LT SERIES OWNERS MANUAL

Retain this manual

WOOD MASTER®

LT 90

Outdoor Wood Fired Hydronic Heater Commercial Use Only

Rev: 4.0

www.woodmaster.com / 800-932-3629 / Manual PN: 7994-590

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

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Northwest Manufacturing, Inc.

WOOD MASTER®

Thank you for purchasing a quality wood furnace 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 LT 90.*
- *The WoodMaster LT 90 is for commercial use only.*
- *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 LT 90 is designed to be operated in a open system. Make sure all necessary safety components are installed and functioning properly. DO NOT pressurize the LT 90.*
- *Freeze protection must be guaranteed in all water-bearing parts in the event of extensive idle periods of the system. Note: Your WoodMaster LT 90 is not intended to be your only heat source.*
- *Boiler water treatment must be used to ensure proper water quality.*
- *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 during operation!*
- *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 LT 90 may not operate the system. Only responsible adults should operate your LT 90. If the LT 90 is not fired properly, damage could result and the warranty may be voided.*
- *Never allow children to play near or tamper with the Furnace, 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 E.T.C. 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 LT 90 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 LT 90 before performing any service.*
- *The water pump must run continuously whenever the WoodMaster LT 90 is being used.*

SAFETY

- ***Never shut power off to the LT90 if there is a fire and fuel in the firebox 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 LT 90.***
- ***Read and follow these directions carefully. Retain this manual for as long as you own your LT 90.***

Sweeping
The chimney should be inspected and cleaned as needed, typically twice a year. This is to be done by qualified persons. Shut off the furnace, disconnect power and allow the system to cool before attempting to clean the system.
Warning!
Always disconnect the power to the furnace 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.

FUEL

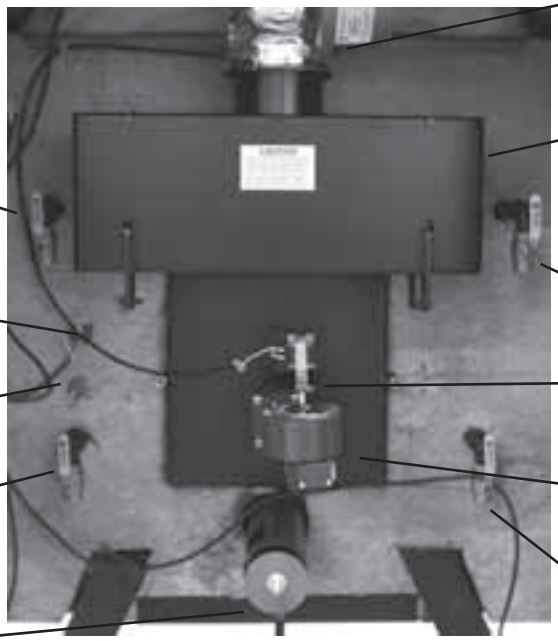
All fuels must conform to certain quality standards to ensure trouble free operation of the furnace. Use of unapproved fuels may result in faulty operation and a voided warranty. Never use the following: trash, household garbage, plastics, gasoline, rubber, naphtha, leaves, and materials treated with 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 27 inches. The wood should always be placed horizontally and parallel to the firebox wall. The pieces of wood should be stacked as tightly as possible whereby the face of the wood should NOT touch the firebox 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%.

Front View

Rear Panel



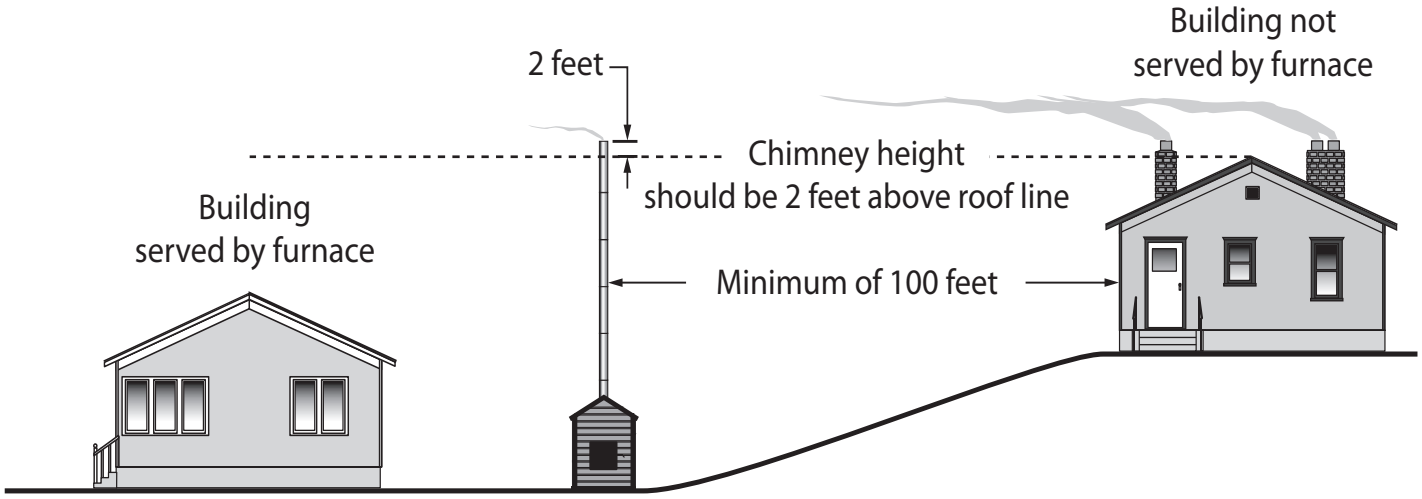
Choosing Location

When installing your WoodMaster, keep in mind the direction of the winds during heating months. Try to place the furnace in an area where exhaust will not be a problem for yourself or any surrounding neighbors. For Commercial use only.

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.

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

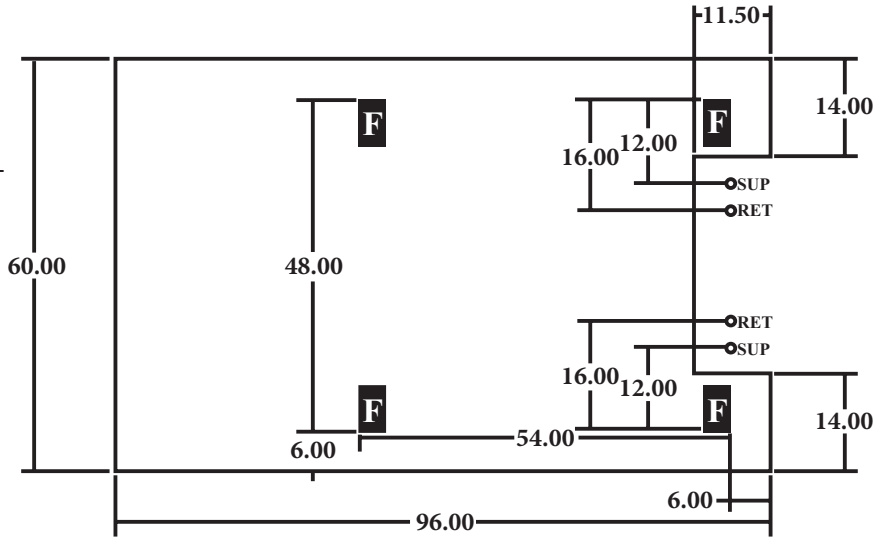


Chimney Specifications

To insure proper insulation, use only a Class A Insulated Chimney and Chimney Adapter from your local WoodMaster Dealer or Northwest Manufacturing, Inc. A draft inducer may be used to ensure proper draft under all conditions. *Note: Remove the chimney cap prior to lighting the furnace.* ***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 LT 90 should be placed on cement blocks. The blocks should be at least 6" wide, 10" long and 3" thick. Two feet of clearance from the front and rear of the furnace and at least one foot clearance on the sides is recommended. Failure to install the WoodMaster LT 90 on a proper support will result in a voided warranty. Never use combustable materials, such as wood blocks, to support the LT 90. A full cement pad is recommended if the supporting ground is soft, sandy, or othewise unable to support the furnace on the pads alone.



