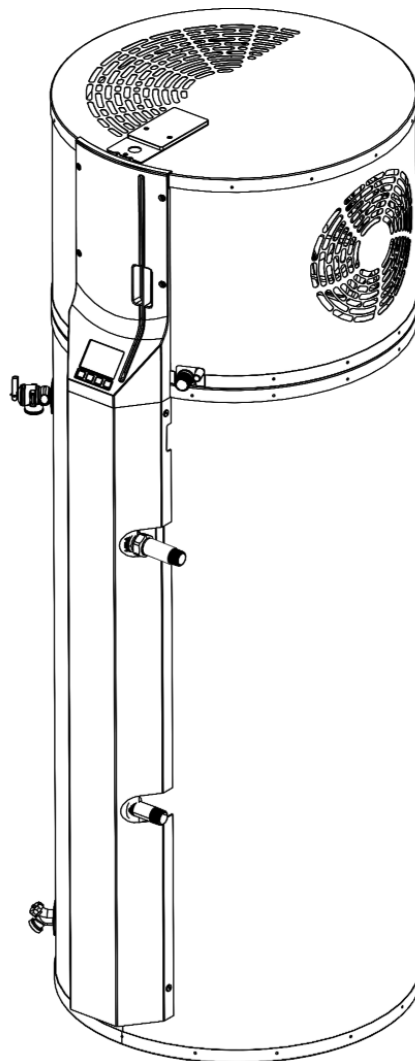


Cala°

INSTALLATION & OPERATION MANUAL

RESIDENTIAL HEAT PUMP WATER HEATER
65 GALLONS
MODEL RDH6524M1



Intertek

5034017

CONFORMS TO UL STDs
60335-1, 60335-2-40, 174

INSTALLATION CHECKLIST.....	3
INTRODUCTION.....	4
GETTING TO KNOW YOUR WATER HEATER.....	4
READ THIS MANUAL!.....	6
IMPORTANT SAFETY INFORMATION.....	7
GENERAL SAFETY INFORMATION AND TERMINOLOGY.....	7
WATER TEMPERATURE SAFETY.....	8
TEMPERATURE & PRESSURE RELIEF VALVE.....	9
TRANSPORTING, LIFTING, AND BRACING YOUR UNIT.....	9
SERVICING AND SHUTDOWN.....	11
OTHER RISKS.....	11
PREPARING FOR INSTALLATION.....	12
READ BEFORE INSTALLING.....	12
TOOL CHECKLIST.....	13
GENERAL CONSIDERATIONS.....	13
CHECKING FOR CLEARANCES.....	14
DETERMINING IF DUCTING IS REQUIRED.....	15
INSTALLING YOUR WATER HEATER.....	16
GENERAL GUIDELINES.....	16
INSTALLATION DIAGRAM.....	17
POSITIONING YOUR WATER HEATER.....	18
CONNECTING THE PLUMBING LINES.....	19
PLACING THE LEAK DETECTOR.....	23
WIRING YOUR WATER HEATER.....	24
FILLING YOUR WATER HEATER.....	28
INSTALLING DUCTING.....	29
SETUP AND OPERATION.....	32
POWERING ON THE UNIT.....	32
ADJUSTING YOUR HOT WATER TEMPERATURE.....	34
REMOVING/RE-INSTALLING THE CENTRAL COLUMN.....	42
RESETTING THE ENERGY CUTOFF (ECO).....	45
CALA INTELLIGENT PREFERENCES.....	47
CARE AND MAINTENANCE.....	49
RECOMMENDED MAINTENANCE SCHEDULE.....	49
CLEANING THE AIR FILTER.....	50
CHECKING THE CONDENSATE LINE.....	50
CHECKING THE TEMPERATURE & PRESSURE RELIEF VALVE.....	51
FLUSHING THE TANK.....	52
REPLACING THE ANODE ROD.....	53
TROUBLESHOOTING.....	57
WIRING DIAGRAM.....	61
REPLACEMENT PARTS.....	62

INSTALLATION CHECKLIST

This list is provided for general guidance only - it does NOT replace reading this Manual.

Installation Requirements

- ☐ Unit will be installed indoors and protected from freezing and water ingress at all times
- ☐ Installation clearances are sufficient
- ☐ Verify if ducting is required based on room size
- ☐ Ground is level and can support weight of FILLED unit
- ☐ No flammable materials stored near Water Heater
- ☐ Circuit Breaker is properly rated for the Water Heater
- ☐ Verify if a Thermal Expansion Tank is needed
- ☐ Verify if a Water Pressure Regulator is needed
- ☐ Verify if a Condensate Pump is needed
- ☐ Home water pressure is within acceptable range

Before Installing

- ☐ Read Manual and understand all safety precautions
- ☐ Check local, state, and federal codes
- ☐ Drain Pan is available
- ☐ Condensate Line is available
- ☐ Plumbing fittings and connections are available
- ☐ Tools gathered
- ☐ Helper is available to move unit
- ☐ Old unit is removed
- ☐ Turn OFF Water Heater Circuit Breaker before installation
- ☐ Turn OFF Cold Water Shut-Off Valve before installation
- ☐ Drain Valve is closed
- ☐ Temperature & Pressure Relief Valve is closed

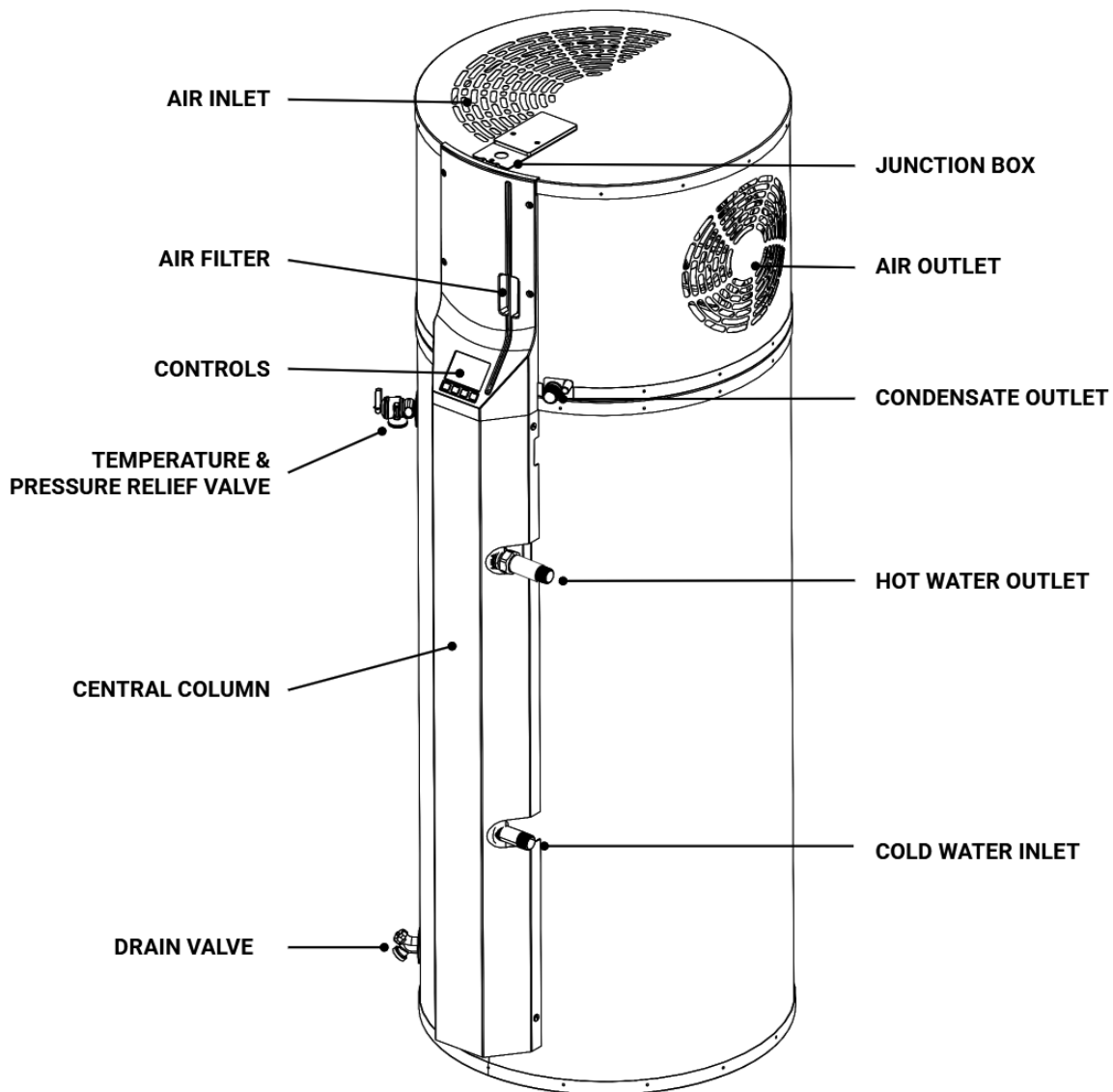
During Installation

- ☐ Hot work is conducted at least 6 feet away from the unit, if applicable
- ☐ Air Filter removal is not blocked by plumbing routing
- ☐ Hot Water Outlet insulation is NOT removed
- ☐ Drain Pan is properly installed and routed to suitable drainage
- ☐ Condensate line is properly installed and routed to suitable drainage
- ☐ Discharge pipe is properly installed and routed to suitable drainage
- ☐ Cold Water Inlet is connected to Cold Water line from home
- ☐ Hot Water Outlet is connected to Hot Water line from home
- ☐ Water Heater is wired to Circuit Breaker
- ☐ Water Heater is properly filled BEFORE powering on and first use
- ☐ Circuit Breaker is turned ON after filling and before first use
- ☐ On-screen system setup is complete

INTRODUCTION

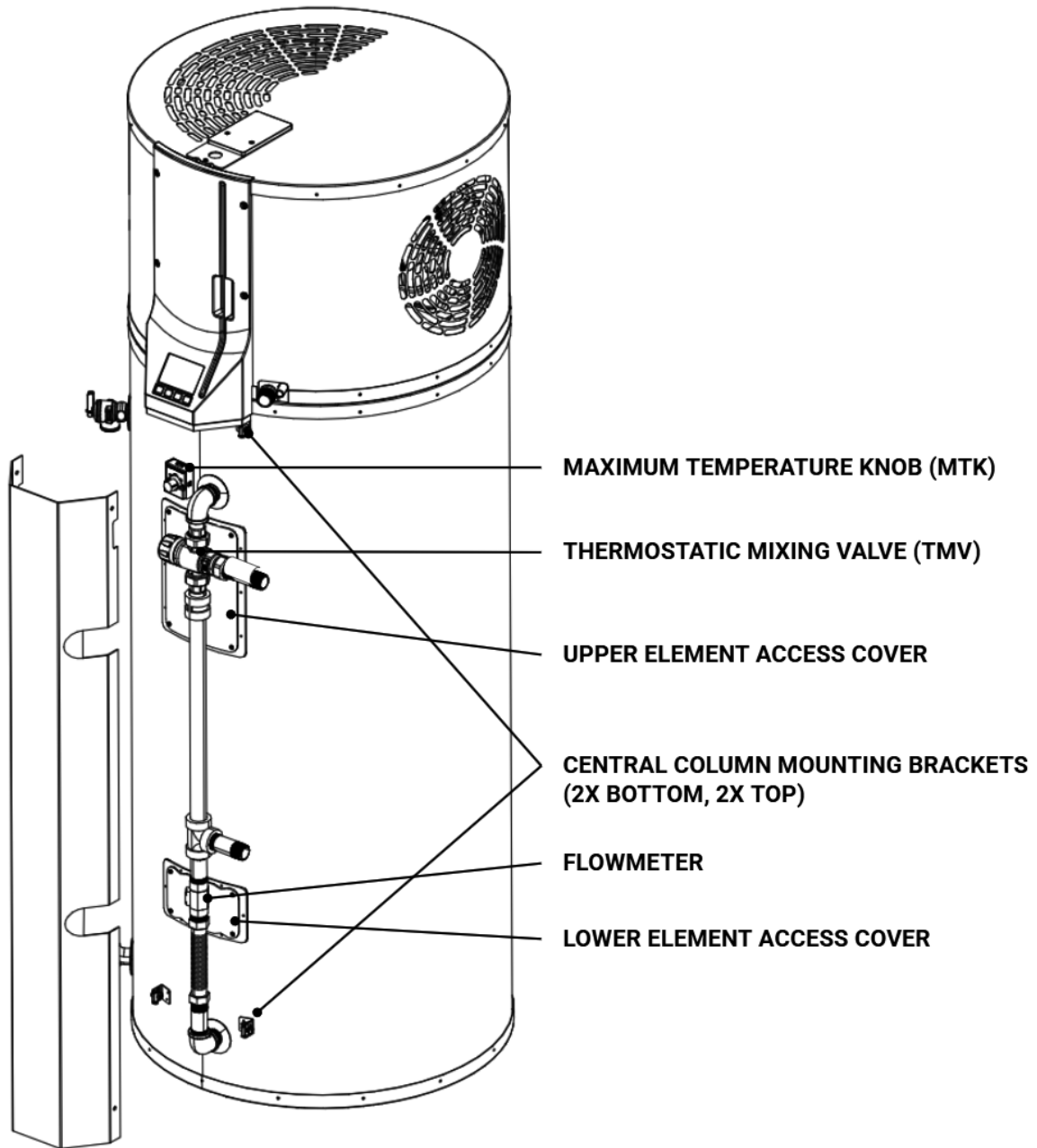
GETTING TO KNOW YOUR WATER HEATER

Note - diagrams in this Manual are representative, minor differences may exist between diagrams and your Water Heater. In some cases, abbreviations may be used as shown in the diagrams. If you have any questions or concerns, please contact support@calasystems.com or call 877-684-2252 (877-684-CALA).



INTRODUCTION

GETTING TO KNOW YOUR WATER HEATER



INTRODUCTION

READ THIS MANUAL!

SUPPORT@CALASYSTEMS.COM

877-684-2252 (877-684-CALA)

DO NOT DESTROY THIS MANUAL. PLEASE READ IT CAREFULLY AND KEEP IT IN A SAFE PLACE FOR FUTURE REFERENCE.

READ ALL SAFETY INFORMATION BEFORE INSTALLING, OPERATING, AND/OR SERVICING THE UNIT. IF YOU NEED HELP OR HAVE FEEDBACK, PLEASE CONTACT CALA SYSTEMS.

INSPECT THE WATER HEATER FOR DAMAGE AS SOON AS IT IS DELIVERED. IF DAMAGE IS FOUND, IMMEDIATELY CONTACT CALA SYSTEMS.

The purpose of this manual is to provide the Installer and/or Owner with the basic safety precautions, instructions, and recommendations for the proper installation, operation, service, and care of the water heater.

It is imperative that anyone who attempts to install, operate, or service this Water Heater read these instructions carefully and follow all safety precautions. If you do not understand these instructions please contact Cala Systems or your Installer before proceeding.

Do not attempt repairs or service that is not explicitly outlined in this Manual. Contact a qualified service technician or Cala Systems.

THIS UNIT IS DESIGNED TO BE INSTALLED INDOORS IN A CLEAN, DRY ENVIRONMENT AND PROTECTED FROM FREEZING AND WATER INGRESS AT ALL TIMES.

Ideal installation locations include a basement, garage, crawlspace, or a ventilated utility closet.

Extra consideration should be given if installing the Water Heater in attics, upper floors, and other locations susceptible to water damage. Always install a Drain Pan under your Water Heater and ensure that the floor can support the weight of the FILLED unit. More information is available in the **PREPARING FOR INSTALLATION** and **INSTALLING YOUR WATER HEATER** sections.

IMPORTANT SAFETY INFORMATION



DANGER - for your safety you **MUST** read and follow all safety information in this Manual to minimize the risk of fire, explosion, electric shock, property damage, personal injury, or death. If you do not understand the instructions or aren't sure you can follow them appropriately, **STOP** and contact Cala Systems or your installation professional for support.

GENERAL SAFETY INFORMATION AND TERMINOLOGY

Ensure you understand and follow the safety symbols and terminology below before installing, operating, and/or servicing your Water Heater.



WARNING - Indicates recommendations that require elevated attention.



DANGER - Indicates general hazards that could cause serious injury or death.



ELECTRIC SHOCK - Indicates electrical hazards that could cause serious injury or death.


This appliance is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

IMPORTANT SAFETY INFORMATION

WATER TEMPERATURE SAFETY

Scalding Danger

	<p>Water temperature over 125°F (52°C) can cause severe burns instantly or death from scalds.</p> <p>Children, disabled and elderly are at highest risk of being scalded.</p> <p>See instruction manual before setting temperature at water heater.</p> <p>Feel water before bathing or showering.</p> <p>Temperature limiting valves are available, see manual.</p>
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Temperature and Time Causing Severe Burns

TEMPERATURE	TIME FOR 1st DEGREE BURN
110°F (43°C)	Normal Shower Temp
116°F (47°C)	35 minutes
122°F (50°C)	1 minute
131°F (55°C)	5 seconds
140°F (60°C)	2 seconds
149°F (65°C)	1 second
154°F (68°C)	Instantaneous

Source: US Consumer Product Safety Commission

Thermostatic Mixing Valve and Hot Water Temperature

This Water Heater is equipped with a factory-installed Thermostatic Mixing Valve complying with ASSE 1017, the standard for *Performance Requirements for Temperature Actuated Mixing Valves for Hot Water Distribution Systems*, and periodically inspected by a Nationally Recognized Testing Laboratory. The Thermostatic Mixing Valve on this Water Heater has been factory set to no higher than 125°F and is suitable for Demand Response applications.

The Thermostatic Mixing Valve controls the water temperature delivered to your home by mixing hot water from the Water Heater with colder water from the home's cold water line to achieve the desired mixed/delivered hot water temperature.

See **SETUP AND OPERATION** for how to adjust the Thermostatic Mixing Valve, and more info.

IMPORTANT SAFETY INFORMATION

Point-of-Use Mixing Valves

To reduce the risk of unusually hot water reaching the taps in your home, consider installing Point-of-Use Mixing Valves at each tap. Note that these valves may limit the tap temperature regardless of the water temperature coming from the Water Heater.

Temperature Programming

Your Water Heater does NOT require manual temperature programming to operate. Your unit learns your home's unique hot water habits and automatically adjusts heating to maintain the optimal temperature in your tank. However, you may optionally adjust various temperature settings based on your needs and preferences. See **SETUP AND OPERATION** for more info.

