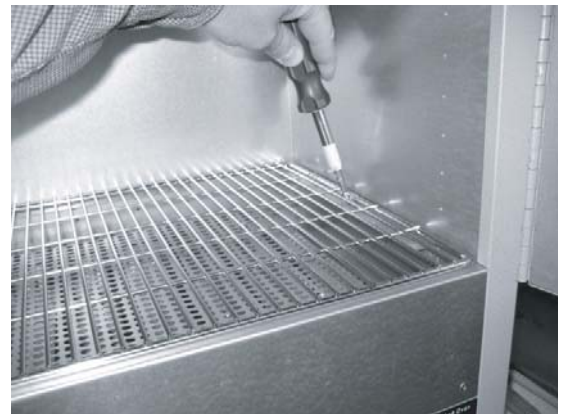


FIG.1

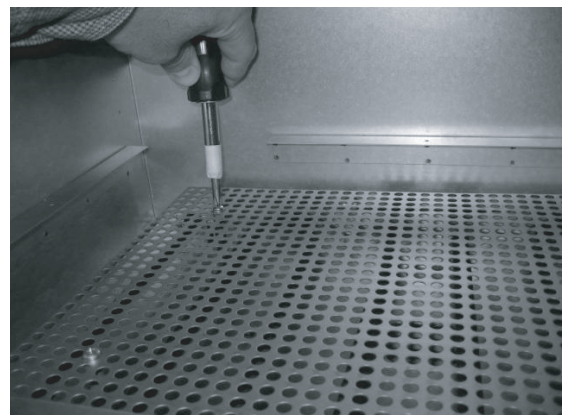


FIG.2

\* required when the replacement thermostat is different than the original

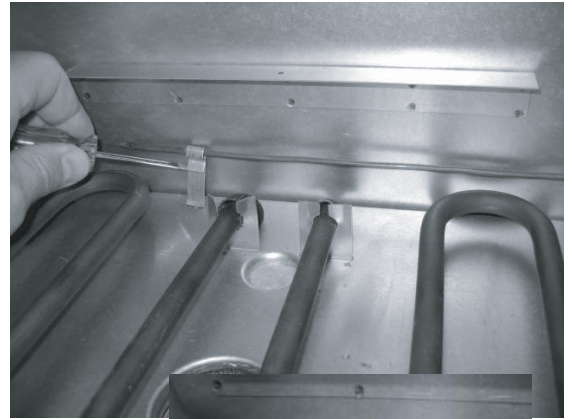
## Thermostat Replacement Instructions (cont.)

2. Using a small flat blade screw driver, release the temp-sensing capillary and bulb by prying open the two retaining clips located toward the back of the oven just above the perforated heat shield (AF model as mentioned) or below the heat shield (GC model). (FIG 3)

3. Stand the bulb upright and push it down into the pass-through hole approximately three inches. (FIG. 4)

4. Remove the thermostat knob. For early models, grasp the knob and pull straight off. Later models use a small 5/64 allen screw that must be loosened to remove the knob. (FIG 5)

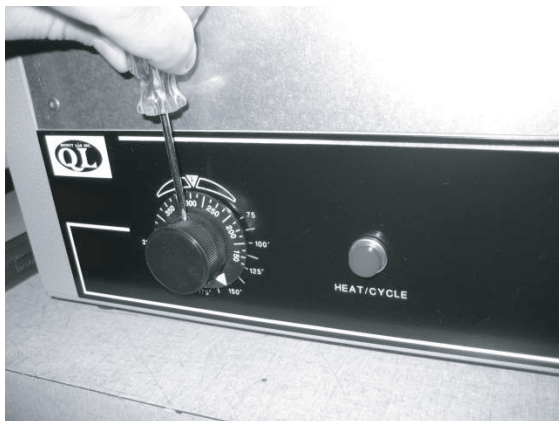
5. Lay the oven on its back, with the bottom facing you. The unit should overhang the work surface enough to allow clearance for the cordset exiting the back of the oven. Remove the bottom panel - remove 6 phillips head screws to access the electrical enclosure. (FIG 6)



