

User's Information Manual for

Endurance

- EBP Series Modulating Combination Boiler
(natural or propane gas)**
- EDP Series Modulating Hydronic Boiler
(natural or propane gas)**
- EDN Series Non-ferrous
Modulating Hydronic Boiler
(natural or propane gas)**

⚠WARNING

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.

⚠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 vous trouvez.
- 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.

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FOR YOUR SAFETY READ BEFORE OPERATING

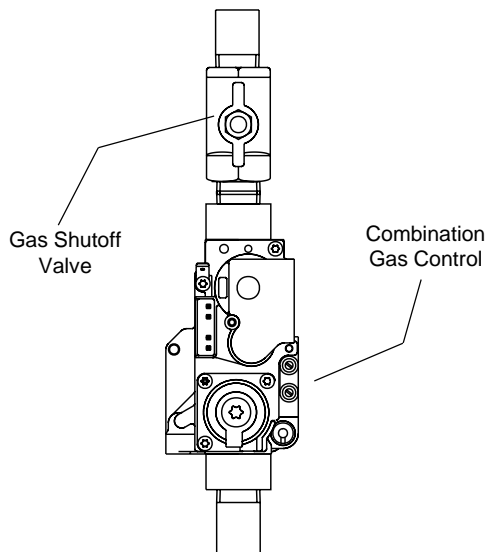
⚠ WARNING



If you do not follow these instructions exactly, a fire or explosion may result, causing property damage, personal injury or loss of life.

- A. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
- B. BEFORE OPERATING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.
- WHAT TO DO IF YOU SMELL GAS**
- Do not try to light any appliance.
 - Do not touch any electric switch; do not use any phone in your building.
 - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- C. If you cannot reach your gas supplier, call the fire department.
- C. Turn on gas shutoff valve (located above the combination gas control) so that the handle is aligned with the gas pipe. If the handle will not turn by hand, don't try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.
- D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.


OPERATING INSTRUCTIONS

1. STOP! Read the safety information above on this label.
2. Set the thermostat to lowest setting.
3. Turn off all electric power to the appliance.



4. This appliance is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
5. Remove control access panel, and top front cover.
6. Turn gas shutoff valve clockwise  to "off". Handle will be horizontal, do not force.
7. Wait five (5) minutes to clear out any gas. If you then smell gas, STOP! Follow "B" in the safety information above on this label. If you don't smell gas, go to next step.
8. Turn gas shutoff valve counterclockwise  to "on". Handle will be vertical.
9. Replace top front cover and control access panel.
10. Turn on all electric power to appliance, depress on/off button on control panel, depress black button on top of control panel.
11. Set thermostat to desired setting.
12. If the appliance will not operate, follow the instructions "To Turn Off Gas To Appliance" and call your service technician or gas supplier.

TO TURN OFF GAS TO APPLIANCE

1. Set the thermostat to lowest setting.
2. Turn off all electric power to the appliance if service is to be performed.
3. Remove control access panel and top front cover.
4. Turn gas shutoff valve clockwise  to "off". Do not force.
5. Replace top front cover and control access panel.

PAR MESURE DE PRUDENCE, LISEZ CE QUI SUIT AVANT DE FAIRE FONCTIONNER L'APPAREIL

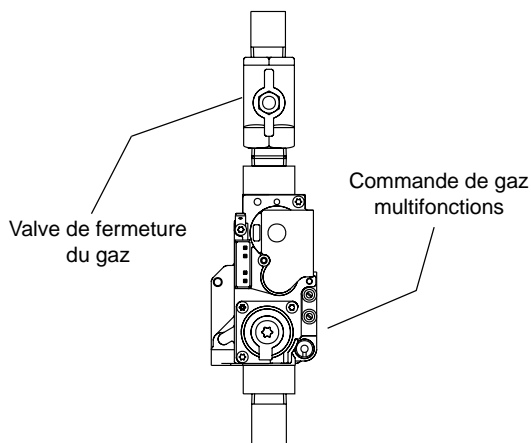
⚠ MISE EN GARDE

Si vous ne suivez pas ces instructions à la lettre, un incendie ou une explosion pourrait se produire et causer des dommages matériels, des blessures personnelles ou même la mort.

