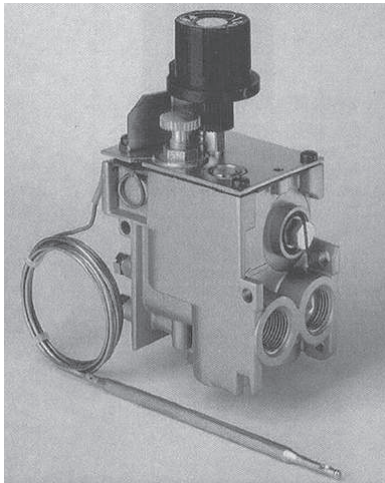
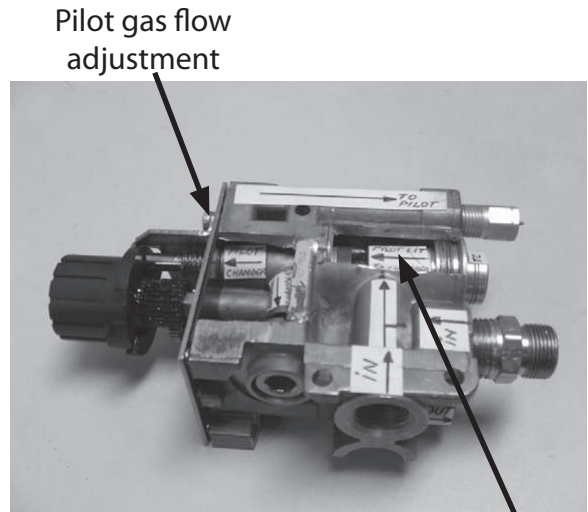


# 630 Euro Sit Control

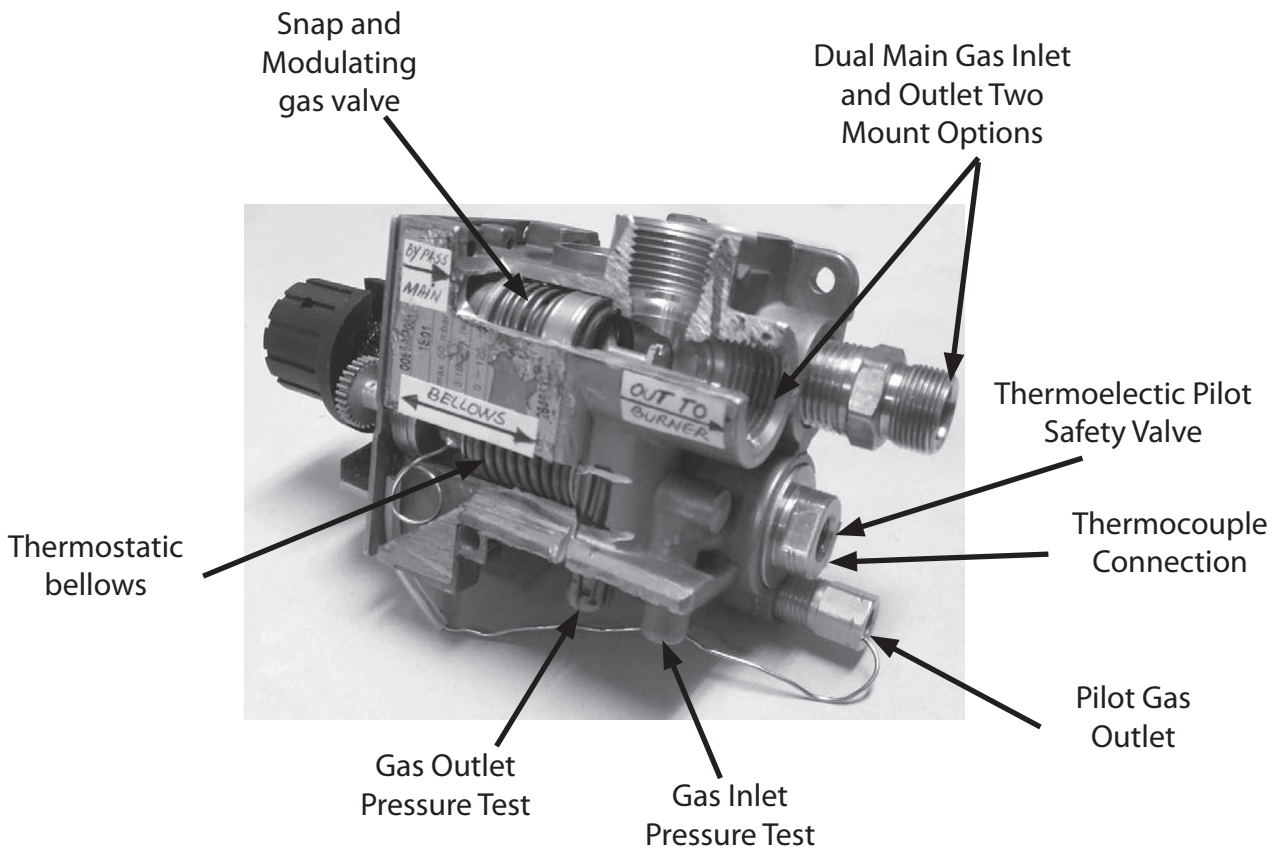
The 630 EUROSIT is a multifunction single knob valve with combined modulating/snap thermostat control.



