



1123

# WARMBOARD COMFORT SYSTEM

## Installation Guide

For use with

**Warmsource** and **Warmsource Flex** natural gas (NG) boiler

**Warmsource** and **Warmsource Flex** liquid propane (LP) gas boiler



# GETTING STARTED

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for assistance

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Read these highlights before proceeding to save time, money and hassle.

Warmboard products are required to be installed and managed by experienced and licensed trade professionals pursuant to current local laws. Failure to use proper installers will void any product warranty.

Follow all instructions and complete the Lochinvar Noble registration card.

## Installation Tips

- 1 The Warmboard Comfort System (WCS) requires tubing loops to be installed according to our documentation in order for the system to operate correctly. **DO NOT** revise tubing loops or zones without first consulting Warmboard Inc.
- 2 WCS **MUST** be installed by a licensed general contractor, heating professional or plumber. Failure to use a properly licensed installer, failure to use the required parts and components and/or any deviation from these installation guidelines will void any product warranty.
- 3 WCS uses proprietary, plug-and-play controls including thermostats, Manifold Controllers and a Smart Reset Controller. These items **CANNOT** be exchanged with alternative products.
- 4 Electrical components require 110 volt wiring.
- 5 All devices communicate via a pre-configured, wireless network – there's no need for additional wiring or knowledge of networking equipment.
- 6 Warmsource boilers require no programming or initial configuration, and water temperatures are calibrated using our Indoor Reset algorithm.



Review this guide and the supplied working drawings (including the floor plan dimensions)

**DO NOT** revise tubing loops or zones without consulting Warmboard. Field changes will impact operation of the system.

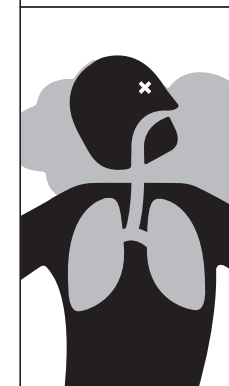


Follow all instructions and complete the Lochinvar Noble registration card.

- 7 **DO NOT** adjust any boiler settings without consulting Warmboard. Changes made through the boiler's LCD screen will impact system performance and operation.
- 8 When plumbing for the system is complete, operate WCS in "Construction Mode" (pg. 15). This feature allows installers to test the boiler and flow rates, acclimate building products and provide heat on cold job sites.
- 9 The use of a combustion analyzer is required to calibrate safe carbon monoxide readings. Failure to do so could result in injury or death (pg.15).
- 10 Disable Construction Mode before installing actuators, Manifold Controller(s) and thermostats.

## ⚠ WARNING

### Breathing Hazard – Carbon Monoxide Gas



- ▶ Do not operate heater if flood damaged
- ▶ Install vent system in accordance with local codes and manufacturers instructions
- ▶ Do not place chemical vapor emitting products near the unit
- ▶ Per NFPA 720, carbon monoxide detectors should be installed outside each sleeping area
- ▶ Never operate the heater unless it is vented to the outdoors
- ▶ Analyze the entire vent system to make sure condensate will not become trapped in a section of vent pipe and therefore reduce the open cross sectional area of the vent

**Breathing carbon monoxide can cause brain damage or death. Always read and understand instruction manual.**

# WCS PREPARATION

WCS is a unique offering that changes many aspects installers have become accustomed to. Components are pre-configured, temperatures are pre-set, and network devices are pre-configured; everything is plug-and-play. Simply follow the instructions in this guide and the system will work.

## Essential Documents

The general contractor is required to manage the job site with the appropriate trade professionals involved. It is important to keep Warmboard supplied documents on site at all times as you will need to reference them regularly for additional information. Below is a list of the documents:

- ▶ 24" x 36" Panel and Tubing Design Documents (inside the Panel Installation Kit)
- ▶ 24" x 36" WCS Design Drawings (inside the Panel Installation Kit)
- ▶ 24" x 36" WCS Engineered Drawings (inside the Panel Installation Kit)
- ▶ Panel Installation Guide (inside the Panel Installation Kit)
- ▶ Tubing & Manifolds Installation Guide (inside the Tubing and Manifolds Installation Kit)
- ▶ Lochinvar Noble Manual (included)

## Warmboard-S Sequencing

While every project is different, this list can be helpful when installing Warmboard-S and WCS.

- ▶ Foundation and joist
- ▶ Install Warmboard-S
- ▶ Install tubing (some loops before walls) and use the provided labels to keep track of loops and zones
- ▶ Frame walls, roof sheeting
- ▶ Install tubing, manifolds (some loops)
- ▶ Install all 110 volt electrical boxes and outlets (WCS Design Drawings)
- ▶ Install manifold supply and return distribution lines (WCS Design Drawings)
- ▶ Prepare for Warmsource (PVC venting, gas line, T&P, condensation line, water line)
- ▶ Insulate walls, floors
- ▶ Drywall
- ▶ Install Warmsource, then plumb in and fire up using "Construction Mode"
- ▶ Tape, texture and paint
- ▶ Finish carpentry and all finish floors
- ▶ Thermostats, Manifolds Controller(s) and actuators

## Warmboard-R Sequencing

While every project is different, this list can be helpful when installing Warmboard-R and WCS.

- ▶ Ensure existing subfloor or slab is level, flat and 100% dried in
- ▶ Install Warmboard-R
- ▶ Install manifolds, tubing; use the provided labels to keep track of loops and zones
- ▶ Install all 110 volt electrical boxes and outlets (WCS Design Drawings)
- ▶ Install manifold supply and return distribution lines (WCS Design Drawings)
- ▶ Prepare for Warmsource (PVC venting, gas line, T&P, condensation line, water line)
- ▶ Insulate walls, floors
- ▶ Drywall
- ▶ Install Warmsource, then plumb in and fire up using "Construction Mode"
- ▶ Tape, texture and paint
- ▶ Finish carpentry and all finish floors
- ▶ Thermostats, Manifolds Controller(s) and actuators

## Included, Pre-Plumbed

The following components are pre-plumbed inside the Warmsource unit:

- ▶ Automatic air vent
- ▶ Temperature and pressure (T&P) relief valve
- ▶ Expansion tank (preset at 15 PSI, can be reset with a bike pump and ball valve in the closed position)
- ▶ Grundfos primary circulator
- ▶ Grundfos constant pressure secondary circulator

## Included, Not Pre-Plumbed

The following are included with Warmsource but **NOT** pre-plumbed. Refer to the WCS Design Drawings for location and pipe sizing:

- ▶ Pressure reducing valve (maintains a constant water pressure of 12-18 PSI, and adds "make up" water for evaporation)
- ▶ Backflow preventer (required by code in many jurisdictions, it prevents water in the closed-loop system from mixing with the domestic water)
- ▶ 1 1/4" combo ball valve/hose bib
- ▶ Several smaller combo valves, for easy air purging (be sure to install in the correct location and water flow direction)

## WCS Design Drawings

Our WCS Design Drawings list all the necessary plumbing and mechanical materials. Reference this document regularly. Before proceeding, all boiler components must be pre-plumbed per the Lochinvar Noble Manual, including:

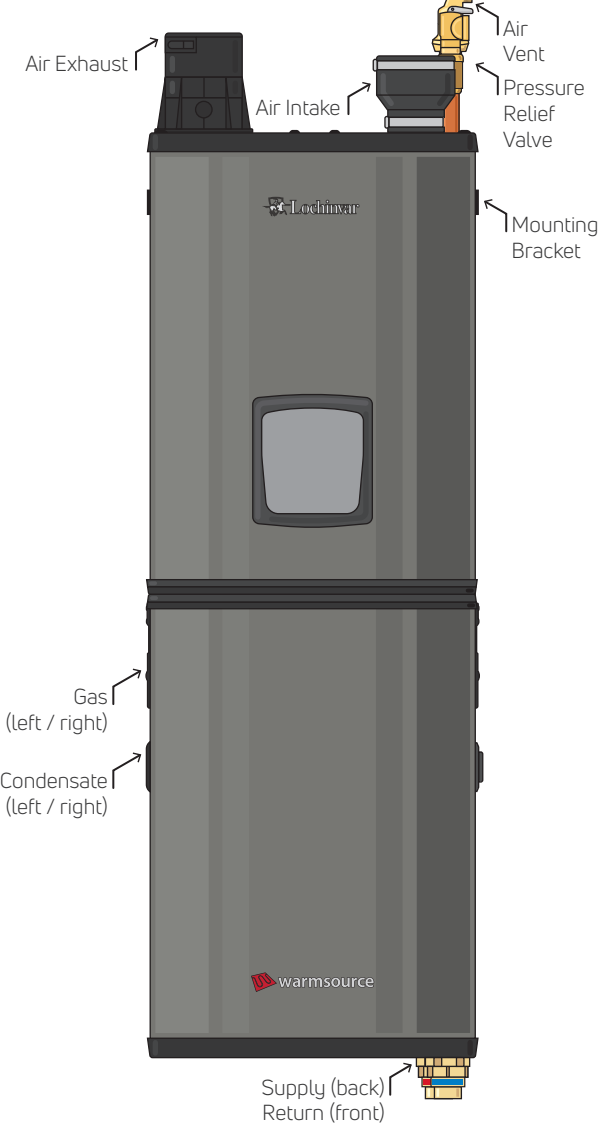
- ▶ PVC intake and exhaust venting (pg. 14-32)
- ▶ Gas (pg. 50-53) and condensation line (pg. 58)
- ▶ Pressure relief valve discharge (pg. 34)
- ▶ 1/2" cold water line from the domestic water supply to the pressure reducing valve (WCS Design Drawings)



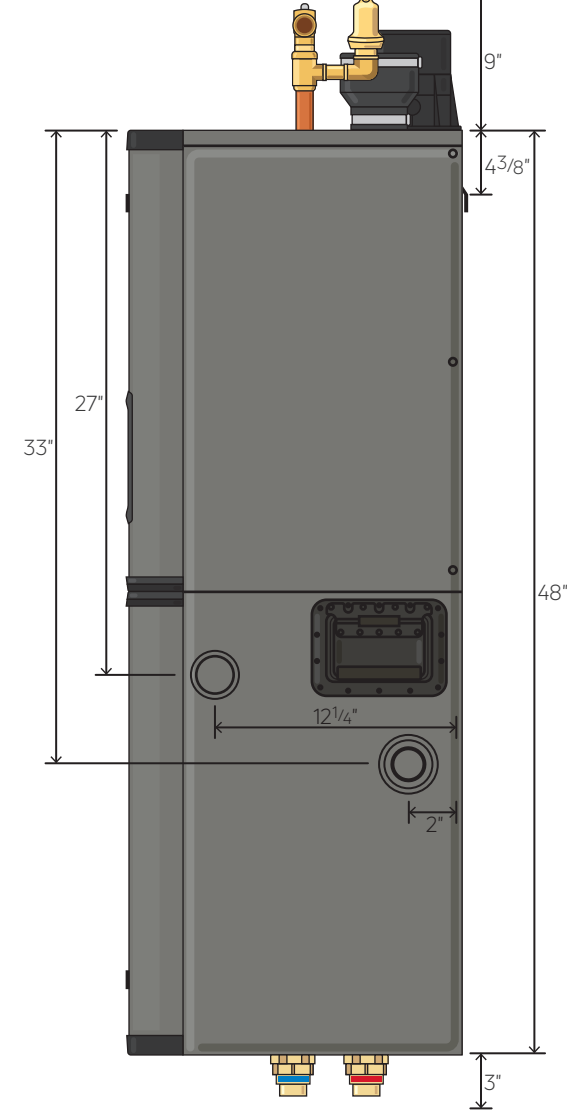
Failure to convert the boiler for propane can result in severe injury or death.

