

Owner's Manual

EZBoilers

EZ-Classic and EZ-Pro

UL 2523-2009 Solid fuel fired hydronic heating appliances, water heaters, and boilers,
CAN/CSA B366.1-2011 Solid fuel fired central heating appliances.



EZBoilers
Formerly Ridgewood Stoves
1445 170th Ave.
Hersey, Michigan 49639
Phone: (231) 823-2499

INTRODUCTION

Thank you for purchasing our stove. Developed and manufactured in Hersey Michigan, the EZBoilers “Simple and Strong” stove has been designed to supply heat and hot water for your home or business. The strongest structural design is round and the weakest is square or rectangular. This pertains to stoves as well. For longevity and strength, our stove uses a round, heavy duty design for the firebox. Rectangular designs with many overlapping welds and faceted corners can be problematic. Our water jacket is a round design as well and is 3/16” thick. Your stove also utilizes a natural draft burning technology to get all of the energy out of traditional fuel sources, and to provide you with many years of safe and cost-effective heating of your building and domestic hot water supply. With no major electronics or fans on the outside of the unit, our stove is simple and safer. The majority of the parts we use are off-the-shelf, readily available, to make service easy. To ensure that you have a clear understanding of the operating procedures of your stove, please take the time to read this manual thoroughly. If you have any questions give us a call at (231) 823-2499. We will be happy to answer any questions you have.

Thanks again,
The EZBoilers Simple and Strong Stove Team
Simple and Strong.....that's our Stove.

SAFETY

Do not operate this equipment for anything other than its intended purpose.

Do not install in a home, basement or garage. This stove is intended to be used outdoors.

Caution....Hot Surfaces....Never leave children unattended near the stove.

Do not burn any material other than natural organics. Do not burn GARBAGE, HOUSEHOLD WASTE, STRAW, HAY or YARD WASTE. Do not use flammable liquids or materials to start or to enhance the fire. Never use any type of petroleum product, petroleum based product, charcoal starter, lighter fluid, lantern fuel, kerosene or any other flammable accelerant to start your fire.

Start your fire with paper, cardboard, and small kindling, never any type of flammable liquid.

When opening the firebox door, pause between the first (main) latch and the safety latch. This type of latch is called a Door Anti Blowback Latch. There can be unburned gases built up inside of the firebox during normal operation. Pausing at the safety latch will allow those gases to ignite and burn off. Failure to make this a practice could result in severe burns. Always close the stove door tightly after tending your fire.

Never leave the stove unattended if the firebox door is open or unlatched.

Do not touch any part of the front of your stove that is uninsulated. Temperatures can reach 200 degrees in these areas. Failure to do this could result in severe burns.

To avoid electrical shock, disconnect the electricity before performing maintenance.

Always wear protective gloves and glasses. Be aware that hanging or loose clothing can catch fire.

Ashes should be placed in a metal container with a tight fitting lid. The closed container of ashes should be placed on a non-combustible floor or on the ground. All combustible materials should be disposed of by burial in the soil, or otherwise dispersed. They should be retained in the closed container until all cinders have thoroughly cooled.

Using an outdoor stove helps eliminate the risk of a house fire, chimney fire, indoor smoke, or carbon monoxide poisoning.

The EZBoilers Simple and Strong stove has been tested to UL 2523-2009 solid fuel fired hydronic heating appliances, water heaters, and boilers, CAN/CSA B366.1-2011 Solid fuel fired central heating appliances.

SECTION 1

INSTALLATION

CAUTION – DO NOT FIRE THIS UNIT UNTIL OPERATING INSTRUCTIONS HAVE BEEN READ AND FULLY UNDERSTOOD. NEVER LIGHT A FIRE IN THE STOVE DRY (WITHOUT WATER), THE STOVE WILL BURN UP.

THIS UNIT MUST BE INSTALLED BY A QUALIFIED INSTALLER.

Before installing your stove always check any and all applicable state and local regulations and consult with your insurance agent.

We recommend installing your stove a distance of at least 25 feet from any flammable structure. Your stove should be located with consideration to your neighbor's property. This type of stove is not designed to be located or operated in densely populated areas.