**SIT Control**



Thermoelectric Flame Failure Device

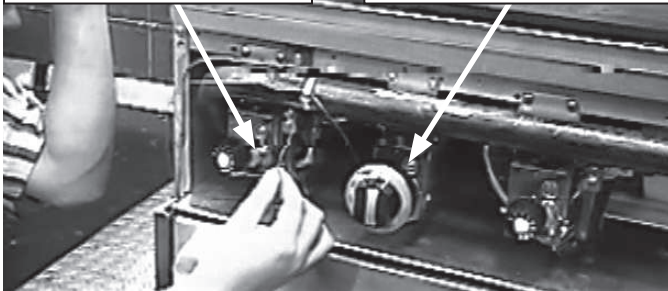


The gas inlet and outlet test points should not be used. A simple manifold test of incoming pressure will be sufficient. If the pilot flame is present and stable, but the burner does not come on, the SIT Control should be considered inoperative.

## Sit Control

Griddle SIT Control  
P/N **4523007**  
Shorter Thermocouple  
No Heat Cover  
Temperature Control  
Range **176°F – 600°F**  
**(80°C – 320°C)**

Oven SIT Control  
P/N Oven – **4523006**  
59" Thermocouple  
Temperature Control  
Range **212°F – 644°F**  
**(100°C – 340°C)**



This control, although very similar to the mechanical controls found on Garland's current range and griddle models, has several major economical efficiencies that offer reliability advantages to the customer.

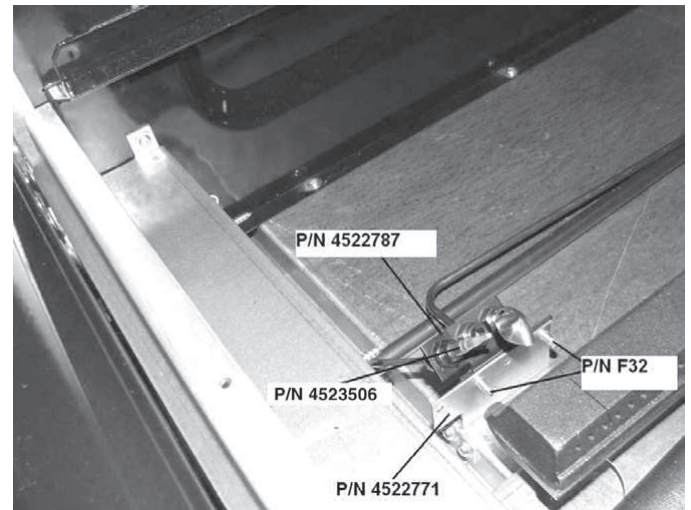
It is a safety valve, and thermostat in one assembly, and the safety valve is away from traditional high heat environment of the oven burner.

1. The safety valve (should not be removed from the body of the control for any reason).
2. Familiar Open circuit, closed circuit, and drop out checks should be made if the internal safety valve is suspected to be at fault.
3. This control does not require any initial flame setting (currently known as "bypass"). The control has an internal fixed bypass orifice.
4. This control does not require internal calibration. (Some minor knob adjustments could be appropriate, but it would be rare).
5. If a Sit control component is suspected to be internally at fault, replace the control.
6. Initial gas pressure checks are required to validate that the control cannot control knob set temperature.

