



**NIRVANA**

HEAT PUMP

# Owner's Manual for Swimming Pool Heat Pump

FC Series



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# HOW IT WORKS



“Congratulations on the purchase of your Nirvana heat pump. It was designed and manufactured in Canada and is renowned for its efficiency and reliability.”

## How it Works

This heat pump is equipped with a large surface evaporator that allows heat to be extracted from surrounding air. This heat is transferred to the pool water by the titanium heat exchanger. This method generates substantial energy savings compared to conventional electric resistance, natural gas or propane pool heaters.

Using a pool heat pump to continuously maintain water temperature at a constant 80°F or 27°C from May to September costs approximately 1/6 of what it would cost with a conventional heater.

## IMPORTANT FACTS

Your pool pumps should always be “on” when your heat pump is in operation.

## Installation Site

To get the best results from your pool heat pump, its location is critical. The heat pump takes hot air from its surroundings and transfers it to the pool water.

To get the best performance from your unit, there must be a minimum clearance of 48" (120cm) above the heat pump and 24" (60cm) around it (image 1). The heat pump must be installed on a level surface.

We recommend a concrete slab or patio stone that is detached from the foundation of the house. The heat pump should not be installed in an enclosed space (e.g., under a deck or in a shed ).

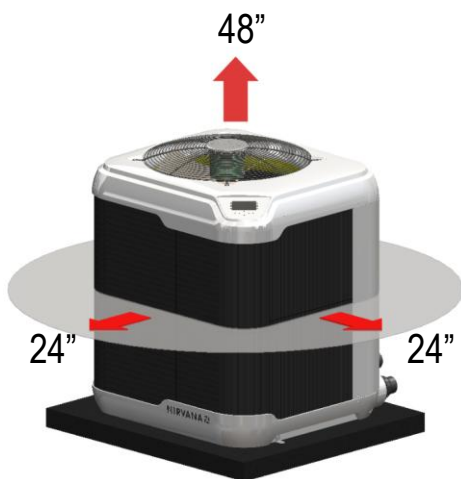


Image 1: Minimum Clearance

## Bypass System

Although a bypass system is not necessary for your heat pump to work properly, we strongly recommend the use of a bypass system (image 2) to make the maintenance and winterizing of the heat pump easier.



Image 2: Suggested Bypass System

## Electrical Connection

### WARNING

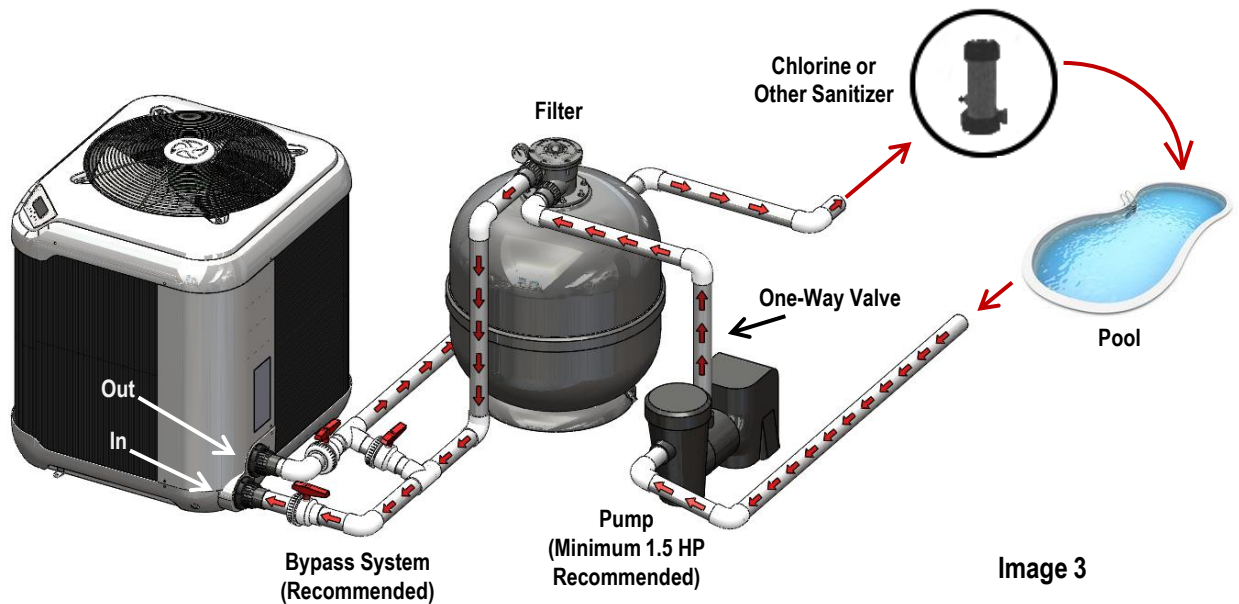
The electrical connection should be done by a professional according to national, state or provincial and city codes.

