OWNERS MANUAL

Retain this manual

Wood Master®

CleanFire 400

C UL US LISTED

Outdoor Wood Fired Hydronic Heater

Rev:2.1.4

www.woodmaster.com / 800-932-3629 / Manual PN: 7994-505

Northwest Manufacturing, Inc / 600 Polk Ave SW / Red Lake Falls, MN 56750

Table of Contents

Thank you for purchasing a quality wood boiler from WoodMaster. This product was designed to deliver easy, trouble free operation for years to come. Check out other WoodMaster heating products at www.woodmaster.com, or our line of quality pellet grills at www.woodmasterpelletgrills.com.

Safety

- *Read and follow these directions carefully. Retain this manual for as long as you own your CleanFire.*
- *All installation and operations must follow STATE and LOCAL CODES for wiring, and firing of this unit. These CODES may differ from this manual. Installation must be performed by a qualified installer.*
- *Follow the manual carefully. Follow the recommended cleaning and maintenance.*
- *The WoodMaster CleanFire is designed to be operated in a pressurized system. Make sure all necessary safety components are installed and functioning properly.*
- *Freeze protection must be guaranteed in all water-bearing parts in the event of extensive idle periods of the system. Note: Your WoodMaster CleanFire is not intended to be your only heat source.*
- *Boiler water treatment must be used to ensure proper water quality.*

Safety

- *The chimney height may need to be adjusted depending on the installation and local codes. Do not connect this unit to a chimney flue serving another appliance. Follow all state/local codes.*
- *Never open the tube access door or lower access door during operation!*
- *All cover plates, enclosures and guards must be properly maintained and in place at all times except during maintenance and servicing. Never operate any part of the system with covers, shields or panels removed.*
- *Anyone who is not familiar with and/or has not been trained to operate the CleanFire may not operate the system. Only responsible adults should operate your CleanFire. If the CleanFire is not fired properly, damage could result and the warranty may be voided.*
- *Never allow children to play near or tamper with the Boiler, fuels or any other part of the system.*
- *Always keep the area around, and in front of the system clean and free from combustible materials.*
- *Keep animals away from the system.*
- *The operation may not be continued or restarted in the event of visible damages (for example, thermal distortion, traces of smoke or fire, mechanical damages, etc.). Any damages must be repaired. In the event of any doubts, please contact your authorized WoodMaster dealer.*
- *The system must not be exposed to external mechanical stress (for example, as storage, climbing support, brace, or similar). This also applies for single parts (doors, covers, etc.).*
- *Only touch the Fire Controller and door handle during the operation. Temperatures at other points (for example, chimney, tube access box & door, water lines…) can be very high.*
- *The WoodMaster CleanFire must be operated exclusively according to the guidelines for planning, assembly, regulations, statutes and product related instructions. The manufacturer is not liable for damages and their results, if they occurred due to improper assembly, operation, application and also inadequate maintenance and cleaning.*
- *Disconnect all electrical power to the CleanFire before performing any service.*
- *The water pump must run continuously whenever the WoodMaster CleanFire is being used.*
- *Do not attempt to fire the CleanFire during a power outage.*
- *In the event of a power outage, the air flow to the fire will be stopped and the fire will go out. When power is restored, the CleanFire must be relit.*
- *Never shut power off to the CleanFire if there is a fire and fuel in the fire chamber unless there is an emergency.*
- *Take the proper precautions to ensure that the modifications made to an existing heating system does not interfere with existing safety controls.*
- *Never use the following: trash, plastics, gasoline, rubber, or naphtha in your WoodMaster CleanFire.*
- *The WoodMaster CleanFire operates as a negative pressure combustion chamber, always open the fire chamber door with caution.*
- *Read and follow these directions carefully. Retain this manual for as long as you own your CleanFire.*
- *For either indoor or outdoor installation.*
- *This wood heater contains a catalytic combustor, which needs periodic inspection and replacement for proper operation. It is against federal regulations to operate this wood heater in a manner inconsistent with operation*

instructions in this manual, or if the catalytic element is deactivated or removed.

- ***The WoodMaster CleanFire will not function properly with the catalytic combustor removed.***
- ***This wood heater needs periodic inspection and repair for proper operation. It is against federal regulations to operate this wood heater in a manner inconsistent with operating instructions in this manual.***
- ***This wood heater has a manufacturer-set minimum low burn rate that must not be altered. it is against federal regulations to alter this setting or otherwise operate this wood heater in a manner inconsistent with operating instructions in this manual.***

Boilers intended to be connected to an existing boiler or boiler system shall:

1. Be capable of being installed without interfering with the normal delivery of heated water from the original boiler to the radiation system.
2. Be capable of being installed to operate as intended without affecting the operation of the electrical and mechanical safety controls of the original boiler.
3. Provide, upon completion of the installation, for a changeover from one heat source to the other without requiring manual adjustment of any controls or components other than the thermostats.
4. Be compatible with the operation of a service water-heating coil within the original boiler without bypassing the operation of the solid fuel boiler.
5. Have provision for preventing, or adequate water capacity within the boiler to prevent, damage to the boiler from loss of circulation due to electrical power failure.
6. Be capable of being installed without changing the function of the controls or rewiring of the original boiler. A wiring interconnection may be used. The electrical system of both boilers shall be powered from a single branch circuit.

Warning!

Always disconnect the power to the boiler before any cleaning or maintenance. Service agreements increases operation length and life of the unit. For more information contact your local WoodMaster dealer. Replacement parts should only be genuine Northwest Manufacturing, Inc. components. Your dealer can supply the genuine service parts and install them.

Emission Standards

The Woodmaster CleanFire 400 was tested by Dirigo Laboratories, Inc., a third party certification facility, to EPA Method 28 WHH. The CleanFire 400 is certified to comply with 2020 particulate emission standards with the following values:

0.07 Lb/MMBTU output and 1.04 g/hr average 67% Delivered Annual Efficiency using higher heating value
73% Delivered Efficiency at maximum burn rate using higher heating value
8hr burn rate: 88,750 btu/hr. Heat Output range 23,626-102,408 btu/hr

Weighted average CO emissions of 0.93 g/min tested to CSA B415.1-10. CO emissions will vary depending on burn rate, and fuel species and moisture content. All wood fired heating appliances will create CO. Take care not to create a dangerous condition. Use of a CO detector should be used in areas that are expected to generate or collect CO, such as all indoor installations.

Various burn rates along with various wood species and moisture content will affect efficiency and heat output ratings. Test results were obtained using seasoned oak. A high burn rate will yield a more efficient result. Delivered efficiency ranges from 64.8% to 73% using higher heating value. Delivered efficiency is calculated assuming year round use and annual fuel usage efficiency (AFUE).

Installation location (Indoor vs Outdoor, distance from building served), waterline type, length and insulation will affect the system delivered efficiency.

Visit the EPA Burnwise website, http://www.epa.gov/burnwise/index.html for information on wood fuel fired appliances, as well as a list of approved appliances. Legal name of original manufacturer:

Northwest Manufacturing, Inc.
600 Polk Ave SW
Red Lake Falls, MN 56750
800-932-3629 / www.woodmaster.com

US ENVIRONMENTAL PROTECTION AGENCY
Certified to comply with 2020 particulate emission standards using cord wood.

Date Code:_____

CleanFire 400

.07 Lb/MMBTU emissions tested to
EPA Method 28 WHH 2016 Crib Wood

Serial #_____

This Wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against federal regulations to operate this wood heater in a manner inconsistent with the operation instruction in the owner's manual.

Northwest Manufacturing, Inc.
600 Polk Ave SW
Red Lake Falls, MN 56750

Safety Standards

ASME H Stamp certified pressure boilers.

Certified by
Northwest
Manufacturing
Inc.

MAWP. Water 30 psi

Maximum Water Temp. 250

Heating Surface 31 boiler Sq Ft

Heating Surface _____ Sq Ft water wall

Heating Surface _____ extended

Ext HS generating cap _____

Minimum relief valve capacity 100 LB HR

Mfg. Serial No. XXXXXX

Year built 20XX

Wood Master®

Certified by
Northwest
Manufacturing
Inc.

MAWP. Water 30 psi

Maximum Water Temp. 250

Heating Surface _____ boiler

Heating Surface 16 Sq Ft water wall

Heating Surface _____ extended

Ext HS generating cap _____

Minimum relief valve capacity 100 LB HR

Mfg. Serial No. XXXXXX

Year built 20XX

Wood Master®

Northwest Manufacturing Inc.

600 Polk Ave SW Red Lake Falls, MN 56750 / 800-932-3629 / www.woodmaster.com

Model: CleanFire 400 Voltage: 120 VAC AMPS: 10 Frequency: 60 Hz

Minimum Ampactity (MCA): 10 Maximum Over Current Protective Device: 10

REFER TO OWNERS MANUAL for basic operating and maintenance instructions For Supply Connections Use 14 AWG Acceptable for at least 105˚C

Replaceable circuit breaker markings are provided in the control box for each circuit breaker.

All Flue connections must be installed with: A UL 103 listed double wall chimney rated for solid fuel in compliance with NFPA 211.

For use on non-combustible flooring. For Either Indoor or Outdoor Installation. Unit will not operate without electrical power.

Minimum Installation clearance: TOP: 18" (45.7 cm), FRONT: 48"(121.9 cm), SIDES: 6"(15.2 cm), REAR: 36"(91.4 cm), BOTTOM: Non-Combustible: 0" (0 cm)

See owner's manual for ventilation requirements of the heating room.

Only use cord wood as fuel as described in the owners manual. Load fuel carefully or damage may result.

DANGER-RISK OF FIRE OR EXPLOSION

DO NOT burn garbage, gasoline, drain oil or other flammable liquids.

WARNING-RISK OF FIRE

DO NOT operate with flue draft exceeding -0.05 inch w.c.

DO NOT operate with fuel loading or ash removal doors open.

DO NOT burn garbage, gasoline, fuel oils, or other flammable liquids or materials.

DO NOT use chemicals or fluids to start unit firing.

DO NOT store fuel or other combustible materials within marked installation clearances.

DO NOT connect this unit to a chimney or flue serving another appliance. Inspect and clean flues and chimney regularly.

For safety leave fuel door and ash removal doors tightly closed during operation.

In the event of a runaway fire disconnect the power supply. Allow the pump to continue circulation.

The heat exchanger pipes, flue pipe, and chimney must be cleaned regularly to remove accumulated creosote and ash. Ensure that the heat exchanger pipes, flue pipe, and chimney are cleaned at the end of the heating season to minimize corrosion during the summer months. The appliance, flue pipe and chimney must be in good condition.

CAUTION HOT SURFACES

KEEP CHILDREN AWAY! - DO NOT TOUCH DURING OPERATION

MAXIMUM DRAFT MARKED ON NAMEPLATE

In the event of power loss, do not attempt to restart the fire without first checking for fire in the fire chamber, and for any damage to the unit. Check the display for errors. If errors are present, consult with the owners manual for course of action. If no fire is present, restart according to the owners manual.