## Removal And Replacement

### Thermostat Replacement

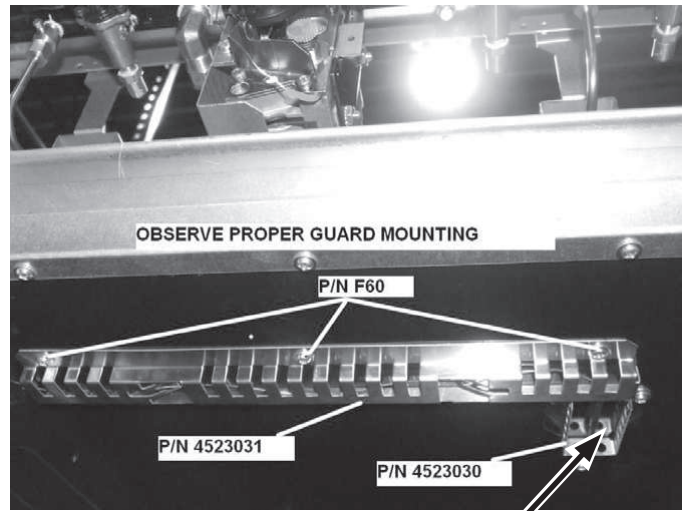
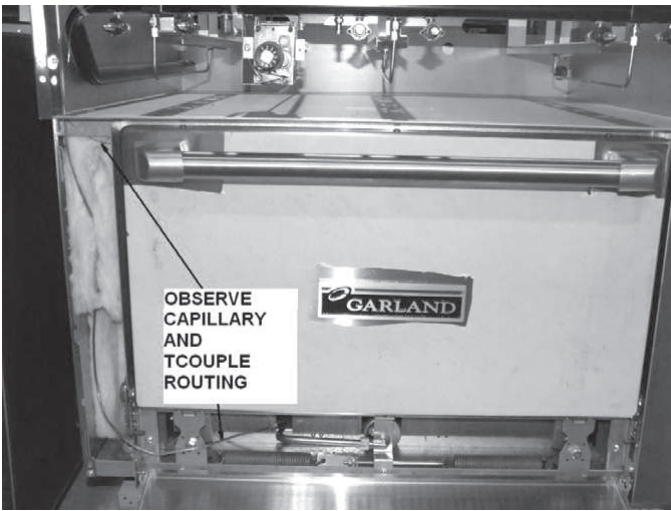
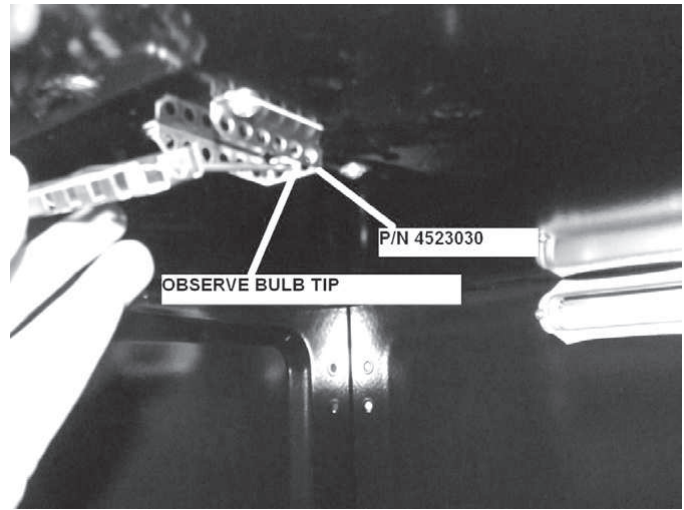
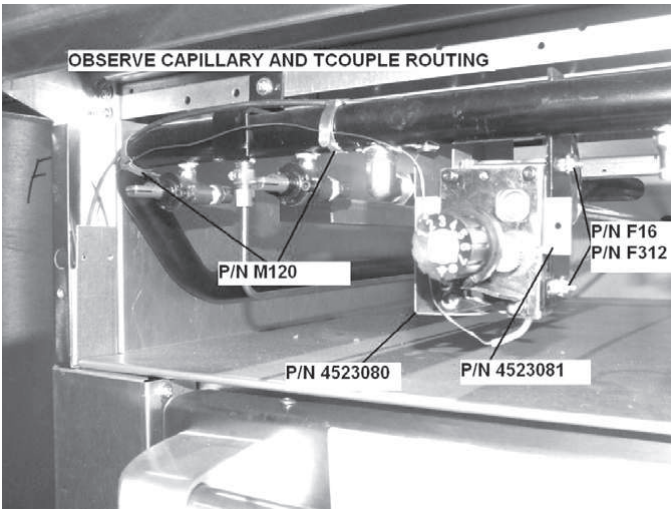
1. Remove left and middle grates.
2. Remove grate support gas line cover
3. Remove gas line shield
4. Remove Grease crumb tray
5. Remove left column trim piece (3 screws), then push down and pull off.
6. Remove left combustion chamber plate - 2 screws, tilt and remove.
7. Remove the two screws (PN F32) holding the pilot assembly.



8. Push, unlock, and free the thermocouple from the pilot thermocouple tip holder.

Note: you can remove the oven bottoms for ease of access.

9. #10 metric wrench should be used on thermocouple fittings at the control; be careful not to lose the thermocouple adapter.
10. "Fish" the thermocouple down and out. BE CAREFUL NOT TO DAMAGE THE THERMOSTATS' CAPILLARY

