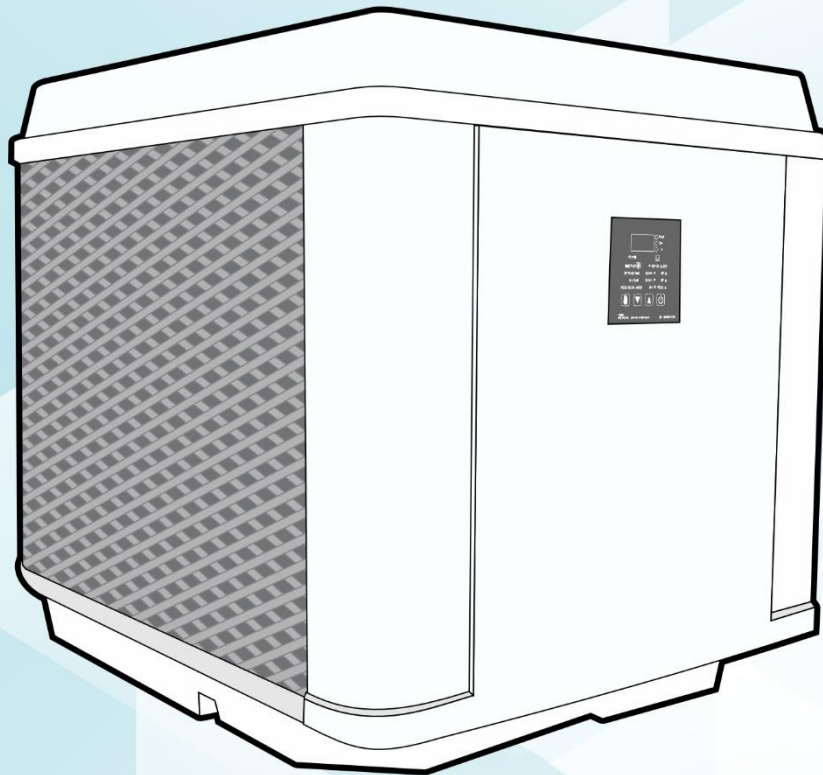




Aqua**CHILL**  
by AquaComfort

# OWNER'S MANUAL



## INSTALLATION, OPERATION MAINTENANCE & SERVICE



Made in the USA  
with Foreign & Domestic Parts

3055 Tech Park Way  
Deland, FL 32724  
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# ACT1750 CHILLER

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## SAFETY CONSIDERATIONS

- Qualified personnel should perform installation, maintenance, and service.
- Make sure all field wiring conforms to the heater specifications and all national and local codes.
- Disconnect all power sources before performing any maintenance or service to the heater.

## INSPECTION

Immediately upon receipt, inspect cartons and their contents for damage due to transit. Damage, if found, should be noted on delivery papers and a claim filed with the carrier. Also, check unit data plate to make sure you have the proper model, before installing.

## GENERAL INFORMATION

The information in this manual was prepared to assist in the proper installation, operation, maintenance and service of your new heat pump chiller. Please read the entire manual and follow all instructions. Improper installation and use can result in damage to the chiller, unsatisfactory operation, and may void the warranty. Retain this manual for quick reference.

## SELECTING A LOCATION

When selecting a location consider the following:

- Chiller must be located outdoors.
- Minimum of 24" of clearance on access / service side of chiller.
- Minimum of 18" of clearance on all three air intake sides of chiller.
- Minimum of 48" of clearance for air discharge (top of unit).
- The Chiller should sit on a solid level surface sufficiently above grade to prevent water from entering it and allowing condensate to drain from base.
- The length of water piping and electric should be kept to a minimum to avoid capacity loss and decreased efficiency.
- Chiller will produce water in the form of condensation when it is running. The amount of condensation depends on air temperature and humidity.
- Irrigation water may damage Chiller components. Have irrigation water directed away from Chiller.
- The Chiller will withstand normal rainfall. Do not allow roof slope to direct rainwater onto the heater. Have a gutter installed on the roof edge to direct water away from Chiller.