TEMPERATURE & PRESSURE RELIEF VALVE



WARNING - To reduce the risk of excessive temperatures and pressure in this Water Heater, a Temperature & Pressure Relief Valve has been factory installed complying with *ANSI Z21.22*, the standard for *Relief Valves and Automatic Gas Shutoff Devices for Hot Water Supply Systems*, and is periodically inspected by a Nationally Recognized Testing Laboratory to ensure compliance with this standard. The Temperature & Pressure Relief Valve is marked with a maximum set pressure not to exceed the working pressure of the Water Heater. If this Valve needs to be replaced, it **MUST** be replaced with an approved Cala replacement part and installed according to the Valve manufacturer's instructions.



DANGER - The opening of the Temperature & Pressure Relief Valve must not be blocked or reduced in size under any circumstances - failure to do so could result in an explosion.



WARNING - See **CARE AND MAINTENANCE** for how to check the Temperature & Pressure Relief Valve.

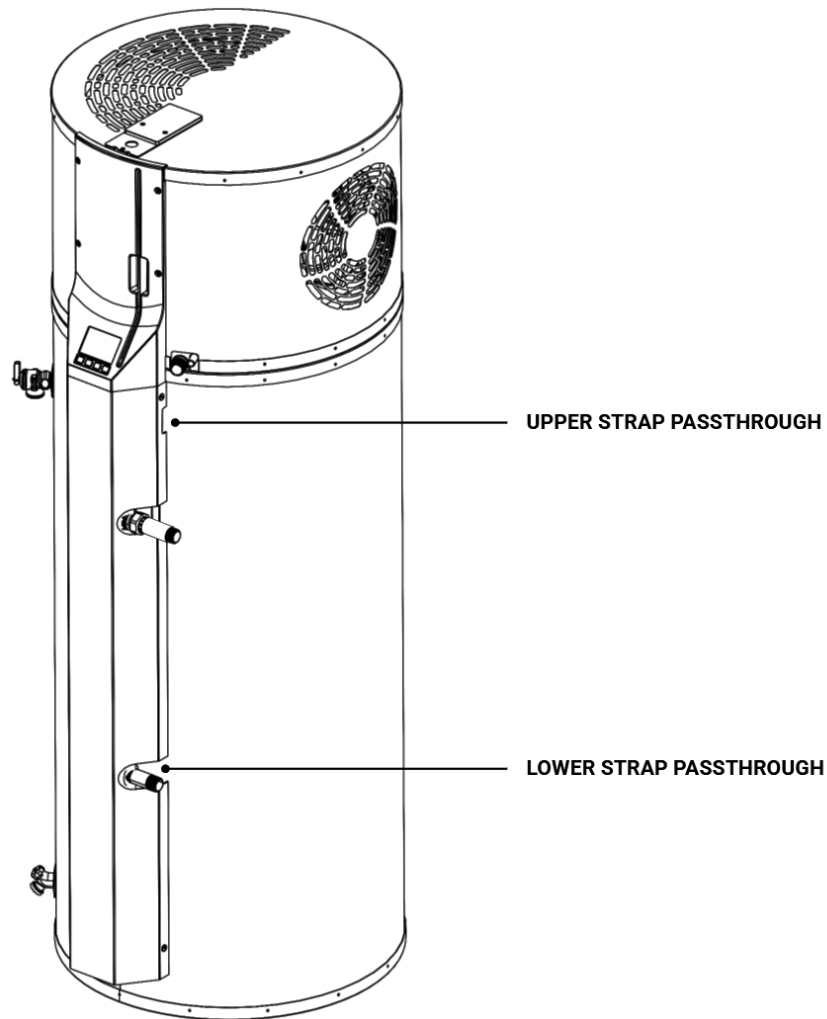
TRANSPORTING, LIFTING, AND BRACING YOUR UNIT



WARNING - The Water Heater is heavy. It is required that two people transport, lift, or otherwise move the unit. **DO NOT** use the plumbing protrusions or any other protrusions as a lifting point as doing so may damage your unit and void your warranty.

Your Water Heater has notches on the upper and lower parts of the Central Column to facilitate strapping of the unit. Straps should be passed through these notches underneath the Column. Straps must be rated to support the Water Heater dry weight (approximately 300 lbs). The Water Heater should only be moved when empty. **DO NOT** strap around the outside of the Column.

IMPORTANT SAFETY INFORMATION



Transporting and Lifting Your Unit

Strap the unit to a wheeled dolly using the strapping locations identified above and use the dolly to move and/or lift the unit.

Earthquake Bracing

California Law requires that all new and replacement water heaters, and all existing residential water heaters, must be braced, anchored, or strapped to resist movement during an earthquake. Refer to the latest edition of the California Plumbing Code for the proper bracing methods. If you live elsewhere, you must check your local and state regulations before installing your Water Heater as similar requirements may apply. Use the strap locations identified above.

IMPORTANT SAFETY INFORMATION

SERVICING AND SHUTDOWN



ELECTRIC SHOCK - Power must **ALWAYS** be turned **OFF** at the **Circuit Breaker** before servicing your Water Heater. Failure to do so may cause serious electric shock, injury or death. Use a non-contact voltage tester to ensure it is properly de-energized.



WARNING - Consider installing an automated Cold Water Shut-off Valve to stop the flow of water into your system in the event of a leak or during other servicing and maintenance for which it may be required to do so.

OTHER RISKS



DANGER - Highly flammable Hydrogen gas can build up in a hot water system when it is not used for extended periods of time. If you have not used your hot water system for two weeks or more, open a hot water tap in the home for several minutes before using any electrical appliances. **DO NOT** smoke or otherwise have an open flame or other ignition source near the tap while it is running during this time.



WARNING - **DO NOT** store any flammable materials near your Water Heater.



WARNING - This Water Heater contains R513A, a Class A1 refrigerant which means it is non-toxic and non-flammable. R513A is non-ozone depleting. Any maintenance or servicing of this Water Heater that could result in the release of refrigerant must be handled by a licensed professional.

PREPARING FOR INSTALLATION

READ BEFORE INSTALLING

If you have questions or need technical support, email support@calasystems.com or call 877-684-2252 (877-684-CALA). Please have your Model Number and Serial Number ready – these can be found on the product specification label on the side of your unit.



DANGER - Incorrect installation, operation, or service can damage the Water Heater, your house, or other property, and present risks including fire, scalding, electric shock, and explosion, causing serious injury or death. Careless or incorrect installation may also void your warranty.



WARNING - This Water Heater must be installed in accordance with the instructions in this Manual, local codes, utility codes, utility company requirements or, in the absence of local codes, the latest edition of the National Electrical Code. Massachusetts code requires this water heater to be installed in accordance with *Massachusetts 248-CMR 3.00* and *248-CMR 10.00: Uniform State Plumbing Code*.



WARNING - Consider installing an automated Cold Water Shut-off Valve to stop the flow of water into your system in the event of a leak or during other servicing and maintenance.

Read this Manual and the labels on your Water Heater before you install, operate, or service it.

If you have difficulty following these instructions or aren't sure you can safely and properly install this equipment, call a qualified professional to have it installed or contact Cala Systems.

An Installation Checklist is available, see INSTALLATION CHECKLIST. This checklist is a general guide only - you MUST still read this Manual!

Examine your home's plumbing to ensure it is up to current codes and standards.

Check your home's water pressure before installation. 50-60 psi is recommended with a maximum of 80 psi. A Water Pressure Gauge can be purchased at a plumbing or hardware store and connected to an outside tap. A Water Pressure Regulator can be installed on the cold water line that enters your home to adjust the water pressure if needed.

Talk to a plumber to see if any of these additional accessories are recommended in your home:

- **Thermal Expansion Tank:** Helps prevent overpressure conditions and is typically installed on your home's cold water line supplying the Water Heater.
- **Condensate Pump:** Required if suitable drainage is not available near the Water Heater.
- **Vacuum Breaker:** Helps prevent back siphonage and/or damage to your Water Heater due to vacuum conditions that could occur in certain situations.

PREPARING FOR INSTALLATION

Purchase a suitable Drain Pan to place under the Water Heater - the Drain Pan must conform to local codes. The Drain Pan should allow for at least 2 inches of clearance all the way around the Water Heater and have a drain port that can be easily connected to a garden hose or pipe for draining water away in case of a leak. For your Cala model, a 28 inch Drain Pan is recommended. The Drain Pan may be purchased from a plumbing or hardware store.

TOOL CHECKLIST

You may need some of the following items during installation. Always wear proper safety gear.

- ☐ Safety Glasses
- ☐ Phillips Screwdriver
- ☐ Flathead Screwdriver
- ☐ Pipe Wrench
- ☐ Adjustable Wrench
- ☐ PTFE tape and/or Pipe Sealant
- ☐ Electrical Tape
- ☐ Wire Cutter
- ☐ Wire Nuts
- ☐ Tube Cutter
- ☐ Thermometer
- ☐ Non-Contact Voltage Tester
- ☐ Electrical Safety Gloves

GENERAL CONSIDERATIONS



WARNING - This unit is designed to be installed indoors in a clean, dry environment and must be protected from freezing and water ingress.



WARNING - The floor must be able to support the weight of the FILLED water heater, approximately 800 lbs.



WARNING - Install the Water Heater vertically on a level surface.



WARNING - DO NOT store flammable materials near your Water Heater.

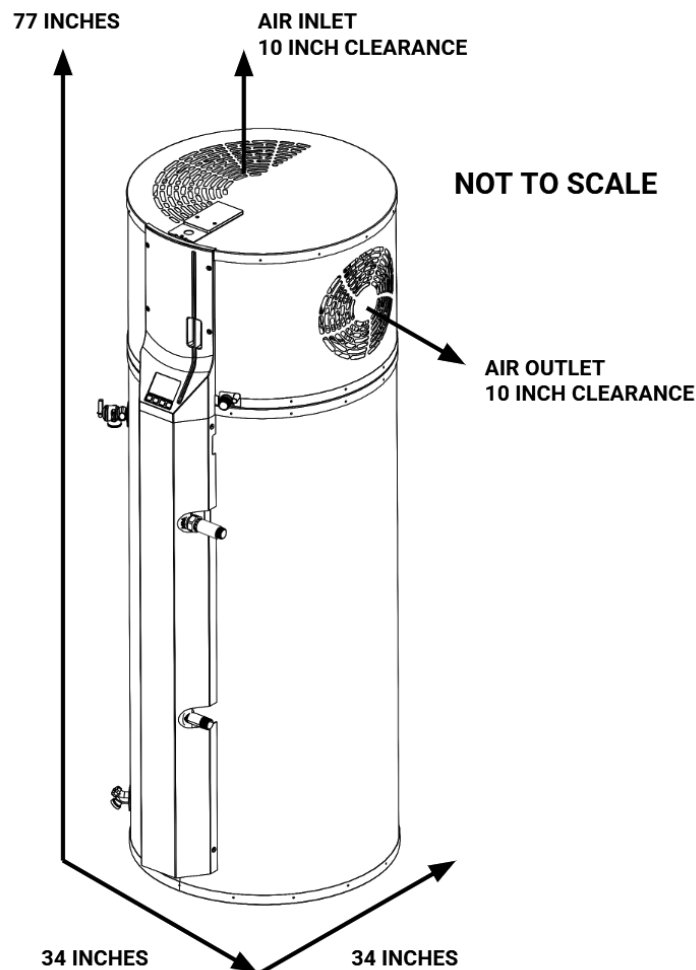
PREPARING FOR INSTALLATION

Ideal installation locations include a basement, garage, crawlspace, or a ventilated utility closet. Insufficient clearances and/or a room that is too small may negatively impact your Water Heater's performance due to insufficient or blocked airflow. Extra consideration should be given if installing the unit in attics, upper floors, and other locations susceptible to water damage. If installing in a garage, consider adding a barrier to protect your Water Heater from vehicle collision. Install the Water Heater close to your plumbing system to simplify pipe routing.

CHECKING FOR CLEARANCES

For proper installation and performance, the Water Heater must have:

- A. AT LEAST 77 inches of vertical space (includes 10 inches of Air Inlet clearance)
- B. AT LEAST 34 inches by 34 inches of floor space (includes 10 inches of Air Outlet clearance)



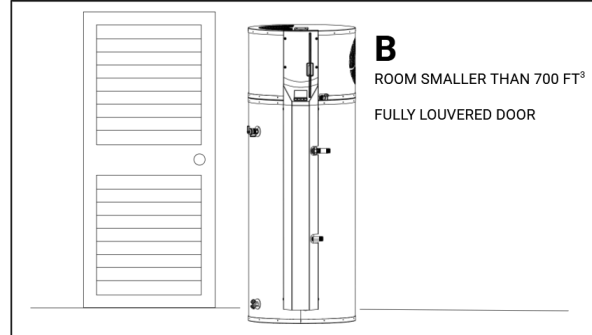
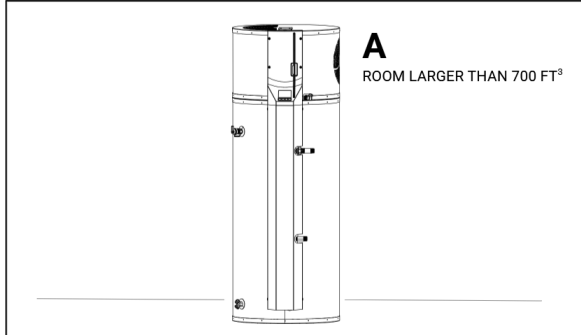
PREPARING FOR INSTALLATION

DETERMINING IF DUCTING IS REQUIRED

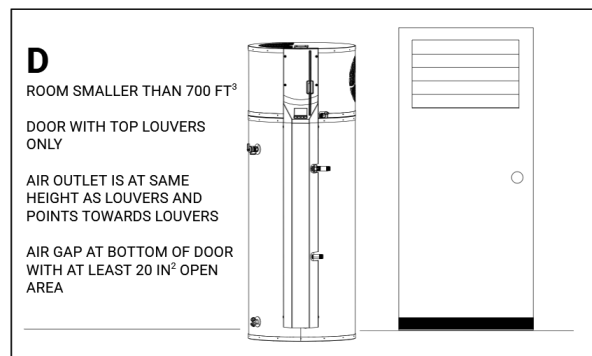
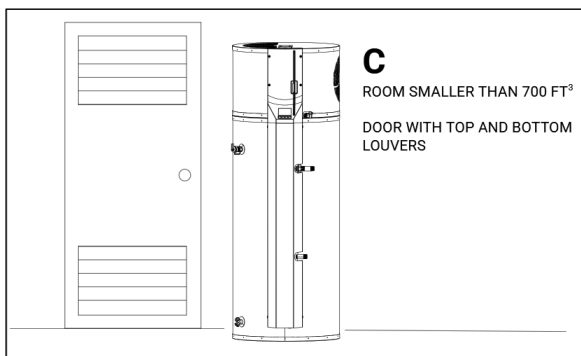
If the room in which you install your Water Heater meets **ANY** of the criteria below then ducting is **NOT** required. Otherwise, your system may need to be ducted and you should consult your Installer to determine the right configuration for your household. See **INSTALLING DUCTING** for more information. Ducting adapters are available for purchase from Cala Systems.

You **DO NOT** need ducting if ANY of the conditions below are met:

- A. The room is larger than 700 ft³.
- B. The room is smaller than 700 ft³ but has a fully louvered door.
- C. The room is smaller than 700 ft³ but has a door with top and bottom louvers.
- D. The room is smaller than 700 ft³ but: has a door with top louvers; the top louvers are at the same height as the Air Outlet; the Air Outlet points towards the louvers; and there is an air gap between the bottom of the door and the floor with an open area of at least 20 in².



NOT TO SCALE



INSTALLING YOUR WATER HEATER

GENERAL GUIDELINES



DANGER - Improper installation can result in serious injury, death, or property damage.



WARNING - Always check local, state, and federal codes before installing and ensure you have the proper permitting, if applicable.



WARNING - DO NOT apply heat near the Water Heater when making connections. If any hot work is required to make connections (e.g. sweating adapters/fittings onto copper piping), this **MUST** be performed at least 6 feet away from the Water Heater. Failure to do so may void your warranty. Ensure anyone performing hot work is properly trained, adhering to local regulations, and following appropriate safety practices. Consider using pre-assembled adapters or adapters that do not require heat to connect (“press” adapters).



WARNING - Ensure all piping and adapters used to connect your Water Heater to your plumbing system are approved for use with potable water and have the appropriate pressure ratings.



WARNING - DO NOT store flammable materials near your Water Heater.



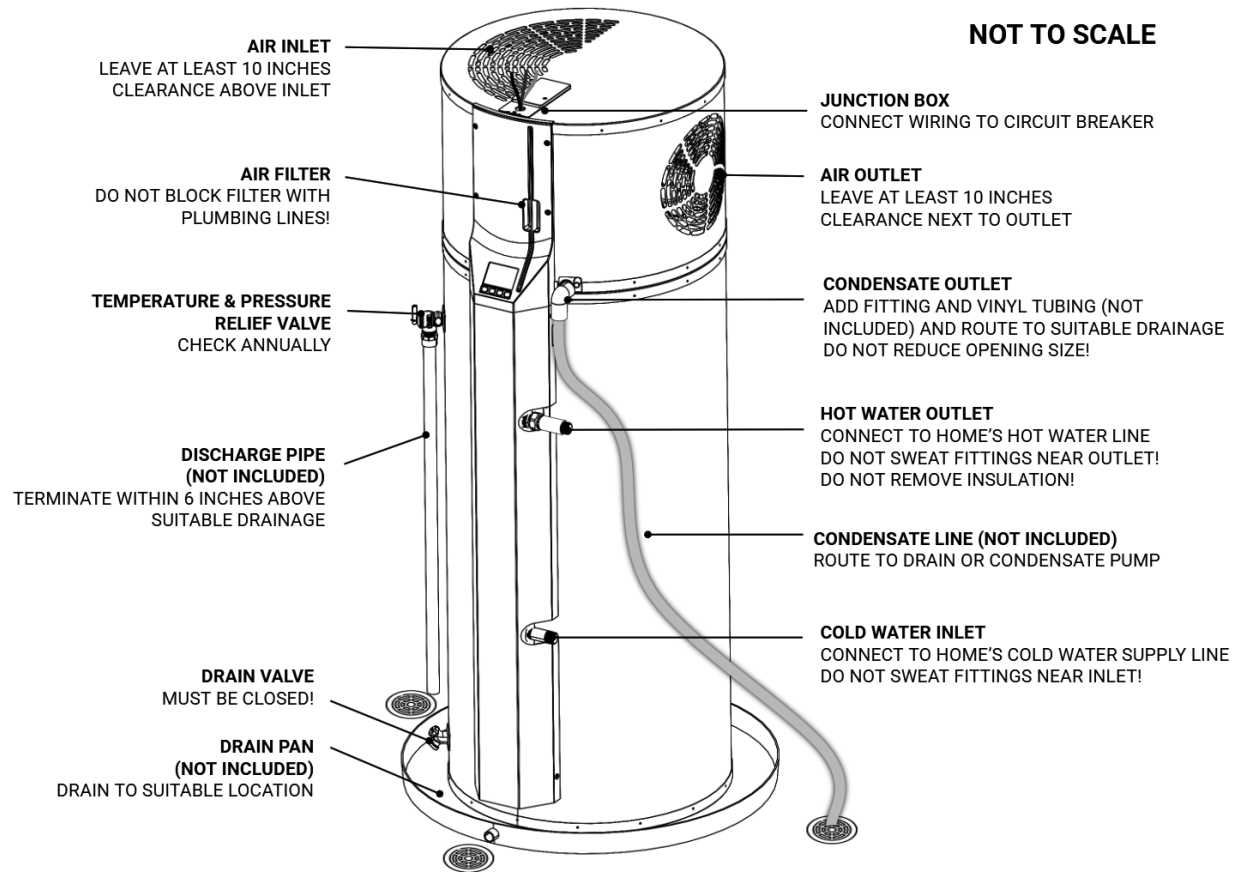
WARNING - Always install a Condensate Line and ensure the line runs to a nearby drain. If no drain is available nearby, it may be necessary to install a Condensate Pump. If you're unsure of the proper configuration for your home, talk to your Installer. See **INSTALLING YOUR WATER HEATER** for more info.

