

# FLAIR MANUFACTURING CORP.



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## INSTALLATION AND OPERATING INSTRUCTIONS - ONE AND TWO-PIPE THERMOSTATIC STEAM VALVES

### GENERAL DESCRIPTION

When installed on the room radiator or convector of a one or two-pipe steam heating system, the FLAIR THERMOSTATIC steam valves will automatically modulate the flow of steam into that radiator or convector. FLAIR THERMOSTATIC steam valves will allow sufficient heat into a room or area to satisfy the exact room or area requirements without overheating. You actually dial the room temperature you want on the thermostatic head of the valve.

FLAIR THERMOSTATIC steam valves work in conjunction with any indoor or indoor/outdoor burner control to provide maximum comfort, positively prevent expensive overheating, and automatically redistribute steam to the underheated areas of a structure.

The addition of FLAIR THERMOSTATIC steam valves does not require the changing of the present room thermostat. However, for increased fuel savings, automatic night setback should be added to your present system. Contact Flair for information on the low-cost, do-it-yourself FUEL MISER (write for Bulletin No. 1074). For most efficient operation of a one or two-pipe steam heating system, the FLAIR THERMOSTATIC valves should be installed on every radiator in the system\*, BUT they can also be used as problem solvers by installing them only in rooms or areas most prone to overheating.

\* NOTE: DO NOT install a FLAIR THERMOSTATIC steam valve in the same room or area in which the boiler controlling room thermostat is located.

For proper operation, the system should be in good operating condition. Main vents should be of fast venting capacity. ~~Chemicals should be added~~ to eliminate surging. All radiators, convectors and piping should be pitched properly. Operating pressure and water level controls should be checked for correct settings. Safety valves and other safety controls should be checked for operation and replaced when necessary. Steam pressures should not exceed 15 psig.

Remember, FLAIR THERMOSTATIC steam valves can provide fuel savings and tenant comfort by effectively reducing overheating and automatically balancing the system to actual room temperature requirements. FLAIR THERMOSTATIC valves cannot compensate for insufficient steam generation due to faulty system design, poor piping, improper controls, boiler settings, or undersized radiators.

### INSTALLATION - ONE-PIPE

Installation itself is simple! Replace the existing steam air vent with the proper model and size FLAIR THERMOSTATIC one-pipe steam valve using the following instructions and photos.

NOTE: To operate properly, the system must have automatic burner firing and an intermittent supply of steam at the radiator. Radiators fitted with FLAIR THERMOSTATIC steam valves should have the radiator hand valve fully open, preferably with the handle removed.

Install special "lifetime" air valve into cast body AFTER cast body is mounted on radiator or convector.

1. CAST IRON RADIATOR with at least six inches of clearance between the vent tapping of the radiator and a wall or other obstruction: use the VNLON (1/8" angle with quick vent/self contained). See installation photo "A".
2. CAST IRON RADIATOR (WITH RADIATOR COVER) with less than six inches but at least two inches of clearance between the end of the radiator and a wall or other obstruction: use the VQLON (1/8" angle with quick vent/remote bulb). See installation photos "B", "C", or "D". The VNLON may be used, provided a hole can be cut in the radiator cover for the FLAIR THERMOSTATIC head to protrude completely outside the radiator cover. See photo "D". (Use a standard 1/8 street ell or serv ell when adapting to "B" or "C" installations.)
3. CONVECTOR: use the VQM series - 1/8" VQMON, 1/4" VQMAN, 1/2" VQMBN. See installation photo "E".

NOTE: If the air valve leaks water, it is not the fault of the air valve! Steam air valves are designed to work with steam and there should be no water at the valve. If water is present at the valve, check for the following faulty conditions:

- (a) radiators, convectors and piping **not** pitched towards the condensate return.
- (b) the hand valve is sized too small or is partially closed.
- (c) boiler surging.
- (d) improper boiler piping or defective boiler water feeder.

### INSTALLATION - TWO-PIPE

On a new or modernization job, the two-pipe FLAIR THERMOSTATIC steam valve replaces the normal radiator hand valve. See photo "F".

1. CAST IRON RADIATOR with at least six inches of clearance between the supply tapping of the radiator and a wall or other obstruction: use the VN series supplied 3/4" and 1". See photo "F". For use on 1/2" supply, both the **supply piping and the radiator tapping must be** adapted to 3/4" size.
2. CAST IRON RADIATOR (WITH RADIATOR COVER): a hole, which will allow the FLAIR THERMOSTATIC head to protrude completely into the room, must be cut into the radiator cover. See photo "G". If the hole **cannot** be cut, use the VQJ remote bulb series supplied 3/4" and 1". Install the remote bulb outside of the radiator cover. See photo "H".