CAUTION: Lift and move the stove at your own risk. Do not lift your stove from the bottom with a fork truck or similar equipment. You can safely lift your stove by removing the chimney diverter clean-out, dropping a chain through the chimney into the firebox, and attaching the chain to the door frame. The stove can also be picked up using a fork truck by putting the forks through the door opening and into the firebox.

Stove Footprint. When you're beginning to install your boiler, the footprint comes in handy to position the blocks under the legs or pouring a concrete pad. EZ-Pro: L = 60 inches W = 44 inches. EZ-Classic: L = 48 inches W = 44 inches

Stove Delivery



Use 4 solid concrete blocks on firm level ground



We use a flatbed trailer for delivery to make loading and unloading easy



We use our custom built machine to move the stove into position



Our moving machine is designed to maneuver over uneven ground and in tight spaces



Final placement of the stove



If the owner ever needs to move the stove, a carefully operated forklift will also work

CAUTION: Lift and move the stove at your own risk. Do not lift your stove from the bottom with a fork truck or similar equipment. You can safely lift your stove by removing the chimney diverter clean-out, dropping a chain through the chimney into the firebox, and attaching the chain to the door frame. The stove can also be picked up using a fork truck by putting the forks through the door opening and into the firebox.

Electrical

We recommend that a licensed professional electrician makes all of the necessary electrical connections involved with the installation of the stove.

Your stove operates on a 115 volt electrical source. We recommend that you use 12-2 underground wire during your installation. To avoid electrical shock, disconnect the electricity before performing your installation.

Your stove is equipped with a 115 volt aqua-stat controller. The pump(s) operate on 115 volts as well.

Aqua-stat Controller

Before firing the stove, ensure that the aqua-stat is correctly programmed. While this is done at the factory, many factors can cause the programming to be lost, and the default programming will cause the stove to burn up. See section "Setting the Aqua-stat" for details.

Grounding Rod

A properly installed grounding system will protect people from electrical shock, help safeguard expensive electronic equipment, prevent electrolysis, limit neutral-to-ground voltage and satisfy the NEC along the way.

Use only a 4GA or larger wire with proper grounding clips. Grind paint away where the wire attaches to the stove in order to get a solid electrical connection.

GFI Outlet or GFI Breaker

Install a GFI outlet or GFI breaker on the stove. This will protect the user and the electronics, and prolong the life of the stove.

Thermostat

Install a second thermostat, connecting it to your existing home furnace. This will allow the heat from the outside stove to be distributed throughout your home, **without** your indoor furnace's burner cycling on.

Your existing furnace thermostat should be set several degrees lower than the new stove thermostat. This will allow the existing furnace to only turn on and heat your home if the fire goes out in your outdoor stove.

IMPORTANT: Have a qualified electrician check to ensure that these changes do not cause the electric motor to overload. Any modification to the existing furnace must be made in

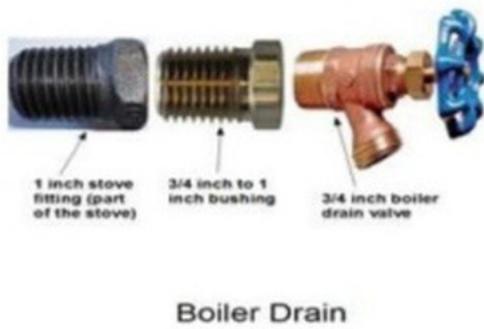
accordance with the manufacturer's specifications and performed by a qualified, licensed person, in accordance with local building codes.

Plumbing

We recommend that you contact a licensed professional plumber to make all necessary plumbing installations between the stove and your existing heating system or your building(s).

