LAARS® Multi-Flue™

Commercial Energy Saver Oil-Powered Water Heater

Models CF-38-3, CF-80-3, CF-100-3

A SPANISH LANGUAGE VERSION OF THESE INSTRUCTIONS IS AVAILABLE BY CONTACTING THE COMPANY LISTED ON THE RATING PLATE.
LA VERSION ESPANOLA DE ESTAS INSTRUCCIONES SE PUEDA OBTENER AL ESCRIBIRLE A LA FABRICA CUYO NOMBRE APPRECE EN LA PLACA DE ESPECIFICACIONES.

WARNING: IF THE INFORMATION IN THESE INSTRUCTIONS IS NOT FOLLOWED EXACTLY, A FIRE OR EXPLOSION MAY RESULT CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR DEATH

WARNING:
Do not store or use gasoline or other flammable vapors, liquids or materials in the vicinity of this or any other appliance

WARNING:
Improper installation, adjustment, alteration, service or maintenance can result in injury or property damage. For assistance or additional information, please contact the plumbing professional who installed this water heater.
Notice To The Installer: Before connecting this appliance, please read these instructions carefully, we call your attention to all items, specifically the instructions on locating the water heater.
Notice To The User: Before operating this appliance, please read these instructions thoroughly. Then please refer to this manual for future reference.

WARNING:
Be aware that this water heater is capable of producing hot water at a temperature high enough to cause scalding injury. Water temperature over 125°F can cause severe burns or death from scalds. Please read these instructions carefully before operating this unit.

LAARS®
Heating Systems Company
A subsidiary of BRADFORD WHITE® Corporation

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CONGRATULATIONS!

You have just purchased one of the finest water heaters on the market today!

This installation, operation and instruction manual will explain in detail the installation and maintenance of your new Oil-Fired Water Heater. We strongly recommend that you contact a plumbing professional for the installation of this water heater.

We require that you carefully read this manual, as well as the enclosed warranty, and refer to it when questions arise. If you have any specific questions concerning your warranty, please consult the plumbing professional from whom your water heater was purchased. For your records we recommend that you write the model, serial number and installation date of your water heater in the maintenance section in the back of this manual.

This manual should be kept with the water heater.

General Information

Note: It is recommended that the installation and service of this water heater be performed by a plumbing professional.

This water heater must be installed in accordance with local codes. In the absence of local codes, it must be installed in compliance with the National Fire Protection Standard For Oil Burning Equipment NFPA No. 31 (latest edition). In Canada the installation of this water heater shall be in accordance with the regulation of authorities having jurisdiction and CSA STANDARD B139.

The warranty of this water heater is in effect only when the water heater is installed, adjusted, and operated in accordance with these installation and operating instructions.

DO NOT use this appliance if any part has been submerged in water. You should contact the plumbing professional who installed the water heater to inspect the appliance and to replace any part of the control system and any component which has been submerged in water.

A sacrificial anode is used to extend tank life. The removal of this anode, for any reason, will nullify the warranty. In areas where water is unusually reactive, an odor may occur at the hot water faucet due to a reaction between the sacrificial anode and the impurities in the water. If this should happen, an alternative anode may be purchased from the supplier that sold you this water heater. This will minimize the odor while protecting the tank. Additionally, the water heater should be flushed with appropriate dissolvers to eliminate any bacteria.

INSTALLATION

Locating the water heater

The location of this water heater is of the utmost importance. Before installing the water heater, you should select a location where the floor is level and is easily accessible to water supply lines as well as to a chimney or vent. DO NOT locate the water heater where water lines could be subjected to freezing temperatures.

This water heater MUST be installed indoors out of the wind and weather.

Note: For California installation this water heater must be braced, anchored, or strapped to avoid falling or moving during an earthquake. See instructions for correct installation procedures. Instructions may be obtained from California Office of the State Architect, 400 P Street, Sacramento, CA 95814.

Minimum Clearances

This water heater shall be installed on NON-COMBUSTIBLE flooring only. This water heater may be installed in an alcove. Refer to the marking on the front of the water heater for clearances to combustible materials.