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UL 2523 STANDARD FOR SOLID FUEL-FIRED HYDRONIC HEATING APPLIANCES, WATER HEATERS, AND BOILERS - Edition 1 - Revision Date 2013/02/08

CSA B366.1-11 SOLID-FUEL-FIRED CENTRAL HEATING APPLIANCES - Edition 4 - Revision Date 2014/01/01

PRODUCTION DATE CODE

Fuel

All fuels must conform to certain quality standards to ensure trouble free operation of the boiler. Use of unapproved fuels may result in faulty operation and a voided warranty. DANGER: Risk of Fire for Explosion; NEVER use the following: trash, household garbage, plastics, gasoline, rubber, naphtha, leaves, and materials treated with petroleum products (ie: particleboard, railroad ties & pressure treated wood). Newspaper and plain, unprinted cardboard should only be used as kindling, not as fuel. Other paper products should not be used. Please contact your WoodMaster dealer for any questions on fuel use.

Only cut, split, seasoned wood with a internal moisture content of 25% or less may be used. Wood can be cut to a maximum length of 22.5 inches. The wood should always be placed parallel to the fire chamber wall. The pieces of wood should be stacked as tightly as possible whereby the face of the wood should NOT touch the fire chamber wall. This ensures proper air flow. DO NOT burn any large, round pieces of wood. DO NOT burn any “green wood”, or any wood that is above the 25% moisture limit.

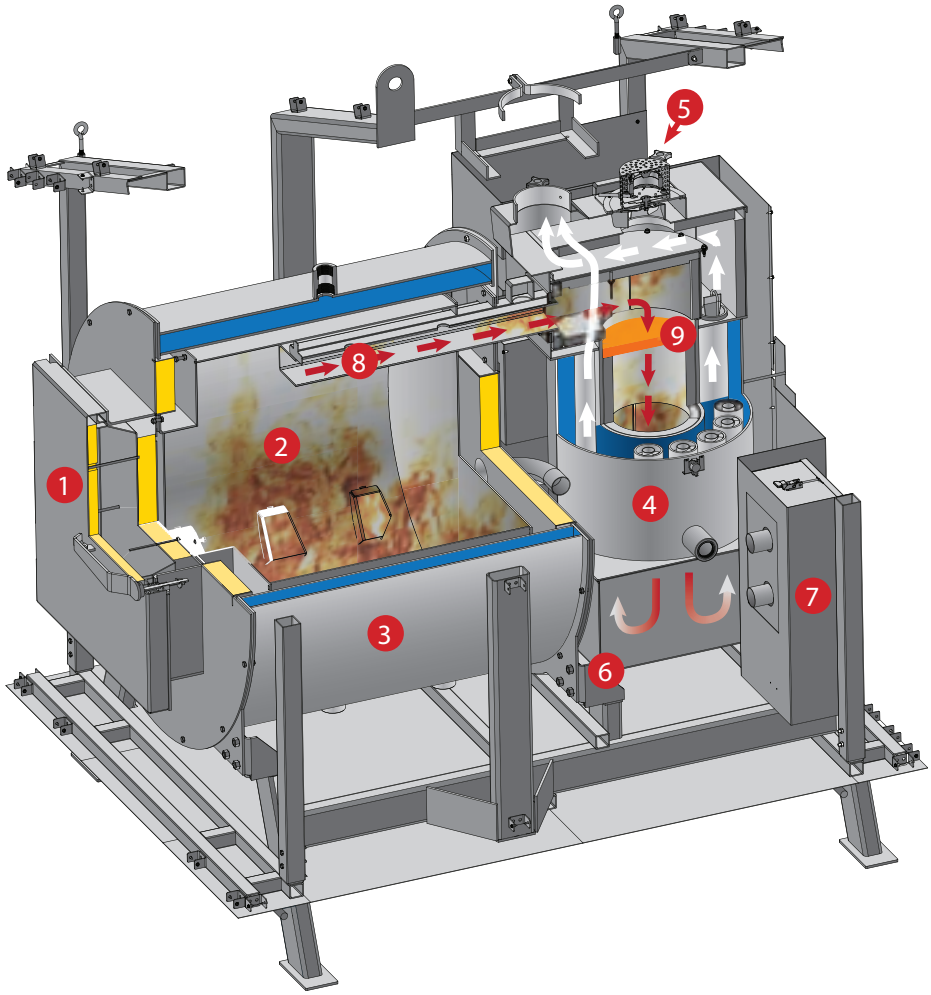
Water Content
The maximum permitted water content is 25%.
Bark Content
The maximum permitted bark content is 20%.

A full wood load is considered to be 10 pounds per cubic foot of fire chamber volume. For the WoodMaster CleanFire 400 a full load is 125 pounds. This is sufficient for a minimum of 8 hours depending on the heat load.

Always store your wood stacked in neat piles, and protect from rain and snow. Store your wood outisde of the boiler clearances.

Note: The amount of wood needed to heat your system will vary depending on a lot of different factors. System design, insulation values and type of wood are a few of the contributing factors that will determine how much wood is needed.

Features



WoodMaster CleanFire

1. Fire Door
2. Dry Fire Chamber
3. **ASME-certified stage 1 boiler**
4. **ASME-certified stage 2 boiler**
5. Negative Pressure Suction Fan
6. Isolators
7. Dampers - primary and secondary
8. Oxygen Injection Tube
9. Catalyst location

FEATURES

- ASME certified pressurized vessel
- Dry fire chamber
- Minimal maintenance
- Non-cycling, modulates for heat load

FUEL DOOR

- Large fuel door for ease of filling.
- Spring loaded door latch maintains pressure and ensures a tight seal.
- Two part door, very insulated. Greatly reduces heat transfer to the outside.

DRY FIRE CHAMBER

- Patent pending design
- A dry fire chamber means no creosote build-up, no ash corrosion, and no need for ceramics.
- Pre-heated combustion air.
- Made from 8 gauge steel.
- Very long lasting due to no creosote.
- Extremely easy maintenance, can be cleaned in a few minutes

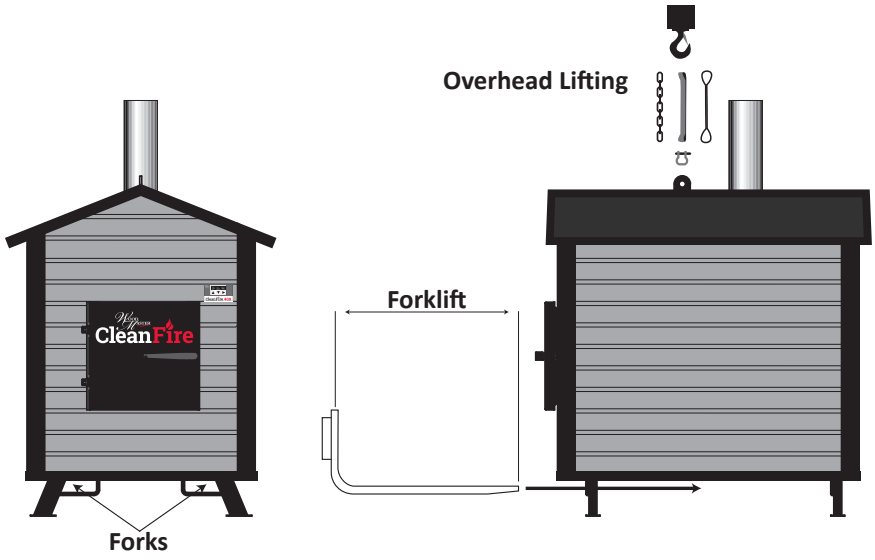
COMBUSTION PROCESS

- Primary and secondary air ducts equipped with 2 dampers to allow for optimal burn.
- The remaining gasses leaving the combustion chamber are mixed with oxygen in the injection tube ensuring a complete combustion through the catalyst.
- The catalyst temperatures are controlled to ensure clean combustion and longevity.
- The heat is recovered in the heat exchanger, then exits the chimney.
- The stack averages an optimal temperature to remain efficient, yet not condense. (approx. 240 degrees)
- The CleanFire is equipped with a lambda sensor which monitors the oxygen levels and adjusts the boiler to maintain the optimal burn.

Choosing Location

When installing your WoodMaster, keep in mind the direction of the winds during heating months. Try to place the boiler in an area where exhaust will not be a problem for yourself or any surrounding neighbors. For either indoor or outdoor installation.

Only lift the CleanFire by the overhead hanger, or with a fork lift from below, placing the forks inside of the loops on the legs. NEVER LIFT THE CLEANFIRE BY THE THROAT/FIRE CHAMBER. THIS WILL DAMAGE THE UNIT.



Clearances

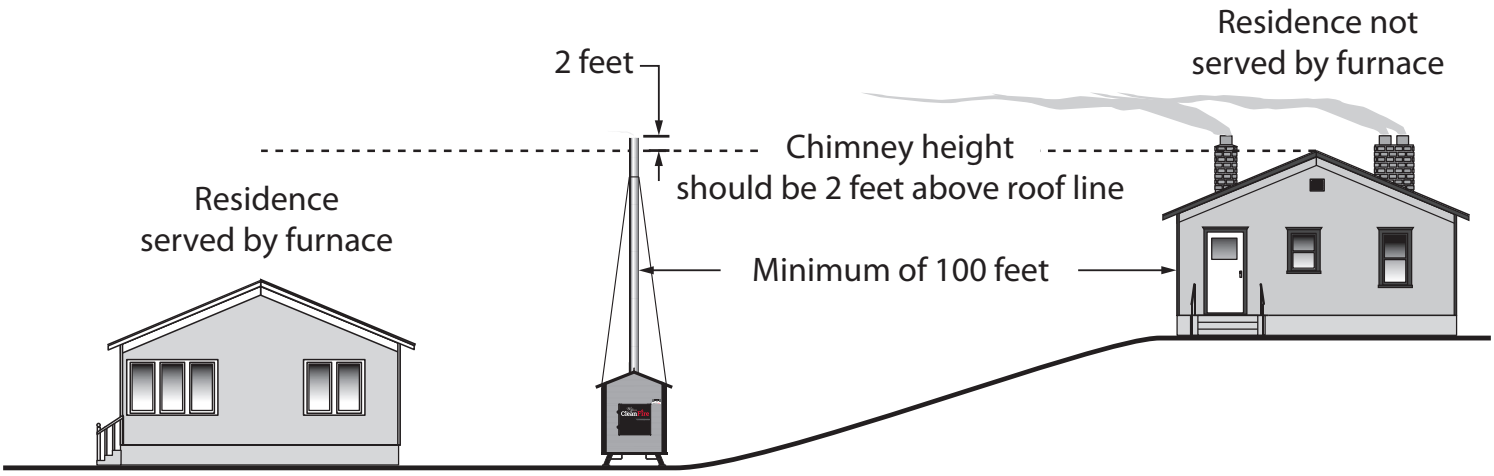
There must be a minimum clearnace from combustibe materials when the boiler is installed. There must be 6” from either side, 48” from the front, 36” from the rear and 18” from the chimney connector. More room should be allowed to make cleaning and maintenance easier. Keep the space underneath the boiler open. Keep the area in front of the door clear. This space must be at least 16” in the front and 8” on either side.

For Outdoor Installation

LOCATION: It is recommended that the unit be located with due consideration to the prevailing wind direction.