- A. Cet appareil n'est pas doté d'une veilleuse. Il est équipé d'un dispositif d'allumage qui allume automatiquement le brûleur. Ne tentez pas d'allumer le brûleur manuellement.
- B. AVANT D'UTILISER, vérifiez s'il n'y a pas d'odeur de gaz près de l'appareil. Vérifiez s'il n'y a pas d'odeur de gaz près du plancher, car le gaz est plus lourd que l'air et peut se déposer sur le plancher.
- QUE FAIRE EN CAS D'ODEUR DE GAZ
- N'essayez pas d'allumer n'importe quel appareil que ce soit.
 - Ne touchez pas à un commutateur électrique. N'utilisez pas le téléphone de votre résidence.
 - Appelez immédiatement votre fournisseur de gaz en utilisant le téléphone de votre voisin. Suivez les instructions de votre fournisseur de gaz.
- Si vous ne pouvez joindre votre fournisseur de gaz, appelez le service des incendies.
- C. Fermez la soupape d'arrêt de gaz (située au-dessus de la commande de gaz multifonctions) de sorte que la poignée soit perpendiculaire au tuyau de gaz. Si vous ne pouvez tourner la poignée à la main, n'essayez pas de la réparer. Communiquez avec un technicien de service qualifié. Le fait de forcer ou de tenter de réparer la poignée pourrait causer un incendie ou une explosion.
- D. N'utilisez pas cet appareil si l'une des pièces a été plongée sous l'eau. Communiquez immédiatement avec un technicien de service qualifié afin qu'il inspecte l'appareil et remplace toute pièce du système de commande et toute commande de gaz qui aurait été plongée sous l'eau.

NOTICE D'UTILISATION

1. ARRÊTEZ ! Lisez l'information de sécurité ci-dessus, sur cette étiquette.
2. Réglez le thermostat au réglage le plus bas.
3. Coupez l'alimentation électrique à l'appareil.
4. Cet appareil est doté d'un dispositif d'allumage qui allumera automatiquement le brûleur. Ne tentez pas d'allumer le brûleur manuellement.
5. Retirez le panneau d'accès aux commandes et le couvercle avant qui se trouve sur le dessus.
6. Faites tourner la valve de fermeture du gaz dans le sens des aiguilles d'une montre et mettez-la à «off». La poignée sera horizontale. N'employez pas de force.
7. Attendez cinq (5) minutes afin que le gaz se dissipe. Si vous croyez sentir une odeur de gaz, ARRÊTEZ ! Reportez-vous aux instructions B ci-dessus, sur cette étiquette. S'il n'y a pas d'odeur de gaz, passez à la prochaine étape
8. Faites tourner la valve de fermeture du gaz dans le sens contraire des aiguilles d'une montre et mettez-la à «on». La poignée sera verticale.
9. Remplacez le couvercle avant et le panneau d'accès de commandes.
10. Rétablissez l'alimentation électrique à l'appareil, appuyez sur le bouton «on/off» qui se trouve sur le panneau de commande, appuyez sur le bouton noir qui se trouve sur le panneau de commande.
11. Réglez le thermostat à la température désirée.
12. Si l'appareil ne fonctionne pas, suivez les directives relatives à la fermeture de l'alimentation en gaz et communiquez avec votre technicien de service ou le fournisseur de gaz.



FERMETURE DE L'ALIMENTATION EN GAZ

1. Réglez le thermostat au réglage le plus bas.
2. Coupez toute alimentation électrique à l'appareil si celui-ci doit faire l'objet d'un entretien.
3. Retirez le panneau d'accès aux commandes et le couvercle avant qui se trouve sur le dessus.
4. Faites tourner la valve de fermeture du gaz dans le sens des aiguilles d'une montre et mettez-la à «off». N'utilisez pas de force.
5. Remplacez le couvercle avant.

SECTION 1. Caring For Your Endurance

Your Endurance will require very little maintenance. However, as with any fine appliance, there are certain steps you should take to insure continuing optimum performance.

1A. General Care

Keep your Endurance area clear and free from combustible materials, gasoline and other flammable vapors and liquids.