# WARMSOURCE SPECIFICATION

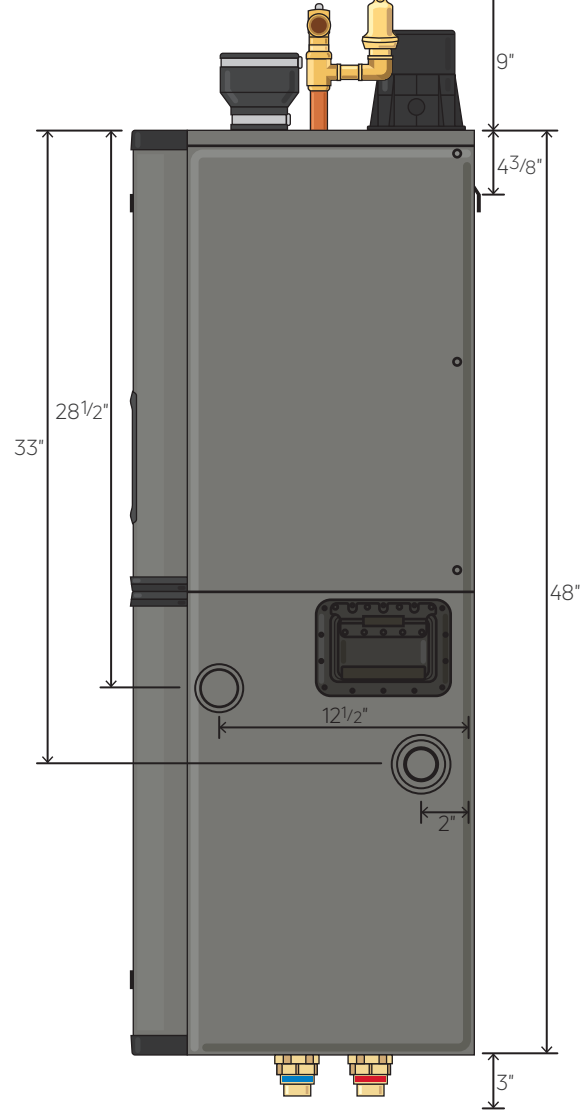
Front View



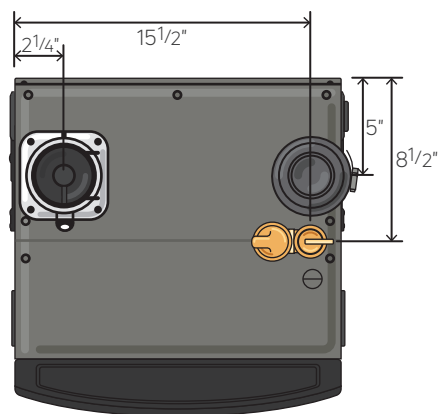
Side View: 80K



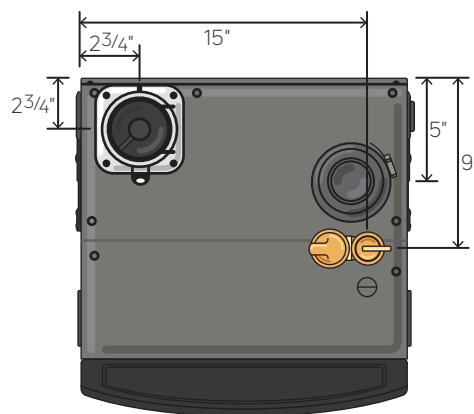
Side View: 110K, 150K, 199K



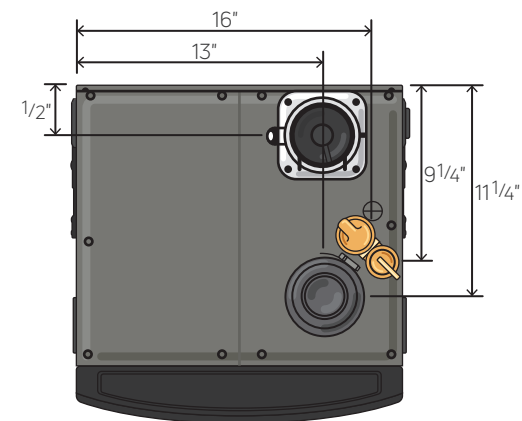
Top View: 80K



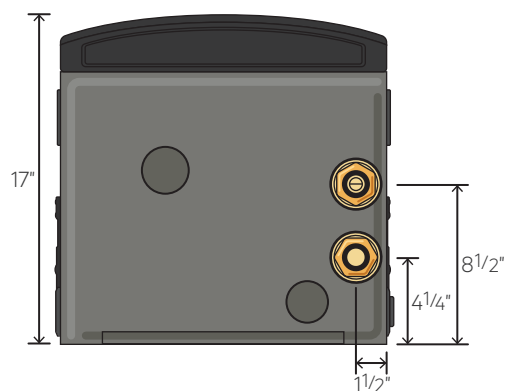
Top View: 110K



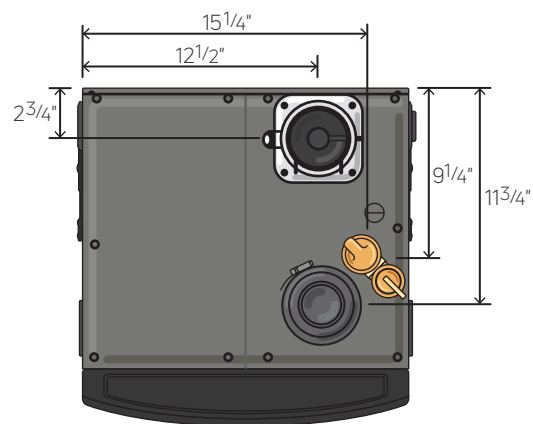
Top View: 199K



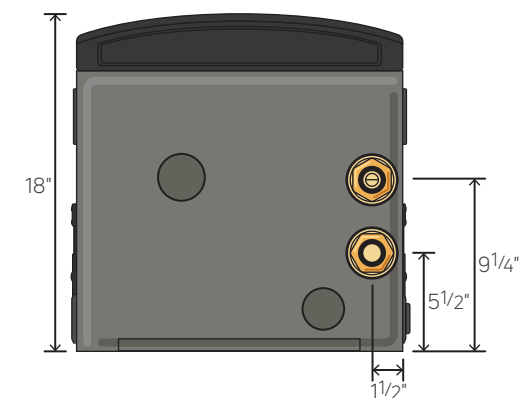
Bottom View: 80K



Top View: 150K



Bottom View: 110K, 150K, 199K





# WARMSOURCE PREPARATION

## Install Location

Like all gas-fired boilers, Warmsource makes some noise and may be disruptive if installed near a bedroom or common living space. Garages and basements are the better choice. See the Lochinvar Noble Manual (pg. 7-11) for additional requirements. Use of a drain pan is recommended.

## Installing Distribution Lines

After the tubing and manifolds, install the manifold distribution lines. Sizing, layout and length of the piping can be found in the WCS Design Drawings.

- Pressure test all distribution lines for 15 minutes at 100 PSI (International Mechanical Code, section 1208.1)

## Minimum Clearances

This illustration shows the recommended minimum dimensions for the Warmsource mechanical area. This image also depicts the space necessary for piping and mechanical components. The minimum depth is 40" for access and serviceability.

## Natural Gas or Propane

If your project is utilizing propane, a conversion kit is included in your shipment, but it has not been pre-plumbed. The boiler is equipped and tested to burn natural gas. WCS projects specified for liquid propane will require a propane conversion. **Failing to complete the necessary fuel conversion can lead to severe personal injury or death.** Directions for converting the boiler to liquid propane can be found in the Lochinvar installation manual (pg. 12). Completing this conversion before hanging the boiler will allow for ease of install.

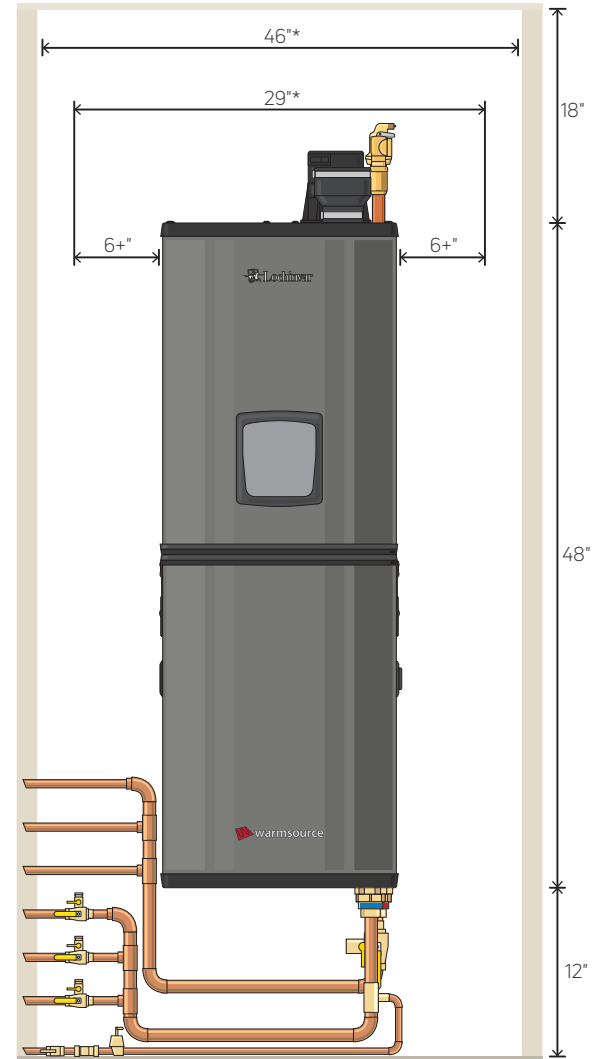
## Electrical Requirements

- Warmsource: 160W  
(requires own 110V GFI outlet)
  - Boiler
  - Pump
  - Smart Reset Controller (SRC)
- Manifold Controller (MC): 10W per loop  
(each requires own 110V GFI outlet)
- Thermostat: 5W each  
(each requires own 110V J-Box)



Warmsource dimensions:  
17W x 48H x 16<sup>3/4</sup>D (80K),  
17W x 48H x 17<sup>1/2</sup>D (110K, 150K, 199K)

To estimate labor costs, view the boiler page in the WCS Design Drawings to see how the manifold distribution lines should be plumbed.



\*29" width recommended for boiler only  
46" width recommended when including distribution lines



Install the Warmboard-supplied ball valves and hose bibs as shown in our Design Drawings for the proper filling and purging of air from the system.

