



# INSTALLATION DATA

## VC4200

### COMMERCIAL THERMOSTATS AND KITS

#### VC4200 (FD) COMMERCIAL GAS THERMOSTAT

Individual models of the VC4200 series are available for specific applications. These thermostats are used on ovens, fryers, sterilizers and similar equipment.

Snap-Throttle models provide snap action to "OFF" for low temperature settings and throttling main valve action for higher temperature settings.

Throttling only models have a constant by-pass and maintain a minimum flame on the burner when the unit is in operation.

#### INSTALLATION INSTRUCTIONS

##### UNCOIL DIASTAT

**NOTE:** Diastat is liquid filled and sharp bends are to be avoided.

The recommended method to uncoil the diastat is as follows:

Insert a round screwdriver shaft through the center of the diastat coil. Push outward or away from control body to uncoil the diastat smoothly. This method will prevent twisting or crimping.

##### MOUNTING

Mount thermostat on manifold using small amount of thread compound on each pipe.

Connect pilot lines as required for the application.

Attach the sensing bulb into its proper location. Again use caution not to twin or crimp the capillary tube.

Leak test all connections and also the rear housing section if the original rear housing was used on the replacement thermostat.

#### OPERATING INSTRUCTIONS

##### OVEN BURNER PILOT FLAME

(If appliance is equipped with automatic ignition - disregard.)

This pilot is only on ovens not equipped with an automatic lighting device. It lights with the oven burner and is extinguished when a main burner gas cock is turned off. To adjust this flame:

1. Turn "on" gas to appliance and light pilot or main burner.
2. With 8 screwdriver turn "pilot adjustment screw" counterclockwise to increase the flame, clockwise to decrease it until the flame is approximately 3/4" high.

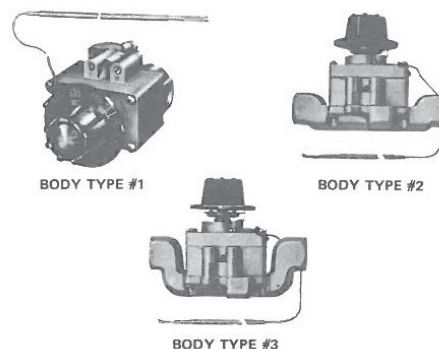
##### BY PASS (MINIMUM BURNER) FLAME-SNAP THROTTLE TYPE

This adjustment must be made at the time the appliance is installed. To adjust this flame: (Be sure burner pilot flame is ignited.)

1. With oven cold, turn dial counterclockwise slowly from "OFF" until main burner gas snaps on.
2. Remove dial.
3. With a screwdriver, turn "by-pass adjustment screw" counterclockwise to increase the by-pass flame or clockwise to decrease it until flame over entire burner is approximately 1/8" high.
4. Replace dial. Caution: While making this adjustment, if the oven should become heated while the dial is set at a low range (below 350), the by-pass flame will shut off completely. If this occurs, turn dial counterclockwise slowly until by-pass gas snaps on. Then check by-pass adjustment as stated above.

##### BY-PASS (MINIMUM BURNER) FLAME (CONSTANT BY-PASS MODELS) - THROTTLE TYPE

This adjustment must be made at the time the control is installed. To adjust this flame: (Be sure oven burner pilot flame is ignited.)



1. Turn dial to 300°F.
2. Light main burner.
3. After oven temperature rises and remains constant, turn dial back to low. This closes main valve and permits only by-pass gas to burner.
4. With a screwdriver, turn by-pass adjustment screw counterclockwise to decrease it, until flame over the entire burner is approximately 1/8" high.

#### SERVICE INSTRUCTIONS

##### RECALIBRATION

Field recalibration is seldom necessary, and should not be resorted to unless experience with cooking results definitely prove that the control is not maintaining the temperature to which the dial is set.

To check oven temperatures When recalibrating, use a Robertshaw Test Instrument or a reliable mercury oven thermometer.

1. Place the thermocouple of test instrument or thermometer in the middle of the oven.
2. Light the main burner.
3. Turn dial to 400° mark and allow oven to heat until flame cuts down to by-pass.
4. After burner has been on sufficiently long enough to cut down to by-pass flame, check oven temperature. The control should be recalibrated if your reading is not within 15 degrees of the dial setting.
5. If the oven temperature indicated recalibration is necessary, note the number of degrees the control is out of calibration.

##### VC4200 SERIES KIT INFORMATION - SEE BACK OF PAGE

6. Remove dial.
7. With a screwdriver, loosen the two calibration screws until calibration plate moves independently of the control.
8. After the dial has been removed and the calibration screws loosened, turn the calibration plate counterclockwise if the oven reading is higher than the dial reading, or clockwise if the oven reading is lower than the dial reading a sufficient number of marks, and while holding in this position, tighten calibration screws firmly. The number of degrees Fahrenheit between the marks are 50° or temperatures will be shown on the calibration plate.