### INSTALLATION OF THE THERMOSTATIC HEAD

This component is both the room temperature sensing and temperature setting device. See Fig. 1. In all installations, the FLAIR THERMOSTATIC head must protrude into the room and sense the actual room temperature. The head should not be installed under a radiator or convector cover unless the remote bulb model (VQ) is used, with the remote bulb sensing room temperature.

1. Set dial to No. 8 (full red).
2. Attach the FLAIR THERMOSTATIC head to the valve by rotating the lock ring clockwise. Hand tighten with the setting numbers in a **readable position**. **(Do not use tools.)**
3. If the remote bulb model is used, completely extend the capillary tube using caution not to crimp, pinch, or cut it, and mount the bulb:
  - (a) for a convector - directly under the element. See photo "E".
  - (b) for a radiator (no clearance) - on the wall in line with the valve. See photo "B".
  - (c) for a covered radiator - on the wall outside the cover. See photos "C" & "H".

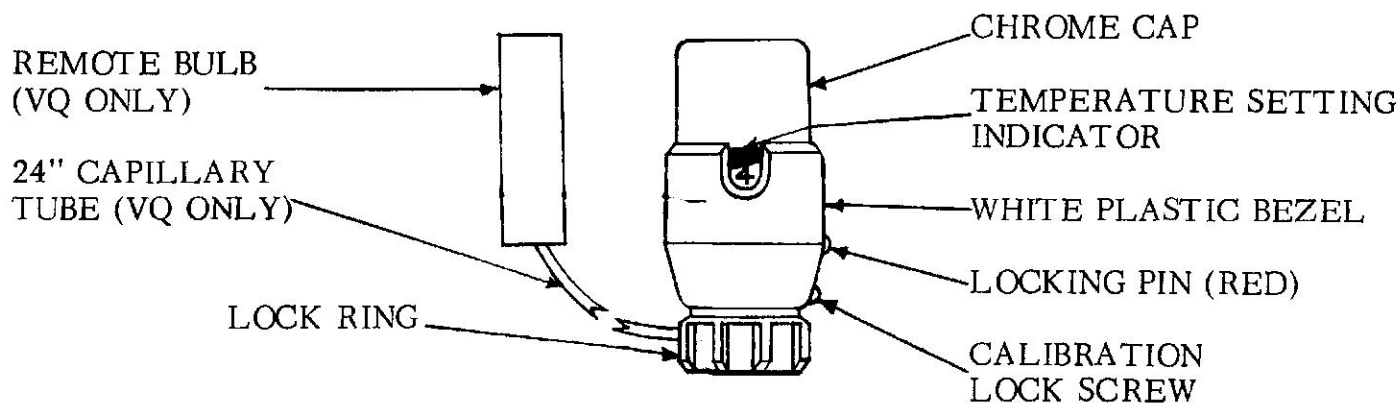
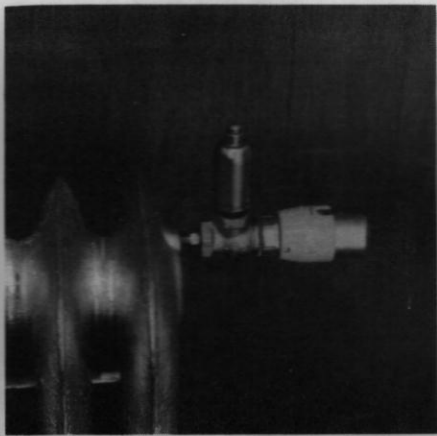


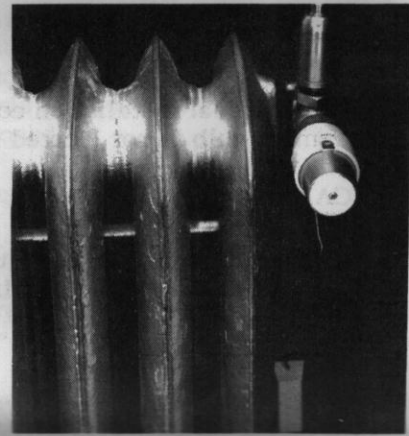
Fig. 1.

### THERMOSTATIC HEAD

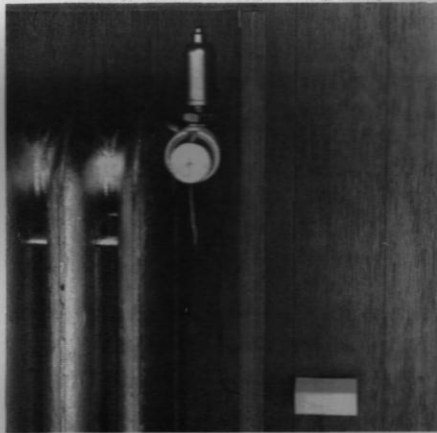
Installation is now complete, and the FLAIR THERMOSTATIC steam valve is ready for operation. To set for approximately 70°F room temperature, turn the dial to No. 4. Higher number settings will give higher temperatures -- lower numbers, lower temperatures (approximately 3 1/2°F per number).



