



POOL HEAT PUMP

*OWNER'S MANUAL
INSTALLATION MANUAL*

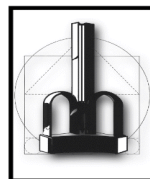


GENERATION MODEL



ECLIPSE MODEL

READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLING OR USING
YOUR NEW POOL HEAT PUMP.



*Habitas Innovation
1994 & 1998*

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INTRODUCTION

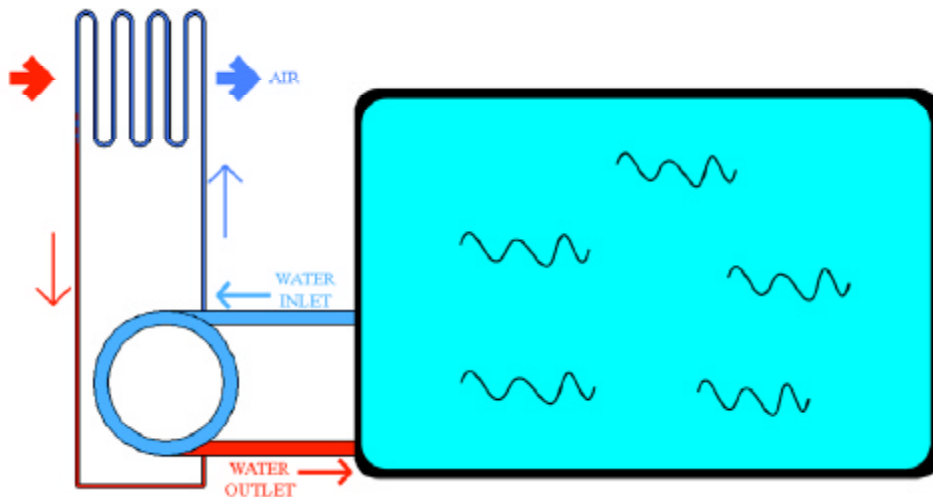
A Cost-efficient Appliance

Your new pool heat pump will make you save money compared to other types of pool heaters.

In fact, even if your pool heat pump has a lower heat capacity which makes it run for 24 hours a day, the pool heat pump remains the most economic system, because of the use of state of the art technics in thermodynamics.

How Does It Work?

Your pool heat pump works just as a water pump does. Whereas a water pump is tranfering water from a place to another, your heat is transferring heat between the surrounding air and your pool water. Moreover, your pool heat pump is not producing heat with the energy it is consuming just as a water pump is not producing water. It is considering that principle that your pool heat pump may attain efficiency ratios going up to 6 or 7 in the beast climatic conditions. This means that for each kilowatt your pool heater consumes, it is tranfering 6 or 7 between surrounding air and pool water. This yield can be compared advantageously to yields between 0.8 to 0.95 given by any traditional pool heater functioning with oil, gas or electricity. But it is true to say that the yield of traditional pool heaters stays constant at any outdoor climatic conditions whereas the yield of a pool heat pump varies. However, even when temperatures are cooler the pool heat pump continues to transfer heat between air and water and it stays the best choice for temperatures down to minus 5 Celcius (23 Fahrenheit) overnight.



Low Maintenance

Your pool heat pump is designed for lower maintenance at a lower cost. But if you want your pool to be heated efficiently, you must follow the advice we supply in this manual.

PLACING THE HEAT PUMP

The location you choose for your pool heat pump is very important. You must take into consideration the following.

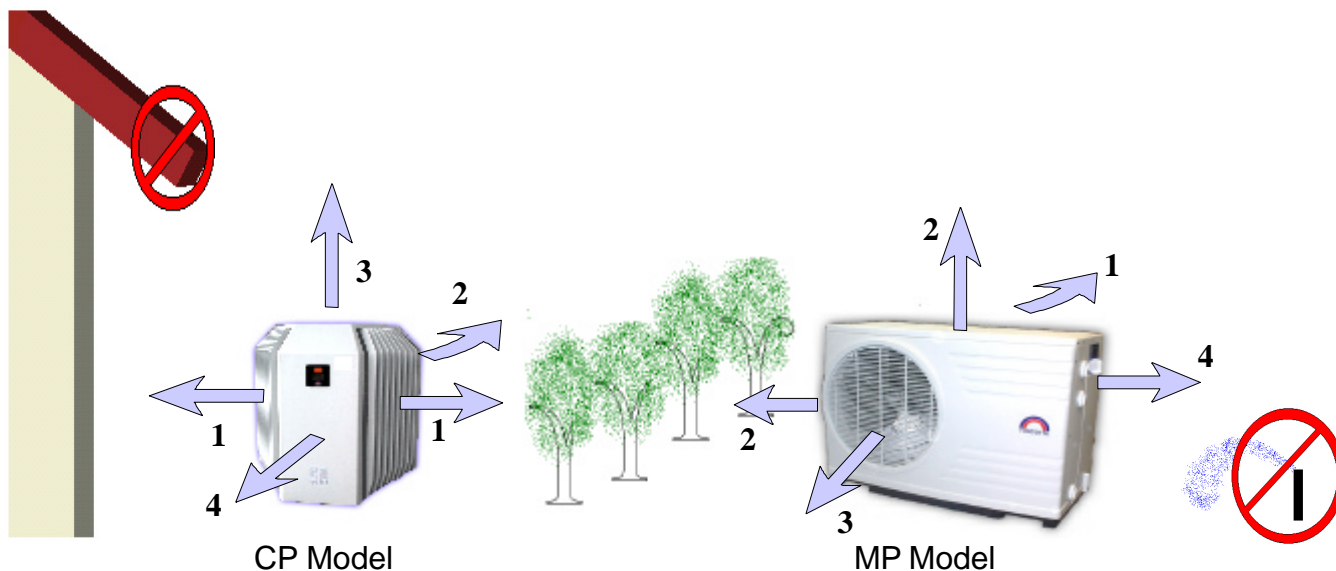
Air Supply and Accessibility

Your heat pump uses surrounding air to work. It is very important to make sure that there is enough air circulation around the heat pump. Do not install the heat pump in a closed space like a garden shed, a garage, or a basement.