- When using more that 4 feet of chimney extension external support is needed.
- Should be located greater than 100 feet from any residence not served.
- If located between 100 and 300 feet to any residence not served, it is recommended that the stack be at least 100% of the height of the peak of the residence, plus an additional 2 feet.
- Should be located 10 feet from any combustible materials.

Always remember to comply with all applicable state and local codes.



For Indoor Installation

LOCATION: It is recommended that the unit be located with due consideration to the prevailing wind direction.

- When using more that 4 feet of chimney extension external support is needed.

- Should be located greater than 100 feet from any residence not served.
- Should be located 10 feet from any combustible materials.

Always remember to comply with all applicable state and local codes.
The CleanFire can be installed in the building that it serves, or an out building.

The room where the boiler is placed should allow ample venting to ensure proper air flow for combustion. The vent should be a minimum of 31 square inches.
If wood or kindling are stored in the same building, they need to be outside of the safety clearances listed in this manual.
If a fan is installed in the room to circulate air in, or exchange air with the outside, then there must be ample venting as to not create a positive or negative pressure inside of the building in relation to the outside.

Chimney Specifications

To insure proper insulation, use only a Class A Double Wall Insulated Chimney UL listed per UL 103 and rated for solid fuel. Chimneys are available from your local WoodMaster Dealer or Northwest Manufacturing, Inc.. The chimney must be 6" in diameter and cannot be reduced or enlarged.

- A draft controller may be used to allow proper flow. The draft controller must be installed as close to the boiler as possible.

- The chimney draw must be no greater than -.05 inches of water.

- Measure the draft at the bottom of the chimney, just above the flue connector, by drilling a hole in the c himeny that is sized for your measuring device. Properly plug the hole when completed.

-A chimney that has four or more feet of extension must be externally suppored by guy wires. Tie points for guy wires are located on the CleanFire and a kit is available from your dealer.

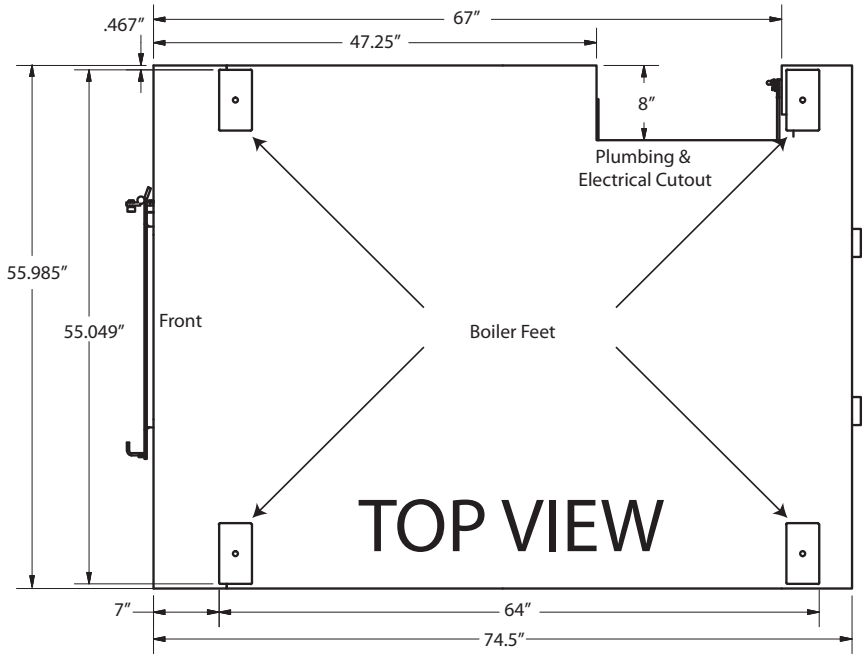
- Do not connect to a chimney or flue that serves another appliance.

Note: Remove the chimney cap prior to lighting the boiler.

CAUTION: Using a non-insulated chimney or failure to use a Class A Insulated Chimney WILL result in a voided Warranty. When using more than four feet of chimney extension external support is needed.

Pad Supports

The CleanFire should be placed on cement blocks. The blocks should be at least 6" wide, 10" long and 3" thick and placed under the feet. Two feet of clearance from the front and rear of the boiler and at least one foot clearance on the sides is recommended. Failure to install the



Installation

WoodMaster CleanFire on a proper support will result in a voided warranty. Never use combustible materials, such as wood blocks, to support the CleanFire. This drawing shows the outside dimensions of the boiler along with the boiler feet placement and the location of the plumbing and electrical cutout.

Trench

The trench must be 24 inches deep and 6 to 12 inches wide. It can be dug with a shovel or a backhoe. Place all the dirt to one side of the trench to allow room for working on the other side.

Wiring

Place electrical supply in bottom of trench and cover with 6 inches of dirt. Electrical wire rated for underground use can be buried in the same trench as the water lines but must maintain a minimum 24 inch depth. The wire used should be 14-2 +ground AWG or larger wire rated for at least 105° C. Always follow state and local codes. The CleanFire needs a 120 V connection with a 15 amp circuit for the basic unit. The unit must be properly grounded to ensure proper operation. Failure to properly ground the unit will result in a voided warranty. Use copper wire and conductors only.

Water Lines

The remaining 18 inches of open trench is where the water lines are placed. Use only water line approved by Northwest Manufacturing through your Woodmaster Dealer. Oxygen barrier line is recommended.

NOTE: If lines travel under a driveway or where heavy equipment travels, the line should be buried two to three feet deep. If lines travel through a low or wet area, they should be insulated and installed in a water tight piping, (PVC).

Note: Leave a minimum of three feet of water line exposed above ground at the boiler to insure adequate length for connection.

Note: Before insulating and burying the water lines, label the hot water supply line at both ends. Once the lines are covered you will be able to easily determine which line is connected to the pump.

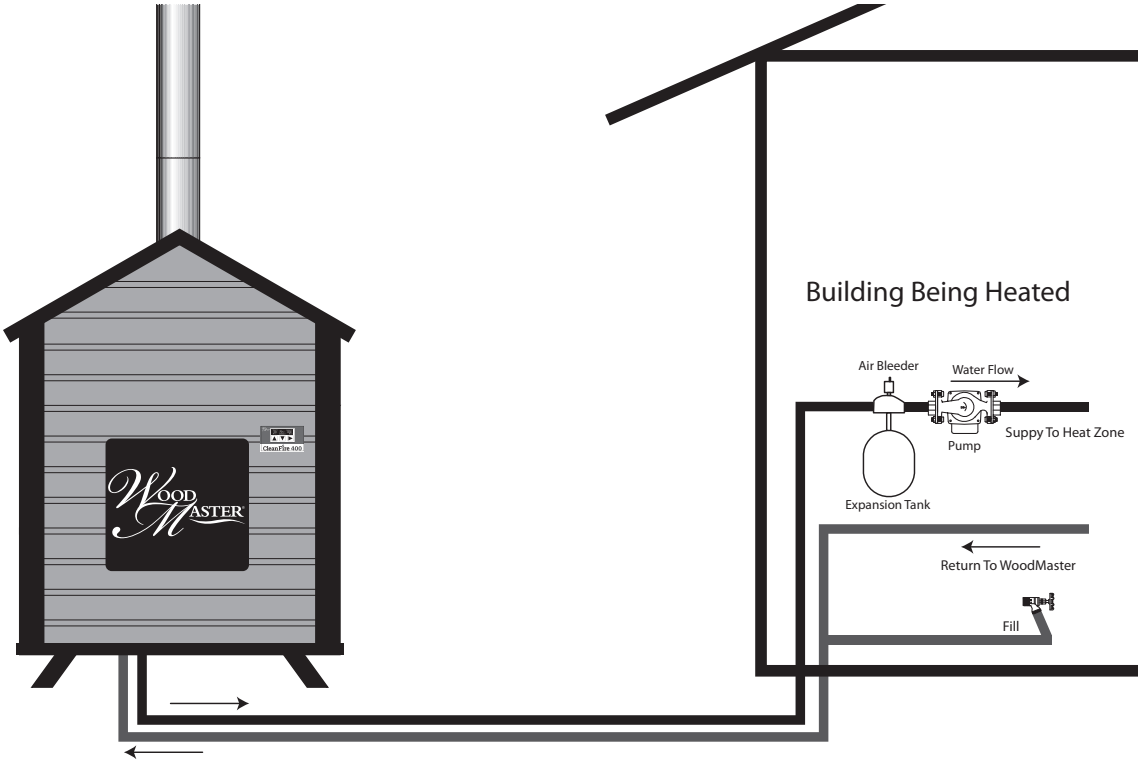
Note: Use only approved water line insulation sold through your WoodMaster Dealer. Poor insulation will cause your Wood Master boiler to burn large amounts of fuel, and hurt the efficiency of the system. For best results use high quality insulation.

Note: Remove the chimney cap before firing your WoodMaster. Replace the chimney cap when the boiler is off for extended periods.

Note: Check the fire chamber and remove any accessories that are included before starting the boiler.

Note: DO NOT seal or insulate any of the seams on the exterior panels of the CleanFire. The gaps in the seams are necessary to supply combustion air to the boiler.

An annual blow down of the pressure vessels is recommended to remove any sediment.



Installing the Water Pump

Remove the cover on the pump. Then using an approved wire, connect the ground wire to the green ground screw on the pump. Connect the black wire to the yellow wire on the pump. Finally, connect the remaining two white wires together and replace the pump cover.

The pump must be able to deliver 10-12 GPM of flow in one inch line to ensure the heat from the boiler can be properly delivered to the heating zones. The target temperature change between the supply and return line is 20°F under max draw. Return water temperature must remain above 140° during operation to prevent condensation.

An expansion tank must be installed on the system along with an air bleeder. The expansion tank must be properly sized for the complete water volume in the entire heating system. Pressure relief valves come installed from the factory. An air bleeder or pressure relief valve must be installed on the water tank. A pressure gauge may be installed on the boiler.

It is recommened to install the pump inside the building that the boiler is serving.

WARNING: Do Not install close off valves on the boiler, closing of the loop while in operation can create dangerous conditions. Follow all state and local codes for installing a pressurized system.

Note: The wires from the pump will have to connect with the main power wires in a junction box.