**NOTE :** If the above adjustment is prevented by the two loosened calibration screws being in contact with the ends of the screw clearance slots in the calibration plate, remove the screws and after turning the calibration plate to the proper location, reassemble screws in the other tapped holes designed for them.

9. Replace dial.

## VC4200 (FDO,FDTO) COMMERCIAL GAS THERMOSTAT KITS

The Robertshaw® VC4200 Commercial Thermostat Kits are designed to provide maximum flexibility for field replacements and present a new approach to the serviceman's replacement problems.

The Robertshaw® VC4200 series (Model FD) is a heavy duty, high capacity, gas thermostat with models available in single and dual valve response. The dual valve response, snap throttle, permits accurate low temperature control with quick throttling action for high capacity requirements. The single valve response type permits normal throttle action with minimum flame. Kit models include a 4-way dial which allows the control to be mounted in any one of four mounting positions (see right) Gas capacity is 194,800 Btu/Hr for natural gas, and 315,600 Btu/Hr for L.P. gas.

### INSTALLATION INSTRUCTIONS



#### CAUTION

THIS DEVICE SHOULD BE INSTALLED BY A QUALIFIED SERVICE TECHNICIAN WITH DUE REGARD FOR SAFETY AS IMPROPER INSTALLATION COULD RESULT IN A HAZARDOUS CONDITION .

### CHANGING INDEX POINTER POSITION

If pointer is not desired, bend tip of indicator tab a few times and it will break off. Check to be certain stop on pointer continues to engage tang at high and low stop.

NOTE: Calibration will not be changed when steps below are followed:

1. Turn dial counterclockwise to h i-stop and remove dial. Note position of tang against stop. See Figure 1.
2. Remove two locking screws and dial stem plate.
3. Slide retainer plate into large opening and remove. See Figure 2.  
2. (If pointer restricts plate removal, bend pointer back slightly for clearance.)
4. Remove pointer screw and reposition pointer to desired location. Replace pointer screw. See Figure 3.
5. Reassemble retainer plate onto drive stem with outer rim facing out.
6. Place dial stem plate into position on retainer plate with tang in same position against stop as noted in Step 1 above .
7. Replace two locking screws to hold dial stem plate in position .

### CHANGING REAR HOUSING (OPTIONAL )

#### ONLY KIT TYPE CONTROLS MAY BE ALTERED TO MOUNT ANY OF FOUR WAYS

This kit provides optional replacement for thermostats not having the 3/8" pipe standard rear housing section.

The original rear housing section may be installed on the new replacement thermostat. A new gasket is included for this purpose .

To install Original Rear Housing Section:

1. Remove rear sections from each thermostat by removing six screws on back section. Tap gently to separate sections,
2. Clean any remaining gasket material from mounting surfaces. Use care not to score surface.
3. Install original rear section on new thermostat main body using new gasket and re-tighten six rear screws.

**REMINDER:** Be certain to check this area for leaks after piping in.



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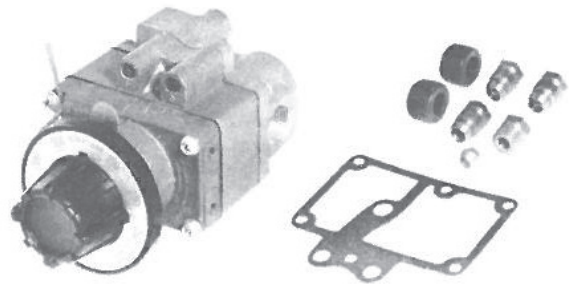


FIGURE 1

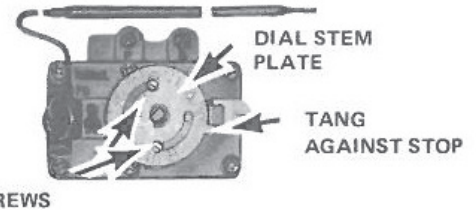


FIGURE 2

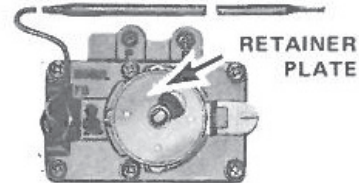
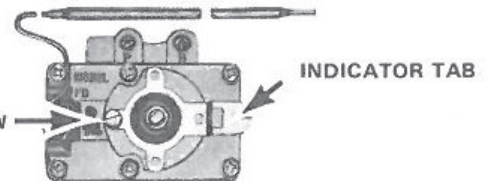


FIGURE 3



### SLIP-FIT 4-WAY DIAL ASSEMBLY

Follow the instruction sheet that is packaged with the dial assembly.  
**UNCOIL DIASTAT**

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### MOUNTING

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Attach the sensing bulb into its proper location. Again use caution not to twist or crimp the capillary tube.

Leak test all connections and also the rear housing section if the original rear housing was used on the replacement thermostat.

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