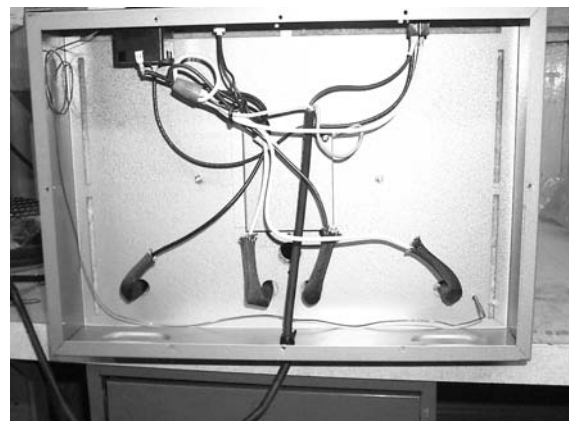
**FIG.3**



**FIG.4**



**FIG.5**



**FIG.6**

## Thermostat Replacement Instructions (cont.)

6. Pull the Capillary and Bulb the remainder of the way out of the oven and remove the two wire leads from the old thermostat's terminals and remove the old thermostat and capillary from the base of the unit. (FIG. 7) From the panel front, remove the single panel nut, or for later models, remove the two 8-32 screws that secure the thermostat to the front panel.

7. If the new replacement thermostat is different from the original, two new holes will need to be drilled in an alternate location on the panel. Use the template as shown, with the centering flange pressed in the shaft hole. (FIG. 8) Hold template square to the panel and mark the new hole locations using the outer horizontal holes on the template. (FIG. 9)

8. With the drill bit provided, drill two new 5/32 diameter holes at the newly marked locations (9/16" on each side of the shaft hole center). (FIG.9) Drill completely through the panel and into the electrical base. Remove burrs from the hole openings so the thermostat bracket will mate flush to the electrical enclosure. This will prevent a crooked turning shaft & knob.

9. Carefully uncoil a portion of the capillary (be careful not to kink the capillary) and push the bulb into the pass-through hole in the electrical enclosure and into the oven chamber so that the entire bulb and approximately 4" of capillary is in the chamber (Note: It may be necessary to enlarge the pass-through hole to a 7/32 diameter to allow for the slightly larger temp-sensing bulb to fit. If this is necessary, drill the enclosure from the bottom side and continue through the inner chamber partition, approx. 1 1/2 inches).

10. Run the capillary around the sides of the enclosure to the thermostat installation position. **IMPORTANT** Be sure to leave coiled any excess capillary length at the side adjacent to the thermostat so that it does not come in contact with any wiring or exposed thermostat or switch terminal connections. (see FIG. 11)

11. Reconnect the two wire leads to the new thermostat terminals. For newer type thermostats this will require replacing the slip-on connectors on the lead wires with the ring connectors provided. In this case, cut off the slip-on connectors, re-strip the wire jacket to a length of 3/8" and crimp secure the ring connectors. Then secure wires leads to the new thermostat's terminals. (FIG. 10)