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 (14-2 +ground) can be buried in the same trench as the water lines but must maintain a minimum 24 inch depth. Always follow state and local codes.

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.

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 furnace 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 furnace 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 LT 90. Replace the Chimney cap when the furnace is off for extended periods.

Note: Check the firebox and remove any accessories that are included with the LT 90 before starting the furnace.

Mounting the Pump

Note: The pump must be located on the furnace.

The pump flange valve comes pre installed on the supply line.

Locate one of the black rubber gaskets, and place it between the pump and the mounted flange valve, bolt the pump to the flange. Make sure the arrow on the pump indicating direction of water flow points down.

Bolt a 1" cast iron pump flange and gasket to the bottom of the Pump.

Note: Make sure that the pump is attached to the supply line, not the return.

Note: A pump that has a flow rate of 10-12 GPM is recommended

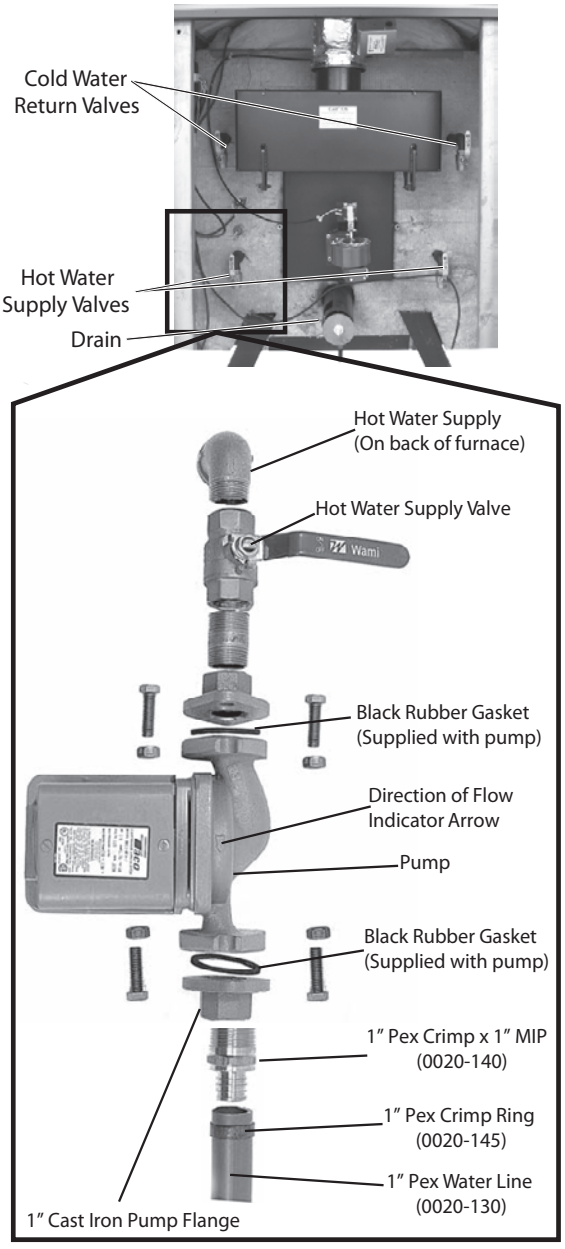
Hooking Up Water Lines

Water Supply

Attach the 1" Pex x 1" MIP fitting (0020-140) to the flange on bottom of the pump. Then attach the hot water supply 1" Pex Water Line (0020-130) to the fitting using 1" Pex Crimp Ring (0020-145).

Water Return

Attach the 1" Pex x 1" MIP (0020-140) fitting to the Water Return Valve. Then attach the cold water return 1" Pex Water Line (0020-130) to the fitting using 1" Pex Crimp Ring (0020-145).



This is an example of an installation using a Taco pump. Your layout may vary, but the pump must be on the supply line.

Wiring The 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.

Locate the junction box in the back of furnace and remove the cover. Connect the running end of the approved wire coming from the Pump to the Junction.

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

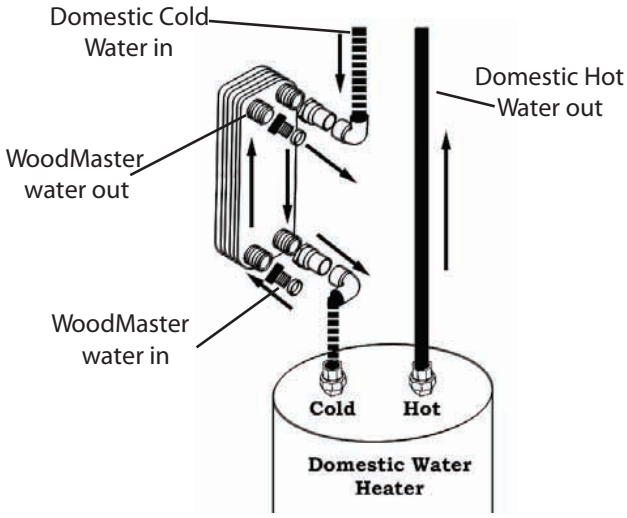
Note: The pump must run continuously whenever the WoodMaster Furnace is in use. DO NOT run the pump dry.

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

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 furnace 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 Furnace.

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 furnace. 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.

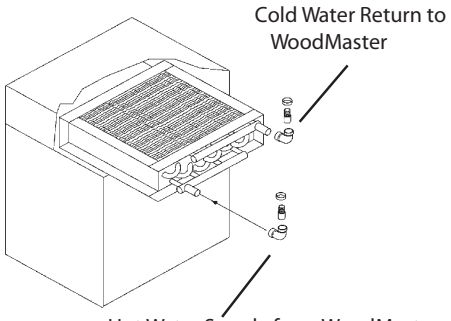
After the installation of the WoodMaster add-on water to air exchanger, the air flow may need to be increased to fuel furnaces, electric furnaces, and electric/gas furnaces. Methods of doing this are:

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.

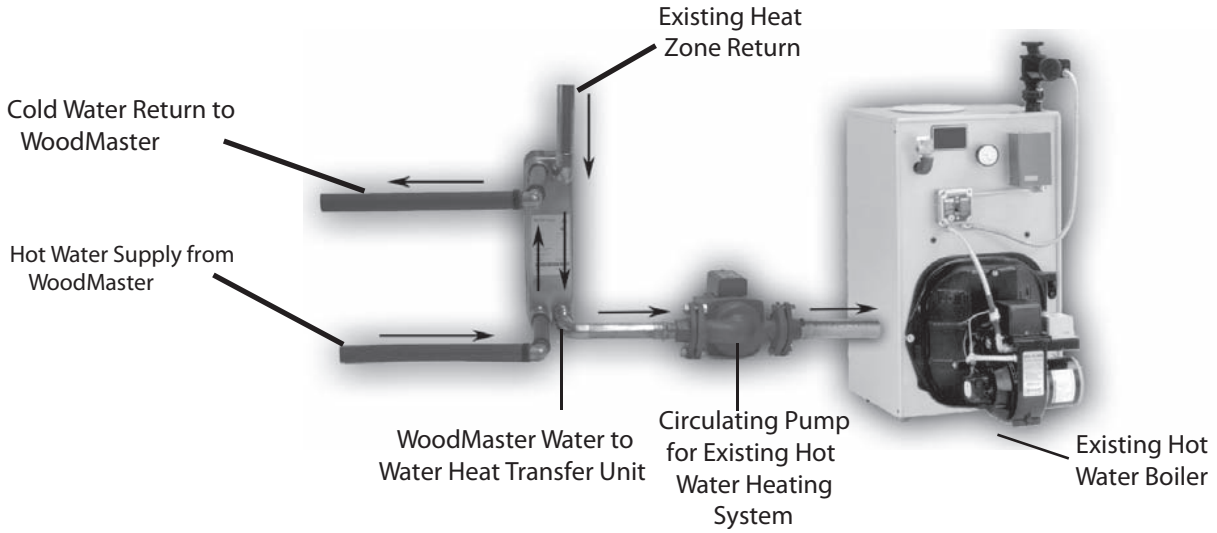


The heat exchanger works on the same principal as your car heater. Air blows through the heat exchanger, taking the heat from the water and blowing it into your existing duct work.

