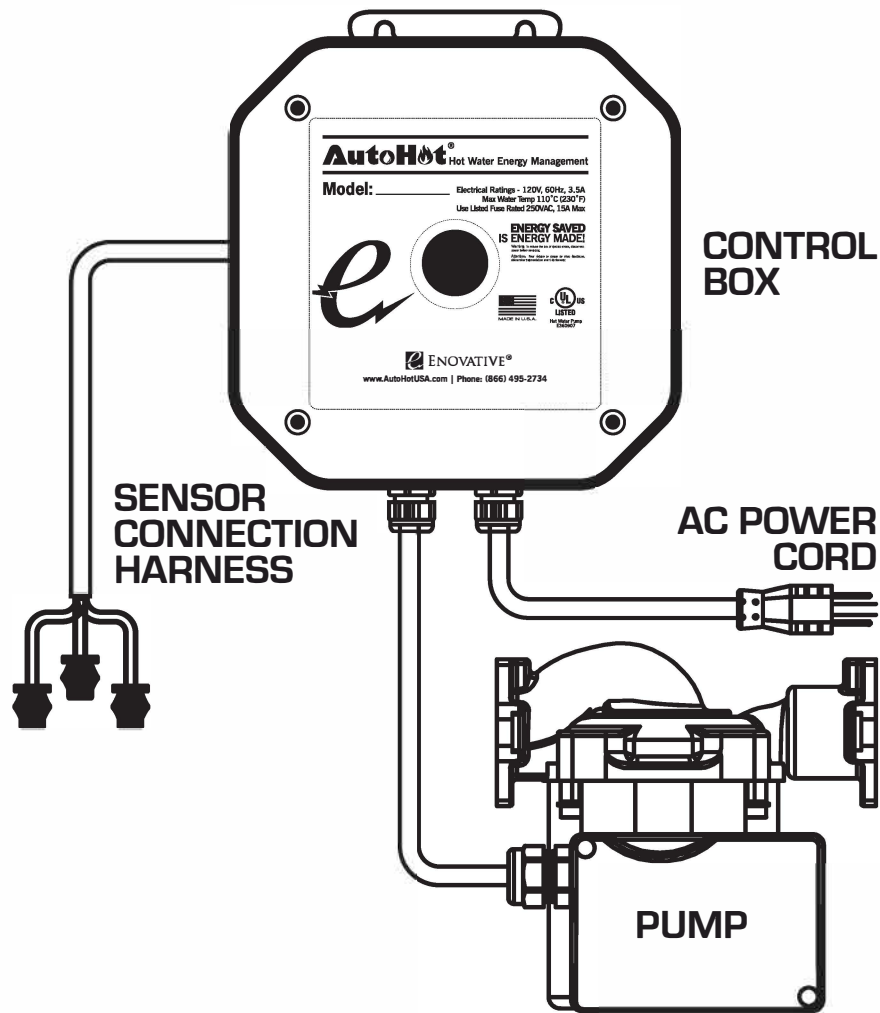




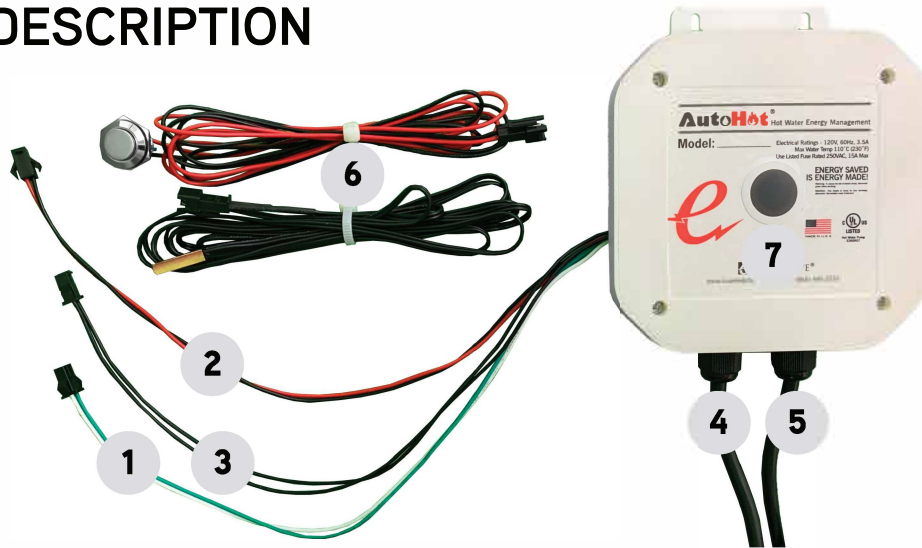
INSTALLATION AND OPERATIONS MANUAL FOR SINGLE FAMILY RESIDENTIAL GEN 2



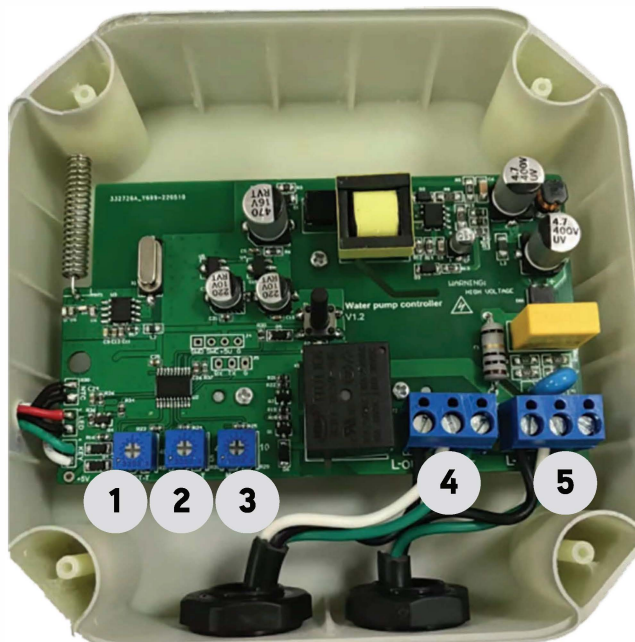
OPERATING INSTRUCTIONS FOR AUTOHOT® GEN2

INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S
INSTRUCTION OR WARRANTY MAY BE VOIDED

PARTS DESCRIPTION



1. Green (+) and White (-) male side, one foot long, with SM2.5 connector, for wired indicator.
2. Black (-) and Red (+) male side, one foot long, with SM2.5 connector, for wired button.
3. Black (-) and Black (+) male side, one foot long, with SM2.5 connector, for NTC temperature sensor
4. AC output cable (Power output, connect to water pump)
5. AC input cable (Power input, connect to AC power)
6. Female sides, 3 feet long, with SM2.5 connector, for the parts.
(sensor included with all units, other harnesses part of other activation devices)
7. Silicon button in controller top
Shortly press - Turn on controller
Press for 5 seconds - Enter pairing mode



1. Potentiometer A
Target temperature adjustment
(95°F ~ 120°F / 35~49°C)
2. Potentiometer B
Target delta adjustment
(2°F/s - 10°F/s) (1°C/s -5°C/s)
3. Potentiometer C
Target runtime adjustment
(1-10 minutes)
4. AC-OUT terminal
5. AC-IN terminal

OPERATION INSTRUCTIONS

Indicator pattern description:

- **STANDBY:** The center button indicator will be off
- **RECEIVING SIGNAL:** The red indicator will flash 3-seconds sharp flashing (faster than fast blinking).
- **RUNTIME:** The red indicator will flash slowly
- **PAIRING:** The red indicator will remain flashing for 15 seconds or until it receives signal.
- **TARGET TEMPERATURE:** The red indicator will stay on.

Pairing with wireless push button support:

(it supports up to 10 wireless devices at a time, combination of wireless push buttons and wireless motion sensors)

Press silicon button on top for 5 seconds, while the Indicator flashes, press down the wireless button. When the flashing pattern changes, press on the wireless push button to verify that the controller responds. Pairing done if the controller responds to the wireless push button.

DELETE WIRELESS BUTTON PAIRING

Unplug the controller from the power outlet, and with the controller unplugged from the outlet, press and hold on the silicon button, plug in the controller to power, the indicator will start flashing fast indicating that pairing is deleted.

WORKING MODES - Demand mode & Temperature mode

Demand mode:

When using a wired activation device, the controller will work as on demand mode.

When the controller powers on, it enters on standby, LED indicator status is off.

Pressing on the wireless push button or the silicon push button in the center of the device will activate the water pump.

The LED indicator will flash fast for 3 seconds and then will change to slow flashing while the pump runs.

