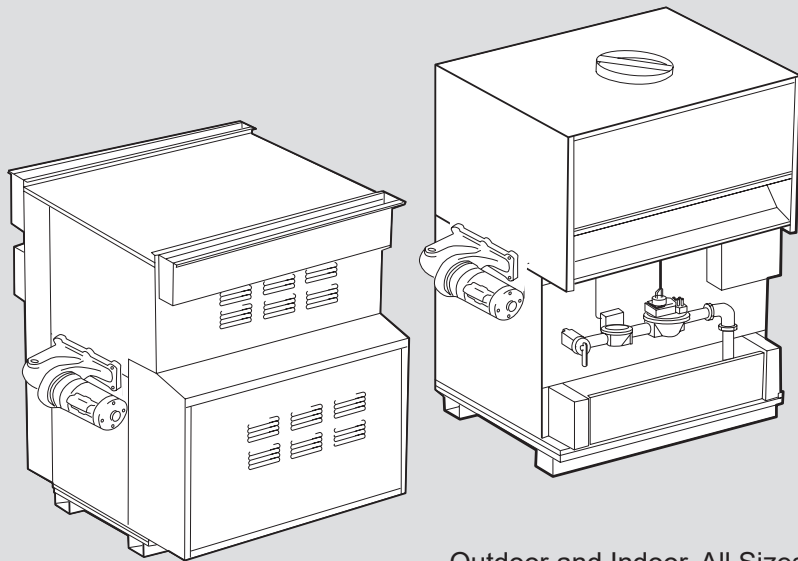


# User's Information Manual for **MIGHTYTHERM<sup>®</sup>**



## Model HH & PH Hydronic Boiler

Outdoor and Indoor, All Sizes

**FOR YOUR SAFETY:** This product must be installed and serviced by a professional service technician, qualified in hot water boiler installation and maintenance. Improper installation and/or operation could create carbon monoxide gas in flue gases which could cause serious injury, property damage, or death. Improper installation and/or operation will void the warranty. For indoor installations, as an additional measure of safety, Laars strongly recommends installation of suitable Carbon Monoxide detectors in the vicinity of this appliance and in any adjacent occupied spaces.

### **⚠ WARNING**

If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

#### **WHAT TO DO IF YOU SMELL GAS**

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call your gas supplier from a nearby phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

Installation and service must be performed by a qualified installer, service agency, or gas supplier.

### **⚠ AVERTISSEMENT**

Assurez-vous de bien suivre les instructions données dans cette notice pour réduire au minimum le risque d'incendie ou d'explosion ou pour éviter tout dommage matériel, toute blessure ou la mort.

Ne pas entreposer ni utiliser d'essence ni d'autres vapeurs ou liquides inflammables dans le voisinage de cet appareil ou de tout autre appareil.

#### **QUE FAIRE SI VOUS SENTEZ UNE ODEUR DE GAZ:**

- Ne pas tenter d'allumer d'appareils.
- Ne touchez à aucun interrupteur. Ne pas vous servir des téléphones dans le bâtiment où vous êtes.
- Appelez immédiatement votre fournisseur de gaz depuis un voisin. Suivez les instructions du fournisseur.
- Si vous ne pouvez rejoindre le fournisseur de gaz, appelez le service des incendies.

L'installation et l'entretien doivent être assurés par un installateur ou un service d'entretien qualifié ou par le fournisseur de gaz.

## A. General Care

Your MightyTherm will require very little Maintenance. However, as with any fine appliance there are certain steps that should be taken to ensure continuing optimum performance.

Keep the area around the MightyTherm clean and free from combustible materials, gasoline and other flammable liquids and vapors.

The MightyTherm must be completely isolated and protected from any source of corrosive chemical fumes such as trichlorethylene, perchlorethylene, chlorine, etc.

Keep grille openings on the boiler free for proper ventilation of interior components.

Do not obstruct or block a free flow of air to the boiler to ensure proper ventilation.

If desired, clean the jacket surfaces with a damp cloth and mild detergent. Do not use flammable cleaning materials.

If sidewall vented, keep the vent terminal clear of obstructions — do not pile snow against the vent terminal. Clean the air filter(s) often, and then develop an appropriate maintenance schedule.

## B. Annual Inspection of Flue and Vents

Visually inspect the vent pipe once a year. Should any deterioration exist, have the affected parts replaced by a qualified service person.

## C. To Shut Down System:

(See attached instructions)

Whenever danger of freezing exists, shut off water supply and remove drain plug in bottom of front header cover and drain every part of system subject to freezing temperatures.

### WARNING

Should overheating occur or the gas supply fail to shut off, do not turn off or disconnect the electrical supply to the pump. Instead, shut off the gas supply at a location external to the appliance.

### WARNING

Do not use this heater if any part has been under water. Immediately call a qualified service technician or Gas Company personnel to inspect the site. Heater replacement is recommended.

### WARNING

#### Carbon Monoxide Hazard

This product burns gas to produce heat. The appliance must be properly installed, operated, and maintained to avoid exposure to appreciable levels of carbon monoxide and the installer is required to confirm that at least one carbon monoxide alarm is installed in the living space before the appliance is put into operation.

It is important for carbon monoxide alarms to be installed, maintained, and replaced following the alarm manufacturer's instructions and applicable local codes.