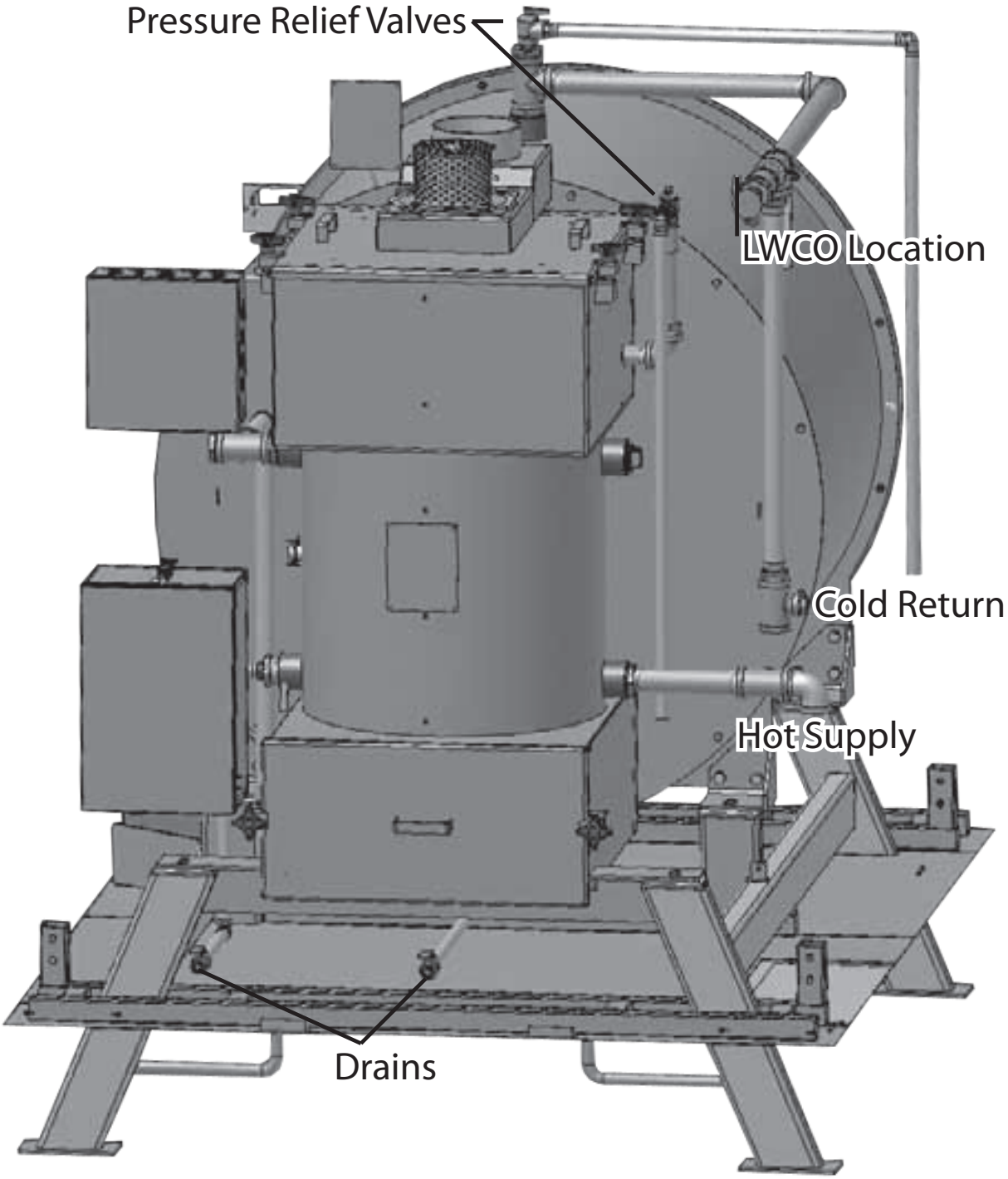
Note: The pump must run continuously whenever the WoodMaster Boiler is in use. DO NOT run the pump dry.

Note: All wiring must follow state and local codes and should be done by a qualified electrician. Disconnect power before servicing any electrical components.

All water lines on the boiler loop must be 1” in size and the boiler loop must be installed in a way that will not allow excessive pressure to develop in the system.

Plumbing

The water pump and expansion tank for the boiler loop should be located inside of the building that is served. Water connections for the boiler are accessed by removing the side panel on the bottom left side of the boiler. Make sure the boiler is off and cool, and the water pump is off and the pressure has be relieved from the sytem before attempting to service any part of the plumbing on the boiler.



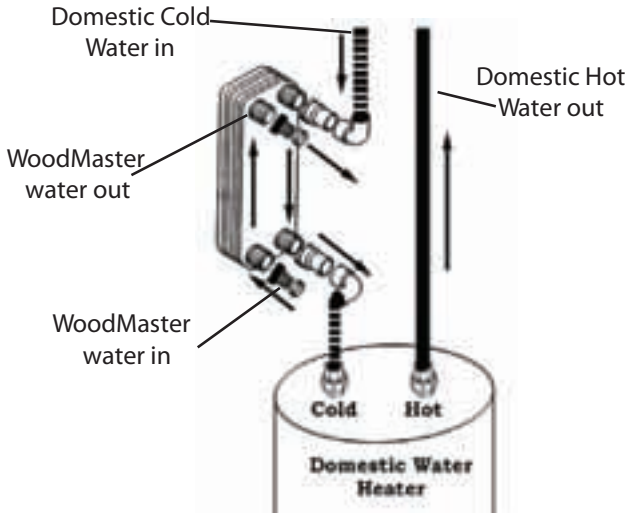
Installation

Entering the building with water lines can be done underground or over the sill plate. Once inside the building the typical hookup would run first to the Domestic Hot Water Supply and next to an existing heating system such as a forced air boiler or a hot water heating system. Finally, before leaving the building, a fill valve must be installed near a water supply for filling and flushing the boiler in the WoodMaster Boiler.

The following examples are as a secondary heat source.

Domestic Hot Water

The Domestic Hot Water/Flat plate Kit consists of a Water to Water Heat Transfer unit and the fittings needed to hook it up. The unit mounts on the wall ***VERTICALLY*** in your utility room and is connected as shown.



Existing Forced Air

A water to air heat exchanger is inserted in the existing plenum. In most cases the heat exchanger is placed in a horizontal position, keeping all four sides level. The air must be forced through the finned area of the heat exchanger evenly. The hot water line coming from the hot-water tube enters the bottom fitting of the heat exchanger and exits the top fitting, which returns to the boiler. If the plenum is too large or too small, it must be altered to fit the heat exchanger properly.

Note: The water to air heat exchanger must be installed below any existing off-peak electric coils already in the plenum.

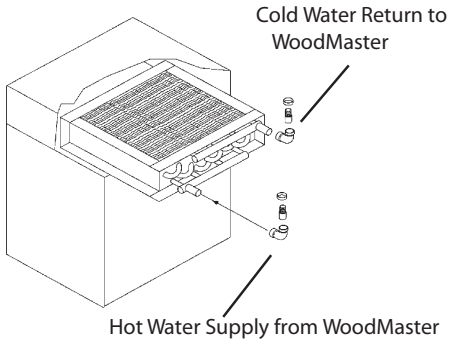
After the installation of the WoodMaster add-on water to air exchanger, the air flow may need to be increased to fuel boilers, electric boilers, and electric/gas boilers. Methods of doing this are:

Belt Drive System

Blower pulleys and motor pulleys may be changed but the electric current flowing through the motor shall not exceed the nameplate rating. (A blower motor of larger power may be used.)

Direct Drive System

The motor shall not be changed, however the speed of the motor may be increased.

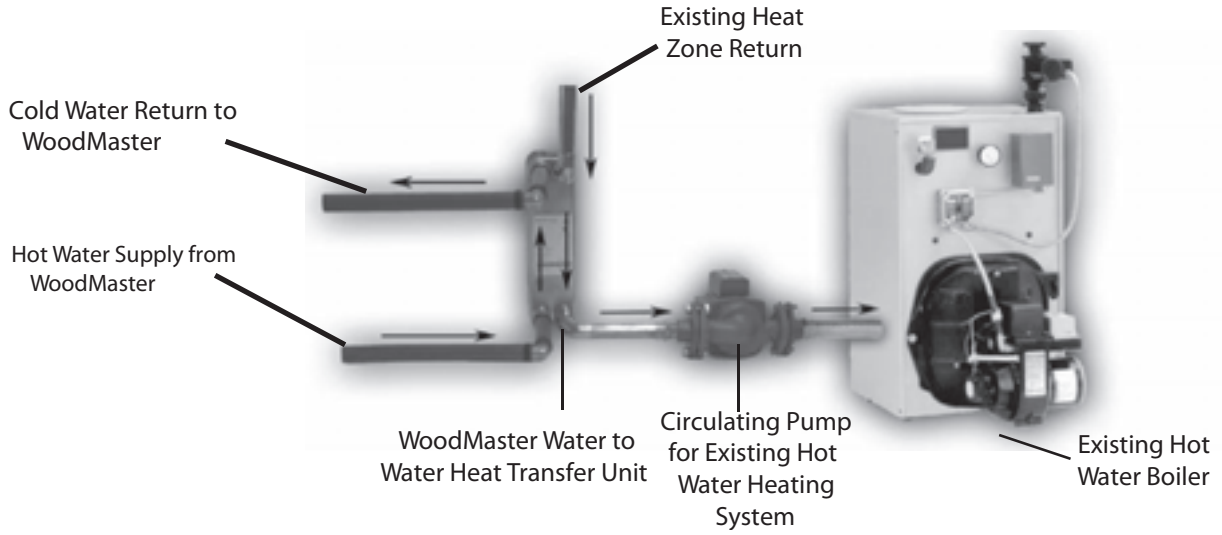


The heat exchanger works on the same principal as your car heater. Air blows through the heat exchanger, taking the heat from the water and blowing it into your existing duct work.

Existing Hot Water Heat

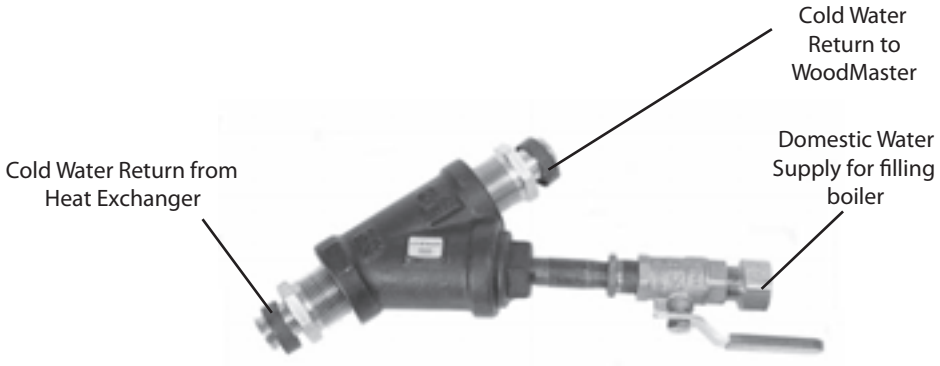
A Water to Water Heat Transfer Unit (0020-052) is used to connect to an existing hot water boiler system.

Note: Any changes that are made to an existing boiler should be done by a qualified plumber and follow all state and local codes.



In Line Filter and Fill Valve Assembly

The In Line Filter and Fill Valve Assembly (0020-325) must be installed in the cold water return line before the line exits the building. It should be placed so that a garden hose can be connected between a domestic water supply and the fill valve.