Initial Water Fill-Up

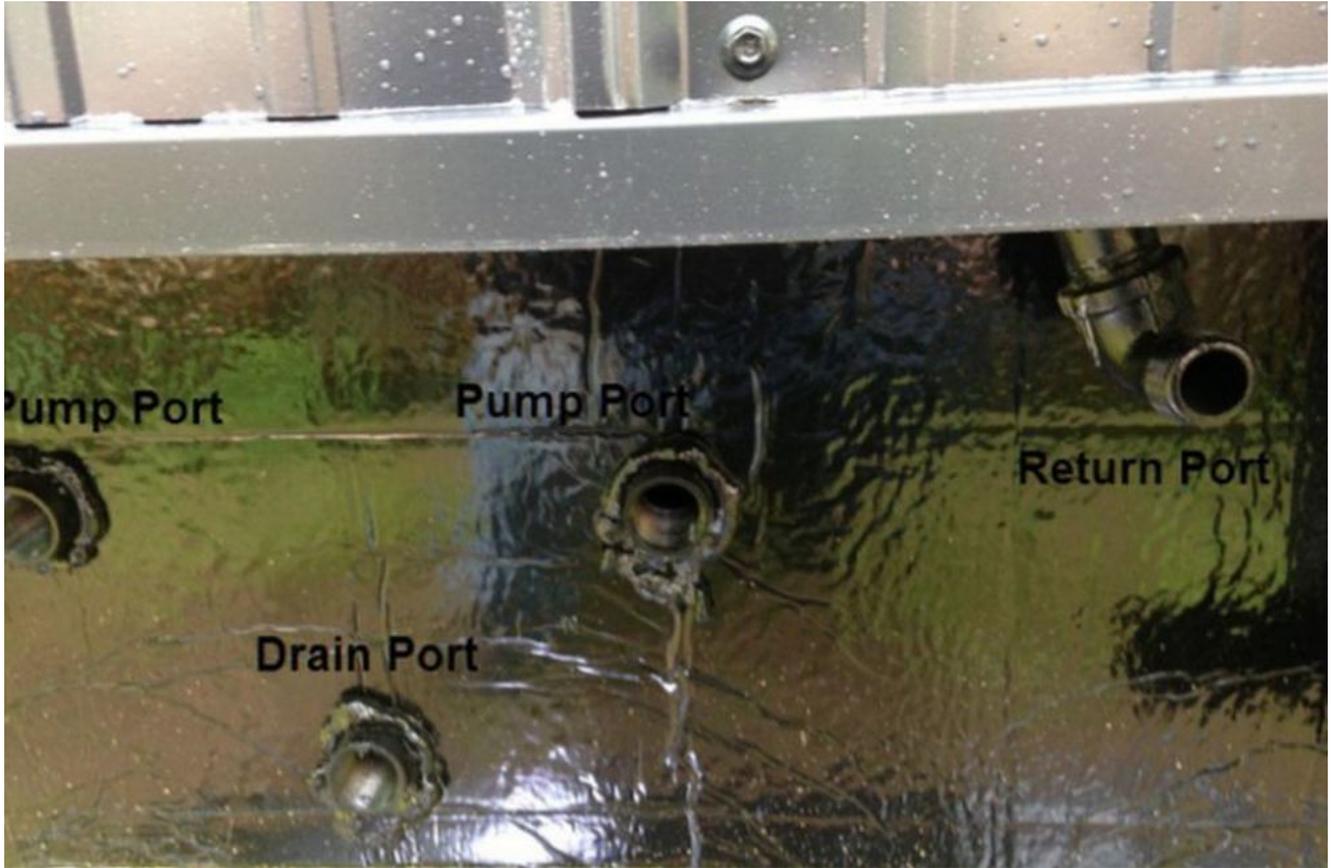
Attach a garden host to the hose fitting on the return line pipe. Shut off the return line ball valve and fill the entire system until water runs out of the vent pipe on the top of the stove. Open the return line ball valve and run the pumps for 24 hours to purge the air from the system and to check the plumbing for leaks. Check and refill the system as necessary and pour 1 unit of sodium nitrate treatment solution into the vent pipe located on the top of the stove.



This is a typical example of the plumbing diagrams for the back ports on your stove.

Stove Water Ports

The stove pump ports are shown here. The ports are female 1 inch NPT (National Pipe Thread) and fittings are available at your local home improvement store.



SECTION 2 – GETTING TO KNOW YOUR STOVE

Stove Construction

Firebox

Our firebox is 5/16" thick, which gives us one of the thickest fireboxes available. The strongest structure is round and the weakest is square or rectangular. For longevity and strength, our firebox uses this round boiler design. Round designs have fewer welds; therefore, fewer spots for possible failure.