Other Considerations

- Always place a Drain Pan under the Water Heater.
- Consider installing an automated Cold Water Shut-off Valve to stop the flow of water into your system in the event of a leak or during other servicing and maintenance.
- It may be advantageous to install insulation on the plumbing lines connecting to your home. Talk to your Installer to see if this is recommended for your installation.
- When using PTFE tape and/or Pipe Sealant, consult the manufacturer's instructions for proper use and installation to minimize leaks.

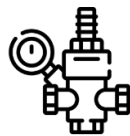
INSTALLING YOUR WATER HEATER

INSTALLATION DIAGRAM



TALK TO YOUR
INSTALLER ABOUT

WATER PRESSURE REGULATOR



THERMAL EXPANSION TANK



CONDENSATE PUMP



VACUUM BREAKER



Connection Sizes

CONNECTION	SIZE
Cold Water Inlet	3/4 inch NPT
Hot Water Outlet	3/4 inch NPT
Temperature & Pressure Relief Valve	3/4 inch NPT
Condensate Outlet	3/4 inch NPT
Drain Valve	3/4 inch GHT (fits standard garden hose)

INSTALLING YOUR WATER HEATER



WARNING - Before installing, locate and familiarize yourself with your home's Cold Water Shut-off Valve. In the event of a leak or other servicing, you may need to close it.

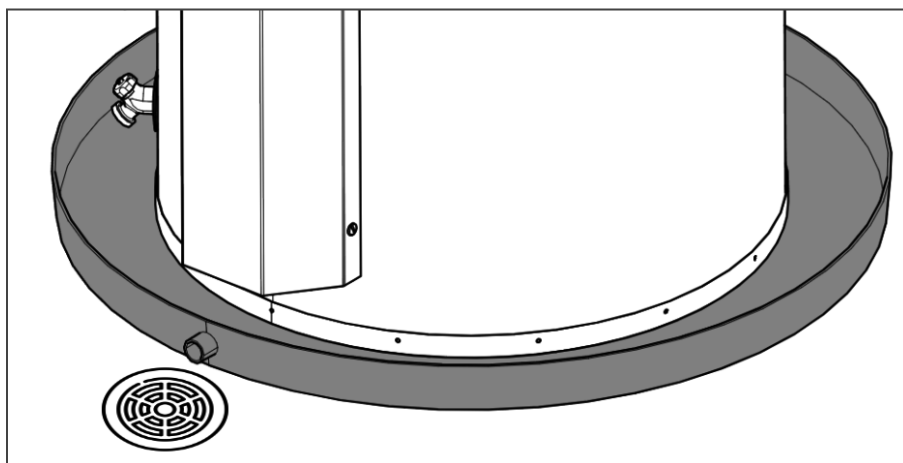
POSITIONING YOUR WATER HEATER

Step 1 - Prepare for Installation

1. Read the **PREPARING FOR INSTALLATION** section of this Manual.
2. Ensure your old system is removed before installing your new Water Heater.
3. Check that power to your Water Heater is turned OFF at the Circuit Breaker.
4. Check that the Cold Water Shut-off Valve in your home's plumbing system is closed.
5. Check that the Drain Valve on your Water Heater is closed.

Step 2 - Place the Water Heater in the Drain Pan

1. Purchase a Drain Pan with at least 2 inches of clearance around the Water Heater - for this model, a 28 inch diameter Drain Pan is recommended.
2. Follow the manufacturer's instructions to Install the Drain Pan and ensure the Drain Pan's outlet is oriented for convenient access.
3. Center the Water Heater in the Drain Pan. Two people are required for this step due to the weight of the Water Heater. See **IMPORTANT SAFETY INFORMATION** for how to properly transport, lift, and brace your unit.
4. Verify that the Water Heater is level before proceeding. Failure to install on a level surface may result in damage to the unit and may void your warranty.



INSTALLING YOUR WATER HEATER

CONNECTING THE PLUMBING LINES

Step 1 - Connect the Cold Water Inlet to the Cold Water Line of Your Home

The Cold Water Inlet has a 3/4 inch NPT fitting.

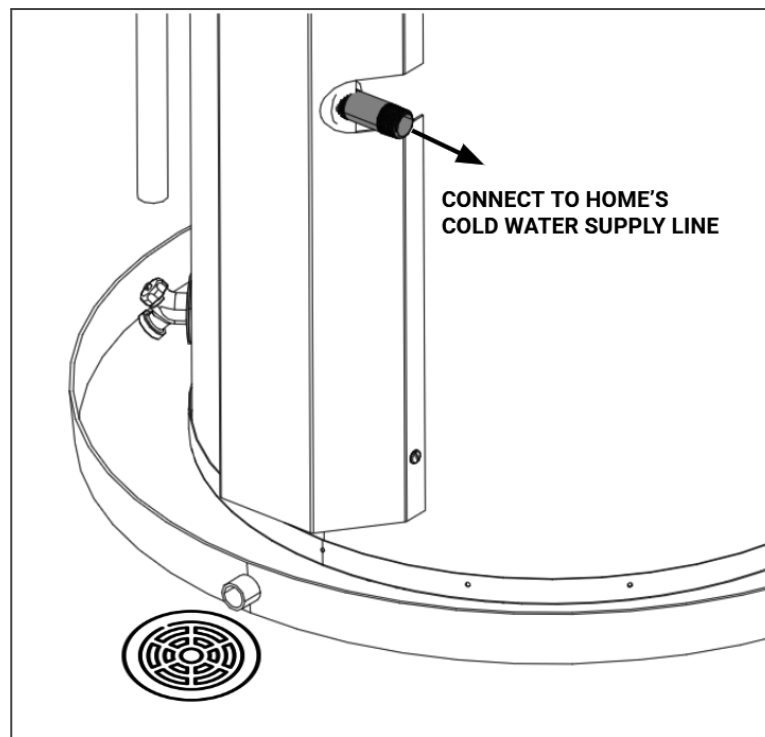
1. To ensure a leak-free seal, it is recommended to use PTFE tape and/or pipe sealant on threaded connections. These supplies may be purchased at most hardware stores. Follow the manufacturer's instructions for proper use to minimize leaks.
2. Start threaded connections by hand, then tighten with a wrench. **DO NOT** overtighten.



WARNING - Ensure the plumbing lines **DO NOT** block the Air Filter on the front of the unit. This will prevent it from removal for general care and maintenance. See **CARE AND MAINTENANCE** for how to remove and clean your Air Filter.



WARNING - DO NOT apply heat near the Water Heater when making connections. If any hot work is required to make connections (e.g. sweating adapters/fittings onto copper piping), this **MUST** be performed at least 6 feet away from the Water Heater. Failure to do so may damage your unit and void your warranty.



INSTALLING YOUR WATER HEATER

Step 2 - Connect the Hot Water Outlet to the Hot Water Line of Your Home

The Hot Water Outlet has a 3/4 inch NPT fitting. **DO NOT remove the insulation from this fitting!**

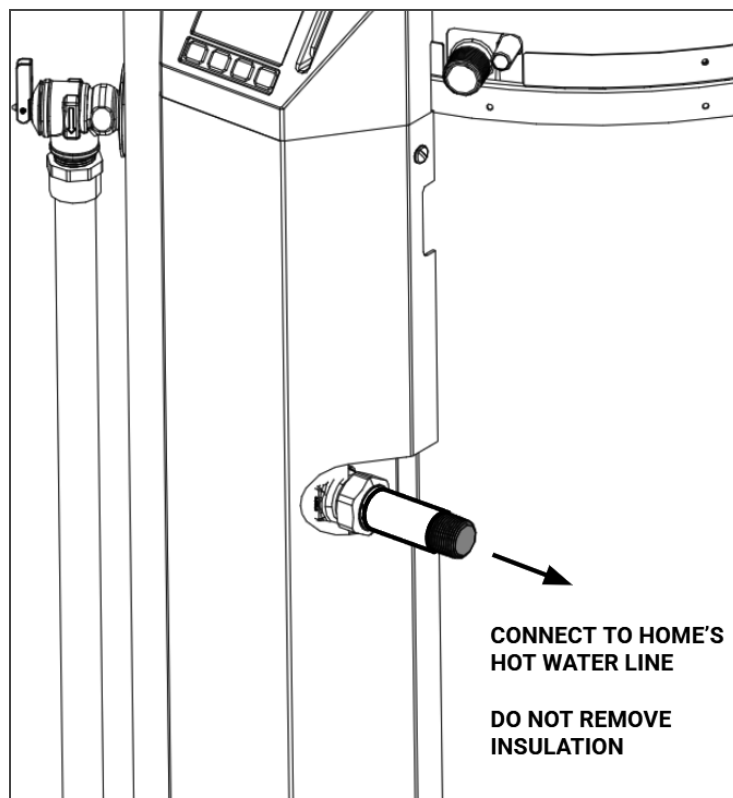
1. To ensure a leak-free seal, it is recommended to use PTFE tape and/or pipe sealant on threaded connections. These supplies may be purchased at most hardware stores. Follow the manufacturer's instructions for proper use to minimize leaks.
2. Start threaded connections by hand, then tighten with a wrench. **DO NOT** overtighten.



WARNING - Ensure the plumbing lines **DO NOT** block the Air Filter on the front of the unit. This will prevent it from removal for general care and maintenance. See **CARE AND MAINTENANCE** for how to remove and clean your Air Filter.



WARNING - DO NOT apply heat near the Water Heater when making connections. If any hot work is required to make connections (e.g. sweating adapters/fittings onto copper piping), this **MUST** be performed at least 6 feet away from the Water Heater. Failure to do so may damage your unit and void your warranty.



INSTALLING YOUR WATER HEATER

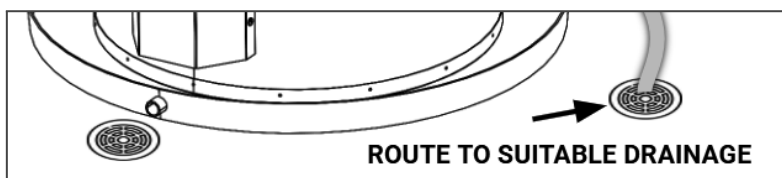
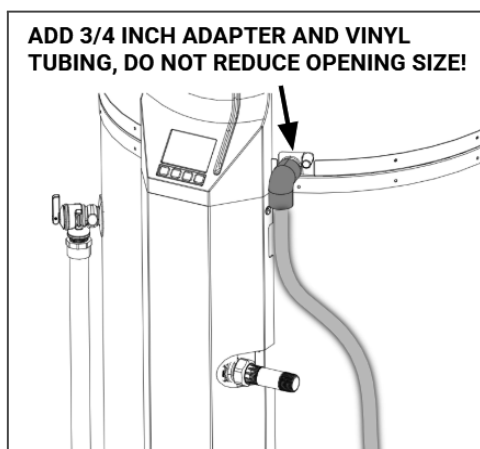
Step 3 - Route the Condensate Line to a Nearby Drain

The Condensate Line drains away water that may accumulate in the Drip Tray underneath the Heat Pump subassembly. The Drip Tray has a 3/4 inch NPT port compatible with standard elbows and/or barb fittings. **DO NOT use fittings that reduce the size of the drainage opening!**



WARNING - Consult local codes for specific drainage requirements that may apply in your area. To ensure proper drainage, all drain lines must be pitched downward and away from the Water Heater at a minimum of 1/8 inch of slope per foot of line. Drain lines must include a P-trap if connected to a sewer pipe. Only use as much length as you need - excess length or coiled up tubing may create blockages preventing proper drainage. Ensure the tube's free end will not become submerged in liquid as this can also cause drainage issues.

1. Find a suitable drainage location near the Water Heater. If a suitable location does not exist nearby, you may need to purchase and install a Condensate Pump to move the condensate water to another location (e.g. outdoors).
2. Install a 3/4" NPT elbow or barb fitting onto the Drip Tray port. **Fittings MUST be hand threaded - DO NOT overtighten, as you may damage the threads.**
3. Install tubing and route the free end to a suitable drainage point or Condensate Pump. If using a Condensate Pump, follow the manufacturer's instructions for proper installation.



INSTALLING YOUR WATER HEATER

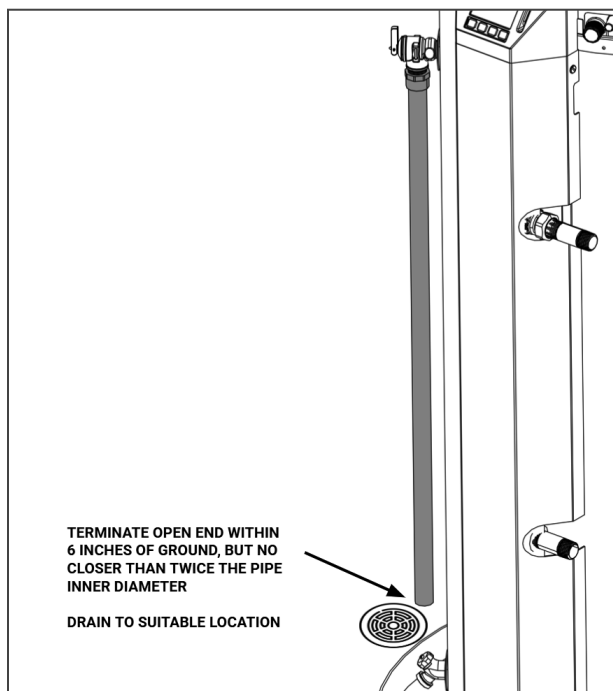
Step 4 - Install a Discharge Pipe on the Temperature & Pressure Relief Valve

The Temperature & Pressure Relief Valve has a 3/4 inch NPT fitting.



DANGER - The discharge from the opening of the Temperature & Pressure Relief Valve must not be blocked or reduced in size under any circumstances - failure to do so could result in an explosion.

1. To ensure a leak-free seal, it is recommended to use PTFE tape and/or pipe sealant on any threaded connections. These supplies may be purchased at most hardware stores. Follow the manufacturer's instructions for proper use to minimize leaks.
2. The Discharge Pipe should have at least a 3/4 inch inside diameter and should be vertical or sloped for proper drainage.
3. The Discharge Pipe must terminate within 6 inches of the floor while leaving a gap that is at least twice the Discharge Pipe's inside diameter. Ensure it terminates to a suitable drainage location.
4. Start threaded connections by hand, then tighten with a wrench. **DO NOT** overtighten.



INSTALLING YOUR WATER HEATER

PLACING THE LEAK DETECTOR

Your Water Heater comes with a Leak Detector that can alert you if a water leak is detected around your unit. You must verify that the Leak Detector is properly positioned before operating the unit. Failure to do so may result in improper operation of the Leak Detector.



WARNING - The Leak Detector is an alert system only and does NOT prevent water leaks!

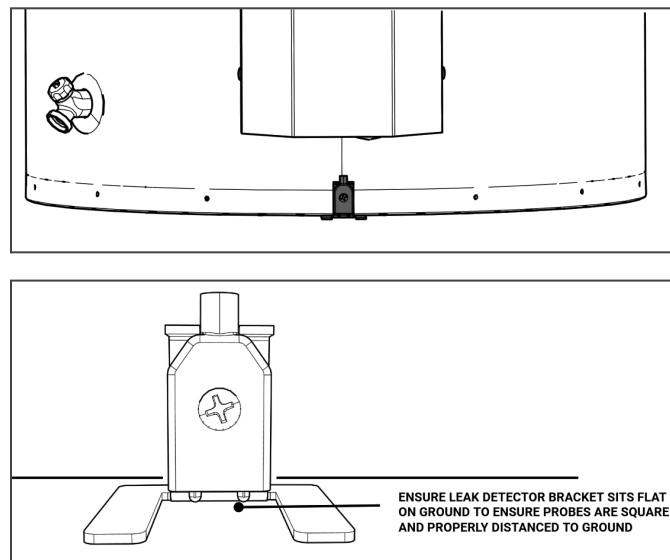


WARNING - If a leak is detected you must turn OFF power to the Water Heater at the Circuit Breaker, turn OFF your Incoming/Cold Water Shut-off Vale, determine the leak source, and clean up the leak prior to returning the unit to operation.

Steps for Installing the Leak Detector

The Leak Detector comes pre-installed in a bracket and is taped to the outside of the Central Column.

1. Remove the Leak Detector assembly from the Column and discard the tape.
2. Place the bracket on the same surface upon which the bottom of the Water Heater is sitting, ideally directly under the Central Column. Ensure the bracket sits flat on the ground so that the probes are square to the ground. Improper placement may result in unexpected Leak Detector behavior.



INSTALLING YOUR WATER HEATER

WIRING YOUR WATER HEATER



ELECTRIC SHOCK - Improper wiring can result in serious shock, injury, or death. If you're unsure of **ANY** steps in this section you **MUST** contact a licensed professional to correctly and safely wire electrical power to your Water Heater. **ALWAYS** turn **OFF** power to your Water Heater at the **Circuit Breaker** before wiring or servicing it. Use a non-contact voltage tester to ensure it is properly de-energized.



DANGER - **NEVER** power on your Water Heater until you have confirmed it is completely filled with water. Doing so may damage or even destroy your unit and/or home. See **FILLING THE WATER HEATER** later in this section for more.



WARNING - All wiring should conform to local codes or, in the absence of local codes, the National Electrical Code ANSI/NFPA 70.



WARNING - The product contains two single pole fuses on the control board, one for each leg (Line 1, Line 2). In the event of a fault, one or both fuses will be blown. The fuses are neither accessible or replaceable by the end user and must be replaced by a qualified factory authorized service technician. The product must be deenergized by disconnecting the double pole Circuit Breaker prior to service.

