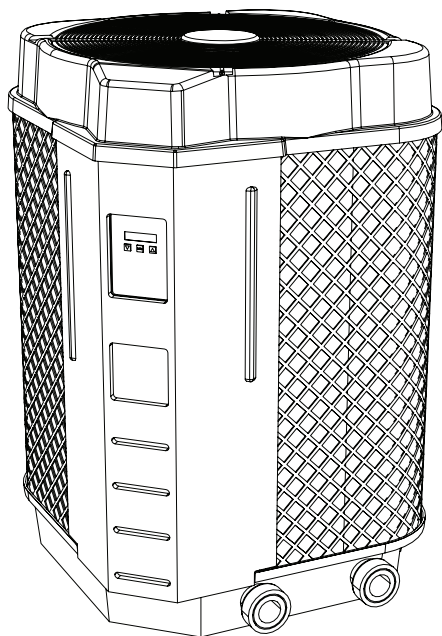




## INSTALLATION AND USER GUIDE



IMPORTANT SAFETY INSTRUCTIONS  
READ AND FOLLOW ALL INSTRUCTIONS  
SAVE THESE INSTRUCTIONS

# IMPORTANT SAFETY INSTRUCTIONS

This guide provides important information that helps ensure proper and safe installation, operation, and maintenance of this equipment. If there are any concerns or questions about tasks described in this manual, consult Pentair or a qualified professional.

**ATTENTION INSTALLER!** Ensure this guide is given to the pool owner and/or operator after installation.

**ATTENTION USER!** Retain this guide for future reference.

Call (800) 831-7133 for additional free copies of these instructions or product labels. Refer to [www.pentair.com](http://www.pentair.com) for more information.

## READ AND FOLLOW ALL INSTRUCTIONS SAVE THESE INSTRUCTIONS



This is the safety alert symbol. When you see this symbol in this guide or on the product itself, note the related signal word and be aware of the potential for personal injury.

**DANGER**

Warns of hazards, that if ignored, will result in death or serious injury.

**WARNING**

Warns of hazards, that if ignored, could result in death or serious injury.

**CAUTION**

Warns of hazards, that if ignored, could result in minor or moderate injury.

**NOTICE**

Indicates information, that if ignored, could result in property damage.

Carefully read and follow all instructions in this guide or displayed on the equipment. Ensure all product labels are kept in good condition and replace missing or damaged labels immediately.

**WARNING**

FAILURE TO FOLLOW ALL INSTRUCTIONS AND WARNINGS COULD RESULT IN DEATH OR SERIOUS INJURY. **INSTALLERS, OPERATORS, AND OWNERS MUST READ AND UNDERSTAND ALL WARNINGS AND INSTRUCTIONS BEFORE OPERATING OR SERVICING THE EQUIPMENT.**

**WARNING**

This equipment should only be installed and/or serviced by a qualified professional.

**WARNING**

Most states and local codes regulate the construction, installation, and operation of public pools and spas, and the construction of residential pools and spas. It is important to comply with these codes, many of which directly regulate the installation and use of this product. Consult your local building and health codes for more information.

**WARNING**

**RISK OF ELECTRICAL SHOCK!** Heat pump electrical supply must be installed by a qualified professional in accordance with the National Electrical Code and all applicable local codes and ordinances. Improper installation could create an electrical hazard and could result in death or serious injury.

**WARNING**

This heat pump is not intended for use by persons 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.

# IMPORTANT SAFETY INSTRUCTIONS

**⚠ WARNING** Do NOT permit children to use this product.

**⚠ WARNING** For units intended for use in other than single-family dwellings, a clearly labeled emergency switch must be provided as part of the installation. The switch must be readily accessible to the occupants and installed at least 5 ft. [1.5 m] away, adjacent to, and within sight of the unit.

**⚠ WARNING** **The following recommendations should be followed when using the pool and/or spa.**

1. Prolonged immersion in hot water can induce hyperthermia. Water temperatures should never exceed 104°F [40°C]. A temperature of 100°F [38°C] is considered safe for a healthy adult. Special caution is suggested for young children.
2. Consumption of alcohol before or during spa or hot tub use can cause drowsiness which could lead to unconsciousness and subsequently result in drowning.
3. Soaking in water above 100°F [38°C] can cause fetal damage during the first three months of pregnancy.
4. Before entering the spa or hot tub, the user should verify water temperature with an accurate thermometer. Spa or hot tub thermostats may err in regulating water temperatures.
5. Persons with a medical history of heart disease, circulatory problems, diabetes, or blood pressure problems should obtain their physician's advice before using spas or hot tubs.
6. Persons taking medication which induce drowsiness should not use spas or hot tubs.

