

Servicing Flooded Boilers

This bulletin describes how to service a Weil-McLain boiler that has been either partially or fully submerged under freshwater or saltwater.

DANGER If any part of a boiler, burner or its controls has been sprayed with or submerged under water, either partially or fully, **DO NOT** attempt to operate the boiler until the boiler has been either replaced or completely repaired, inspected, and you are sure that the boiler and all components are in good condition and fully reliable. Otherwise, by operating this boiler, you will cause a fire or explosion hazard, and an electrical shock hazard, leading to serious injury, death, or substantial property damage.

Saltwater Damage

The exposure of boiler components to saltwater can have both immediate and long-term effects. While the immediate effects of saltwater damage are similar to those of freshwater (shorting out of electrical components, washing out of critical lubricants, etc.), the salt and other contaminants left behind can lead to longer term issues after the water is gone due to the conductive and corrosive nature of the salt residue. Therefore, Weil-McLain equipment contaminated with saltwater or polluted water will no longer be covered under warranty and should be replaced.

Freshwater Damage

When a freshwater flooding condition has occurred with a boiler, you must follow one of these steps:

For Condensing Boilers:

- If any electrical component or wiring came into contact with water, or was suspected to have come into contact with water, replace the boiler with a new Weil-McLain boiler.

For Cast Iron Boilers:

- Replace the boiler which has experienced flooding conditions with a new Weil-McLain boiler, OR

- Thoroughly service the boiler which has experienced flooding conditions using the following guidelines:

a) **Replace all controls, gas valves, and electrical wiring on the boiler.** Once an electrical control has been wet, it poses a fire and electrical shock risk and must be replaced. Gas valves are no longer assured to provide a safe shut-off to the gas, potentially causing gas leaks, fires, and explosions. Even mechanical devices such as float low water cut-offs and safety relief valves need to be replaced, as their components may become corroded, making the device unreliable for future use.

b) **Thoroughly inspect all burner tubes, gas piping, manifolds, orifices, and flue ways for signs of rust and/or sediment from the flood waters.** The rust and sediment can prevent proper operation of the boiler if it is not cleaned out from the boiler.

c) **For oil-fired boilers, replace all oil burners.** Oil burners are complex systems consisting of solenoid valves, motors, electrodes, and pumps. If these components have experienced flooding, then oil leaks, valve failures, and electrical faults may occur, resulting in a severe fire hazard, potential injury or death. In the case of large commercial burners, such as Gordon-Piatt and Power Flame, it is more cost efficient to replace the entire burner rather than attempting to replace all the controls and repair the mechanical components.

d) **Replace all insulation that has become water damaged.** This includes jacket insulation, base box insulation, and combustion chamber insulation and refractories. After insulation has become water damaged due to flooding, it may deteriorate, reducing its insulation value and causing a potential fire hazard. Also, it can pose a health risk due to bacteria from the flood waters remaining in the insulation.

e) **Where possible, inspect seal rings for damage from petroleum products.** Flood waters are often contaminated with gasoline and other petroleum products, which damage elastomer seals used on most Weil-McLain boilers.

f) **Thoroughly inspect all venting for signs of corrosion.** Replace any venting that is rusting or corroded in order to prevent flue gases from entering the building through the venting system.

NOTE: Even if only part of the boiler has been submerged in flood waters, replace **ALL** controls, gas valves, and other components as noted above. There is no easy way to know which components may be damaged; even if a control was not submerged, water can get inside components because of splashing, wicking action, and/or moisture in the air.

Water and sediment can easily enter controls, wiring, insulation and other boiler components. Even if you cannot see obvious signs of penetration, water and sediment may have entered a device and rendered it unsafe.

Replacing the boiler is usually the quickest and most economical option when servicing a boiler that has experienced flooding. With so many areas of concern in attempting to repair a boiler that has experienced flooding conditions, replacing the boiler is generally the safest choice.

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