The installation should allow access to the front of the water heater and adequate clearance should be provided for servicing and operating the water heater. It is recommended that a minimum clearance of 3” be provided on the side of the water heater for servicing and maintenance of the temperature and pressure relief valve.

Installation (locating the water heater) continued-

This water heater must be located in an area where leakage of the tank or water line connections will not result in damage to the area adjacent to the water heater or to lower floors of the structure. When such locations cannot be avoided, a suitable drip pan must be installed under the water heater. The drain pan must have a minimum length and width of at least 4 in. (10.2 cm) greater than the diameter of the water heater and must not restrict proper combustion air flow to the water heater. The drain pan, as described above, can be purchased from your plumbing professional. The piping must be at least ¾" in diameter and pitched for proper drainage. The pan must not restrict the combustion airflow.

WARNING

Water heaters are heat-producing appliances. To avoid damage or injury, there shall be no materials stored against the water heater. Proper care shall be taken to avoid unnecessary contact (especially by children) with the water heater. UNDER NO CIRCUMSTANCES SHALL FLAMMABLE MATERIALS, SUCH AS GASOLINE OR PAINT THINNER, BE USED OR STORED IN THE VICINITY OF THIS WATER HEATER OR IN ANY LOCATION FROM WHICH FUMES COULD REACH THE WATER HEATER.

Note: The failure to adhere to these instructions may create a hazard to life and property and will nullify the warranty.
Water heater corrosion and component failure can be caused by heating and breakdown of airborne chemical vapors. Examples of typical compounds that are potentially corrosive are: spray can propellants, cleaning solvents, refrigeration and air conditioning refrigerants, swimming pool chemicals, calcium and sodium chloride, waxes and process chemicals. These materials are corrosive at very low concentration levels with little or no odor to reveal their presence.

NOTE: DAMAGE TO THE WATER HEATER CAUSED BY EXPOSURE TO CORROSIVE VAPORS IS NOT COVERED BY WARRANTY.

IMPORTANT!!
THE FLOW OF COMBUSTION AND VENTILATING AIR MUST NOT BE OBSTRUCTED!!

Combustion Air Supply

Installation of this water heater requires that provisions be made to supply adequate air for combustion and ventilation. If the building is unusually tight or if this water heater is installed in a small room, provisions for additional makeup air must be provided. This air must be supplied through two permanent openings located so that the lower edge of the lower opening is 6 inches below the top of the enclosure.

The minimum free air area for such openings shall not be less than one square inch per 1000 BTU/HR of the total input rating of all appliances in that enclosure of 100 square inches, whichever is greater. For outside air, in the absence of local codes, refer to the National Fire Protection Standard For Oil Burning Equipment NFPA No. 31 (latest edition).

Electrical Connections

This water heater is normally wired for 120 volts and shall be electrically grounded in accordance with local codes, or in the absence of local codes, with the National Electrical Code, ANSI/NFPA No. 70 (latest Edition).

If any of the original wiring must be replaced, replacement shall be with 105 degree C wire or equivalent.