**⚠ WARNING** Hyperthermia occurs when internal body temperature reaches several degrees above the normal body temperature of 98.6°F [37°C].

Symptoms of hyperthermia include: drowsiness, lethargy, dizziness, fainting, and an increase in the internal temperature of the body.

*Effects of hyperthermia can include:*

1. Unawareness of impending danger.
2. Failure to perceive heat.
3. Failure to recognize the need to leave the spa.
4. Physical inability to exit the spa.
5. Fetal damage in pregnant women.
6. Unconsciousness resulting in danger of drowning.

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**WARNING:**



Non-authorized service may not be covered under warranty.

**REGISTER YOUR WARRANTY ONLINE AT:**

[gulfstreamheatpump.com/register](http://gulfstreamheatpump.com/register)

All warranty service must be handled by an Authorized Service Center. Warranty costs may not be covered if a non-authorized service representative services the unit. Do not return the heat pump to your dealer, as they do not provide service. Before calling for assistance or service, please check the Troubleshooting section of this manual or call your dealer. This may save you the cost of a non-warranty service call. If you still need help, follow the instructions below.

**Schedule service online at:**

[gulfstreamheatpump.com](http://gulfstreamheatpump.com)

**Service can also be obtained by calling us at:**

**(239) 567-0009 or (954) 318-6900**

For faster service, please provide a detailed description of the problem, heat pump serial number, and purchase date. This information will help us respond properly to your request.

**Keep a copy of the sales receipt.**

**Proof of purchase will verify in-warranty service.**

Take a moment to record the following information. If you need to call us, we may ask for this information.

**Serial Number:** \_\_\_\_\_ **Purchase Date:** \_\_\_\_\_

**Dealer Name/ Phone #:** \_\_\_\_\_

# INTRODUCTION

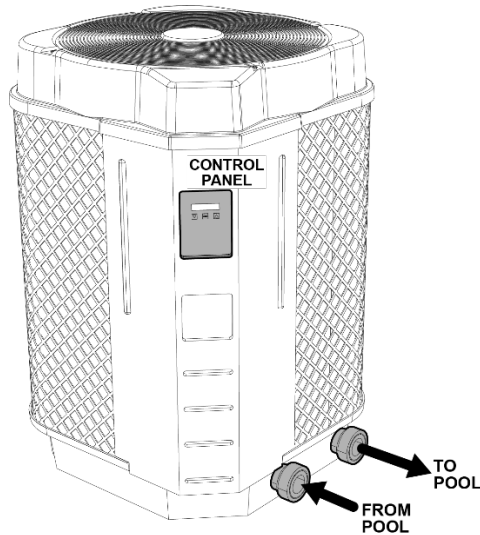
Pool heat pumps operate by transferring heat from the surrounding air into the pool water. The warmer and more humid the air, the more latent heat is available for heating your pool.

Ideal operating conditions are 80°F [27°C] air temperature, 80% relative humidity, and 80°F [27°C] water temperature. If a heat pump is properly sized, and operating in these ideal conditions, it should raise water temperature an average of 1°F [0.56°C] per hour.

Heat pumps are best utilized to maintain a set water temperature. Heat pumps are not intended to provide instant or fast heating similar to gas heaters. The heat pump will automatically turn on and off while maintaining the desired water temperature.

The heat pump can be turned off for prolonged periods of time. However, if heating is needed, it may take the heat pump some time to return the pool to the desired temperature.

To take advantage of the sun's energy, operate the heat pump during the warmer daylight hours. The heat pump will continue to operate when the temperature drops at night, but efficiency will decrease.



# WATER CHEMISTRY

Maintaining proper water chemistry is critical in prolonging the service life of the heat pump. Failure to maintain or properly introduce chemicals into the water may damage the internal components.



## CAUTION:



Do not store corrosive pool chemicals near the heat pump!

### **Recommended Water Quality Levels:**

Test	Range
PH Level	7.4 - 7.6
Free Chlorine	1 - 3 PPM (Pool) 3 - 5 PPM (Spa)
Total Alkalinity	100 - 120 PPM
Total Dissolved Solids	Less than 2000 PPM
Calcium Hardness	200 - 400 PPM

Where chemicals are introduced to the filtration system is important. Automatic in-line chlorinators or salt chlorine generators must be located on the return side of the heat pump. To prevent water backflow into the heat pump, a Check Valve can be installed between the chlorinator and heat pump.