When the NTC sensor detects the target temperature, the controller turns off the pump automatically and the LED indicator stays red and constant, the LED indicator goes out when the temperature is lower than target temp.

When run time reaches the set target time, the controller will turn off the pump automatically and the LED indicator will turn on and constant if it reaches target temperature.

While in demand mode, re-pressing the wireless button or wired button, the set runtime will re-clock.

Temperature mode:

The controller goes into temperature mode of operation, when the wire harness for the wire push button has been jumped.

In temperature mode of operation, when the controller gets power , it automatically turns water pump on and the LED indicator will blink slowly.

When NTC sensor detects the set target temperature, the controller will turn off the pump automatically and the LED indicator stays red and still.

If the target temperature is decreased while running, the controller will re-activate pump itself immediately.

The process will repeat again and again to maintain high water temperature in the lines

The LED indicator keeps a slow blinking pattern during pump's runtime.

In temperature mode, the wireless button or silicon button are disabled.

TECHNICAL PARAMETERS

RATED PARAMETERS	
Working Voltage	AC110 / AC220V 50HZ / 60HZ
Output Voltage	AC110 / AC220V 50HZ / 60HZ
Output Power	550W
Static Power	< 1W
Radio Frequency	33.92MHZ
Wireless Receiving Distance	700 feet (open area)

IMPORTANT:

Operation of the pump without being plumbed into water lines may damage the pump and void the Warranty.

Parts included depends on the model:

<p>DR000A 1 - Control Box 4 - pairs of screws and wall anchors 1 - insulation tape 1 - manual 1 - hardwired push button assembly</p>	<p>DR055A 1 - Control Box 4 - pairs of screws and wall anchors 1 - insulation tape 1 - manual 1 - hardwired push button assembly 1 - 55 series pump 2 - flanges 4 - bolts and nuts</p>	<p>DR099A 1 - Control Box 4 - pairs of screws and wall anchors 1 - insulation tape 1 - manual 1 - hardwired push button assembly 1 - 99 series pump 2 - flanges 4 - bolts and nuts</p>
<p>DR150A 1 - Control Box 4 - pairs of screws and wall anchors 1 - insulation tape 1 - manual 1 - hardwired push button assembly 1 - 150 series pump 2 - flanges 4 - bolts and nuts</p>	<p>All Models with -USK, also include: 2 - stainless steel flex lines 1 - tee with plug 1 - tee with threaded temp sensor assembly</p>	<p>**Activation Accessories All residential systems Gen2 come with 1 wireless push button and integrated receiver. Any other activation accessories are purchased separately and have instructions on how to connect with the packaging.</p>

TOOLS YOU NEED

<p>Crescent Wrench</p>	<p>Phillips and flathead screwdrivers</p>	<p>Plier</p>	<p>Wire Strippers</p>	<p>Drill and 5/8 inch drill bit</p>

INSTALLATION CONSIDERATIONS

Figure 1: Pump on a return line



For return line installations, all pumps are flanged (where they mount onto the pipe), please order flanges if you don't already have them.

Best Location for the Enovative On-Demand Recirculation System:

For those using standard plumbing without a return line, typically, this would be at the fixture farthest away from the water heater, generally the kitchen or master bathroom. If the hot water supply runs in two different directions from the water heater, you may need more than one On-Demand Recirculation System.

For those with a return line (see figure 1), the pump and controller will be installed near the water heater.



Please see page 7 for instructions on where and how to install, and disregard step 3 through 7 that involve installing the tees and flex lines under the furthest sink.

Electrical Supply:

A 110V electrical supply outlet is required to power the unit. If an outlet is not available, install a 110V outlet in accordance with all local electrical codes.

CAUTION:

Do not plug in the On-Demand Recirculation System until all plumbing and wiring connections are completed and the water supply is turned on. Running the circulating pump without water may damage internal components and void the warranty.

Pump Position:

The pump should always be installed in a horizontal position (as shown in Figures 1 and 2) with a capacitor box facing up toward the sink. Be sure the arrow on the pump casing is pointing from left to right (hot water to cold water side) before connecting the flex lines.

Note:

T's and flex lines supplied by Enovative provide maximum flow and performance. Alternative plumbing parts may restrict flow and delay hot water to fixtures.

Mount the AutoHot® Control Box

Second gen AutoHot® controller is integrated to the pump, there is no separate controller mounting. Controller power is supplied by the same power cord.