The table below indicates the minimum distance any object should be placed away from the heat pump.

	Generation (CP)	Eclipse (MP)
(1) facing evaporator's surfaces	2 feet = 61 cm	2 feet = 61 cm
(2) facing other surfaces	10 inch = 25.4 cm	14 inch = 35.5 cm
(3) facing fan *	4 feet = 122 cm	4 feet = 122 cm
(4) facing service panel	2 feet = 61 cm or accessible	2 feet = 61 cm or accessible

* Objects should be placed as far as possible from where the air is discharged.



Other Recommendations

Some other factors have to be considered before choosing the heat pump's location. Do not install the heat pump under a roof. This will prevent the heat pump from being buried by snow accumulating on the roof. Although the internal components are protected from rain, it will prevent water from falling on the heat pump during heavy rainfall.

Also, make sure that the digital control does not face the sun. The control will not break but its digital display will be more difficult to read.

If you have an automated sprinkler system for your lawn, make sure that the heat pump is not showered by a sprinkler.

The pool heat pump should be installed on a firm and leveled surface, preferably on a concrete slab or the equivalent.

HEAT LOSS CONTROL

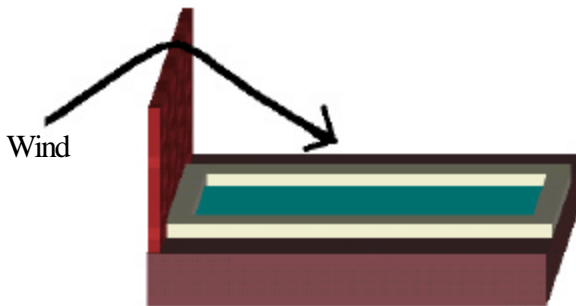
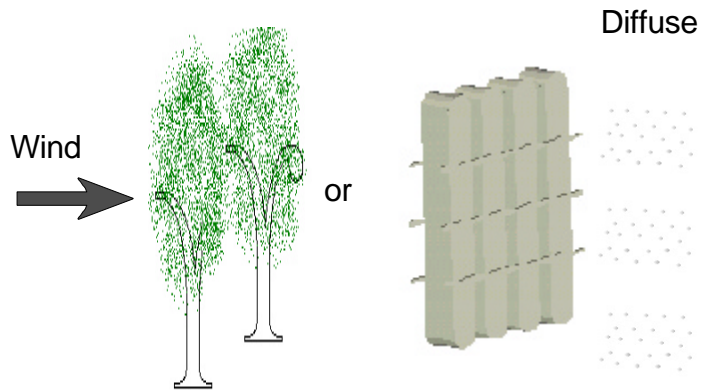
Here's some advice on how to reduce heat loss from your pool. Reducing heat loss will also reduce the heating bill.

Break the Wind Speed

Wind is one of the principal causes of your pool's heat loss. If you want to heat your pool faster, and save money, you have to reduce wind speed near your pool.

To do it, we recommend you to install shrubs or bushes around the pool's perimeter. If the pool area is to be fenced off, select a fence opaque enough to stop the wind but still permits air to go through.

A solid type fence or wall does not act as a good wind breaker. It tends to create wind turbulence across the water surface increasing heat loss.



Cover Your Pool

Most of the heat loss occurs on the surface of the pool. Using a solar blanket will greatly increase the efficiency of the heat pump. To prevent most of the heat loss you are recommended to use a solar blanket as often as possible. Particularly at the beginning and the end of the swimming season, or whenever ambient conditions are unfavorable (low temperatures and high winds).



Recommendations for Spas

When heating the spa, we recommend to cover it.

Shut off the air blowers since they cool the water when it is colder outside.



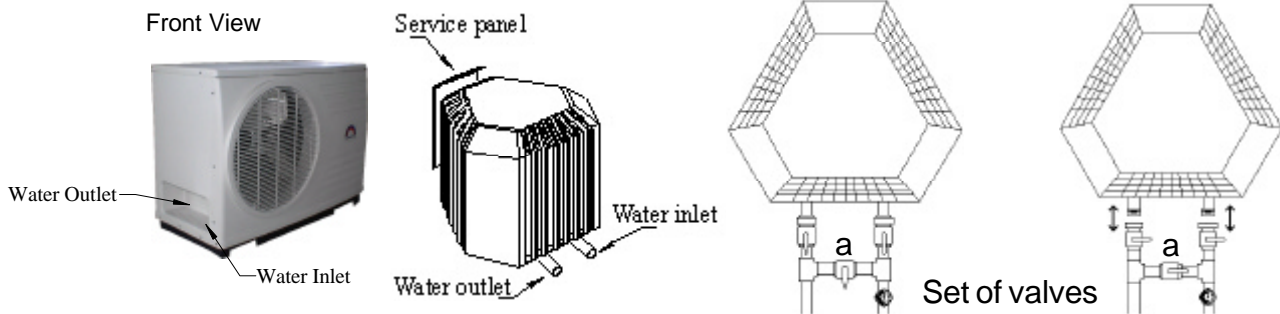
Do not swim when the pool or spa is covered.

WATER INLET AND OUTLET CONNECTIONS



For your own security, and to ensure proper operation of the unit, the water connection must be performed by a qualified person as per all applicable national, provincial, state or local codes.

For all Eclipse (MP) models, connection pipes are 1 1/2 inches in diameter. For all Generation (CP) models, the connection pipes are 2 inches in diameter. For all the pool heaters, we recommend (obligatory for the Eclipse serie) the installation of set of valves allowing to isolate the pool heater from the filtration system when necessary. (See the drawing below) Moreover, you have to make sure that your pool heat pump may be disconnected from the pool pipes without having to stop the water pump.