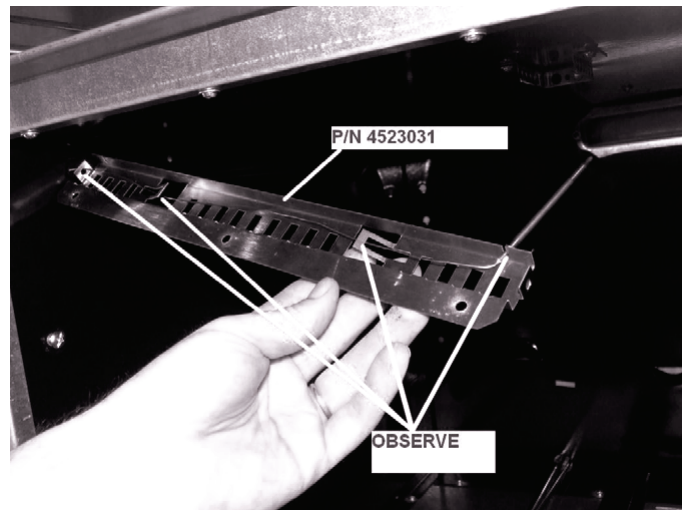


11 Install the new thermocouple using the above procedure, but in reverse.

**Thermostat Replacement:**

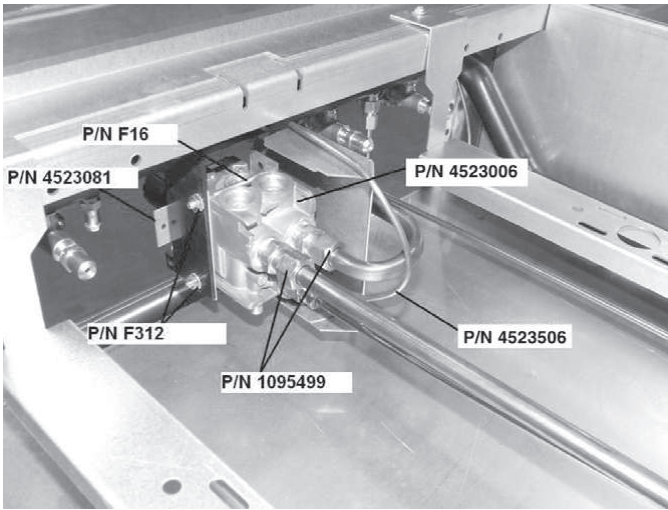
1. Unmount the oven thermostat capillary from its holder.
2. Carefully snake the capillary through the guide holes and out of the guard holder.

**Bulb Tip Holder**



**Control capillary guard mounting**

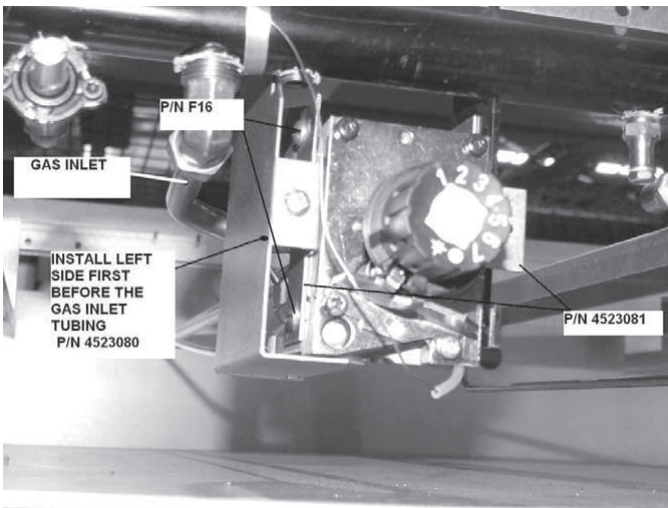
3. Remove the gas lines from the valve. You will also need to remove the fittings from the valve.
4. Remove the two nuts and bolts that hold the thermostat in place. (Do not lose)