Pre-plumb boiler components prior to drywall (pg.4)

# WARMSOURCE INSTALLATION

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## Securing Warmsource

- ▶ Double check code clearances and recommended minimum clearance dimensions (pg. 7)
- ▶ Fasten the mounting bracket to the wall (the use of two, 2"x 4" x 18" wood sleepers may be necessary. Securely fasten the sleepers to the wall studs, then mount the bracket to the sleepers)
- ▶ Once the bracket is secured, use the lifting handles to place Warmsource on to the mounting bracket (the unit is very heavy and requires two individuals to move safely)

## Connections

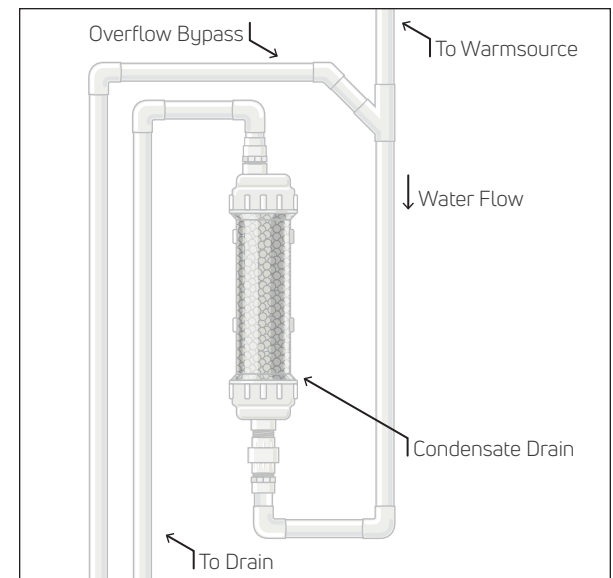
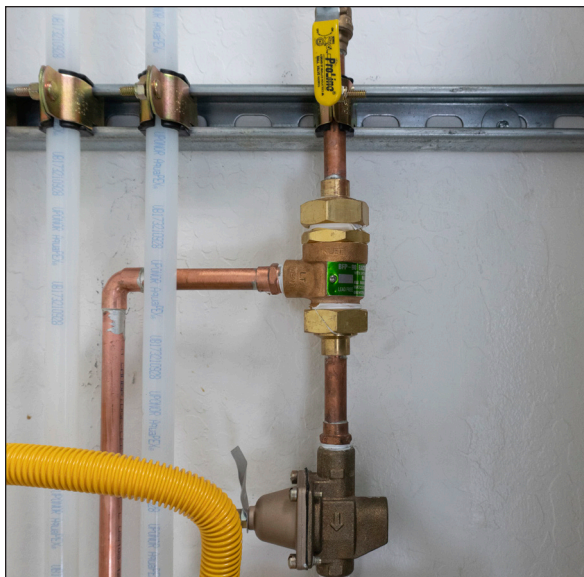
- ▶ Connect the PVC intake and exhaust lines, gas line, condensation discharge line and pressure relief discharge line per the Lochinvar Noble Manual
- ▶ Plumb the cold water line to the backflow preventer and the pressure reducing valve (WCS Design Drawings)
- ▶ Install all 1<sup>1</sup>/<sub>4</sub>" copper plumbing and primary distribution lines
- ▶ Install the condensate neutralizer (Lochinvar Noble Manual, pg. 58). If installing vertically instead of horizontally be sure to confirm the correct orientation (illustration)



Warmsource is very heavy and will require two people to lift and carry.



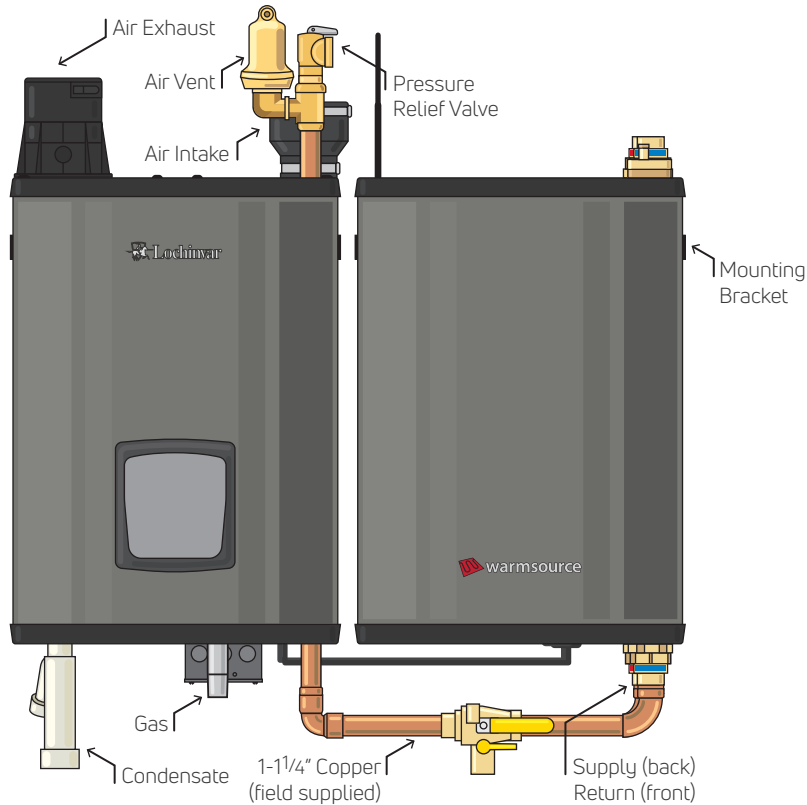
Exterior terminations are strongly recommended for intake and exhaust venting to minimize noise



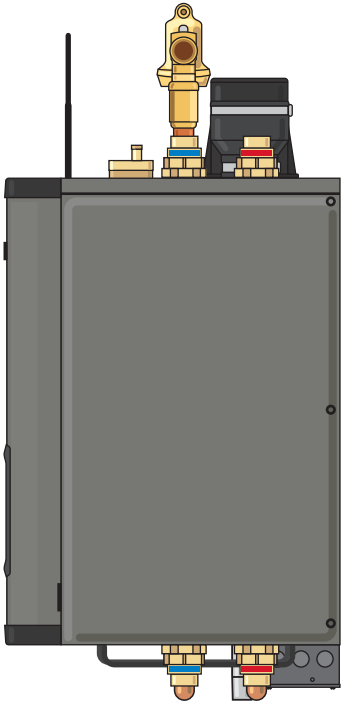
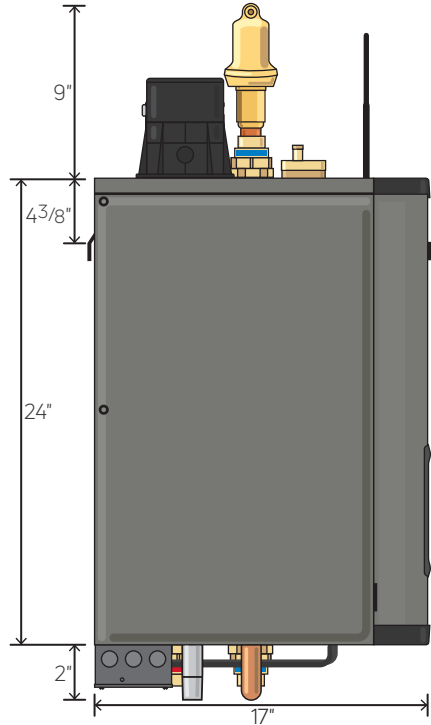