To equilibrate the water flow passing through the pool heater, please adjust the by-pass valve (a) as follow:

MP30 - MP40 : 3/4 opened

MP60 : 1/2 opened (closed, the pump works much, opened, the MP60 works much)

All CP's : Closed - the internal calibrated valve regulates the water flow.

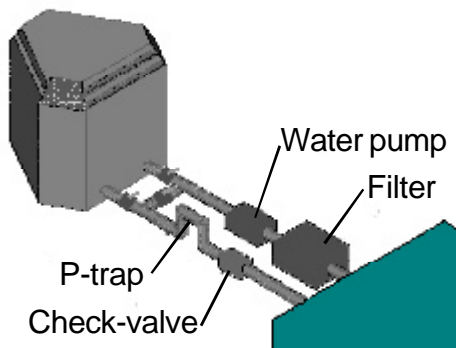
If the previous settings are not respected, the pump or the pool heater can suffer surcharge and it can result in a failure of your equipment.

Your water pump must provide a the quantity of water indicated in the table below. These numbers must be used for each pool heat pump installed. A flow meter must be installed on the water inlet of the pool heater to know the exact water flow. **Caution** : many flow meters require an long distance of straight tubing on the inlet side to offer an adequate measurement.

	Minimum	Ideal	Maximum
Eclipse	15 GPM(US)	20-30 GPM(US)	50 GPM(US)
Generation	25 GPM(US)	40-50 GPM(US)	65 GPM(US)

GMP(US) : American gallons (3,78l) per minute

Basic Connections



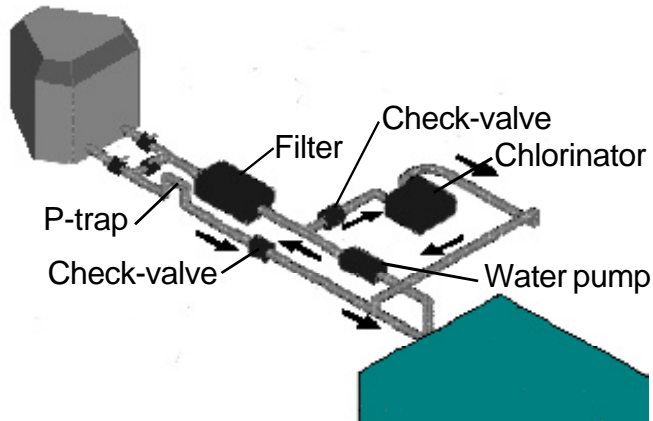
This connection method is strongly recommended to enhance the life-span of your pool heat pump.

If you connect the unit this way, you have to pour chemicals directly into the pool or the spa, as far as possible from the water supply point.




Do not pour chemicals in the skimmer or at the bottom of the pool if you have a drain because of the possibility of migration of the chemicals to the heater.

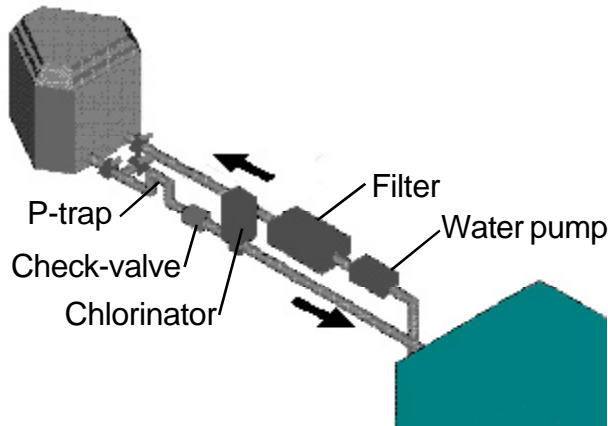
Pressure-type Chlorinators or Brominators




The pressure-type chlorinator or brominator takes a small amount of water from the exhaust side of the filter, adds chemicals to it and returns this highly concentrated solution to the pool. This type of chlorinator or brominator requires a check valve on the chlorinator's (brominator's) inlet pipe to prevent the migration of this highly corrosive chemical to the heat pump's condenser. This check valve must be highly resistant to corrosion. Use only a check-valve either supplied or recommended by the chlorinator (brominator) manufacturer.

 The p-trap should be installed as high as the top of the chlorinator (brominator) to prevent migration.

In-line Chlorinator or Brominator



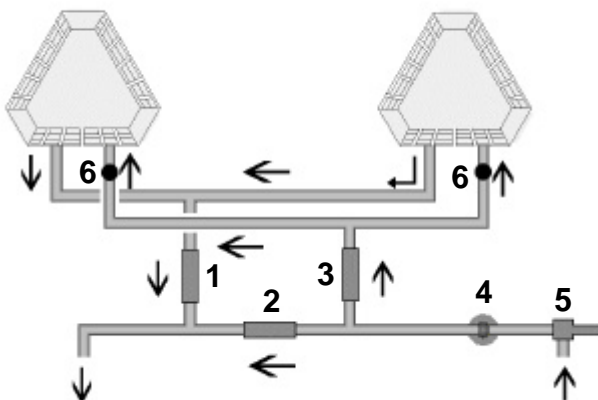
The in-line chlorinator or brominator should be installed on the pool water return line, between the heat pump and the pool. This type of chlorinator (brominator) should be installed as far as possible from the heat pump. Install a check-valve between the heat pump and the chlorinator (brominator).

 The p-trap should be installed as high as the top of the chlorinator (brominator) to prevent migration.



The use of a brominator or a chlorinator tends to lower pH and total alkalinity because of the chemicals in it. If you use such a product, you must check the quality of the water regularly as indicated on page 14 of this manual. (Addition of sodium bicarbonate is recommended to restore the balance.) (See the section Water Maintenance on p.11)

Dual Unit Connections



For some larger pools, it may be necessary to install two units in parallel. In this case, double the distances recommended in the table 1 of the page 4. Never place two MP models vol against coil, fan against fan or coil against fan.