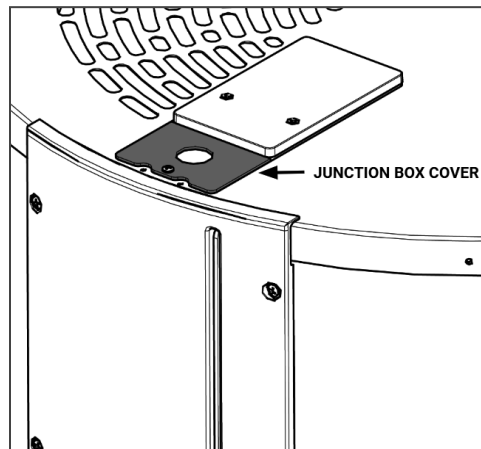


WARNING - Before wiring the Water Heater or performing any service or maintenance, you **MUST** complete the following checklist:

1. **Confirm the Circuit Breaker is the correct size for your model.** This model requires 240V/1-phase AC power at 50 or 60 Hz and a 30A double pole breaker.
2. **Confirm the Circuit Breaker and Water Heater are OFF.** Use a non-contact voltage tester to ensure that the Circuit Breaker and Water Heater are de-energized.
3. **Confirm the wiring gauge being used to connect to the Water Heater from your Circuit Breaker.** 10 AWG wire is recommended.
4. **Confirm that all wiring is undamaged.**

Wiring connections for the Water Heater are located within the Junction Box on top of the unit as shown on the following page.

INSTALLING YOUR WATER HEATER



Step 1 - Identify the Wire Colors

Note the Circuit Breaker wire colors listed below are based on what is common across most homes, but they may not match what is in your home. If you're unsure how to properly identify the wires, or if the wire colors on your Circuit Breaker do not match what's listed below, please contact a licensed electrician.

WIRE	WIRE COLOR - WATER HEATER	WIRE COLOR - CIRCUIT BREAKER
GROUND	GREEN or GREEN/YELLOW	GREEN or GREEN/YELLOW or BARE COPPER
POWER #1	BLACK	BLACK or RED or WHITE
POWER #2	RED	BLACK or RED or WHITE

INSTALLING YOUR WATER HEATER

Step 2 - Connect the Wiring



WARNING - The Ground wire from the Circuit Breaker **MUST** be connected to the Ground wire on your Water Heater! **ALWAYS** connect the Ground wires first.

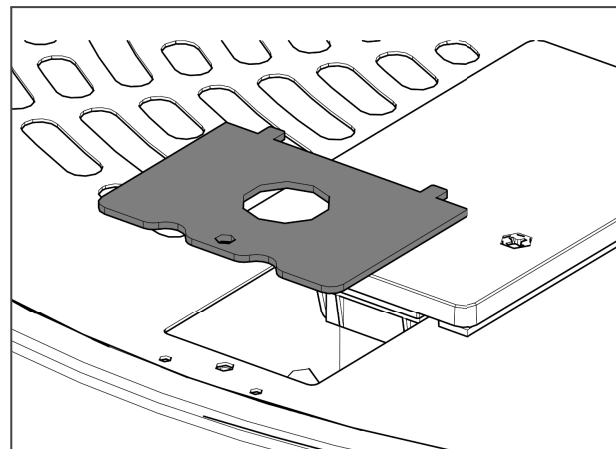
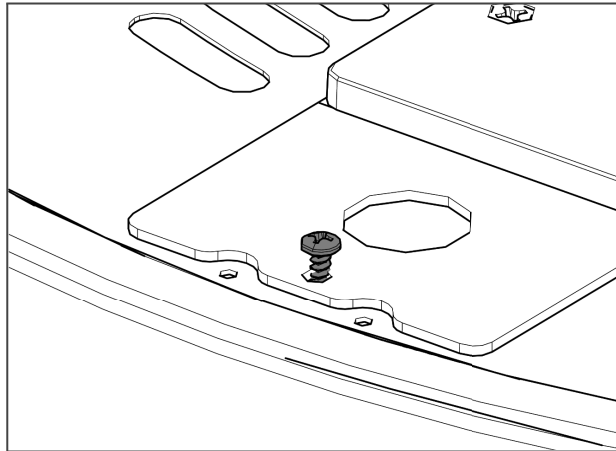


WARNING - If you're unsure how to wire your unit, you **MUST** contact a licensed professional.



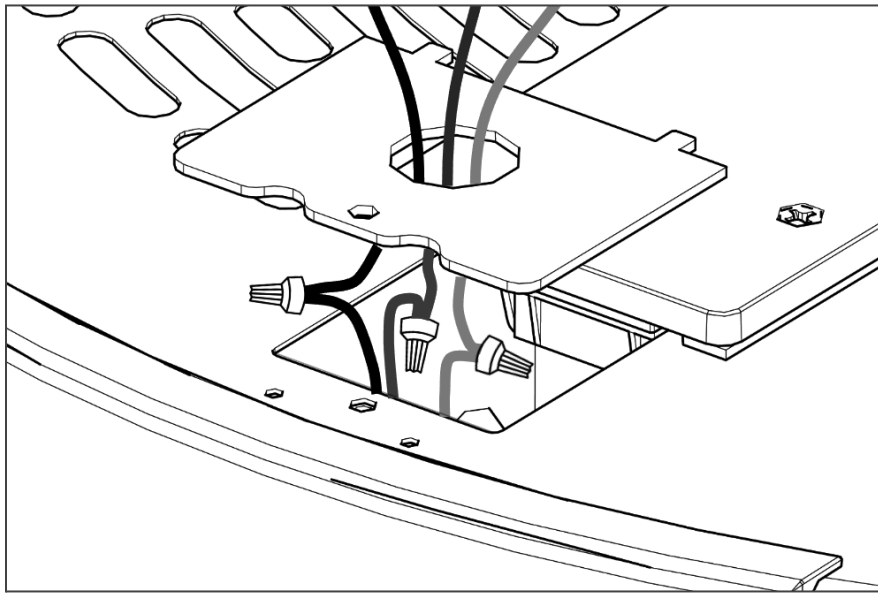
WARNING - You may use metallic conduit or metallic sheathed cable provided it is approved for use as a grounding conductor and installed as intended.

1. Using a screwdriver, remove the screw from the Junction Box and lift the cover.

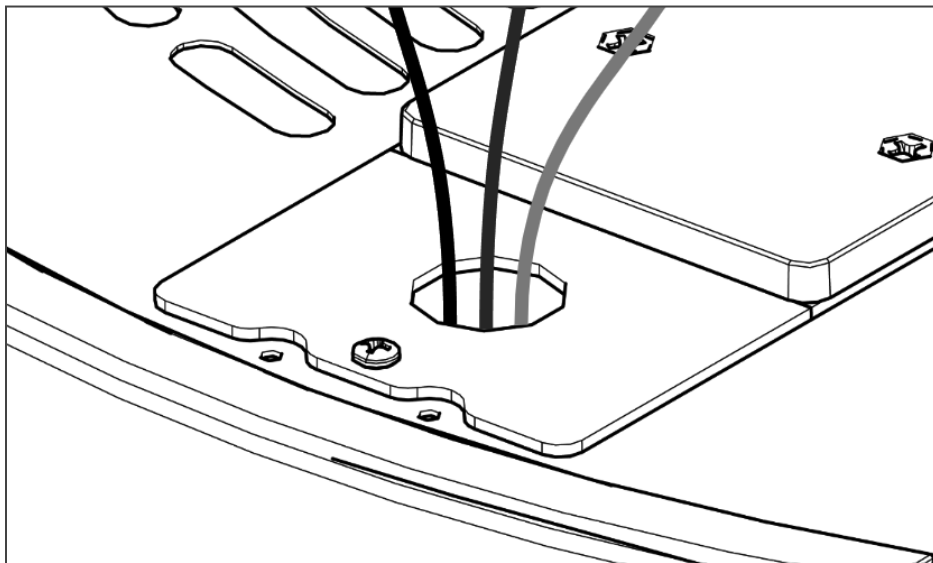


INSTALLING YOUR WATER HEATER

2. Pass the Circuit Breaker wires down through the opening in the Junction Box Cover. Using wire nuts or other approved wire connection devices, securely connect the Circuit Breaker wires to the Water Heater wires. Each connection **MUST** be between **ONLY** two wires!



3. Tuck the wires and wire nuts into the Junction Box, then replace the Junction Box cover and screw.



4. Turn power to your Water Heater back ON at the Circuit Breaker.

INSTALLING YOUR WATER HEATER

FILLING YOUR WATER HEATER



WARNING - DO NOT fill your water heater until AFTER it has been installed and wired.



DANGER - NEVER power on your Water Heater until you have confirmed it is completely filled with water. Doing so may damage or even destroy your unit and/or home. **ALWAYS** verify the Water Heater is properly filled after servicing it.

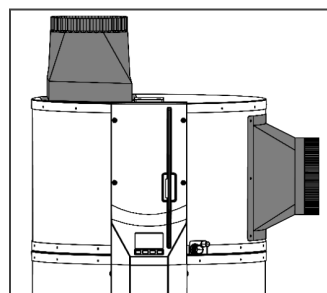
Steps for Filling Your Water Heater

1. Ensure all plumbing connections are tight.
2. Ensure the Drain Valve is fully closed.
3. Ensure the Temperature & Pressure Relief Valve lever is fully closed.
4. Open your home's Cold Water Shut-off Valve.
5. Open several hot water taps in your home to allow air to vent from the Water Heater and plumbing system.
6. Leave the taps open until they each have a steady stream of water flowing - this indicates the Water Heater is full. Note the water will not be hot since your system is OFF.
7. Now that water is flowing, verify all connections at the Water Heater are leak-free.
8. Close the taps in your home – your Water Heater is now completely filled! **Your home's Cold Water Shut-off Valve MUST remain OPEN for proper Water Heater operation.**

INSTALLING DUCTING

Ducting adapters designed specifically for this Water Heater are available for purchase from Cala Systems. Adapters are available for both the Air Inlet and Air Outlet and come with installation instructions. These adapters are compatible with standard 8 inch diameter ducting.

PART NUMBER	DESCRIPTION
100199	AIR OUTLET DUCT ADAPTER KIT
100200	AIR INLET DUCT ADAPTER KIT



WARNING - Always check with local building and HVAC codes before designing and installing a duct system.



WARNING - Ducting configurations that do not follow the guidelines in this Manual are not approved and may damage your unit and/or void your warranty. You must use ducting approved for HVAC applications.

General Considerations

Your Water Heater will perform better when (i) there are no airflow restrictions around the Water Heater and (ii) the inlet air is warmer and/or more humid. There are several things you can do to minimize performance impacts when ducting your unit:

- Limit the length of your ducting runs
- Avoid elbows and bends
- Use rigid ducting instead of flexible ducting
- Avoid ducting the Air Inlet to locations with cool, dry air

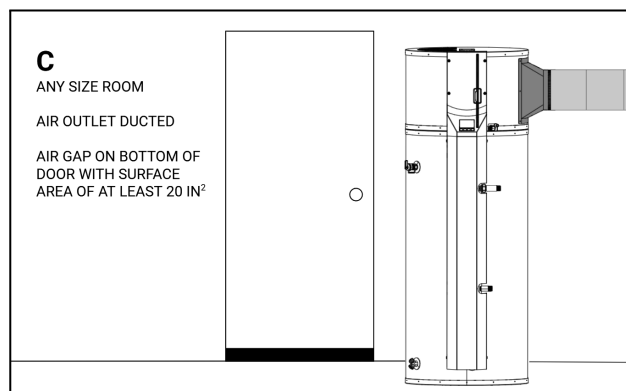
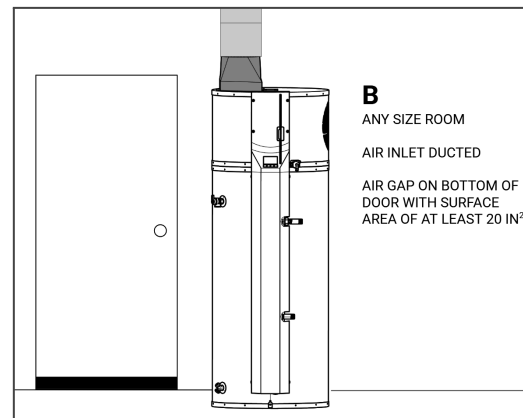
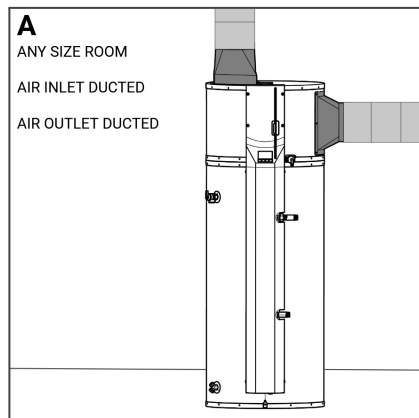
The Water Heater may be ducted to the outdoors or to another space in the home.

INSTALLING DUCTING

Safety Considerations

- **DO NOT** connect this Water Heater to existing duct work; it must be ducted separately from other appliances. Ducting must be adequately supported.
- Ducting must be properly supported along both horizontal and vertical runs.
- UL-Certified terminations must be used for ducting to the outside - these terminations have been tested to ensure proper protection from the elements and to minimize airflow resistance.
- A short section of flexible duct should be used between the Water Heater and rigid ducting to provide stress relief and to isolate noise and vibration.
- Ensure that cold air ducting is sufficiently distanced from other structures to prevent condensation from the ducts damaging those structures.

Example Ducting Configurations



INSTALLING YOUR WATER HEATER

The maximum allowable length of the ducting system depends on the type of duct, number of elbows, terminations, and registers. All ducting used with the system should be 8 inches in diameter.

For optimal performance, total External Static Pressure (ESP) must not exceed 0.085 inches water gauge or the equivalent of 40 feet of 8 inch round rigid ductwork.

Maximum Duct Length

DUCT TYPE	AIRFLOW	SYSTEM STATIC PRESSURE (ESP)	8 INCH ROUND, MAX LENGTH
Rigid	350 CFM	0.085 (inches water gauge)	40 feet

Equivalent feet for Duct Accessories

DESCRIPTION	8 INCH ROUND, MAX LENGTH
Elbows/Flexible Bends (each)	15 feet
UL Certified Termination for ducting outside (each)	5 feet
Register for ducting inside (each)	5 feet

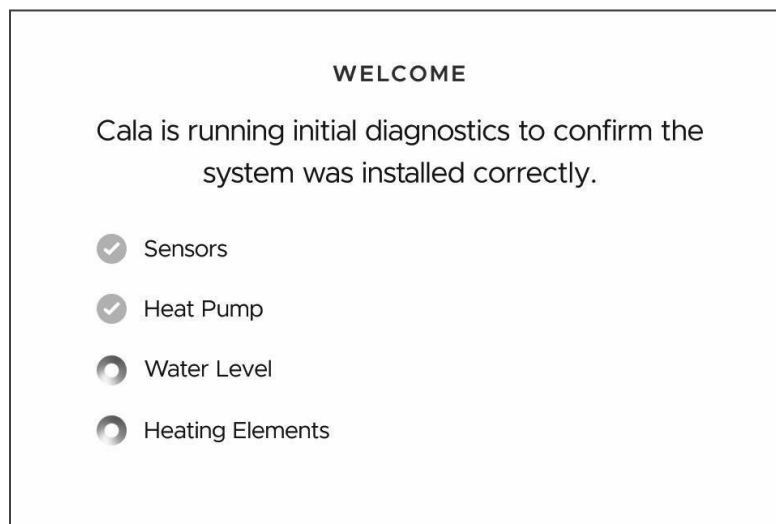
SETUP AND OPERATION

Congratulations - you've successfully installed your Water Heater and are ready for hot water!

POWERING ON THE UNIT

Initial Startup

1. Ensure the Water Heater has been properly installed, wired, and filled - see **INSTALLING YOUR WATER HEATER**.
2. Turn power to your Water Heater ON at the Circuit Breaker.
3. The Water Heater will automatically power ON and complete initial diagnostics to ensure it has been installed correctly (see image below); this will take approximately 10 minutes. The system will alert you if anomalies are detected, in which case you **MUST** contact your Installer or Cala.



Using the Controls

- Your Water Heater has an LCD screen with 4 buttons below it. These buttons are used to navigate through menus and execute commands.
- Button functions are indicated by icons on the screen above each button. Note you may not see each icon on every screen. **Button functions are defined on the following page, along with an example screen showing some of the icons in use.**

SETUP AND OPERATION

Move selection UP



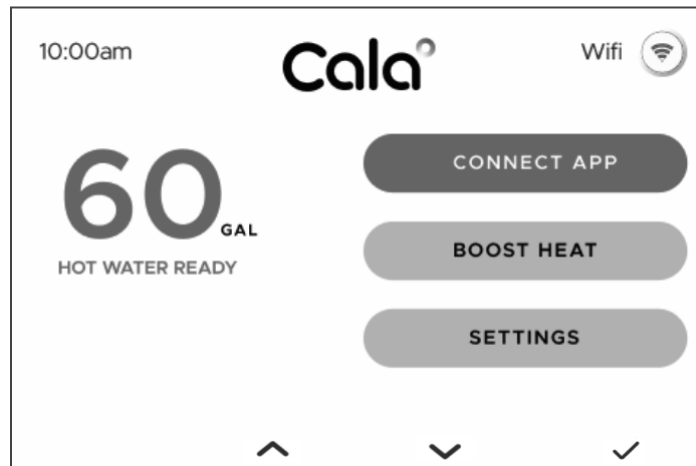
Move selection DOWN



CHOOSE selection



GO BACK one screen

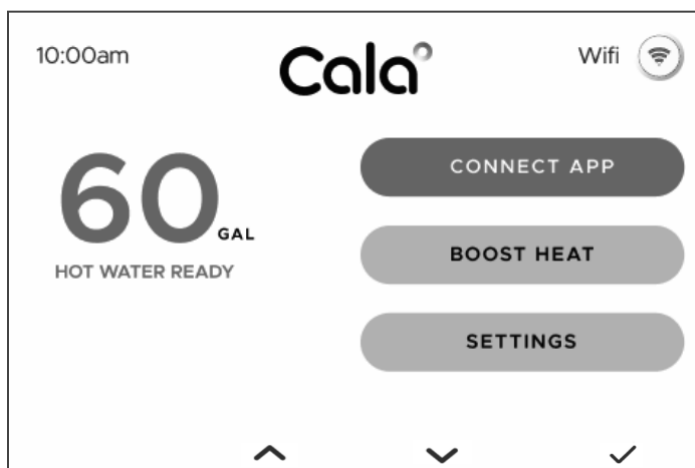


Mobile App

To get the most out of your Water Heater, please download the Cala mobile app via the QR code below. The Cala app is available for both iOS and Android and provides additional settings, functions, and features allowing you to fully customize and optimize your system.

