Thermostatic Radiator Valves - LV-4/WV-4

Installation Instruction

This bulletin should be used by experienced personnel as a guide to the Installation of Thermostatic Radiator Valves. Selection or installation of equipment should always be accompanied by competent technical assistance. You are encouraged to contact Armstrong International, Inc. or its local sales representative for additional information.

Installation Instructions

All radiator and pipe work must be flushed thoroughly to prevent problems caused by weld beads, dirt or rust in the system. When converting old heating systems, a pipe line strainer is recommended.

The radiator valve is installed in the supply pipe to the radiator with the flow in the direction of the arrow.

Do not install the thermostatic operator until all building and decorating work has been completed. During construction the valve can be operated with the temporary screwed cap provided. The capillary tube of the remote sensor may become kinked or flattened.

The radiator valve should be installed so that the valve spindle is in a horizontal position to ensure good circulation of ambient air around the thermostatic operator.

Setting Temperature Limits or Locking to Preset Temperature LV-4 Operators (Read Instructions Completely)

To limit the range of the thermostatic operator, first remove the graduated control cap. To remove the control cap from the LV-4 thermostatic operator, first turn it completely clockwise. Then turn the control counter clockwise 1 turn. Insert a small screwdriver in the hole provided on the base of the thermostatic operator. Pry up until the control cap is dislodged from its base.

To place an upper limit on the room temperature, the maximum temperature must be set first. Remove the control cap and screw the serrated ring clockwise until it stops at the base. Then unscrew it until the white marks are lined up. This is equal to the number 3 on the control cap. Lightly replace the control cap lining up the number 3 with the white setting mark and turn to the number which corresponds to your chosen maximum temperature. Lift the control cap off the operator and place one of the black removable stops located in the control cap to the right of the number corresponding to the desired maximum temperature.

To limit the lower temperature, place one of the black removable stops located in the control cap to the left of the number corresponding to the minimum desired temperature. To lock a preset temperature put one stop to each side of the number corresponding to the desired temperature. Lightly replace the control cap and push down until it snaps in place. See Figure 1-1 for help.

When removing or replacing the control cap, care must be taken not to disturb the position of the white serrated ring which has a white setting mark. Should this ring be removed, the proper setting will need to be restored. The proper setting can be restored In the following manner:

Screw in the serrated ring until it stops at the base. Then unscrew it until the white mark is opposite the white Setting mark at the base of the thermostatic operator. Replace the control cap with the numeral "3" opposite the Setting mark.

Locking to Preset Temperature WV-4 Operator (Read Instructions Completely)

To lock the WV-4 thermostatic operator to a preset temperature, first remove the graduated control cap.

To remove the graduated control cap, rock the control cap back and forth until it becomes dislodged from its base. A certain amount of effort may be required. A screw driver placed between the base of the operator and the graduated control cap can be used to pry the control cap up and off. If you try this method be careful and do not apply too much pressure (the control cap could dent or chip).

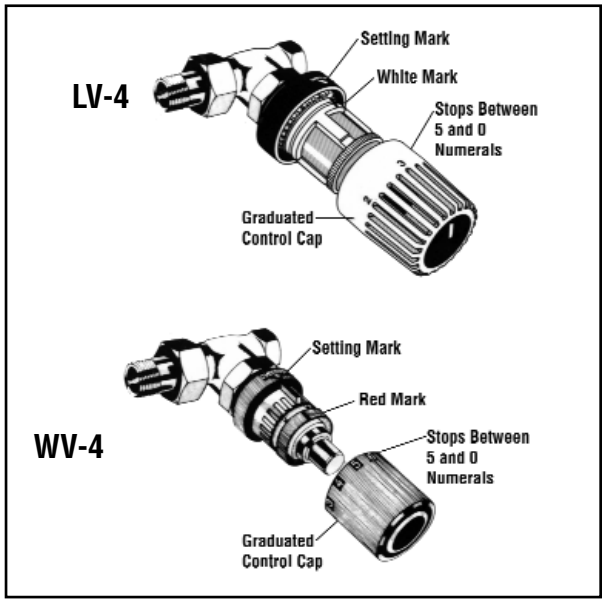


Figure 1-1

Now screw the serrated ring clockwise until it stops at the base. Then unscrew it until the red mark is opposite the white setting mark at the base of the thermostatic operator. This is equal to the number 3 on the control cap. Lightly replace the control cap lining up the number 3 with the white setting mark and turn to the number which corresponds to your chosen temperature.