## CAUTION:



### **Never add chemicals into the pool skimmer.**

Never leave any type of solid chlorine in the pool skimmer. This will cause a high concentration of chlorine to enter your pool equipment and cause premature corrosion.



## CAUTION:



Ensure sprinklers do not spray near or directly on the heat pump. This will cause expedited corrosion of the unit.

# INSTALLATION

## INSTALL LOCATION REQUIREMENTS

1. The unit is designed for outdoor installation. Do not install in a totally or partially enclosed area, such as a shed or garage. This will cause recirculation of discharged air through the evaporator coil and greatly reduce heating capacity. Restriction of air flow can also damage the unit.
2. If the unit is installed under the edge of a roof or overhang, ensure a gutter prevents water from pouring into the heat pump.
3. Locate the heat pump as close to the pool pump and filter as possible. This will minimize pressure and heat loss.
4. **Provide a minimum of 4 feet clearance above the unit to ensure proper air discharge.** Air is pulled through the evaporator coil and discharges through the top of the grill. The unit must not be installed under a porch or any kind of overhang with less than 4 feet of clearance.
5. **Provide a minimum of 12 inches of clearance on each side of the heat pump to allow enough air to flow through the evaporator coil.**
6. The unit should be placed on a flat surface, preferably on a concrete or fabricated pad. The surface should have a slight grade to allow condensation to drain off the pad.
7. The unit should be completely isolated from the building foundation or wall. This will prevent vibration from transmitting into the structure.
8. The installer must provide an electrical cutoff switch that will interrupt all power to the unit. This switch must be within line of sight of the heat pump. Check local codes for requirements.
9. Ensure wiring is protected from wear, corrosion, excessive pressure, vibration, sharp edges, or any other extreme environmental factors. Account for the effects of aging and continual vibration from compressors and fans.
10. If heat pump anchoring is required, refer to anchor placements in **Figure 1**.

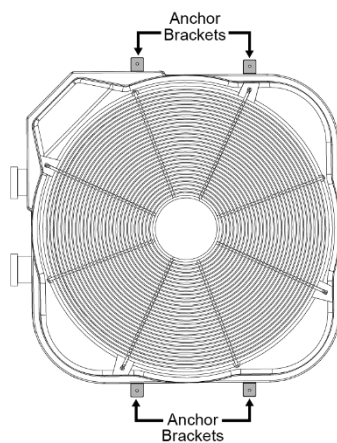


FIGURE 1

## INSTALLATIONS BELOW POOL LEVEL

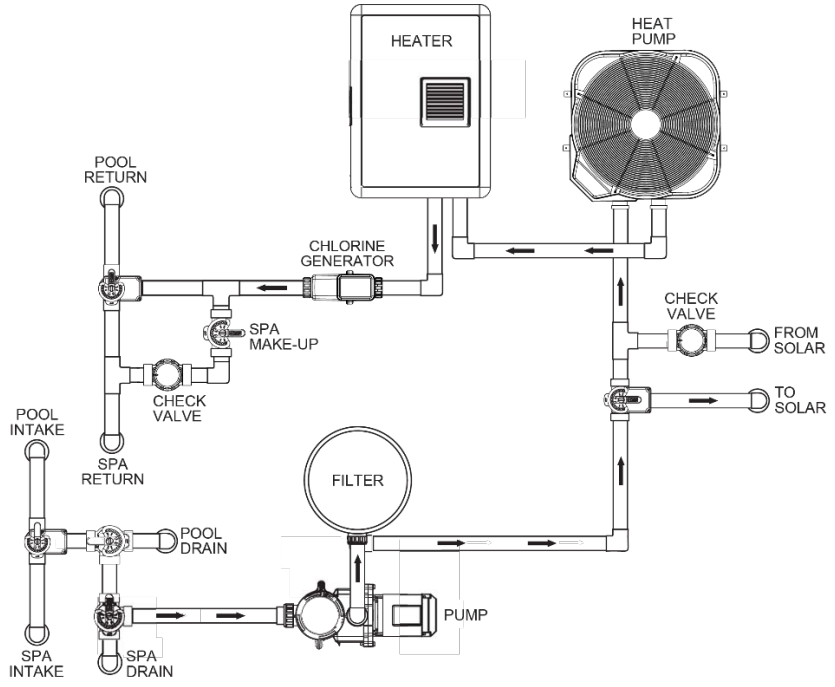
When installing the heat pump below the pool level (and/or with some solar heaters), the pressure switch must be adjusted or an external flow switch may be required. This is to prevent the pressure switch from falsely indicating water flow due to high head pressure. Failure to adjust the pressure switch may cause the unit to activate without water flow. The unit may go into "WATER FLOW LOCKOUT". You may install the flow switch on the inlet or outlet side of the plumbing. Wire the flow switch into the space marked WPS located on the bottom right corner of the board. (Refer to Wiring Diagram later in manual)

## PLUMBING SEQUENCE

**Pool Pump > Filter > Heat Pump > Solar > Chlorinating System(s) > Pool**

Rigid PVC piping should be used, and all joints should be secured with PVC glue. Installation **MUST** conform to all applicable codes. Verify proper water flow between 30-70 GPM (**optimal flow rate is 45-50 GPM**).

