



# Instruction Sheet Heat-Gard™ Thermostatic Valves

100-3.4F

SUPERSEDES: 100-3.4F September 1, 1983

EFFECTIVE: August 1, 1997

Plant ID#: 001-1005

## DESCRIPTION AND APPLICATION

Operator Models	Current Valve Bodies That Operator Controls		Discontinued Valve Bodies That Operator Controls			
	1/2"	3/4"	1/2"	3/4"	1"	1 1/4"
5211-2	5321-C1	5331-C1	5221-C1	5231-C1	5241-1	5251-1
	5321-1	5331-1	5221-1	5231-1	5242-1	5252-1
	5322-1	5332-1	5222-1	5232-1	5243-1	5253-1
	5323-1	5333-1	5223-1	5233-1		
		5234-1	5227-1	5237-1		
			5228-1	5239-1		
			5229-1			

The Taco Heat-Gard Thermostatic Valves consist of a straight (globe type), angle or side-mount angle valve and an operator.

They are self-contained, wireless, automatic, modulating control valves for use in hot water or two pipe steam space heating systems. They sense changes in temperature and automatically increase the flow of heat in response to a temperature drop or automatically decrease it in response to a temperature rise. They may be used to control baseboard, convector and radiator types of space heating units.

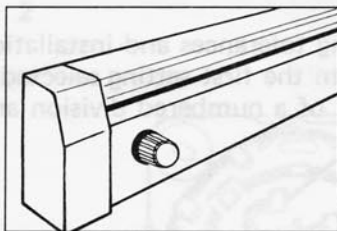
<b>RATINGS:</b> Hot Water	150 PSI (1,034kPa)	250°F (120°C)
L.P. Sat. Steam	15 PSI (103kPa)	250°F (120°C)
Differential Pressure (Shut-off Pressure)		
Valve with direct or remote sensor operators	*50 Ft. WG (150kPa)	
Valve with wall mount operator	30 Ft. WG (90kPa)	

*\*NOTE: Valve noise increases at high differential pressures. It is recommended that differential pressure be limited to 40 ft. WG (117.2kPa). If higher pump head is encountered, it is recommended that a differential by-pass valve be installed.*

## INSTALLATION

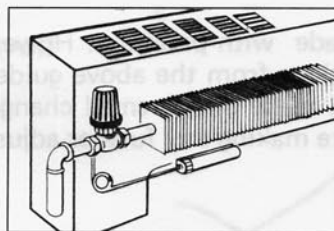
The valve and the operator of the Heat-Gard Thermostatic Valve must be selected and installed so that the temperature sensor is properly positioned. It must be exposed to circulating air. It must not be obstructed or shut in by covers, draperies or furniture. Locate the sensor so that it is not exposed to direct sunlight or drafts.

## TYPICAL HEAT-GARD™ INSTALLATIONS



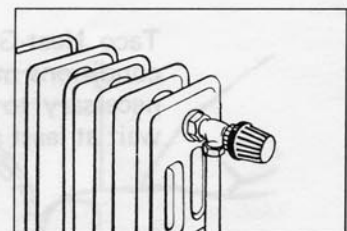
### 1. BASEBOARD

In-line straight valve with direct control mounted through the cover so that it may sense air temperature in open space.



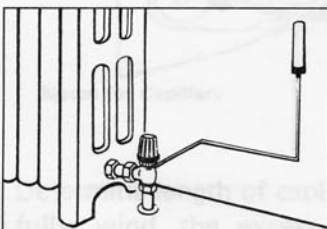
### 2. FINTUBE CONVECTOR

Valve installed inside cover at access door with remote sensor under the radiation so that it will sense the returning air.



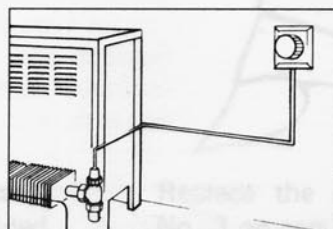
### 3. FREE STANDING RADIATOR

Direct mount operator on a side-mount angle valve. Sensor is away from direct heat of pipe and radiator. Shown at top, valve can also be placed at bottom of radiator.