## WATER FLOW & CONNECTIONS

Water in and out are labeled at the connections.

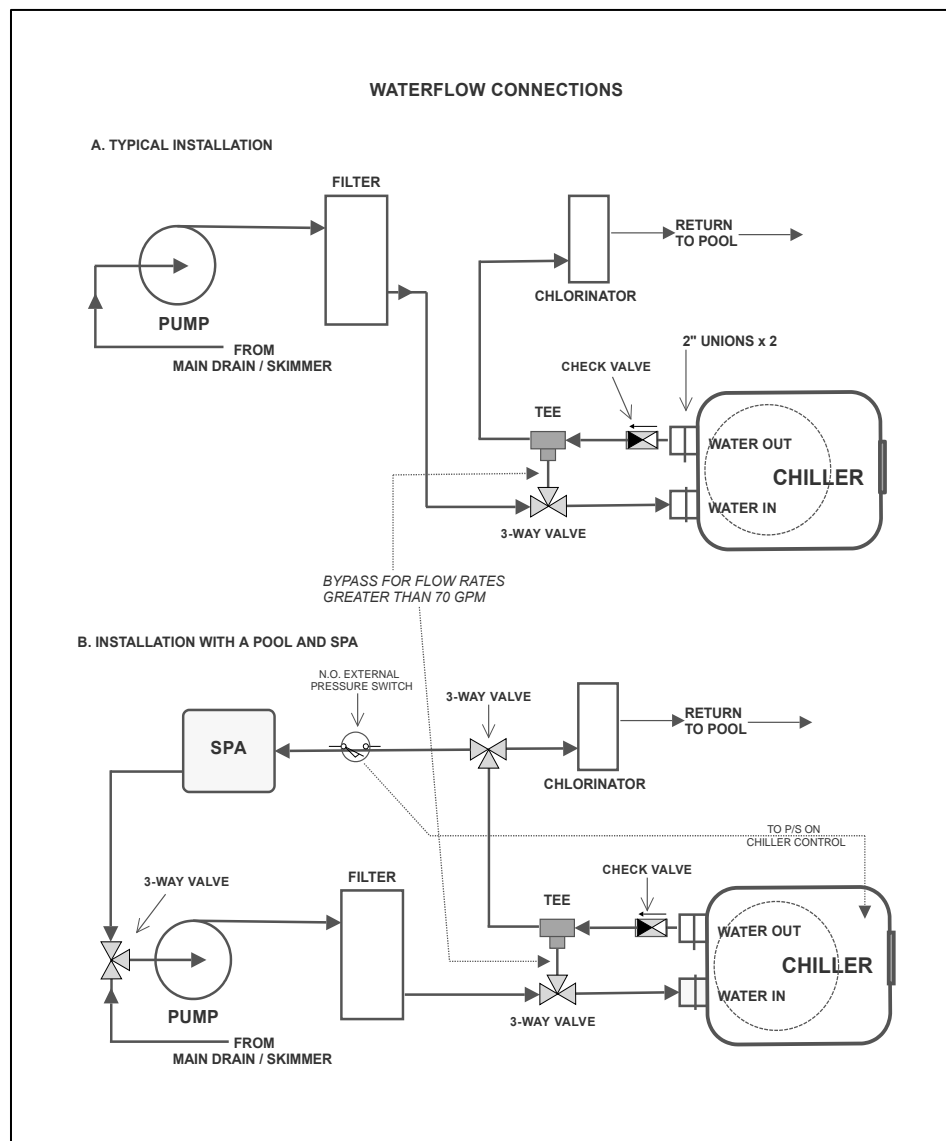
**WATER IN is on the RIGHT** rear of the Chiller.

**WATER OUT is on the LEFT** rear of the Chiller.

2" Unions are supplied with the Chiller. Female connections are shipped within the front cover.