To avoid substantial flow restriction, minimize the number of fittings and length of piping. No external bypass is required up to 70 GPM.



# HEAT PUMP FEATURES

## **CABINET**

The heat pump cabinet is made from an ABS plastic with added UV inhibitor. Use only cleaners designed for plastic.

## **CONTROL**

The LCD display allows real-time monitoring of operation mode and water temperature. Dual thermostats allow users to set separate pool and spa temperatures. OFF mode provides a way to shut off the heat pump. The control is self-diagnostic and will display a fault if there is a problem.

Other features include: lockout, spa timer, automatic low temperature defrost, remote control capabilities and chiller operation via remote control.

## **QUIET OPERATION**

The unit is equipped with a low RPM fan motor in combination with a deep drawn venturi and engineered fan blade to ensure quiet operation.

## **INSTALLATION**

The unit is joined to the plumbing loop by hand-tightened unions. The unions will accept 2" PVC piping. Electrical connections are made inside the control box. Refer to the wiring diagram on page 19.

# OPERATION

## POWER ON

On initial powering up of the unit, "LANGUAGE SELECT" will appear on the display. Select your desired language using the up or down arrows. Next, press "MODE" to select °F or °C in the "TEMP SCALE" screen. This menu will display for 30 Seconds, then will transition to the Operation Menu. From the Operation Menu you can adjust the set point. To adjust Language or Temp Scale again, turn the power off at the breaker. Once turned back on, the board will display the "LANGUAGE SELECT" screen again for another 30 seconds. The factory settings are English / °F.



### ATTENTION:



There is a 120 second time-delay at the start heating cycle. This helps ensure that critical heat pump components are not damaged by short cycling. A six second countdown will display.

## POWER OFF

To shut your Heat Pump OFF, tap the "MODE" button until it reads, "POWER OFF". While in "POWER OFF" the unit will not run. To get out of "POWER OFF", tap the "MODE" button until it reads "POOL - HEAT" and you can continue normal operation.



### CAUTION:



When in "OFF" mode, there is still high voltage to the unit. If the unit must be off for long periods of time, disconnect main power to the unit at the circuit breaker.

## **POOL/SPA MODES**

The control is equipped with two independent thermostats; one for pool temperature and one for spa temperature. This will allow users to preset the temperature of their choice and switch between the two settings with the "MODE" button located on the control. When water is flowing through the unit and the water temperature meets the specified set point condition, the control will turn the heat pump off.

If you do not have a spa, you can use the spa thermostat as a second pool temperature setting. For example, if you swim on the weekends only, you can set the temperatures lower during the week to save costs but maintain a warmer temperature for a shorter recovery time for the weekend.

The display on the control will show the thermostat being used and the operating mode on the top line and the current water temperature on the bottom line. The standard mode displays are: "POOL – HEAT", "SPA – HEAT", "POWER OFF".

For units with manufactured with the optional Chiller feature, "POOL-COOL", "POOL- HEAT/COOL", will also be available if enabled in the service menu. Units will need to be ordered and manufactured with the optional Chiller components to use these features. See pages 13 and 14 for enabling these features.

## **CHANGING SET POINT TEMPERATURE**

To change the set point temperature, press either the "Up" or "Down" arrow buttons on the control. The display will then show "POOL or SPA TEMPERATURE SET POINT". After adjusting to the desired temperature setting, the display will revert to "POOL or SPA – HEAT" on the top line and the pool temperature in numbers with "DEGREES" on the bottom line. After 5 seconds of inactivity, the new set point will be stored in memory. The default factory setting for Pool Temperature is 85°F.

## **SUB-MENU ACCESS**

To access the programming sub-menu (remote t-stat, heat/cool, calibration, load defaults, etc.) press and hold the UP and DOWN arrows simultaneously until "Remote T-Stat" displays. Use the MODE button to scroll through the options and use the arrows to change settings.