Water jacket

Our water jacket is 3/16" thick, and is also a round design, giving it maximum strength. The water jacket surrounds the entire firebox of the stove to maximize heat transfer.



Stove Door

The stove has a large 24" x 24" door and is insulated with 2200 degree ceramic fiber insulation. When opening the firebox door, pause between the first / main latch and the safety latch. This type of latch is called a Door Anti Blow-back Latch. There could be unburned gases built up inside the firebox during normal operation. Pausing at the safety latch will allow those gases to ignite and burn off. Failure to make this a practice could result in severe burns. Always close the stove door tightly after tending your fire. Replace the door gasket as needed. Symptoms of a bad gasket are uncontrollable or high water temperatures.



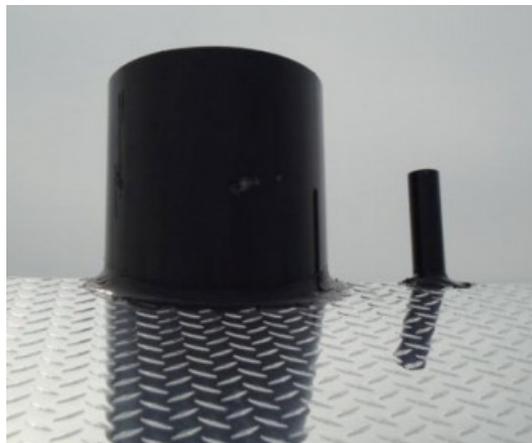
Sight Glass

A sight glass is a simple mechanical way to keep track of the water level in your stove. With a quick glance, you know that your stove has the correct amount of water. If you do not see water in the sight glass, water must be added to your stove.



Boiler Vent

The boiler vent is a port coming off of the highest part of the water jacket of the stove, and is used to vent air from the stove when it is filled. It is also used to prevent a vacuum from forming when the stove is drained. The stove is a non-pressurized unit and is ventilated to the atmosphere through the vent. The vent is also a good place to pour the water additive (sodium nitrate) for your stove. It is not recommended to fill your stove the first time through the vent tube, because that could trap air in the pumping system.



Chimney

The chimney is 8" schedule 40 steel. A regular 8" piece of stove pipe will fit into the chimney of your stove. You could also use 8" insulated pipe.

Stoves with chimneys mounted out the side will have far more creosote than those that have chimneys going out the top. The answer is simple. Unburned gases when exiting into the chimney cool off, condense and form creosote. Out-the-side chimneys run much cooler, resulting in excessive creosote buildup. Your stove has an 'out-the-top' chimney running through a diverter. Our stove is designed this way to be simple, safer, and require less maintenance.

Check the caulk around the chimney and roof of your stove. Re-caulk as necessary. Your local home improvement store will carry a high temp RTV silicone adhesive/sealant that withstands up to 500 to 600 degrees.

Diverter

If you look at the top of the firebox, you will see a metal box. This box is called a Diverter. The diverter is mounted under the chimney. It is designed to push smoke and heat to the back of the stove so that the stove heat does not go straight out the chimney. The flapper in the diverter is there to aid in cleaning the chimney. It can be removed or pulled back to clean the chimney.



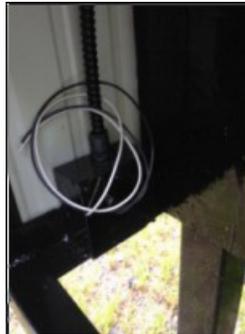
Rear Access Door

The rear access door encloses the plumbing and electrical wiring for your stove. It is held on with two knob bolts and slides out the bottom of the stove frame.



Electrical

Your stove comes with one electrical box containing aqua-stat wiring. You or your electrician will probably add an additional box for your pump wiring. The stove is pre-wired and ready for 115 volts.



Electronics Aqua-stat Controller

The aqua-stat controller for your stove is designed for many heating and cooling and high temperature applications. The probe temperature is displayed on a bright 3-digit display. You are able to program the set point (SP), which is the temperature the damper door will open and you are able to set the differential (R0), which is the difference between the damper open and close temperatures. Setting the aqua-stat is covered in 'Setting the Aqua-stat' on page 17.



