

T&P valve reinspection programs that work!



Seven persons were hurt in water heater explosion at fraternity house.

Periodic reinspection of temperature and pressure relief valves to assure that they have been installed properly, have not been tampered with, and are functioning properly is one of the vital aspects in preventing water heater explosions. DE, along with many others, has long advocated that a requirement for periodic inspection be part of the plumbing process. Two examples of reinspection programs that can serve as models for others are examined in this article.

Two organizations that have initiated and carried out reinspection programs which exemplify the kind of independent action that can save lives are Modern Electric Co., a water utility in Spokane, WA and the Los Angeles Unified School District.

- Modern Electric's assistant water superintendent Denny Lopp first became aware of the dangers of "unprotected hot water heaters" while teaching cross connection control classes.

Pointing out that installing backflow preventers on a service line or supply line to water heaters reduces the area where thermal expansion can occur, he says that the reduced expansion area, combined with a T & P valve that does not open, may increase the possibility of an explosion. At the same time he notes that, "an overheated hot water heater that cannot vent to the atmosphere may explode whether thermal expansion is reduced or not." Lopp strongly believes that whenever the installation of a backflow preventer reduces thermal expansion, the T & P valve should be inspected. He outlines the following procedure for inspecting valves.

T & P valve reinspection...

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“Most plumbing authorities recommend that any valve over three years old, based on the dating code, be removed and visually inspected for accumulations of corrosion deposits and to insure it has not been illegally altered or repaired. The valve should be replaced if there is evidence of any of the above. The age of the valve may be determined by locating the four-digit dating code on the name plate (e.g. 8322 was manufactured the 22nd week of 1983).”

“T & P valves should be manually operated by lifting the operating lever on a regular basis to insure it is capable of discharging water.”

Consumer education is vital

Lopp also believes that educating the consumer is an important adjunct to any inspection program.

- In 1985 his company prepared and sent to water and electric customers a brochure, “Is Your Hot Water Heater (Tank) Safe?” which explains how T & P valves operate; describes the factors necessary for correct installation, including the importance of correct sizing; gives steps the homeowner can take to ensure the safe operation of his hot water heater, and includes diagrams and drawings which illustrate the text.

Along with the brochure, Modern Electric Water Co. sent a survey card, results of which revealed that 25 percent of the heaters were not properly protected.

Those surveyed responded that: 18 percent, no T & P valve installed; two percent, T & P valve incorrectly installed; four percent, pressure only relief valve; one percent, T & P valve would not discharge; less than one percent, T & P valve plugged. However, Lopp says that 15 percent of the T & P valves inspected by his company would not discharge, leading them to believe that the figure for unprotected hot water heaters in their area is closer to 30 percent.

- Charles C. Lunt, plumbing technical supervisor, Los Angeles Unified School District, says the district’s program was a direct response to a tragedy in Spencer, OK, in which six students were killed in an explosion.

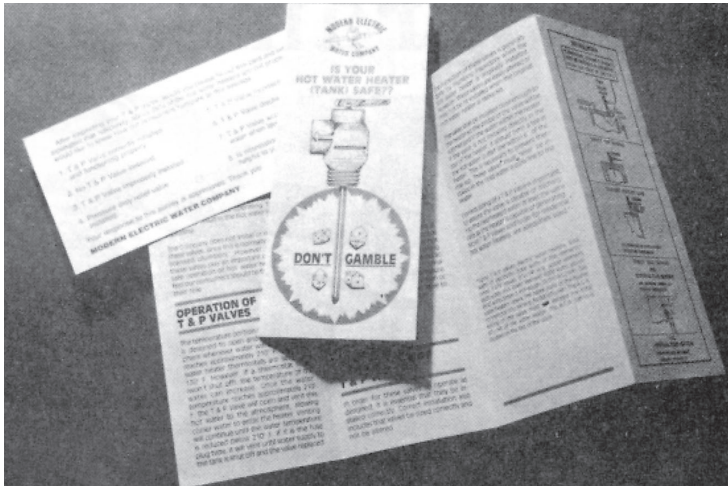
Immediately after the accident, they began to investigate the condition of all hot water heater/storage and hot water storage tanks in the district to insure adequate protection. They developed a program to inspect, test, and replace valves, and required certification by the area plumbing supervisor and the journeyman installer that work was successfully completed. An ID ticket placed on the inspected equipment and stub filed in the district’s central files aid in keeping track of the status of all equipment.

