

Boiler and Hot Water Heater Inspections

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Boilers

The leading cause of boiler failures is low water. Trouble often starts with a leak, which could appear as a damp spot or small puddle on the floor. If the boiler/water heater safety devices are working properly, a small leak will cause problems over time which will require repair. If the safety devices are not working properly, serious problems are imminent because low water in a boiler/water heater is like an engine without oil. A system failure is only a matter of time.

The results of boiler/water heater failures are costly repairs, replacement, and possible new construction if an old building must be adapted to accommodate new equipment.

To keep your systems running smoothly and safely, consider the following strategic maintenance tips.

- Contact a competent service firm to disassemble the low water cutoff (LWCO) and make-up water feeding devices. All parts should be thoroughly cleaned and reconditioned as required, then tested before the boiler or water heater is put into regular service. While in service, the LWCO should be tested once a month for hot water boilers. Hot water heaters should be drained twice a year.
- Burner equipment should be cleaned and adjusted to provide maximum efficiency. This can save fuel dollars throughout the life of the equipment.
- The boiler heating surfaces, firebox, ash pit, casing and ducts should be cleaned of all deposits. Dirty internal surfaces not only waste fuel and dollars, but also can lead to the burning, bulging, cracking, corrosion and even explosion of the boiler.
- The safety and safety relief valve should be tested for freedom of operation. This is of primary importance. The boiler or water heater must not be fired if the safety and safety relief valves are inoperative or otherwise defective. These valves should be tested once a month while in service.
- All pressure and temperature controls and gages should be checked for satisfactory operation and adjusted or replaced as necessary.
- The water level gage glass must be cleaned to indicate that water is at the proper level at all times.

- The entire heating system should be inspected for leaking pipes or fittings. Deficient parts should be repaired or replaced to prevent a loss of water.
- Water lines exposed to freezing temperatures should be insulated to prevent freeze-up. Steam and condensate return lines should be insulated to prevent unnecessary heat loss. This action will reduce fuel bills and eventually more than pay for itself.
- All mechanical equipment, such as fans and pumps, should be checked for smooth operation and proper lubrication.
- A suitable record of boiler operation should be established and maintained throughout the season.
- The boiler room should be kept dry and clean. Storage should not be placed in the boiler room.

These tips should prove helpful in prolonging the life of your boiler or water heater, as well as provide a safe environment. Keep in mind however that even though you follow a preventive maintenance routine, unexpected problems could still occur. Check your insurance policy to see if you have boiler insurance. If you do not, consider adding this coverage. It is a small premium to pay considering the cost of a problem.



Water Heaters

Most workplaces and homes have domestic hot water that is heated by electric, gas or oil water heaters. As a hot water faucet is opened, heated water is drawn from the top of the water heater's tank. The heated water is replaced by cold water that flows into the bottom of the tank. When the water temperature drops below a preset minimum, a thermostat activates electric heating elements or a gas or oil burner.

A temperature-pressure relief valve guards against excessive temperatures and pressures. This safety valve should be located near the top of the tank. A discharge pipe should be attached to the relief valve and run down the side of the tank to just above the floor. This discharge pipe prevents burns and other damage from discharged water. There must be no valves, caps or other obstructions preventing discharged water from draining rapidly. If the temperature-pressure relief valve ever discharges steam or boiling water, shut off the water heater and call a plumber immediately.

Sediment can accumulate at the bottom of the water heater's tank. This reduces the unit's efficiency and can cause serious damage. Unusual noises from the tank such as "whistling and sizzling" or "rumbling and cracking" can be a sign of sediment buildup. A drain valve near the bottom of the water heater can be used to prevent sediment accumulation. Once a month, place a bucket under the valve and drain water and sediment from the bottom of the tank (five gallons or so) until the water runs clear.

You should also inspect the water heater once every six months. During the inspection, check to see whether there are any signs that water has leaked or been discharged from the temperature-pressure relief valve. If so, call a plumber immediately. The relief valve may be faulty or there may be a problem with the water heater.

Test the relief valve by lifting or pressing down on its handle. Water should flow through the valve and down the discharge pipe. If water does not flow through the valve or if water continues to drip from the valve after the handle is released, call a plumber immediately to replace the defective valve.

Inspect the cold water supply pipe, the hot water outlet pipe, the water heater's metal housing and along the unit's base for rust, corrosion and signs of leaks. If you find a moist area, wipe it with a towel to determine whether the moisture is from a leak or from condensation. Repair all leaks or have the tank replaced if necessary.

If you have a gas or oil-fired water heater, you should have the unit professionally serviced at the same time your heating system is serviced. The service person should inspect and test the temperature and pressure relief valve, drain sediment from the tank, inspect the flue assembly and clean and adjust the burner ports.



Did you know?

- Hot water heaters should be properly sized for your workplace/home.
- Extra thick insulation helps prevent radiant heat loss and saves energy and money.
- Water temperatures above 120°F can cause scalding especially on young children.
- Sediment build-up can cause premature tank failure, electric element failure, and excess costs on fuel bills.
- Hot water heaters require yearly maintenance to ensure proper operation.

Do

- Set hot water heater temperature below 120°F.
- Flush hot water heater through drain valve at least once a year to remove sediment build-up.
- Test the safety relief valve once a year to ensure proper operation (this device protects the heater from over-pressurizing and from exceeding 210°F).
- Keep area around the hot water heater clean and free of combustible and flammable material.
- When leaving for vacation, set hot water heater temperature at its lowest setting. This will save money and reduce the risk of any problems while you are away.
- Follow the manufacturer's guidelines for recommended maintenance schedule.

Don't

- Set hot water heater temperature above 120°F.
- Keep combustible material or flammable material within 18” of the hot water heater.
- Never leave children unattended around a hot water heater.

It is important to complete a regular self-inspection of the area where the boiler or water heater is located. It is even more important to have an inspection plan for when the building is vacant or unoccupied for any length of time. More often than not, problems arise in this type of situation and nobody is aware of a problem until there is property damage.

Should you have an incident with your boiler or water heater, it is imperative you report the claim immediately. If you are unsure of whom to contact for cleanup and repair, ask when reporting the claim. It is also beneficial to maintain a folder of documentation and invoices. By maintaining this information, it will be accessible to you and available should the claim adjuster request additional information.



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