

PORTAGE & MAIN

Since 1973

40 Years of Efficiency, Excellence, Reliability & Long Lasting Outdoor Water Furnaces

SHAKER GRATE COAL WATER FURNACE

ULTIMIZER SERIES

Conventional Coal Burning
Outdoor Water Furnace
with Refractory
Brick Lining...

The most important major innovation in conventional outdoor boiler design to date. The reinforced 2 1/2 inch thick refractory cement surrounding the fire provides:

- Much hotter temperatures for relight and proper combustion.
- Hotter temperatures allow for the most complete combustion within any conventional outdoor boiler.
- More complete combustion means a cleaner and more efficient burn.
- Hotter combustion temperatures eliminates moisture and its damaging effects.
- Hotter combustion temperatures equal a dryer, longer-lasting outdoor water furnace.

*We all know that for proper combustion, three key ingredients are required:
fuel, oxygen and
HEAT!*



QUALITY & VALUE MEET TO GIVE YOU THE INDUSTRY'S BEST WARRANTY!

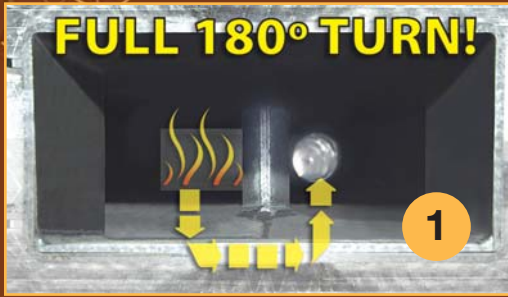
20 Year Limited Warranty

1 Year Warranty on Electrical Components

CALL US FOR FULL DETAILS!



NOT A BOX WITH A STACK AND DEFINITELY NOT YOUR REGULAR STRAIGHT SHOT DESIGN!



FULL 180° TURN!

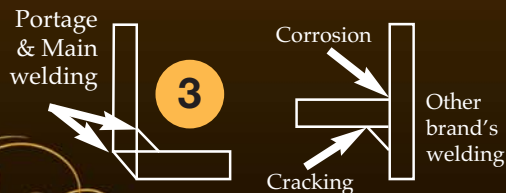
Air under the fire



Rounded fire chamber



Refractory cement fire chamber



Portage and Main Outdoor Water Furnaces has taken the best design in the outdoor coal boiler industry and made it even better - introducing the revolutionary new Ultimizer Series.

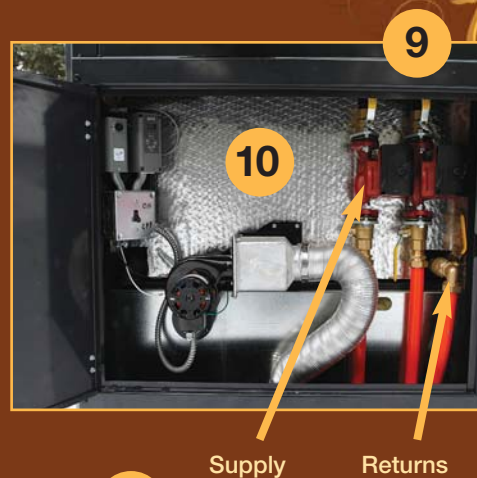
The New Ultimizer Shaker Grate Coal Water Furnace Series features a refractory cement lining to protect the firebox,

1. P&M's unique multi-pass heat exchanger is extremely efficient. This reverse-180°- return, trough-style design is located above the fire chamber and is completely surrounded by water. By keeping exhaust gases in the furnace longer, the P&M heat exchanger allows the maximum amount of heat energy to be transferred to the water jacket.
2. A water-cooled baffle at the back of the fire chamber keeps hot exhaust gases longer before they move to the heat exchanger. Prolonged contact with the water jacket means additional heat energy is transferred to the water.
3. Double-welded boiler style joints, exclusive to Portage & Main, insure strength and longevity of your outdoor coal furnace. Double-welding inside and outside takes more time but is worth it as it helps prevent weld corrosion, cracking and pin holes.
4. Fire chamber and heat exchanger are made of 1/4" W44 cold rolled mild steel which eliminates spider cracking and thermal expansion problems associated with other metals.
5. Rounded fire chamber design requires fewer welds than box style boilers and encourages greater airflow and even water jacket contact with exhaust gases.
6. Air introduced from under the fire is essential for clean and efficient coal burning. This preheated air comes up through the shaker grate and substantially increases the efficiency of the P&M outdoor coal water furnace. Air could also be introduced at the front of the fire chamber, just inside the door, which helps to increase burn temperatures and consume residual volatiles.
7. Our heavy duty shaker grate runs down the centre of the fire chamber and is made of 3/4" plate steel. The easy-to-operate, louver-style grate is operated by an exterior handle allowing ashes to fall easily into a galvanized ash pan below.
8. Programmable Johnson Controls regulate temperature and are accurate to within one degree.
 - a) The Johnson A419 aquastat is run in tandem with a
 - b) High-limit fail-safe aquastat, in the unlikely event that the digital unit experiences any malfunction.
9. The BL 2840 and BL 3444 feature two supply ports at the top of the water jacket and two return ports at the bottom. All connections are designed to support one-inch flow.
10. Mechanical components (blower motor, aquastats, electrical connections, circulators, air box, damper and ducting) are kept warm and dry in the rear cabinet easily accessed through the large, hinged and securable door.

SIMPLE DESIGN + QUALITY CRAFTSMANSHIP + SIMPLE TO OPERATE = HIGHLY EFFICIENT + LONG LIFE + HAPPY RELATIONSHIP

retain heat and encourage proper combustion. This heavy-duty refractory lining surrounds the bottom of the fire chamber to a height of 12 inches, insuring the Portage and Main outdoor coal burner will stand the test of time while providing superior performance and efficiency.