IMPORTANT:

MAKE SURE THE LOCATION WHERE TO MOUNT THE BOX IS REACHABLE FOR ALL THE SENSORS, CABLES, AND POWER.

INSTALLATION UNDER A SINK



Note about tees supplied in models that use the -USK accessories to install under the sink.

The two custom adapters "T" are designed to simplify the installation to 1/2" copper hot and cold supply lines. If there is plumbing other than as shown in these instructions, additional fittings may be required. Consult a plumbing professional or call us.

Figure 3:
Shutoff Water and Remove Angle Stops



Figure 4:
Install T's and Re-attach Angle Stops



Figure 5:
Tighten Flange to Pump with Bolts



Figure 6: Install Flex Line to T



Figure 7: Install Flex Line to Flange



1. Turn off the house water supply at the main shut-off valve.
2. Open hot and cold faucets at the fixture chosen for installation. This will relieve water pressure from the hot and cold water lines.
3. Remove the hot and cold shut-off valve angle stops from the 1/2" copper pipes located below the sink (see figure 3). Be sure to use a catch basin to drain water from hot and cold lines.

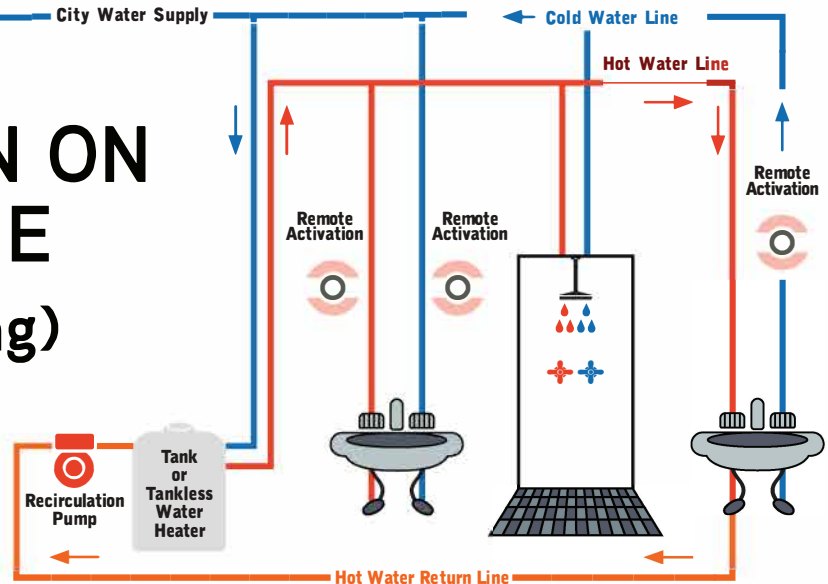
WARNING:

To prevent scalding, use caution when removing valves on hot water lines. For ease of installation, leave the existing compression ring and nut from the angle stops on the hot and cold water lines.

4. The T with the wire coming out of it has a temperature sensor, this T should generally be installed on the hot side which is normally on the left. Remove the compression ring and nut from the adapter tees provided and slide on to the opposite straight copper end. Attach the existing nut and ring to the threaded end of the tee and tighten firmly (see figure 4).
5. Connect the shut-off valves to the new compression ring and nut and tighten firmly (see figure 4).
6. Assemble shut-off flanges to pump as shown in Figure 5 and tighten firmly. Attach the stainless steel flex lines to the 3/4" threaded connection on the tees and the 3/4" threaded connections on the pump shut-off flanges (see figure 6 - 7).

INSTALLATION ON A RETURN LINE (Standard Plumbing)

When installing on a dedicated return line (see figure 1 for an example), an -USK under sink kit is not needed. This assumes the house has a return pipe, which usually means there is an existing recirculation pump. For standard plumbing, install the pump near the water heater between flanges. If the pump is already available, flanges may be already there, otherwise, there might be a need to order plumbing parts that are readily available at any local plumbing supplier to connect the piping to the flanges.



Once the flanges are in place, bolt the pump in between the flanges, and make sure to insert the O-rings or gaskets in between the pump and the flanges to create a watertight seal.

Make sure to relieve any air from the system and so that the pump can move water properly and avoid pump damage. Damage from air is not covered under warranty.

Note: In this situation, the system is not near the sink. Another option is to order wireless push buttons and motion sensors that would be placed in each bathroom to remotely activate the pump.