### AVERTISSEMENT

#### Danger lié au monoxyde de carbone

Ce produit brûle des gaz pour produire de la chaleur. L'appareil requiert une installation, un fonctionnement et une maintenance adéquates afin d'éviter l'exposition à des niveaux appréciables de monoxyde de carbone; l'installateur est requis de confirmer qu'au moins une alarme de détection de monoxyde de carbone est installée dans l'espace de vie avant que l'appareil ne soit mis en service.

Il importe que les alarmes de détection de monoxyde de carbone soient installées, maintenues et remplacées selon les directives du manufacturier et les codes locaux applicables.

## D. To Start Up System:

It is recommended that your service representative be allowed to start up the system when required. For details of the operational sequence and system requirements, refer to documents in the instruction envelope.

### 1. Start up heater:

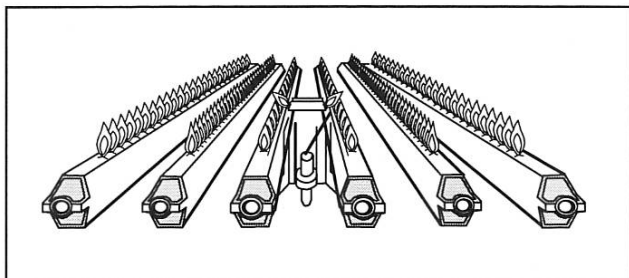
- Be certain system pump is running.
- Follow attached lighting instructions.

### 2. To set temperature controls:

- Boilers on constant flow are provided with temperature controller bulb located in the heater inlet and the high-limit sensing bulb in the heater outlet. In these systems, set the temperature controller at the designed system supply temperature less the temperature drop in the system. Set the high-limit switch 15°F to 25°F above the supply temperature to the system.
- Heaters on variable flow are provided with both the temperature control sensing bulb and the high-limit sensing bulb located in the boiler outlet. These heaters are typically equipped with staged or modulated firing. Set the temperature controller at the designed system temperature. Set the high-limit switch 15°F to 25°F above the temperature controller setting.

## E. Maintenance:

1. Lubricate the water circulating pump per instructions found on the pump.
2. If a strainer is employed in a pressure reducing valve or in piping, clean it every six months.
3. At start-up and every six months thereafter, the main burner flame should be observed for proper performance (See Figure 1). If flame has



**Figure 1. Main Burner Flame Pattern.**

appearance of "sooting" tips, check for debris near orifices. Call serviceperson. See lighting and shut down instructions attached for proper pilot flame pattern.

4. Inspect the venting system for obstruction, leakage and corrosion at least once each year.
5. Keep boiler area clear and free from combustible material, gasoline and other flammable vapors and liquids.
6. Be certain all combustion air and ventilation openings are unobstructed.
7. Check for fouling on the external surfaces of the heat exchanger every six months.

**Note:** After installation and first start-up, check the heat exchanger for fouling after the following periods of operation:

24 hours    7 days    30 days    90 days

Then once every six months thereafter.

Fouling on the external surfaces of the heat exchanger is caused by incomplete combustion and is a sign of combustion air and/or venting problems. As soon as any fouling is observed, the cause of the fouling should be corrected. The heat exchanger can be checked with a flashlight and locating a mirror under the burners. An alternate method is to remove the venting and top panel as necessary to inspect from above. Also check the vent system for defects at this time.

- a. If cleaning is required, shut off all electrical and gas supply to the heater.
- b. To expose the heat exchanger:

### Indoor Models:

Remove flue pipe, top of unit, rear upper jacket, flue collector rear panel and heat exchanger baffles.

### Outdoor Models:

Remove vent top assembly, rear upper jacket, flue collector rear panel and heat exchanger baffles.

- c. Remove all burners:

It is usually more convenient to remove the burner tray assembly. Disconnect sensor wire, ignition cable (or thermocouple generator) and pilot gas line. Disconnect manifold inlet union(s). Remove the four (4) retaining screws. Grasp burner/pilot assembly firmly at the front.. Push it back, disengaging it from the gas orifice. Lower the front of the burner (to avoid damaging pilot shield) then remove the burner tray.

### **⚠ Caution**

Black carbon or green soot on a dirty heat exchanger can, under certain conditions, be ignited by a random spark or open flame. To prevent this unlikely occurrence, dampen the soot deposits with wet brush or fine water spray before servicing or cleaning the heat exchanger.

With a wire brush, remove soot and loose scale from heat exchanger. Do not use water or compressed air for cleaning. Clean fallen debris from bottom of heater. Check that burner ports are clear and pilot assembly is free of debris.

- d. Reassemble in reverse order: Be sure the heat exchanger baffles are replaced.
8. The gas and electric controls installed on boilers are designed for both dependable operation and long life, but the safety of this equipment so completely depends on their proper functioning that it is strongly recommended that the basic items be checked by a competent serviceperson every year and replaced when necessary. The basic controls are:
    - a. Water temperature controls
    - b. Pilot safety system
    - c. Automatic electric gas valve(s)
    - d. Flow sensing safety device.
  9. Low water cutoffs should be inspected every six months, including flushing of float types.
- NOTE:** Warranty does not cover any damage caused by lack of required maintenance or improper operating practices.
10. Both modulating and stage valves are adjusted at the factory for minimum permissible rates and should not be readjusted.



**LAARS®**  
**Heating Systems Company**

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