The unit should be connected with a sufficient GFCI.

The electrical diagram is located inside the electrical panel.

Connection requires a 240V single phase panel.

# INSTALLATION



## Water Connection

1. Connect the water line from the swimming pool filter to the water inlet connector located on the base of the heat pump.
2. Connect the water line returning water to the swimming pool to the water outlet connector on the base of the heat pump.
3. Once all the connections have been made, turn the circulating pump to "ON" to check water pressure and to ensure that connections are watertight. The flow rate should be at between 40 and 80 gallons per minute (gpm) or 9-18m<sup>3</sup>/hr. Higher flow will improve heat pump performance.

Connections from your heat pump to your pool water line can be done either by a certified technician or by you. It is an easy task that requires rigid or flexible 2" PVC pipes (image 3).

## WARNING !

The Nirvana heat exchanger works best at higher flow rates of up to 80 gpm (18m<sup>3</sup>/hr).

## Electronic Display

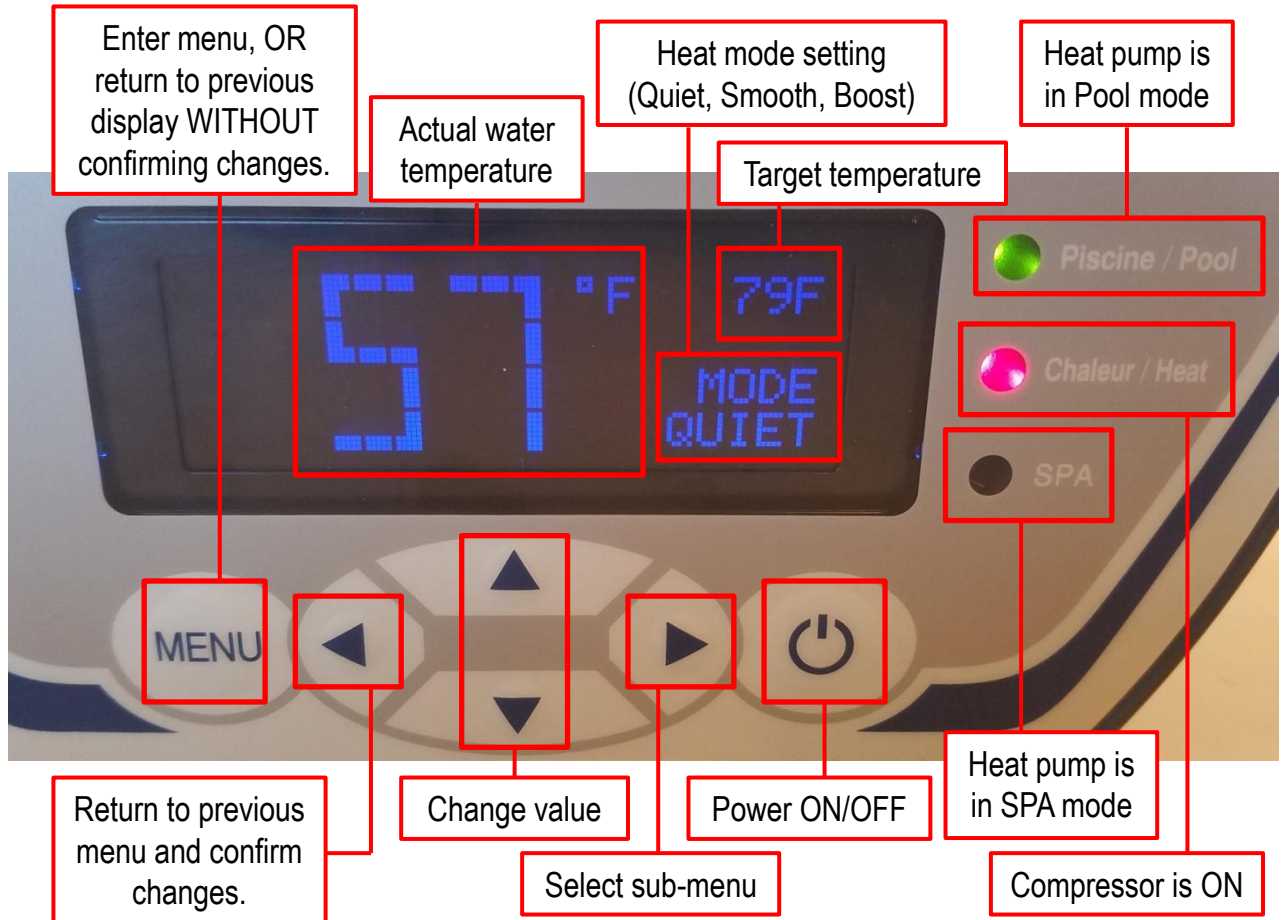


Image 4: Button Layout

# SETTINGS



Image 5: User Menu



Image 6: Set Temperature Sub-Menu

## User Menu

-**Set Temperature** - Set the desired temperature of the POOL or the SPA.

-**Pool or Spa Mode** - Change between POOL and SPA modes.

-**Heat Mode** - (Variable Speed Fan Models Only) Change Between speed settings:

- Quiet Mode** - Keeps the Fan Speed Lower to reduce noise when it is warm outside - This mode does not work below 60F - If Temperature Drops below 60F, Heat Pump will return to SMART Mode. Quiet Mode Reduces heat pump BTU Output due to reduced fan speed.

- Smart Mode** - Varies Fan Speed according to Outside Temperature to produce the best COP Possible. As Temperatures get colder, Fan speed increases. As Temperatures get Warmer, Fan Speed Decreases,

- Boost Mode** - Fan Speed is increased to improve BTU output of the heat pump.