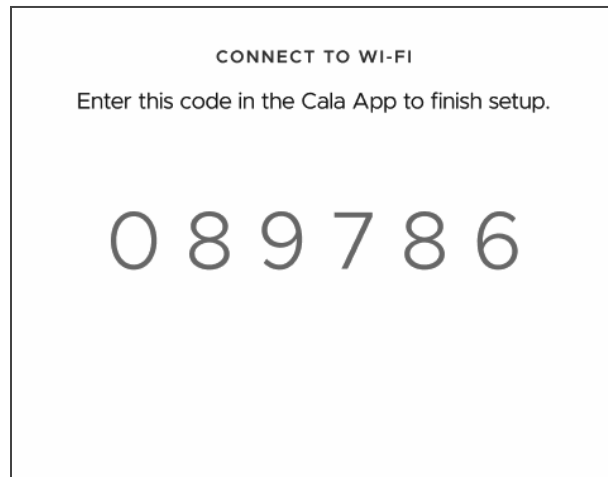
Follow the in-app directions, or the on-device instructions as shown in the following steps.

1. Select "App Connect" from the on-device Home Menu shown below or follow the in-app instructions.



SETUP AND OPERATION

2. You will be shown a unique six digit code - enter this into the Cala app. **Note the code below is an example only and WILL NOT match your unique code!**



3. Once the connection is complete, return to the Home Screen - Congratulations, your Water Heater is now connected to your Cala App!

ADJUSTING YOUR HOT WATER TEMPERATURE



DANGER - You **MUST** read this section before adjusting your hot water temperature.

Adjusting your hot water temperature can impact your home's hot water safety.

ALWAYS measure your hot water temperature at several taps to ensure it is within the desired range. See **IMPORTANT SAFETY INSTRUCTIONS** for more information on hot water safety.



WARNING - Your Water Heater is equipped with a factory-installed Thermostatic Mixing Valve complying with ASSE 1017, the standard for *Performance Requirements for*

Temperature Actuated Mixing Valves for Hot Water Distribution Systems. The valve on your unit has been factory set to provide water at no higher than 125°F, the recommended safe limit for most homes.



WARNING - Some homes may have point-of-use mixing valves installed at some or all taps, which may limit the hot water temperature from your taps regardless of the water temperature provided by your Water Heater. Long plumbing runs may also impact how long it takes for hot water to reach your taps and/or lead to temperature losses.

SETUP AND OPERATION

Understanding Temperature Control on your Water Heater

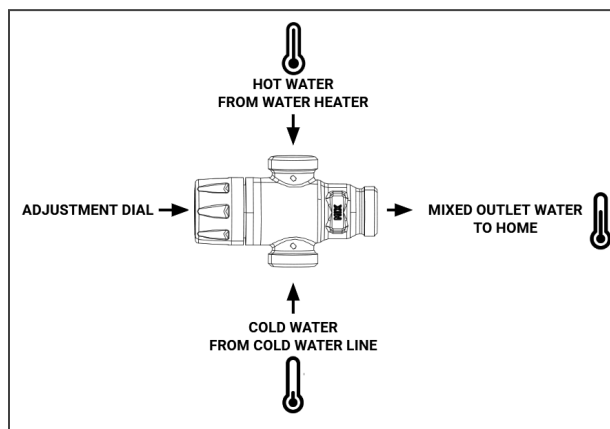
Cala Predictive Intelligence™ may heat your tank to hotter temperatures while still delivering water at safe temperatures to your home via the Thermostatic Mixing Valve. This enables your unit to increase hot water capacity when beneficial - for example, if electricity prices are low, if high demand is forecasted, or if your home's solar system is producing renewable energy.



WARNING - Temperature adjustment is optional and not required for operation. Your water heater is already factory configured for flexible capacity while delivering water no higher than 125°F. If you do choose to adjust these settings you must follow the instructions in this section.

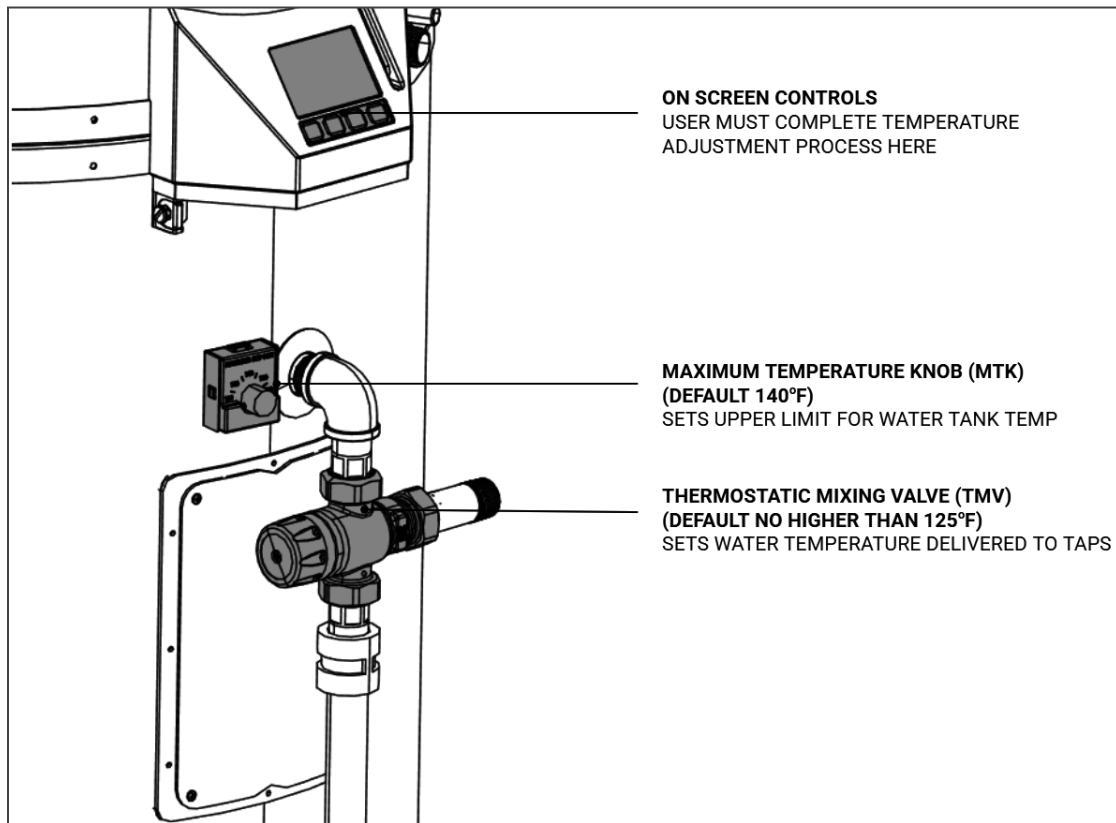
Your Water Heater has two temperature control devices, located as shown on the following page.

1. **The Thermostatic Mixing Valve (TMV) controls the temperature of the water delivered to your home** by mixing hotter water from the Water Heater with colder water from the home's cold water line to achieve the desired mixed/delivered hot water temperature. This is NOT a tank temperature setpoint. If you choose to adjust the TMV, you must follow the instructions in this section. **The default setting is configured to deliver water at no higher 125°F.**



2. **The Maximum Temperature Knob (MTK) is a safety control that defines the upper temperature limit in the tank for Cala Predictive Intelligence™.** Depending on your home's hot water usage and your preferences, the system may heat to this temperature frequently, periodically, or not at all. Decreasing this setting will reduce your maximum hot water capacity; increasing this setting will increase your maximum hot water capacity. If you choose to adjust this setting, you must follow the instructions in this section. **The default limit setting is 140°F.**

SETUP AND OPERATION



Adjusting The Thermostatic Mixing Valve (TMV)



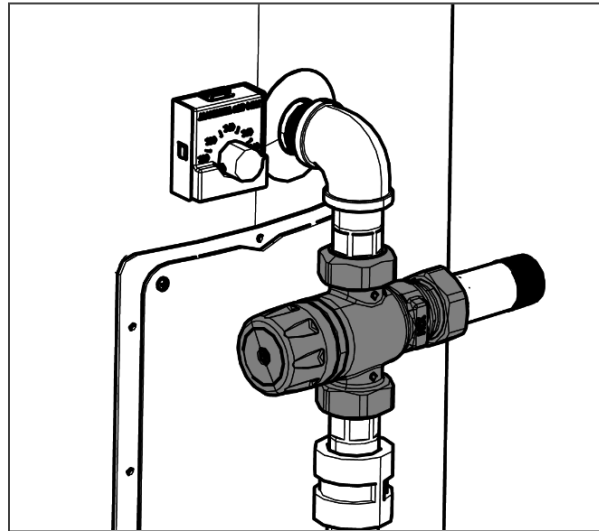
DANGER - You must follow the instructions in this section. Failure to properly comply with all steps may result in improper operation of the unit and unexpected or even unsafe water temperatures resulting in injury, scalding, or even death.

To adjust the TMV outlet temperature, you'll navigate to **Settings > Temperature**, then follow the on-screen instructions. **You must exactly follow this sequence and use the additional details and diagrams in this Manual.**

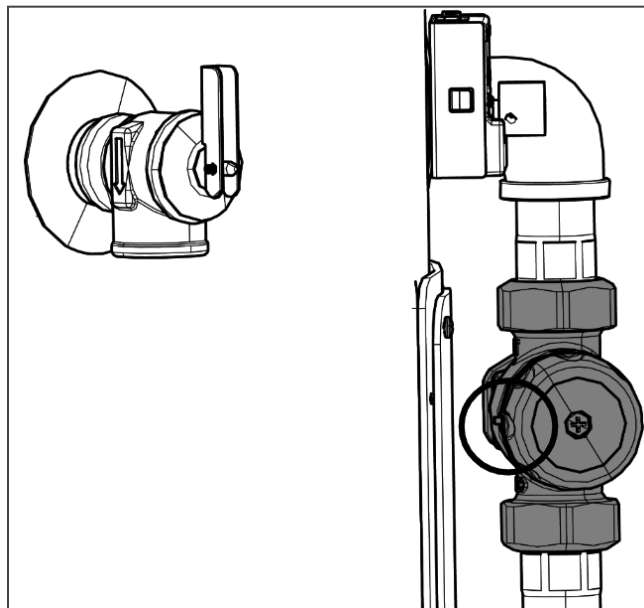
Note that the tank may require a waiting period to heat up enough hot water to properly configure the TMV. If applicable, the waiting time will be indicated on the screen.

SETUP AND OPERATION

1. Remove the Central Column. See **REMOVING AND RE-INSTALLING THE CENTRAL COLUMN** later in this section
2. Locate the TMV at the top of the plumbing assembly.



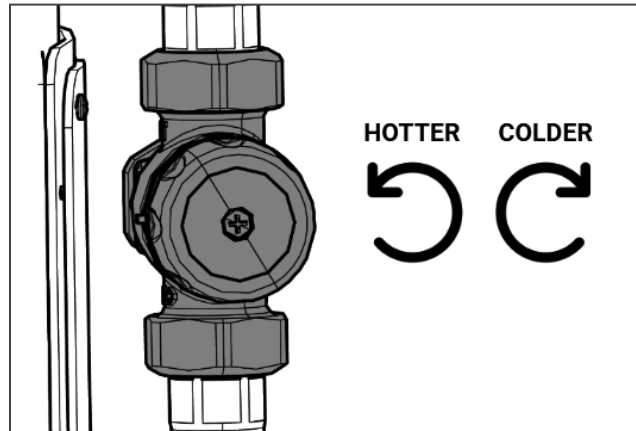
3. Locate the numbered adjustment dial on the TMV. The Index Point (circled below) is a notch indicating the current numbered setting. These settings are provided for dial position reference only and **DO NOT** correspond to specific temperatures.



SETUP AND OPERATION

4. Adjust the temperature. To increase the outlet temperature, rotate the dial counterclockwise to a higher number. To decrease the outlet temperature, rotate the dial clockwise to a lower number.

It is recommended to only increase or decrease the dial by one setting at a time before verifying the temperature at a tap. For example, change from a "4" to a "5".



5. Turn on a hot tap in your home and use a thermometer to measure the temperature to ensure it is in the desired range. **You MUST wait until the tap temperature stabilizes before verifying your reading.**

Measure at multiple taps if possible. Temperature can vary between different taps for a variety of reasons including, but not limited to:

- Point-of-Use Mixing Valves that may limit the tap temperature regardless of the water temperature coming from the Water Heater.
- Long piping runs between the Water Heater and taps causing heat loss before the water can reach the tap.

If satisfied with the temperature, proceed to Step 3. Otherwise repeat Step 2 until the desired temperature is achieved.

6. Re-install the Central Column. See **REMOVING AND RE-INSTALLING THE CENTRAL COLUMN** later in this section.

SETUP AND OPERATION

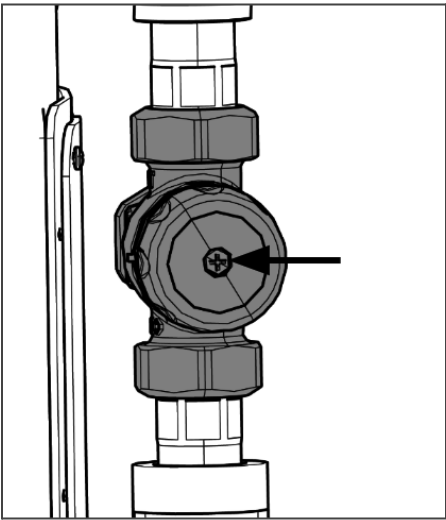
Locking the Thermostatic Mixing Valve Setting (OPTIONAL)

Locking the TMV is optional and not required for the TMV to operate.

- 1. Adjust the TMV to the Desired Setting. See **Adjusting The Thermostatic Mixing Valve** earlier in this section for how to properly adjust the TMV.
- 2. Record the TMV Setting. Once the valve is in a locked position, it will not be apparent what the current dial setting is. Use the table below to maintain a record for future reference

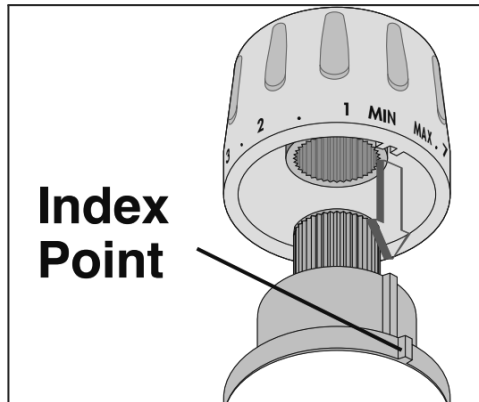
DATE	TMV DIAL SETTING	MEASURED TAP TEMP(S)

- 3. Remove the screw from the TMV dial.



SETUP AND OPERATION

4. Pull off the TMV Dial and orient it so that the locking slot fits over the Index Point on the TMV body. This prevents the dial from being rotated.



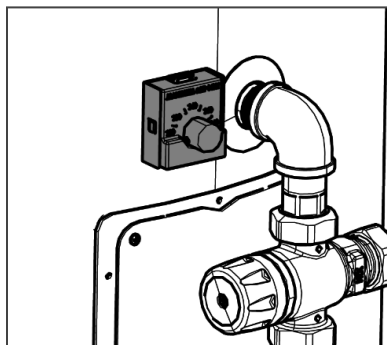
5. Re-install the TMV Dial and screw.
6. Re-install the Central Column. See **REMOVING AND RE-INSTALLING THE CENTRAL COLUMN** later in this section.

Adjusting the Maximum Temperature Knob (MTK)



WARNING - The MTK setting must always be at least 5°F greater than the desired hot water temperature at your taps. You **MUST** read **Understanding Temperature Control on your Water Heater** earlier in this section before adjusting the MTK.

1. Remove the Central Column. See **REMOVING AND RE-INSTALLING THE CENTRAL COLUMN** later in this section
2. Locate the Maximum Temperature Knob.



SETUP AND OPERATION

3. Rotate the knob to the desired Maximum Temperature setting. You should feel a detent indicating the knob is correctly seated in the selected position.
4. Re-install the Central Column. See **REMOVING AND RE-INSTALLING THE CENTRAL COLUMN** later in this section

Temperature Adjustment Examples

The following examples are provided for illustrative purposes.

SCENARIO	TMV DIAL	MTK
My water is not hot enough	<u>Increase</u> setting, then verify hot water temperature at tap(s)	No change required
My water is being delivered too hot	<u>Decrease</u> setting, then verify hot water temperature at tap(s)	No change required
I'm OK with my water temperature, but I want to reduce the limit on my tank temperature*	No change required	<u>Decrease</u> , but ensure setting is also at least 5°F <u>higher</u> than desired tap temperature

*Reducing the MTK setting may limit performance.

SETUP AND OPERATION

REMOVING/RE-INSTALLING THE CENTRAL COLUMN

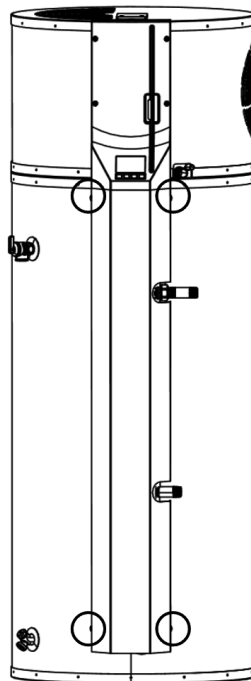
Removing the Central Column is required in order to access:

- The main plumbing assembly, including the Thermostatic Mixing Valve (TMV) which adjusts the temperature of water delivered to your home.
- The Max Temperature Knob (MTK), which controls the maximum temperature of water allowed inside the tank - **note this is an upper limit and NOT a temperature setpoint!**
- The Upper Element Housing
- The Lower Element Housing

Step 1 - Removing the Central Column

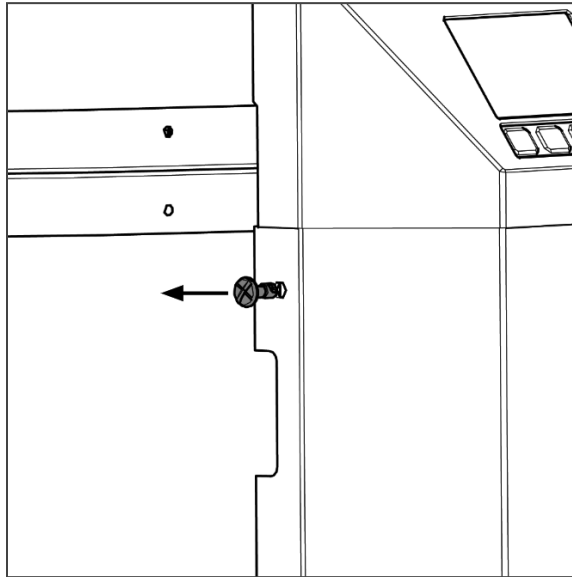
Note - it may be useful to have a helper support the column as you remove it.

