INSTRUCTION OF
OPERATION & USER MANUAL
WATER CHILLER

Please read this manual carefully, before any installation, operation or maintenance.

Support at info@LivingstonMtnSpas.com

or

360.503.0030

SAFETY NOTICES:

A. The appliance must be positioned so that the plug is accessible.

B. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

C. This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

D. This appliance shall be installed in accordance with national wiring regulations.

E. Disconnect the power supply before cleaning and maintenance.

F. This appliance contains the fluorinated greenhouse gases that hermeticall sealed, the installation, maintainece, repairment and disposal must be handled by the professional and qualified persons, according to related chapters or appendix in this operation manual.

G. The water flow direction of this appliance is marked by sticker on its body and in this manual.

INSTRUCTION OF OPERATION & USER MANUAL

(End User's Edition)

WATER CHILLER

⚠ **ATTENTION:**

This manual includes all the necessary information with the use and the installation of your water chiller. The installer must read carefully this manual and attentively follow the instructions during the implementation and maintenance. The installer is responsible for the installation of this water chiller and should follow all the instructions that the manufacturer regulates in actual application. Improper installation against the manual might cause severe safety accidents and cause your water chiller out of guarantee provided by your supplier. The manufacturer declines any responsibilities for the damages caused by the users, objects and the errors due to installation that disobeys the manual's guidance. Any use that without conformity with the origin of its manufacturing will be regarded as dangerous.

1. TECHNICAL SPECIFICATIONS

Accordance with CE Standard, R410a refrigerant.

Product name	Ice bath Water chiller		
Suitable Water Volume	125-200L	200-350L	350-550L
Specification	0.5HP	1HP	1.5HP
Voltage	220V/50Hz & 110V/60Hz		
UV ozone sterilizer	Built in		
Filter	External (easy to change filter element)		
Water pump	Built in		
Wireless control	WiFi support		
Temperature range	2-40° C		
advised temperature range	5-10° C		
Refrigerating power	1300W	2600W	3500W
Heating power	1920W	3300W	5000W
Input power	490W	850W	1085W
Input current	4.28A	7.3A	8.75A
Refrigerant	R410A		
Pump power	80W		
Pump lift	16m		
Pump flow	2400L/H		
Noise	≤58DB(A)	≤60DB(A)	≤65DB(A)
Recommended water flow	40-45L/min		
Packing detail	Ice bath machine *1 caster *4 filter wrench *1 hose *2 buckle *4 pagoda connector *2		

Due to our continuous improvement, above data are subject to update without prior notice, please refer to the nameplate on your machine.

2. INSTALLATION AND CONNECTION

⚠ ATTENTION:

Please pay attention to the following rules when installing:

1. Any addition of chemicals must be carried out at the piping located downstream from the machine.

2. Always hold the machine upright. If it has been held at certain angle more than 30°, wait at least 24 hours before starting the machine.

2.1   Location of your water chiller

The water chiller will work properly in any desired location as long as the following three factors are present:

1. Fresh Air   2. Electricity   3. Tub Water

The unit may be installed in virtually any outdoor location as long as the specified minimum distances to other objects are maintained (see drawing below). Please consult your installer for installation with an indoor tub. Installation at a windy location does not present any problem at all, unlike the situation with a gas heater.
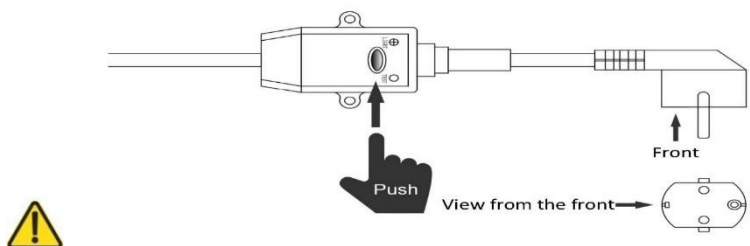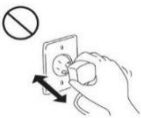
⚠ **ATTENTION:**

Never install the machine in a closed room with limited air volume in which the air discharged from the machine will be reused, or close to shrubbery that might block the air inlet. Such locations impair the continuous supply of fresh air, may reduce the running efficiency and possibly prevent sufficient heat output.

2.2   Electrical connection

Before connecting the machine, make sure that the supply voltage matches the

operating machine's voltage. There's RCD plug that equipped with power cable; it helps to offer a full electrical protection.