**NOTE:** Unions can be used for quick drainage of your Chiller and winterizing.

- Chiller must be piped downstream from filter in the pool return line.
- Make sure filter is clean and there are no obstructions in the filtering system.
- Proper water flow is essential to the performance of your heat pump chiller.
- The minimum flow rate is 20 GPM, maximum is 70 GPM.



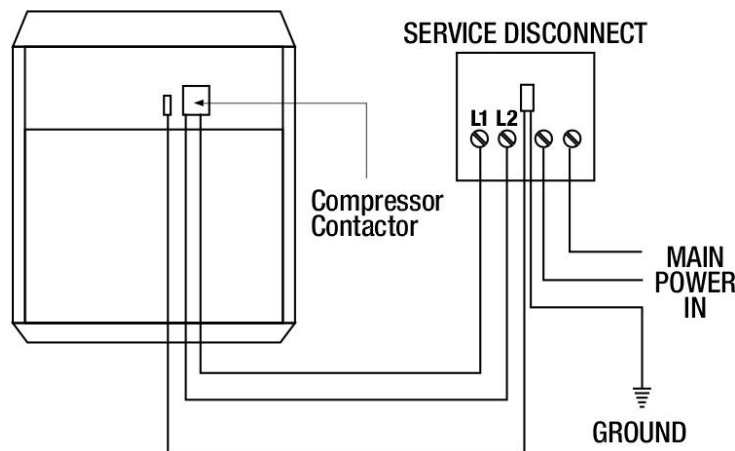
## ELECTRICAL CONNECTIONS

- Field connections must comply with national and local codes, i.e. CSA C22.1 or NFPA70. The work must be done by a qualified electrician.
- **Chiller must be permanently grounded and bonded.** Bonding will drastically reduce the chances of electrolysis, “Electrical Corrosion.”
- Use copper conductors only.
- Disconnect all power sources before performing any work on unit.
- Standard Power Supply: 208- 230Volts / 60Hertz / 1Phase.
- See unit data plate for specific ampacity.