1. The Central Column is secured with four “quarter-turn” screws that secure it to four brackets attached to the Water Heater. These screws are located on the Column as circled below. These screws only require a quarter-turn (90 degree rotation) to remove or insert.

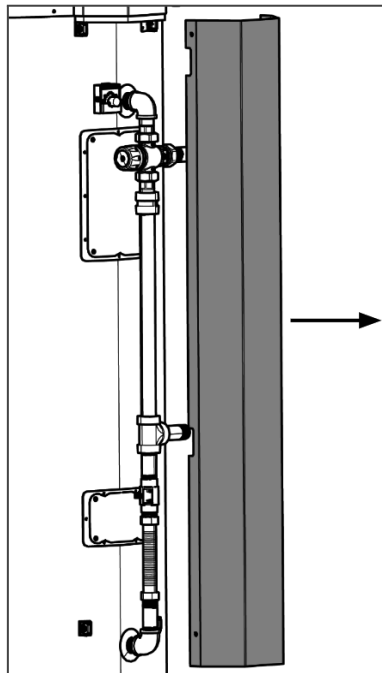


SETUP AND OPERATION

2. To remove each screw, use a screwdriver and turn counterclockwise one quarter turn, then pull the screw completely out and set aside.



3. Once all four screws are removed, pull the Central Column away from the front of the Water Heater and set it aside.

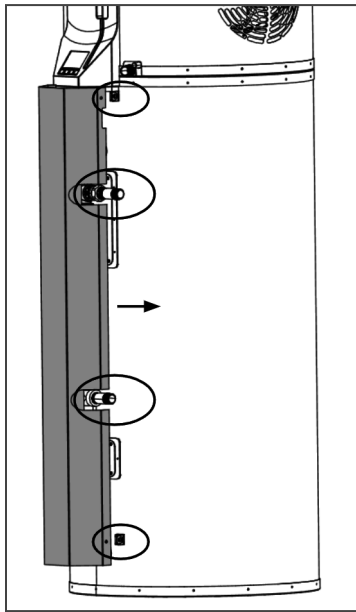


SETUP AND OPERATION

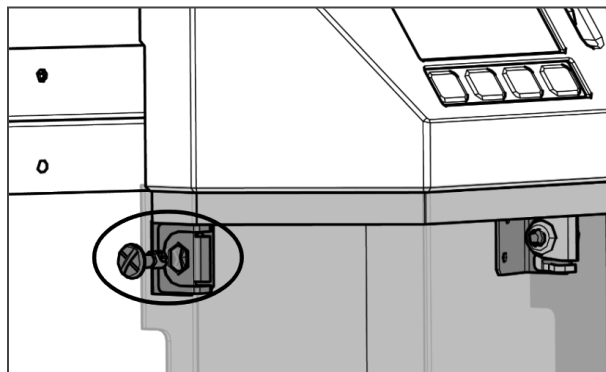
Step 2 - Re-Installing the Central Column

Note - it may be useful to have a helper support the column as you re-install it.

1. Place the Central Column over the plumbing assembly, aligning the four mounting holes on the Column with the four brackets on the Water Heater jacket (note the two obscured far side brackets are not shown in the image below). If done properly, the Hot Water Outlet and Cold Water Inlet will also align with the side cutouts in the Column.



2. To install each screw, re-insert it through the hole in the Central Column. Use a screwdriver to turn the screw clockwise while pushing in to ensure the screw engages the bracket. If done correctly, the bracket will grab the screw and the screw will bottom out after one quarter-turn. If the screw is still loose or wiggling after you've turned it, it is not secured correctly in the bracket.



SETUP AND OPERATION

RESETTING THE ENERGY CUTOFF (ECO)

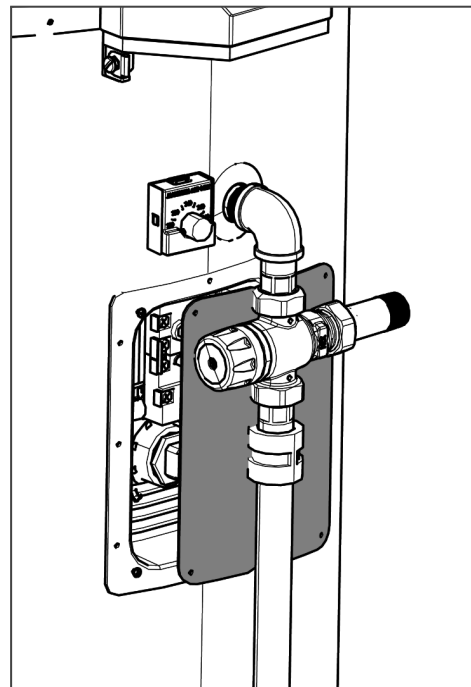
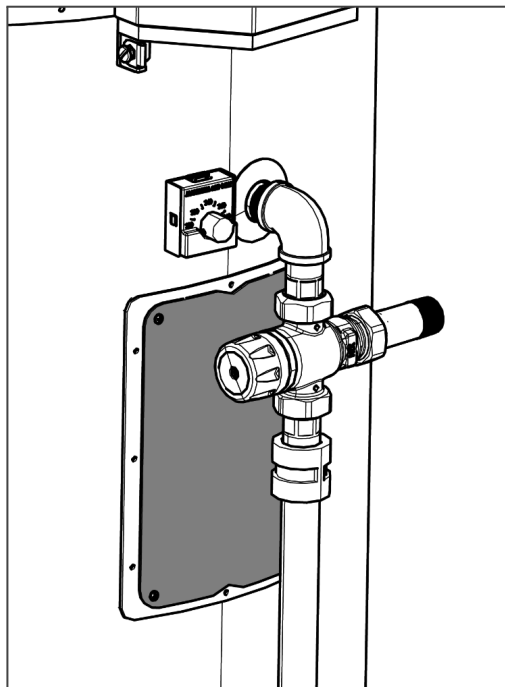
Your Water Heater is equipped with a temperature limiting energy cutoff (ECO) that disconnects power to the system if the temperature in the tank gets too hot. **If the ECO activates, your system will not heat until the ECO is reset. It is recommended to let the tank sit for several hours to cool down after the ECO trips.**



ELECTRIC SHOCK - You MUST turn OFF the power to your Water Heater at the Circuit Breaker before wiring or servicing it. Failure to do so may result in injury or death. Use a non-contact voltage tester to ensure it is properly de-energized.

Step 1 - Access the ECO

1. Turn power OFF at the Circuit Breaker and use a non-contact voltage tester to ensure no power is going to your Water Heater.
2. Remove the Central Column. See **REMOVING AND RE-INSTALLING THE CENTRAL COLUMN** earlier in this section.
3. The ECO is located behind the Upper Element Access Cover. Remove the four screws that hold this cover in place, and set the cover aside.

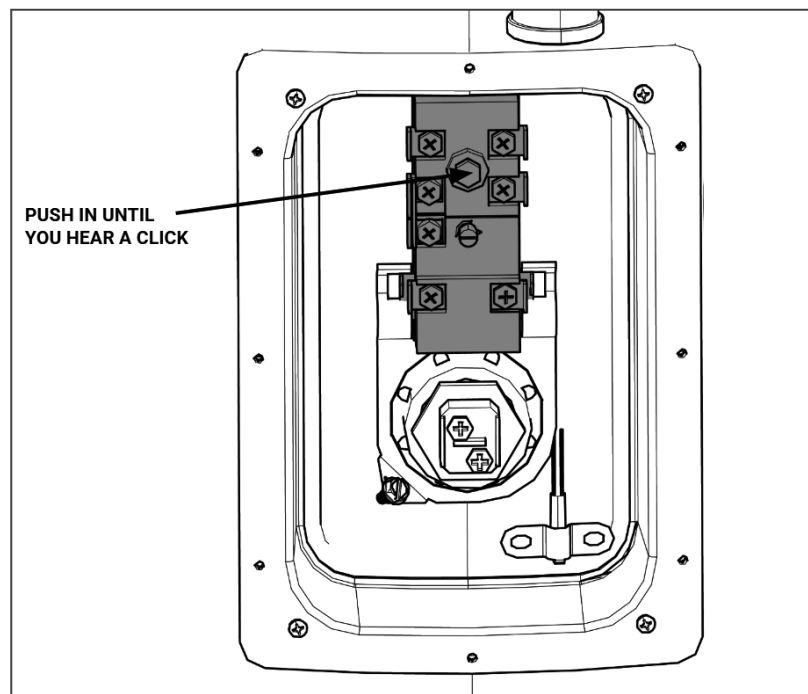


SETUP AND OPERATION

4. Remove the insulating foam from within the cavity and set it aside.

Step 2 - Reset the ECO

1. The ECO has a red reset button that must be pushed in until you hear a click, indicating it has been properly reset. **Note that the ECO may not reset until the Water Heater has cooled down. If you are unable to get the ECO to reset properly, you MUST contact a licensed professional or contact Cala Systems.**



Step 3 - Re-install the Covers

1. Replace the insulating foam within the cavity.
2. Replace the Upper Element Access Cover and secure the four screws.
3. Replace the Central Column. See **REMOVING AND RE-INSTALLING THE CENTRAL COLUMN** earlier in this section.

SETUP AND OPERATION

CALA INTELLIGENT PREFERENCES

Cala Intelligent Preferences™ are optional features available in the Cala app providing advanced customization for your home. Once you configure these settings, Cala Predictive Intelligence™ will incorporate them into its water heating plan for your home.

See the Cala App or on-device controls for more information.

Solar Synchronization

Cala Solar Synchronization™ coordinates water heating with times when electricity is produced by your home's solar system, reducing your carbon footprint and, for most homes, reducing the amount of electricity exported to the grid. For homes without net metering, electricity provided to the grid is paid at a lower price (\$/kWh) than electricity purchased from the grid. For these homes, Solar Synchronization reduces the annual cost of water heating. For homes with a battery, this feature increases the battery capacity available for other electrical loads in your home.

Electricity Price Synchronization

Cala Electricity Price Synchronization™ maximizes the amount of water heating that occurs during periods when electricity prices are lower, and can reduce your operating costs. Availability varies by region.

Carbon Emissions Synchronization

Cala Emissions Synchronization™ maximizes the amount of water heating that occurs during periods when the grid is producing cleaner energy, and can reduce your home's carbon footprint.

Storm Preparation Heating

Cala Storm Preparation Heating™ provides increased hot water in a power outage by heating more hot water before major storms in your area.

Sound and Air Management

Cala Sound and Air Management™ enables you to choose specific time periods during which Cala will prevent the heat pump from running, preventing noise and cool air from impacting comfort in nearby rooms. Cala will prepare for these periods by preheating hot water according to the usage patterns of your home. This setting may result in increased energy use and operating costs by limiting use of the heat pump and relying on electric element heating during these periods if there is unusually high demand.

Demand Response Participation (aka Virtual Power Plants, Distributed Power Plants)

Join other Cala homes to support your regional electric grid. Cala Predictive Intelligence™ will receive signals to increase or decrease electricity use during certain periods of time and

SETUP AND OPERATION

incorporate these into your home's water heating plan. This helps reduce load on the electrical grid while earning you money and reducing your carbon footprint. Availability varies by region.

Boost Mode

Cala Boost Mode™ enables you to temporarily increase your hot water capacity when you expect heavier hot water usage than normal, for example if you have visitors staying with you. Energy usage will be higher but your unit will produce more hot water.

CARE AND MAINTENANCE

Basic periodic maintenance can significantly extend the life of your water heater!

Refer to the maintenance schedule below and instructions that follow.

RECOMMENDED MAINTENANCE SCHEDULE

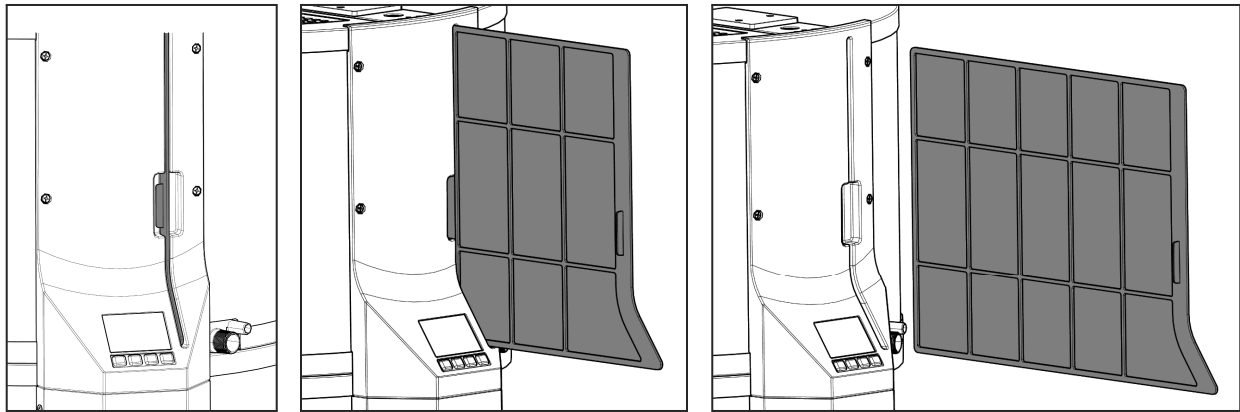
FREQUENCY	TIME	MAINTENANCE	TOOLS
Every 3-6 months	5 minutes	Clean Air Filter	None
Once per year	5 minutes	Check Condensate Line	None
Once per year	5 minutes	Check Temperature & Pressure Relief Valve	Bucket Safety Glasses
Once per year	1-2 hours	Flush the Tank	Screwdriver Garden Hose Safety Glasses
Every 3-5 years	2-3 hours	Inspect Anode Rod and replace if more than half depleted	Screwdriver Bucket Socket Wrench Socket Extender 1 - 1/16 inch socket PTFE Tape Pipe Sealant Safety Glasses Step Ladder

CARE AND MAINTENANCE

CLEANING THE AIR FILTER

The Air Filter prevents dust, dirt, and debris from accumulating on the evaporator of your heat pump – just like the air filter in an air conditioner. Debris build-up can cause airflow restrictions that may reduce your system's performance or impact the lifespan of your Water Heater.

1. Remove the Air Filter - it is easily accessible on the front of the unit and can be removed by using the finger tab to slide it out.
2. Wipe the Air Filter or rinse with water and ensure it is completely dry. **DO NOT** vacuum it as this may damage the mesh.
3. Re-Insert the Air Filter.



CHECKING THE CONDENSATE LINE

The Condensate Line helps drain away condensate from the Heat Pump subassembly.

1. Visually inspect your Condensate Line to ensure there are no blockages or leaks. Confirm it is still installed properly according to the instructions outlined in **INSTALLING YOUR WATER HEATER.**
2. (If applicable) Visually inspect your Condensate Pump to ensure it is functioning properly, not blocked or damaged, and that there are no leaks.

CARE AND MAINTENANCE

CHECKING THE TEMPERATURE & PRESSURE RELIEF VALVE

The Temperature & Pressure Relief Valve is a safety device that prevents excessive build up of temperature and pressure in the tank.

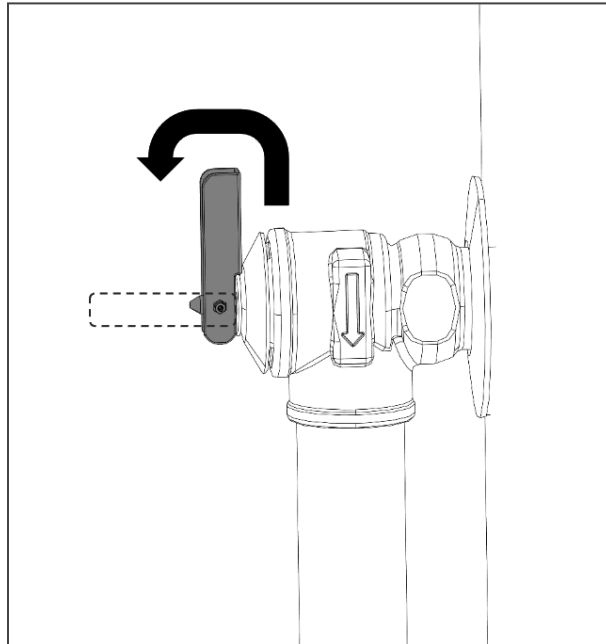


DANGER - It is critical to check this valve at least once per year to ensure it is functioning properly. A malfunctioning, blocked, or damaged valve may lead to an explosion.



DANGER - Take care when opening the valve as the water that flows out may be hot and could scald you. If no water flows out, close the lever, power OFF your system, and immediately contact Cala or your Installer as the tank may not be properly filled or you may have a blockage or malfunctioning valve which could cause an explosion.

1. Before checking the Valve, ensure that it leads to a suitable drainage point.
2. Rotate the lever down on the Valve to the position shown below and leave it in this position for around 5 seconds. It may require some force to rotate the lever, this is normal.
3. If water steadily flows out, your valve is functioning properly and you can close the lever.



CARE AND MAINTENANCE

FLUSHING THE TANK

Potable water contains natural minerals and particles that accumulate over time causing build-up that accelerates tank failure and/or leads to water blockage reducing water flow in your system.

Flushing your Water Heater once per year will help remove these particles and extend the life of your unit.



WARNING – Turn OFF power to your Water Heater at the Circuit Breaker before flushing your tank.

1. Turn OFF the Water Heater power at your Circuit Breaker.
2. Close the Cold Water Shut-off Valve in your home's plumbing system.
3. Connect a garden hose to the Drain Valve on your unit and ensure this hose leads to a suitable drainage point or to the outside. If you are draining water to a location above the height of your unit, you may need a transfer pump to facilitate drainage.
4. Turn on at least two hot water taps in your home - ideally on the highest floor above the Water Heater - this will help alleviate pressure in the tank and ensure that water steadily flows out of the tank.
5. Open the Drain Valve. The Valve may have a slotted screw for a screwdriver, or it may have a knob. In either configuration, you will open the Valve by turning counterclockwise until it is completely open and water is flowing.
6. Wait until the tank has completely drained and water stops flowing - this should take around 30-45 minutes, but may vary.
7. Once the tank is completely drained, open the Cold Water Shut-off Valve to allow water to flow into the tank. This will help to flush out any remaining particles at the bottom of your tank through the Drain Valve.
8. When the water being flushed is completely clear, close the Drain Valve by turning the slotted screw (or knob) counterclockwise until it is completely closed.
9. Remove the garden hose from the Drain Valve.
10. When water is steadily flowing out of the hot water taps, your tank has been refilled. You may close the hot water taps.
11. Turn back ON power to your Water Heater at the Circuit Breaker; your system will now begin heating the water in the tank.

