



HEATING BOILER START-UP CHECKLIST

Every year at this time, several thousand heating boilers begin a journey which will eventually take them to the 'heating boiler graveyard'.

The Hartford Steam Boiler Inspection and Insurance Company's (HSB) loss prevention inspectors would like to help you make this a season of warmth and comfort rather than a cold and expensive one.

HSB's inspectors can help you because they know that the leading cause of heating boiler failures is 'low water'. As a business equipment insurance specialist, HSB has investigated thousands of boiler failures resulting in claims as high as \$300,000. The trouble often starts with a leak which probably will not appear dramatic; it could be simply a damp spot or puddle on the floor.

If the boiler's safety devices are working properly, the 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 is like an engine without oil. A failure will undoubtedly occur; it is only a matter of time.

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

The following tips from our loss prevention inspectors will help you avoid the most common heating boiler problems by means of strategic maintenance.

- Have a competent service firm 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 is put into regular service. While in service the LWCO should be tested once a week for steam boilers and once a month for hot water boilers.
- Burner equipment should be cleaned and adjusted to give maximum efficiency. This can save fuel dollars.
- 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 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.
- If the boiler is of a type designed to permit cleaning of the water spaces, this should be done, and, where necessary, a suitable chemical treatment should be used to minimize new build-up of scale and to prevent corrosion.
- All pressure and temperature controls and gage should be checked for satisfactory operation and adjusted or replaced as necessary.
- The water level gage glass must be cleaned to indicate the proper water level at all times.
- Any leaking pipes or fittings located on the boiler or anywhere throughout the heating system 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. Such 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. Call HSB; we can help!
- The boiler room should be kept dry and clean.



HEATING BOILER LOG

ADDITIONAL LOG(S) REQUEST TO:

Engineering Department, The Hartford Steam Boiler Inspection and Insurance Company,
One State Street, P.O. Box 5024, Hartford, CT 06102-5024.

Please specify which log and how many copies per log.

NOTE: In addition to the checks and tests listed here, the Check List for High Pressure Boilers (on reverse side) must be completed as well.

MANUFACTURER _____ BOILER NUMBER _____ YEAR _____

| LOG THIS INFORMATION WEEKLY | MONTH | SAFETY/RELIEF VALVE TESTED | | | | | WATER COLUMN GAGE GLASS DRAINED | | | | | LOW-WATER FUEL CUT-OFF TESTED | | | | | CIRCULATING PUMP/RETURN PUMP AND SYSTEM CHECKED | | | | | BURNER OPERATION CHECKED | | | | |
|-----------------------------|-------|----------------------------|---|---|---|---|---------------------------------|---|---|---|---|-------------------------------|---|---|---|---|---|---|---|---|---|--------------------------|---|---|---|---|
| | | WEEK | | | | | WEEK | | | | | WEEK | | | | | WEEK | | | | | WEEK | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| JANUARY | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FEBRUARY | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MARCH | | | | | | | | | | | | | | | | | | | | | | | | | | |
| APRIL | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MAY | | | | | | | | | | | | | | | | | | | | | | | | | | |
| JUNE | | | | | | | | | | | | | | | | | | | | | | | | | | |
| JULY | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AUGUST | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SEPTEMBER | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OCTOBER | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NOVEMBER | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DECEMBER | | | | | | | | | | | | | | | | | | | | | | | | | | |

TEST INSTRUCTIONS

SAFETY/RELIEF VALVE – pull try-lever to full open position with pressure on the boiler. Release try-lever to allow the valve to snap closed. **Caution** – All discharges must be piped to a safe place.

WATER COLUMN OR GAGE GLASS (steam systems only) – open the drain valve quickly to void a small quantity of water. Water level should return quickly when the drain valve is closed. **Caution** – All discharges must be piped to a safe place.

LOW-WATER FUEL CUT-OFF – drain float chamber while the boiler is running. This should interrupt the circuit and stop the burner. **Caution** – All discharges must be piped to a safe place.

PUMP AND SYSTEM – check pump for proper operation and leaky packing. Examine traps, check valves, makeup float valves, expansion or condensate tank, and other parts of the system.

BURNER OPERATION – if the burner starts with a puff or operates roughly, call your service personnel at once!

FOR IMMEDIATE REFERENCE, ENTER NAME, ADDRESS AND TELEPHONE OF YOUR SERVICE PERSONNEL _____

SERVICING

SERVICE DATES _____

LOW-WATER FUEL CUT-OFF – The low-water cut-off should be dismantled for a complete overhaul by competent service personnel at least annually. The internal and external mechanism, including linkage contacts, mercury bulbs, floats, and wiring should be carefully checked for defects. See the manufacturer's instructions.

STOKER, OIL OR GAS BURNER, AND CONTROLS – The stoker, oil or gas burner, and all operating and protective controls should be thoroughly checked at least once every three months by a competent service organization. See the manufacturer's instructions.

Record the service dates above.