### Wiring Main Power Supply

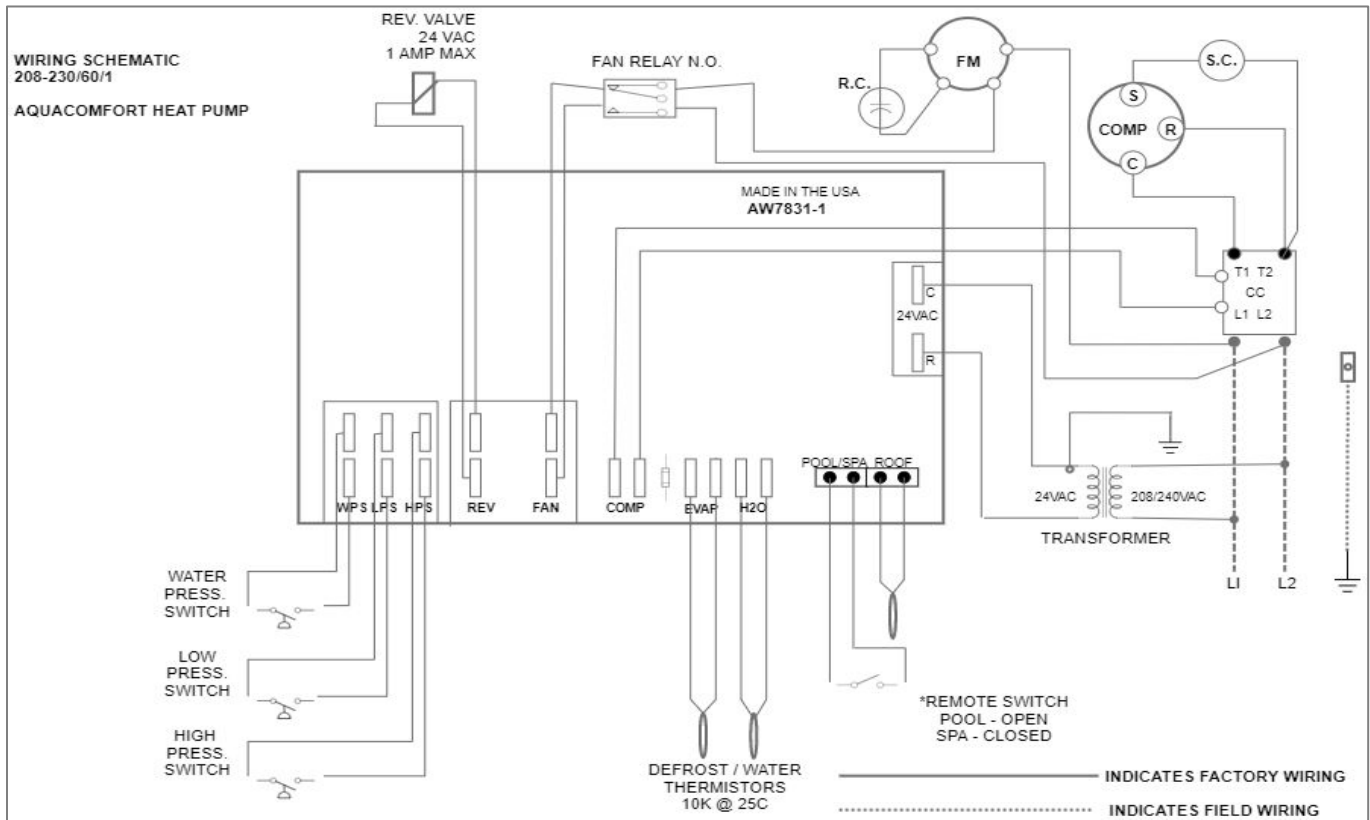
1. Remove the screws from lower left and right side of front cover (service panel).
2. Remove the (2) 1/4” hex head screws on left side of electrical enclosure.
3. Route weather tight, flexible conduit through opening at base of unit.
4. Connect conduit to bottom of the electrical enclosure using a weather tight fitting. A 1.13” hole is provided near the main contactor to accept a weather tight fitting. Mounting conduit directly to the electrical enclosure will ensure a moisture tight seal, extending the life of the heater.
5. Attach grounding conductor to the ground lug provided inside the electrical enclosure (labeled).
6. Install L1 and L2 input conductors to the line side of the main contactor. (See wiring diagrams.) Ensure that the wires are inserted properly into the contactor lugs and that the screws are properly torqued to 40 in. lbs. Burnt or failed contactors due to poor field wiring are not covered under warranty!
7. Connect bond wire (at least #8 solid copper wire) to bond lug provided on right or left side of coil header plate to pool pump bonding terminal or other suitable location.