## -Daily Timers:

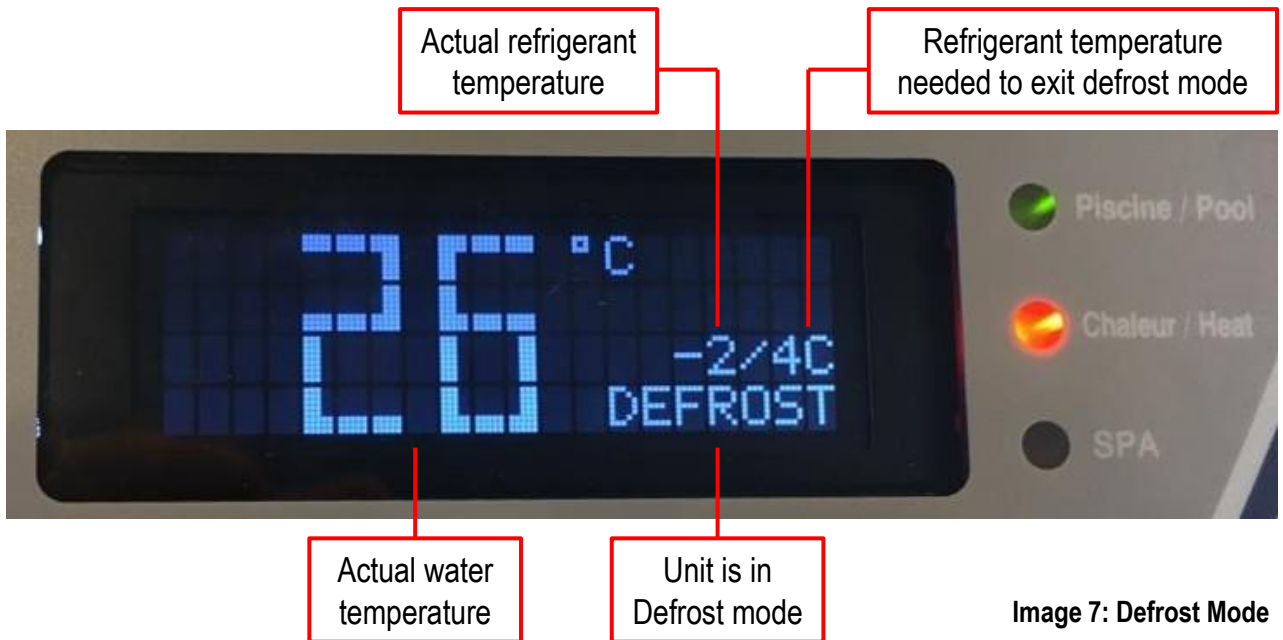
- **Timers ON/OFF** – This activates the heat pump timer function - Make sure clock is set.
- **Start Heating Time** - Set the time of day when the heat pump turns on. The heat pump relay (optional) is activated whenever heat is ON.
- **Stop Heating Time** - Set the time of day when the heat pump turns off.
- **Start Pump Time** - Pump relay (optional) set the time of day when the pool pump turns on.
- **Stop Pump Time** - Pump relay (Optional) Set the time of day when the pool pump turns off.
- **Set Clock Time** - Allows User To Set Clock Time (Must be done every time the power is cut to the unit).

## -Settings:

- **Min Outside Temp** - Allows User to set the minimum outside temperature that the heat pump will turn on. This allows users to save energy by not heating on days when temperatures are too low or avoids heating at night. Note that this setting may prevent the pool from reaching set temperature at certain times of the year.
- **Fahren. or Celsius** - Select temperature units – Fahrenheit or Celsius.