Filling With Water

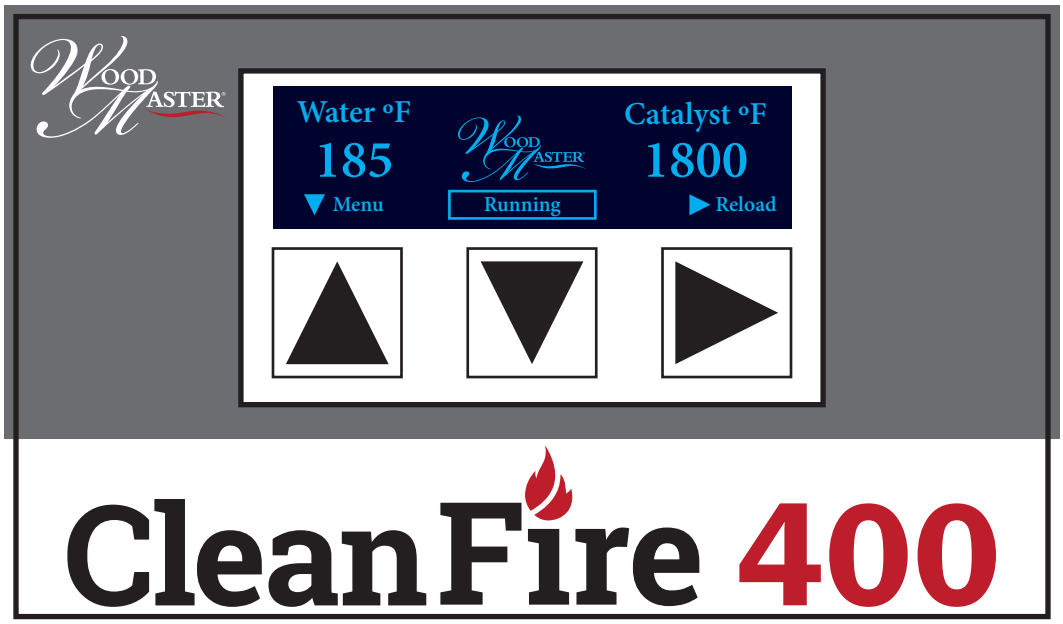
Connect a garden hose between a domestic water supply and the boiler fill valve (0020-325), which was installed in the cold water return line at a point just prior to its exiting the building. Make sure there is no blockage in the lines and that the boiler drains are closed and the overhead air bleed valve is open. Begin filling and inspect for leaks on all fittings. Repair any leaks that are found. Fill until water comes out of the air bleed valve on the boiler. Close the bleed valve and switch the pump on. Monitor the pressure in the boiler and add water as the remaining air in the system is purged.

Routinely pay attention to the water pressure level. If the water pressure falls below 10 psi during normal operating temperatures, add water to increase the pressure in the system. A water pressure gauge is installed on the boiler from the factory. A second pressure gauge may be installed indoors to monitor the system pressure more easily.

Understanding the Boiler Controller

The controller for the WoodMaster has an easy to read, backlit OLED display that can be read in extreme conditions. The user can input selections using three arrow buttons. The function of these buttons will change, depending on what screen is active. The function for the buttons will be displayed at the bottom of the display. The Up and Down buttons scroll through the Manin Menu. Below is the main home screen that shows the Catalyst and water temperature, as well as the status of the boiler in the bottom center of the display. This will read Running, Cold Start, Reload and Standby. Pressing any button from the home screen will turn on the boiler light. Press and hold the button to activate the function. This is a safety feature meant to prevent accidental changes.

Note: Do not use your fingernails or sharp objects to press the buttons as this will cause damage to the membrane.

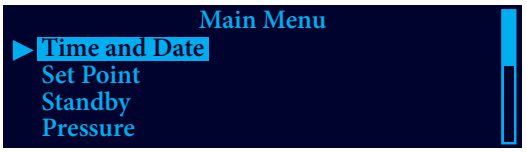


Switching the Boiler On

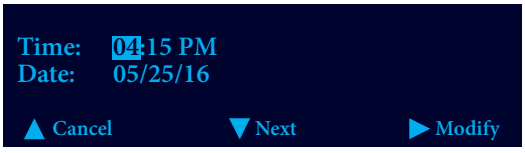
Once the boiler is properly plumbed and water has been added to the system, it can be switched on and fired. Press and hold the Button to start the boiler. Once started, See the Firing section for igniting the fire.

Controller Navigation

Press and hold the ▼ button to access the Menu. Use the ▲ and ▼ buttons to scroll through the options, and press ▶ to select the highlighted option. Selecting standby will stop boiler operation.



Follow the on screen directions to set the date and the time of the controller.

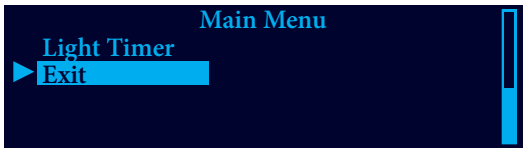


Follow the on screen directions to set the boiler set point. Do not set the set point below 160˚ F or above 190˚F. The default set point is 185˚F. There is no hysteresis to set, as the CleanFire will adjust its burn to maintain the water set point.

This screen will allow you to view the boiler water pressure. No changes can be made on this screen.

Follow the on screen directions to change the light timer. The Timer can be set from 5 minutes to 60 minutes in 5 minute intervals. The light can also be set to always off or always on.

Select Exit to return to the home screen.



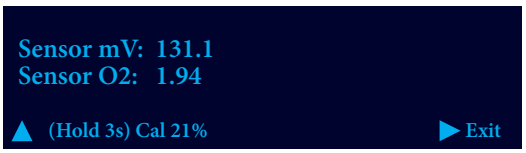
Accessing the Diagnostics Menu

Press and hold the ▲ button for 10-12 seconds. This menu is intended for diagnosing a problem, and any calibrating should be done by qualified persons.

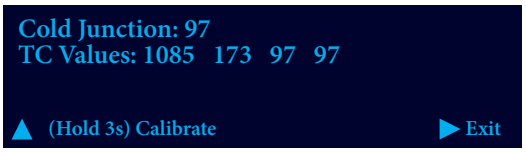
Controller Navigation

Once the Diagnistics Menu has be activated, use the ▲ and ▼ buttons to scroll through the options, and press ▶ to select the highlighted option.

Follow the on screen directions to calibrate the O2 sensor. The O2 sensor must be warm and in clean air inorder to calibrate properly.



Shown is the Thermocouple Calibrate screen. Your dealer or WoodMaster customer service representative may ask for these values to diagnose a failed thermocouple. Do not attempt to calibrate the Thermocouple as a jumper must be installed for calibrating. DO NOT ATTEMPT TO CREATE A JUMPER. THIS WILL CAUSE DAMAGE TO THE BOARD AND VOID YOUR WARRANTY!



Firing

Spread your firing material in the fire chamber making sure that it covers the entire bottom of the fire chamber.

Note: A cardboard and newspaper combination works best at starting the fire.

Caution: DO NOT use laminated or coated paper or cardboard in your CleanFire. Using laminated or coated products WILL damage the boiler and void your warranty. Only use plain, unprinted cardboard and news paper to fire your boiler.

Caution: Load your boiler carefully and avoid any hard contact between the fuel and the fire chamber, the fire chamber throat, and the fire chamber door.

NEVER use fluids or chemicals to start the fire.

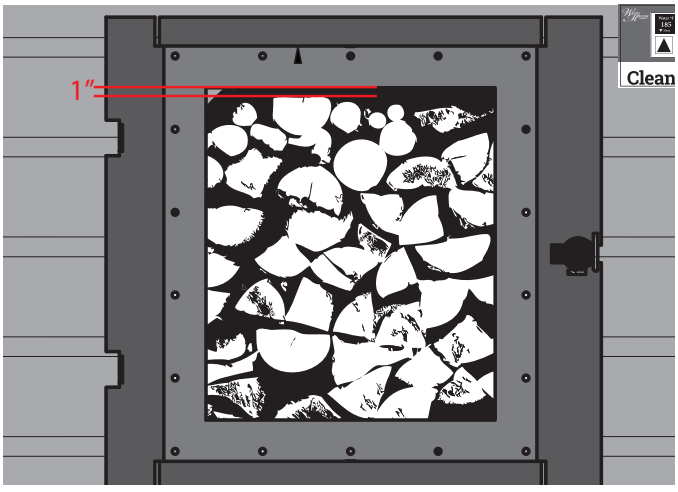
Then take the dry, small-sized and easily combustible material and arrange it parallel to the fire chamber side, making sure to fully cover the bottom of the fire chamber.

Now ignite the material making sure that it is lit in several positions. Activate cold start on the controller. Make sure the wood kindling pieces begin to burn before moving on to the next step. Continue to ignite the kindling as needed.

Once the wood pieces have ignited and a good size fire established, more wood kindling pieces can be added.

close the fire chamber door.
Once the Catalyst has reached 750° on the display, the boiler should enter burn mode. more fuel can be added at this time.
Make sure all fuel used meets the guidelines in this manual and is loaded parallel to the sides of the fire chamber. 125 lbs of seasoned hardwood such as oak or maple will give an 8 hour burn at max draw. Other hardwood and softwood species can be used, but may result in shorter burn times as these woods are less dense and have less energy by volume.

The maximum fill level is 1” (2.54cm) from the top of the door opening.



Reloading the Boiler

The WoodMaster CleanFire is designed for a continuous burn and can be reloaded at any time as long as certain parameters are met. Under low load conditions a full fuel load may be added. This will not affect the burn quality or efficiency of the boiler.

The best time to reload the boiler is when there is a well established coal bed in the bottom of the boiler and the boiler is currently under load.

Do not reload the boiler if the coal bed is too low to maintain a catalyst temperature of 600° F and above. This can be checked on the display. If the catalyst is below 600°F and the coal bed is low, then light the boiler according to the initial firing as explained on the previous pages.

Do not reload the boiler if the water temp is at 185° or above and the load on the boiler is minimal. Reloading at this time may cause the boiler to go over temperature and lockout.

The boiler may be reloaded when there is a well established coal bed or fire and the catalyst is at or above 600°F. Caution must be used when opening the fire chamber door since the WoodMaster CleanFire controls the oxygen to the fire at all times. At certain points in the burn the fire may chase oxygen out of the door when it is opened. The WoodMaster CleanFire is equipped with a two stage latch that will prevent burn back when used properly.

It may be necessarry to rake and level the coal bed druing the burn cycle under heavy loads to maintain output. When raking, bring any large unburnt pieces of wood to the center of the fire chamber. If done properly, this will only have to be done once, midway through the burn.

Since the CleanFire is a fully automatic boiler that can burn to match the heat load, it is not necessarry to load the fire chamber according to the heat load. Loading a part load or a full load will not affect the efficiency or the emissions output, it will only affect the burn time. It is imperative to use dry, seasoned wood that is properly split to maintain a good coal bed during all seasons and heat loads. During time of light heat load, check the boiler daily and rake the coal bed as needed.

To reload the boiler, make sure the conditions are met as previously explained. Open the fire chamber door by turning the latch and opening to the first stop (Shown In Picture) on the latch. Wait for one minute before opening the fire chamber door completely. This will slowly allow oxygen to fill the fire chamber.

Turn the latch past the stop and slowly open the door.

When the door is open, inspect the coal bed and remove any ash build up that may be present near the primary air ports on each side of the fire chamber. If there is an excess build up of ash clean the fire chamber according to the directions in the maintenance section of this manual.

Level the coal bed if needed.

Load the fire chamber with cut, split and seasoned wood, laying it parallel to the fire chamber sides.

Close the door completely and activate the reload function on the controller. This will purge any excess oxygen from the boiler. Once the oxygen has been purged and the catalyst is at or above a set value, the boiler will automatically enter burn mode. On lower heat loads, the reload function may need to be activated more than once if the catalyst temperature is below 700F and falling.