## FIELD WIRING DIAGRAM



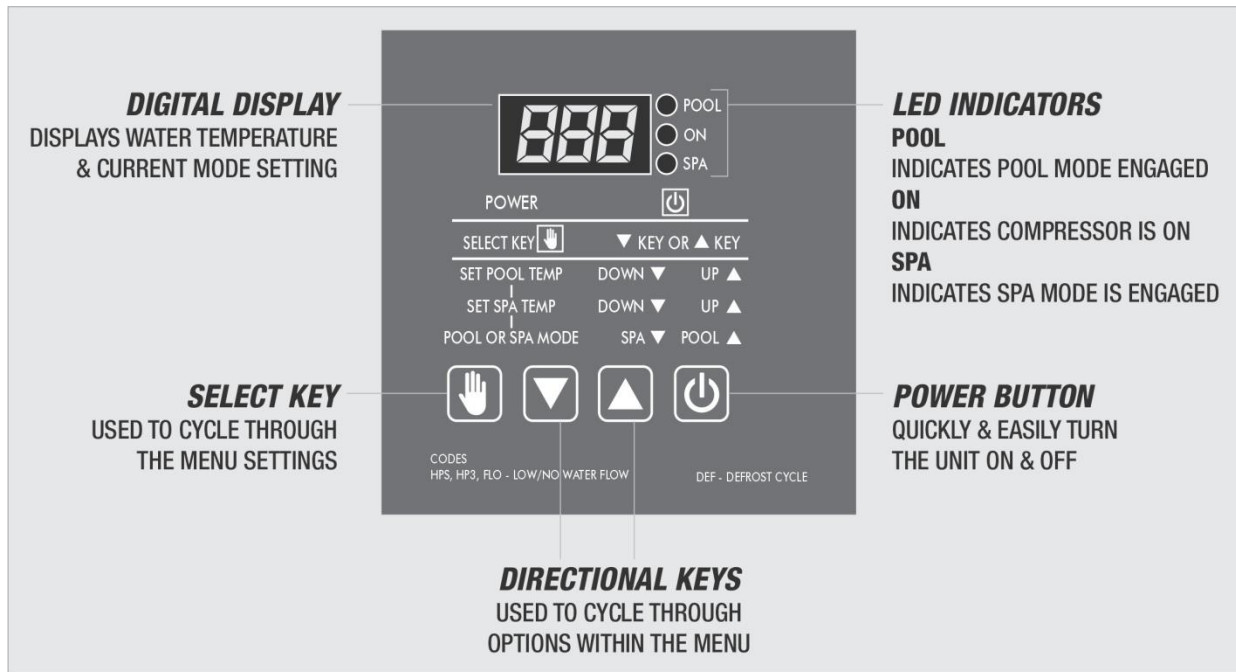
# WIRING DIAGRAM

1. Use copper conductors only
2. Connect field wiring in grounded rain tight conduit, per rating plate.
3. Connect bond wire to pool steel using # 8 solid copper wire or larger.
4. All wiring must conform to National (N.E.C.) and local electrical codes.



## ELECTRONIC CONTROL PANEL

ELECTRONIC CONTROL PANEL will display actual Pool or Spa water temperature for six seconds and then display mode of operation (HEA, COL, AUT or OFF) for two seconds.



## MODE SELECTION



Press POWER BUTTON to turn unit ON or OFF. Pressing the Power Button will turn unit OFF instantly (when unit is ON) or turn unit ON when unit is in OFF Mode.

When unit is OFF control panel will display actual water temperature for six seconds and OFF for two seconds. The Pool, ON and SPA LED will be off in OFF mode. When unit is ON Pool or Spa LED will light up and mode of operation (Pool, Spa or AUT) will be displayed for six seconds followed by the actual water temperature.



Selecting the desired mode of operation is accomplished by pressing the Select Key.

**NOTE: Chiller will only operate in POOL Mode. SPA MODE must remain off.**

**Chiller is factory preset to POOL>COOL, 80F.**

1. **SELECT “POL” POOL MODE**
2. **SELECT “PHC” and then press the DOWN button for “P\_C” - COOL MODE.**
3. **CHANGE THE TEMPERATURE SETPOINT**, press the SELECT KEY until you reach “POL” POOL. Press either the UP or DOWN key to scroll to your desired temperature setpoint. Once your new temperature setpoint has been reached, release the UP or DOWN key. Your new setpoint will be displayed for five seconds, then revert to the actual pool water temperature.

Temperature Setpoint

- Temperature setpoint maximum for POOL mode is 95°F
- Temperature setpoint maximum for SPA mode is 38°F

**NOTE: UNIT WILL ONLY COOL IN “POL” POOL MODE SET TO “COL” COOL.**

## START-UP

Before proceeding with this section make certain all plumbing connections are airtight and leak free. Flow rates should not exceed 70 GPM maximum. Use of an external bypass is necessary at 70 GPM and above. Minimum flow rate is 20 GPM.