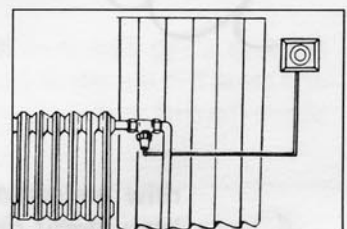
### 4. FREE STANDING RADIATOR

Remote sensor allowing accurate sensing of air temperature by removing sensor from direct heat influence of radiator.



### 5. CONVECTOR OR ENCLOSURE

Wall mount dial mounted away from heat influence of radiator on a nearby wall or actually on convactor cover if provision is made to insulate sensor from heat influence of cover.



### 6. CONVECTOR OR BASEBOARD

Remote bulb sensor with capillary and cabinet or wall mount dial with capillary. Used where remote sensing is needed and where the setting dial must be located away from the valve for accessibility.

INSTALLATION (Cont'd)

VALVE INSTALLATION

- 1. The system must be clean and free of oil. Additives containing oil or petroleum based products must not be used.
- 2. Make sure that the valve is installed with the arrow cast on its side pointing in the direction of fluid flow in the pipe.
- 3. A stream system should have a strainer installed to keep the valve seats free of loose particles.
- 4. When determining the valve location in the piping, consideration must be given to capillary lengths and desired locations for the remote sensor and the setting dial.

OPERATOR INSTALLATION

- 1. Mount the setting dial on the convector cover, baseboard cover, or wall. Refer to illustrations on next page.
- 2. When connecting the actuator part of the operator to the valve, first turn the setting dial to No. 5. Center the actuator over the valve stem and cartridge hexagon. Engage the inside hexagon section of the actuator with the hexagon of the valve cartridge. Push down on the actuator and at the same time turn the assembly nut down onto the thread of the neck of the valve until the operator is firmly in place. Tighten slightly with smooth jawed pliers or wrench. Turn the setting dial back to 3 or other desired setting.
- 3. The remote sensing bulb can be located on the wall under the heating unit if air flow is not obstructed and the space is sufficient to permit the sensing bulb to be at least 3"(8 cm.) from the bottom of the heating unit. Make sure that the sensing bulb is not buried in carpeting.
- 4. Take care not to kink or make very sharp bends in the capillaries.

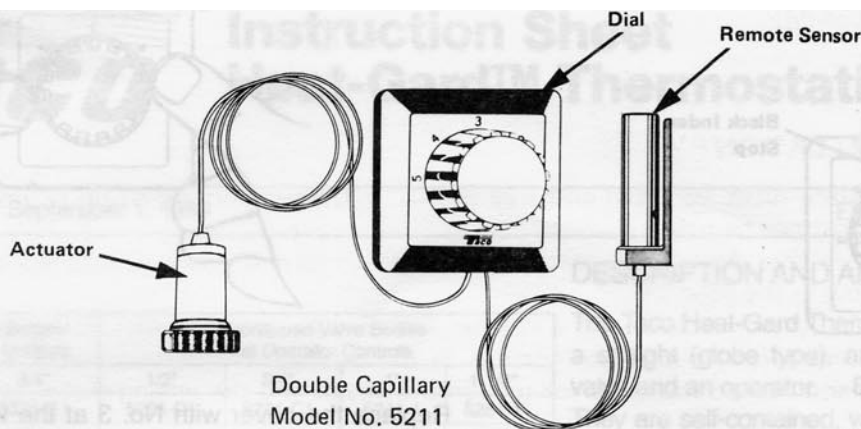
OPERATION

Set the dial to provide the comfort level desired. The following table may be used as an approximate guide for the first trial setting:

