

CARE AND MAINTENANCE

CAUTION: DO NOT ATTEMPT TO START THE BURNER WHEN EXCESS OIL HAS ACCUMULATED, WHEN THE UNIT IS FULL OF VAPOR, OR WHEN THE COMBUSTION CHAMBER IS VERY HOT.

CAUTION: DO NOT TAMPER WITH THE UNIT OR CONTROLS—CALL YOUR SERVICE PERSONNEL.

I. EXTENDED SHUTDOWN, CLEANING OR REMOVAL OF BOILER FROM SERVICE.

DANGER: Use CAUTION when handling chemicals and draining hot water from a boiler. Scalding water and/or chemicals can cause permanent injury to the skin, eyes and respiratory system.

A. Shut down burner by disconnecting all electrical power to the burner by turning OFF the BURNER EMERGENCY SWITCH of this boiler. After shutting down burner, while the boiler is still hot (180°F to 200°F), drain water from the bottom of the boiler until it runs clear.

B. To clean the fireside boiler surfaces, first shut down burner by disconnecting all electrical power to the burner by turning OFF the OIL BURNER EMERGENCY SWITCH of this boiler in order to perform the following work in (1) through (10) below.

1. Remove the flue pipe from the boiler flue collar and clean thoroughly.
2. Inspect the entire vent connector back to the chimney and clean if necessary.
3. Inspect the chimney for soot, debris and other unsafe conditions of the chimney and take the necessary action.
4. Remove the flue collector by first removing the top jacket panel. The flue collector is held in place by a 1/4-20 Wing Nut. Remove the Wing Nut and carefully remove the flue collector. Try not to disturb the sealant under the flue collector. (For the Hinge Style flue collectors, see 4A.)
- 4a. For the Hinge Style flue collector (TR-30 and TR-40) only. Open the two latches and swing open the flue collector top on its hinge.
5. When necessary to clean the combustion chamber you must first CLOSE the suction valve (and return valve if two pipe). Then disconnect the oil lines from the burner. The flexible electric conduit connected from the junction box on the boiler to the burner via a plastic connector must be disconnected from the burner by grasping the plastic half of the connector closest to the flexible conduit and gently pulling it in the direction of the conduit until it is disconnected. Remove the single 3/8-16 hex head screw on the LEFT side of the swinging door. You will need a 9/16" drive socket. Open the door to completely expose the combustion chamber for thorough cleaning and for inspection of target wall, blanket (provided in certain models; see rating plate), main cast iron burner door insulation and burner door fiberglass sealing rope. If combustion chamber parts above are badly deteriorated then replace with original factory parts available at your distributor.
6. Remove the Baffles from between the casting sections. Use the flue brush to clean the pinned flueways between the sections.† A wire brush may be used to remove any carbon accumulation that may have developed in the combustion chamber. Vacuum the loose soot and debris from the boiler. Reinstall all flue Baffles between the casting sections. (see pg. 23 for Baffle Layout Chart)
7. Inspect the burner combustion head. Clean if necessary and make sure all the adjustments are correct. (See burner data pages for the burner installed.) Replace oil nozzle with new one and readjust electrodes. To insure proper burner operation ONLY THE NOZZLES SPECIFIED IN THIS MANUAL OR ON THE BURNER LABEL SHOULD BE USED FOR REPLACEMENT.
8. Close main cast iron burner door (door on which burner is mounted). Make sure that the entire seal (fiberglass rope) is making good contact with the boiler casting when replacing 3/8-16 x 1" long hex head bolt and tightening.
9. Check the flue collector seal. This is the sealant on top of the heat exchanger. The sealant must be in place adjacent to

the long bosses on front and rear sections and adjacent to the short bosses on the intermediate sections. The sealant should be directly under the flue collector flange when the flue collector is replaced. Use the 1/4-20 Wing Nut and washer to fasten the flue collector. In order to assure a proper seal be sure that the sealant is pressed tight against the flue collector and castings. (For the Hinge Style flue collectors, see 9A.)

- 9a. For the Hinge Style flue collectors (TR-30 and TR-40) only. Inspect the Fiberglass rope seal to ensure its proper location and close the Hinged top using the two latches.
- C. If boiler room is damp, provide ventilation.

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

II. PROVIDING PROTECTION FOR FREEZING

Anti-freeze is sometimes used in hydronic heating systems to protect against freeze-up in the event of power failure, or safety control shutdown when the building is unoccupied. It should be recognized that unless the building is kept above freezing temperature by some means, the plumbing system is not protected.

PROPYLENE GLYCOL is used in the quick-freeze food industry; it is practically non-toxic. Its use may be permitted when tankless heaters are used. When anti-freeze must be used, inhibited propylene glycol is recommended. Useful information on the characteristics, mixing proportions, etc. of glycol in heating systems is given in Technical Topics No. 2A, available from the Hydronics Institute, 35 Russo Place, Berkeley Heights, N.J. 07922. Consult glycol manufacturers for sources of propylene glycol. DO NOT use ethylene glycol because it is toxic.

III. OIL BURNER

All service to the oil burner, oil filter, oil strainers, etc., should be performed by a professionally trained service person. Inspect and clean annually and following any period of improper operation. Recheck and adjust settings as specified for burner model and nozzle size. Set burner air and draft regulator, using test instruments to obtain recommended CO₂ and draft without smoke. Refer to page 8.

IV. GENERAL MAINTENANCE

These operations are recommended to be performed at regular intervals:

- A. BOILER HEATING SURFACES: clean off all coatings found. Reseal covers.
- B. BOILER CONTROLS: check contacts, settings, correct functioning.
- C. PIPING: check piping and accessories for leaks.
- D. CHIMNEY or STUB VENT and BREECHING: check for obstructions and leaks.
- E. COMBUSTION AIR TO BURNER: check for continued POSITIVE supply of air as required. Air needs are greatest in coldest weather. Refer to AIR SUPPLY, page 3.
- F. WATER SYSTEM: check
 1. System to be full of water and pressure to remain stable (between 12 psi and 25 psi).
 2. Air-control system: noise and air binding in radiation should not occur.
 3. Water lines: slightest leaks should be corrected.
 4. Low water cut-off, for operation (see instructions furnished with unit). See page 9.
- G. STEAM SYSTEM: check
 1. Low water cut-off, for operation (see instructions furnished with unit). See page 9.
 2. Check pressure cut-off for operation. See page 10.
 3. Any unusual water conditions. Obtain water analysis and treat water.
- H. BOILER ROOM AIR SUPPLY: air vents should be open and free of obstruction. See page 3.

† A flue brush (2-1/4" dia.) is supplied with boiler. Replacements are available from dealer or hardware stores.



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