- Turn filter pump time clock to the ON position and set filter pump hours. For initial cooling, the chiller and filter pump may need to run continuously until your desired temperature is reached. After initial cooling is achieved, the chiller will run only to maintain your desired temperature.
- Turn power supply to heater ON.
- The control panel will light up and display either OFF or the actual pool water temperature.
- Select POL and set your desired water temperature by scrolling either up or down.
- If your programmed water temperature is below the actual water temperature, the fan and compressor will start once the time delay is satisfied.

**NOTE: Each time the compressor turns off; it is protected by a 3-minute anti short-cycling delay.**

## Initial Cooling

Initial cooling may require you to run your Chiller and filter pump continuously for at least 24 hours, or more, depending on the following factors:

- Temperature difference between actual water temperature and desired water temperature.
- Size of pool.
- Ambient air temperature, the hotter the air temperature the longer the cooling time.



## Defrost Cycle

The heat pump Chiller has automatic defrost. When the water temp drops below 38 F, frost may start to form on the evaporator coil. During the defrost cycle, the display will show “DEF” indicating the unit is defrosting. During this time the compressor is inactive.

## Internal Protection Analyzers

The Chiller is equipped with internal devices to monitor and protect the integrity of the unit. If an abnormal condition occurs, the device will interrupt the operation of the unit and may display the appropriate code on the control panel.

- **LOW WATER FLOW:** Indicated by “LP” or “LP3” on the control panel. The heater is designed to run efficiently above twenty (20) GPM. If there is insufficient water flow, the unit will shut down, protecting the compressor. The usual causes for these conditions are a dirty pool water filter, a restriction in the return line (i.e. skimmer), or improper valve positioning.
- **NO WATER FLOW:** Indicated by “FLO” on the control panel. When the filter pump is off, or if the water flow to the heater is interrupted during the cooling mode, the internal water pressure switch will shut down the unit. When normal water flow resumes, the chiller will automatically restart itself.
- Other analyzer codes include: “LPS”, “tSO”, “tSS” and “ESO” and “ESS”.

The TROUBLESHOOTING CHECKLIST on page 9 goes into further detail on these analyzer codes.

## MAINTENANCE

**WARNING: DISCONNECT ELECTRICAL POWER TO UNIT BEFORE STARTING ANY MAINTENANCE TO PREVENT SERIOUS INJURY FROM SHOCK.**

### Protecting your Chiller

- Keep your pool filter system clean and free of restrictions to ensure proper water flow.
- Check water chemistry regularly. Misuse of chemicals will cause permanent damage to your Chiller and other pool equipment. Manufacturers can void warranties for damage as a result of poor water quality.
- Free airflow is essential. Keep the condenser coil clean and free of weeds, leaves, grass clippings, dirt and other debris that will decrease the airflow. Keep fences and shrubs away from air inlets (sides and back of heater).
- Frequent rinsing of the condenser coil with fresh water will remove build up. Always spray the coil gently with a regular garden hose being careful not to bend the aluminum fins.
- Regular cleaning of the cabinet will improve its appearance and extend the life of the finish.

## WINTERIZING

When the heater is exposed to freezing temperatures, it is essential that all water within the unit be properly drained. When water freezes, it expands, damaging piping.

- Turn thermostat settings to OFF. Turn filter pump to OFF.
- Turn power to unit OFF (i.e. pull disconnect or turn circuit breaker OFF).
- Disconnect water inlet and outlet unions at the back of the unit. Be careful not to lose rubber o-rings.
- Flush the heater piping out with fresh water to remove any residual chemicals.
- Use low-pressure air or vacuum to remove water that has accumulated inside the piping of the heater.

## TROUBLESHOOTING CHECKLIST

- Check to see that the electrical power is on. Reset breakers, or replace fuses if necessary.
- Check to be sure the electric control panel is set properly. The desired temperature must be set above the actual pool or spa temperature for the heater to run.
- Check to make sure the condenser coil has enough clearance and that there are no restrictions to its airflow.
- Low water temperatures and low water flow conditions may cause the Chiller to go into defrost mode, displayed on the control panel as “DEF”.