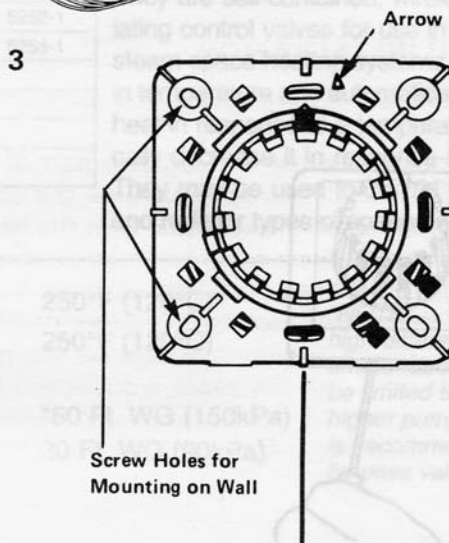
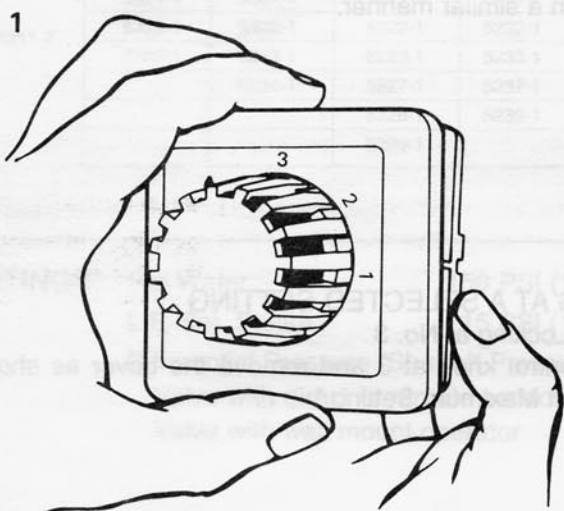
Dial Setting	Closed	1	2	3	4	5
Temperature F	43	54	61	68	75	82
C	6	12	16	20	24	28

Taco Heat-Gard valves are made with precision. However, manufacturing tolerances and installation conditions might cause deviations from the above guide. If a change from the first setting selected is necessary to achieve comfort, make only a small change, say 1/4 to 1/2 of a numbered division and wait at least a few hours before making any further adjustment.

# INSTALLATION



Double Capillary  
Model No. 5211



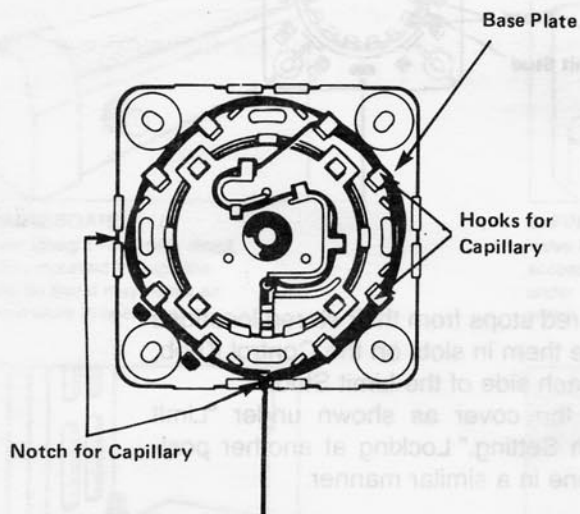
Screw Holes for  
Mounting on Wall

Remove the cover from the baseplate.

Mount the baseplate on a flat wall surface, convector cover, or baseboard cover, with the arrow pointing up.