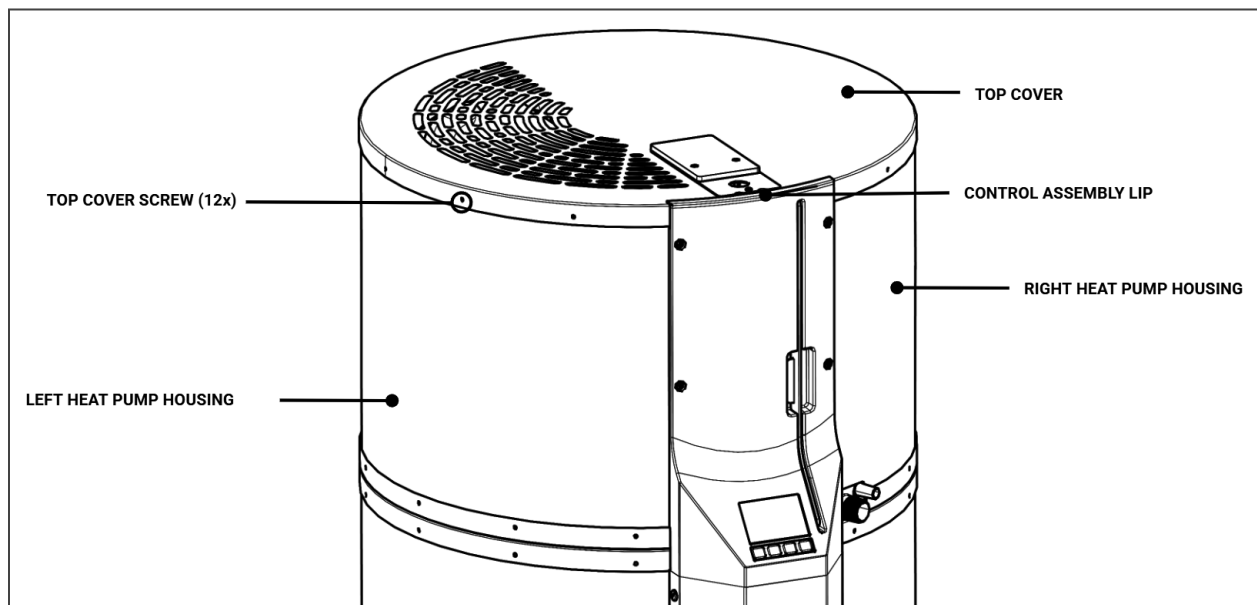
CARE AND MAINTENANCE

REPLACING THE ANODE ROD

The Anode Rod - sometimes called a “Sacrificial” Anode Rod - is a magnesium rod that attracts rust-causing ions in your water and corrodes over time, “sacrificing” itself to prevent your tank from corroding. **Over time, most Anode Rods will gradually wear away leaving the tank vulnerable to degradation. This can lead to small or major leaks causing property damage.**

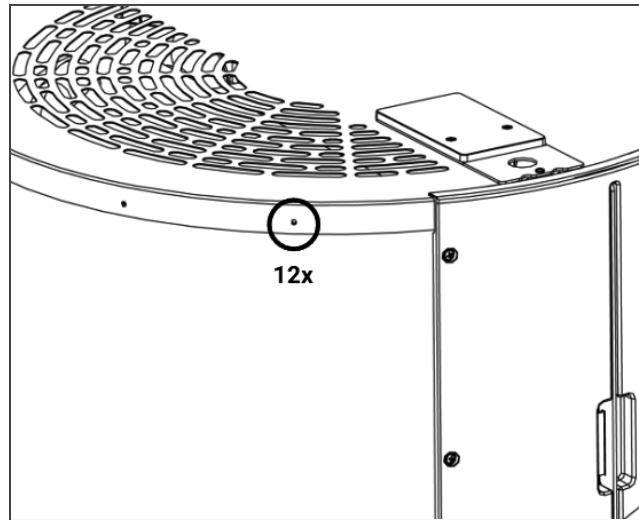
1. Turn OFF power to your unit at the Circuit Breaker. Use a noncontact voltage tester to ensure both the Circuit Breaker and Water Heater are properly de-energized.
2. Disconnect the wiring from your Water Heater from your Circuit Breaker. See **INSTALLING YOUR WATER HEATER** for more info on the wiring on your unit.
3. Close the Cold Water Shut-Off Valve in your plumbing system.
4. Ensure your Temperature & Pressure Relief Valve is routed to a suitable drainage location, then open it to relieve pressure and allow water to flow out. See **CHECKING THE TEMPERATURE & PRESSURE RELIEF VALVE** earlier in this section. Leave the Valve open to ensure there is no additional pressure build up inside the tank while you work on it.
5. Disconnect the Water Heater wiring from the Circuit Breaker wiring. See **INSTALLING YOUR WATER HEATER** for more info on the wiring on your unit.

Now you'll remove the Top Cover. Follow the steps starting on the next page.



CARE AND MAINTENANCE

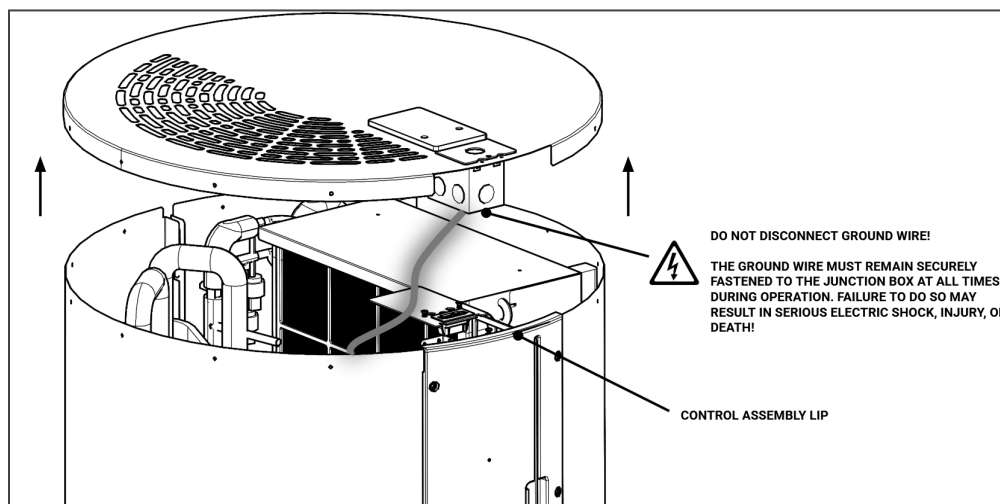
6. Remove all screws (12x) from the lip of the Top Cover.



7. Carefully lift up the Top Cover and rest it on the top of the Right Heat Pump Housing.
DO NOT disconnect or damage the Ground Wire on the bottom of the Junction box. You may need to gently pull back the Control Assembly Lip to help the Top Cover to come off.

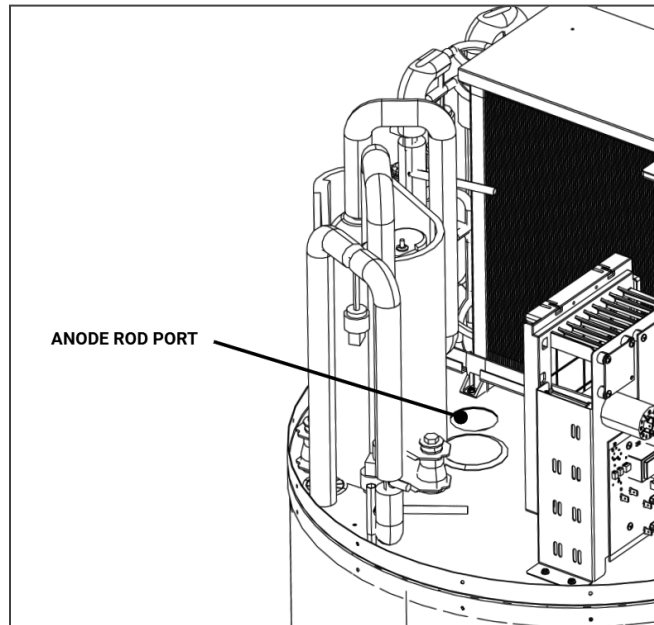


ELECTRIC SHOCK - The Ground Wire must remain securely fastened to the Junction Box at all times during operation. Failure to do so may result in serious electric shock, injury, or death!

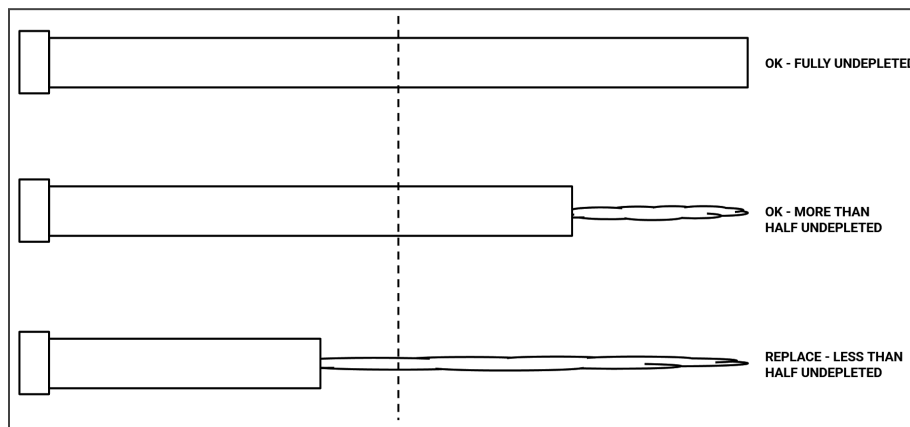


CARE AND MAINTENANCE

8. Locate the Anode Rod Port. Remove the port plug, then remove the insulation underneath to access the Anode Rod. Using your socket, wrench, and extender, remove the Anode Rod by twisting counterclockwise. Because the Anode Rod is torqued in, you may need a helper to hold the Water Heater steady as you rotate.



9. Inspect the Anode Rod. If less than half the rod - 22 inches - is undepleted, install a replacement Anode - see **REPLACEMENT PARTS**. To install, seal the threads with PTFE tape and/or pipe sealant and torque to a setting of 50 ft-lbs.

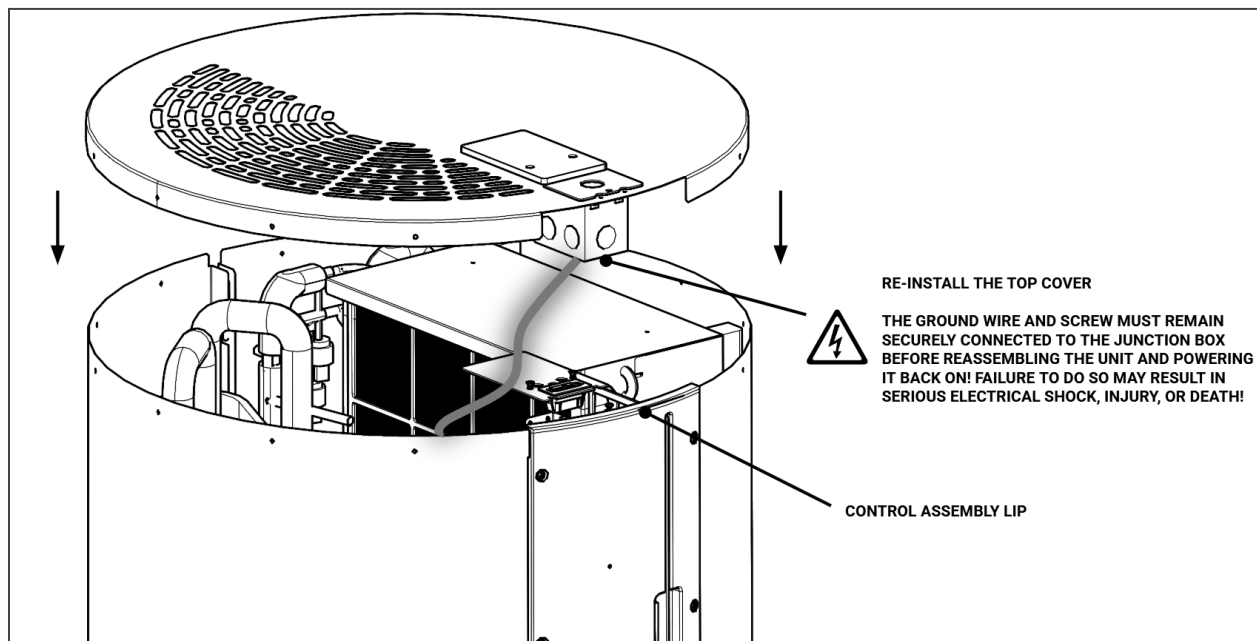


CARE AND MAINTENANCE

10. Re-install the Top Cover onto the Left and Right Heat Pump Housings. Note you may need to gently pull back on the Control Assembly Lip to position the Top Cover in place.



ELECTRIC SHOCK - Ensure the Ground Wire is still securely attached to the Junction Box before reassembling the unit and powering it back ON. Failure to do so may result in serious electric shock, injury, or death!



11. Close the lever on the Temperature & Pressure Relief Valve.
12. Reconnect the wiring from your Water Heater to the Circuit Breaker. See **INSTALLING YOUR WATER HEATER** for more info on wiring your unit.
13. Open the Cold Water Shut-off Valve.
14. Refill your tank - see **INSTALLING YOUR WATER HEATER** for how to properly fill.
15. Turn your Water Heater power back ON at the Circuit Breaker.

TROUBLESHOOTING



ELECTRIC SHOCK - You MUST turn OFF power to your Water Heater at the Circuit Breaker before attempting to service it. Failure to do so may result in injury or death. Use a non-contact voltage tester to ensure it is properly de-energized.



WARNING - it is strongly recommended to contact Cala Systems or a licensed professional to diagnose and repair the Water Heater!

If an error occurs, a fault code will be displayed on your Cala's screen and a notification will be sent to the Cala app. Error codes are visible until resolved.

DO NOT replace parts solely based on fault codes. The fault codes can help identify potential sources of error, but the system may also generate false errors under extenuating circumstances.

Code(s)	Error	Cause(s)	Troubleshooting
S-0-0 S-0-1 S-0-2	UPPER TEMP SENSOR ERROR	<i>Sensor is unplugged or has failed causing it to be out of range.</i>	Turn OFF power at the circuit breaker, then check sensor connections. If issue persists, contact your Installer or Cala Systems.
S-1-0 S-1-1 S-1-2	LOWER TEMP SENSOR ERROR	<i>Sensor is unplugged or has failed causing it to be out of range.</i>	Turn OFF power at the circuit breaker, then check sensor connections. If issue persists, contact your Installer or Cala Systems.
S-2-0 S-2-1 S-2-2	TOP TEMP SENSOR ERROR	<i>Sensor is unplugged or has failed causing it to be out of range.</i>	Turn OFF power at the circuit breaker, then check sensor connections. If issue persists, contact your Installer or Cala Systems.
S-3-0 S-3-1 S-3-2	DELIVERY TEMP SENSOR ERROR	<i>Sensor is unplugged or has failed causing it to be out of range.</i>	Turn OFF power at the circuit breaker, then check sensor connections. If issue persists, contact your Installer or Cala Systems.
S-4-0 S-4-1 S-4-2	DISCHARGE LINE TEMP SENSOR ERROR	<i>Sensor is unplugged or has failed causing it to be out of range.</i>	Turn OFF power at the circuit breaker, then check sensor connections. If issue persists, contact your Installer or Cala Systems.
S-5-0 S-5-1 S-5-2	LIQUID LINE TEMP SENSOR ERROR	<i>Sensor is unplugged or has failed causing it to be out of range.</i>	Turn OFF power at the circuit breaker, then check sensor connections. If issue persists, contact your Installer or Cala Systems.
S-6-0 S-6-1 S-6-2	SUCTION LINE TEMP SENSOR ERROR	<i>Sensor is unplugged or has failed causing it to be out of range.</i>	Turn OFF power at the circuit breaker, then check sensor connections. If issue persists, contact your Installer or Cala Systems.
S-7-0 S-7-1 S-7-2	AMBIENT TEMP SENSOR ERROR	<i>Sensor is unplugged or has failed causing it to be out of range.</i>	Turn OFF power at the circuit breaker, then check sensor connections. If issue persists, contact your Installer or Cala Systems.
S-8-0 S-8-1 S-8-2	AMBIENT HUMIDITY SENSOR ERROR	<i>Sensor is unplugged or has failed causing it to be out of range.</i>	Turn OFF power at the circuit breaker, then check sensor connections. If issue persists, contact your Installer or Cala Systems.

TROUBLESHOOTING

Code(s)	Error	Cause(s)	Troubleshooting
S-9-0 S-9-1 S-9-2	DISCHARGE PRESSURE SENSOR ERROR	<i>Sensor is unplugged or has failed causing it to be out of range.</i>	Turn OFF power at the circuit breaker, then check sensor connections. If issue persists, contact your Installer or Cala Systems.
S-10-0 S-10-1 S-10-2	SUCTION PRESSURE SENSOR ERROR	<i>Sensor is unplugged or has failed causing it to be out of range.</i>	Turn OFF power at the circuit breaker, then check sensor connections. If issue persists, contact your Installer or Cala Systems.
S-11-3	SAFETY CPU ERROR	<i>SafetyCPU has activated.</i>	System will automatically resume normal operation once safety criteria are met. If operation does not resume, contact your Installer or Cala Systems.
S-12-0 S-12-2	FLOW SENSOR ERROR	<i>Sensor is unplugged or has failed causing it to be out of range.</i>	Turn OFF power at the circuit breaker, then check sensor connections. If issue persists, contact your Installer or Cala Systems.
S-26-0 S-26-1 S-26-2	SYSTEM VOLTAGE ERROR	<i>System voltage is out of range or not reporting.</i>	Contact your Installer or Cala Systems.
S-27-0 S-27-1 S-27-2	IDLE CURRENT ERROR	<i>Idle current is out of range or not reporting.</i>	Contact your Installer or Cala Systems.
H-0-0 H-1-0 H-2-0	TANK TEMP TOO HIGH	<i>Safety CPU has activated due to tank temperature being above control limits.</i>	Run hot tap(s) to remove hot water from system and bring tank the temperature down. If applicable, increase Max Temp Knob back to factory setting of 140°F - see Manual.
H-3-0	DELIVERY TEMP TOO HIGH	<i>Safety CPU has activated due to mixing valve temperature being above control limits.</i>	System will automatically resume normal operation once safety criteria are met. If operation does not resume, contact your Installer or Cala Systems.
H-0-4 H-1-4 H-2-4	DRY FIRE CONDITION	<i>Tank not filled properly or element failure.</i>	Ensure tank is properly filled. If issue persists, turn OFF power at the Circuit Breaker . Measure the resistance across the element terminals. If the resistance is not 12.25 ohms +/- 10% the Element is failing or has failed. Contact your Installer or Cala Systems.
H-13-5	COMPRESSOR OVERCURRENT	<i>Compressor drawing more current than expected.</i>	System will operate in element-only mode while automatically attempting to resolve the issue. If error persists, contact your Installer or Cala Systems.
H-13-6 H-13-7	COMPRESSOR VOLTAGE ERROR	<i>Compressor voltage is out of expected range.</i>	System will operate in element-only mode while automatically attempting to resolve the issue. If error persists, contact your Installer or Cala Systems.
H-13-8	COMPRESSOR IDLE CURRENT ERROR	<i>Compressor reported high idle current.</i>	System will operate in element-only mode while automatically attempting to resolve the issue. If error persists, contact your Installer or Cala Systems.
H-13-9	COMPRESSOR CYCLE ERROR	<i>Compressor turning on/off more frequently than expected.</i>	System will operate in element-only mode while automatically attempting to resolve the issue. If error persists, contact your Installer or Cala Systems.