Make sure the power plug is secured	Never pull out the power plug when your machine is running	Never use damaged electric wires or unspecified electric wires.
If the plug is not secure, it may cause an electric shock, over-heating or fire	Such improper operation may cause an electric shock or a fire due to over-heating	Otherwise it may cause an electric shock or a fire.

When all connections have been completed and checked, carry out the following procedure:

1. Switch on the chiller. Check for leakage and verify that water is flowing incoming and outgoing to the ice bath tub.(Please see 2.4 if encounter problem)
2. Connect power to the machine and press the run key the control panel. The machine will start up after set the target temperature.
3. After a few minutes, check whether the air blowing out of the unit is hot.

2.3   Condensation

The air suctioned into the machine will be cooled to be a very low temperature by

the evaporation process of your machine's refrigerant, at its heating mode. This may cause condensation on fins of the evaporator, which might be as much as several litters per hour at high relative humidity.

Sometimes users may treat this phenomenon as water leakage, while this is quite normal and no need to do anything.

2.4   Possible Issues You Might Encounter on First Run n

When you first start using it, please pay attention to adjusting the water level in the bathtub and the relative position of the filter. There might be strange noises coming from the machine and the water circulation may not run properly. This is due to the presence of air in the water pipes that needs to be expelled. If you encounter this issue, please use this solution to resolve the problem.

When the water level in the ice bucket is lower than the height of the machine's water inlet, the water cannot flow into the machine.

Fill the ice bucket with enough water to exceed the height of the machine's water inlet.

Slightly loosen the filter bottle to create a gap for air to escape.

Turn on the machine, allowing water to enter the filter, and air to be pushed out through the gap.

Once the water out let flow is sufficient, the machine will operate normally.

Tighten the filter bottle and the lid.

Operating precautions for the first-time use

As the machine is drained of water before leaving the factory.

It is necessary to fill the ice bath with enough water during the first use.

The water level inside the bucket need to be higher than the height of the machine's water inlet.

This ensures there is sufficient water pressure to allow the water to flow quickly into the water pipe.

The initial air purging process of the machine takes approximately 5 minutes and will produce a sound during the purging.

Contact the merchant to obtain relevant operation instruction videos.

Step 1 :
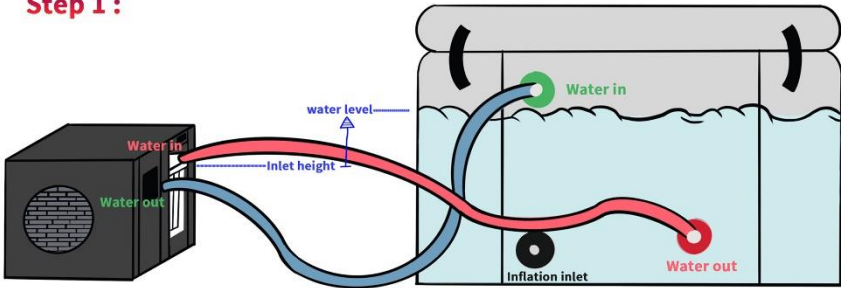
Step 2 :

Rotate the filter bottle to the left, loosen the filter bottle slightly by 1-2 turns leaving a gap to release the air.

Step 3 :

After water flows into the filter bottle, the air is pushed out by the water through the gap.

Tighten the filter bottle by twisting it to the right.

3. WIRING CIRCUIT DIAGRAM

⚠ NOTES:

1. Above wiring circuit diagram is for reference only, due to consideration of universal use, there might be some difference from the actual circuit diagram.
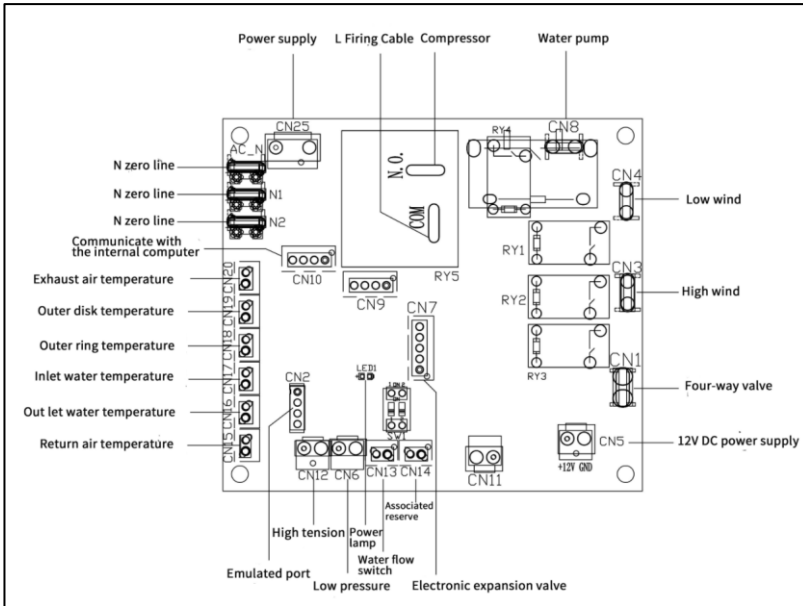2. Ground wire of the water chiller must be connected well, although the water chiller's heat exchanger has been already electrically isolated from the rest of the unit. Grounding the unit is still required to prevent users from electric shock or unit damage by short circuits. Bonding is also required.
3. Disconnect: A disconnect (circuit breaker, fused or un-fused switch) should be installed at the position readily accessible from the water chiller unit. This is common practice for both commercial and residential machine. It prevents the unattended equipment from remotely-energizing and permits to turn off the power supply when the unit is being serviced or at maintenance.

4. OPERATIONS OF CONTROLLER

4.1   Buttons of the controller
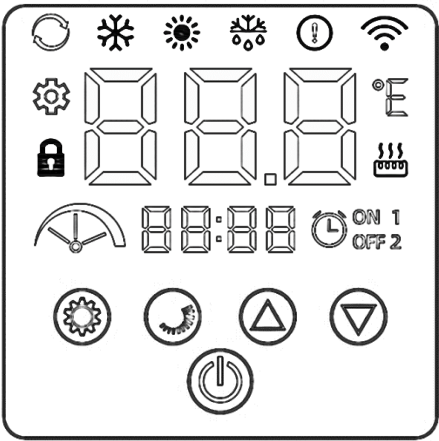
Icon	Name	Light on representative
○	Auto	Automatic temperature regulation
❄	Refrigeration	Cooling in progress
☀	Heating	Heating in progress
❄	Defrost	Defrosting
①	Fault	out of order
📶	Wireless connection	Connected to the Internet

Icon	Name	Description
⏻	Run key	Press once to stop or turn on the machine
▽	Down key	Used to adjust parameters downward
△	Up key	Used to adjust parameters upward
◔	Timing key	For time setting
⚙	Function key	Mode switch, tap the "Function" key to switch the heating - auto - cooling mode.

4.2 Turn on/off the machine

Press Run key once to start the machine, the system decides to cool or heat according to the water temperature, and then press Run key once to close the machine, the machine stops running.

4.3 Water temperature setting

In the main screen, press the function key to select the unit working mode, press the "+" key or "-" key, then set the target temperature.

4.4 Real time clock setting

On the home screen, hold down the "Timing" button for 5 seconds to enter the real-time clock setting screen, and the clock hour and minute blink together.

In the real-time clock setting screen, press the "Timing" key, then the number of the hour part flashes, the minute part stops blinking, then press the "+" key or "-" key, you can set the hour of the real-time clock.

When the hour part is set, then press the "timing" key key, then the number of the minute part flashes, the hour part stops blinking, at this time press the "+" key or "-" key, then the minute of the real-time clock can be set.

When the minute part is set, press the "timing" key again, then confirm the real-time clock setting, and return to the main interface.

In the real-time clock setting interface, press the " Function" key, also confirm the current real-time clock setting value, and return to the main interface.

In the real-time clock setting interface, if no key operation is performed for 30 consecutive seconds, the current real-time clock setting value is confirmed and the home screen is returned.

4.5 Timing switch setting

- brief description

Two timing switches can be set. On the home screen, tap the timing key to enter the timing group setting screen.

When timing group 1 blinks, press Timing key to enter the startup time setting of timing group 1, press the "+" key or "-" key to adjust the time, press Timing key to determine the time, after setting the startup time, press Timing key again, then enter the shutdown hour setting of timing group 1. The time adjustment method is the same as the above.

After the time of timing group 1 is determined, press the "+" key or "-" key to enter the time setting of timing group 2.

- Detailed operation

On the home screen, tap the Timing key to enter the setting screen for entering the timing group.

When you enter the timing setting screen, timing group 1 blinks. The wire controller has 1 and 2 timing groups.

When segment 1 is blinking, press Timing key to enter the screen for setting the hour part of the timed startup time for group 1. When the number of the hour part of the timed startup time is blinking, press + or - to set the hour part of the timed startup time for group 1.