2

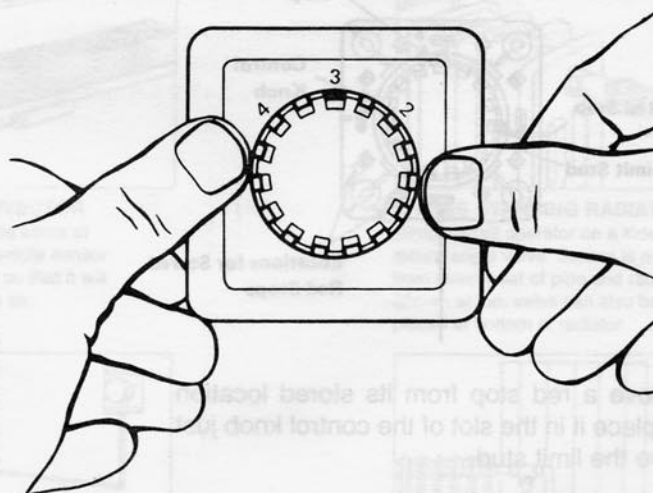
4



Base Plate

Hooks for  
Capillary

Notch for Capillary



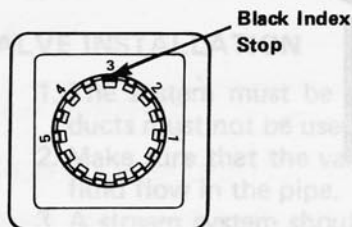
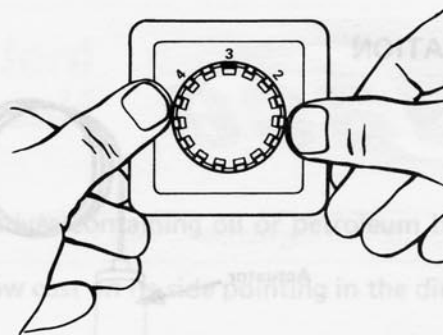
Determine length of capillary needed and carefully wind the excess around the molded plastic hooks. Be sure to lead the capillary out from the baseplate at one of the four notches provided.

Replace the cover over the baseplate with No. 3 on top. Press the cover on firmly until it snaps into place.

## TO LIMIT MAXIMUM SETTING

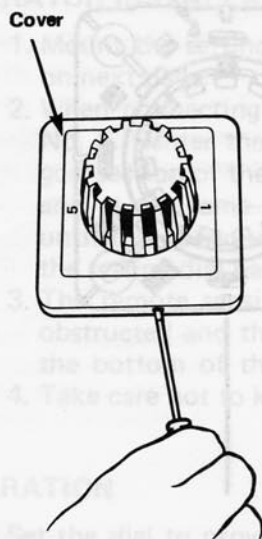
Example: Limit to No. 3

4



Set black index stop at 3

Replace the cover with No. 3 at the top. Other setting limits are done in a similar manner.

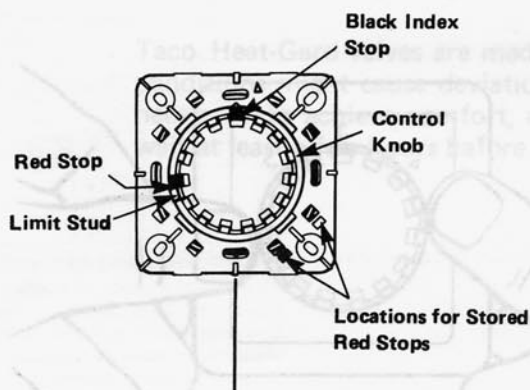
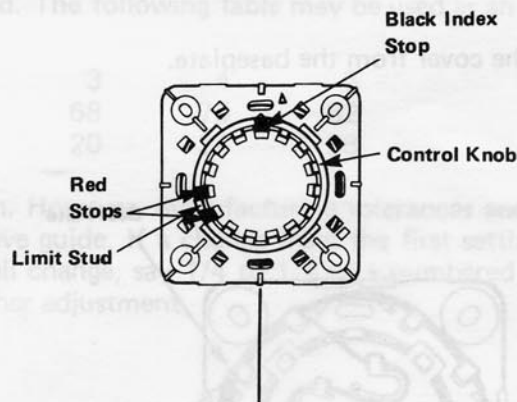


Pry cover off by inserting a tool at the small oval hole in the bottom of the cover.

## LOCKING AT A SELECTED SETTING

Example: Locking at No. 3

Set the control knob at 3 and remove the cover as shown under "Limit Maximum Setting."



Remove a red stop from its stored location and place it in the slot of the control knob just above the limit stud.

Remove red stops from their stored locations and place them in slots on the Control Knob, one on each side of the Limit Stud.

Replace the cover as shown under "Limit Maximum Setting." Locking at another position is done in a similar manner.

## COMPARE. YOU'LL TAKE TACO.

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