1,2 and 3 : calibrated valves
 4 : filter
 5 : water pump
 6 : flow meter

POOL AND SPA CONNECTION

Using One Pump and One Filter for the Pool and the Spa

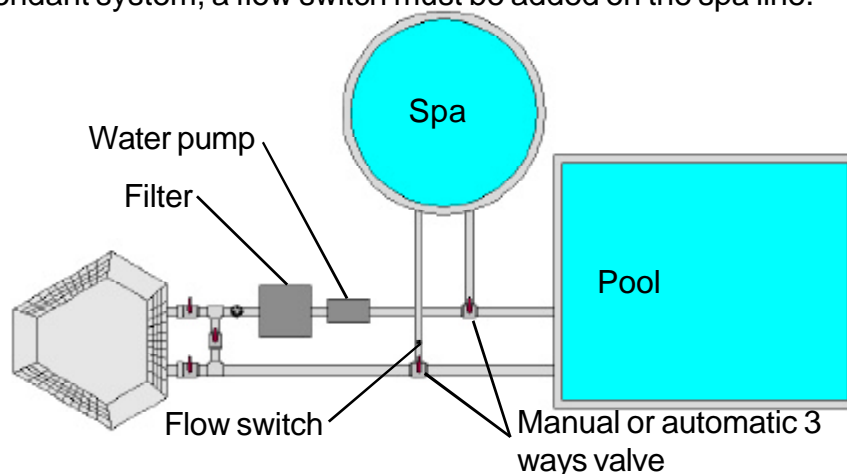
An installation featuring a single pump and a single filter for the pool and the spa is easier and more economic. Using domotic, it is possible to always keep the pool and the spa to the appropriate temperature. Else, it is always possible to have only the desired system functioning by positioning the valves to have the water circulating in the pool or in the spa.



1) It is more difficult to keep the water into the quality standards when using a single filter because this type of installation always lets either the pool or the spa without filtering. An independent domotic system with automatic valves can alleviate this problem, else one must be very assiduous in maintenance.



2) For the pool heat pump to detect the change made either manually or by an independant system, a flow switch must be added on the spa line.

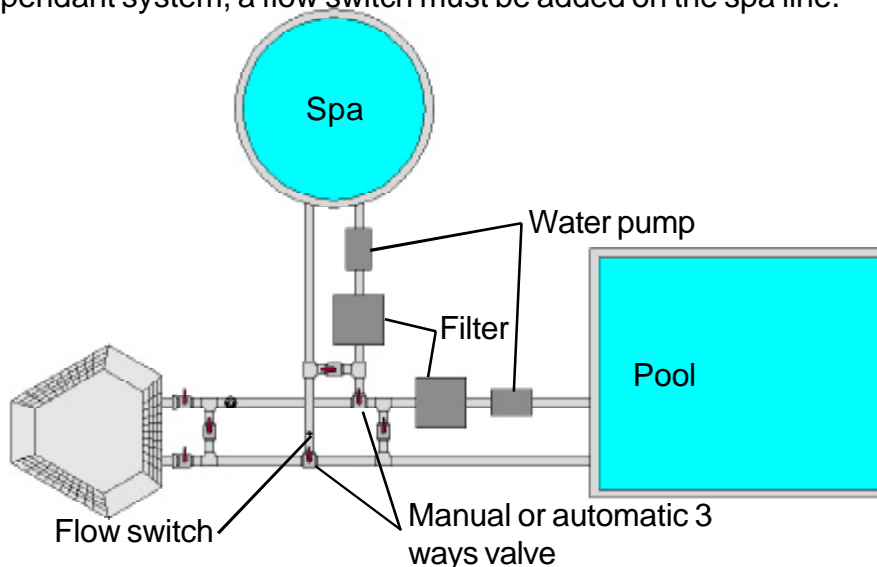


Using Independent Pumps and Filters for the Pool and the Spa

An installation featuring independant pumps and filters for the pool and the spa is a little more complicated and expensive. However, it is more advantageous because it never lets the pool or the spa without filtering during long periods. Water is therefore easier to maintain.



1) For the pool heat pump to detect the change made either manually or by an independant system, a flow switch must be added on the spa line.



ELECTRICAL CONNECTION



For your own safety, and to ensure proper operation of the unit, the electrical connections must be performed by a qualified electrician as per all applicable national, provincial, state or local electrical codes.

A breaker must be installed near the heat pump in an accessible area.

Use 3 conductor copper wires only of the appropriate gauge. (The wire gauge should be selected according to the circuit ampacity and the distance between the circuit breaker and the heat pump.)



The supply must have a contact separation of at least 3 mm on all poles

- ① Pull out the front service panel (stainless steel screws)
Unscrew the electrical box cover (4 zinc plated screws)
- ② Install the appropriate strain relief in the 7/8" diameter hole for the power supply.
- ③ Properly route the cable or conduit and secure.
- ④ Attach the grounding conductor to the ground lug. (Precautions must be taken to prevent corrosion due to the copper-aluminum contact.)
- ⑤ Attach power supply cables to L1 and L2 input terminals of the contactor for the single phase or to L1, L2 and L3 terminals of the contactor for the triphase.
- ⑥ Make sure wiring conforms to all applicable industry codes.
- ⑦ Reinstall the electrical box cover using the 4 zinc plated screws. Reinstall the service panel with the stainless steel screws. Don't mix the screws.