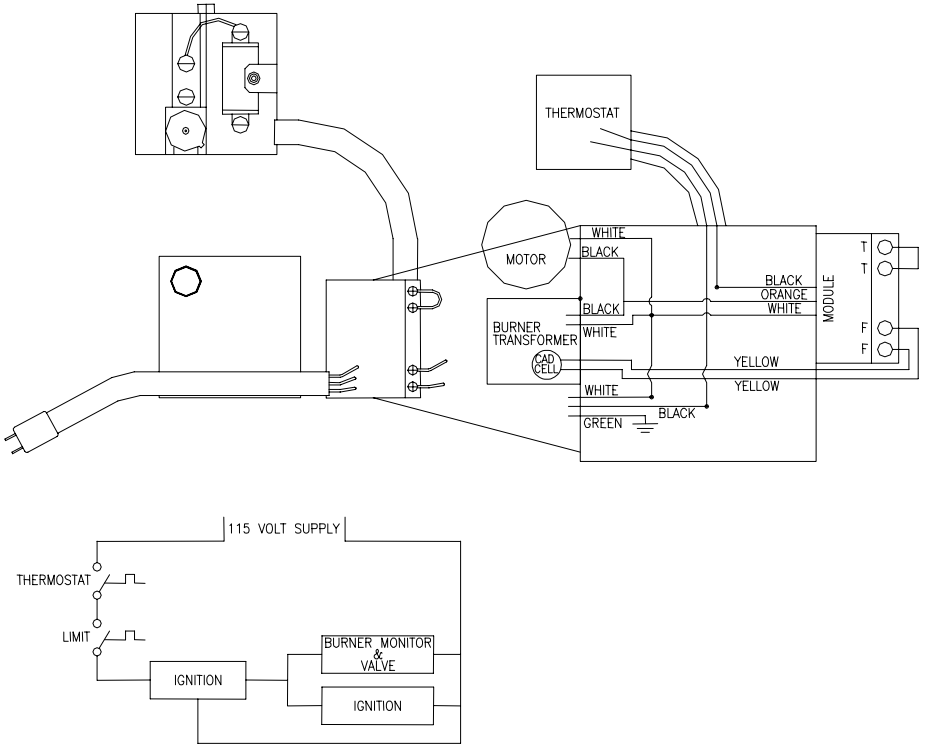

Figure 1

Venting

The connection from the water heater vent to the stack must be made as direct as possible and of the same diameter as the vent outlet. The recommended slope of any horizontal breaching is at least 1/2" rise per linear foot. A barometrically operated draft regulator (barometric damper) shall be installed in the vent connector at a location just above the water heater.

Caution: The stack must extend at least three feet above the highest point of the roof to insure proper venting. The stack should be provided with a weather cap of approved design.

Note: Provisions shall be made to prevent contact of the vent pipe with combustible materials in accordance with all codes and regulations.

A separate vent for each appliance is strongly recommended. A separate vent is required for installation and application of multiple power vent(s). If combined venting of multiple appliances is necessary or if an unusual situation arises consult the National Fire Protection Standard For Oil Burning Equipment NFPA NO.31 (latest edition), for sizing and installation information.

Water Connections

NOTE: Before proceeding with the installation, close the main water supply valve. After shutting off the main water supply, open and close the appropriate faucets and valves to prevent any water from leaking out of the pipes while making the water connections to the water heater. The cold water inlet and hot water outlet are identified on the top of the water heater. The fittings at the cold water inlet and hot water outlet are dielectric fittings with a 3/4 NPT male thread. Make the proper plumbing connections between the water heater and the plumbing system of the house. A shut-off valve should be installed in the cold water supply line.

If sweat fittings are to be used, ***Do Not*** apply heat to the nipples on top of the water heater. Sweat the tubing to the adapter before fitting the adapter to water connections. It is imperative that no heat be applied to nipples containing a plastic liner. Heat traps may have been provided in the inlet and outlet nipples. Although they may appear to be plastic plugs, ***Do Not*** attempt to remove the plastic insert.

If this water heater is installed in a closed water system, such as one having a back-flow preventer in the cold water supply, provisions shall be made to control thermal expansion. Your water supplier or local plumbing inspector should be contacted on how to control this situation.

WARNING

For protection against excessive temperature and pressure, install temperature and pressure protective equipment required by local codes, but no less than a combination temperature and pressure relief valve certified as meeting the requirements for Relief Valves and Automatic Gas Shut-off Devices for Hot Water Supply Systems, ANSIZ21.22, by a nationally recognized testing laboratory that maintains periodic inspection of production of listed equipment or materials. The temperature and pressure relief valve shall be marked with a maximum set pressure not to exceed the maximum working pressure of the water heater. The temperature and pressure relief valve shall also have an hourly rated temperature steam BTU discharge capacity not less than the hourly rating of the water heater.

Install the temperature and pressure relief valve into the opening provided and marked for this purpose on the water heater. Install a drainpipe in the opening of the temperature and pressure relief valve so that any discharge from the valve will exit within 6 inches above, or at any distance below the structural floor and cannot contact any live electrical part. The end of the relief valve drainpipe opening should terminate near the floor drain or other suitable location. Do not subject the discharge opening to blocking or freezing or reduce its size under any circumstances. It is recommended that a minimum clearance of 3" be provided on the side of the water heater for servicing and maintenance of the temperature and pressure relief valve.