When the hour part of timed startup is set, press the "timing" key again, then the number of the minute part of timed startup time is blinking. At this time, press the "+" key or "-" key, then you can set the minute of timed startup time for group 1.

When the timing 1 group of startup minutes are set, then press the "timing" key, then

enter the timing 1 group of shutdown hours setting, setting method is the same as the above.

When the timing shutdown time is set, press the "timing" key again, then confirm to save the setting timing switch time of the current group, press the "+" key or "-" key at this time, you can enter the next set of timing switch time Settings, the setting method is the same as that of timing 1 group.

If the timing time group is valid, the serial number of the timing time group is displayed on the main screen.

In a set of timing time Settings, if the timing on time and the timing off time is the same, the timing on/off of the group is invalid.

When timing segment 1 or 2 blinks, press and hold the mode key for 3 seconds to confirm the current set timing time, and blink the timing switch icon.

When timing segment 1 or 2 blinks and the timing switch icon is displayed, hold down the mode key for 3 seconds to close the current setting timing time, and the timing switch icon is no longer displayed.

In the timing interface, if there is no key operation for 30 consecutive seconds, confirm the current setting timing time and return to the main interface.

In the timing screen, press the "Function" key to confirm the current setting timing time and return to the main screen.

4.6 Lock key and unlock

If the unit does not perform any input operation for 60 consecutive seconds, the inline controller display screen enters the sleep state, locks automatically, and the Lock button icon lights up.

In the lock state, press any key to light up the screen. After holding down the Function key for 5 seconds, the buzzer beep will release the lock key, and the Lock icon will be turned off.

5. PARAMETER QUERY

5.1 The unit parameter comparison table

Unit temperature status query comparison table

(User can query, long press the "+" key 3 seconds to enter, and then press the "+" key and " -" key can be up and down page query)

Parameter number	Parameter name	Remarks
T1	Exhaust temperature	
T2	Return temperature degree	
T3	Water inlet temperature	
T4	Outlet temperature	
T5	Outdoor coil temperature	
T6	Outdoor ambient tempera	
1F	Main electronic expansion valve opening	
od	Outdoor running mode	1: heating 2: cooling
OF	Outdoor fan wind speed	Ac: 1: high wind,2: stroke,3: lo wind Dc: Actual rotational speed (dis*10)
dF	Defrosting state	
STF	Four-way valve switch	
Pu	Water pump switch	
HE1	Trouble code history	
HE2	Trouble code history	
HE3	Trouble code history	
HE4	Trouble code history	
Pr	Master Control Protocol version	

Parameter number	Parameter name	Remarks
Sr	Master control software version	

5.2 The unit user parameter comparison table

Users can query, long press the Function key 3 seconds can directly enter, press the "+" key or "-" key can go up and down page query

No.	Parameter name	Adjustment range	Factory defaults
L0	Heating set value	15℃ ~ 42℃	27℃
L1	Heating startup deviation set value	0℃ ~ 18℃	2℃
L2	Heating up to temperature stop deviation set value	0℃ ~ 18℃	0℃
L3	refrigeration set value	2℃ ~ 35℃	20℃
L4	refrigeration startup deviation set value	0℃ ~ 18℃	2℃
L5	Cooling up to temperature stop deviation set value	0℃ ~ 18℃	0℃
L6	Automatic mode Setting temperature	2℃ ~ 42℃	27℃
L7	Pump working mode	0: The pump is not turned off when the constant temperature is shut down 1: Constant temperature shutdown, pump delay compressor 60 seconds off, every (L8) min on 5min 0	0

No.	Parameter name	Adjustment range	Factory defaults
L8	When the thermostat is shut down, run for 5 minutes every (L8) minute	3 ~ 180min	30

User parameter query and setting (can be set on or off)

In the main interface, hold down the "Function" key for 3 seconds to enter the user parameter query interface, press the "+" key or "-" key to query each parameter. On the User parameter query screen, select a parameter and press Function to enter the screen for setting the current user parameter. When the parameter blinks, press+ or - to modify the current user parameter. Then press Function to confirm the parameter change and return to the parameter query state. (Note: in the query state, the parameter does not blink; In the Settings state, parameters blink.)