- **Change Language** - Set display language.



# SETTINGS



## Defrosting Mode

Defrosting is a normal cycle that takes a few minutes. During this process, the fan will be working while the compressor will be turned off.

## WARNING

Improper installation, adjustment, service, maintenance or use can cause fire, electrical shock or other conditions which may cause injury or property damage.

Consult a qualified technician or service agency for information or assistance.

All service calls under warranty should be authorized by Nirvana Heat Pumps Inc.

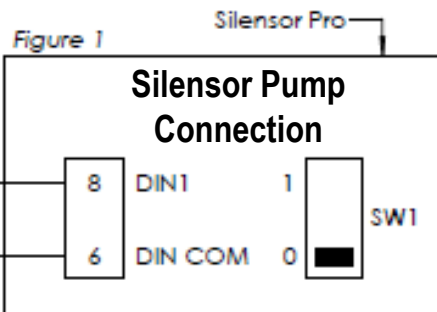
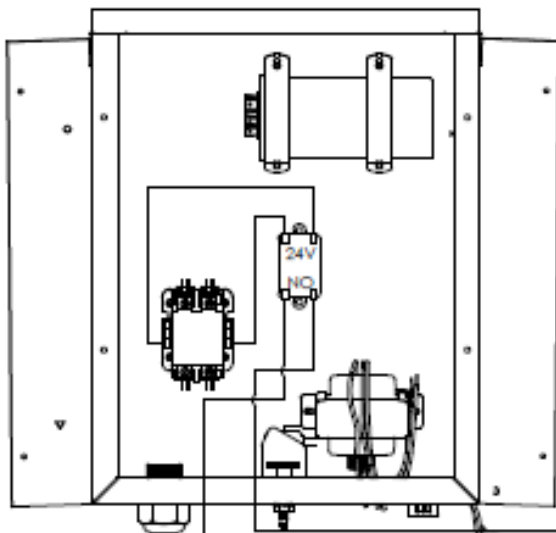
<p><b>PH</b> 7,2 - 7,8</p>	<p>CHLORE CHLORINE CHLORO</p> <p>ENTREE BETWEEN ENTRADA</p> <p>1 &amp; 3 P.P.M.</p>	<p>ALCALINITE ALKALINITY ALCALINIDAD</p> <p>ENTREE BETWEEN ENTRADA</p> <p>80 &amp; 120 P.P.M.</p>	<p>DURETE HARDNESS DUREZA</p> <p>ENTREE BETWEEN ENTRADA</p> <p>150 &amp; 300 P.P.M.</p>	<p>ACIDITE ACIDITY ISO CYANURIC</p> <p>ENTREE BETWEEN ENTRADA</p> <p>30 P.P.M.</p>
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Image 8: Langelier Index