Contractors benefit from program

The inspection and replacement work is done by district plumbing personnel and by outside contractors in accordance with specifications provided by the Technical Services Section. Plumbing supervisors are required, in addition to testing existing valves, to “always install new T & P valves on heaters when water heaters are replaced.”

Responsibilities of all those involved - the journeyman plumber, area planning supervisor, plumbing technical supervisor - are clearly spelled out. These include specific technical and record-keeping procedures to ensure that nothing is left to chance where water heater safety is concerned.

According to Lunt, “An accident is nonexistent, not costly or even considered until it happens; the only truly ‘safe way’ is prevention of the accident.”



After inspecting your T & P Valve, would you please fill out this card and return it to us. It is estimated that nationally, about 30% of the hot water heaters are not properly protected. We would like to know how our consumers compare to this average.

- | | | | |
|--|--------------------------|---|---|
| 1. T & P Valve correctly installed and functioning properly. | <input type="checkbox"/> | 5. T & P Valve incorrectly sized. | <input type="checkbox"/> |
| 2. No T & P Valve installed. | <input type="checkbox"/> | 6. T & P Valve discharge vent plugged. | <input type="checkbox"/> |
| 3. T & P Valve improperly installed. | <input type="checkbox"/> | 7. T & P Valve would not discharge water when lever was lifted. | <input type="checkbox"/> |
| 4. Pressure only relief valve installed. | <input type="checkbox"/> | 8. Is information such as this helpful to you, as a consumer? | 8a Yes <input type="checkbox"/>
8b No <input type="checkbox"/> |

Your response to this survey is appreciated. Thank you.
MODERN ELECTRIC WATER COMPANY

Pieces used in Modern Electric survey of homeowners. Results showed 25 percent of customers answering survey did not have proper protection for water heating units.

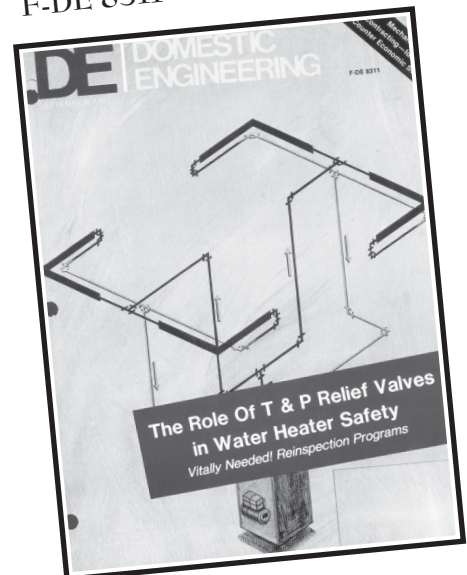
Film shows need for water heater safety

"Explosion-Danger Lurks", an educational film from Watts Regulator Co., graphically shows the critical need for temperature and pressure relief valves on water heaters.

The tremendous violence of unprotected, exploding hot water storage tanks and heaters can result in extensive property damage, personal injury, and loss of life. Watts engineers conducted a series of laboratory experiments and field tests in which hot water heaters were overheated above 212°F and then filmed the resulting explosions. The film has been shown over a million times during the past 37 years as a training tool for contractors, safety personnel and other industry members.