If you desire, clean the jacket surfaces with a damp cloth and mild soap. Do not use flammable cleaning materials.

Keep vent terminal free of obstructions. Do not pile snow against vent terminal.

1B. Annual Inspection of Flues and Vents

You should visually inspect the vent pipe once a year. Should any corrosion exist, have the affected parts replaced.

On horizontally vented units installed with p/n 2400-009 (Direct Vent Kit) inspect the metal vent terminal (see Figure 3) on the outside of the building for corrosion. Replace if necessary.

On all models installed without the Direct Vent Kit, clean and inspect the condensate collection and disposal system which is a part of the flue assembly.

1C. Shutting Down the Endurance

The need may arise to shut down your Endurance (extended stay away from home, for example). If so, the following steps are required:

1. Switch off main disconnect switch (located on back of control panel).
2. Close gas shutoff valve above combination gas control valve (inside unit).
3. Close main manual gas valve.
4. If freezing is anticipated, drain Endurance and be sure to protect building piping from freezing, also.

The above steps may require qualified service personnel.

1D. To Restart Endurance

Should the need arise (power interruption, for example), you may have to restart your Endurance. Follow these steps:

1. Depress the reset button on the top of the control panel for at least one second, and then release.
2. Turn up thermostat to call for heat.
3. In approximately 2 seconds, the blower will operate and ignition should occur after 35-40 seconds. It may take as long as 2½ minutes.
4. If ignition does not occur, wait 5 minutes and then repeat steps 1 through 3.

5. If, after three attempts, you still are unable to achieve ignition, shut down the boiler and call your service technician.

If drained, follow these steps:

1. Follow "Installation Manual" for proper filling and purging.
2. Turn on main manual gas valve.
3. Remove control access panel and top front cover and turn on gas shutoff valve, above combination gas control valve.
4. Switch on main disconnect switch, depress on/off button on front of control panel, and depress black reset button on top of control panel (pump and blower will start and igniter will be energized, after 35 seconds the gas valve will be energized, and ignition will occur). If ignition does not occur within 2½ minutes switch "off" main disconnect switch, wait 5 minutes and switch "on" again. If after three attempts ignition does not occur, initiate shutdown procedure and call for service.

1E. In the Event of Power Failure

The Endurance cannot be operated during an electrical power outage. If there is an extended power outage with danger of freezing, then the Endurance (and all other water systems) should be completely drained. When draining the unit, turn off gas and turn off the main power switch. When replacing in service, refer to start-up instruction for proper filling and purging.

1F. Full Service Every 3 Years

In addition to the annual visual inspections by the homeowner, a qualified service agency should conduct a detailed inspection of all flue product carrying areas of the boiler and vent system. This should be done in accordance with the service instruction in the "Installation and Operating Instructions Manual" for the Endurance.

Caution

Do not use this boiler if any part has been under water. Immediately call a qualified service technician to inspect the boiler and to replace any part of the control system and any gas control which has been under water.

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 Endurance.

En cas de surchauffe ou si l'admission de gaz ne peut être coupée, ne pas couper ni débrancher l'alimentation électrique de la pompe. Fermer plutôt le robinet d'admission de gaz à l'extérieur de l'appareil.