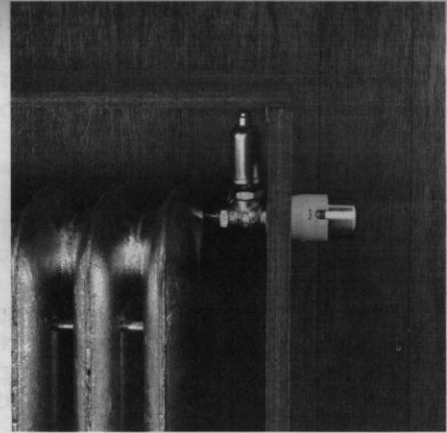
**A**



**B**



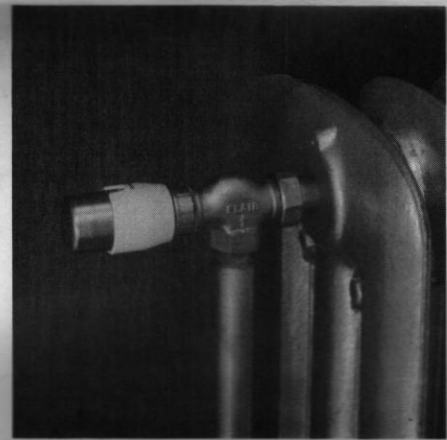
**C**



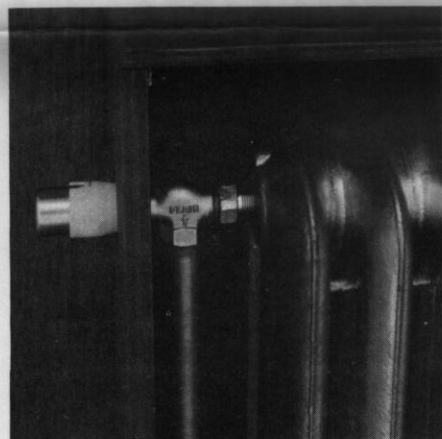
**D**



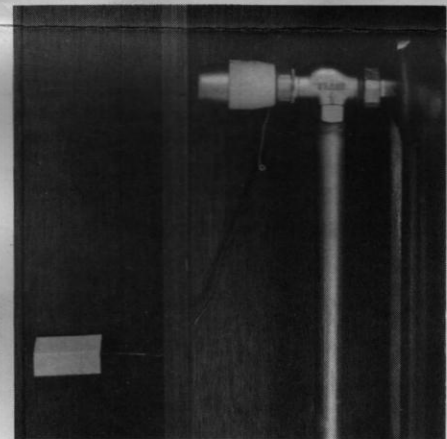
**E**



**F**



**G**



**H**

## CALIBRATION

All valves are factory calibrated. Although unlikely, it may be necessary to recalibrate in the field due to unusual installation conditions. Before recalibrating, check to make sure chrome cap or remote bulb is not located in direct sunlight, in a drafty area, or behind drapes.

### TO RECALIBRATE

Set point numbers are factory adjusted to 70°F. at a setting of "4" for an average installation. In unusual cases, where this setting has to be adjusted, the following steps should be taken:

1. Rotate chrome cap so that "4" appears in setting window.
2. Loosen differential adjusting screw at lower end of white plastic bezel by backing it off  $4\frac{1}{2}$ -5 turns. DO NOT REMOVE SCREW!

**NOTE:** The calibration locking screw is a "ONE WAY" screw that can be opened with a little extra effort. This is designed to prevent unauthorized tampering.

3. Hold chrome cap with setting numbers facing you. Slide white plastic bezel fully back (toward you) taking care not to rotate any parts. See Fig. 1.
- 3a. If room temperature is too low and more flow is desired, rotate white plastic bezel until a lower setting number (i.e., No. 2) appears in setting window. Slide white bezel fully forward (away from you). Tighten calibration locking screw. See Fig. 1. Settings change approximately  $3\frac{1}{2}$ °F. for each number.
- 3b. If room temperature is too high and less flow is desired, rotate white plastic bezel until a high setting number (i.e., No. 6) appears in setting window. Slide white bezel fully forward (away from you). Tighten calibration locking screw. See Fig. 1. Settings change approximately  $3\frac{1}{2}$ °F. for each number.

### LOCKING VALVE AT PRESET TEMPERATURE

To lock the valve at a desired temperature, pry out the white locking pin, adjust the valve to the required setting, and replace the white pin with a red one. (Red locking pins are available from the factory - no charge - by request.)

For further information regarding specifications, applications, and temperature limiting features, please consult the factory.