SECTION 3 – MAINTENANCE AND CLEANING

Before the Heating Season

CAUTION – DO NOT START A FIRE IN THIS STOVE UNTIL OPERATING INSTRUCTIONS HAVE BEEN READ AND FULLY UNDERSTOOD.

1. Never start a fire in your stove without water, The stove will burn up.
2. Make sure your stove is full of water (SIGHT GLASS), run the pumps and check for leaks. Remember, the pump is lubricated with water.
3. Inspect the rope seal around the inside of the door before lighting the first fire and a few days after, looking for any indications of a poor seal.

End of the Heating Season

1. Check the caulk around the chimney and roof of your stove. Re-caulk if necessary. Your local home improvement store will carry a high temp RTV silicone adhesive/sealant that withstands temperatures up to 500 to 600 degrees.
2. Check the rope seal around the inside of the door. Replace if necessary.
3. Remove the read access door and inspect the pumps and fittings for leaks.
4. Clean the outside of your stove. Many times there will be creosote on the roof and ash around the door. This is a good time to take care of your stove.
5. Scrape the inside of the firebox and spray it down with kerosene mixed with automatic transmission fluid, PB Blaster, or something that will prevent rust and corrosion.
6. Drain and flush the water jacket, then refill it with water and a unit of sodium nitrate treatment. Then completely fill the stove to the top of the vent pipe with water. This will eliminate the chance of the oxygen attacking the top of the firebox. Be sure to recheck the water level before using the stove again at the start of the next heating season.

Creosote

Creosote is a gummy, foul smelling, corrosive, and extremely combustible substance that, if no precautions are taken, will coat the insides of everything it comes in contact with. It is formed when gases given off in the burning process combine and condense on their way out of the chimney.

The firebox must be cleaned and rust protected during the off season. Scrape, brush, clean the inside of the firebox and spray it down with kerosene mixed with automatic transmission fluid, PB Blaster or something that will prevent rust and corrosion.

Corrosion Control

1. Add 1 unit of sodium nitrate to the water jacket each year.
2. Install a 6' grounding rod and ground the frame of the furnace. This will minimize corrosion from electrolysis.
3. Keep the ash and coal pulled to the front of the firebox and add fuel to the top and behind of this coal pile. Pay special attention to the left and right sides of the coal pile where they touch the firebox. Move those edges around every day so that an undisturbed corrosive ash line doesn't form against the sides of the firebox.
4. Keep the firebox cleaned out and oiled in the off season.
5. Put a bucket or cap on the chimney in the off season to keep out rain.
6. Drain and flush the water jacket every year (sludge buildup in bottom of water jacket can allow corrosion even if you maintain nitrate chemicals).

Water Maintenance

It is important that the water be drained every year and refilled with treatment and water, or as needed due to sludge and build up. Water treatment can be purchased from Wood Boiler Solutions. Their website is: <http://www.woodboilersolutions.com/> or local customers can purchase it at our office in Hersey, Michigan. Keep the empty sodium nitrate bottle on hand for quick reference to the company's website address.

Pumps

You should run your pumps at least once a month for 24 hours during the off season. This will cycle the pumps and circulate the water and chemicals throughout your plumbing system.

Sight Glass

If your sight glass becomes cloudy or hard to read, it is serviceable. Simply remove the nut fitting on the top and remove the glass tube. Clean the tube and reassemble. Make sure the rubber washer on the underside of the nut is still there and is in good condition. Do not over-tighten the nut.

SECTION 4 – OPERATING INSTRUCTIONS

Fuel Burning

Every day, before you load fuel into your outdoor stove, you will want to pull the ash and wood burning coal pile to the front of your firebox. Make it into a heaping pile and then load fuel on and behind the coal pile. The fire will burn through the pile and turn it to ash. Do not pull the coals tightly against the front plate. Leave them back a few inches or more. Be sure to stir the ashes where they touch the sides of the firebox as well.

Another benefit of raking ashes forward each day is that it will make it easier when you need to empty the ashes, every 4-6 weeks, or as needed. The ashes will already be in the front, and more of the firebox will be available for heat transfer to the water jacket. This will make your outdoor wood stove come to temperature faster and burn less wood. If you allow your firebox to fill half way up with ashes, you will minimize the heat transfer area and will have a tough time finding room for fuel.