**If there are issues with the operation of the board, we suggest to "Load Defaults" to reset to factory settings.**

### **Sub-Menu Items:**

- Remote T-Stat – Allows remote thermostat control
- Remote Heat/Cool – Allows remote control of chiller (heat/cool models only)
- Pool Heat/Cool – Unit will automatically switch between heat and cool (heat/cool models only)
- Pool Cool – Unit will only operate as a chiller (heat/cool models only)
- Spa Timer – Timer for the spa thermostat.
- Time Delay – Changes countdown timer before engaging the compressor
- Defrost Mode – Air or hot gas defrost (select models only)
- Defrost End – Sets the temperature that the unit begins operation after defrosting (select models only)
- Evap Calibration – Calibrates the Evap Sensor +/- 10 degrees
- Water Calibration – Calibrates the water temp sensor +/- 10 degrees
- Load Defaults – Takes the board back to factory settings

## **AUTOMATION CONTROL (REMOTE T-STAT)**

Wire automation system low voltage dry contacts to the heater control board "Pool/Spa T-Stat" terminal (refer to wiring diagram). Access the sub-menu by holding the UP and Down Arrow at the same time until the board reads "Remote T-Stat Disabled". Press the UP Arrow so that the display reads "Enabled". If left alone, the board will return to the main menu and your remote system is now in control of your heat pump.

This heat pump can not be connected to automation systems via RS-485 connection.

## **REMOTE HP (REMOTE ON/OFF SWITCH)**

Spade terminals located on the control board marked Remote HP are used as a remote On/Off switch. Wire low voltage wires to the spades marked Remote HP to any dry contact switch or relay. Remove the shunt to enable this feature. When the contact/ relay is closed the heat pump will be "On". When open, the heat pump will remain idle and will be "Off".

## **HEAT PUMP RUN TIME**

Recommended run times are based on unique pool conditions and install environments. The heat pump is capable of running 24 hours per day, if necessary.

When first operating a newly installed heater or reopening a pool the heat pump may need to run continuously until the set temperature is reached. In colder climates or seasons, the heat pump may need to run continuously to maintain the set temperature.

The heat pump operates most efficiently when operated during the warmest hours of the day.

## **KEYPAD LOCKOUT**

While in any mode, the user can lockout the keypad by pressing and holding the "MODE" button for 6 seconds. When the keypad has been locked, all buttons are disabled and the control will operate in the mode and temperature it was in when the lockout was enabled.

Pushing a button will cause the display to show "LOCKED" for 5 seconds. To unlock the Keypad, press and hold the "MODE" button for 6 seconds. The display will show "UNLOCKED" for 5 seconds.

## **DEFROST CYCLE**

The heat pump is designed to enter the defrost cycle at ambient air temperatures below 48°F. During this cycle, the unit may shut down and the control will display "DEFROSTING" until the ambient air temperature rises above 48°F. "Reverse Cycle Defrost" (in Heat/Cool models only) is available. This will allow units to operate in the mid 30's°F using hot gas defrosting. This feature must be enabled in the service menu. Unit will not operate below 35°F.

## **CONDENSATION DRAINAGE**

It is normal for water to drain from the heat pump. This occurs when the evaporator coil condenses the water from the air. The water drains into the base of the unit and out the holes in the bottom of the heat pump. The remaining water will dry when the heat pump is shut off.

**The heat pump can produce up to 3 gallons of condensation per hour.**

Pool water will contain chlorine and condensation will not. A chlorine test strip can be used to confirm drainage is condensation.

## HEAT/COOL OR CHILLER MODES

### Option #1

HEAT/COOL – This will allow your Heat Pump to maintain the temperature in your pool at a constant temperature. If the water temperature gets 2° warmer or colder, the unit will heat or cool the pool until it reaches the desired set point.

Programming Instructions:

1. Enter Sub-Menu
2. Press the "MODE" button to scroll options until screen reads "POOL – HEAT/COOL" (Default "DISABLED").
3. Press the "UP" or "DOWN" to "ENABLE" this feature.

Operation Instructions:

1. Press the "MODE" button; The Display will read "POOL – HEAT/COOL".
2. Press the "UP" or "DOWN" until screen reads "POOL TEMPERATURE SETPOINT".
3. Use the "UP" or "DOWN" arrow until desired temperature is on display.
4. While still in the "POOL TEMPERATURE SETPOINT" screen, press the "MODE" button to set the "DEADBAND" This will regulate how many degrees out until the unit kicks on to heat or cool (Default is 2°F).