11. Convenient and easy-to-read float can be seen at a distance and will not discolor like traditional sight-tube fluid gauges. The P&M's unique filler tube design also helps reduce evaporation.
12. End-mount chimney orientation prevents roof leaking and subsequent corrosion that might occur in through-the-roof stack designs. .
13. Powder-coated, one-piece roof design reduces potential for rust. No need for additional flashing or joinery
14. Doors are sealed with top-quality, braided rope gaskets. Our gaskets incorporate a layer of hi-temp silicone to insure an airtight fit. Adjustable double-point latches provide a positive pressure seal on the fire chamber door. The rugged firebox handle is easy to operate - even with one hand.
15. Portage and Main Outdoor Furnaces are very well insulated with both fiberglass and Roxul, high-temp mineral wool. Unlike spray foam, fiberglass and mineral wool will not off-gas, oxidize or trap moisture against exterior metal surfaces.
16. Insulated access panels serve as a "storm door" – keeping the fire chamber door, heat exchanger door and door jams warm. This helps reduce condensation that may lead to corrosion.
17. The Ultimizer Series with legs can be installed on a gravel pad or on heavy concrete blocks such as topping blocks, patio bricks or silo staves. A conventional concrete pad is not required, allowing for installation in any season. This design feature gives extra height for a convenient loading and keeps the furnace off the ground to help reduce underside corrosion.
18. The Ultimizer Series is designed as a flanged, bolt-together, component furnace where the refractory-filled, bottom chamber is bolted to the upper water jacket chamber. This streamlines the manufacturing process and simplifies any future maintenance requirements.
19. A diverting valve is supplied with the Ultimizer Furnaces to control return water temperature to the furnace. The diverting valve operates much like the thermostat in your vehicle does, when proper operating temperature is achieved it opens up, allowing hydronic fluid to circulate to floor loops, heat exchangers and other heat emitters. If water furnace temperature drops, the valve will close and bypass the emitters therein. This helps reduce Dewpoint Condensation, a leading cause of interior corrosion.
20. The easy to access, ash collection area means you can clean it out while the fire is going. No more putting off ash removal! With proper maintenance, your Portage and Main outdoor furnace will pay for itself over and over again.



The Portage & Main Ultimizer ~ A Leader by Design!

The Ultimizer Series uses its revolutionary design to eliminate the problems associated with the outdoor boiler industry.

Problems such as low burning temperatures, caused by water that completely surrounds the fire chamber, occur in nearly all outdoor boilers. Excessive moisture combined with ash create a corrosive environment, which can lead to premature boiler failure. Other major issues are low return water temperatures (less than 140° – condensate point) and normal operating temperatures of 175°-185° which is high for water temperatures but not high enough for proper combustion. This causes poor combustion and ash build up against the burn chamber walls which are

unable to dry starting the corrosion process. Hotter burn temperatures and residual heat due to the pre-cast refractory and firebrick in the Ultimizer Series eliminate these problems and ensure a longer lasting, corrosion free, dry fire pot.

Thanks to P&M's innovative design, the Ultimizer Series coal burner is one of the most efficient in its class – consuming 1/3 to 1/2 less coal than the competition.

The Ultimizer's efficient design will save you time, labor and thousands of dollars in fuel over the years. It is our mission to give you the ultimate experience in outdoor hydronic furnace operation!

TWO MODELS TO CHOOSE FROM:

PORTAGE & MAIN ULTIMIZER	BL 2840	BL 3444
Maximum Furnace Output (BTU/hour)	225,000	370,000
Heating Area (sq. ft.)	4,000 plus	Up to 8,000
Size Total W x D x H	44" x 62" x 77"	50" x 80" x 82"
Shipping Weight (lbs)	2,300	2,800
Chimney Size	6"	8"
Door Size W x H	19" x 15"	20" x 18"
Fire Chamber W x H x L	28" x 35" x 40"	34" x 44" x 44"
Surround Fire Brick Height	12"	14"
Water Capacity (US gallons)*	90	120
Horizontal Flat Tube Heat Exchanger	6" x 10" x 7' ***	6" x 11" x 8' ***
Heat Exchanger	Multi-Pass Reverse Turn	Multi-Pass Reverse Turn
Electrical Requirement	120 Volt	120 Volt
Power Draft Motor	Yes	Yes
Limited Warranty	20 Year	20 Year

** Extra water volume is usually a by product of a large firebox because of inefficient design. Think of which pot boils faster—a big one or a smaller one? Consider the extra cost of treating larger volumes of water or propylene glycol if required. ** Approximate only – heat load should be calculated. Many factors influence the heating area - such as the insulation value of the structure, the climate in which the furnaces operates, and the quality of the fuel consumed. It is always best to calculate the number of BTUs required per hour for your heating requirements. *** Does not include any vertical heat exchange, ie: baffle at back of fire chamber.*

Manufacturers reserve the right to make changes or modifications to products. Brochures are updated regularly, however for the most current information please see the website www.portageandmainfurnaces.com

- Portage & Main Ultimizer Series Quick Recovery: Water temperature will get from 50 degrees to 180 degrees in less than one hour. Fastest recovery time in the industry!!
- All systems come with a cleanout tool, certified boiler treatment, standard stainless steel chimney and an easily removed galvanized ash pan.

North American Portage & Main Outdoor Water Furnace Distributor



HEAT SMART PLUS
R.R. # 5, Site # 16, Comp # 114
PRINCE ALBERT, SK S6V 5R3
1-800-561-0700

www.portageandmainfurnaces.com

Authorized Portage & Main Outdoor Water Furnace Dealer