Ash Disposal

Ashes should be placed in a metal container with a tight-fitting lid. The closed container of ashes should be placed on a noncombustible surface, well away from all combustible materials. If the ashes are going to be buried in soil or otherwise locally dispersed, they should be left in the closed container until all cinders have thoroughly cooled.

Stove Operating Checklist

- Check The Water Level
- Inspect The System Plumbing
- Verify That The Pump(s) Are Running
- Verify That The Chimney Is Installed And Clear
- Inspect The Door Gasket
- Inspect The Door Tightness
- Verify The Aqua-stat Operation
- Review All Safety Precautions

Electrical

Supplied Electrical

Your stove comes with one electrical box and a supply wire that will power the Aqua-stat controls. This is a 115 volt circuit.

Setting the Aqua-stat

The aqua-stat controller for your stove is designed for many heating and cooling applications. Proper adjustment of the aqua-stat is important for proper stove operation. The display will show the current water temperature. To enter into the programming mode to adjust the settings, press and hold the 'set' button. It can take 10-20 seconds, but when it shows '0' in the display, release the 'set' button. You are now in the programming mode. From here out in the instructions do not hold the buttons. Just a simple single push is all that is required.



Press the 'set' button one time and 'SP' will display. This is the set point. Pressing the 'set' one more time will display the current set point. The factory setting is 180 but yours may be different. Use the '▲' up arrow and '▼' down arrow to adjust the setting to your desired temperature. Pressing the 'set' button will lock the setting in and return you to the 'SP' display.



Press the '▲' up arrow button one time and 'r0' will display. This is the temperature differential. Press the 'set' button and it will display the current differential. The factory setting is 5 (or 10) but yours may be different. This controls the temperature range. With SP=180 and r0=5, the damper door will open at 175 and close at 180. Use the '▲' up arrow and '▼' down arrow to adjust the setting to your desired temperature. Pressing the 'set' button will lock the setting in and return you to the 'r0' display.



Press the '▲' up arrow button one time and 'r1' will display. This is not used and should remain at 0.



Press the '▲' up arrow button one time and 'r2' will display. This is the maximum set temperature. Press the 'set' button and it will display the current maximum. The RWS factory setting is 180. This will be the maximum temperature that can be set in the 'SP' value. Use the '▲' up arrow and '▼' down arrow to adjust the setting to your desired temperature. Pressing the 'set' button will lock the setting in and return you to the 'r2' display.



Press the '▲' up arrow button one time and 'd0' will display. This is the heating / cooling switch setting. THIS MUST BE SET TO 'Ht' or your stove will not function properly. Press the 'set' button and it will display the setting. The RWS factory setting is 'Ht', but if it shows 'Co' you MUST change it. Use the '▲' up arrow to change the setting to 'Ht'. Pressing the 'set' button will lock the setting in and return you to the 'r2' display



To exit the programming mode press the 'set' button and the '▼' down arrow at the same time. This will return you to displaying the current temperature.



Quick Adjustment of the Run Temperature

You can quickly adjust the run temperature by pressing the 'set' button once. The screen will say 'SP'. Press the 'set' one more time. The display will show the current set temperature. Use the '▲' up and '▼' down arrows to adjust the temperature. Press the 'set' button once and this will set the temperature set point.

To exit the programming mode press the 'set' button and the '▼' down arrow at the same time. This will return you to displaying the current temperature.

SECTION 5 – SPECIFICATIONS

EZ-Classic

Approx. Sq Ft.	4000
Water Capacity	155 Gal.
All Ports	1" NPT
Door Size	24" x 24"
Firebox Diameter	37" Round
Firebox Length	47"
Chimney Size	8" Sch.40
Approx. Weight	1450 Lbs.

The EZ-Classic model firebox size is 37" x 47" with a door size of 24" x 24" and the stove weighs around 1450 pounds. The EZ-CLASSIC is a good size for the average house and small garage. It holds 150 gallons of water.