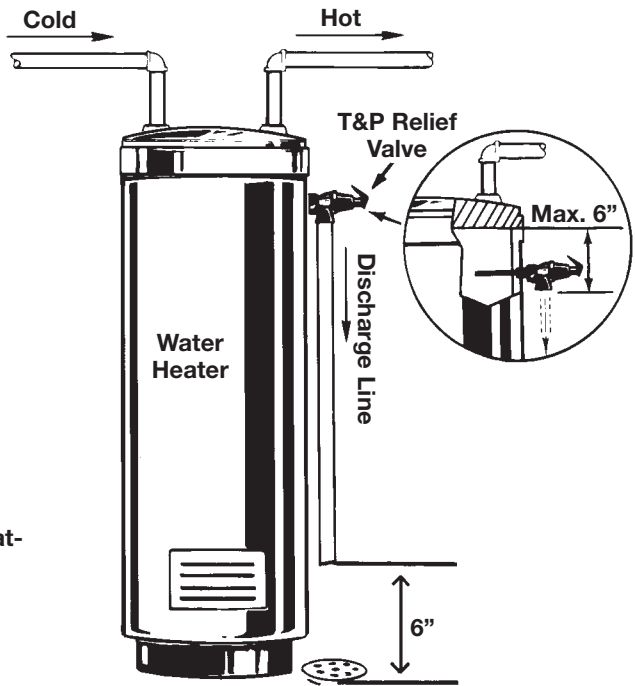
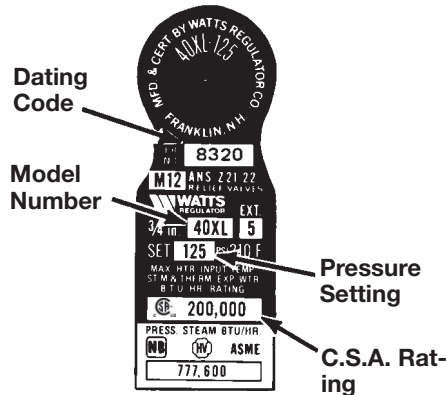
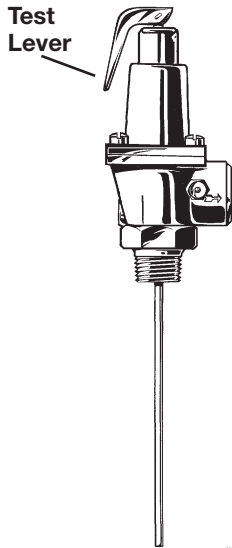
"Explosion-Danger Lurks" is available free of charge for use by interested groups. It is available on VHS videotape. To arrange for a loan, contact your local Watts Representative.

For Previous Information on this subject, send for F-DE 8311



REINSPECTION GUIDE

For T. & P. Relief Valves



ITEM TO INSPECT	WHAT TO DO	PURPOSE
Test Lever 1	Manually lift lever	Following installation, the valve lever MUST be operated AT LEAST ONCE A YEAR by the water heater owner to ensure that waterways are clear. Certain naturally occurring mineral deposits may adhere to the valve, blocking waterways, rendering it inoperative. When the lever is operated, hot water will discharge if the waterways are clear. PRECAUTIONS MUST BE TAKEN TO AVOID PERSONAL INJURY FROM CONTACT WITH HOT WATER AND TO AVOID PROPERTY DAMAGE.
Valve Location 2	Observe how valve is installed	Valve thermostat must be immersed in tank water and located in top 6" of tank to accurately sense temperature.
Discharge Line 3	Observe size and direction	Discharge line must be installed to avoid water damage and scalding injury, when valve operates. Discharge line must be same size as valve outlet, be pitched down for free draining, and have no shut-off valve or obstructions throughout its entire length. Discharge line termination point should be visible to observe any discharge.
Nameplate 4	A. Observe Pressure Setting B. Observe C.S.A. Rating C. Observe Model number D. Observe Dating Code	Pressure Relief Setting cannot exceed working pressure of tank. C.S.A. Rating must be in excess of BTU input of heater. To ensure that valve is temperature and pressure type rather than plain pressure relief. To determine age of valve, all devices have a 4 digit serial number dating code. The first two digits are the year and the last two digits are the week of the year the valve was manufactured (i.e. 8320 is 20th week of 1983.)
Complete Valve 5	Remove valve from tank	TEMPERATURE AND PRESSURE RELIEF VALVES should be inspected AT LEAST ONCE EVERY THREE YEARS , and replaced, if necessary, by a licensed plumbing contractor or qualified service technician, to ensure that the product has not been affected by corrosive water conditions and to ensure that the valve and discharge line have not been altered or tampered with illegally. Certain naturally occurring conditions may corrode the valve or its components over time, rendering the valve inoperative. Such conditions can only be detected if the valve and its components are physically removed and inspected. Do not attempt to conduct an inspection on your own. Contact your plumbing contractor for a reinspection to assure continuing safety.
Inspection Log 6	Log inspection Data	To provide record of inspection date and results of inspection.



Water Safety & Flow Control Products



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 Canada: 5435 North Service Rd., Burlington, ONT. L7L 5H7; www.wattscanada.ca