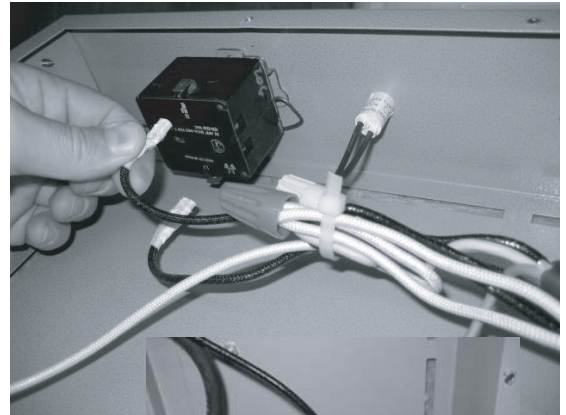


FIG.7

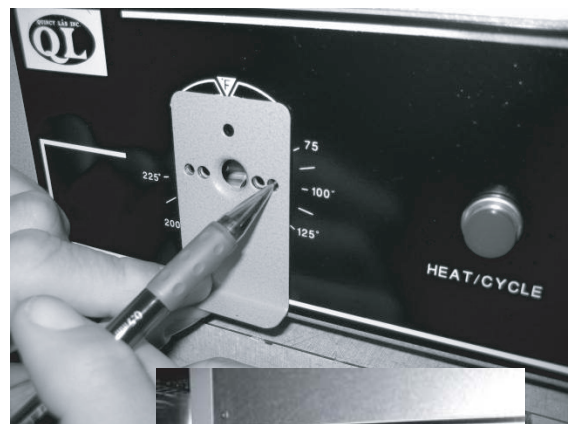


FIG.9

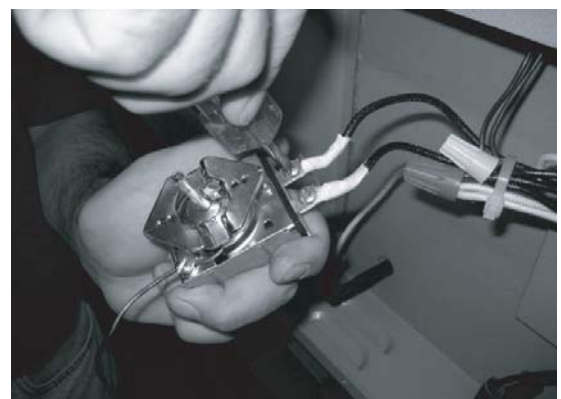


FIG.10

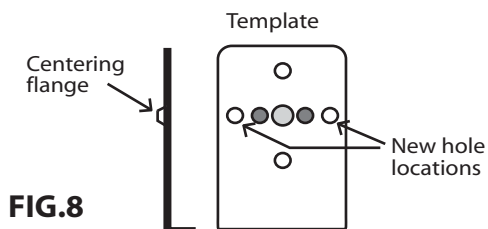


FIG.8

## Thermostat Replacement Instructions (cont.)

12. Secure the new thermostat using the two 8-32 slotted screws. Orient the new thermostat so the connection terminals are toward the middle of the enclosure. (FIG. 11)

13. Replace the bottom panel and set the oven upright.

14. Secure the new Bulb in the two retaining clips by pressing them closed (not too tight) with a pair of pliers.

**NOTE:** For a tighter set point tolerance install new bulb clips provided as shown in figure 8. This bulb placement is diagonal from the though hole corner and about 1/8 inch above the surface of the heating element (not in contact with element). Mark and drill using a 3/32 drill bit (enclosed) at points approximately between the element "legs" and secure with screws provided. This bulb placement works well for all GC & AF models. (FIG. 12)

15. Replace the heat shield if removed. First, place the 4 tubular stand-offs upright over the holes in the element base. Carefully place the heat shield over the stand-offs, aligning the marked holes in the shield with the stand-offs - depending on the model this can be tough task for even the steadiest of hands. Drop in the four screws and tighten.

16. Replace and re-secure the fixed bottom shelf.

17. Replace the temperature knob. For original knobs that are secured by a set-screw, turn the shaft of the thermostat counter-clockwise until the ground flat side of the shaft is in the up or top position. Insert the support pin provided into the center shaft opening. (FIG.13) Orientate the knob to the shaft so the set-screw on the knob is aligned with the flat on the shaft and tighten the knobs set-screw.

If you're replacing an older style press-fit knob the support pin should not be used. In this case rotate the shaft counterclockwise to the off position then align "off" marking on knob with pointer on panel and press knob on shaft. The older press fit knob will be a tight fit. (A newer knob should be subsequently purchase since the new thermostat more accurately corresponds to it's temperature markings across the full temperature range.

18. Plug oven in and verify its proper operation.

19. Refer to the calibration instructions if you would like to accurately adjust the thermostat knob temperature markings to actual thermometer readings.

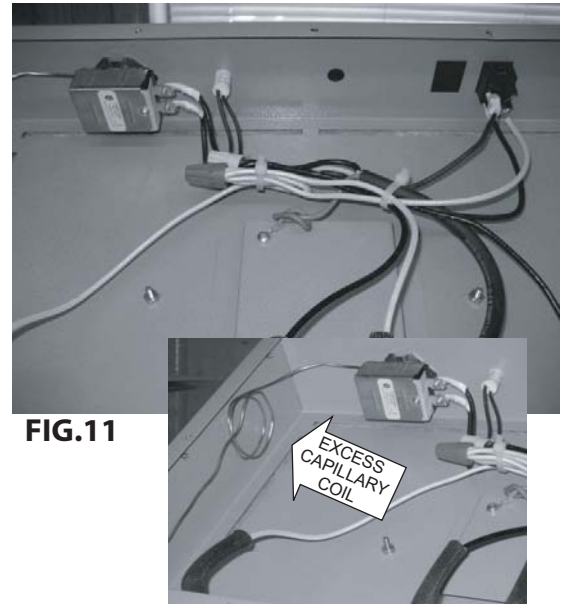


FIG.11



FIG.12

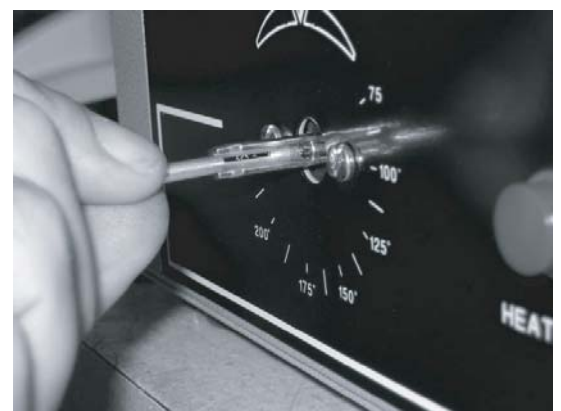


FIG.13