The placement of the temperature sensors should be as follows:

T1 Placement- On the return line as far upstream of the pump as the wire length and available return line permit.

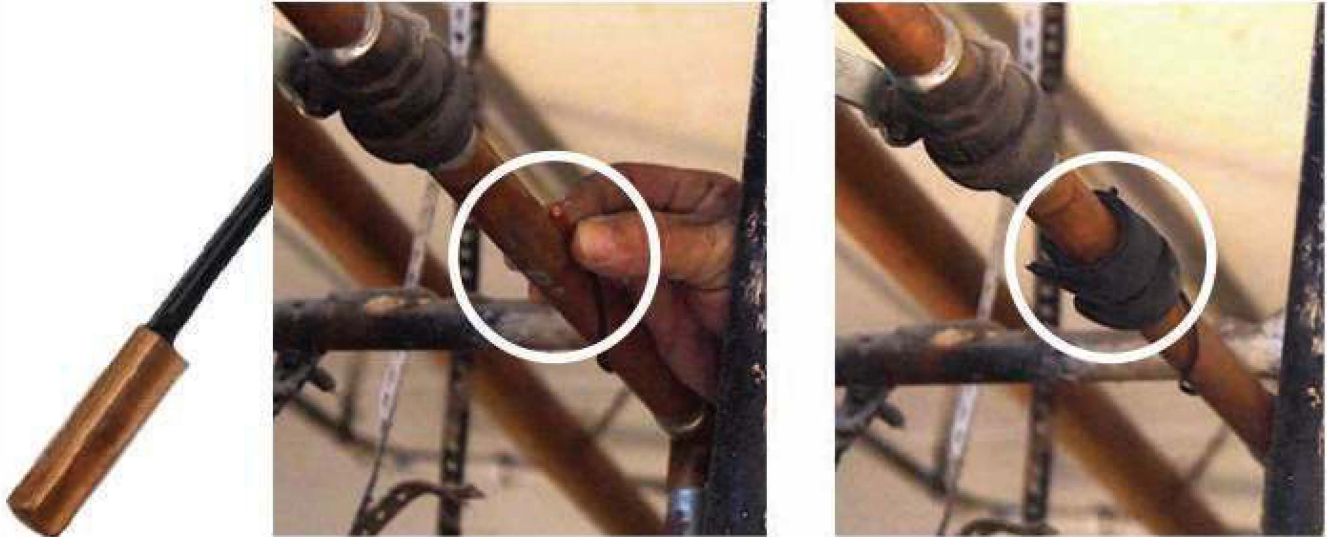
This sensor is important to the operation of the pump control, as the lockout temp determines when the pump should and shouldn't run.

*T2 and T3 are for commercial systems that are not part of the single-family residential model.



Attach T1 Temperature Sensor:

Use the included insulation tape to attach the temperature sensor, concave side towards the pipe. Zip ties will secure them into place.



Installing the On-Demand Hardwired Push Button (Starter Button) and wireless push button pairing

1. Drill a 5/8" hole into the desired location, typically the side or front of a vanity cabinet.
2. Plug in male harness connector provided with the push button into the female harness connector. Harnesses are color coded, make sure that the harnesses are not crossed. .
3. Firmly insert the button into the drilled hole.

COMPLETING THE INSTALLATION

Ensure all wires are connected and organized. The control box should be plugged into an outlet, the temperature sensor is plugged into T1, and the activator is plugged into DRYSW or RJ45 port.

Turn on the water supply at the main. Check the system carefully for possible leaks. If it occurs, check all compression and threaded connections and tighten firmly. Open hot and cold fixtures for one to two minutes to flush the system completely.

Make sure the T1 led is off. Create an activation signal (press BL button, activate button, or activation accessory), and see that the pump turns on (Relay 1 LED turns on D4), and turns off once Lockout is met (T1 LED turns on, D9)