In the user parameter query or user parameter setting interface, if there is no key operation for 30 consecutive seconds, the changed parameter values are automatically saved, and exit the user parameter query interface or user parameter setting interface, and return to the main interface, or press the on/off key to return to the main interface. On the User parameter query screen, select a parameter and press Function to enter the screen for setting the current user parameter. When the parameter blinks, press+ or - to modify the current user parameter. Then press Function to confirm the parameter change and return to the parameter query state. (Note: in the query state, the parameter does not blink; In the Settings state, parameters blink.)

In the user parameter query or user parameter setting interface, if there is no key operation for 30 consecutive seconds, the changed parameter values are automatically saved, and exit the user parameter query interface or user parameter setting interface, and return to the main interface, or press the on/off key to return to the main interface.

5.3 The unit factory parameter comparison table

(Only factory technicians to enter, long press the "Function" key + "+" key 3 seconds later, enter the password: 1688 can enter after authentication, switch the password bit with timing key, press "+" key and " -" key combined with "mode" key or "function" key to change the parameter Settings)

Parameter serial number	Parameter name (definition)	Parameter setting range	Factory defaults	Remarks
H0	Cumulative heating run time set value	1 ~ 120	50min	
H1	Defrosting run Set maximum	1 ~ 25	8min	
H2	defrosting time		12℃	
H3	Exit defrosting coil temperature	-20 ~ 20	-7℃	
H4	Enter defrosting coil temperature	0 ~ 15	5	
H5	Enter defrosting environment with	0℃ ~ 20℃	15	
H6	outdoor coil temperature	-20 ~ 20	2	
F0	difference		5	
F1	Can enter defrosting outdoor ambient temperature		2	
F2	Water temperature condition for heat exit defrosting	10 ~ 60 秒	45 秒	
F3	Main valve superheat ratio coefficient		--	
F4	Main valve superheat differential	0(manual)/1 (automatic)	01	
F5	coefficient	40 ~ 480	200	
F18	Main valve regulation cycle		80	
F20	Reserved	-10 ~ 10	3	

Parameter serial number	Parameter name (definition)	Parameter setting range	Factory defaults	Remarks
F21	Main road electronic expansion	-10 ~ 10	3	
F22	valve mode	-10 ~ 10	2	
F23	Manual opening of main electronic expansion valve	-10 ~ 10	2	
F27	Minimum opening of the main electronic expansion valve	-10 ~ 10	2	
F28	Heat target superheat ORT≤-3℃	-10 ~ 10	1	
F58	Heating target superheat of -3℃ < ORT≤8℃	0 ~ 480	450	
F59	Heating target superheat 8℃ < ORT≤17℃	0 ~ 480	200	
P0	Heat target superheat ORT > 17℃		--	
P1	Refrigeration target superheat ORT < 10℃	-30 ~ 10	7	
P2	Refrigeration target superheat ORT≥10℃	40 ~ 60	42	
P3	Defrost main valve opening	-10 ~ 10	2	
P4	Opening degree of antifreeze main valve	5 ~ 100	10	
P5	--		40	invalid
P6	Low ring temperature protection set	-10 ~ 10	0	

Parameter serial number	Parameter name (definition)	Parameter setting range	Factory defaults	Remarks
	temperature			
P9	High water temperature protection temperature	OF/ON	OF	
P10	Outlet water too low protection temperature	OF/ON	OF	
P11	Inlet and outlet water temperature difference protection	--	--	
P13	Current protection		100	can't adjust
P21	Temperature compensation	Range: 0 ~ 3 0= single heating; 1= single cooling; 2= cooling, heating; 3= cooling, heating, automatic	3	
P22	Forced defrosting	35-60℃	42℃	
P23	Forced refrigeration (refrigerant recovery)	15-25℃	15℃	
P24	--	25-35℃	35℃	
P25	When the outdoor ambient temperature T7 < 0 ° C and the return water temperature T3 <	2-10℃	2℃	
P26	25 ° C, the main expansion valve is forced to open steps			
P27	Run Mode type			

Parameter serial number	Parameter name (definition)	Parameter setting range	Factory defaults	Remarks
P28	Heat setting temperature maximum	60-120℃	105	
P29	Heating Set minimum temperature	5-60℃	30	
P30	Set the maximum temperature for refrigeration	20～60℃	43	
P31	Refrigeration set temperature minimum	70℃～110℃	95	
P32		0℃～20℃	3	

In the shutdown state, long press the "Function" key + "+" key for 3 seconds ,enter the 4-digit password "1698", after completing the input, press the M key to confirm the main control E square parameter setting, the serial number displayed on the wire controller corresponds to the parameter serial number in the E square table; No response in the power -on state.