Existing Hot Water Heat

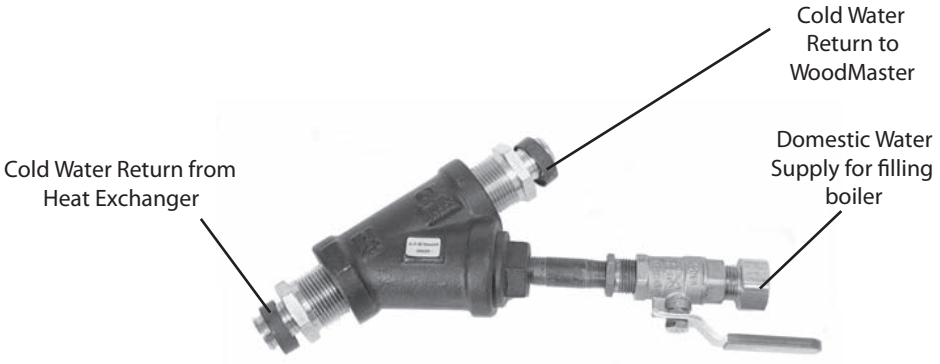
A Water to Water Heat Transfer Unit (0020-052) is used to connect to an existing hot water boiler system.

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 furnace 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 that valves not being used on the furnace are closed and the valves that are being used are open. Begin filling and inspect for leaks on all fittings. Repair any leaks that are found. The furnace may also be filled through the vent pipe in front of the chimney.

Routinely pay attention to the water level light. If the light is not lit, this indicates that the water level is low and the furnace may need to have water added. Add water until it flows out of the vent pipe. Install the vent cap into the vent pipe once the furnace is filled with water.

Note: Place the steam saver on the furnace vent once the furnace is full.

Firing The Furnace

Once properly installed and full of water, go to the E.T.C. control and turn fan switch off. If below "LA" (Low Alarm, see E.T.C. Section) press set on Dixell. Paper and kindling should be used for starting the fire. Build a small fire, turn fan switch to on, and close fuel door. Be sure that the pumps are circulating when firing the furnace. Add wood as needed to increase water temperature to 170°F. Once the furnace has reached 170°F, the furnace is ready to be filled to capacity to operate for a 12 hour period.

Rotate ash from back to front, maintaining a level coal bed. Load wood towards the back of the furnace for improved efficiency. WoodMaster recommends burning cut, split and seasoned wood. Do not overfill so that hot coals fall out of the furnace when opening the fuel door. During periods of warmer weather, you may find it to have creosote inside the firebox. It is important to fill the furnace only with enough wood to last up to a 12 hour period. After burning your furnace for a period of time, you will discover how much wood is needed per day and what types of wood burn the best.

Loading the Furnace

When loading your furnace the manufacturer recommends that you center your wood lengthwise in one row as shown below. This will allow air from the draft fan to circulate properly creating the optimum burn environment.

SIDE VIEW

FRONT VIEW

Be mindful of the latch on the front door and air holes on rear door when you are stacking the wood.

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.

Ash Rotation

Maintaining proper ash rotation and wood fill is crucial to the performance of your WoodMaster furnace. Keeping a fresh bed of coals on the top of your ashes will ensure that you get the most out of whatever kind of wood that you burn by burning and breaking down the wood to its smallest usable form. To make sure that you are rotating your ashes properly, follow the instructions below.

1. With your Ash Hoe, pull the ash from the back of the furnace to the front, and level coal bed.

2. Load wood length wise towards the back. Be careful not to damage rear door or plug air holes.

Remove ash from the front of the furnace as needed. Make sure not to remove any hot coals with the ash, and properly dispose of hot ash in a metal container. Dispose of all ash properly. For more information, see the maintenance section.

ELECTRONIC TEMPERATURE CONTROL (E.T.C.):

Function: (Factory Settings below)

- The E.T.C. monitors and controls the WoodMaster water temperature by controlling the draft and draft fan.
- During normal operation (adequate wood supply) the controller will turn off the draft and draft fan when the water reaches 170° F (Set) and will turn on the draft and draft fan when the water falls 10° F (Hy, see page 20).
- During shut down (low wood supply) or when the water falls to 120° F (ALL, see page 20) the controller will shut off the draft and draft fan. At this time, the WoodMaster will need to be filled with wood and the ETC will need to be reset. (See page 13)

Energy Start Shut-Down (LA):

- This function shuts down the WoodMaster draft and draft fan when not in use and back-up system is operating (Example: if gone for the weekend, wood firing furnace runs out of wood and back-up system takes over). To restart the WoodMaster, simply push the Set Button.

Start Up / Reset

- The first time the WoodMaster is powered up or when it has shutdown, the controller display will flash “LA” two times and then display the water temperature for two seconds and then start over. This is normal and indicates the system has shut down because the water is at or below 120° F.
- To start up (or reset) your WoodMaster, press the set button one time. The display will indicate “rSt” (reset) and after 1 to 2 seconds, the draft will open and the draft fan will turn on. The display will continue to flash “LA” and the water temperature will be displayed until the water temperature reaches 140° F (ALL + 20). After water temperature reaches 140° F, only the water temperature will be displayed until the water temperature falls to 120° F.
- **Note:** The fan switch must be in the on position.
- **Note:** Fan switch can be shut off when loading or for servicing.

Parameter Description and Factory Settings:

- Set (Set Point) - 170° F
- Hy (Differential) - 10° F
- ALL (Low Alarm) - 120° F

How To:

- View Set Point — Push and immediately release the set key, display will indicate set point and will return to water temperature after 5 seconds.
- Change the Set Point — Push and hold the set key until the set point is displayed, change the value using the up and down arrows, and press the set key. The set point will flash a few times and then the display will return to water temperature.
- Change Hy or ALL — Push and hold the set and down arrow keys at the same time until Hy is displayed. Using the up and down arrows, select the parameter to be changed (Hy or ALL), push the set key once (value of parameter should be displayed), use arrows to change value, and push the set key (value should flash a few times). After 10-15 seconds the display will change back to water temperature.

Green Float Light:

- Green light on: Water level O.K.
- Green light off: Water level low, add water.

Light Switch: Operates lights.

Fan Switch: The fan switch must be on during normal operation, but may be turned off to fill furnace or for maintenance.

Digital custom controller

XR30C FOR WOODMASTER

CONTENTS

1. GENERAL WARNING

1.1 PLEASE READ BEFORE USING THIS MANUAL

- This manual is part of the product and should be kept near the instrument for easy and quick reference
- The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device
- Check the application limits before proceeding
- Some parameters, such as CH are not applicable to Woodmaster see default settings grid fig. 15 on next page

1.2 ⚠ SAFETY PRECAUTIONS

- Check the supply voltage is correct before connecting the instrument
- Do not expose to water or moisture: use the controller only within the operating limits avoiding sudden temperature changes with high atmospheric humidity to prevent formation of condensation
- Warning: disconnect all electrical connections before any kind of maintenance
- Fit the probe where it is not accessible by the End User. The instrument must not be opened
- In case of failure or faulty operation send the instrument back to the distributor or to "Dixell s.r.l." (see address) with a detailed description of the fault
- Consider the maximum current, which can be applied to each relay (see Technical Data)
- Ensure that the wires for probes, loads and the power supply are separated and far enough from each other, without crossing or intertwining
- In case of applications in industrial environments, the use of mains filters (our mod. FT1) in parallel with inductive loads could be useful

2. GENERAL DESCRIPTION

Model XR30C, format 32 x 74 mm, is a digital thermostat. It provides two relay outputs, one for the fan, the other one for alarm signalling. The probe input can be selected between PTC or NTC. The instrument has a digital input, for alarm signalling, or for switching the auxiliary output.