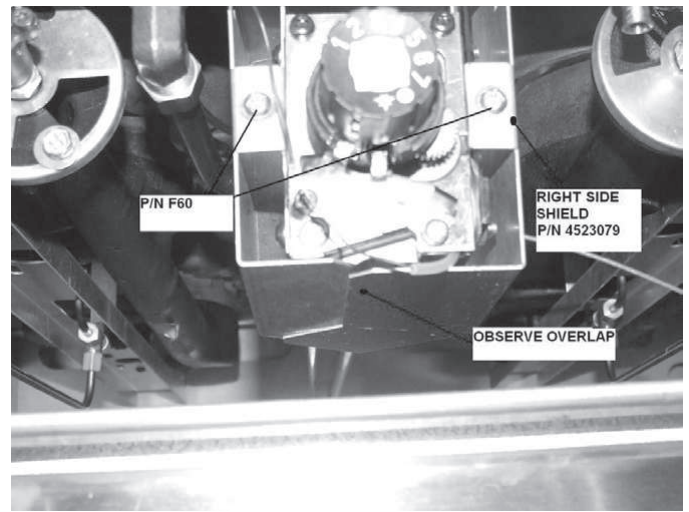
5. Remove the thermostat

**To install a new thermostat:**

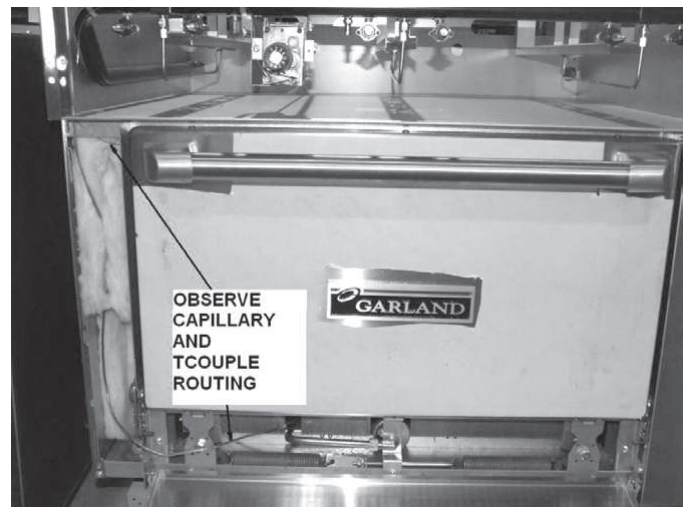
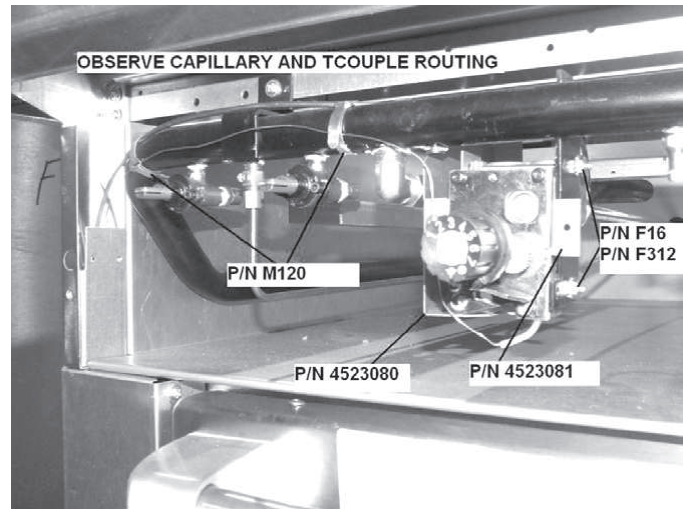
1. Ensure that the fittings removed from the housing are installed in the same location where they were found on the control that is being replaced
2. Reverse the process listed above, ensuring that the proper sequence of installation is followed:
  - A. Install left side first before the gas inlet tubing.



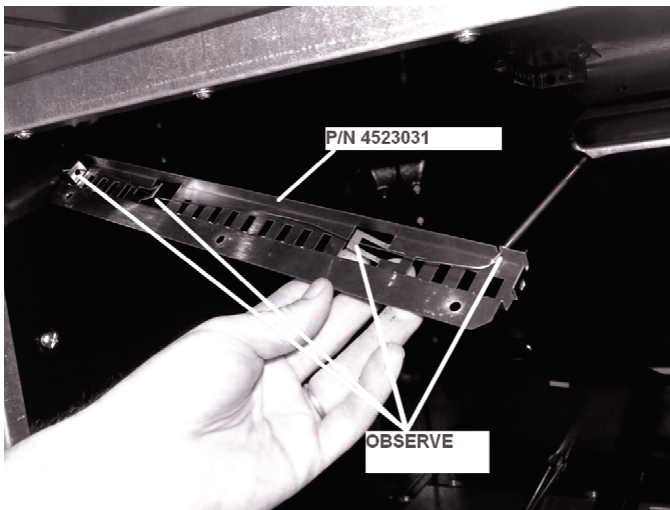
B. Observe overlap.



C. Observe capillary and T couple routing



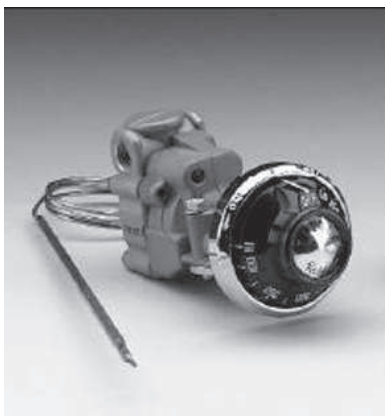
- D. Insure that the temperature bulb is secured in the capillary guard holder as shown:



3. Check for leaks
4. Perform an operational check of the new control using your pyrometer as a crosscheck. Temperature recovery should be most responsive when initial temperature setting is set to 400 ° F. Temperature swings of  $\pm 30$  ° F at this temperature should be no longer than thirty minutes when heating a cool unit.

NOTE: For complete Sit Control installation instructions refer to Garland Service for an installation DVD.

## BJWA Gas Thermostat



The BJWA control is a combination of gas cock and by-pass type thermostat. It is available with both by-pass and pilot adjustments. With the BJWA, the gas is turned on, and the temperature setting is made, with a single turn of the dial.

The BJWA can be adapted to have a multiple orientation and number of outlets. It can be mounted above or below the manifold via a flanged nipple.

Adjustments are on the front for by-pass and temperature calibration.

The BJWA is typically used on US Range Ovens and griddle and on Garland griddles.

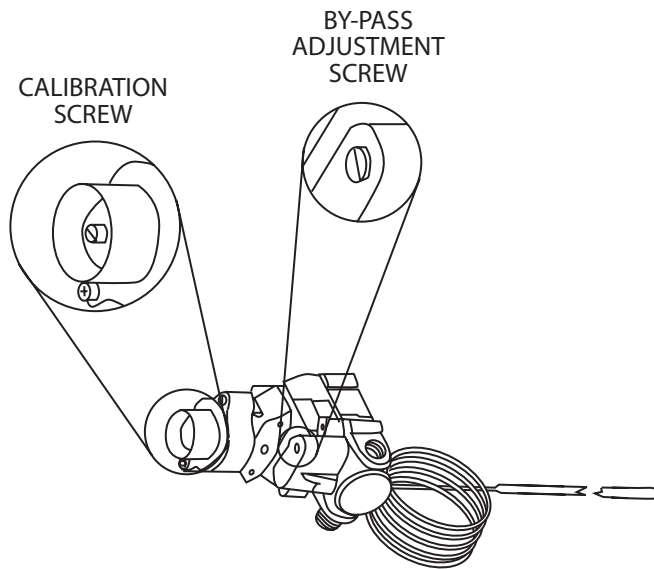
- Ambient temperature 32°F (0°C) to 350°F (177°C)
- Maximum inlet pressure 0.5 PSI
- Capacity (Natural Gas): To 70,000 BTU/Hr