## Start-Up

1. Inspect the unit to ensure that it is in good operating condition.
2. Clean the swimming pool filter.
3. Balance the pool water according to the Langelier index.
4. Reconnect all the water inlets and outlets.
5. Turn on the circuit breaker.

### Nirvana Heat Pump Electric Box



## WARNING

Water connections to the heat pump should be disconnected during winter in order to allow the heat pump to fully drain itself.

**The winterization of the heat pump must be done before the air temperature falls below 0°C.**

## WARNING

Your unit should never be tilted more than 30°-35°, even during transportation.

## Winterizing

1. Turn off the circuit breaker.
2. Drain the heat pump then loosen up all of the water connectors.
3. Rinse the inside of the heat exchanger's cylinder with a stream of tap water for about 15 minutes to remove any chlorine residue that could damage the heat exchanger.
4. Tilt back the unit slightly to drain all the water from the unit.

Block water inlet and outlet with a cloth or some plastic to prevent mice or other animals from entering the unit.

For better protection, cover your heat pump with the Nirvana winter cover; call your dealer for details.

# MAINTENANCE

## WARNING



To prevent injuries, death, or property damage, read and follow all of the instructions and warnings.

### Safety Tips

Always disconnect the heat pump before:

- ❖ Opening the access door,
- ❖ Cleaning the cabinet or evaporator.

Never sit or place a heavy object on top of the heat pump.

Never put objects in or on the protective grid to prevent injuries or damaging the unit.

A heat pump requires professional maintenance and repair. All “do-it-yourself” repairs on a unit under warranty may void the remainder of the manufacturer’s warranty.

### Maintenance

Maintenance or adjustments other than those recommended in this owner’s manual should not be attempted. Contact your dealer for any questions or problems you may have concerning your unit.

### Regular Maintenance

1. Inspect and clean the pool filter regularly to ensure adequate water flow to the heat pump.

2. Inspect the evaporator and rinse it using a garden hose. Wash from top to bottom with a stream of water to remove any grass, leaves or other objects that could obstruct the evaporator.

3. Clean the heat pump casing with a mild soap (dish soap). Do not use any abrasives or bleach.

4. Inspect the skimmer regularly. Never use the skimmer to add chemicals to the pool.

The PH should be maintained between 7.2 and 7.8. A higher level could result in damage to your unit and could void the warranty.