Maintenance

To maintain the efficiency of your boiler the manufacturer recommends that you perform these checks. You may need to clean it more frequently depending on the heat load and the type of wood that you are burning. Cleaning requires the fuel load to be at the end of the burn, with only a coal bed remaining. ***Caution, the boiler will be hot during fire chamber ash removal, as shutting down the boiler is not needed. Ashes should be placed in a metal container with a tight-fitting lid. The closed container of ashes should be placed on a noncombustible floor or on the ground, well away from all combustible materials, pending final disposal. If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be retained in the closed container until all cinders have thoroughly cooled.***

Removing the Ash From the Fire chamber (daily or as needed)

Open the fire chamber door according to the directions in the operating section.

Using a small shovel, remove any excess as buildup in the fire chamber prior to reloading. The points of ash build up will be around the primary air channels and in the center of the fire chamber.

Once the ash has been removed, level the coal bed and reload.

Maintenance

Removing the Ash From the Fire chamber (weekly or as needed)

Open the fire chamber door according to the directions in the operating section.

When the ash buildup in the bottom of the fire chamber is at or higher than the primary air channels, it is necessary to remove the ash from the bottom of the fire chamber.

Using your ash hoe, push the hot coals to the back of the fire chamber, separating the coals from the ash.
Note: the hot coals can be removed and temporarily place in a metal container. Once all of the ash is removed, place the hot coals back in the fire chamber.

Shovel the ash out of the front of the fire chamber. Take care as to not damage the primary air channels when removing the ash.

Pull the coals from the back of the fire chamber to the front.
Shovel out the ash from the back of the fire chamber.

Level the coals on the bottom of the fire chamber. If there are not enough coals to ignite a new wood load, restart the boiler according to the initial firing process.

This wood heater contains a catalytic combustor, which needs periodic inspection and replacement for proper operation. It is against federal regulations to operate this wood heater in a manner inconsistent with operation instructions in this manual, or if the catalytic element is deactivated or removed.

Cleaning of the Turbulators, Tube Box and Ash Box (every 6 months or as needed)

Making sure the boiler is cool and power is disconnected, remove the chimney coupling on the top of the heat exchanger top access box.

Disconnect the draft fan wires. Take care not to damage the connectors.

Unscrew the four knobs that secure the lid.

Maintenance

Lift the lid off and back, taking care not to damage the draft fan wires. Set the lid aside where it will not be damaged.

Slide each turbulator up and down to loosen. Use a twisting motion to clean the transfer tubs. Remove and clean each turbulator. Take care not to damage the insulation and the sensors on the side of the box.

Vacuum all ash from the tube box, including the door and any remaining ash in the heat transfer tubes.

Make sure the turbulators are in place and close the top door when cleaning is complete. Reconnect the draft fan wires and the chimney coupling.

Open the ash box door by unscrewing the two knobs.

Vacuum or sweep the ash from the ash box. Replace the cover when finished.

Monitor the pressure of the water in the boiler daily. If the pressure is low, add water. There is no need to drain and flush the boiler when proper boiler treatment is used.

Chimney Sweeping & Creosote Removal (twice a month)

Creosote – Formation and Need for Removal – When wood is burned slowly, it produces tar and other organic vapors, which combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cool chimney flue of a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited this creosote makes an extremely hot fire. The chimney connector and chimney should be inspected at least twice monthly during the heating season to determine if a creosote buildup has occurred. If creosote has accumulated it should be removed to reduce the risk of a chimney fire.

Since the CleanFire has a fire chamber that is surrounded by air, the metal surface of the chamber is allowed to heat up with the fire and will prevent creosote from building up during normal opertaion with seasoned wood.

Due to the use of a catalytic converter, the smoke in the exhaust that would potentially create creosote buildup in the chimney is greatly reduced. However the chimney should be inspected twice a month and cleaned if needed.

To check the chimney, turn the boiler off and remove the hose clamps that hold the flexible chimney coupling to the top of the tube access box. Remove any creosote buildup to reduce the risk of a chimney fire. Inspect the upper seal for damage. Replace if necessary as described later in this section.

Catalyst Replacement

If the catalyst cannot reach and maintain a temperature above 700° F, and if the boiler is not maintaining normal heat ouput, the catalyst may be failed and in need of replacement. To access the catalyst, remove the heat exchanger top lid as described previously in this manual. See the warranty section to determine if your catalyst is covered under warranty. Do not attempt to burn the CleanFire without a working catalyst, as this will cause the heat exchanger to plug and will greatly reduce the heat output of the unit. Burning the CleanFire without a catalyst will void the boiler warranty.

Remove the heat exchanger lid as previously described. Remove the cap screws that secure the catalyst housing lid in place and carefully remove the lid, taking care not to damage the seal or drop any debris onto the catalyst.

Carefully remove the insulation pieces from the catalyst housing. Inspect for cracks or damage and replace if needed.

Maintenance

Remove the old catalyst by gently prying it out of the heat exchanger with a screwdriver. The old seal will fall apart when the catalyst is removed. Clean any debris out of the bottom ash box after completing installation.

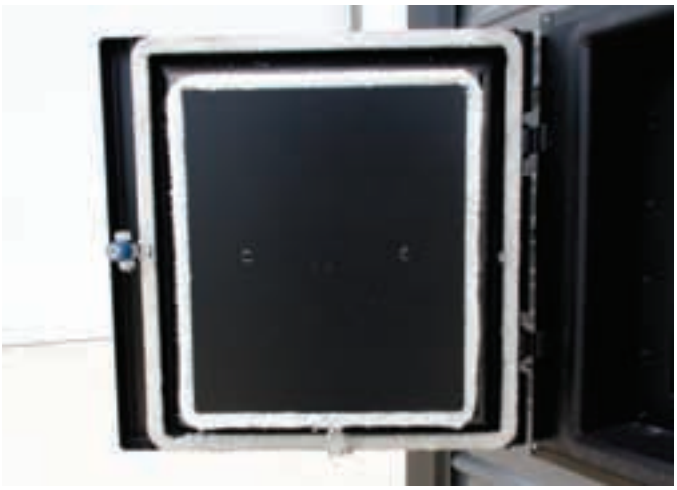
Remove all of the old seal and inspect the ceramics below the catalyst. Replace if damaged. Install the new seal as shown.

Place a new, clean catalyst in the housing as shown. Small gaps in the seal are acceptable as the seal will expand the first time the boiler is fired. ***Do not allow any debris to sit on the catalyst, as this can create hot spots and will reduce the life of the catalyst.***
Replace all insulation and the catalyst cover.
Make sure the turbulators are in place and close the top door. Reconnect the draft fan wires and the chimney coupling.

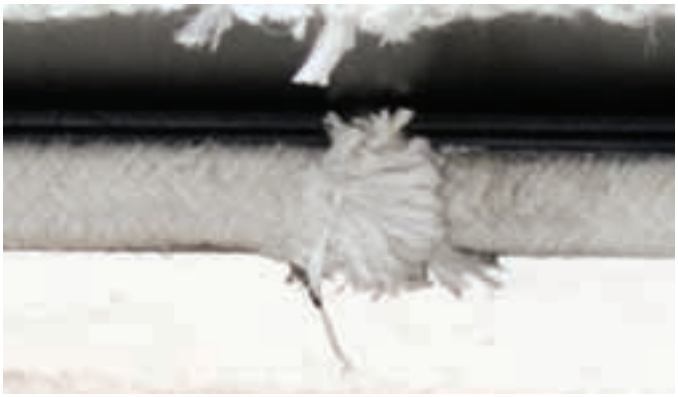
Door Seal (Daily-Yearly)

The front door as well as the rear access doors must seal properly to ensure proper combustion. The front door seals should be inspected for damage or fatigue each time the boiler is loaded. The heat exchanger access doors should be checked each time the heat excahnger is cleaned. The door seals are made of fiberglass rope and proper personal protective equipment should be worn, including but not limited to, gloves, eye protection and long sleeves.

The front door should seal tightly with no visible signs of air leakage. If a leak is detected or if the rope becomes hard and is no longer flexible, the seal should be replaced.



To replace the outer door seal, locate the joint of the rope and start to remove one end by simply pulling the rope out of the channel on the door. Clean any debris from the channel once the rope is removed.



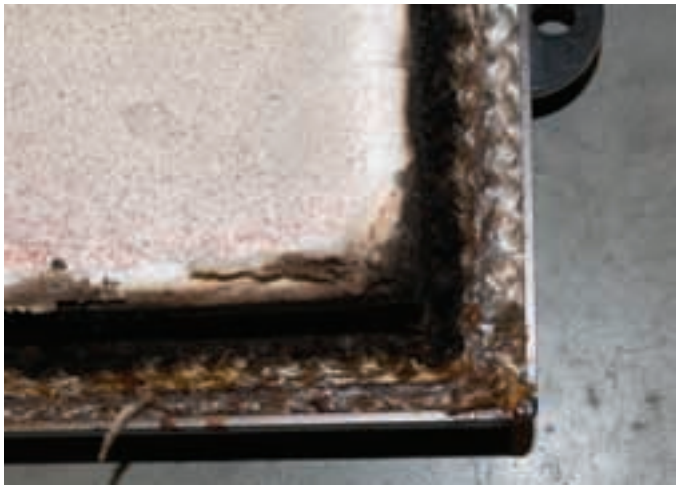
Start the new rope in the same location as the old one and press the rope into the channel on the door. Clean the sealing surface on the boiler before closing door.

To replace the inner seal loosen, but do not remove, the two nuts that hold the inner protection plate to the door. Slide the old rope out from under the plate.

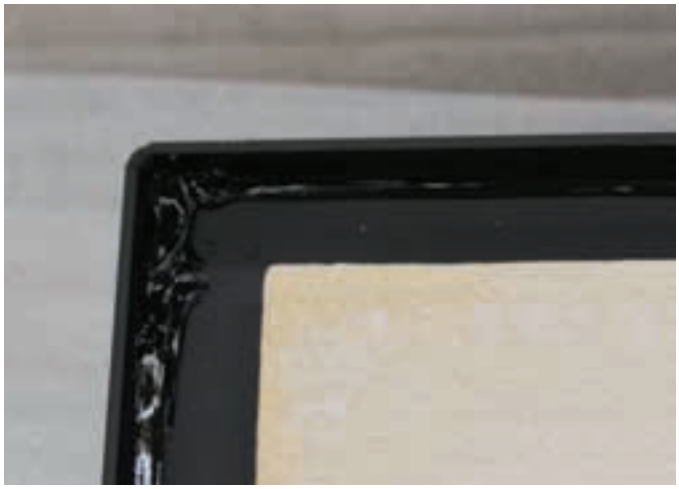
Slide a portion of the new rope under the plate, making sure to leave enough of the rope exposed to ensure a good seal. Once the rope is in place, secure the two nuts to 8 ft/lbs.

The heat exchanger doors should seal tightly with no visible signs of air leakage. If a leak is detected or if the rope becomes hard and is no longer flexible, the seal should be replaced. The same process is used for the upper door.