### By-Pass Feature

The BJW has a by-pass feature which when the appliance reaches the temperature at which the dial is set, the control cuts down the flow of gas to the amount required to keep the appliance at that temperature. However, the control must by pass enough gas to keep the entire burner lighted. To maintain this minimum flame, the by-pass must be set carefully and accurately. Instructions on setting the by-pass feature on the BJWA are as follows:

1. Light the burner, then turn the dial to "FULL ON".
2. After 5 minutes, turn the dial clockwise to a point slightly beyond the first mark on the dial.
3. Remove the dial and bezel.
4. With a screwdriver, turn the by-pass adjuster – counter-clockwise to increase the flame, clockwise to decrease it, until there is a minimum blue stable blue flame over the entire ported area of the burner.
5. Replace the bezel and dial, turning the dial clockwise, until it locks in the "OFF" position.

**NOTE:** A replacement thermostat will come with the by-pass in the closed position.



### Calibrating The BJWA Thermostat

This control is a precision component, it is carefully calibrated at the factory. Re-calibration should not be undertaken until the by-pass flame has been adjusted and the operating gas pressure has been confirmed.

To check the temperature when re-calibrating, use an appropriate temperature reading meter. Position of the instrument/thermocouple should be in the geometric center of the oven. For a griddle, use a disc type thermocouple placed in the center of each zone. **There should be no products in the oven or on the griddle**

If the dial has a removable metal insert, proceed as follows:

1. Remove the dial and push out the insert.
2. Replace the dial and turn to the 350° mark.
3. After the burner has been on about 15 minutes, check the temperature.
4. Continue to check the temperature at 5 minute intervals until 2 successive reading are with in 5° of each other.

**The control should be re-calibrated if your reading is not within  $\pm 20^\circ$  F of the dial setting (350°F). If re-calibration is required, the additional steps that need to be taken are as follows:**

5. Hold the dial firmly, insert a screwdriver through the center of the dial and push the calibration stem. Do Not turn this stem.
6. While holding the calibration stem firmly with the screwdriver, turn the dial until it is set at the actual temperature as shown on your meter. Release the pressure on the calibration stem. Replace the dial inset.
7. Set the dial at 400°F mark. Check the temperature again as indicated in step 3 and 4 above. If the temperature is not with in  $\pm 20^\circ$  of the dial setting (400°F), the control should be replaced.

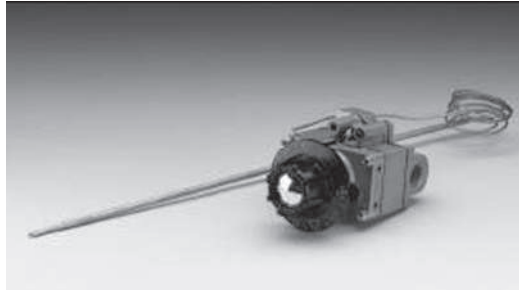
If the dial does not have a removable insert or the dial has a "D" type stem, use the following procedure to re-calibrate.

1. Set the dial to the 350°F mark.
2. After the burner has been on about 15 minutes, check the temperature.
3. Continue to check the temperature at 5 minute intervals until 2 successive readings are within 5°F of each other.

**The control should re-calibrated if your reading is not within  $\pm 20^\circ$  of the dial setting (350°F). If re-calibration is required, the additional steps that are need to be taken are as follows:**

4. Remove the dial assembly or the complete "D" type stem.
5. Push the calibration stem inward with a screw driver, while holding the calibration stem firmly in, turn the stem clockwise to obtain a lower temperature or counter-clockwise for a higher temperature. Each mark on the retainer represents 25°F. Replace the dial assembly or "D" type stem with dial.
6. Set the dial at 400°F mark. Check the temperature again as indicated in step 3 and 4 above. If the temperature is not with in  $\pm 20^\circ$  of the dial setting (400°F), the control should be replaced.