**NOTE: IT IS NORMAL FOR WATER TO DRIP FROM THE DRAINHOLES AT THE BASE OF THE CHILLER. THE UNIT PRODUCES CONDENSATION WHEN IT OPERATES.**

### Analyzer Codes

**FAILURE LOCK-OUT:** This feature is for the protection of the heater. If the same failure occurs three (3) times within an hour, the control will not allow the unit to restart, and shall display the appropriate code. The reset of HP3 to normal conditions can be accomplished by pressing any button on the control touch pad one time.

**“FLO”** (Little or No Water Flow)

- The pump is not running.
- The filter is dirty or clogged.
- Shortage of water to pump - air leak.
- Undersized pump.
- Valves not in correct position.
- Filter in backwash mode.
- Water pressure switch needs adjustment, or is defective.

**“LPS”** (Compressor Low Pressure)

- Low water flow to heater.
- Defective low-pressure switch.
- Low refrigerant Pressure.

**“HPS”** (Compressor High Pressure)

- Condenser coil fan motor not running.
- Dirty or blocked condenser coil
- High refrigerant pressure.
- Defective high-pressure switch.
- High ambient air temperature.

**“ESO”**

- Evaporator temperature sensor connection opened. Check for cut or loose sensor wiring or defective sensor.

**“tSO”**

- Water temperature sensor connection opened. Check for cut or loose sensor wiring or defective sensor.

**“ESS”**

- Evaporator temperature sensor connection shorted. Check for a short in sensor wiring or defective sensor.

**“tSS”**

- Water temperature sensor connection shorted. Check for a short in sensor wiring or defective sensor.

**“DEF”**

- Heat pump in defrost cycle.

## CALLING FOR SERVICE

- Please eliminate any water flow problems before calling for service.
- To request service, go to [www.aquacomfort.com](http://www.aquacomfort.com) and click “**Service and Support**”. Complete the Service Request form. This is the fastest and most effective way to get service. Please include the following on the Service Request form: Date of Installation, Model Number, serial number and installing contractor.

**SERVICE PERFORMED WITHIN THE WARRANTY PERIOD MUST BE APPROVED BY AQUACOMFORT SOLUTIONS, LLC. PRIOR TO SERVICE BEING PERFORMED AND ONLY BY AN AQUACOMFORT SOLUTIONS AUTHORIZED TECHNICIAN. SEE WARRANTY FOR DETAILS.**

Please have the following ready before calling:

**MODEL #:**

**SERIAL #:**

**DATE OF INSTALLATION:**

**NAME OF OWNER:**

**ADDRESS:**

**CONTACT #:**

**NATURE OF PROBLEM:**

## WARRANTY REGISTRATION

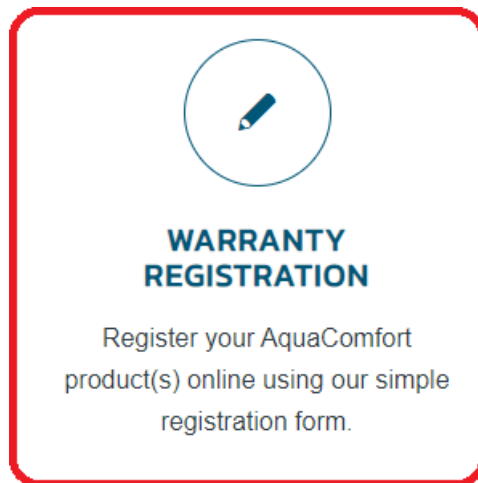
How to register the warranty for your AquaComfort Heat Pump!

1. Go to <https://aquacomfort.com/>

2. Click on Service & Support



3. Click on WARRANTY REGISTRATION



4. Fill in all required fields to complete your warranty registration.

**ATTENTION: Warranties must be registered within (60) sixty days from the date of installation**



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