### Option #2

COOL ONLY - This will allow your Heat Pump to independently heat or cool your pool.

Programming Instructions:

1. Access the service menu by pressing and holding the "UP" and "DOWN" at the same time, until the screen changes to "REMOTE TSTAT" (Default "DISABLED").
2. Press the "MODE" button to scroll options until screen reads "POOL – COOL" (Default "DISABLED").
3. Press the "UP" or "DOWN" to "ENABLE" this feature.

Operation Instructions:

1. Press the "MODE" button; the Display will read "POOL – COOL".
2. Press the "UP" or "DOWN" until screen reads "POOL TEMPERATURE SETPOINT" the unit will cool until it reaches this temperature.

## HEAT/COOL WITH AN EXTERNAL REMOTE



### **WARNING:**



Only use dry-contact relays. Any relay that sends low voltage will damage the heat pump transformer.

In addition to the external remote's heat pump relay, a second unused dry-contact relay in the controller (external remote) will be required. Any relay that sends voltage will cause the transformer to be damaged in the heat pump.

### **Heating:**

Wire the Heat Pump to the control system for Remote T-stat like normal (see page 11). Using the Sub-menu, enable "Remote T-Stat". You will be able to set the heating temperature for your pool and/or spa on your remote control. You will now be able to control the Heating Setpoint from your controller.

### **Chilling:**

Wire the secondary spare dry-contact relay in the controller to the spades on the control board that are labeled "Heat/Cool".

In the sub-menu, enable the "Remote Heat-Cool" and "Pool Cool" Modes. Return to the main menu. Press the Mode Button until "Pool Cool" is displayed on the board. Use the Up/Down arrows on the heat pump to activate the setpoint temperature for the Cooling Mode.

*Your remote can be programmed to call the spare relay "Chiller" (see the manual for the controller or have this completed by your pool professional).*

When the "Chiller" is activated on the controller, it will over-ride the Heating Mode and begin chilling down to the "Pool Cool" set point on the heat pump. The heat pump will shut off when it meets the Pool Cool set point and will run as needed to maintain the cooling setpoint.

When the chiller is turned off on the controller, the unit will go back to the remote t-stat or manual heating mode. If heat is desired, just make sure the setpoint is higher than the current water temperature.

# MAINTENANCE

## COMMON MAINTENANCE QUESTIONS:

1- **Heat pump temperature does not match my thermometer.** Slight variations in temperature between devices are common. If the heat pump temperature is out of calibration by more than 3 degrees, the temperature sensor may need to be replaced. Floating thermometers are notoriously out of calibration. If the unit shows "Max Water Temp", that is an indicator that the Water Temperature Sensor (WTS) is off calibration. The heat pump will not turn on until the WTS has been replaced.

2- **Heat pump is leaking water.** If the unit only leaks when the heat pump is running, that will be condensation. The unit can produce up to 3 gallons per hour (see page 12 for additional information). If the unit is leaking when the heat pump is not running, there could be a leak inside and would require a service call.

3- **Heat pump is not activating with my remote.** Verify the remote has been 'enabled'. This can be verified by accessing the sub-menu under 'Remote T/Stat'. This must be 'enabled' for the heat pump to know it should be getting a signal from your remote system. If this does not work, check the unit in manual heating. 'Disable' the 'Remote T/Stat' in the sub-menu. Once the display is back to Pool-Heat, use the up/down arrows to check the set point. If the set point is higher than the Pool-Heat temp, the heat pump should begin counting down and then begin heating. If the unit does come on, then this is an indicator that the remote is not working. Contact your pool professional to service your remote control system.

4- **Heat pump is displaying 'No Flow'.** Indicates the heat pump is not receiving enough water to activate the internal pressure switch. There are three common causes for this message. 1)The pool pump is not on. 2)The pool filter is very dirty or needs to be replaced Pool filters should be replaced approximately once a year. 3) A valve may have been turned to the wrong position causing the water to be shut off to the heat pump. If it still shows 'No Flow' after checking these, you may need a service call.

5- **Heat pump is displaying "Water Flow Lockout".** Occurs if the heat pump has displayed 'Water Flow HP' three times. This can be reset by holding the 'down arrow' for 5 seconds. The heat pump should start counting down. Watch the display once it gets to zero. If you see 'Water Flow HP', this indicates the heat pump does not have enough water flow to carry away the heat. Pressure will build up in the refrigerant system and the heat pump will shut down to avoid damage. Check for the 3 'No Flow' items listed above. If issues continue, please call customer service.

