Boiler Startup Checklist

An 8-step guide for general boiler startup

QUALICHEM Water Treatment

- [ ] **1. Check all valves and place in their startup position**: If you natural gas fired boiler has been shut down for a while, the natural gas valve, steam and water lines have likely been shut off. Make sure all valves are in their startup position. Refer to your owners manual for a full list of valves that need to be open.

- [ ] **2. Open the sight gauge and water column high and low-water shut-off valves. Make sure the water level safety controls are blown out:** While a sight gauge and water column let you visually inspect water level, they often have electronic level controls as well. If the water level drops when operating, the automatic safety shutdowns will keep the boiler from turning off. Opening these shut off valves allows the boiler to fill properly. Make sure safety controls are blown out to clear any debris and prepare the boiler for operation.

- [ ] **3. Close the bottom blowdown valves, then open the upper drum vent valves:** If drain valves were left in an open position, you need to close them prior to filling the boiler. Upper vent valves need to be opened for air to escape as you fill the boiler. Other operating valves may also need to be opened or closed according to how the boiler was left.

- [ ] **4. Start filling with soft water:** Now you've prepped the boiler to start refilling and the boiler system should be physically ready to start up. Start filling the water with the appropriate makeup water. Use soft water in low-pressure boilers.

- [ ] **5. Manually inject water treatment chemicals, including oxygen scavenger chemicals, with the fill water.** Chemicals should be injected as the boiler is being filled with makeup water. It's much more difficult to correctly add these chemicals after the fact. Chemical treatment will vary by makeup water and your boiler type. Consult a QualiChem specialist for more information.

Contact a QualiChem specialist for help determining the right boiler water treatment program.

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- [ ] **6. Open the fuel system and fire the boiler:** Once full to the operating level, carefully bring the pressure up to 10-15 PSIG, with the vent valve open. The boiler's warm-up curve, as dictated by the manufacturer, should be strictly followed. The standard warm-up curve for a typical boiler dictates increasing the boiler water temperature no more than 100°F per hour. Refer to your manufacturers' guidelines.

  A key point here is to fill it to the operating level, and not overfill. Raise the heat steadily to prevent damage to the boiler. Like other materials, steel will expand as it heats up. Because of the intricate nature of how boilers are assembled, rapid heat up can cause severe expansion and could result in damage to the boiler. Manufacturer guidelines should be closely followed.

- [ ] **7. Once the pressure reaches 10-15 PSIG, close the drum vent and slowly bring the boiler up to operating pressure:** Once a good consistent heat is established, start to bring the boiler up to pressure. Follow your manufacturer's operating manual.

- [ ] **8. Collect a boiler water sample and test for the proper chemical concentrations. Adjust as needed:** Start evaluating the chemistry and make any adjustments required. Set a schedule for ongoing

Note: Startup procedure will vary by boiler manufacturer. As always, consult your manufacturer's guidelines.