# TROUBLESHOOTING

PROBLEM	CAUSE	WHAT TO DO
<b>WATER FLOW ERROR CHECK WATER FLOW INSIDE HEAT PUMP</b>	<ul style="list-style-type: none"> <li>❖ The water flow inside the heat pump is insufficient;</li> <li>❖ The bypass valves are in the wrong position;</li> <li>❖ There is no water circulation inside the heat pump;</li> <li>❖ The flow switch is defective.</li> </ul>	<ul style="list-style-type: none"> <li>❖ Make sure the circulating pump works;</li> <li>❖ Make sure the bypass valves are properly positioned;</li> <li>❖ Check the skimmer (no obstruction).</li> </ul>
<b>DEFROST MODE</b>	<ul style="list-style-type: none"> <li>❖ The heat pump is in de-icing mode. This is Normal if outside temperatures are low</li> </ul>	<ul style="list-style-type: none"> <li>❖ Wait until the end of the de-icing cycle. The heat pump will restart automatically.</li> </ul>
<b>ERROR LOW REFRIGERANT PRESSURE</b>	<ul style="list-style-type: none"> <li>❖ Ventilation on the evaporator is insufficient</li> <li>❖ The fan does not work</li> <li>❖ Refrigerant leak</li> <li>❖ The outside temperature is too low</li> </ul>	<ul style="list-style-type: none"> <li>❖ Check that the evaporator is not obstructed by pollen, grass, leaves; see the user's manual for safety and maintenance tips;</li> <li>❖ Be sure there is enough free space around the heat pump (see the Installation Guide);</li> <li>❖ Check that the fan is powered ON</li> </ul>
<b>LOW PRESSURE FAILED 3 TIMES IN 1 HOUR RESET THE BREAKER</b>	<ul style="list-style-type: none"> <li>❖ The heat pump low switch has cut off three (3) times in the same hour for one of the reasons above.(code LP)</li> </ul>	<ul style="list-style-type: none"> <li>❖ The heat pump will not re-start after one of the protection devices shuts it down for the third time in the same hour</li> <li>❖ Close the circuit breaker to reset the heat pump</li> </ul>
<b>ERROR HIGH REFRIGERANT PRESSURE</b>	<ul style="list-style-type: none"> <li>❖ The water flow inside the heat pump is insufficient</li> <li>❖ The bypass valves are in the wrong position</li> <li>❖ The water exit is blocked</li> <li>❖ There is an obstruction in the refrigeration circuit (piping blocked)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Check whether there is adequate water circulation inside</li> <li>❖ Check that the bypass valves are properly positioned</li> <li>❖ Check if there is an object obstructing the water hose</li> </ul>
<b>HIGH PRESSURE FAILED 3 TIMES IN 1 HOUR RESET THE BREAKER</b>	<ul style="list-style-type: none"> <li>❖ The heat pump high pressure switch has cut off three (3) times in the same hour for one of the reasons above (code HP)</li> </ul>	<ul style="list-style-type: none"> <li>❖ The heat pump will not re-start after one of protection devices shuts it down for the third time in the same hour</li> <li>❖ Close the circuit breaker to reset the heat pump</li> </ul>

# TROUBLESHOOTING

PROBLEM	CAUSE	WHAT TO DO
<b>NO CONNECTION</b>	❖ The display and main boards are not communicating.	❖ Close the breaker switch and reopen it. If the problem is not resolved, the digital control will have to be changed. In this case, call your dealer .
<b>DEFROST TEMPERATURE PROBE OPEN</b>	❖ The de-icing sensor is not properly connected or is not receiving power	❖ Call your dealer .
<b>DEFROST PROBE SHORT CIRCUIT</b>	❖ The de-icing sensor is defective	❖ Call your dealer .
<b>WATER TEMPERATURE PROBE OPEN</b>	❖ The water temperature sensor is not properly connected or is not receiving power	❖ Call your dealer .
<b>WATER TEMPERATURE PROBE SHORT CIRCUIT</b>	❖ The water temperature sensor is defective	❖ Call your dealer .
<b>AIR TEMPERATURE PROBE OPEN</b>	❖ The air temperature sensor is not properly connected or is not receiving power	❖ Call your dealer .
<b>AIR TEMPERATURE PROBE SHORT CIRCUIT</b>	❖ The air temperature sensor is defective	❖ Call your dealer .
<b>The fan is functioning, no code is displayed and the compressor does not start</b>	❖ Electrical problem in the compressor circuit ❖ Capacitor defective ❖ Compressor defective	❖ Call your dealer .