Check hot water at the fixture for the desired temperature. If hot water temperature is not satisfactory, refer to the Troubleshooting checklist section.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REMEDY
1 The pump does not run when the push button is pressed	A. No power at electrical outlet B. The controller is plugged into an electrical outlet controlled by a wall switch (such as the outlet under many kitchen sinks that controls the garbage disposal) C. Power cord is not secured to pump D. Wires to wired push button are not connected well E. The temperature setting is already sensing hot water so the pump is not being activated.	A, B. Plug the controller into a hot outlet. C. Shut off power, make sure all wires have good contact D. Make sure all push button wires have good contact. E. Pump will run when the water temperature decreases.
2 The water is not hot enough	A. The temperature sensitivity setting now in place is too low, so the pump is shutting down too soon	A. Increase temperature lock out, no higher than 5 degrees lower than water heater.
3 There is hot water at the cold water tap (For USK models)	A. The water temperature sensor is loose or dislodged B. The temperature sensitivity setting now in place is too high so the pump is not shutting down soon enough	A. Make sure the sensor is firmly attached to the plug and casing or pipe. B. Decrease temperature setting to turn off pump sooner.
4 Water is not hot enough when pump shuts down	A. The temperature sensitivity setting now in place is too low, the pump is turning off too soon.	A. Increase temperature lock out, no higher than 5 degrees lower than water heater.
5 There is hot water in the cold water lines only	A. The pump mode of operation is not correct, it keeps the pump running continuously.	A. Change the mode of operation.
6 Pump does not start when pushing wireless button	A. Receiver is not receiving power B. Push button and receiver are not paired	A. Make sure the receiver is plugged in all the way B. Follow pairing procedures

PUMP MODES	
DEMAND	This is full demand mode, and most energy efficient. Pump turns on with demand, if lockout temp is not met, and turns off with lockout temp being met or based on interval time being met.
THERMO	This only looks at meeting the target temp of the lockout, it makes a constant demand signal, so that the pump turns on when T1 has fallen below lockout temp by the deadband (2 to 5 degrees), and turns off once lockout setpoint temperature is met.
CONSTANT	This runs the pump 24/7, does not save any energy, but is water efficient and minimizes hot water issues.

Lockout (Default: 115F) - is the target temperature for T1, at which point the pump is unable to turn on, or if running, stops running. This only applies to Demand, and Thermo modes, because constant and timer modes ignore temperature in general.

Delta (Default: 6F) - the temperature rise needed on a return line from T1 needed to turn off the pump. (mostly ignored in commercial/multifamily/houses with return lines)

Interval (Default 5 min) - the amount of time before the pump turns off even if the lockout is not met. E.g. a 5-minute interval means even if T1 is not meeting the lockout if it runs for 5 minutes without an activation signal it will turn off.

AUTOHOT® LIMITED WARRANTY

THIS WARRANTY IS APPLICABLE TO THE ORIGINAL OWNER ONLY in accordance with the warranty terms and conditions specified before.

The warrantor will furnish the ORIGINAL OWNER, 1) a replacement AutoHot® of identical model or current equivalent model if a component inside the AutoHot® control box fails and, 2) a replacement part for any external component part which fails.

THE REPLACEMENT AUTOHOT® OR PART WILL BE WARRANTED FOR ONLY THE UNEXPIRED PORTION OF THE ORIGINAL WARRANTY. The warranty period will be determined by the original date of purchase of the AutoHot®, or in the absence of a Bill of Sale verifying said date, from the date of manufacture indicated on the rating plate affixed to the AutoHot® enclosure. This warranty is not transferable and applies to models listed below:

ITEM	WARRANTY PERIOD
Controller (the control box only, not anything attached to it)	5 years
Pumps (pumps included with the AutoHot®)	18 months or OEM warranty length, whichever is greater
Activators/Accessories (activators and accessories included with AutoHot® or sold by Enovative Group, Inc.)	1 year

This warranty shall apply only when the AutoHot® is installed and operated in accordance with 1) all local fire codes, electrical codes, and plumbing codes, or other ordinances and regulations, 2) the printed instructions provided with it, 3) good industry practices, and 4) proper safety practices.

This warranty shall apply only when the AutoHot® is:

- owned by the original purchaser;
- installed for indoor operation only, or if installed for outdoor operation, installed correctly;
- used in a non-corrosive and non-contaminated atmosphere;
- used with factory approved accessories installed;
- in its original installation location;
- in the United States, its territories or possessions, and Canada;
- Has relays sized in accordance with proper sizing techniques for the controlled pump;
- bearing a rating plate which has not been altered, defaced or removed except as required by the warrantor;
- installed with no attempted, nor actual modification or alteration of the AutoHot®'s design in any way, including but not limited to, the attachment of non-company approved appliances or equipment, including any additional aftermarket equipment introduced into the control, monitoring, or electrical pathways.