# WARMSOURCE FLEX SPECIFICATION

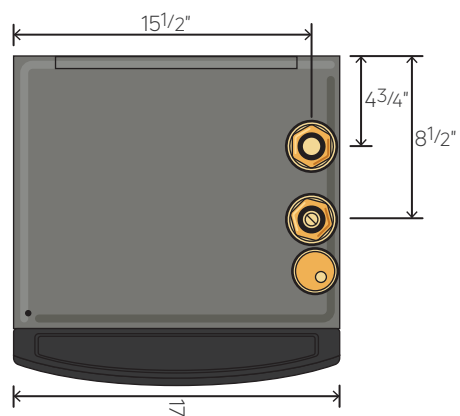
Front View



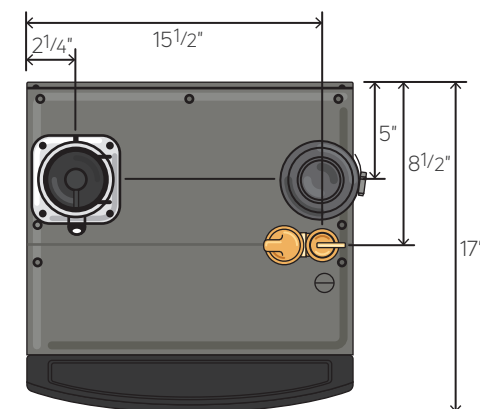
Side View: 80K



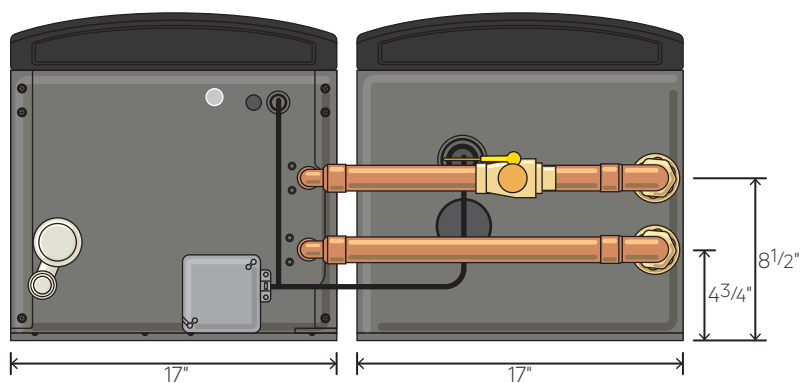
Top View (Warmsource):



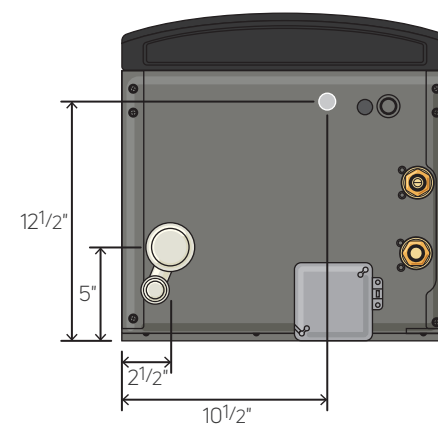
80K Boiler, Top View:



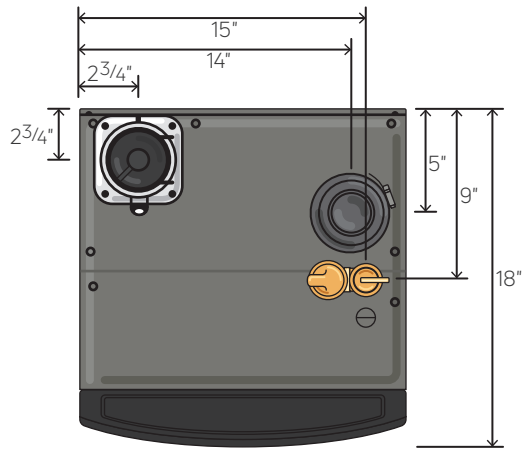
Bottom View:



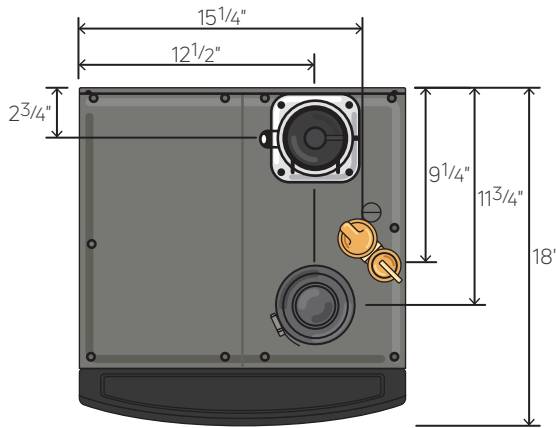
80K Boiler, Bottom View:



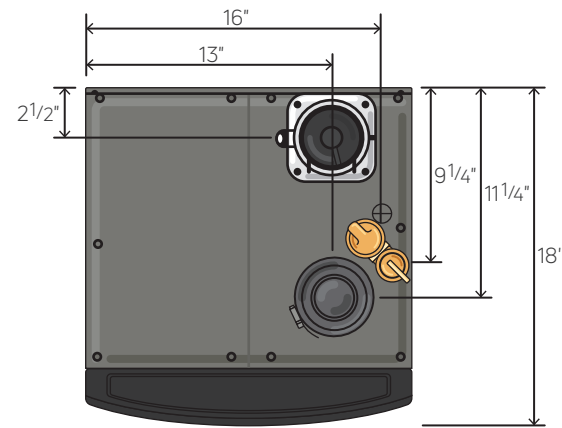
110K Boiler, Top View:



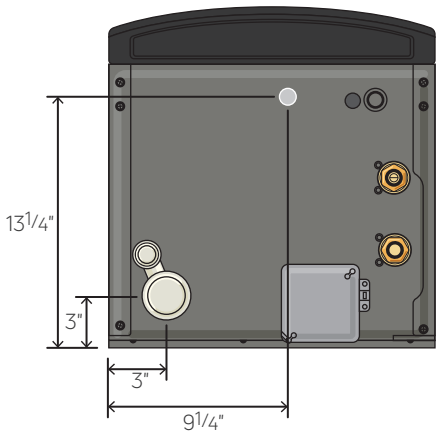
150K Boiler, Top View:



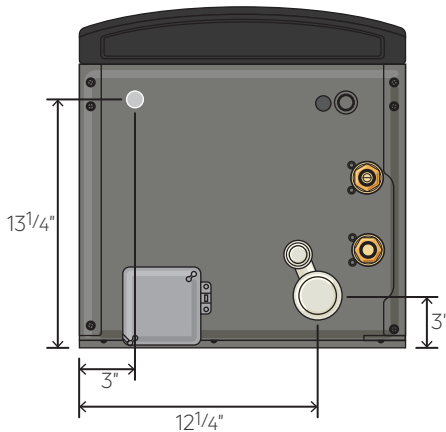
199K Boiler, Top View:



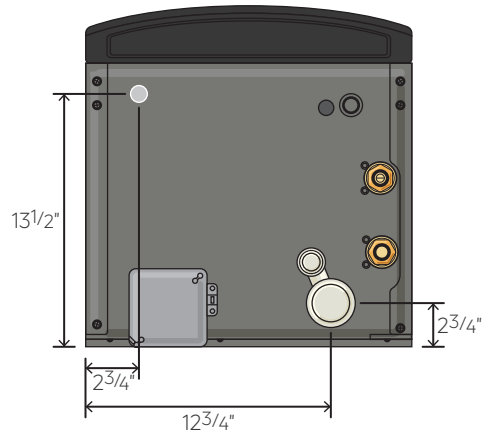
110K Boiler, Bottom View:



150K Boiler, Bottom View:



199K Boiler, Bottom View:



# WARMSOURCE FLEX PREPARATION

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## Install Location

Like all gas-fired boilers, Warmsource makes some noise and may be disruptive if installed near a bedroom or common living space. Garages and basements are the better choice. See the Lochinvar Noble Manual (pg. 7-11) for additional requirements. Use of a drain pan is recommended.

## Installing Distribution Lines

After the tubing and manifolds, install the manifold distribution lines. Sizing, layout and length of the piping can be found in the WCS Design Drawings.