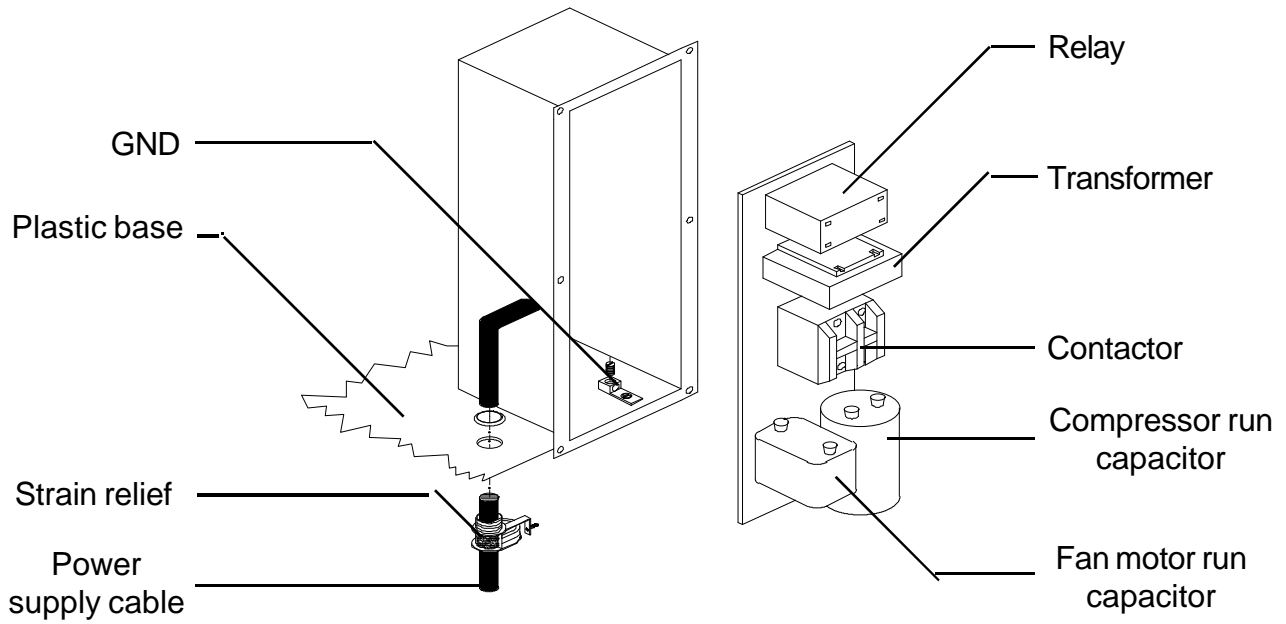


The identification plate on heat pump identifies all voltage requirements.

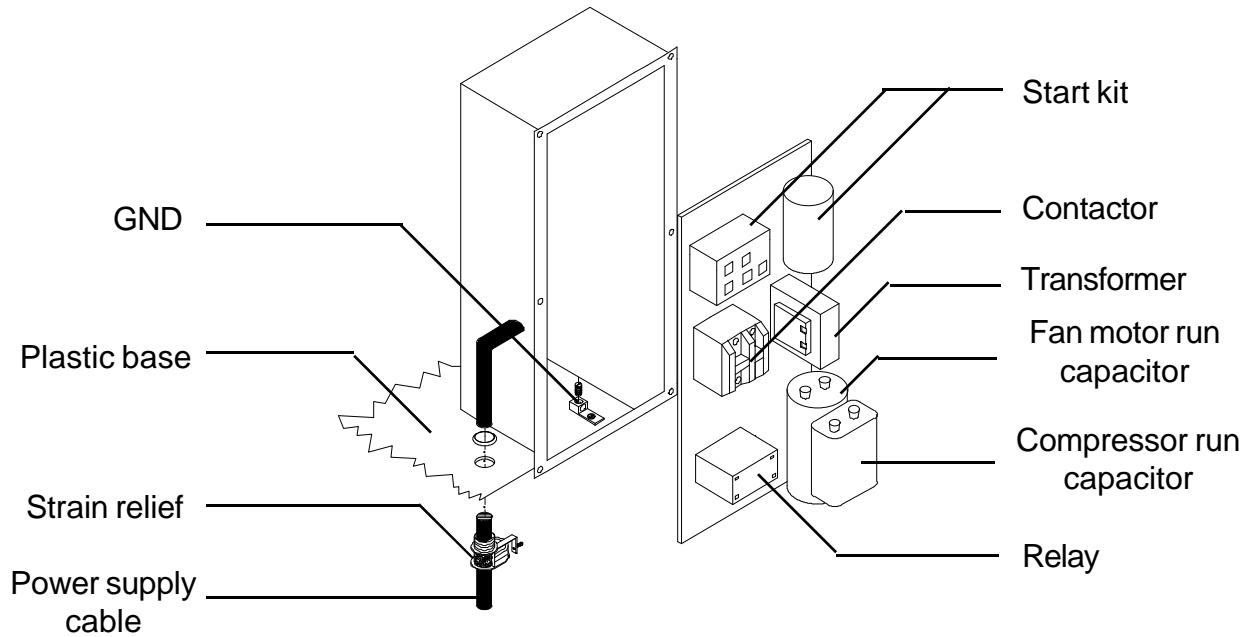


If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a qualified electrician to avoid electrical shock.

Electrical Box Without Start Kit



Electrical Box With Start Kit



MAINTENANCE



Before performing any maintenance on the heat pump you must turn off the heat pump. Refer to your “Digital Control for Pool Heat Pumps” manual. Once completed, switch off the breaker of the electrical supply line.

Don't use the breaker as an ON / OFF key!!!

Cleaning

To ensure optimum performance from your heat pump, perform these operations:

- backwash the pool's filter on a regular basis in order to ensure proper flow rate through the pool heater;
- keep the evaporators' surfaces clean and free of any obstruction such as papers, leaves or other debris;
- clean the unit carefully using a soft, non abrasive and bleach free cleaner, and rinse using a garden hose without the nozzle;
- check the drainage holes of the unit to make sure that they are clean and unobstructed (this prevents water from accumulating in the heat pump).

Winterizing

If you close the swimming pool during the winter season, it is essential to drain the unit in order to prevent the formation of ice in the condenser (water section).

1. Stop the unit.
2. Shut off the heat pump electrical supply line.
3. Disconnect the water inlet and outlet connections.
4. Freely flush the condenser with clean water. Completely drain the system using air pressure or vacuum system. We do not recommend putting anti-freeze into the heat pump pipes, but if you chose to put some, make sure that is compatible with copper, else, it would do more damage to the condenser than small quantity of ice would.