Lift the control cap off the operator and place one of the black removable stops located in the control cap to the right of the number corresponding to the desired maximum temperature.

To limit the lower temperature, place one of the black removable stops located in the control cap to the left of the number corresponding to the minimum desired temperature. To lock a preset temperature put one stop to each side of the number corresponding to the desired temperature.

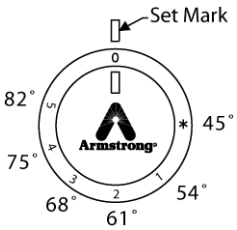
Replace the control cap so the white molded slots found on the inside of the control cap lines up with the black slot found at the base of the operator in front of the setting mark. Push the control cap down until it snaps in place. See Figure 1-1 for help.

Reinforcing Cover

A reinforcing cover should be used to provide extra strength against impact, and to reduce the risk of theft in schools, hospitals or public buildings. And at the same time allow complete freedom of adjustment.

General Instructions and Installation Hints

The thermostatic operator must be able to "sense" the ambient air temperature without a problem. A prerequisite for satisfactory control is a constant flow of ambient air over the thermostatic operator. The thermostatic operator must not be screened or covered by curtains, furniture, radiator paneling, nor should it be exposed to direct sunlight or drafts. In problem applications, a thermostatic operator with remote sensor should be used.



The LV-4 and WV-4 can be easily adjusted to a comfortable temperature. The temperature to scale relationship is shown to the left. The lowest settling provides freeze protection at approximately 45°F with a high setting of 82°F. Temperature settings on all LV-4/WV-4 Operators may be limited or locked.

Troubleshooting

Problem: The desired room temperature is not achieved or maintained.

Steam Systems

1. The radiator is covered by curtains, paneling, etc. Use a thermostatic operator with a remote sensor.
2. Temperature near the thermostatic operator differs from the ambient temperature due to poor installation. Use a thermostatic operator with a remote sensor.
3. The sensor bulb is poorly positioned. The best height is three (3) feet above floor level. In some circumstances the sensor bulb may be installed below the radiator, halfway between the radiator and the floor.
4. The valve and thermostatic operator were improperly installed. The thermostatic operator must be able to sense the ambient air temperature. The valve and thermostatic operator work best in a horizontal position.
5. The radiator selected is too small for the size of the room.

Hydronic Systems

1. The water supply temperature is too low.
2. The circulating pump is off.
3. The pump output is set too low.
4. The pump connections are reversed.
5. On gravity-fed central heating systems, a circulating pump must be installed. Gravity systems are very sensitive to the presence of air in the system.

Problem: The thermostatic radiator valve does not function.

1. The thermostatic operator is not screwed tightly to the valve body.
2. The capillary tube of the remote sensor is kinked or flattened. Install carefully a new thermostatic operator.
3. Is a pipe line strainer being used, and has it become clogged. Remove valve, clean strainer and reinstall.
4. Air inside the radiator is reducing radiator circulation. Install a radiator air vent.
5. The valve seat has been distorted, as a result of improper assembly. A new valve is required.
6. Air is interfering with system circulation. Install an automatic air vent at the appropriate place within your system.
7. The thermostatic operator has been tampered with. Have the thermostatic head re-adjusted by the factory, or install a new thermostatic operator.

Problem: The valve cannot be shut off.

1. In most cases this is caused by dirt build-up on the valve insert. The dirt can usually be removed by repeatedly working the valve spindle. To do this, remove the thermostatic operator and push down on the spindle several times.
2. The valve insert has been worn and damaged. The valve insert must be replaced. On hydronic and steam systems this can be done without draining the system; use the in-service repair tool.
3. Make sure the thermostatic operator is set on the “0” setting. If it is set on the crystal symbol, the valve will not shut off completely.

Problem: The valve leaks.

1. The valve insert is loose. Tighten it.
2. The “O” ring seal is damaged. Replace the valve insert.

Problem: The valve rattles.

1. Inlet and outlet connections have been reversed.

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