3. CONTROLLING LOADS

3.1 THE REGULATION OUTPUT

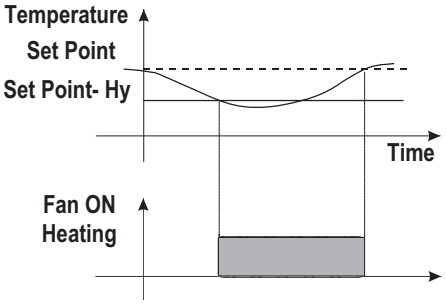
The regulation is performed according to the temperature measured by the probe.

The instruments are provided with the CH programmable parameter, which enables the user to set the regulation both for heating or cooling applications:

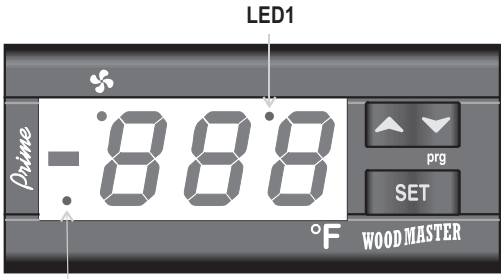
CH = Ht: heating applications, which is the application here.

3.2 CH = HT: HEATING APPLICATION.

The Hy value is automatically set under the Set Point. If the temperature decreases and reaches set point minus differential the regulation output is activated and then turned off when the temperature reaches the set point value again.



4. FRONT PANEL COMMANDS



SET: Displays the target set point; selects and confirms a parameter in the programming mode. Also used in conjunction with ⌃ (**UP**) and ⌄ (**DOWN**) to view the Min and Max recorded temperatures and to reset the stored temperatures.

⌃ (**UP**): To see the last temperature alarm that occurred; in programming mode it browses the parameter codes or increases the displayed value.

⌄ (**DOWN**) To see the last temperature alarm that occurred; in programming mode it browses the parameter codes or decreases the displayed value.

KEY COMBINATIONS:

⌃ + ⌄ To lock & unlock the keyboard.

SET + ⌄ To enter in programming mode.

SET + ⌃ To return to the temperature display.

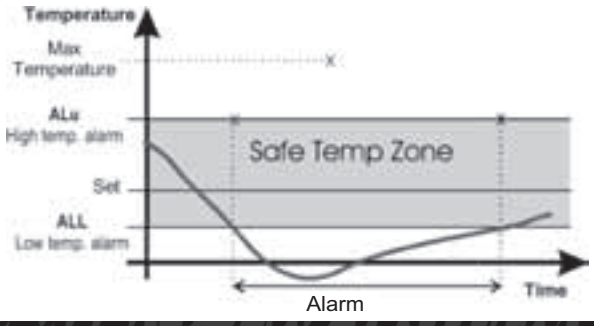
4.1 USE OF LEDS

Each LED function is described in the following table.

LED	MODE	FUNCTION
✣	ON	- Output enabled
✣	Flashing	- Programming Phase (flashing with LED1) - Anti-short cycle delay enabled
LED1	Flashing	- Programming Phase (flashing with ✣)
LED2	ON	- Temperature Alarm has happened, LED2 stays on until reset

5. TEMPERATURE ALARM AND ITS DURATION

Example of Low temperature alarm



5.1 HOW TO SEE THE ALARM DURATION AND MAX (MIN) TEMPERATURE

If the LED2, the alarm LED is on, an alarm has taken place

To see the kind of alarm, the max (min) reached temperature and alarm duration do as follows:

1. Push the Up or Down key.
2. On the display the following message is shown: **"HAL"** for high temperature alarm (**"LAL"** for the minimum alarm), followed by the **Maximum (minimum) temperature.** Then the **"tiM"** (**tiM**e) message is displayed, followed by the **"Duration"** in h.mm.
3. Then the instrument displays the temperature once again.

NOTE1: if an alarm is still occurring the "tim" shows the partial duration.
NOTE2: the alarm is recorded when the temperature comes back to normal values

5.2 HOW TO RESET A RECORDED ALARM OR ONE THAT IS STILL OCCURRING

1. Hold the SET key pressed for more than 3s, while the recorded alarm is displayed. (The rSt message will be displayed)
2. To confirm the operation, the "rSt" message starts blinking and the normal temperature will be displayed.

6. MAIN FUNCTIONS

6.1 HOW TO SEE THE SETPOINT

Push and immediately release the **SET** key: the display will show the Set point value;

Push and immediately release the **SET** key or wait for 5 seconds to display the probe value again.

6.2 HOW TO CHANGE THE SETPOINT

1. Push the **SET** key for more than 2 seconds to change the Set point value;
2. The value of the set point will be displayed and the LED1 starts blinking;
3. To change the Set value push the ˄ or ˅ arrows within 10s.
4. To memorise the new set point value push the **SET** key again or wait 10s.

6.3 HOW TO CHANGE A PARAMETER VALUE

To change the parameter's value operate as follows:

Enter the Programming mode by pressing the Set and DOWN key for 3s ✣ and LED1 starts blinking.

1. Select the required parameter.
2. Press the "**SET**" key to display its value (only ✣ LED is blinking).
3. Use "**UP**" or "**DOWN**" to change its value.

4. Press "**SET**" to store the new value and move to the following parameter.

To exit: Press **SET + UP** or wait 15s without pressing a key.

NOTE: the set value is stored even when the procedure is exited by waiting the time-out to expire.

6.4 HOW TO LOCK THE KEYBOARD

1. Keep pressed for more than 3 s the ˄ and ˅ keys.
2. The "**POF**" message will be displayed and the keyboard will be locked. At this point it will be possible only to see the set point or the MAX o Min temperature stored.
3. If a key is pressed more than 3s the "POF" message will be displayed.

6.5 TO UNLOCK THE KEYBOARD

Keep pressed together for more than 3s the ˄ and ˅ keys, till the **"Pon"** message will be displayed.

7. PARAMETERS

REGULATION

Hy Differential: (0,1 ÷ 25,5°C / 1÷255 °F) Intervention differential for set point. Fan Cut IN is Set Point Minus Differential (Hy). Fan Cut OUT is when the temperature reaches the set point.

DISPLAY

CF Temperature measurement unit:
°C=Celsius; **°F**=Fahrenheit. **WARNING**: When the measurement unit is changed the SET point and the values of the parameters Hy, LS, US, Ot, ALU and ALL have to be checked and modified if necessary).

rES Resolution (for °C): (in = 1°C; dE = 0.1 °C) allows decimal point display.

ALARM

ALL Minimum temperature alarm: (-50.0 ÷ SET°C; 58÷230°F when this temperature is reached the alarm is enabled and fan will shut off.

AFH Differential for alarm recovery: ((1÷45 °F) It sets the value above the alarm value for alarm recovery.

8. ALARM SIGNALS

Message	Cause	Outputs
"LA"	Minimum temperature alarm	Outputs unchanged.

8.1 ALARM RECOVERY

Probe alarm "**P1**" starts some seconds after the fault in the related probe; it automatically stops some seconds after the probe restarts normal operation. Check connections before replacing the probe.

Temperature alarms "**HA**" and "**LA**" automatically stop as soon as the thermostat temperature returns to normal values.

Alarms "**EA**" and "**CA**" (with i1F=bAL) recover as soon as the digital input is disabled.