If the heat pump is kept outside during the winter season, protect it with a waterproof cover.

Seasonal Start-up

1. Make sure that the pool heater's switch and the electrical breaker is in the off position.
2. Reinstall the water inlet and outlet connections to the pool return line.
3. Clean the pool's filter and make sure that the water is flowing adequately through the pool return line.
4. The water quality should be at optimum levels before letting water flow through the heat pump.
5. Switch ON the electrical supply line breaker.
6. Start the unit and adjust the temperature control at the desired position.

Water Derivation

1. Stop the unit.
 2. Open the by-pass valve and close the water inlet and outlet valves.
- For longer stops (1 week or more):
3. Unscrew the water inlet and outlet connections.
 4. Rinse the condenser with tap water and drain the system (with air pressure or vacuum).

WATER MAINTENANCE

Why Do Water Maintenance?

Contrary to traditional heat pumps that treat air only, pool heat pumps deal with water and are much more sensitive. This is mainly caused by 2 factors: the water chemistry and the erosion done by circulating water. In Turcotte pool heat pumps, many measures have been taken to prevent water erosion, but only the customer can control the chemistry of the pool water to avoid premature degradation of his pool heat pump.

Water Chemistry

Many chemicals are used to control the quality of the pool water for swimming. We use different types of chlorine or bromine to control microorganisms and algae. We also use various products to regulate pH and other aspects of the water chemistry. Every product added produces an effect on water chemistry that must often be balanced with other chemical products. For example, trichlor addition induces a diminution of pH and of total alkalinity (TA). We must balance those effects by adding sodium bicarbonate (baking soda).

Some organizations, like the NSPI (National Spa & Pool Institute), publish standards on pool water chemistry. Those standards are made to protect swimmers and pool equipments, particularly their metallic pieces, copper, steel and even stainless steel, that will corrode under the effect of the chemistry of poor quality water. Generally, if the equipment can be damaged by poor quality water, this water is also bad for the swimmers. (See the following table for the standards)

Table 2: Chemical Products Concentration in Pool Water Standard

	Minimum	Ideal	Maximum
Free chlorine*	1.0	pool 1.0-3.0 spa 3.0-5.0	pool 3.0 spa 10.0
Combined chlorine*	None	None	0.2
Bromine*	2.0	pool 2.0-4.0 spa 3.0-5.0	pool 4.0 spa 10.0
pH	7.2	7.4 - 7.6	7.8
Total alkalinity*	60	80-120	180
Total dissolved solids*	300	1000-2000	3000
Calcium hardness*	150	200-400	500-1000
Cyanuric acid*	10	30-50	150

* ppm (parts per million)

Your heat pump, just as any type of pool heater (gas, oil, electric, etc.), features some metallic pieces that can be damaged by bad quality water. The condenser of your pool heat pump is made of a copper alloy that, as resistant as it is, is sensitive to pH. That is why Turcotte greatly recommends testing the quality of the pool water regularly. These controls must be made on a weekly basis and must at least feature the following: chlorine or bromine, pH and TA.

Moreover, Turcotte suggests having the pool water tested by a professional (often free of charge) once a month.

The water of the pool or spa must be maintained within the standards included in this manual. Any negligence will void the warranty. These standards are from the NSPI and are common throughout the pool industry; they are not particular to Turcotte.

The most important factor for the durability of the pool heat pump is the pH because the capability of the water to cause the degradation of metal is directly related to it. Let's also mention that TA is the measure of the capacity of water to resist to pH variation; therefore it is as important. Taylor, an important manufacturer of pool water test kit for professionals states:

“Corrosive water will dissolve copper piping and heat exchangers and leave stain on pool walls.”[Taylor, A Testing & Treatment Guide part #2004B, p.35]

“The result is a highly unbalanced water condition resulting in damage to copper heat exchangers, light rings, stainless steel ladders an concrete pool surface.”(Talking about acidity and low TA) [Taylor, A Testing & Treatment Guide part #2004B, p.11]

Just following, you will find a table presenting pH associated to concentrated solutions of various chemical products for pools.

Table 2: pH of Various Chemical Products for Pool

Chemical	pH
Chlorine	
Trichlor	2.5-3.0
Sodium Dichlor	6.8-7.0
Lithium Hypochlorite	10.7
Calcium Hypochlorite	11.8
Liquid Chlorine	13.0
Bromine (tabs)	3.6
pH Regulating Products	
Muriatic Acid	0.1
Dry Acid	1.4
Cyanuric Acid	3.0
Sodium Bicarbonate	8.3
Sodium Sesquicarbonate	10.1
Soda Ash	13

Sanitizers

Sanitizers are products used to purify water, to relieve it from microbes and algae. They are the chlorine, in its different forms, and the bromine in the case of the pools. Each of them has its advantages and inconveniences. They are some times basic, some times acid. They can have different impacts on water chemistry and can necessitate various chemical products to counter-balance those impacts or to stabilize them. Warm water is more difficult to maintain, it necessitates greater quantities of sanitizers and, therefore, greater quantities of other chemical products.



Never pour any sanitizer into directly into the water intake (skimmer) without having diviated the water from the pool heat pump previously. (See the section Water Derivation, p.10)

NOTE: The use of floatting distributer is recommanded as an aleternative to pour the chlorine directly into the skimmer. Maitaining the chlorine level using this methodcan however be more difficult because the water flow solving the chlorine is less important on the top of the pool than in the water pump system.