## CLEANING

Making sure there is good airflow through the evaporator and proper drainage are the two main maintenance tasks. A garden hose with low-pressure water flow can be used to clean the evaporator coil.

**\*\*DO NOT spray the control box\*\***

Ensure shrubs and trees are trimmed away from the unit to allow sufficient airflow. Clean the coil as needed. If located near the saltwater, cleaning will need to be done regularly to remove salt and sand. Use a very soft brush avoid bending the coil fins and soapy water to remove any build up.

**Keep the drain holes in the base free of debris to assure proper condensation drainage.**

Your heat pump's cabinet is made from a maintenance-free, rust-free plastic that is UV-resistant. It will last for years and any dirt or dust may be wiped away with a cloth or sprayed off with a water hose. Only use products designed for cleaning plastics.



### CAUTION:



Ensure all power is disconnected to the heat pump prior to washing.

### Best Practice:

Do not allow the heat pump to sit unused for prolonged periods.  
Run the heat pump at least 30 minutes per month to keep mechanical parts in their best condition.

## WINTERIZING



### ATTENTION:



**In freezing areas, water must be completely drained from the heat pump and the disconnected piping disconnected. The heat exchanger must be blown out with air to ensure water is not left in the heat exchanger.**

In areas where freezing conditions and winterizing of pools is not common, allow water to flow through the heat pump even when not in use.

# TROUBLESHOOTING

A simple way to verify the heat pump is functioning is to place your hand above the unit. There should be cool air blowing out of the top after the time delay has expired. The return water to the pool should be a few degrees warmer than water entering the heat pump. After about 15 minutes of run time, there should be condensation draining out of the base of the unit. If you believe the heat pump is not malfunctioning, review the troubleshooting guide below or contact a service professional.

## **Blank display:**

1. Check Breakers, Disconnect or Transformer

Try to reset the breaker by flipping it off and then back on.

If you still do not get a display on the board, you may need to have an electrician to make sure the breaker or transformer is still in working condition.

## **Water running from bottom of unit:**

1. Turn the heat pump off, but allow the Circulation Pump to continue to run

Come back after an hour. If the water stops leaking from the bottom of the unit, it was normal condensation.

If water is still coming out of the bottom of the unit, then you may have a water leak inside of the unit. Also, a pool test strip can detect chlorine if a water leak is suspected.

## **HEATING SLOWLY OR NOT REACHING SET TEMPERATURE:**

1. Low or restricted water flow through the heat pump

You may need to clean or replace the filter.

Check the pool pump to make sure you are getting about 40- 50 GPM through the unit. Variable Speed pumps should provide 40-50 gallons per minute.

2. Air leak in pool system

Repair any air leaks in plumbing.

3. Pool pump run time

Make sure you are allowing the circulation pump to run long enough, try to allow unit to run longer.

4. Strong winds in pool area

This may cause water to lose a large portion of heat from the wind.

Install some type of windbreak around the pool

Use of a pool blanket will greatly cut down the amount of heat loss you experience and save you money.

## **COUNTDOWN DISPLAYS AND MY UNIT IS NOT KICKING ON:**

1. 2-minute delay period to allow the unit pressures to balance out.

Once the count-down reaches zero, the unit should kick on. If not, the unit may require a new contactor.

### **NO FLOW OR WATER FLOW HP DISPLAYS:**

1. Check to make sure the Pool Pump is on and primed  
If pump is off or not primed, it will not send any water through the system.
2. Check any bypass valves  
Make sure valves are not directing water away from the unit. Make sure flow to the heat pump is between 30 and 70 GPM.
3. Check the pool filter to make sure it is clean  
If filter is dirty then the unit will not sufficient flow. Make sure the filter is being cleaned regularly.

### **WATER FLOW LOCKOUT DISPLAYS:**

1. Once the unit has had a Water Flow HP 3 times the unit will lockout  
Check the same flow issues for No Flow and Water Flow HP.
2. Backflow from solar or pool heat pump installed below water level  
Water backflow once the circulation pump stops can activate the pressure switch. Adjust pressure switch as needed or install a flow switch.  
If flow issues have been addressed, hold the down arrow for 5 seconds to reset the lockout.

### **LOW REFRIGERANT PRESSURE DISPLAYS:**

1. Unit low-pressure switch was activated by loss of refrigerant  
Faulty low pressure switch or the fan not operating. Call for service.

### **MAX WATER TEMPERATURE DISPLAYS:**

1. Check to make sure you do not have a secondary source of heat feeding hot water into the unit  
If no secondary source of heat, call for service.