TROUBLESHOOTING

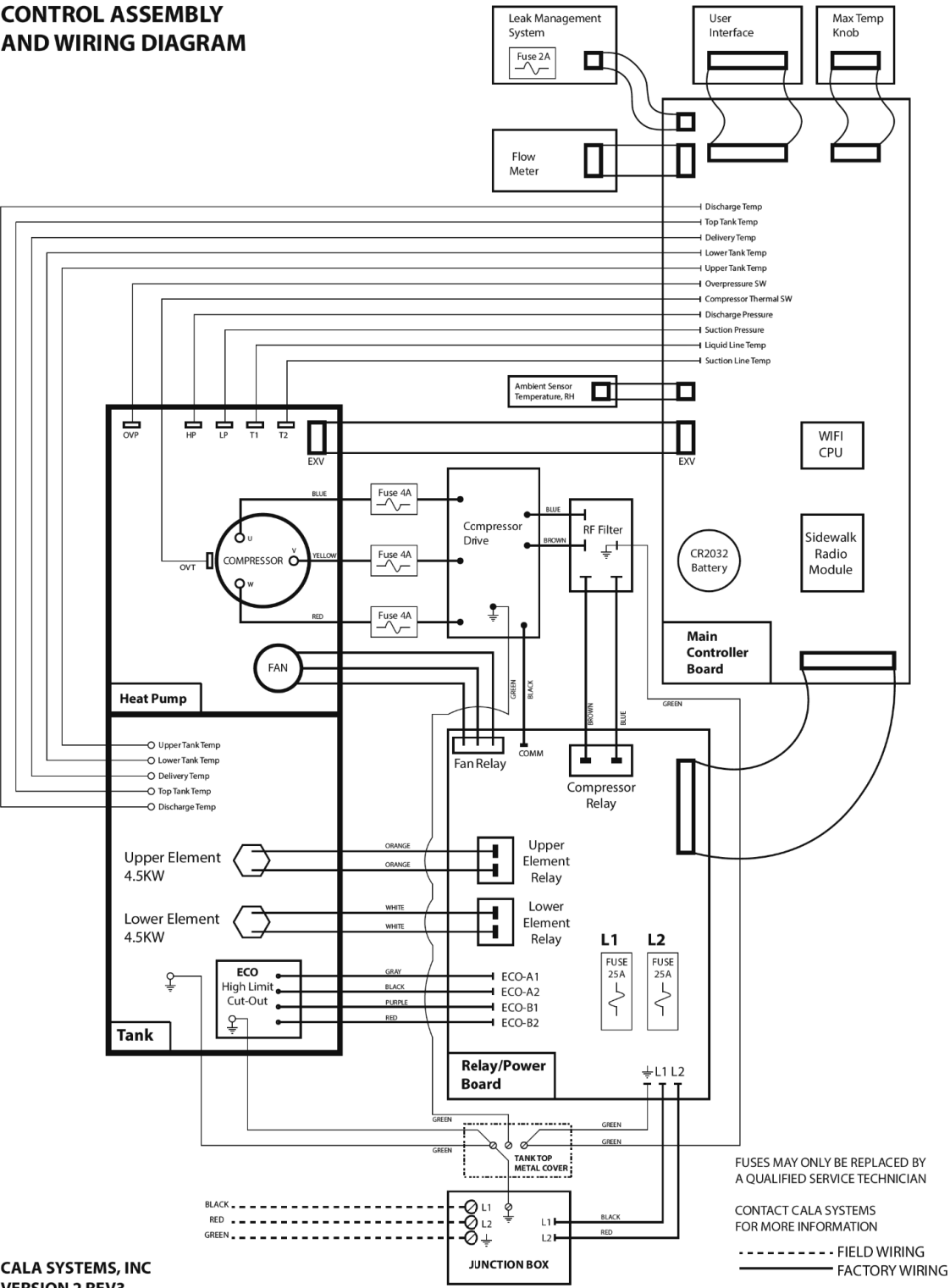
Code(s)	Error	Cause(s)	Troubleshooting
H-14-0	HEAT PUMP PRESSURE DELTA ERROR	Pressure delta between Discharge and Suction sides is too high.	System will operate in element-only mode while automatically attempting to resolve the issue. If error persists, contact your Installer or Cala Systems.
H-4-0 H-6-1 H-9-0 H-10-1	HEAT PUMP SYSTEM ERROR	Low airflow and/or blockage in system causing the Suction and/or Discharge Pressure and/or Temperature to be out of range.	Check that Air Filter is clean - see Manual for maintenance procedure. Check that fan is not blocked - see Manual for proper clearances. If error persists, contact your Installer or Cala Systems.
E-15-9 E-16-9	ELEMENT CYCLE ERROR	Upper and/or Lower Element turning on/off more frequently than expected.	System will automatically attempt to resolve the issue. If error persists, contact your Installer or Cala Systems.
E-15-5 E-15-12 E-16-5 E-16-12	ELEMENT CURRENT ERROR	Upper and/or Lower Element reporting current that is out of range.	Turn OFF power at the Circuit Breaker. Ensure the element(s) wiring is connected and secure. Measure the resistance across the element terminals. If the resistance is not 12.25 ohms +/- 10% the Element is failing or has failed. Contact your Installer or Cala Systems.
L-23-16	DRIP TRAY OVERFLOW SENSOR ACTIVATED	Water build up in drip tray in heat pump subassembly.	Turn OFF power at the circuit breaker. Visually inspect the Drip Tray Ports, Condensate Line, and (if applicable) the Condensate Pump for Blockage. Ensure Condensate Line does not have excessive length or is coiled up - this may cause blockage. See Manual for proper Condensate installation. If issue persists, contact your Installer or Cala Systems.
L-24-16	LEAK SENSOR ACTIVATED	Water leak on ground near water heater.	Turn OFF power at the circuit Breaker. Identify the leak source, then clean up the leak. Ensure the Leak Sensor probes are completely dry and reposition the sensor. If no leak is visible, ensure the Leak Sensor is properly positioned and the probes are not wet. If error persists, contact your Installer or Cala Systems.
L-25-16	DRIP TRAY OVERFLOW AND LEAK SENSORS ACTIVATED	Water build up in drip tray in heat pump subassembly and water leak on ground near water heater.	Turn OFF power at the circuit Breaker. Identify the leak source, then clean up the leak. Ensure the Leak Sensor probes are completely dry and reposition the sensor. If no leak is visible, ensure the Leak Sensor is properly positioned and the probes are not wet. If error persists, contact your Installer or Cala Systems.

TROUBLESHOOTING

Code(s)	Error	Cause(s)	Troubleshooting
O-17-13 O-18-13 O-19-14 O-20-13	OTA UPDATE ERROR	<i>System was unable to properly receive or execute an Over-the-Air software update.</i>	Confirm system is connected to WiFi and that WiFi has internet connectivity. If issue persists, contact Cala Systems.
C-21-15	WIFI ERROR	<i>WiFi disconnected.</i>	Verify WiFi is connected to internet. Repeat WiFi setup process. If issue persists, contact Cala Systems.
C-22-15	AMAZON SIDEWALK ERROR	<i>Amazon Sidewalk disconnected.</i>	Contact Cala Systems.

WIRING DIAGRAM

CONTROL ASSEMBLY AND WIRING DIAGRAM



CALA SYSTEMS, INC
VERSION 2 REV3

REPLACEMENT PARTS

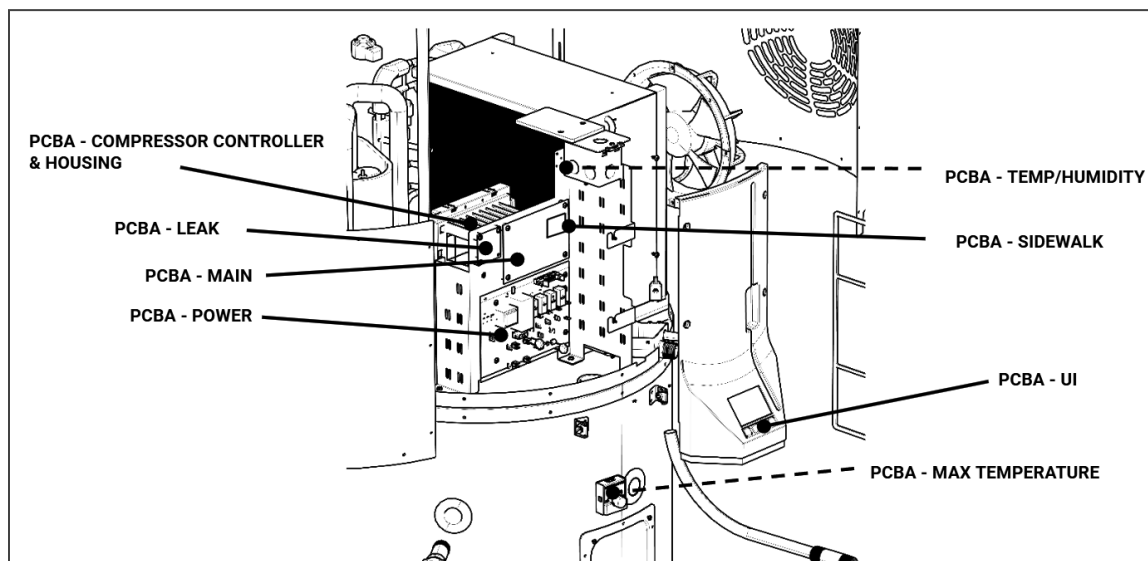
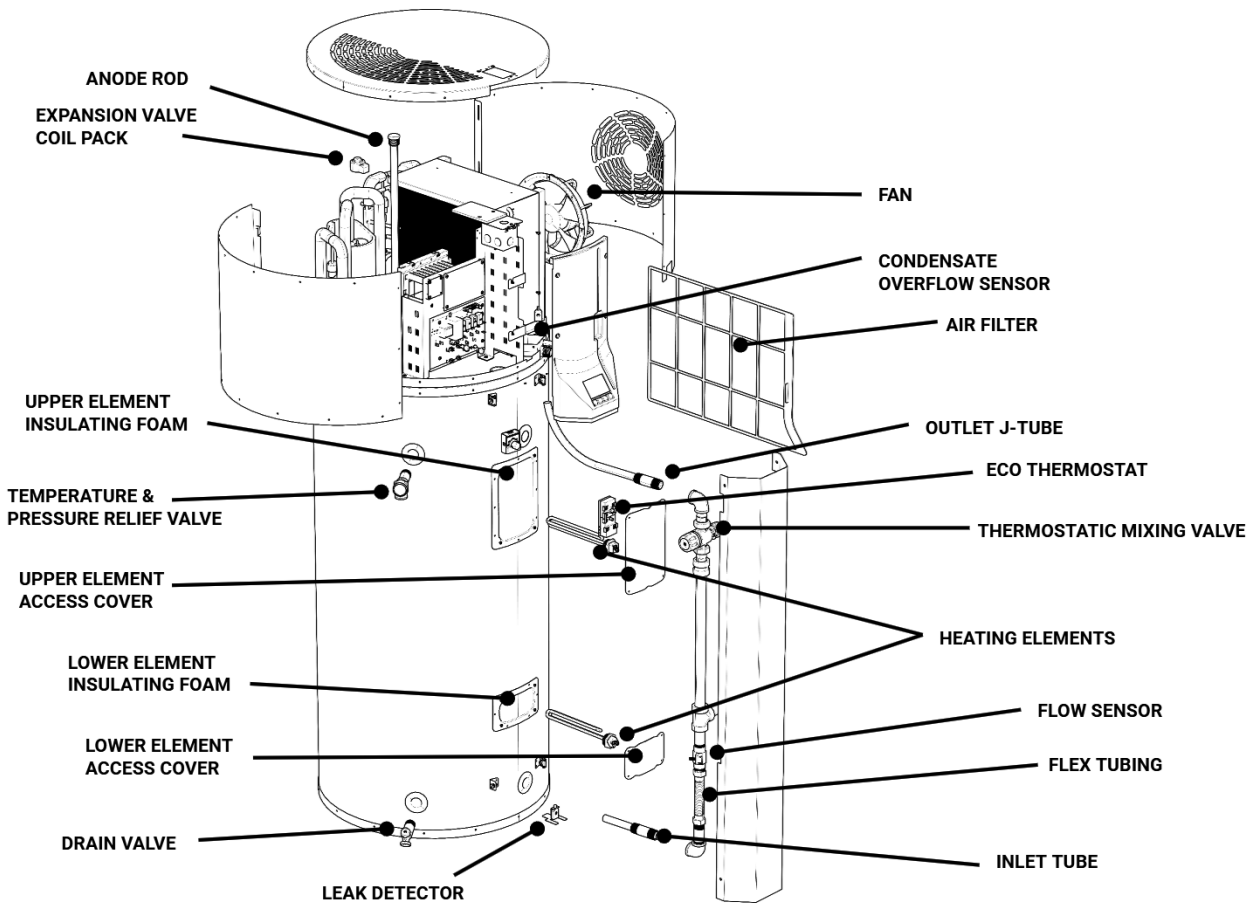
To order replacement parts, please contact **support@calasystems.com** or call **877-684-2252 (877-684-CALA)**.

Cala strongly recommends contacting a licensed professional to service the replacement parts below, with the exception of the Air Filter and Leak Detector.

Refer to the parts list below and diagrams on the following page.

PART NUMBER	DESCRIPTION
100032	LOWER ELEMENT ACCESS COVER
100034	UPPER ELEMENT ACCESS COVER
100038	AIR FILTER
100047	HEATING ELEMENT (4500W)
100048	INLET TUBE
100049	OUTLET J-TUBE
100059	FLEX TUBING
100060	ANODE ROD (44")
100064	DRAIN VALVE
100065	THERMOSTATIC MIXING VALVE
100082	FAN
100091	ECO THERMOSTAT
100150	UPPER ELEMENT INSULATING FOAM
100151	LOWER ELEMENT INSULATING FOAM
100251	TEMPERATURE & PRESSURE RELIEF VALVE
100092	LEAK DETECTOR
100094	TEMP SENSOR (2 INCH, PROBE)
100095	TEMP SENSOR (9 INCH, STRAP)
100096	TEMP SENSOR (32 INCH, STRAP, RED CONNECTOR)
100349	TEMP SENSOR (32 INCH, STRAP, BLUE CONNECTOR)
100350	TEMP SENSOR (32 INCH, STRAP, GREEN CONNECTOR)
100099	FLOW SENSOR
100137	EXPANSION VALVE COILPACK
100342	CONDENSATE OVERFLOW SENSOR
100001	PCBA - COMPRESSOR CONTROLLER & HOUSING
100191	PCBA - LEAK
100192	PCBA - MAIN
100194	PCBA - UI
100195	PCBA - TEMP/HUMIDITY
100196	PCBA - MAX TEMPERATURE
100197	PCBA - SIDEWALK
100198	PCBA - POWER
100172	COMPRESSOR CONTROLLER HARNESS
100174	COMPRESSOR HARNESS
100173	THERMAL CUTOFF HARNESS

REPLACEMENT PARTS



REPLACEMENT PARTS

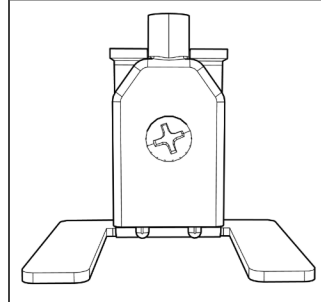
TEMP SENSOR (2 INCH, PROBE)



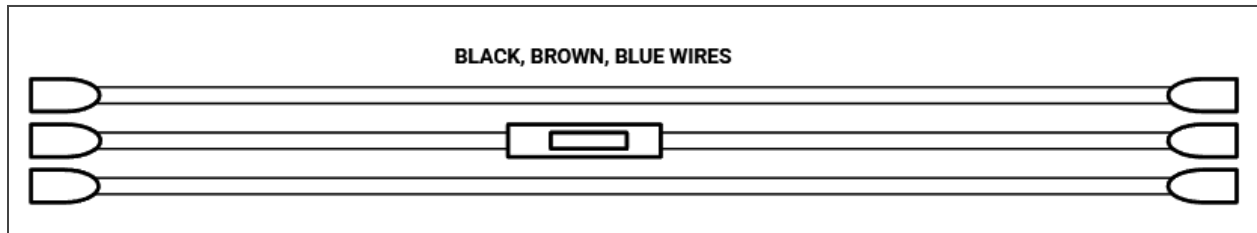
TEMP SENSOR (32 INCH, STRAP)



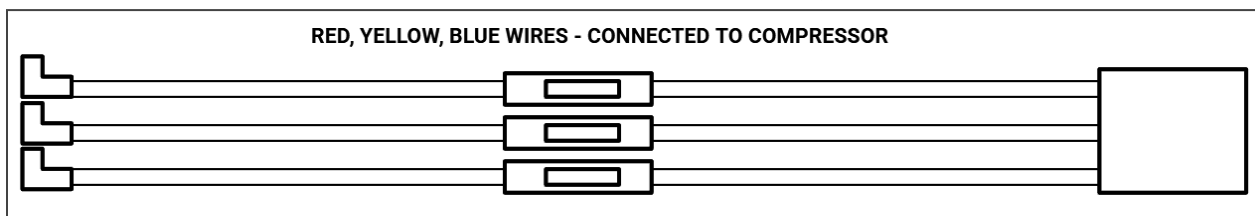
LEAK DETECTOR



COMPRESSOR CONTROLLER HARNESS (WITH FUSE BOARD)



COMPRESSOR HARNESS (WITH FUSE BOARDS)



THERMAL CUTOUT HARNESS