After the installation of all the water lines, open the main water supply valve and fill the water heater. Open several hot water faucets to allow air to escape from the system while the water heater is filling. When a steady stream of water passes through the faucets, close them and check all connections for possible leaks in the system.

FAILURE TO INSTALL AND MAINTAIN A NEW, LISTED 3/4 X 3/4 TEMPERATURE AND PRESSURE RELIEF VALVE WILL RELEASE THE MANUFACTURER FROM ANY CLAIM WHICH MIGHT RESULT FROM EXCESSIVE TEMPERATURES AND PRESSURES.

Never operate the water heater without first being certain it is filled with water.

This water heater can deliver scalding water temperatures at any faucet in the system. Be careful whenever using hot water to avoid scalding injury. Certain appliances require increased water temperatures (such as dishwashers and automatic clothes washers). By setting this water heater to a higher water temperature setting, you may create the potential for a scalding injury. To protect against injury, install an anti-scalding tempering valve in the water system. This valve will reduce point of discharge temperature by mixing cold and hot water in branch water lines. Such valves are available from the local plumbing supplier. Please consult the plumbing professional who installed the water heater concerning this matter.

THE FOLLOWING INSTRUCTIONS ARE FOR INSTALLATION OF: GAS WATER HEATERS SUITABLE FOR WATER (POTABLE) HEATING AND SPACE HEATING

⚠ CAUTION

THE COIL PROVIDED IN THIS WATER HEATER IS MANUFACTURED USING AN ALUMINUM ALLOY INNER WALL, CROSS-LINKED POLY- ETHYLENE OUTER WALL AND NITRILE/HDPM "O" RING(S).

DO NOT USE COMPONENTS OR MATERIALS WHICH MAY NOT BE COMPATIBLE WITH THESE MATERIALS. THIS MAY CAUSE PREMATURE FAILURE OF THE COIL AND/OR THE WATER HEATER.

1. All piping components connected to this water heater for space heating applications must be suitable for use with potable water. In Massachusetts, space heating piping length **must not** exceed 50 feet.
2. Toxic chemicals, such as those used for boiler treatment, **must not** be introduced into potable water used for space heating.
3. This water heater **must not** be connected to an existing heating system or component(s) previously used with a non-potable water heating appliance.
4. When the system requires water for space heating at temperatures higher than required for other means, such as an ASSE approved mixing valve shall be installed to temper the water for those uses in order to reduce the scald hazard potential.

Please refer to the illustration below for the suggested piping arrangement.

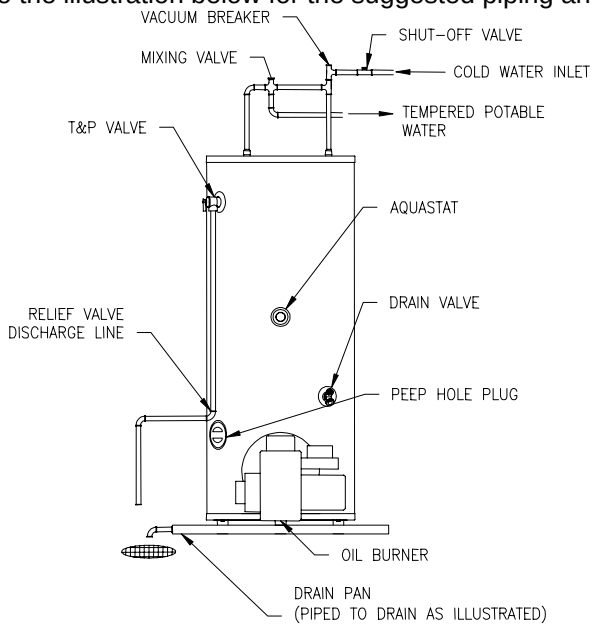

Figure 2

OIL TANKS AND PIPING

IMPORTANT!!

The instructions in this Section are general guidelines. The instructions for the specific pump installed on the burner that you have purchased should take precedence over the instructions given below. Read all of the instructions provided with the burner before continuing with the installation.