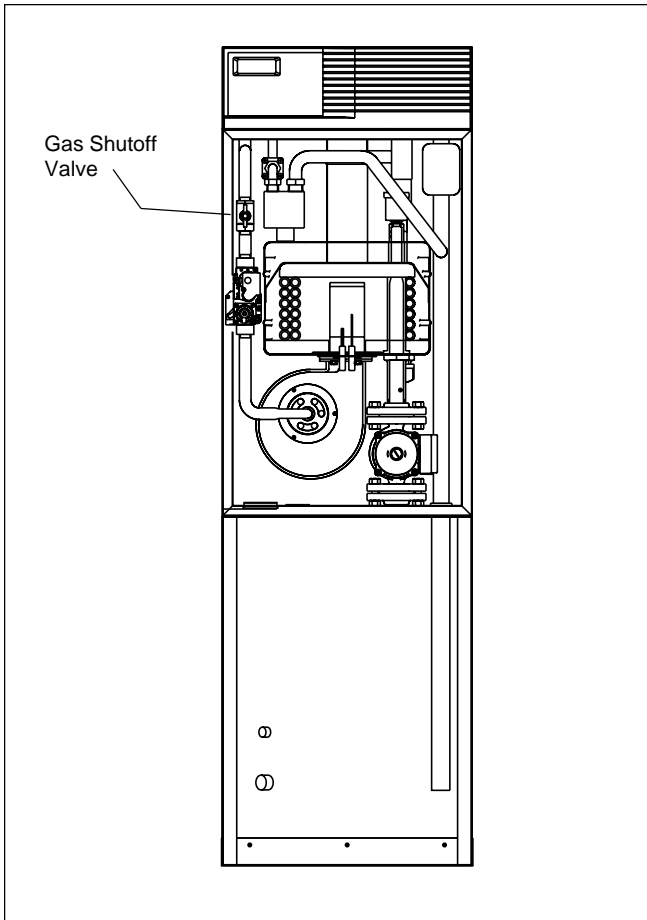


Figure 1. EBP Assembly View.

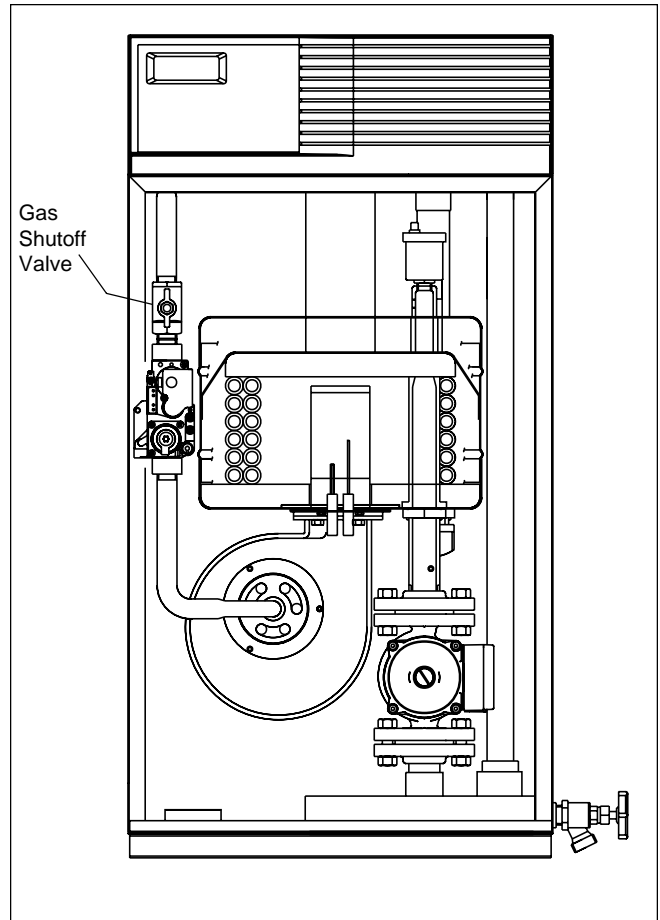


Figure 2. EDP/EDN Assembly View.

