

# Why Little Leaks Jeopardize Big Boilers

## Safety Note

**Hot Water Boilers: Leaking systems can create dangerous conditions.**

### **It's just a little drip...**

It could be around a hand hole or maybe somewhere in the system a valve packing is leaking.

The most common leak is a weeping relief valve. Many sites have relief valves dripping or leaking, but since they are piped to a drain, they don't worry much about it.

**This is a problem in both hot water and steam boiler systems.** Hot water heating systems are not designed to hold much water. These systems don't typically need or get regular water analysis. The loss from any leak must be made up somewhere, and often it is through the automatic fill valve. This make up water is untreated and can be extremely corrosive to the boiler. The fresh water brings in oxygen and minerals that will corrode your boiler over time. The minerals will insulate tubes and make hot spots that can warp or fail. The oxygen can cause pitting and tube corrosion. This means that your boiler, which should be good for 20-30 years, could fail in five. If a shortened boiler life is all that happens, that's not bad. Your failure may just be leaks and expensive tube repairs. These same mineral deposits can corrode and seize the relief valve shut. If the relief valve doesn't work when it's supposed to, you can have a catastrophic failure (i.e. explosion).

### **Action to take**

#### **Fix all hot water boiler system leaks.**

Do this in a timely manner – big or small

#### **Conduct periodic water sampling.**

Do this even from closed systems. Make sure that oxygen and contaminant levels don't indicate the presence of untreated water in your system.

#### **Consider make up water meters.**

We try to design make up water meters into all of the automatic fill systems of hot water boilers. The meter needs to be read and logged. Unusual water use can indicate a problem. Certain volumes used over time may mean treatment with oxygen scavengers and dispersants may be needed.

#### **Safety relief valve testing.**

Relief valves must be tested regularly. It's code and law. Be careful to do it properly so the valve reseats and you don't get hurt. Be mindful of where the discharges are.

Even though they are very simple, when compared to steam boilers, hot water boilers and their unique issues need proper care and respect. A small hot water heater killed six children and destroyed a substantial part of a school in Oklahoma in 1992. Pressure vessels don't have to be big to cause serious damage.

## ABOUT US

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Honeywell Combustion Safety is a part of Honeywell Thermal Solutions, an industry leader in commercial and industrial combustion solutions. Honeywell Combustion Safety, formerly known as CEC Combustion Safety, has been in business since 1984. With engineers and staff members that sit on Code committees such as NFPA 56, NFPA 85, NFPA 86, and NFPA 87, our inside expertise is integrated within all of our practices, and our global reach ensures that customers around the world are kept safe. Honeywell offers testing and inspections, engineering & upgrades/retrofits, gas hazards management, training, and field services for all industrial facilities and different types of fuel fired equipment. By assisting organizations and their personnel with the safe maintenance and operation of their combustion equipment, Honeywell aims to save lives and prevent explosions while increasing efficiency and reliability of combustion equipment.

### **For more information**

Learn more about Honeywell Combustion Safety, contact [info@combustionsafety.com](mailto:info@combustionsafety.com), visit [www.combustionsafety.com](http://www.combustionsafety.com) or contact your Honeywell Sales Engineer.

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