Alarm "**CA**" (with i1F=PAL) recovers only by **switching off and on** the instrument.

9. DEFAULT SETTING VALUES

Label	Name	Range	°F	Level
Set	Set point	LS÷US	170	Pr1
Hy	Differential	0,1÷25.5°C/ 1÷ 255°F	10	Pr1
ALL	Minimum temperature alarm	-50.0°C÷Set/-58°F÷Set	120	Pr1

CE

c UL us

e-211299

E.T.C. Guide Reference

Changing the Set Point

1. Press and hold the set button for 3 seconds or until the fan symbol is flashing. The number that appears is the Set Point. (Fig. 1)
2. Use the up or down arrow buttons to adjust the setting.
3. Press the set button to lock in the settings.

(Fig. 1)

Changing the Hy

1. Press and hold the arrow down and set buttons until the display reads Hy. (Fig. 2)
3. Press set button, the number displayed is the differential. (Fig. 3)
2. Release the arrow down and set buttons.
4. Press the arrow up or down button to adjust.
5. Press the set button. (Fig. 6)
6. The display will read ALL for approximately 30 seconds, it will then return to the water temperature reading.

(Fig. 2)

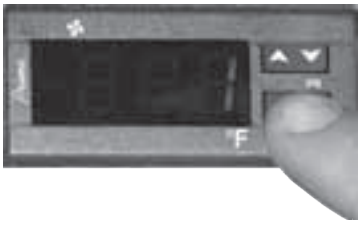
(Fig. 3)

Changing the All

1. When the E.T.C. reads ALL from the previous step press the set button. The number that appears is the Low Alarm temperature.
2. To adjust the number press the up or down arrow.
3. Press the Set button to lock in the setting.

(Fig. 4)

Definitions


(Fig. 5)

Set Point- The temperature at which the fan will shut down.
Hy aka Differential- The amount, in degrees, the temperature has to drop in order to start the fan.
ALL aka Low Alarm- The temperature at which the furnace will shut down.

(Fig. 6)

CAUTION!!

Do not set your (SP) lower than your (ALL)!

Factory Settings

WoodMaster Digital Aqua Stat Settings	
Set Point (SP)	170° F
Differential (Hy)	10° F
Low Alarm (ALL)	120° F

WoodMaster Digital Aqua Stat Minimum and Maximum Settings	
Set Point (SP)	100° F to 180° F
Differential (Hy)	1° F to 45° F
Low Alarm (ALL)	-67° F to 302° F

Digital custom controller

XR30CX FOR WOODMASTER

CONTENTS

1. GENERAL WARNING

1.1 PLEASE READ BEFORE USING THIS MANUAL

- This manual is part of the product and should be kept near the instrument for easy and quick reference
- The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device
- Check the application limits before proceeding
- Some parameters, such as CH are not applicable to Woodmaster, see Section 9, Default Settings.

1.2 ⚠ SAFETY PRECAUTIONS

- Check the supply voltage is correct before connecting the instrument.
- Do not expose to water or moisture: use the controller only within the operating limits avoiding sudden temperature changes with high atmospheric humidity to prevent formation of condensation.
- Warning: disconnect all electrical connections before any kind of maintenance.
- Fit the probe where it is not accessible by the End User. The instrument must not be opened.
- In case of failure or faulty operation send the instrument back to the distributor or to “Dixell s.r.l.” (see address) with a detailed description of the fault.
- Consider the maximum current which can be applied to each relay. (see Technical Data)
- Ensure that the wires for probes, loads and the power supply are separated and far enough from each other, without crossing or intertwining.
- In case of applications in industrial environments, the use of mains filters (our mod. FT1) in parallel with inductive loads could be useful.

2. GENERAL DESCRIPTION

Model XR30CX, format 32 x 74 mm, is a digital thermostat. It provides two relay outputs, one for the fan, the other one for alarm signalling. The probe input can be selected between PTC or NTC. The instrument has a digital input, for alarm signalling, or for switching the auxiliary output.

3. CONTROLLING LOADS

3.1 THE REGULATION OUTPUT

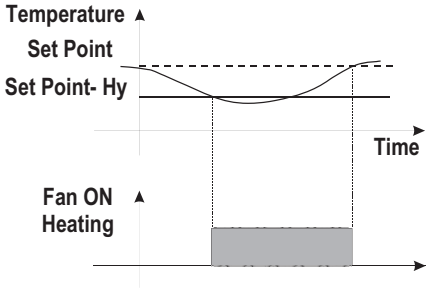
The regulation is performed according to the temperature measured by the probe.

The instruments are provided with the CH programmable parameter, which enables the user to set the regulation both for heating or cooling applications:

CH = Ht: heating applications, which is the application here.

3.2 CH = HT: HEATING APPLICATION.

The Hy value is automatically set under the Set Point. If the temperature decreases and reaches set point minus differential the regulation output is activated and then turned off when the temperature reaches the set point value again.



4. FRONT PANEL COMMANDS

SET: Displays the target set point; selects and confirms a parameter in the programming mode. Also used in conjunction with ▲ (**UP**) and ▼ (**DOWN**) to view the Min and Max recorded temperatures and to reset the stored temperatures.

▲ (**UP**): To see the last temperature alarm that occurred; in programming mode it browses the parameter codes or increases the displayed value.

▼ (**DOWN**) To see the last temperature alarm that occurred; in programming mode it browses the parameter codes or decreases the displayed value.

KEY COMBINATIONS:

▲ + ▼ To lock & unlock the keyboard.

SET + ▼ To enter in programming mode.

SET + ▲ To return to the temperature display.

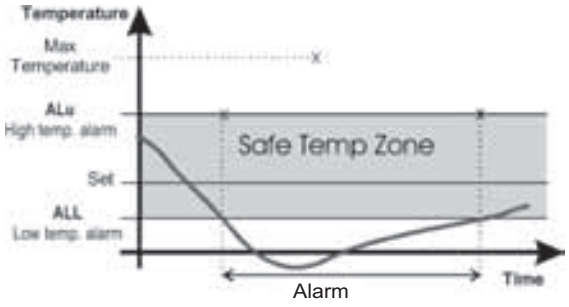
4.1 USE OF LEDS

Each LED function is described in the following table.

LED	MODE	FUNCTION
✣	ON	- Output enabled
✣	Flashing	- Anti-short cycle delay enabled
°C/°F	Flashing	- Programming Phase
(!)	ON	- Temperature Alarm has happened, (!) stays on until reset

5. TEMPERATURE ALARM AND ITS DURATION

Example of Low temperature alarm



5.1 HOW TO SEE THE ALARM DURATION AND MAX (MIN) TEMPERATURE

If the alarm LED is on, an alarm has taken place

To see the kind of alarm, the max (min) reached temperature and alarm duration do as follows:

1. Push the Up or Down key.
2. On the display the following message is shown: **"HAL"** for high temperature alarm (**"LAL"** for the minimum alarm), followed by the **Maximum (minimum) temperature.** Then the **"tiM"** (**tiM**e) message is displayed, followed by the **"Duration"** in h.mm.
3. Then the instrument displays the temperature once again.

NOTE1: if an alarm is still occurring the "tim" shows the partial duration.
NOTE2: the alarm is recorded when the temperature comes back to normal values.

5.2 HOW TO RESET A RECORDED ALARM OR ONE THAT IS STILL OCCURRING

1. Hold the SET key pressed for more than 3s, while the recorded alarm is displayed. (The rSt message will be displayed)
2. To confirm the operation, the "rSt" message starts blinking and the normal temperature will be displayed.

6. MAIN FUNCTIONS

6.1 HOW TO SEE THE SETPOINT

Push and immediately release the **SET** key: the display will show the Set point value;

Push and immediately release the **SET** key or wait for 5 seconds to display the probe value again.