A. Miscellaneous Information: If suction and return lines are less than 30 feet in length, 1/2" OD tubing may be used, but never smaller; however, when the oil line is 30 feet or over, 5/8" OD tubing is recommended. Where basement oil storage tanks or oil storage tanks installed above the burner are used, and/or when the oil flows by gravity to the oil pump, a single-stage fuel unit with a single oil line to the pump may be used. Avoid as many connections as possible in the suction line and make up all connections as tightly as possible, using a good pipe joint compound for oil on all pipe threads. To minimize the possibility of air leaks, tighten packing gland on any valve installed in the suction line. Also, be sure to tighten the cover on the oil filter, as filter gaskets often shrink. Check for kinks in the oil lines as well as for possible air pockets and for loose connections. Underwriters' Laboratories requirements now in effect stipulate a bottom outlet on all 275 gallon oil storage tanks. This is to prevent the accumulation of condensation, which causes the tank to rust. A water trap can be installed at the oil storage tank outlet to prevent the water from entering the burner. There are a number of additives on the market that can be added to the oil storage tank with the fuel oil. These additives hold the water in suspension and allow it to pass through the burner. Consult a local fuel oil dealer for information concerning the use of these additives.

B. Single Line System: NOT RECOMMENDED WHEN IT IS NECESSARY TO LIFT THE OIL. This type of installation is used where the oil storage tank is above the burner and gravity oil feed to the burner is permitted. The oil outlet and the line should be taken from the bottom of the tank. This line should have a gradual slope downward of approximately 112" per linear foot or more to a point directly below where it is connected to the burner. A shut-off valve should be installed in the line.

C. Two Line System: If oil storage is buried or if a suction line is long, it is recommended that a two-stage fuel unit with a two line (suction and return) installation be installed. For Suntec (Sunstrand) fuel units, insert the bypass plug through the return port and turn tight. For Webster pumps, bypass plug comes installed.

D. Suction Line: It is recommended that extra heavy wall copper tubing be used for this line. If standard wrought iron pipe is used. It should be scale free and not smaller than 5/8" OD. Copper tubing should be installed to connect the pipe to the fuel unit. Where tubing is used, one complete loop should be made in the tubing to connect the pipe to the fuel unit. Where tubing is used, one complete loop should be made in the tubing immediately below the fitting connecting it to the oil pump in order to reduce transmission of noise and to prevent strain on the burner. When the top of the oil storage tank is below the level of the fuel unit, high points or air pockets in the suction line must be avoided between the oil storage tank and the fuel unit, and a 5/8" OD ball check valve should be installed to prevent the return of the oil to the oil storage tank during the off cycle period of the burner. Do not run suction or return line overhead as this greatly increases the possibility of air pockets, oil leaks, siphoning and transmission of noise. When the top of the oil storage tank is above the fuel unit and gravity feed to the unit is not permitted, the suction line should be run to a point above the tank where an approved anti-siphon valve and a 5/8" OD gate valve shall be installed. These valves shall be installed inside. No ball check valve is required, but a union should be installed between the gate valve and the strainer to facilitate the removal of the strainer for cleaning when necessary.

E. Return Line: The return line should be the same size as a suction line and run as directly as possible from the return opening in the fuel unit to the oil storage tank and should extend into the oil storage tank to the same depth as the suction line.

F. Pressure Test for Buried Oil Lines: It is important that buried oil lines be thoroughly tested for leaks before being covered.

CAUTION

DO NOT USE GASOLINE, CRANKCASE DRAININGS,
OR ANY OIL CONTAINING GASOLINE

OPERATION

Filling the Water Heater

1. Close the water heater drain valve by turning the handle clockwise.
2. Open the cold water shut-off valve.
3. Open several hot water faucets to allow air to escape from the system.
4. When a steady stream of water flows at the hot water faucets, the water heater is filled. Close the faucets and check for water leaks at the temperature-pressure relief valve and the hot and cold water connections.