Any accident to the AutoHot® or any part thereof (including freezing, fire, floods, or lightning), any misuse, abuse or alteration of it, any operation of it in a modified form, or any damage caused by attempts to repair the AutoHot® will void this warranty. This warranty does not apply to a Commercial AutoHot® used in a residential setting, nor does it cover a Residential AutoHot® used in a Commercial Setting, without prior written approval from warrantor.

This warranty gives you specific legal rights, and you may have other rights which vary under the laws of each state. If any provision of this warranty is prohibited or invalid under applicable state law, that provision shall be ineffective to the extent of the prohibition or invalidity without invalidating the remainder of the affected provision or the other provisions of this warranty.

SERVICE AND LABOR RESPONSIBILITY

UNDER THIS LIMITED WARRANTY, THE WARRANTOR WILL PROVIDE ONLY A REPLACEMENT AUTOHOT® OR PART THEREOF. THE OWNER IS RESPONSIBLE FOR ALL OTHER COSTS. Such costs may include but are not limited to:

- A. Labor charges for service, removal, or reinstallation of AutoHot or part thereof.
- B. Shipping and delivery charges for forwarding the AutoHot or replacement part from the nearest distributor and returning the claimed defective AutoHot® or part to such distributor.

C. All costs necessary or incidental for handling and administrative charges, and for any materials and/or permits required for installation of the replacement AutoHot® or part.

LIMITATION ON IMPLIED WARRANTIES

Implied warranties, including any warranty of merchantability imposed on the sale of this AutoHot® under state law are limited to one year duration for the heater or any of its parts. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

CLAIM PROCEDURE

Any claim under this warranty should be initiated with the dealer who sold the AutoHot®, or with any other dealer handling the warrantor’s products. If this is not practical, the owner should contact: Enovative Group, Inc., 340 S Lemon Ave Suite 5425, Walnut, CA 91789. Phone: 1.866.495.2734 or visit our website: www.autohotusa.com.

Replacement Parts may be ordered through authorized servicers or distributors. Refer to your local Yellow Pages for where to call or contact AutoHot Parts Fulfillment, 340 S Lemon Ave Suite 5425, Walnut, CA 91789. Phone: 1.866.495.2734 or visit our website: www.autohotusa.com.

The warrantor will only honor replacement with identical or similar AutoHot® or parts thereof which are manufactured or distributed by the warrantor.

Dealer replacements are made subject to in-warranty validation by warrantor.

PROOF OF PURCHASE AND PROOF OF INSTALLATION DATE ARE REQUIRED TO SUPPORT WARRANTY CLAIM FROM ORIGINAL OWNER. THIS FORM DOES NOT CONSTITUTE PROOF OF PURCHASE OR PROOF OF INSTALLATION.

DISCLAIMERS

NO EXPRESSED WARRANTY HAS BEEN OR WILL BE MADE ON BEHALF OF THE WARRANTOR WITH RESPECT TO THE MERCHANTABILITY OF THE HEATER OR THE INSTALLATION, OPERATION, REPAIR OR REPLACEMENT OF THE HEATER OR PARTS. THE WARRANTOR SHALL NOT BE RESPONSIBLE FOR WATER DAMAGE, LOSS OF USE OF THE UNIT, INCONVENIENCE, LOSS OR DAMAGE TO PERSONAL PROPERTY, OR OTHER CONSEQUENTIAL DAMAGE. THE WARRANTOR SHALL NOT BE LIABLE BY VIRTUE OF THIS WARRANTY OR OTHERWISE FOR DAMAGE TO ANY PERSONS OR PROPERTY, WHETHER DIRECT OR INDIRECT, AND WHETHER ARISING IN CONTRACT OR IN TORT.

Should governmental regulations or industry standards prohibit the Manufacturer from furnishing a comparable model replacement under this warranty, the Owner will be furnished with the closest comparable model meeting the then current governmental regulations and industry standards. A supplementary fee may be assessed to cover the additional cost associated with the changes made to meet applicable regulations and standards.

IMPORTANT INFORMATION

Model Number	
Serial Number	
Date Installed	
Installer Company Name	
Installer Address	
Installer Phone Number	
Installer License Number	
Recirculation Pump Model	
Recirculation Pump Serial Number	
Water Heater Model	
Water Heater Serial Number	