6.2 HOW TO CHANGE THE SETPOINT

1. Push the **SET** key for more than 2 seconds to change the Set point value;
2. The value of the set point will be displayed and the "°C" or "°F" starts blinking;
3. To change the Set value push the ˄ or ˅ arrows within 10s.
4. To memorise the new set point value push the **SET** key again or wait 10s.

6.3 HOW TO CHANGE A PARAMETER VALUE

To change the parameter's value operate as follows:

1. Enter the Programming mode by pressing Set and ˅ keys for three seconds. (the "°C" or"°F" LED start blinking)
2. Select the required parameter. Press the **SET**" key to display its value.
3. Use "**UP**" or "**DOWN**" to change its value.
4. Press "**SET**" to store the new value and move to the following parameter.

To exit: Press **SET + UP** or wait 15s without pressing a key.

NOTE: the set value is stored even when the procedure is exited by waiting the time-out to expire.

6.4 HOW TO LOCK THE KEYBOARD

1. Keep pressed for more than 3 s the ˄ and ˅ keys.
2. The "**POF**" message will be displayed and the keyboard will be locked. At this point it will be possible only to see the set point or the MAX o Min temperature stored.
3. If a key is pressed more than 3s the "POF" message will be displayed.

6.5 TO UNLOCK THE KEYBOARD

Keep pressed together for more than 3s the ˄ and ˅ keys, till the **"Pon"** message will be displayed.

7. PARAMETERS

REGULATION

Hy Differential: (0,1 ÷ 25,5°C / 1÷255 °F) Intervention differential for set point. Fan Cut IN is Set Point Minus Differential (Hy). Fan Cut OUT is when the temperature reaches the set point.

DISPLAY

CF Temperature measurement unit:
°C=Celsius; **°F**=Fahrenheit. **WARNING**: When the measurement unit is changed the SET point and the values of the parameters Hy, LS, US, Ot, ALU and ALL have to be checked and modified if necessary).

rES Resolution (for °C): (in = 1°C; dE = 0.1 °C) allows decimal point display.

dLy Display Delay: (0 ÷20.0m; risul. 10s) when the temperature increases, the display is updateed of 1°C/1°F after this time.

ALARM

ALL Minimum temperature alarm: (-50.0 ÷ SET°C; 58÷230°F when this temperature is reached the alarm is enabled and fan will shut off.

AFH Differential for alarm recovery: ((1÷45 °F) It sets the value above the alarm value for alarm recovery.

8. ALARM SIGNALS

Message	Cause	Outputs
"LA"	Minimum temperature alarm	Outputs unchanged.

8.1 ALARM RECOVERY

Probe alarm "**P1**" starts some seconds after the fault in the related probe; it automatically stops some seconds after the probe restarts normal operation. Check connections before replacing the probe.

Temperature alarms "**HA**" and "**LA**" automatically stop as soon as the thermostat temperature returns to normal values.

Alarms "**EA**" and "**CA**" (with i1F=bAL) recover as soon as the digital input is disabled.

Alarm "**CA**" (with i1F=PAL) recovers only by **switching off and on** the instrument.

9. DEFAULT SETTING VALUES

Label	Name	Range	°F	Level
Set	Set point	LS÷US	170	Pr1
Hy	Differential	0,1÷25.5°C/ 1÷ 255°F	10	Pr1
ALL	Minimum temperature alarm	-50.0°C÷Set/-58°F÷Set	120	Pr1

CE
c UL us
e-211299

Changing E.T.C. Settings

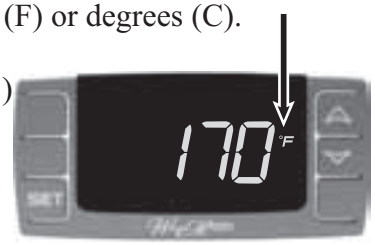
For units equipped with the XR30CX

Note: The procedures are the same wether you are using degrees (F) or degrees (C).

Changing the Set Point

1. Press and hold the set button for 3 seconds or until the ˚C/˚F is flashing. The number that appears is the Set Point. (Fig. 1)
2. Use the up or down arrow buttons to adjust the setting.
3. Press the set button to lock in the settings.

(Fig. 1)



Changing the Hy

1. Press and hold the down arrow and set buttons until the display reads Hy. (Fig. 2)
3. Press set button, the number displayed is the differential. (Fig. 3)
2. Release the arrow down and set buttons.
4. Press the arrow up or down button to adjust. (Fig. 4)
5. Press the set button. (Fig. 5)
6. The display will read ALL for approximately 30 seconds, (Fig. 5) it will then return to the water temperature reading. (Fig. 6)

(Fig. 2)

(Fig. 3)

Changing the All

1. When the E.T.C. reads ALL from the previous step press the set -button. The number that appears is the Low Alarm temperature.
2. To adjust the number press the up or down arrow.
3. Press the Set button to lock in the setting.

(Fig. 4)

Definitions

Set Point- The temperature at which the fan will shut down, until hysteresis is achieved.

Hy aka Differential- The amount, in degrees, the temperature has to drop in order to start the fan.

ALL aka Low Alarm- The temperature at which the furnace will shut down. At which point the furnace should be reloaded and the control is reset.

Note: The temperature scale can be changed from Fahrenheit to Celsius with the hot key from your WoodMaster Dealer.

(Fig. 5)

(Fig. 6)

CAUTION!!

Do not set your (SP) lower than your (ALL)!

WoodMaster Digital Aqua Stat Factory Settings		
Set Point (SP)	170° F	76.7°C
Differential (HY)	10° F	5.5°C
Low Alarm (ALL)	120° F	48.9°C

WoodMaster Digital Aqua Stat Minimum and Maximum Factory Settings	
Set Point (SP)	100° F to 180° F 38° C to 82° C
Differential (HY)	1° F to 45° F 1° C to 25° C
Low Alarm (ALL)	-67° F to 302° F -55° C to 150° C

MAINTENANCE

To maintain the efficiency of your furnace the manufacturer recommends that you preform these checks a minimum of once a week. You may need to clean it more frequently depending on the heat load and the type of wood that you are burning.

Cleaning The Fire Box and Heat Exchanger Tubes:

1. Ensure fan switch is off and wood level is low.
2. Open the Heat Exchanger Access Box Door.
3. Remove the Swirlys from the Heat Exchanger Tubes. (Fig. 2)
4. Run the Swirly in and out of each tube several times. (Fig. 2)
5. Clean out all ash that is left in the Heat Exchanger Access Box.
6. Ensure Swirlys are back in the Heat Transfer Tubes and close the door.
7. Scrape down the Fire Box.
8. Shovel out the ash.

CAUTION: The swirlys, ash and furnace may be hot.

(Fig. 1)

(Fig. 2)

Ash Removal and Disposal (Weekly or as needed)

Remove the ashes when the furnace is very low on wood. Use a shovel to take the ashes from the front of the fire box and use a Ash Hoe to pull the ashes from the rear of the furnace to create a level bed of hot coals. The 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 and well away from all combustible materials, pending final disposal. Ashes should be retained in the closed container until all of the cinders have thoroughly cooled.

CAUTION: Hot coals can last for days, disposing of them improperly or too soon can cause a fire.

Note: Try to keep the Combustion Fan and the Draft Inducer Blades was clean as possible. Clean the Combustion Fan by using a brush to keep the impeller clear of any build-up. (Fig. 1) Inspect fire box for creosote and ash corrosion.

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.

Annual WoodMaster Maintenance

PROTECT your fire chamber by placing the chimney cap over the chimney during the off-season, inspect all silicone caulking and make sure it has a good seal so moisture can't enter furnace. Scrape excess creosote from the fire chamber surface. **Moisture combined with ashes will eat through metal in a very short time.**

CAUTION: The warranty does not cover ash corrosion! Neglecting to clean your furnace or cover the chimney, when not in use, will void your warranty. When the furnace is in use, be sure that you maintain a good ash rotation. This should be done weekly.