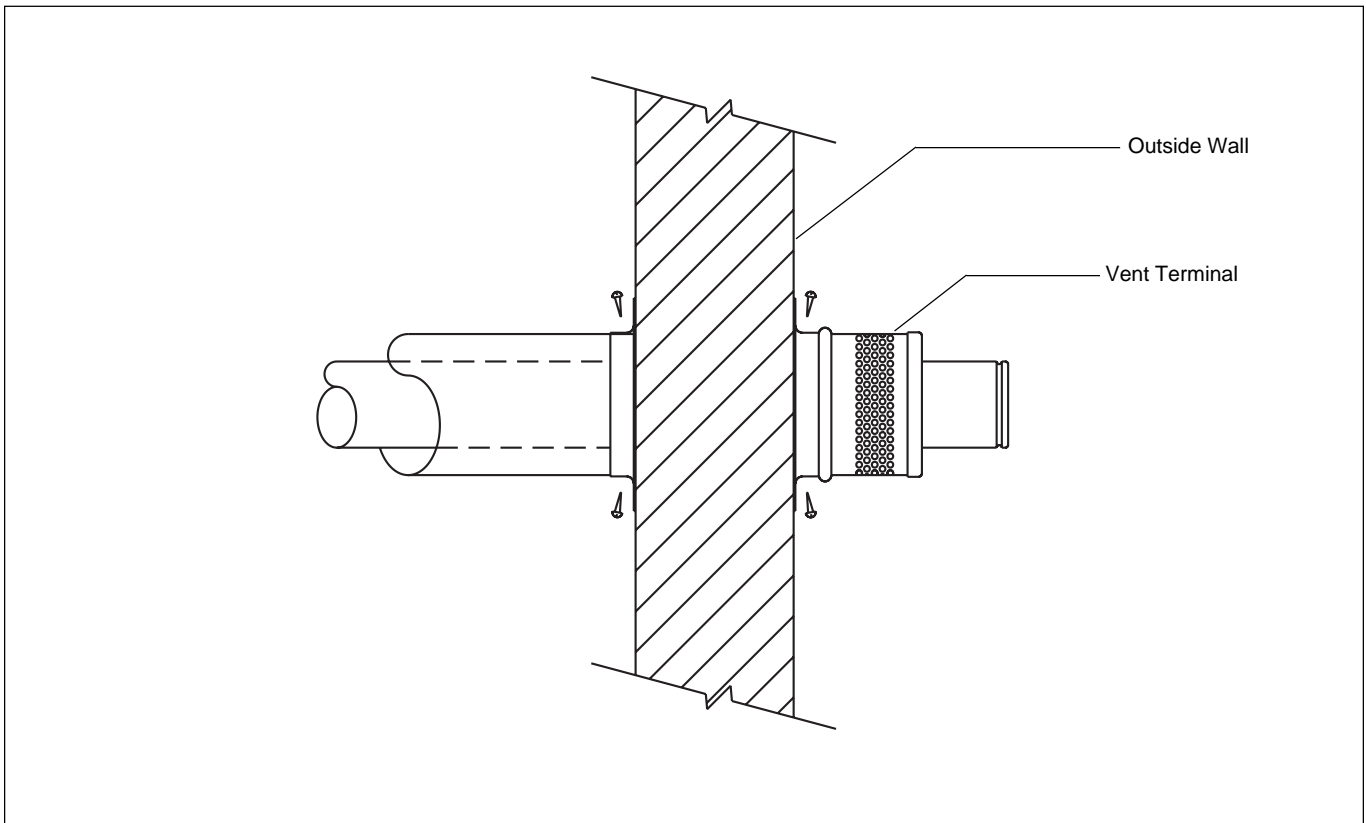


Figure 3. Vent Terminal.