# Heavy Duty FDO Control Thermostat

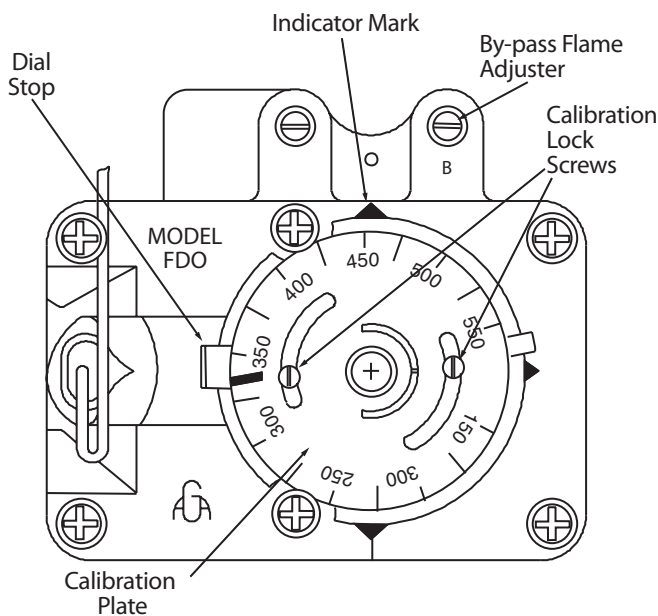


The FD Control is a heavy duty, high capacity gas thermostat. It is a modulating snap by-pass.

Garland uses the FD Control for range ovens and Pizza decks.

Adjustments are at the front for by-pass and temperature calibration.

## Instructions for Model FDO Heavy Duty Control



The model FDO is a precision made instrument, carefully set at the factory to accurately control oven temperatures, from 150° F (66°C) to 500°F (260°C). All adjustments are accessible from the front of the appliance after removing the dial. To remove the dial, grasp the knob portion and pull straight out.

1. With the oven cold, turn the dial counter-clockwise slowly from "Low Stop", until the bypass seat just snaps on.
2. Remove the dial.
3. With a screw driver, turn the bypass flame adjuster screw counter-clockwise to increase the bypass flame or clockwise to decrease the entire flame to a minimum stable flame.
4. Replace the dial. CAUTION: While making this adjustment, if the oven should become heated while the dial is set at a low range below 350°F (177°C), the bypass flame will shut off completely. If this occurs, turn the dial counter-clockwise slowly until the bypass gas snaps on. Then check the bypass adjustment as stated.

Below is the dial insert used by Garland on FD Control thermostats. Note the space between 300°F and the 350°F mark.



## Re-calibration

Field re-calibration is seldom necessary, and should not be resorted to unless poor cooking results definitely prove that the control is not maintaining the temperature to which the dial is set. To check the oven temperature when re-calibrating use an indicating potentiometer or reliable mercury oven thermometer.

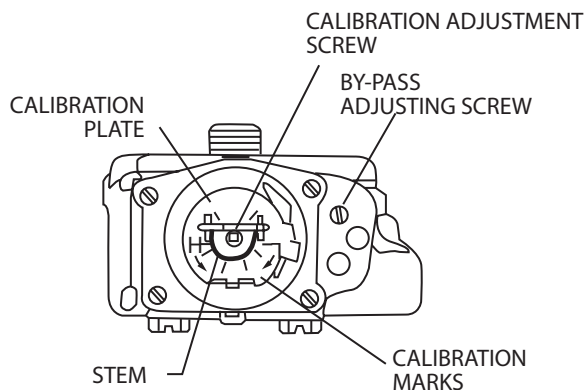
1. Place the thermocouple of the test instrument or thermometer in the geometric center of the oven.
2. Light the main burner. Observe which indicator mark aligns with the low stop position of the dial. Use this indicator mark for all settings.
3. Turn the dial so 400°F (240°C) lines up with the "low setting" indicator mark.

4. Allow the oven, or appliance, to heat and the thermostat to cycle three times. After sufficient time, check the temperature, if the temperature does not read with in  $\pm 20^\circ$  of the dial setting, re-calibrate as follows:
5. Pull the dial straight off without turning the thermostat shaft.
6. Hold the calibration plate and loosen the two calibration screws until the plate can be moved independently of the control.
7. Turn the calibration plate so that the instrument of the thermometer reading is in line with the indicator mark. Hold the plate and tighten the screws firmly.

8. Replace the dial.
9. Note: If the above adjustment is prevented by the two loosened calibration lock screws being in contact with the ends of the screw clearance plate to the proper location, reassemble the screws in the other tapped holes designed for them.

If the thermostat is cycling beyond the  $20^\circ$  tolerance and the appliance is under warranty **re-calibrate the thermostat** or if not under warranty consult the owner for proper action. If the thermostat is out of calibration more than fifty (50) degrees, it will not like hold an attempt of re-calibration, we suggest that the thermostat be replaced.

## UN Type Griddle Thermostat



The Robertshaw UN throttle-type griddle control requires a by-pass adjustment. To adjust, proceed as follows:

1. Be sure that the pilot flames are lit and adjusted.
2. Turn the dial to  $200^\circ\text{F}$  ( $93^\circ\text{C}$ ) mark and allow the griddle to heat for approximately 5 minutes.
3. Turn the dial clockwise to "LOW" position. The control will cut down to the BY-PASS flame.
4. Carefully remove the dial, making sure the setting is not disturbed.

5. With a screwdriver, turn the by-pass adjustment screw and adjust to the "LOWEST POSSIBLE STABLE FLAME COVERING THE ENTIRE BURNER". Turn the screw clockwise to decrease or counter-clockwise to increase the size of the by-pass flame.
6. Replace the dial.
7. Turn the dial to the "OFF" position.