EZ-Pro

Approx. Sq Ft.	5500
Water Capacity	200 Gal.
All Ports	1" NPT
Door Size	24" x 24"
Firebox Diameter	37" Round
Firebox Length	59"
Chimney Size	8" Sch.40
Approx. Weight	1800 Lbs.

The EZ-Pro model firebox size is 37" x 59" with a door size of 24" x 24" and the stove weighs around 1800 pounds. The EZ-Pro is a good size for a large house or an average house plus garage. It holds 200 gallons of water.

Note: The quality of home insulation and windows, outdoor temperature, and type of fuel used, will all affect the burn time and square footage rating.

SECTION 6 – PARTS

Please call to confirm the current pricing of parts: (231) 823-2499

DOOR GASKET



Our Part Door Rope Seal \$3.00 per ft
1" standard fiberglass fire door rope gasket. Glue in place with high temperature silicone adhesive.

SOLENOID



Our Part Solenoid \$45.00
Grainger Part 4x420

SIGHT GLASS



Our Part Sight Glass \$75.00
Grainger Part 1U614

PUMPS



Our Part Small Pump \$125.00
Our Part Large Pump \$250.00

PUMP FLANGE



Our Part Flange Kit \$50

AUQA-STAT CONTROLLER



Our Part Controller \$85.00

THERMOCOUPLE PROBE



Our Part Thermocouple Probe \$41.00

HEAT EXCHANGER



Our Part Heat Exchanger \$250.00 up to 22x22

SIDEARM HEAT EXCHANGER



Our Part Sidearm with Mix Valve \$250.00

PLATE EXCHANGER



We are not responsible for damage to this heat exchanger due to lime or hard water. Lime and hard water will plug this exchanger and make it unusable. It will be the customer's responsibility to purchase a new exchanger if it becomes plugged.

Our Part 20 Plate Exchanger \$200.00

MIXING VALVE



Our Part Mixing Valve \$150.00

INSULATED PEX PIPING



Our Part 3 Wrap, \$5 per foot 5 Wrap, \$8.50 per foot

Limited Warranty

EZBoilers Models EZ-Classic and EZ-Pro

Who is covered

This limited warranty covers only the original purchaser of the product. The limited warranty is not transferable to subsequent owners or purchasers of this product.

What is covered

The stove has a one (1) year workmanship warranty.

The stove has a five (5) year corrosion warranty on the water jacket.

What is not covered

Lack of maintenance is the leading cause of outdoor stove failure. The two leading causes of failure are creosote corrosion, and water chemical additive neglect. Corrosion in the firebox occurs when creosote is absorbed into an undisturbed ash line. Corrosion in the water jacket occurs when the levels of sodium nitrate additive to the water are not properly maintained. Consult the "Corrosion Prevention" page on our website for guidance.

This warranty does not cover corrosion of the firebox caused by improper maintenance.

This warranty does not cover damage to plate heat exchangers caused by poor water quality.

This warranty does not cover electrical parts.

This warranty does not cover damage caused by the user's failure to properly operate and maintain the unit as outlined in the owner's manual and the company website, ezboilers.com.

This warranty does not cover damage due to overheating of the stove.

What will void this warranty

Any unauthorized modifications to the stove will void this warranty.

Failure to maintain proper levels of sodium nitrate in the water tank resulting in premature corrosion of the water jacket will void the warranty.

Failure to protect the firebox from rust during the off season will void the warranty: at the end of the heating season, thoroughly scrape the inside of the firebox clean and spray it down with kerosene, PB Blaster, or something else that will prevent rusting.

How to obtain services

Simply contact us to discuss the problem. Call (231) 823-2499 or use the contact form on our website.

If we determine that your claim is valid, we will either repair the stove, or replace it if necessary.

No other express warranty applies

This warranty is the sole and exclusive warranty. No employee, agent, dealer, or other person is authorized to alter this warranty or make any other warranty on behalf of EZBoilers.

Limitation on liability

EZBoiles shall not be responsible for any incidental or consequential damages to persons or property. Please observe proper safety precautions at all times. Some countries, districts, or states do not allow the limitation or exclusion of relief, incidental, consequential, special, or indirect damages, or the limitation of liability to special amounts, so the above limitations or exclusions may not apply to you.

