



Risk Control

Heating System Pre-Season Maintenance and Inspection



In order to have a safe and reliable heating system, pre-season maintenance and inspection should be completed every year. Trained and licensed persons should complete all system maintenance. If using a contractor, verify the business is properly insured.

Heating systems come in many designs. Maintenance and testing requirements vary. Following the manufacturer's recommended maintenance scope and schedule is mandatory in many jurisdictions.

The lack or improper maintenance of heating systems can lead to frozen pipes, fire, boiler explosions, carbon monoxide poisoning and, in extreme cases, death.

While preparing your boiler for the heating season, check the carbon monoxide detector, smoke detector, fire detection systems and extinguishers for proper operation and fitness for service.

Always keep a clear zone around all boilers and hot water heaters. Avoid using the boiler room as a storage space. Do not keep combustible or flammable materials in the room. Maintain installed emergency lighting.

Following is a list of tasks that your technician should be performing:

- Test and log the operation of all controls and safety devices, including all relief valves.
- Clean applicable heat exchange surfaces.

- Change system filters. This could be air or fuel system filters.
- Lubricate where required.
- Verify proper combustion. Flue gas analysis requires a trained technician with specialized equipment.
- Inspect all flue gas containing components, including the chimney.
- Inspect the electrical service for the equipment, including equipment grounding. Amperage draw should be noted for motors and/or heaters where applicable.
- Fuel storage and delivery systems should be inspected. If you store fuel oil, it should be tested for presence of water contamination.
- Where applicable, boiler feed system piping, tanks and pumps should be inspected.
- Humidification systems should be inspected.
- Fresh air intakes or louvers should be checked for general condition, especially blockage.

One item often overlooked when preparing the building for the heating season are the air louvers which are designed to introduce fresh air into the building. With this design, fresh air passes over heating coils just inboard of the louvers. In order to protect the coils from freeze damage, the correct operation of the louvers must be verified, including full closure. In extreme cold conditions, louvers that do not fully shut can result in frozen and burst heating coils. Lack of building heat can disrupt the work force leading to additional costs.

Last but not least, have your heating system checked weekly. Logs are required in many jurisdictions. Any testing or inspection work should be documented and a history maintained. A sample log is attached as a convenience and aid.

BOILER LOG

Manufacturer										Boiler Number										Year Built												
Month	Safety/ Relief Valve Tested					Water Column Gage 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	1	2	3	4	5		
January																																
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<p>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.</p> <p>WATER COLUMN OR GAGE GLASS: (Steam Systems Only) - Open the drain valve quickly to void a small quantity of water. Water level should quickly return when the drain valve is closed.</p> <p>LOW WATER FUEL CUT-OFF/RESET: Drain the float chamber while the boiler is running. This should interrupt the circuit and stop the burner. Press reset to start. If unit fails to lock out on reset, call for service at once.</p>										<p>PUMP AND SYSTEM: Check pump for proper operation and leaky packing. Examine traps, check valves, make-up float valves, expansion or condensate tank, and other parts of the system (i.e., piping).</p> <p>BURNER OPERATION: If the burner starts with a puff or operates roughly, call your service personnel AT ONCE!</p> <p>CAUTION: All discharges must be piped to a safe place.</p>																						
For immediate reference: Enter name, address, telephone number of your service personnel.																																
Service Dates:																																
<p>LOW WATER FUEL CUT-OFF: Competent personnel should dismantle the low water fuel cut-off for complete overhaul at least annually. The internal and external mechanism, including linkage mercury bulbs, floats, and wiring should be carefully checked for defects. See manufacturer's instructions. Record service dates above.</p>										<p>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 every three months by a competent service organization. See the manufacturer's instructions. Record the service dates above.</p>																						

Note: Repairs should be made immediately should any check or test indicate that the device being tested or observed is *not* in good operating condition. Record all repairs on the back of this sheet so that a complete record will be available for review.

To learn more about how to help your clients manage risks and increase efficiencies, please contact CNA Risk Control at RiskControl@cna.com or visit cna.com/riskcontrol.

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