### Re calibration

**Do not re-calibrate until the following has been checked:**

1. BY-PASS FLAME for proper adjustment (see above).
2. Check that the control bulb is fully inserted into the bulb tube.

To check calibration, proceed as follows:

Use a Robertshaw test instrument with a special disc type thermocouple or a reliable "SURFACE" TYPE thermometer. (Note: A drop of oil on the face of the disc will provide better contact.



1. Turn all griddle temperature control dials to 350°F (177°C). In order to allow the temperature to stabilize, the controls must be allowed to cycle three times before taking a test reading.
2. Check the temperature reading when the control cuts down to by-pass by placing the sensor firmly on the griddle surfaces directly above the sensing bulb of the control. Reading of the test instrument should be between 335°F (168°C) and 365°F (185°C).
3. If the dial setting does not agree with the test instrument reading within the above limits, re-calibrate as follows:

4. Remove the dial making sure the setting is not disturbed.
5. Each division mark on the calibration plate equals 15°F. With a screw driver, turn the calibration screw clock-wise (toward LOW) to reduce the temperature, or counter-clockwise (toward HIGH) to increase the temperature.

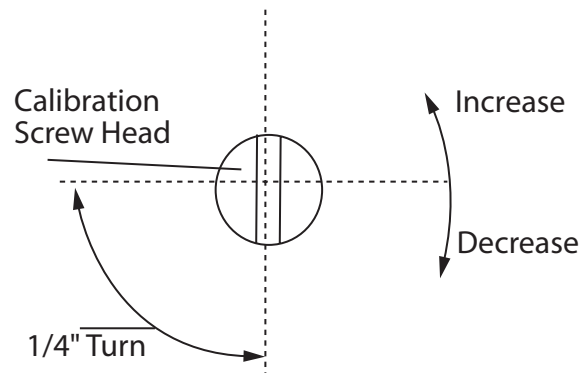
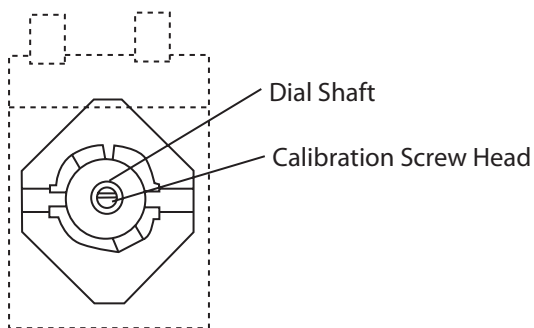
Example – The dial setting is at the 350°F mark. The test instrument is reading 380°F. Turn the calibration screw clockwise (toward LOW) two divisions.

6. Replace the dial, turning the dial to the “OFF” position.
7. Repeat steps 1 through 3 to make sure the correct adjustment has been made.

## Electric Thermostat

### Thermostat Operation

It is normal for a hydraulic thermostat to cycle with a temperature differential of 45° to 50°. If the thermostat is cycling beyond the 15° tolerances above or below the set point and the appliance is under warranty, re-calibrate the thermostat or if not under warranty, consult the owner for proper action. If the thermostat is out of calibration more than 50°, it will not likely hold an attempt of re-calibration. We suggest that the thermostat be replaced.



### Thermostat calibration

#### Oven thermostat

1. Place the thermocouple of the test instrument in the center of the oven.
2. Turn the oven temperature control dial to 400°F. In order to allow the oven temperature to stabilize, the oven control must be allowed to cycle twice before taking a test reading.
3. Check the temperature reading just when the control cycles “OFF” as indicated by the cycling pilot lamp. If the temperature dose not read within 15° of the dial setting, re-calibrate as follows:

4. Carefully remove the thermostat dial, not disturbing the dial setting.
  5. Hold the thermostat shaft steady and with a small flat blade screw driver, turn the calibration screw located inside the shaft clockwise to decrease the temperature or counter-clockwise to increase the temperature. Note each 1/4 turn of the screw will create a change of approximately 25°F.
  6. Replace the thermostat dial and repeat steps 1 through 3 to verify that the correct adjustment has been made.
3. Check the griddle temperature when the thermostat just cycles "OFF" by placing the thermocouple firmly on the griddle surface directly above the sensing bulb of the thermostat. The reading should be between 285°F and 315°F. If the reading is outside of these limits, calibrate as follows:
  4. Carefully remove the thermostat dial, not disturbing the dial setting.
  5. Hold the thermostat shaft steady and with a small flat blade screw driver, turn the calibration screw, located inside the shaft, clockwise to decrease the temperature and counter-clockwise to increase the temperature. Note each 1/4 turn of the screw will create a change of approximately 25°F.
  6. Replace the thermostat dial and repeat steps 1 through 3 to verify that the correct adjustment has been made.

### **Griddle thermostat**

1. Use a test instrument with a special type thermocouple or a reliable surface type pyrometer. Note: a drop of oil on the face of the disc will provide better contact with the plate.
2. Set all griddle thermostats to 300°F. In order to allow the griddle temperature to stabilize, the thermostats must be allowed to cycle twice before taking a test reading.