BURNER AND THERMOSTAT INFORMATION

It is recommended that this water heater be installed with the following burners and thermostat:

MODEL SIZE	BURNER	NOZZLE	THERMOSTAT
30S	Beckett AF Burner (BW307)	.60 GPH 70° A	Honeywell Aquastat 4103a1100 (160° Max.)
32L	Beckett AF Burner (BW301)	.65 GPH 80° B	Honeywell Aquastat 4103a1100 (160° Max.)
50L	Beckett AF Burner (BW302)	.75 GPH 80° B	Honeywell Aquastat 4103a1100 (160° Max.)
70L	Beckett AF Burner (BW305)	1.0 GPH 80° B	Honeywell Aquastat 4103a1100 (160° Max.)

The correct burners and thermostat may be purchased from the same supplier that provided the water heater to you.

Installing the Burner: It is recommended that the burner be installed so that the face of the burner head is between 1/8 of an inch to 5/8 of an inch from the inside wall of the combustion chamber (see Figure 3). The position of the burner head can be checked by putting your hand through the peep site hole and feeling the location of the burner head. If the peep site hole is too small for you to fit your hand through, then you can check the burner position with a mirror. The burner head **SHALL NOT** extend inside the combustion chamber. The burner is secured to the water heater by three 5/16" nuts.

CAUTION: Do not operate the burner if it is wet. If the burner gets wet, have a qualified technician examine the burner before putting it back into operation.

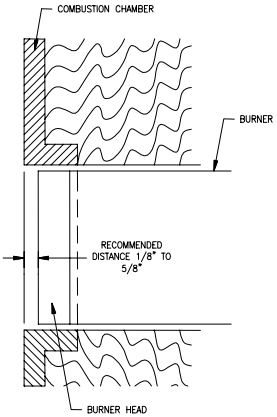

Figure 3

Installing the Thermostat: The water heater comes with the thermostat well installed in the tank. A Honeywell Aquastat 4103A1100 needs to be installed in the thermostat well.

T'stat information continued-

Adjusting the Thermostat: When adjusting the thermostat it should be remembered that lower temperature settings are more energy efficient. To adjust the thermostat, turn the dial clockwise to decrease the temperature and counter-clockwise to increase the temperature. It is suggested that the starting setting not exceed 120°F on the thermostat dial as indicated in (Figure 4).

CAUTION

Hotter water increases the risk of scald injury. Scalding may occur within five (5) seconds at a temperature setting of 140°F. To protect against hot water scald injury, install and anti-scald tempering valve in the water system. This valve will reduce point of discharge temperature by mixing cold and hot water in branch water lines. A qualified plumber should be consulted.

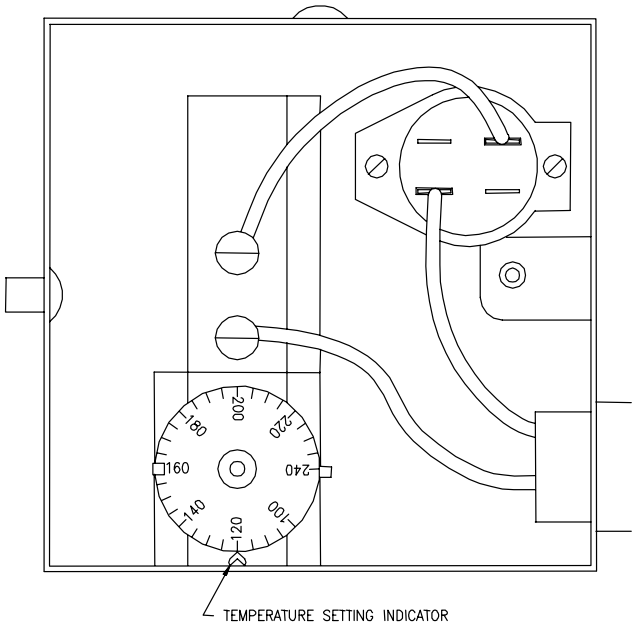

Figure 4 – Thermostat with cover removed

WARNING

Escaping flue gases can be lethal. Make sure that the flue and venting system is checked at least once a year by a plumbing professional or the oil supplier's service technicians.

T'stat information continued-

Motor Lubrication: Oil motor with one or two drops of non-detergent motor oil.