- ▶ Pressure test all distribution lines for 15 minutes at 100 PSI (International Mechanical Code, section 1208.1)

## Minimum Clearances

This illustration shows the recommended minimum dimensions for the Warmsource mechanical area. This image also depicts the space necessary for piping and mechanical components. The minimum depth is 40" for access and serviceability.



Warmsource Flex dimensions:  
80K: 17W x 24H x 17D ea.  
110,150,199K: 17W x 24H x 17D, 17W x 24H x 18D

To estimate labor costs, view the boiler page in the WCS Design Drawings to see how the manifold distribution lines should be plumbed.

## Electrical Requirements

- ▶ Warmsource: 160W  
(requires own 110V GFI outlet)
  - Boiler
  - Pump
  - Smart Reset Controller (SRC)
- ▶ Manifold Controller (MC): 10W per loop  
(each requires own 110V GFI outlet)
- ▶ Thermostat: 5W each  
(each requires own 110V J-Box)

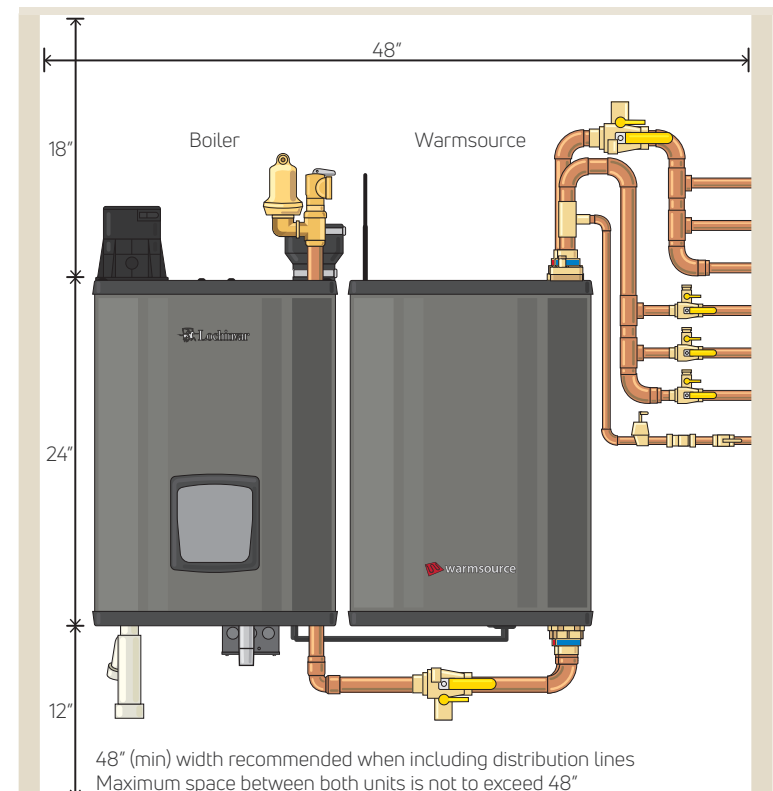
## Natural Gas or Propane

If your project is utilizing propane, a conversion kit is included in your shipment, but it has not been pre-plumbed. The boiler is equipped and tested to burn natural gas. WCS projects specified for liquid propane will require a propane conversion. **Failing to complete the necessary fuel conversion can lead to severe personal injury or death.** Directions for converting the boiler to liquid propane can be found in the Lochinvar installation manual (pg. 12). Completing this conversion before hanging the boiler will allow for ease of install.



Install the Warmboard-supplied ball valves and hose bibs as shown in our Design Drawings for the proper filling and purging of air from the system.

Pre-plumb boiler components prior to drywall (pg.4)



# WARMSOURCE FLEX INSTALLATION

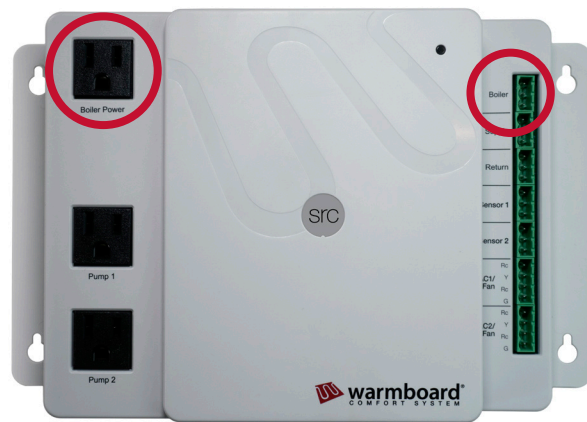
## Securing Warmsource

- ▶ Double check code clearances and recommended minimum clearance dimensions
- ▶ Fasten the mounting brackets to the wall (use two, 2"x 4" wood sleepers as necessary. Securely fasten the sleepers to the wall studs, then mount the bracket to the sleepers)
- ▶ Once the bracket is secured, hang both units on the wall and secure from below

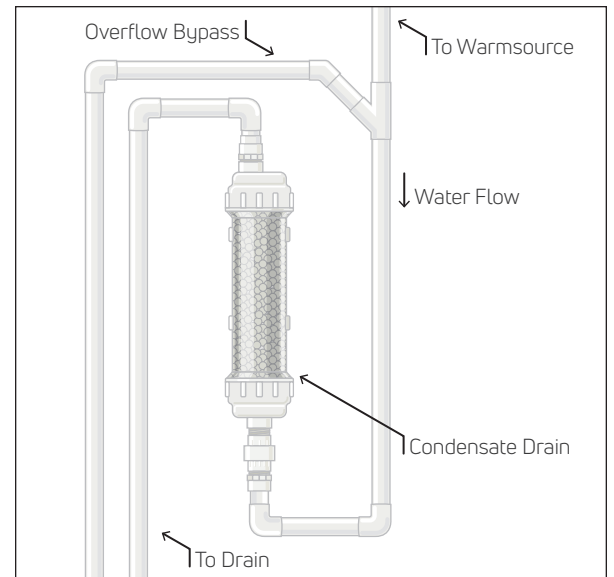


## Connections

- ▶ Connect the PVC intake and exhaust lines, gas line, condensation discharge line and pressure relief discharge line per the Lochinvar Noble Manual
- ▶ Plumb the cold water line to the backflow preventer and the pressure reducing valve (WCS Design Drawings)
- ▶ Plumb Warmsource Flex to the boiler through the 1 $\frac{1}{4}$ " supply and return copper connections (boiler fitting is 1" sweat)
- ▶ Install all 1 $\frac{1}{4}$ " copper plumbing and primary distribution lines
- ▶ Install the condensate neutralizer (Lochinvar Noble Manual, pg. 58). If installing vertically instead of horizontally be sure to confirm the correct orientation (illustration)
- ▶ Plug the 110 volt plug from the boiler into the SRC port labeled "Boiler Power". Plug the boiler control cable into the port labeled "Boiler" (image)



Exterior terminations are strongly recommended for intake and exhaust venting to minimize noise





# FILLING & PURGING

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Once the system is plumbed and pressure tested with air (T&M Installation Guide), the next step is to fill the system with water and purge the air in the lines.

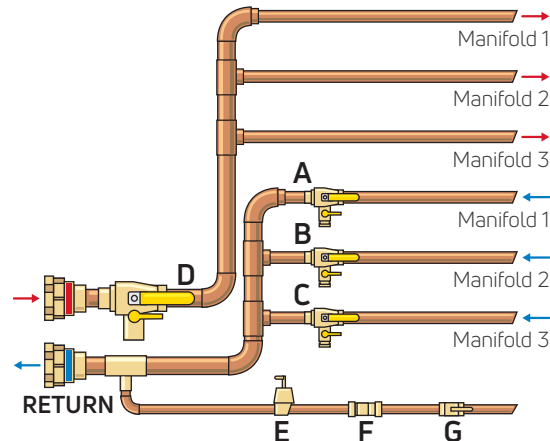
Air in a closed loop heating system can create noise and inhibit the flow of water. Follow these steps to save hours or days of frustration.