### **WATER/EVAP SENSOR MALFUNCTION DISPLAYS:**

1. Unit Water or Evaporator Sensor needs service  
Call for service.

### **LOUD OPERATION:**

1. Check if the sound stops after running for a few minutes  
If it stops making noise within a few minutes, it may be because of the starting position of the compressor. This can occur sometimes and does not require service as long as it corrects itself.  
Look to see if the fan is hitting anything.  
If noise does not stop, call office for service.

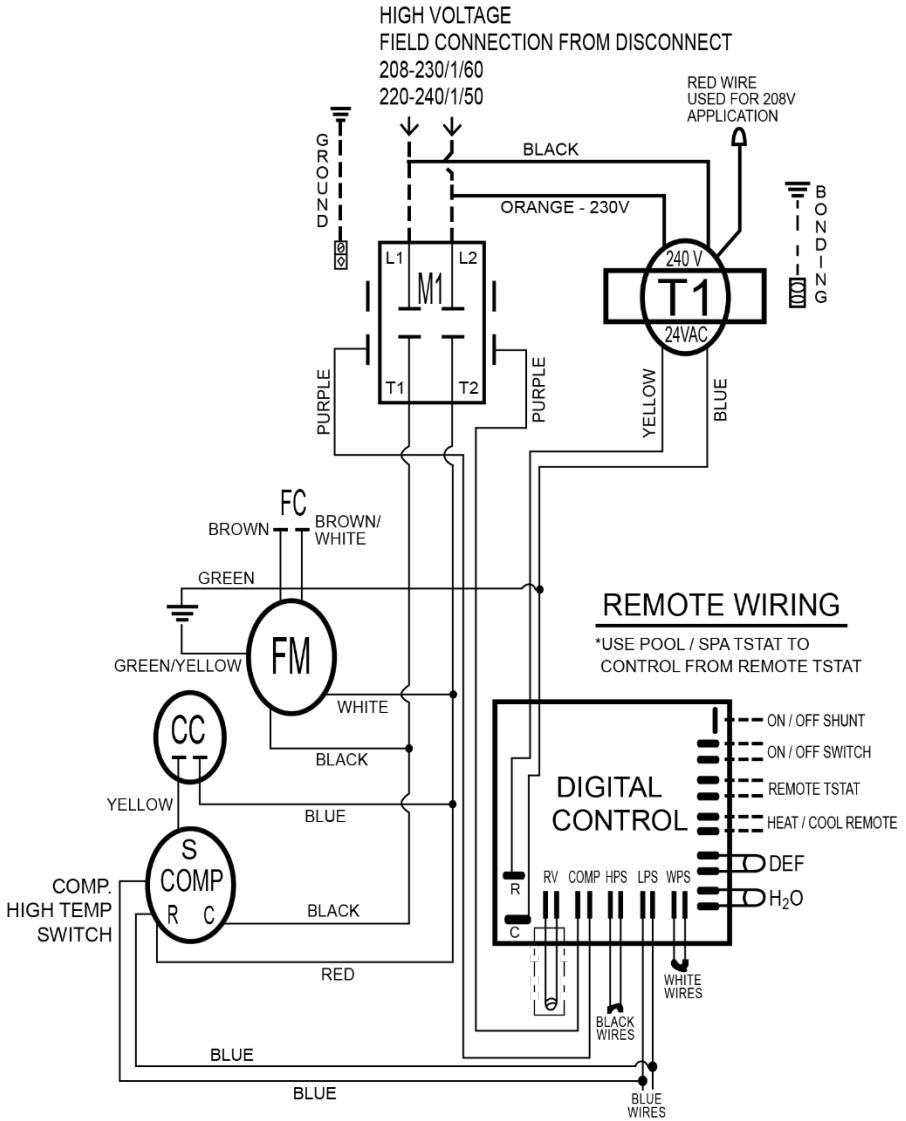
### **REMOTE SYSTEM NOT WORKING:**

1. Disable Remote T-stat in the sub menu.  
If the heat pump operates normally in manual mode, have the remote system serviced.

# WIRING DIAGRAM

**Legend:**

**COMP**=Compressor    **CC**=Compressor Capacitor    **FM**=Fan Motor  
**DEF**=Defrost Temp. Sensor    **FC**=Fan Capacitor    **HPS**=High Pressure Switch  
**H2O**=Water Temp. Sensor    **LPS**=Low Pressure Switch    **M1**=Main Contactor  
**RV**=Reversing Valve    **T1**=Transformer    **WPS**=Water Pressure Switch



# NOTES

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# NOTES

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# SAVE THESE INSTRUCTIONS



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