Priming The Fuel Units: Locate the air bleed valve on the fuel unit (pump). Place a container underneath the air bleed valve. Open the air bleed valve by turning it one quarter of a turn in the counter-clockwise direction. Turn the thermostat on the water heater to a setting that is high enough to allow the burner to operate. Turn on the power supply to the burner. After the air is pumped out of the fuel unit, let at least one pint of oil flow into the container. While running under these conditions, the pressure valve in the pump will not open; hence, there will be no flame. When a pint of oil has flowed into the container, close the air bleed valve. The burner should start burning when the air bleed valve is closed.

The above is not necessary when a two-pipe system is used. Install the pressure gauge and turn burner on. The system will vent itself through the return line and flame will appear as soon as the air has been eliminated. In the event a lot of air is present and flame is not sighted within 45 seconds, the cad cell will cause the relay to cut off for protection. It may then be necessary to push the reset button on the burner on the burner module.

WARNING

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

TUNE-UP PROCEDURE

A. To Put The Burner in Operation: Remove the temporary oil connection previously used and install a pressure gauge. Set all the controls to the normal starting position. Close the main cut out switch. The burner should start, ignite and burn. After you have obtained a flame, the oil pressure should be checked and adjusted to a pressure of 100 psi. This is the normal operating pressure. The air inlet can then be adjusted so that the flame is a clean yellow with slightly smoky tips. The burner flame can be observed through the peep site hole. It may be necessary to readjust the air inlet after the burner is running twenty minutes or more in order to obtain the proper fire with a hot combustion chamber. After final adjustment, tighten lock screws on air inlet, let unit cool and restart burner to be sure burner operates on a cold start. Remove the pressure gauge and install pipe plug.

T'stat information continued-

B. Using Instruments To Set Fire: It is strongly suggested that the installer use combustion test instruments when adjusting a flame. We suggest 9 1/2% to 11% CO2 with a smoke reading no darker than 1 on the Bachrach Scale. Adjust the air inlet on the burner for the minimum amount of air for clean combustion while the combustion chamber is hot. Adjust the draft regulator so that there is -.01" to -.04" draft over the fire, maximum. Take readings and adjust air so that a minimum of 9 1/2% CO2 is obtained with a smoke reading between 0 and 1. When using instruments in setting a fire, do not lean towards getting a greater percentage of CO2 than a clean fire will give. It is more important to keep the inside of the combustion system clean than to receive a higher CO2.

C. Nozzle (Oil Input) Variations: Oil service personnel will carry several nozzles of different manufacture, angles and types of spray in order to obtain the most suitable for the particular application. Fuel oils vary greatly. Because of this, nozzles will not always deliver the gallons per hour or angle of spray that is indicated on the nozzle. In addition, it has been found that, in certain areas, due to local conditions, nozzles other than those furnished as original equipment, give better performance due to the type of oil being delivered.

D. Draft: Draft reading in the stack should be -.02" to -.05". High Draft may be caused by over firing or too much excess air.

If there is back draft caused by down draft, DO NOT operate the burner until this situation is corrected. Back pressure (back draft or down draft) may also be caused by the chimney termination being lower in elevation than surrounding objects, such as buildings, hills, trees, rooftops, etc. Back pressure may also be caused by an exhaust fan in the building.

IMPORTANT REMINDERS

1. Install all electrical work in strict accordance with local codes and ordinances.
2. All unions must be of the ground seat type.
3. A check valve shall be installed in the suction line when the oil storage tank is below the burner to prevent the return of the oil to the oil storage tank when the fuel unit is not in operation.
4. Lubricate oil burner motor.
5. Set the draft to a range of -.02" to -.05".
6. See that the smoke pipe enters into the chimney far enough to be tight and not so far as to reduce flue area. Its end should be flush with the inside of the chimney.
7. Be sure that there is at least -.01" draft over the fire.
8. Be sure that there is no backpressure such as down draft or back draft.
9. Be sure that there is sufficient air in heater room for proper combustion at all times.
10. Explain the operation of the burner to the owner -show where to oil -how to operate controls and main cutout switch.
11. Hang burner-operating instructions as supplied with burner in prominent place near installation.

DRAINING THE WATER HEATER

Should it become necessary to completely drain the water heater, make sure you follow the steps below:

1. Shut off the oil supply to the water heater.
2. Turn off/disconnect all electric power to the water heater.
3. Close the cold water supply shut-off valve.
4. Open a hot water faucet to allow air to enter the system.
5. Open the drain valve. This is threaded to receive a standard hose coupling.
   Caution: This water may be hot.

