

USERS INFORMATION MANUAL

OIL-BURNING EQUIPMENT: STEAM AND HOT-WATER BOILERS

IMPORTANT

- ***READ AND SAVE THESE INSTRUCTIONS FOR REFERENCE.***
- ***USE ONLY NUMBER 2 FUEL OIL.***

⚠ CAUTION ⚠

- ***DO NOT USE GASOLINE, CRANKCASE DRAININGS, OR ANY OIL CONTAINING GASOLINE.***
- ***NEVER BURN GARBAGE OR PAPER IN THE UNIT, AND NEVER LEAVE COMBUSTIBLE MATERIAL AROUND IT.***

⚠ WARNING ⚠

- ***KEEP YOUR BOILER AND THE SPACE AROUND THE APPLIANCE CLEAR OF DEBRIS. DO NOT STACK ITEMS ON OR AROUND THE APPLIANCE WITHIN THE REQUIRED CLEARANCES TO COMBUSTIBLES.***
- ***ENSURE THAT THE SUPPLY OF COMBUSTION AIR TO THE APPLIANCE IS NOT OBSTRUCTED OR CUT OFF. ENSURE THAT THE PROPER VENTILATION TO THE APPLIANCE AREA IS MAINTAINED.***

INSTRUCTIONS TO OBTAIN PROPER OPERATION OF THE BOILER

CAUTION

- **DO NOT START THE BURNER UNLESS ALL CLEAN-OUT DOORS ARE SECURED IN PLACE.**
- **DO NOT ATTEMPT TO START THE BURNER WHEN THE COMBUSTION CHAMBER HAS ACCUMULATED OIL, OR IS FULL OF VAPOR, OR IS VERY HOT.**

Instruments are the only reliable method to determine proper air adjustments. An improperly adjusted burner causes soot and high fuel bills because of incomplete combustion of the fuel oil. This in turn may require excessive boiler maintenance, service costs, and in some instances, house cleaning or redecorating. A competent service mechanic should be consulted to make the proper adjustments with a smoke tester, CO₂ indicator and draft gauge. Bacharach or Dwyer test kits include these instruments.

A ¼" diameter slot is provided in the inspection cover plate to take draft readings in the combustion chamber. A ¼" diameter hole will be required in the flue pipe between the boiler and barometric damper (if used) to take draft, CO₂, smoke and temperature readings. Adjust air shutter on oil burner to obtain a "trace" of smoke. Measure CO₂ at this point. Increase air adjustment to lower CO₂ approximately one (1) percent. Check to ensure zero (0) smoke and correct draft is obtained for the unit installed (reference the Boiler Installation Manual for correct draft settings). If the proper draft can not be maintained, changes and/or modifications may be required in the venting, chimney or combustion air supply.

SHUTTING DOWN THE BOILER FOR EXTENDED PERIODS OF TIME

CAUTION

ALWAYS KEEP THE OIL SUPPLY VALVE SHUT OFF IF THE BURNER IS SHUT DOWN FOR AN EXTENDED PERIOD OF TIME.

- Always turn off electrical power to the boiler via the field installed fused disconnect switch if the boiler is shut down for an extended period of time.
- When restarting the boiler from an extended shutdown, follow the Operating Instructions in the Installation Manual and Operating Instructions.

GENERAL MAINTENANCE DURING OPERATION

The following preventative maintenance should be performed by a qualified service technician annually prior to the heating season.

Preventative maintenance of an oil fired boiler reduces operating costs. The boiler and vent pipe should be inspected for accumulation of soot or scale deposits periodically but at least once every year before the start of each heating season. When soot is present on the section walls and flue ways, improper combustion will result, causing additional sooting and scaling until flue ways are completely closed. Periodic inspection and tightening of the tank-less heater/cover plate bolts, if applicable, will reduce the risk of leaks.

WARNING

ALWAYS DISCONNECT POWER TO THE BOILER WITH THE EMERGENCY POWER ISOLATION SWITCH WHEN SERVICING THE BOILER. THE EMERGENCY POWER ISOLATION SWITCH IS FIELD INSTALLED AND SHOULD BE WITHIN 5 FEET OF THE BOILER.