If you are using a spark arrester or a chimney cap, you will need to provide your furnace with a little more maintenance. It is very important that you keep these areas free of any creosote build up at all times. Failure to do this will cause harm to the roof of your furnace.

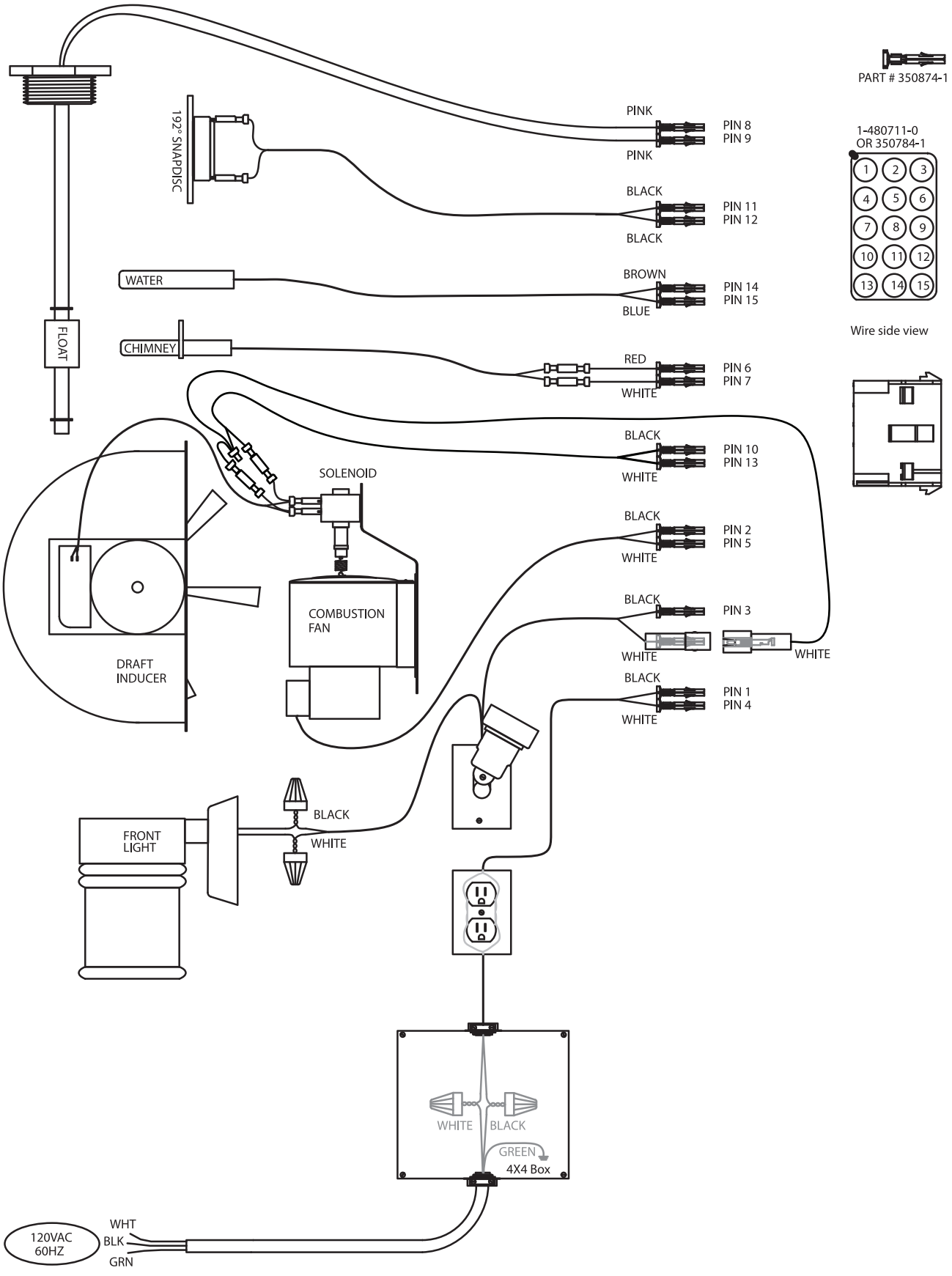
CAUTION: Use of a spark arrester or chimney cap will require extra care and maintenance. If you don't maintain it properly, it may cause damage to your roof.

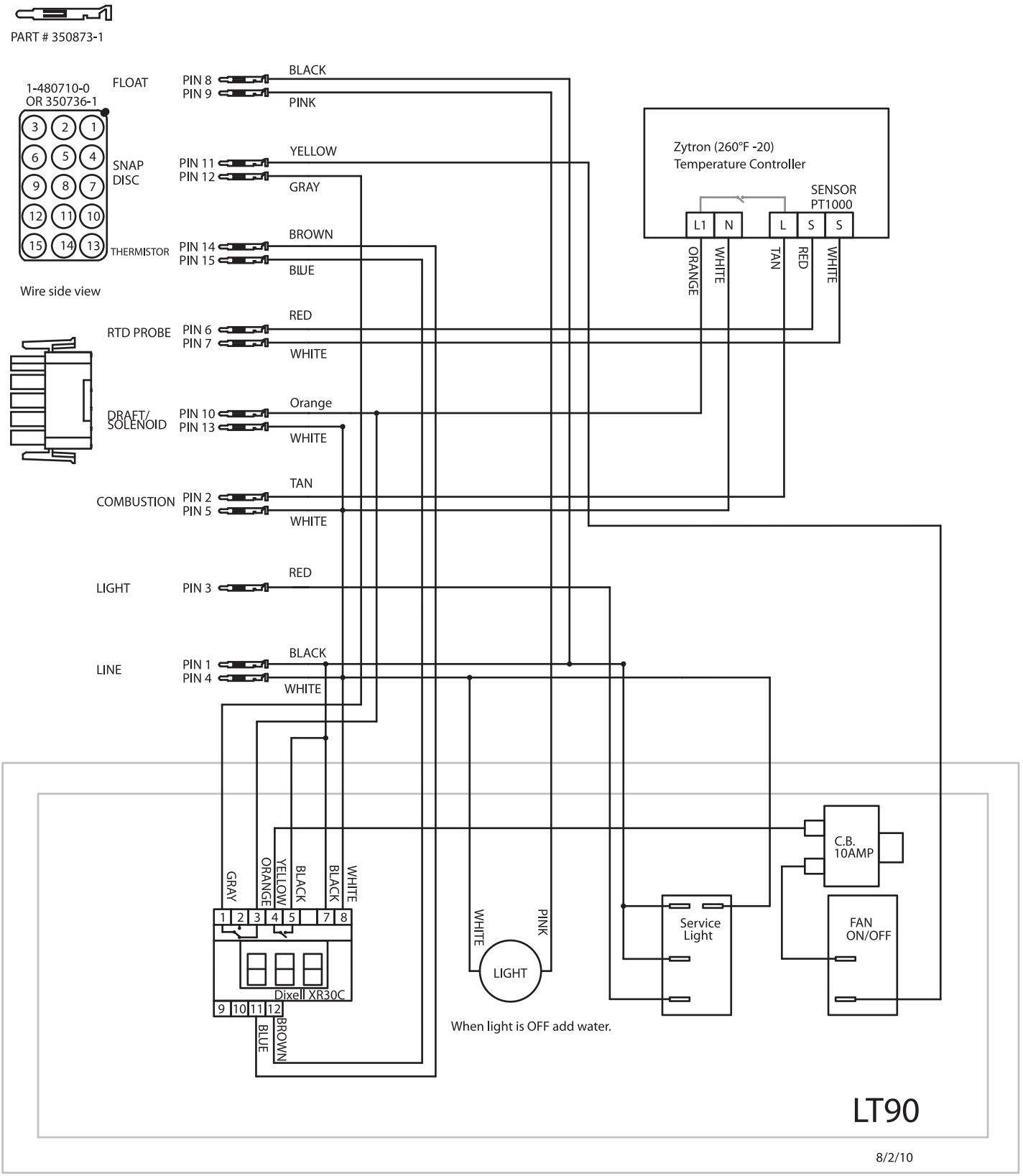
Boiler Treatment

It is very important to drain and flush your furnace each spring. To drain furnace - ensure furnace has cooled to a manageable temperature and open drain valve and let furnace empty completely. To flush - leave drain valve open and close pump valve. Add water to furnace through the return lines. Let flush for several minutes. Close drain valve and open pump valve. Refill furnace and treat water right away.