To put the water heater back into operation, refer to "Filling The Water Heater".

CAUTION:

Hydrogen gas can be produced in a hot water system served by this water heater that has not been used for a long period of time (generally two weeks or more). Hydrogen gas is extremely flammable. To reduce the risk of injury under these conditions, it is recommended that the hot water faucet be opened for several minutes at a convenient sink before using any electrical appliance connected to the hot water system. If hydrogen is present, there will probably be an unusual sound such as air escaping through the pipe as the water begins to flow. There shall be no smoking or open flame near the faucet at the time it is open.

MAINTENANCE

In addition, the following steps should be performed at six-month intervals unless otherwise specified:

1. Make sure you clear the combustion air openings of any dust, lint or other restrictions. Flow of combustion air MUST NOT be restricted.
2. Check the burner flame periodically. If it becomes out of shape or smoky, call your service technician.
3. When cleaning your heater room or utility room, always turn off the burner to reduce the amount of dust and lint drawn into the burner.
4. The electric ignition system and all controls should be checked periodically for reliability of operation and adjusted if necessary.
5. Lightly oil the burner motor with "Medium" detergent-free automobile engine oil twice per year.
6. Clean Strainer or Filter as follows:
   a) Oil valves between oil storage tank and burner should be shut.
   b) Remove Strainer cover.
   c) Remove Strainer baskets and wash in kerosene.
   d) Reassemble.
7. Drain off at least one gallon of water each month to remove the silt and sediment from the water heater.
   CAUTION: THIS WATER MAY BE HOT.
8. Check the temperature-pressure relief valve to insure that the valve has not become inoperable. Lift the lever at the top of the valve several times until the valve seats properly without leaking and operates freely. **CAUTION: THIS WATER MAY BE HOT.**

SAFETY WARNING

When lifting the lever of the temperature and pressure relief valve, hot water will be released under pressure. Be certain that any released water does not result in bodily injury or property damage.

If the temperature and pressure relief valve on the water heater discharges periodically, this may be due to thermal expansion in a closed water supply system. Please contact your water supplier or plumbing professional on how to correct this situation. Do not plug the temperature and pressure relief valve.

Either a plug type, combination anode/nipple or both have been installed in this water heater to extend tank life. The anode(s) should be inspected periodically (every 2 years) and replaced if necessary. Contact the installing professional plumber or the manufacturer listed on the rating plate for replacement anode information. The use of a water softener may increase the speed of anode consumption. More frequent inspection of the anode is needed when using softened (or phosphate treated) water. You should contact your supplier or a plumbing professional for replacement parts. Make sure that you give the Part name, model number and serial number of the water heater when ordering the parts.

Contact your supplier or plumbing professional for replacement parts or contact the company at the address given on the rating plate of the water heater.

Provide the part name, model and serial numbers of the water heater when ordering parts.

READ THE WARRANTY FOR A FULL EXPLANATION OF THE LENGTH OF TIME THAT PARTS AND THE WATER HEATER ARE WARRANTED.

Manufactured under one or more of the following U.S. Patents: RE.34,534; B1 5,341,770; 4,416,222; 4,628,184; 4,669,448; 4,672,919; 4,808,356; 4,829,983; 4,861,968; 4,904,428; 5,000,893; 5,023,031; 5,052,346; 5,081,696; 5,092,519; 5,115,767; 5,199,385; 5,277,171; 5,372,185; 5,485,879; 5,574,822; 5,596,952; 5,660,165; 5,682,666; 5,761,379; 5,943,984; 5,954,492; 5,988,117; 6,142,216; 6,684,821. Other U.S. and Foreign patent applications pending. Current Canadian Patents: 1,272,914; 1,280,043; 1,289,832; 2,045,862; 2,092,105; 2,107,012; 2,108,186; 2,112,515.

Complete the following information and retain for future reference:

Model No: _____
Serial No:_____
Installation Date: _____
Service Phone No._____
Days: _____Nights: _____
Address:_____
Supplier:_____
Supplier's Phone No:_____