1) Trichloro-s-triazinetrione (TCCA or trichlor or pucks)

Trichlor is a very common and practical sanitizer because it dissolves into hypochlorous acid, a powerful sanitizer, and into cyanuric acid, a stabilizer improving the duration of it efficiency. However, it produces 2 acids that contribute to lowering pH and AT of the pool water. This can cause severe damage to the pool and to its system because of corrosion:

"...having a strongly acidic pH, TCCA tablets will reduce total alkalinity and, if not monitored, low total alkalinity will cause corrosive damage to the pool." [Taylor, A Testing & Treatment Guide part #2004B, p.26]

Usage of trichlor requires the addition of sodium bicarbonate to higher the pH and TA level. Warning: many users testing only pH will be tempted to use sodium carbonate, or pH+, however this product does not increase TA level and pH will decrease back rapidly. As acidic water is also most of the time very clear because it is free of microorganisms, Turcotte wants to remind you to test water regularly to avoid problems caused by acidity of water. Clear water is not a synonym of good quality water.



NOTE: with trichlor, it is possible to use what is called a chlorinator. A chlorinator is an automatic chlorine distribution system, but in no case it is controlling pH and TA of water. Thinking their system is completely automatic, users of those systems often neglect to test their water. Moreover, make sure that your heat pump installer has modified the circuit of your chlorinator in a manner to prevent it form pouring out its concentrated solution of chlorine into the pool heat pump. (See p.7)

2) Bromine

Bromine is a very good sanitizer, it is safe, practical, it does not require any stabilizer and it does not cause irritation nor has any odor. Furthermore, its efficiency is independent from pH of water. However, it is acid and it destroys TA. Water that is acid and low in TA becomes corrosive and disintegrates metallic pieces of the pool system, including the condenser of your pool heat pump. Therefore, it is imperative to test water frequently, even if water is very clear, to avoid problems caused by water acidity. Acid water is often very clear because it is free of microorganisms, but it is damageable and of bad quality.



NOTE: with bromine, it is possible to use what is called a brominator. A brominator is an automatic bromine distribution system, but in no case it is controlling pH and TA of water. Thinking their system is completely automatic, users of those systems often neglect to test their water. Moreover, make sure that your heat pump installer has modified the circuit of your brominator in a manner to prevent it from pouring out its concentrated solution of bromine into the pool heat pump. (See p.7)

3) Sodium hypochlorite (liquid chlorine)

Liquid chlorine is completely soluble in water and does not leave residue in pool water, but it decomposes rapidly, even when stored, and request usage of a stabilizer like cyanuric acid. As it is alkaline, it contributes to raise pH and TA. High pH and TA can contribute to the formation of a deposit of limestone on the condenser of the heat pump, creating an isolating layer on the heat exchanger and reducing the heat pump efficiency.

4) Calcium Hypochlorite (granular or stick chlorine)

Granular chlorine is easy to use and dissolves rapidly. On the other hand, it increases pH, TA and calcium hardness significantly. Like with liquid chlorine, high calcium hardness, pH and TA can contribute to the formation of an isolating layer on the heat exchanger reducing the heat pump efficiency.



NOTE: Other types of sanitizers exist; all of them have their advantages and inconveniences. What is truly important to keep in mind is that pool water is something that should be maintained regularly and that should be balanced according to standards established throughout the pool and spa industry.



Shock Treatment

Before performing any shock treatment, deviate water from the pool heat pump to prevent chemical products from damaging it.

What to do?

The purpose of maintaining the water of your pool is not only to protect the swimmers, but also to improve the work conditions of your pool equipment, particularly of your pool heat pump to increase its durability and its efficiency. To achieve this goal, the user must:

1. Test pool water regularly (chlorine or bromine, pH and total alkalinity);
2. Balance the pool chemistry within the level of the standards using the appropriate products;
3. Protect the pool heat pump whenever the water should be beyond the standards.

1) Testing

We recommend greatly verifying the level of chlorine or bromine, and the level of pH and TA at least once a week. Moreover, we suggest that you have your water tested professionally once a month, particularly the following variables:

- Calcium hardness: a low calcium hardness level implies corrosive water that can damage your pool heat pump. A high level of calcium hardness contributes to the formation of deposits on the surface of the heat exchanger reducing the efficiency of the pool heat pump;
- Total dissolved solids: a high total implies a tendency of the water to corrode, therefore to destroy gradually the pool equipment;
- Copper level: a high copper level can indicate a degradation of the copper condenser of the pool heat pump. So this can be considered as a warning urging to verify the pool water more often. For the users of copper algacides, a higher level of copper is normal; but verify if there is no gray-black stain deposit indicating the saturation of the water in copper and a possible degradation of the condenser;
- Stabilizer (cyanuric acid): a high level of cyanuric acid can damage the equipments and, especially, is toxic for the swimmers.

2) Balancing

According to the levels given by the test results and according to the volume of water of your pool, always balance the pool water in a manner to meet the standards. Your pool man can help you to choose the proper chemical products and the good quantities. Always carefully follow the instructions given by the chemical products suppliers. Never pour more into the water than prescribed.



Warning: any chemical product, acid or basic, is susceptible of provoking the degradation of the heat exchanger of your pool heat pump. Never pour any chemical product into the water intake (skimmer) of your pool to prevent the product from damaging your pool heat pump.

3) Protecting the Pool Heat Pump

If you observe that your pool water is beyond the established standards, we urge you to shut down your pool heat pump, to divert the water from it and to disconnect it from the plumbing, as described in the section "Maintenance", p12. After, wash the condenser using tap water.