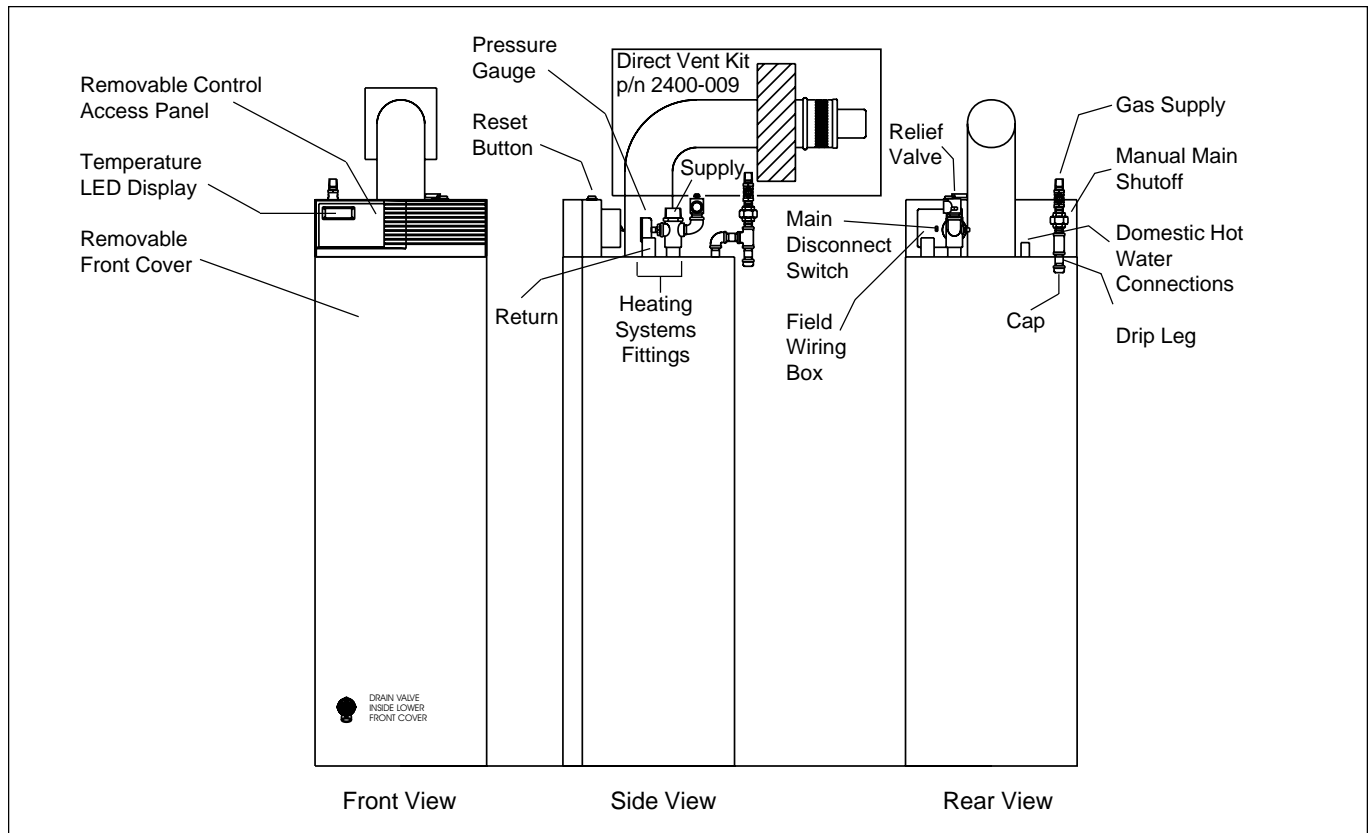


Figure 4. EBP Series.