## Before placing a service call

**There is always a possibility of condensation, especially on days with a high humidity level. If you see water near the heat pump, there's a good chance it comes from condensation. To make sure it is water from condensation you can shut the heat pump off, leaving the circulation pump running. Within a few hours, if you see that the water around the unit is drying up, it is indicative of normal condensation.**

Before calling your dealer, follow the steps below to avoid any unnecessary cost for a service call not covered by warranty.

1. Make sure the breaker is ON , the fuses are functional and the heat pump is connected properly (green light on the unit).
2. Make sure that the circulation pump is running at full capacity, has sufficient flow and that the filter is clean.
3. Make sure that the pressure gauge on your filter indicates sufficient flow (between 10 and 15 PSI) If it does not indicate 10 to 15 PSI, start a backwash.
4. Make sure that the water inlet and outlet are open and bypass valve is closed.
5. Check whether the temperature set is higher than the actual pool temperature.
6. Check that the plumbing is positioned in a way to enable sufficient water flow.
7. Check that the evaporator is not obstructed by pollen, leaves, grass etc. (See maintenance for washing instructions).
8. When the temperature goes down to about 7°C, the heat pump may switch to de-icing mode; it will then start a cycle that stops the compressor while letting the fan continue running. Once the cycle is complete, it will resume normal operation.
9. Frost may appear on the evaporator during cold weather and this is normal; however, if there is ½" of ice or more on the evaporator, contact us immediately.

If your heat pump does not operate properly after following these steps, contact your dealer.

All replacement must be made using Nirvana parts to maintain your heat pump performance, durability and safety as well as keeping your warranty valid.

## WARNING

DO NOT modify or remove a safety device. The manufacturer disclaims all responsibility if installation or maintenance instructions are not followed or if electrical or mechanical components and / or safety devices have been modified in any way.

# WARRANTY

## Warranty

Please visit our website [www.nirvanahp.com](http://www.nirvanahp.com) to register your unit online within 10 days after the installation of the unit. This information could be needed in the event of a product recall. To help you keep the information you might need in the future, please record the information below.

Model : \_\_\_\_\_

Serial number : \_\_\_\_\_

Installation date : \_\_\_\_\_

Make sure you keep your original invoice. A proof of purchase is required on any service call request.

## Manufacturer's Limited Warranty

Nirvana Heat Pump Inc. Offers a limited warranty against defects in the operation of the heat pump. This warranty becomes effective upon installation and is valid for new heat pumps only (residential use only). A proof of the date of installation will be required.

The heat pump must be installed according to manufacturer's specifications and must be operated under normal conditions of use as described in this owner manual. This warranty does not cover damage due to improper installation or use such as : inappropriate power of the unit for the size of the pool, improper use or maintenance according to the owner manual or provincial or national, state or municipal codes, installation by a person not authorized by Nirvana Heat Pump, flood, tornado, earthquake and other events known as an "act of god", improper winterizing of the unit, frozen pipes, poor water quality or infiltration of abrasive substances or sand in the components of the unit, premature corrosion of the titanium coil resulting from improper use of chemicals (chlorine or salt level above or below standards), modification alteration, repair or replacement of parts made without the authorization of the manufacturer.

Nirvana Heat Pump Inc. Agrees to repair or replace at its own discretion any parts deemed defective by an authorized dealer or technician. Heat pumps are not household appliances and should be repaired by a recognized technician. Evidence of servicing or repair by an unauthorized person will result in a cancellation of the manufacturer's limited warranty.

The manufacturer will not be liable for direct or indirect damage caused by improper use or installation or for the inability to use the heat pump. The manufacturer does not offer any other warranty of any kind. No distributor or dealer is authorized to modify the terms and conditions of this warranty. Coverage under any additional warranty provided by a distributor or dealer is the sole responsibility of the dealer or distributor

The warranty applies to the original purchaser and is transferable to successors only if the heat pump remains at the owner's original address and was installed according to standards and recommendations of this owner's manual, and until the expiry of the warranty. There is a \$100 fee to transfer the warranty. Please contact 1-866-443-4476 to get the details.