## Purge Air, Fill with Water

Follow these steps to fill and purge air the system. This should be done one manifold at a time. In this example, we'll begin with Manifold 1 (illustration).

- ▶ Thread a discharge hose on to valve **A**, and ensure the other end of the hose reaches the exterior of the house (or drain)
- ▶ On valve **A**, make sure the ball valve is closed and the hose bib is open
- ▶ Close all hose bibs and ball valves on the remaining manifold return lines (**B, C**)
- ▶ On the supply side, close the hose bib and open ball valve **D**

- ▶ To fill Warmsource and the Manifold 1 loops with water (city or well supply), lift the fast fill lever on the pressure reducing valve **E**
- ▶ Check each loop flow meter on Manifold 1 and confirm good flow is taking place. You may need to open the loop flow restrictors (pg. 15, step 4)
- ▶ Continue filling the system with water for 10–15 minutes until air cannot be seen or heard escaping the hose
- ▶ Close the fast fill lever, then slowly close hose bib **A**
- ▶ Manifold 1 is now complete. Repeat this process for each manifold (**B, C**)
- ▶ Once complete, ensure the pressure gauge located inside Warmsource reads 12–18 PSI



## Propylene Glycol

In some situations, it may be necessary to add propylene glycol to prevent freezing. To do this, open ball valve **D** and add via the hose bib. Use the manufacturer's recommendation for the correct mix (generally 10–30%). **ONLY** use propylene glycol for freeze protection.

To fill the system with a propylene glycol/water solution, we recommend a Liberty 331 Portable Transfer Pump, or equivalent ([homedepot.com](http://homedepot.com)). To maintain the propylene glycol feed for many years, we recommend the Axiom MF200 Pressure Pal.

- A** 3/4" Combo ball valve/hose bib\*
- B** 3/4" Combo ball valve/hose bib\*
- C** 3/4" Combo ball valve/hose bib\*
- D** 1 1/4" Combo ball valve/hose bib
- E** Fast fill lever/pressure reducing valve
- F** Backflow preventer
- G** 1/2" ball valve

\*Size according on WCS Design Drawings



Reference the Lochinvar Noble Manual (pg. 59) for allowable mineral levels and quality of the water. Filtered water or a corrosion inhibitor may be required.

# CONSTRUCTION MODE

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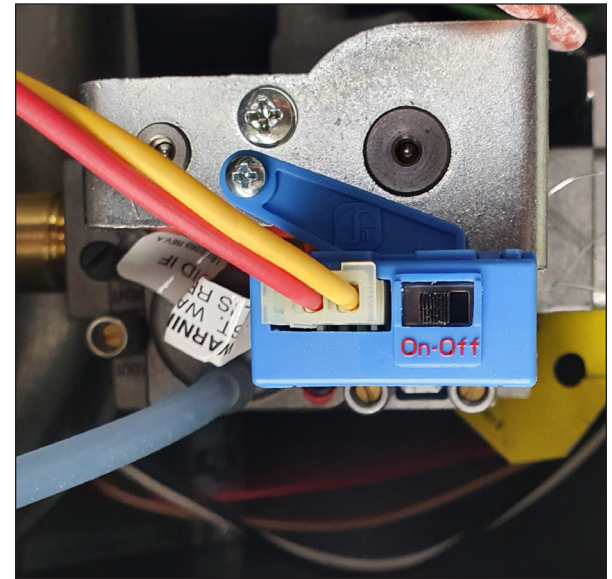
Once the system is properly filled, use "Construction Mode" to heat the structure before thermostats, MC(s) or actuators are installed. Construction Mode offers the opportunity to:

- ▶ Listen for air noises while confirming flow rates and water temperatures
- ▶ Heat an active job site and hasten the release of moisture from building materials (paint, plaster, hardwood flooring and other wood materials)

Before firing boiler, ensure the gas switch is set to **ON** (image) and perform final checks as noted in Lochinvar Noble Manual (pg. 62-63)

- ▶ **Step 1:** Remove the cover from Warmsource
- ▶ **Step 2:** Locate the Smart Reset Controller (SRC), then plug the Construction Mode jumper into the "Sensor 2" terminal. Use the white jumper for 100°F water, the red jumper for 120°F
- ▶ **Step 3:** Plug Warmsource into the 110 volt outlet and confirm the system is **ON** by viewing the LCD screen on the front of the unit (Warmsource will reach the target temperature in about 10 minutes)
- ▶ **Step 4:** Return to each manifold and adjust the flow rates of each loop
  - 1 Unthread (and discard) the white caps from the return side of the manifold
  - 2 Remove the red caps on the supply side and adjust the black knobs beneath. Flow rates for each loop should be equal to, or greater than, those noted in the WCS Design Drawings. When done, replace the red caps

It is required to use a Combustion Analyzer while in Construction Mode to verify, and adjust, the carbon monoxide output. Values **MUST** match those listed in the Lochinvar Noble Manual (pg. 67, table 10A). Failure to do so could result in injury or death.



Connect Warmsource to an appliance timer to limit the hours the system runs in Construction Mode and reduce energy use. Be sure to remove before installing thermostats and actuators.



Warmsource is pre-set at our factory to maintain proper temperature control and operation. **DO NOT** adjust.

Purge all air from the gas line before firing.

You **MUST** use a Combustion Analyzer while in Construction Mode.

**DO NOT** use Construction Mode after actuators have been installed.

If operating Warmsource during Construction Mode, you **MUST** keep the venting clear of dust and debris. Be sure to service and clean the heat exchanger prior to normal operation. Failure to do so could cost hundreds of dollars in repair fees.



# MANIFOLD CABINET

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## Preparation

Before installing the controls, an electrician **MUST** review the electrical page of your WCS Design Drawings and note necessary materials, locations, voltage and amperage of all electrical components.

## Tubing and Labeling

Included with your controls is a series of labels to adhere to each supply and return loop beneath the manifold. Appropriate use of these labels will ensure each loop is accurately labeled for diagnostic issues. These color-coded labels coincide with the color labels on the side of the Manifold Controller (MC) and those displayed in your WCS Design Drawings.

## Controls

Warmboard Controls consist of the following:

- ▶ 110 volt thermostats (one per heating zone)
- ▶ 110 volt Manifold Controller (one per manifold)
- ▶ 24 volt solenoid valve loop actuators (one per loop, powered by the MC)
- ▶ Smart Reset Controller (inside Warmsource)