SOLVING PROBLEMS

Error	Possible Causes	Possible Solutions
Unit does not run	<ol style="list-style-type: none"> 1. Power is not supplied to the heat pump 2. No demand for heat 3. Anti cycle delay (5 minutes) 	<ol style="list-style-type: none"> 1. Make sure that the heat pump electrical supply line breaker is ON. 2. Make sure that the temperature control is set at a proper level. Adjust as required. 3. Whenever the compressor is stopped, the digital control imposes a minimal time delay of 5 minutes before restarting it to allow gases to re-equilibrate.
The actual water temperature (shown when the Set LED 6° is off) increases when the compressor starts.	Water is not circulating in the right direction	Check connections.
The heat pump runs but does not generate enough heat.	<ol style="list-style-type: none"> 1. Water is not circulating in the right direction 2. The heat loss of the pool exceeds the heating capacity of the heat pump 3. The pool size exceeds the specified capacity of the model selected 	<ol style="list-style-type: none"> 1. Check connections. 2. See “Heat loss control” section on page 5. 3. Use a more powerful model or use more than one heat pump.
The heater seems to have a water leak.	<ol style="list-style-type: none"> 1. Normal - water caused by condensation 2. Water leak 	<ol style="list-style-type: none"> 1. No action required. (Install a derivation drain if necessary.) 2. To verify if it is a leak, you need to stop the pool heat pump until all the condensate has disappeared. Verify if there is water remaining around the machine after 24 to 48 hours. (See p. 17 Q2)
The defrost sensor temperature decreases when the compressor starts.	Normal	No action required
The digital control displays “888”.	The digital display is exposed to the sunlight.	Make shade on the display to distinguish lights that are ON from those that are OFF.
Only the fan is running.	<ol style="list-style-type: none"> 1. Defrost mode 2. Anti cycle delay (5 minutes) 3. Defective compressor. 	<ol style="list-style-type: none"> 1. No action required 2. No action required 3. Call an authorized service technician

QUESTIONS AND ANSWERS

1) Is it possible that my pool is losing water since my pool heater was installed?

-Your pool is not losing water, but because the pool water is at a higher temperature, there is more evaporation. When the difference of temperature between the pool water and the surrounding air is increased, more evaporation happens.

2) Some water drops beside my pool heater, does my pool heater have a leak?

-It probably does not. The water dropping from your pool heater must come from condensation of the humidity on the evaporator of your pool heater, just as condensation forms on a cold water glass for example. But, if you really think a leak could be present in your pool heater and want to be sure, you can stop the filter pump and the pool heater, or stop the pool heater and use the bypass set of valve to prevent water from accessing your pool heater. Wait until the water evaporates beside the pool heater and have the water circulates again into the pool heater without putting the pool heater on. If water drops, it comes from a leak, not from condensation.

3) My pool heater indicates a temperature that is different from the temperature indicated on my pool thermometer. Does my pool heater have a problem?

-Chances are that it does not. Your pool heater features calibrated digital control and sensors. Most of the time, the problem comes from the pool thermometer. Even though the mercury thermometer is precise, its box is not and the thermometer is often not in line with the graduations written on the box. In this condition, the thermometer reads a temperature higher or lower than the real pool temperature. To measure the temperature of water, you can use a mouth thermometer on which the graduations are written directly.

-When the pool features a bottom drain, it is possible that the pool heater shows a temperature 1 or 2 degrees lower than what is measured on surface. This situation is normal since the water at the bottom of a pool is always cooler than on surface.

4) Since the installation of my pool heater, the pressure in my filter pump has risen, is it normal?

-Yes. The new heater, as well as the new tubing, is an added resistance to the water flow. Therefore, it is normal to have a rise of the pressure of 5 to 7 psi after the installation of a new pool heater.

5) Why isn't the pool water heating as my pool heat pump is working?

-3 cases exist as the pool heat pump is functioning: The pool heat pump provides more energy than the pool is losing, the temperature rises. The pool heat pump provides as much energy as the pool is losing, the temperature is stable. The pool heat pump provides less energy than the pool is losing, the temperature lowers. We should not forget that the pool heat pump efficiency varies with the operation conditions and that the energy losses of the pool are relative to the outdoor temperature, to the wind, to the size of the pool and to many other factors.

WARRANTY

Turkhot Tech Inc. (hereinafter referred as “TURCOTTE“)

Models MP30, MP40, MP60, CP80, CP100, and CP125.

Note: Prior to proceeding with any maintenance or repair covered by the TURCOTTE warranty, first consult your TURCOTTE representative.

One (1) year warranty on parts and labor

TURCOTTE warrants this product for a period of one (1) year after the date of purchase against defects in material and workmanship (the period is extended to five (5) years after the date of purchase for the compressor). TURCOTTE will furnish new or rebuilt replacement parts, at TURCOTTE's discretion, to replace parts that are judged defective by TURCOTTE. TURCOTTE will pay for the direct replacement cost, including parts and labor, in accordance with TURCOTTE's flat rate hourly schedule.

The direct replacement cost does not include the traveling expenses and diagnostic charges of the service agent, nor the freight and delivery cost of replacement parts. The replacement of such parts may be accomplished by a TURCOTTE Authorized Refrigeration Technician or through a TURCOTTE Authorized Representative. Replacement parts should be original TURCOTTE replacement parts only. TURCOTTE or a TURCOTTE Authorized Representative should approve any change of part in writing.

Restrictive clauses

- This warranty applies only if the installation and operation instructions contained in the Owner's Manual are fully respected. This warranty does not cover damages resulting from negligent handling, misuse or lack of reasonable care.

- This warranty applies to heat pumps used for domestic use only.

- This warranty does not cover damage due to corrosion or freezing.

- The owner of the heat pump must keep his receipt as proof of the date of purchase.

- TURCOTTE shall have no liability whatsoever at any time for any personal injury or property damages or for any special, indirect or consequential damages of any kind.

- This warranty is strictly limited to its terms and is in lieu of any kind and all other warranties and conditions, written or oral, either expressed or implied.

- This warranty and related provisions mentioned above may not be applicable in certain provinces or states.

- TURCOTTE reserves the right to refuse warranty on units in operation which doesn't include the installation kit.

- This warranty is not transferable.

Additional five (5) years limited warranty on parts and labor

This warranty is included for heat pumps purchased in the United States and is optional if bought in Canada. Check the warranty certificate for full details.

It is not available for other countries.

TURKHOT TECH INC.

Customer Service

690 Trans-Canada

J4G 1P1

Tel.: 1-800-833-7527

NOTE: These warranties will be observed only if the warranty card has been filled and returned to TURKHOT TECH INC. (The warranty card is in the center of the manual)