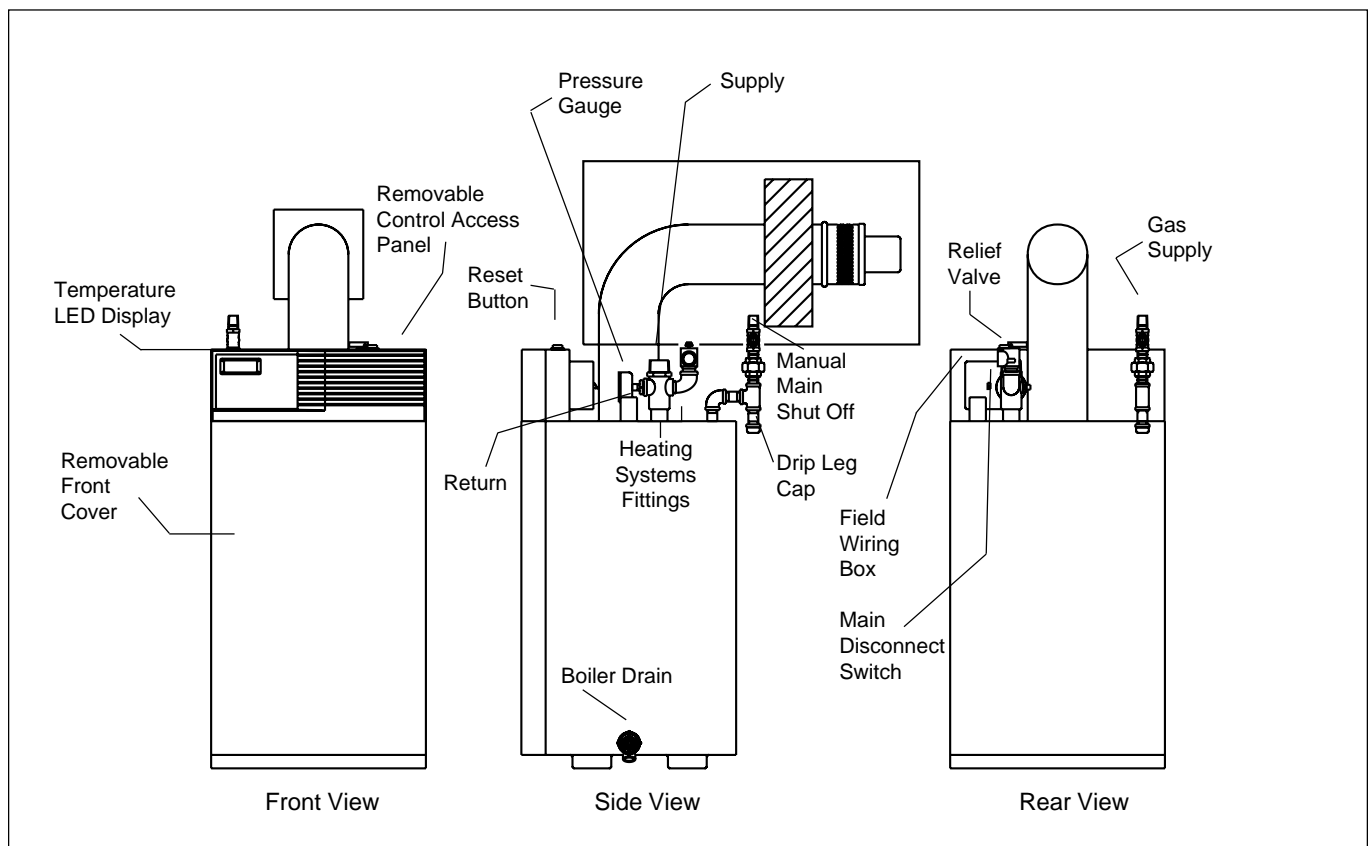


Figure 5. EDP/EDN Series.

FOR SERVICE

Contact your installing contractor, gas utility, Laars dealer, or call Laars for the nearest authorized representative in your area.

1G. Trouble Shooting – Fault Codes

The Endurance boiler uses an electronic boiler controller that shows operation information and fault codes in a three-character alphanumeric display.

Boiler Operation Information

default display = supply temperature, the temperature of the water leaving the boiler heat exchanger

rtn = return temperature, the temperature of the water entering the boiler heat exchanger

tnt = tank temperature, the temperature of the water in the transfer tank (EBP only)

dt = delta tee, the difference in temperature between the inlet and outlet of the boiler heat exchanger

Oat = outdoor air temperature, the temperature at the outdoor air sensor, if outdoor reset is used.

CSP = calculated setpoint, the calculated boiler supply temperature, if outdoor reset is used.

Boiler Control Fault Codes

F1 = Boiler control internal error. Switch off boiler and restart. If F1 repeats, replace boiler control.

F3 = Gas valve status is on, with no call for heat. This is an indication of a wiring error or a seized relay. Check relay first, and then boiler wiring.

F4 = Supply sensor error. Check for damaged wiring or poor connection first. Check sensor resistance per installation manual.

F5 = Tank sensor error (EBP only). Check for damaged wiring or poor connection first. Check sensor resistance per installation manual.

F6 = Return sensor error. Check for damaged wiring or poor connection first. Check sensor resistance per installation manual.

F8 = Outdoor air sensor error. Check for damaged wiring or poor connection first. Check sensor resistance per installation manual.

LO = Lockout. Many conditions can cause a boiler lockout. See boiler manual for possible causes and resolution.

OFF = Controller is off. Press and hold the upper left (power) button on the boiler control for 3 seconds.

ICE = Low temperature protection – boiler has detected water temperature below 39°F (4°C), and will attempt to run the boiler's circulator. Correct low temperature situation to avoid freezing conditions. Although the pump attempts to run, the Endurance boiler cannot prevent boiler or system freeze-up. When water freezes, it expands, and this expansion can burst pipes and cause damage to the boiler, or to the pipes and components throughout the whole heating system



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