OIL BURNER MAINTENANCE

1. **Oil Burner Motor** – Refer to burner manual provided with boiler.
2. **Fuel Filter** – Replace to prevent contaminated fuel from reaching nozzle. Partially blocked fuel filter can cause premature failure of fuel pump.
3. **Fuel Pump Unit** – Replace pump screen and clean pump unit to maintain fuel delivery to nozzle.
4. **Ignition Electrodes** – Clean and adjust per manufacturer's recommendations, to maintain reliable ignition of oil.
5. **Nozzle** – Replace to maintain safe and reliable combustion efficiency. Replace with nozzle as required in charts located in this manual
6. **Fan and Blower Housing** – Must be kept clean, free of dirt, lint and oil to maintain proper amount of air fuel requires to burn.
7. **Check Final Burner Adjustments.**

BOILER CLEANING INSTRUCTIONS

1. Shut off all electrical power to the boiler/burner and shut off fuel supply
2. Remove vent pipe from top of boiler. Inspect pipe and chimney for signs of corrosion and deterioration. Clean out base of chimney. If vent pipe shows any signs of corrosion or deterioration, replace it immediately. If chimney damage or deterioration is discovered, contact a service technician.
3. Remove top jacket panel screws (5), brass wing nuts (2) holding flue collector top, and flue collector top. Inspect gasket on underside of flue collector and replace as necessary.
4. Before beginning to clean flue passageways, insure combustion chamber blanket is covered. If blanket is not covered prior to cleaning, replace blanket once cleaning is completed.
5. With access to flue passageways, remove soot from fireside surfaces by brushing diagonally through flue passages (see drawing below). Brushing can be made easier by cutting end of flue brush off and inserting it into drill. When brushing, take care to not damage target wall with flue brush or to damage the combustion chamber with the flue brush.

BOILER CLEANING INSTRUCTIONS

6. Carefully vacuum soot accumulations from combustion chamber area, take care to not damage any of refractory or blanket insulation. To gain access to combustion chamber first check that shut off valve on fuel oil line is closed and disconnect fuel oil line. Open swing door by removing whiz lock nut holding door shut.
7. Inspect target wall, fire door refractory, and combustion chamber blanket (when included) for cracking and deterioration. If there are signs of cracking or deterioration, replace refractory or blanket before reassembling burner / front plate.
8. Inspect door's braided gasket for wear and damage. Replace when necessary with braided gasket of same material and size.
9. Use caution when vacuuming in the chamber area. Damage to chamber could result.
10. Reinstall the burner.
11. Reinstall the flue collector.
12. Reinstall top jacket panel. Reconnect flue pipe.
13. Reconnect electrical and fuel supplies.
14. Fire burner, check for proper combustion using combustion test equipment, make adjustments as necessary.
15. Verify all safety controls and operating controls are functioning properly.

INSTRUCTIONS FOR BLOW DOWN OF A STEAM BOILER

Before blowing down the boiler, fill it to the water line. Turn in burner and allow five pounds of steam pressure to build up. Run a temporary connection from one of the drain valves to a nearby sewer. Connect to a drain valve on the opposite end of the boiler from the feed water inlet, if possible. Shut off the oil burner, open drain valve and blow down the entire contents of boiler.

 **WARNING** 

WATER WILL BE BOILING HOT.

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Allow boiler to thoroughly cool and slowly refill to water line. Repeat as many times as required until blow off water is clear. Owner should blow down boiler at least once each month of the heating season.

Contact a qualified service technician before remodeling, for annual service/maintenance, before extended periods of shutdown, and before start-up.

 CAUTION 

***DO NOT TAMPER WITH THE UNIT OR CONTROLS –
CALL YOUR QUALIFIED SERVICE TECHNICIAN.***

Service Personnel Information

Name: _____

Address: _____

Telephone Number: _____

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