



Field Service Bulletin

Discharging Relief Valves

Model(s) Affected: All Residential & Commercial Units

More and more housing developments are being constructed in areas where the local water utility is supplying these projects with extremely high water main distribution pressure. Contractors are installing water pressure reducing valves in the service. These reducing valves are available with or without a back flow check. In the case where the reducing valve does not permit back flow, we have found by tests that for every degree rise in the temperature there is a build up of pressure from 4 to 6 pounds per square inch in the water heater tank. Under these conditions the tank would be subject to a minimum of 240 PSI with a 60 degree rise in water temperature ($4 \times 60 = 240$) and minimum 400 PSI with a 100 degree rise in water temperature ($4 \times 100 = 400$) and since the tank is designed to withstand a test pressure of 300 PSI, it can be easily understood that the tank may very well rupture unless a temperature and pressure relief valve is installed in the water heater.

Where a temperature and pressure relief valve is used on a water heater installation, as described above, every time the water heater cycles on the relief valve will discharge or drip.

To correct this problem:

Replace the water inlet pressure reducing valve with a valve that has a back flow by-pass built into it. This will permit the water to expand back into the main supply when heated.

Or, if codes require a back flow prevention device a properly sized thermal expansion tank should be installed in the supply side piping of the water heater.

The above does not only apply to areas with extremely high main distribution water pressure, but will also occur in areas where the utility will require a check valve in front of the water meter, or where codes require backflow prevention devices installed in the water service.

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