Leaving your furnace empty of water exposes the water jacket to oxygen which will shorten the life of your furnace. If your system has antifreeze, you do not need to drain it. However you should then test your water annually. For water sampling contact your dealer. ***NOTE: You must replace boiler treatment annually.***

WIRING


PART # 350874-1
1-480711-0
OR 350784-1
1 2 3
4 5 6
7 8 9
10 11 12
13 14 15
Wire side view
192° SNAPDISC
PINK
PIN 8
PIN 9
PINK
BLACK
PIN 11
PIN 12
BLACK
WATER
BROWN
PIN 14
PIN 15
BLUE
FLOAT
CHIMNEY
RED
PIN 6
PIN 7
WHITE
BLACK
PIN 10
PIN 13
WHITE
SOLENOID
BLACK
PIN 2
PIN 5
WHITE
COMBUSTION
FAN
BLACK
PIN 3
WHITE
WHITE
DRAFT
INDUCER
BLACK
PIN 1
PIN 4
WHITE
BLACK
FRONT
LIGHT
WHITE
WHITE
BLACK
GREEN
4X4 Box
120VAC
60HZ
WHT
BLK
GRN


PART # 350873-1
1-480710-0
OR 350736-1
FLOAT
PIN 8
PIN 9
BLACK
PINK
SNAP
DISC
PIN 11
PIN 12
YELLOW
GRAY
THERMISTOR
PIN 14
PIN 15
BROWN
BLUE
Wire side view
RTD PROBE
PIN 6
PIN 7
RED
WHITE
DRAFT/
SOLENOID
PIN 10
PIN 13
Orange
WHITE
COMBUSTION
PIN 2
PIN 5
TAN
WHITE
LIGHT
PIN 3
RED
LINE
PIN 1
PIN 4
BLACK
WHITE
Zytron (260°F -20)
Temperature Controller
SENSOR
PT1000
L1
N
L
S
S
ORANGE
WHITE
TAN
RED
WHITE
GRAY
ORANGE
YELLOW
BLACK
BLACK
WHITE
1 2 3 4 5 7 8
Dixell XR30C
9 10 11 12
BLUE
BROWN
WHITE
PINK
LIGHT
When light is OFF add water.
Service
Light
C.B.
10AMP
FAN
ON/OFF
LT90
8/2/10

If Furnace 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 level. If water is low, inspect for leaks in the system.

4. Check chimney for creosote build-up. If opening is reduced fire cannot burn properly.

5. Check Fan Draft and Draft Flapper. Make sure they are operating properly.

6. Check Fan Switch on E.T.C. to be sure it is ON. Fan Switch should only be off while filling or cleaning.

7. If water temperature is reading 120° F or lower, push Set Button on E.T.C. System to restart Heating Mode.

8. Furnace cannot produce enough energy for heat demand with wood being burned. Wood or system need to be addressed.

If Furnace Boils:

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

2. Check fire door rope. This is the fire resistant gasket around the Fuel Door. Make sure the door has a tight seal.

3. Check air intake on fire door. Make sure cover closes tight.

4. In extremely warm weather, a smaller amount of wood should be used.

5. Check Auger Tube Plug for air leaks.

NOTE: If furnace 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 level to insure that your furnace is full.

NOTE: Combustion fan will not be turning when stack temp is above 260° F.

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

WARRANTY

FIVE (5) YEAR LIMITED WARRANTY - FIREBOX & WATER JACKET

This Warranty is provided by Northwest Manufacturing, Inc. only for the benefit of the initial purchaser (Original Owner) of the Northwest Manufacturing, Inc. LT 90 (the "Furnace") 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 Furnace 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 herein) must be preformed. Installation by an uncertified or unqualified contractor or installer and/or improper maintenance, operation, misuse or abuse of the Burner shall void this Warranty in whole or in part.

LIMITED FIVE (5) YEAR WARRANTY FOR THE FIREBOX AND WATER JACKET
Northwest Manufacturing, Inc. warrants that the Firebox and Water Jacket of the Furnace shall be free of defects in material and workmanship for FIVE (5) YEARS from the Date of Original Installation. If there is a leak in your properly delivered and installed WoodMaster LT 90 in the first year, WoodMaster will replace the furnace at no cost to the original owner. (A leak means; a leak in the firebox or water jacket.) Northwest Manufacturing, Inc. will only pay costs of warranty work for years two (2) through five (5) – 100% of warranty work, once a defect is determined, repair or replacement of the Firebox and Water Jacket, in a whole or part, will be at the sole discretion of Northwest Manufacturing, Inc..

LIMITED ONE (1) YEAR WARRANTY ON ELECTRICAL COMPONENTS
Northwest Manufacturing, Inc. warrants to the Original Owner, 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 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) years from the date of installation.

START OF WARRANTY PERIODS
The Warranty Period shall begin on the date the Furnace 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 Furnace, 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 Furnace, incorrect start-up, incorrect or careless handling, improper control adjustment, disregard of the operating instructions and proper maintenance or disregard of any other instructions supplied with the Furnace, improper operation of the Furnace or improper alteration and repairs/service by a third party not affiliated with Northwest Manufacturing, Inc. will not be covered under this warranty. Damage due to water freezing will not be covered. All repairs must be performed by a Certified Contractor. The warranty does not cover replacing water, antifreeze, or boiler treatment.

II. The warranty will not cover damage to parts caused by improper installation, improper care or maintenance. The Furnace, and any installed accessories must be serviced, inspected and cleaned at regular intervals. Northwest Manufacturing, Inc. will NOT warranty damage to the Furnace 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. as part of the Furnace are not covered under this Warranty. Damages 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 Burner must meet the specifications set out by Northwest Manufacturing, Inc.. Suitable fuels are listed in the owners manual. 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.

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 Furnace or any of their 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, and situating the Furnace and Burner in an unsuitable location or continuing use of the Furnace and Burner after onset of a malfunction or discovery of a defect.

VII. 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 Furnace must have been installed by a Certified Contractor.

II. The Furnace must have been properly maintained, cleaned and serviced during the Warranty Periods in accordance to the manual. A blow down of the furnace and must be performed yearly after each heating season and every six months if the furnace is used year round. After the furnace has had a blow down performed, an annual water test must be taken and immediately treat and refill the furnace. Failure to send in a water sample annually will void the warranty. Boiler treatment must be used. Freeze protection must be guaranteed at all times.

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 Furnace for the purpose of conducting tests of the Furnace and Burner 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 Furnace 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.

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 Furnace and Burner. 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 LT 90 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

_____

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

I have read the owners manual and understand the proper usage of my WoodMaster LT 90.

Signature _____ Printed Name _____

Specifications

Power Connection	**Single Phase, 120v, 60 Hz**
Maximum Current Draw	**7 Amps @ 120 v, 60 Hz**
Draft Fan (Max Draw)	**1 Amp @ 120 v, 60 Hz**
Maximum Power Output	**90,000 BTU**
Weight	**1800 Pounds (approx.)**
Water Jacket Capacity	**120 Gallons**
Door Size	**16”x16”**

Notes

www.woodmaster.com / 800-932-3629 / Manual PN: 7994-590
Northwest Manufacturing, Inc / 600 Polk Ave SW / Red Lake Falls, MN 56750