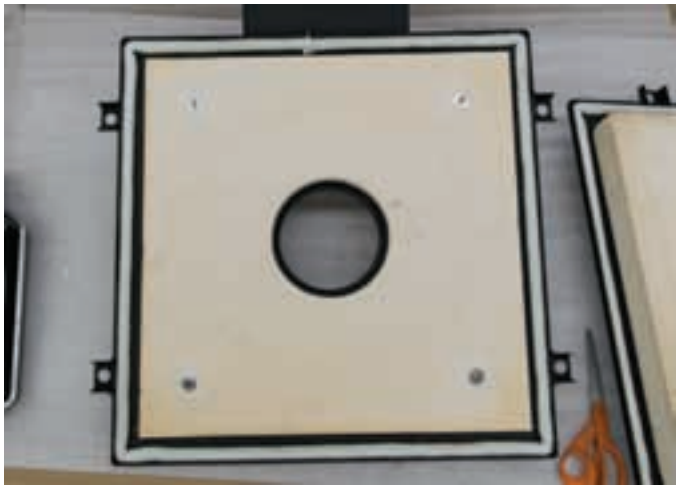
To replace the seals from the top and bottom doors on the heat exchanger, locate the joint of the rope and start to remove one end by simply pulling the rope out of the channel on the door. Scrape out any old caulking and clean any debris from the channel once the rope is removed.



Once the debris is cleaned, lay a small bead of silicone in the corner of the dorr as shown. the Silicone must remain behind the rope, so use the smallest amount needed to hold the rope in place.



Start the new rope in the same location as the old one and press the rope into the channel on the door. Clean the sealing surface on the heat exchanger before replacing the door.

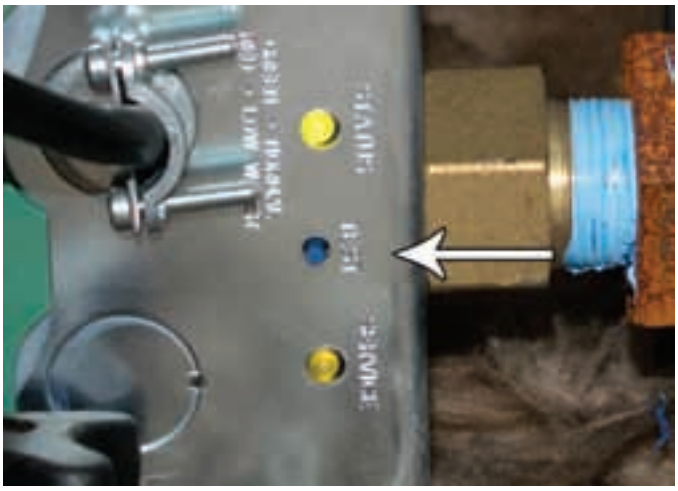


Low Water Cutoff - Testing

The LWCO is located on the top left side of the rear enclosure. To test for proper function the boiler must be empty of water.
With the boiler empty, power on the CleanFire. The Control should not allow operation, and the Indication LED on the LWCO should be red.

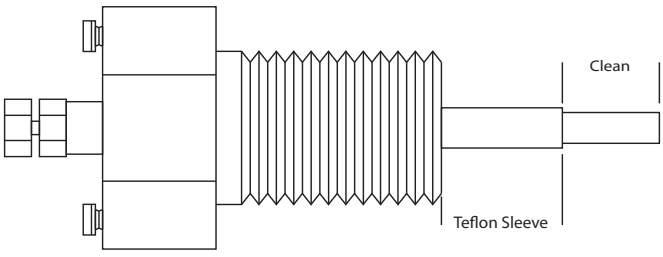
Fill the boiler with water. Once the LED changes from red to green, the control will allow for operation.

To test during normal operation, press the test button on the side of the LWCO The light should turn red and the boiler operation should stop. Release the button to restart normal operation.
The LWCO should be tested once a year, or any time the boiler is fired after an extended down period.

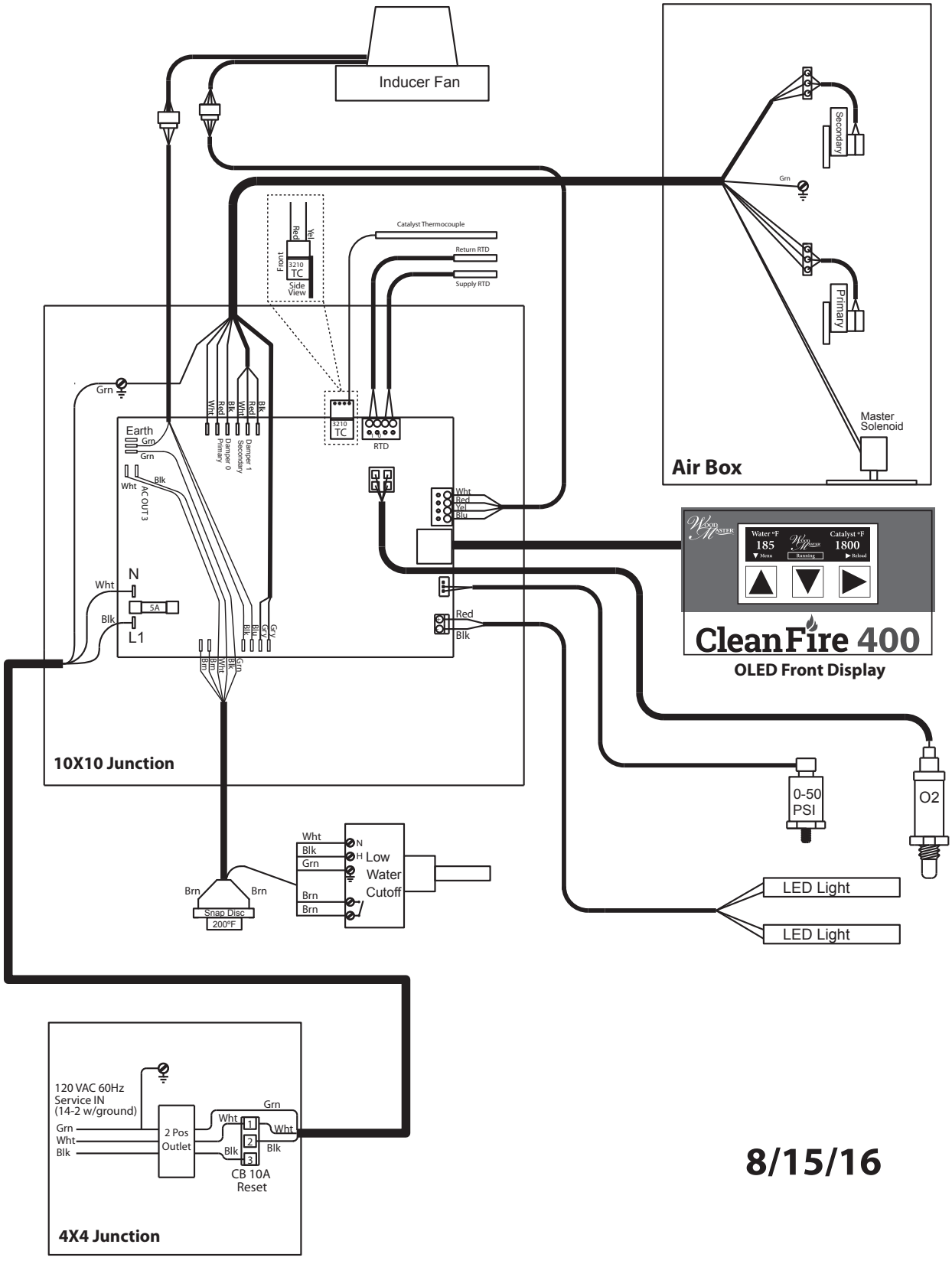


Low Water Cutoff - Cleaning

The LWCO should be cleaned every 5 years or if indicated by a red service light. To clean, remove the LWCO from the boiler line and remove all oils, fluxes and scale build up with a clean cloth. Take care not to damage the teflon insulator.



All wiring should be done by qualified persons.



Troubleshooting

If Boiler Is Not Heating:

1. Check fire.

2. Check pump. If pump is not running, shut off power supply to pump and inspect.

3. Check water pressure. If water is low, inspect for leaks in the system.

4. Check the ash box for ash buildup. If opening is reduced fire cannot burn properly.

5. Check the draft fan and air dampers. Make sure they are operating properly.

6. Check that the controller is not in lockout mode.

7. If water temperature is reading 120° F or lower, initiate the start process

8. Boiler cannot produce enough energy for heat demand with wood being burned. Wood or system need to be addressed. Thermal storage may be added.

9. Check the catalyst temperature. If the catalyst is not able to maintain a temperature of 700° F or higher. then the catalyst may be plugged or failed.

If Boiler Pressure Valve Releases:

1. Check fire chamber door. Be sure door was not left open.

2. Check fire chamber door seal. Make sure the door has a tight seal.

3. Check the draft fan and air dampers. Make sure they are operating properly.

4. In extremely warm weather, there may not be enough of a load to function properly.

In the Event of a Runaway Fire:

1. Close the door if not already closed.

2. Disconnect Power.

3. Allow the pump to continue to circulate.

4. Allow the boiler to cool. Once cool, check the boiler and heat exchanger for damage.

5. Check water pressure and level. Adjust as needed.

6. If no damage is found, power up the boiler.

7. Check the display for errors.

8. If no errors are found, check and clean the firebox.

9. Check the firebox and door seals for damage. If no damage is found, restart the boiler according to this manual.

NOTE: If any damage is found, contact your WoodMaster Dealer.

In the Event of Power Loss:

1. Leave the door closed until power is restored.

2. Once power is restored, check the unit for visible damage.

3. Check the dispay for errors.

4. If no errors are found, check the fire chamber for fire and restart the unit according to this manual.

In the Event of Lock Out:

1. Wait for the unit to come out of lockout mode.

2. Before proceeding, check the boiler for damage.

3. Check the display for errors.

4. If no errors are present, check the fire chamber and inspect the door seals.

5. If no damge is present, restart the unit according to this manual.

NOTE: If boiler boiled water out and air entered lines this could damage pump. Be sure to remove air from system. (See Filling With Water) A hissing sound coming from the pump, in most cases, means there is air in the system. Check water pressure level to insure that your boiler is full.

If none of these suggestions appear to solve your problem, contact your dealer.

Troubleshooting

Error Codes

Below is a list of errors that the controller can display and the course of action that should be taken to rectify the issue. All repairs must be made by qualified persons.

Error	Cause	Solution
O2 Error	O2 Reads 0% for 60 consecutive minutes	Disconnect power and check the O2 sensor connections. Remove the O2 sensor and check for damage. Calibrate the 02 sensor as described in the operation section. If none of these work, replace the O2 sensor.
	O2 Reads Over 18% while Catalytic Convertor is above 650˚F for 60 consecutive minutes	
RTD Error	RTD Reads -40˚F or 248˚F	Disconnect power and check the RTD Connections. If this does not work, replace the RTD Probe.
TC Error	Thermocouple reads less than -100˚F	Disconnect the power and check the Thermocouple connections. If this does not work, Replace the Thermocouple.
	Catalytic Convertor thermocouple Reads same as board temperature +/-1˚F for 5 consecutive minutes	
Snap Error	Snap disc triggered or low water cutoff has triggered.	Wait for boiler too cool, thus allowing the snap disc to reset. If the boiler does not reset, replace the snap disc. Check the door seals for leaks. Check the pump for proper flow. Adjust the draw on the stove or the wood load. Check the water pressure in the boiler. If low, add water.
Fan Error	Fan torque applied but not getting tach signal	Disconnect power and check the fan connections. If the connections are not the cause, disconnect power, allow the boiler to cool, and remove the fan to inspect for damage or creosote/ash buildup. Clean if needed. If damage to the fan is found, or if the fan still fails to work, replace the fan.