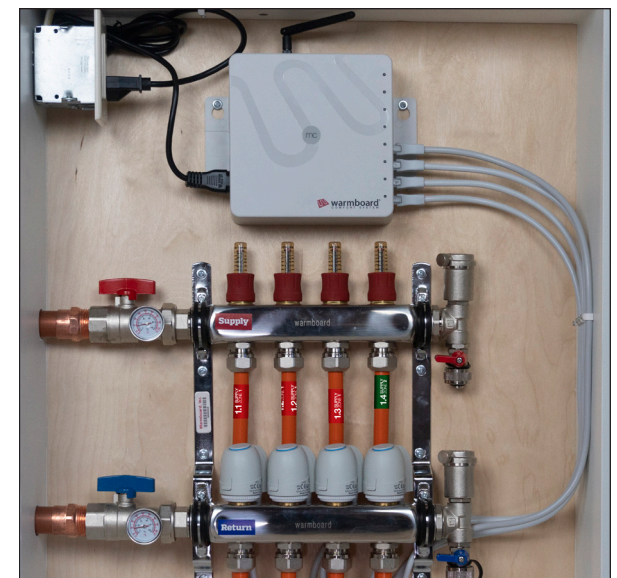
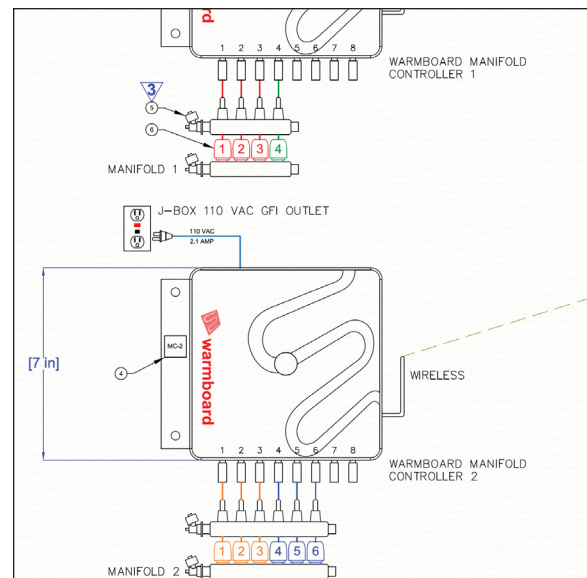
Before installing the controls, you **MUST** disable Construction Mode by removing the jumper on the SRC.

## Installing the MC

- ▶ Use the provided screws to mount each Manifold Controller (MC) inside the manifold cabinet specified by the WCS Design Drawings
- ▶ Plug the MC into the nearby 110 volt outlet

## Installing the Actuators

- ▶ Attach actuators to each port on the return manifold
- ▶ Connect each actuator wire to the appropriate port on the side of the MC, which is pre-labeled and color coded. Refer to the WCS Design Drawings as needed





# THERMOSTATS

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Warmboard Comfort System offers 3 different types of thermostats:

- ▶ **Heating**  
Controls the heat in one zone of the house
- ▶ **Cooling/Heating**  
Controls one cooling zone and one heating zone (limit 2 per Warmsource)
- ▶ **Floor Warming/Heating**  
Controls the heat in one bathroom and offers a warming feature which keeps the floor warm even when heat is not called for (can be enabled/disabled by the homeowner)

## Thermostat Installation

Every thermostat **MUST** be installed in the location specified in the WCS Design Drawings. Failure to do so will cause the system to behave inaccurately. If there are any discrepancies regarding the thermostat or zoning, contact us immediately.

- ▶ Remove the appropriate thermostat from the box
- ▶ Grip the "face" of the thermostat on the sides with one hand, and the back of the thermostat with the other hand, then slowly separate the pieces
- ▶ Set the face to the side
- ▶ Connect the hot and neutral (black and white) wires from the back piece to the connections in the junction box, then fasten into place with the provided screws – be sure the arrows point "up" (photo)
- ▶ Snap the face plate back into place
- ▶ Repeat for each thermostat, always checking to make sure they are installed in the correct location



After texture and paint, each thermostat **MUST** be installed in the correct location in order for the system to perform properly.

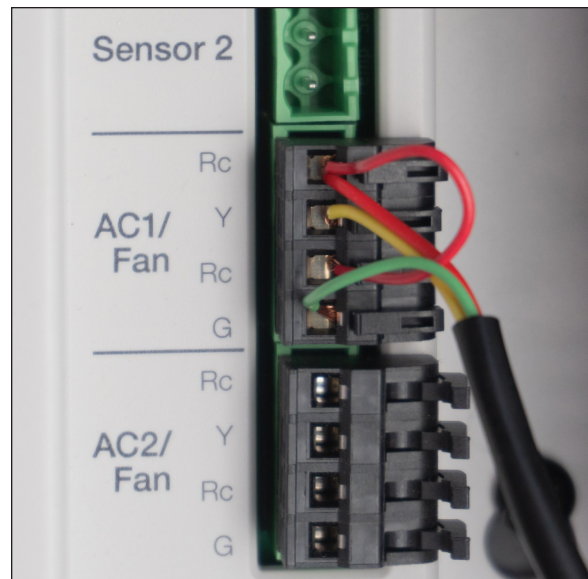


# AIR CONDITIONING

## AC Installation

Warmboard thermostats offer single-stage air conditioning control. Connecting an AC system to WCS is very similar to wiring a 24v thermostat from an AC unit, just follow the steps below.

- ▶ Remove the front cover from Warmsource
- ▶ Locate terminal connection "AC1/Fan" on the Smart Reset Controller (SRC)
- ▶ Connect the wires from the AC unit to the terminal block accordingly:
  - RC**: 24v power (red wire)
  - Y**: Cooling Call (yellow wire)
  - G**: Fan (green wire)
- ▶ To activate the "Fan Only" feature, use a small jumper wire between the two RC ports on the terminal block
- ▶ Repeat for "AC2/Fan" if using air conditioning across two cooling zones



Some AC solutions require their own proprietary controls. In these instances, our thermostats **CANNOT** be used to control the cooling.



# TESTING THE SYSTEM

## Prior Steps

It is imperative that all previous tasks have been completed before testing or operating the system.


- ▶ Use of Construction Mode to test the boiler and flow rates on each loop
- ▶ Disable Construction Mode by removing the jumper from the appropriate sensor port
- ▶ If Warmsource operated in Construction Mode near and dust or debris, service and clean the heat exchanger before beginning normal operation
- ▶ Successful installation of all electrical components (Manifold Controllers, actuators, thermostats)

Once these steps have been completed sequentially, proceed to the next steps.


## Testing the Controls

With all components installed, it's time to test each zone independently to ensure the thermostats are accurately controlling each zone.

To begin, go to the Zone 1 thermostat, then follow the instructions below.

- ▶ Tap the thermostat screen
- ▶ Next, tap the  button in the lower right corner and choose "Tutorial" to familiarize yourself with the controls
- ▶ Once complete, go to "Settings" then "Support" and tap "Test Zone"
- ▶ Go to the manifold cabinet for this zone. On the Manifold Controller you will see a green light on the loops requesting a call for heat
- ▶ After 5 minutes, the green lights will turn blue, indicating that the actuators have opened and water is flowing to the zone
- ▶ If something does not appear to be working properly, consult your Warmboard Engineered Drawings
- ▶ After 15 minutes, the test will end
- ▶ Repeat this process for each thermostat

## Final Checklist

- ▶ A flame icon  will appear on the thermostat when there is a call for heat. It will take 5-7 minutes for the boiler and pump(s) to receive this signal and fire up
- ▶ When receiving a call for heat, lights on the pump(s) will engage and water will begin to circulate. If not, reference the pump installation manual
- ▶ When there is a call for heat, water temperatures on the boiler LCD should read between 90–140°F
- ▶ Match the specifications in the Warmboard Design Drawings for each loop and zone to ensure the system operates smoothly
- ▶ Confirm the Warmboard-supplied tubing labels are adhered to each loop to accurately identify each loop and zone from inside the manifold cabinet



**NOTE:** Warmboard thermostats have an "Off" setting of 55°F for freeze protection.



Make sure all supply and return tubing labels have been affixed to the appropriate loop at the manifold location.

After a zone calls for heat, the actuators will take approximately 5 minutes to open and begin heat flow.

**NOTICE:** Customer is solely responsible for determining whether the products and the information contained in this installation guide are appropriate for Customer's use and are in compliance with applicable laws because the applicable laws related to the installation and use of this product may vary from one location to another and may change with time. Customer represents and warrants that Customer is required to check current local laws, building codes and other local requirements and that all local requirements will be adhered to in connection with the installation of this product.

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