If none of these suggestions appear to solve your problem, contact your dealer.

WARRANTY

WOODMASTER CLEANFIRE LIMITED WARRANTY

This Warranty is provided by Northwest Manufacturing, Inc. only for the benefit of the initial purchaser (Original Owner) of the Northwest Manufacturing, Inc. WoodMaster CleanFire (the "Boiler") on the original site of installation (the "Site of Original Installation"). This Warranty provides specific legal rights. You may have other rights depending on where you live.
The rights in this warranty depend on the proper assembly, installation and commissioning of the Boiler by a dealer or installer who is certified by Northwest Manufacturing, Inc. (the "Certified Contractor"); and proper operation and maintenance. Proper maintenance in accordance with the Maintenance Intervals (as defined in the owners manual) must be performed. Installation by an uncertified or unqualified contractor or installer and/or improper maintenance, operation, misuse or abuse of the Boiler shall void this Warranty in whole or in part. All portions of the Warranty are subject to the Warranty Limitations.

LIMITED TWENTY FIVE (25) YEAR WARRANTY FOR THE FIRE CHAMBER
Northwest Manufacturing, Inc. warrants that the Fire Chamber shall be free of defects in material and workmanship for TEN (10) YEARS from the Date of Original Installation. If there is a defect in your properly delivered and installed WoodMaster CleanFire in the first Ten (10) years, WoodMaster will replace the Fire Chamber at no cost to the original owner. Northwest Manufacturing,Inc. will only pay these percentages of costs of warranty work per year, years Eleven (11) through Fifteen (15) – 50% of warranty work. Years Sixteen through Twenty Five (16-25) 25% of warranty work. Once a defect is determined, repair or replacement of the Fire Chamber, in a whole or part, will be at the sole discretion of Northwest Manufacturing, Inc..

LIMITED TWENTY FIVE (25) YEAR WARRANTY FOR THE PRESSURE VESSELS
Northwest Manufacturing, Inc. warrants that the Pressure Vessels shall be free of defects in material and workmanship for FIVE (5) YEARS from the Date of Original Installation. If there is a defect in your properly delivered and installed WoodMaster CleanFire in the first 5 years, WoodMaster will replace the Pressure Vessel at no cost to the original owner. Northwest Manufacturing, Inc. will only pay costs of warranty work for year Six (6) – 70% of warranty work, the Seventh (7) year – 60% of warranty work, the Eighth (8) year – 40% of warranty work, the Ninth (9) year – 20%of warranty work, the Tenth (10) year – 10% of warranty work. Years eleven through twenty (11-20) WoodMaster will give you a 10% discount on the purchase of a new WoodMaster Boiler. (Boiler only) Years Twenty One through Twenty Five (21-25) WoodMaster will give you a 5% discount on the purchase of a new WoodMaster furnace. Once a defect is determined, repair or replacement of the Pressure Vessel, in a whole or part, will be at the sole discretion of Northwest Manufacturing, Inc..

LIMITED ONE (1) YEAR WARRANTY ON THE ELECTRICAL COMPONENTS
Northwest Manufacturing, Inc. warrants to the Original Owner, that any electrical components are free from defects for the period of ONE (1) YEAR from the date of installation. Northwest Manufacturing, Inc. will determine whether to repair or replace the defective parts.

LIMITED ONE (1) YEAR WARRANTY ON CATALYTIC COMBUSTOR
Northwest Manufacturing, Inc. warrants to the original owner only, the Catalytic Combustor during normal usage for a period of ONE (1) YEAR from the date of installation. This does not cover damage from excessive heat to the Catalytic Combustor, which will result in visible damage to the Catalytic Combustor.

LIMITED ONE (1) YEAR WARRANTY ON ADDITIONAL COMPONENTS
Northwest Manufacturing, Inc. warrants to the original owner only, any additional components, including, but not limited to the outer shell, paint, insulation, doors and latches during normal usage for a period of ONE (1) YEAR from the date of installation. This does not include door seals and other seals on the boiler.

START OF WARRANTY PERIODS
The Warranty Period shall begin on the date the Boiler installation has been completed (the "Original Date of Installation"). In the event of dispute as to the Date of Original Installation, the shipping date of your Boiler, as recorded by Northwest Manufacturing, Inc., shall be deemed to be the Date of Original Installation.

WARRANTY LIMITATIONS
I. Damages for unsatisfactory performance caused by improper installation or any damages caused by or as a result of improper use of the Boiler , incorrect start-up, incorrect or careless handling, improper control adjustment, incorrect chimney installation or draft, disregard of the operating instructions and proper maintenance or disregard of any other instructions supplied with the Boiler, improper operation of the Boiler or improper alteration and repairs/service by a third party not affiliated with Northwest Manufacturing, Inc. will not be covered under this warranty. All repairs must be performed by a Certified Contractor.

II. The warranty will not cover damage to parts caused by improper installation, improper care or maintenance. The Boiler, and any installed accessories must be serviced, inspected and cleaned at regular intervals. Northwest Manufacturing, Inc. will NOT warranty

damage to the Boiler due to ash corrosion.

III. The workmanship, repairs or replacement of parts of the Certified Contractor will not be covered under this warranty.

IV. Components of the heating system not furnished by Northwest Manufacturing, Inc. are not covered under this Warranty. Damages to the Boiler caused by components of the heating system not supplied by Northwest Manufacturing, Inc. will not be covered under this Warranty.

V. Fuels used in the Boiler must meet the specifications set out in the owners manual by Northwest Manufacturing, Inc.. Damage caused by the use of any unapproved fuel, or any fuel that does not meet the guidelines set forth by Northwest Manufacturing, Inc. will not be covered by this warranty. Failure to properly load the Boiler will result in a voided warranty.
VI. Any costs for labor for the examination, removal or reinstallation of allegedly defective parts, transportation of the parts to and from Northwest Manufacturing, Inc. facilities will not be covered and will be the responsibility of the Original Owner. This includes any other labor and costs for any material necessary for the said examination, removal or re-installation.

VII. The warranty will not cover damage to the Boiler or any original parts, replacement parts or other accessories or standard equipment caused by excessive temperatures or pressures, vandalism, fuel or gas explosion, electrical, chemical or electrochemical reaction, electrical failures, insurrection, riots, war, acts of God, combustion air contaminated externally, air impurities, sulfur or sulfuric action or reaction, dust particles, corrosive vapors, oxygen corrosion, improper fuel loading and situating the Boiler in an unsuitable location or continuing use of the Boiler after onset of a malfunction or discovery of a defect.

VIII. The warrany will be void if there is continued use after Catalyst failure.

IV. Consumable parts, and parts in direct contact with the flame, will not be covered under this warranty.

WARRANTY TERMS
The Warranty shall also be subject to the following terms and conditions:
I. The Boiler must have been installed by a Certified Contractor.

II. The Boiler must have been properly maintained, cleaned and serviced during the Warranty Periods in accordance to the manual.

III. This Warranty is non transferable and only covers the Original Owner, at the original site of installation.

IV. Northwest Manufacturing, Inc. shall have the time needed and unobstructed access to the Boiler for the purpose of conducting tests of the Boiler and for the making of repairs or installation of replacement parts.

V. Repairs, replacement or the repair of replacement parts shall be subject to the terms and conditions of this Warranty as if they had been installed at the time of original installation.

VI. This Warranty is limited to the provisions previously described and does not extend to any Boiler and Burner, related parts or products that are (a) not sold in Canada or the United States; (b) not installed in Canada or the United States; or (c) not purchased from an Authorized Distributor.

VII. Northwest Manufacturing, Inc. shall not be responsible for any consequential damages, direct or indirect caused by the products described in this Warranty.

VIII. The warranty registration card must be returned within 10 days from installation.

APPLICABLE LAW
All disputes or claims on the Warranty shall be determined in accordance with the laws of Red Lake County, Minnesota.

WARRANTY CLAIM/SERVICE
Notify the Certified Contractor who installed your Boiler. The Contractor will then notify Northwest Manufacturing, Inc. who will make all warranty decisions. No warranty work can be carried out without approval from Northwest Manufacturing, Inc.. If the Certified Contractor fails to make a warranty claim, contact Northwest Manufacturing, Inc. directly. Allegedly defective parts MUST be returned to Northwest Manufacturing, Inc. for the purpose of inspection to determine cause of failure.
Northwest Manufacturing, Inc. / 600 Polk Ave. SW / Red Lake Falls, MN 56750-5002
(800) 932-3629 • Fax: (218) 253-4409 / www.woodmaster.com

Cut here and mail registration card

Northwest Manufacturing Inc.
600 Polk Ave. SW
Red Lake Falls, MN 56750

PLACE
POSTAGE
HERE

Northwest Manufacturing Inc.
600 Polk Ave. SW
Red Lake Falls, MN 56750

WoodMaster CleanFire 400 Warranty Registration Card

Please fill out the warranty registration card below and mail it back to us.
Failure to register may delay warranty claims.

Serial Number (Located on UL Sticker)

_____

Owners Name _____

Address _____

City _____ State _____ Zip _____

Fold Fold Fold Fold Fold Fold Fold Fold Fold Fold

Daytime Phone _____ Home Phone _____

Email _____ Date of Purchase _____

Dealers Name _____

Address _____

City _____ State _____ Zip _____

Phone _____

How did you learn about our product?

Radio ☐ Newspaper ☐ Internet ☐ TV ☐ Print ☐ Other _____

Fold Fold Fold Fold Fold Fold Fold Fold Fold Fold

Would you like information on other products from Northwest Manufacturing, Inc.? ☐ Yes ☐ No

Cut here and mail registration card

I have read the owners manual and understand the proper usage of my WoodMaster CleanFire

Signature _____ Printed Name _____

Specifications

Power Connection	**Single Phase, 120v, 60 Hz**
Maximum Current Draw	**4 Amps @ 120 v, 60 Hz**
BTU/HR Output on an 8 Hr Burn	**88,750 BTU**
Maximum Power Output	**102,400 BTU (30 kw)**
Weight	**2885 Pounds (1180 kg)**
Boiler Height	**84” (213.4 cm)**
Boiler Width	**56”(142.2 cm)**
Boiler Depth	**74.5”(189 cm)**
Water Jacket Capacity	**55 Gallons (227.3 L)**
Fire chamber Opening	**16.5”x19”(42x48.3 cm)**
Fire chamber Volume	**12.5 cubic feet (354 L)**
Model Number	**CleanFire 400**

All specifications are approximate and may change without notice.

www.woodmaster.com / 800-932-3629 / Manual PN: 7994-505
Northwest Manufacturing, Inc / 600 Polk Ave SW / Red Lake Falls, MN 56750