6. FAULT CODE

Unit fault code display comparison table (fault code on controller display)

Fault code	Fault description	Remarks
E01	Exhaust temperature fault	
E05	The temperature of the coil is faulty	
E09	The return temperature is faulty	
E19	Inlet temperature fault	
E18	Outlet temperature fault	
E21	The communication with the indoor unit fails	
E22	Ambient temperature fault	
P01	Water flow switch fault	
P02	High voltage protection	

P06	Low pressure protection	
P11	High exhaust temperature protection	
P15	Inlet and outlet water temperature difference is too large protection	
P16	Refrigeration undercooling protection	
P17	Standby anti-freezing protection	
P25	Ring temperature protection	
P26	The heating water temperature is too high	
P27	Cooling outer coil overtemperature protection	

7. SAFETY WARNINGS

1. Due to transportation safety regulations, the machine you received may not contain freon. Machine needs to be filled with freon before use. Running without freon can seriously damage the machine! Freon refilling and future maintenance must be performed by professional and technical personnel who comply with local installation and maintenance codes and rules and have rich installation and maintenance experience. Please refer to the machine nameplate for the amount of freon refilling.
2. Sharp edges and coil surfaces are harmful and should be avoided
3. If unit is not powered on for a long time, in the environment of SOX, the water in the heat exchanger and water tank may freeze which resulting in cracking. If not in use. please drain water. Power switch should be set in 1.4 meters or above where children cannot reach.

8. MAINTENANCE

(1) The users should check the water supply system regularly to avoid the air to enter the system and to cause low water flow, because it would reduce the performance and reliability of your water chiller unit.

(2) Clean your pools and filtration system regularly to avoid the damage caused to your heat unit as a result of the dirty of clogged filter.

(3) The users should drain away the water inside titanium heat exchanger of your water chiller if it remains not running for a long period (especially during the winter season).

(4) When you use again the water chiller after a long period, please check if the water pipeline at proper condition and make the water pump run firstly before startup the unit.

(5) When your water chiller is running, there will be always some little water discharge under the unit, it is normal.

(6) This water chiller should not be put into the domestic waste throughout the EU, at the end of its useful life, but must be disposed at a central point for recycling of electrical and electronic domestic applications.

To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources.

To return your used electrical devices, please use the return or collection system or contact the retailer where your water chiller was purchased, they can take this product for environmental safe recycling. By doing this you will help to preserve the environment, and thank you for your efforts.

9. SERVICE & QUALITY

If you have any questions or need more information, please feel free to call **Livingston Mountain Spas customer service:**

360.503.0030 or email us at info@LivingstonMtnSpas.com

Please send any picture or write a short description of the issue you are experiencing so we can explore solutions proactively for us both

                                             .

Limited warranty

We guarantee that all parts are free of defects in materials and workmanship for **a period of one year from the date of purchase.**
The warranty:

Covers only material or manufacturing defects that prevent the product from being able to be installed or operated in a normal way. Defective parts will be replaced or repaired.

The warranty does not cover transportation damage, any use other than what is intended, damage caused by incorrect assembly or improper use, damage caused by impact or other error, damage caused by frost cracking or by improper storage.

The warranty becomes void if the user modifies the product.

The warranty does not include product-related damage, property damage or general operational loss.

The warranty is limited to the initial retail purchase and cannot be transferred and it does not apply to products moved from their original

location.

The manufacturer's liability cannot exceed the repair or replacement of defective parts and does not include labour costs to remove and reinstall the defective part, transportation costs to and from the service center, and all other materials necessary to carry out the repair.

This warranty does not cover failure or malfunction as a result of the following:

- Lack of proper installation, operation or maintenance of the unit in accordance with our published "User's Guide" supplied with the unit.
- The workmanship of any installation of the unit.
- Not maintaining a proper chemical balance in your pool [pH level between 7.0 and 7.4. Free chlorine between 0.5 - 1.5 mg/l. Total dissolved solids (TDS) less than 1,200 ppm. Salt maximum 8 g/l]
- Misuse, alteration, accident, fire, flood, lightning strike, rodents, insects, negligence or unforeseen actions.
- Scaling, freezing up or other conditions that cause insufficient water circulation.
- Operation of the device without complying with the published minimum and maximum flow specifications.
- Use of non-factory authorized parts or accessories in conjunction with the product.
- Chemical contamination of combustion air or improper use of water care products
- Overheating, improper wiring, improper power supply, indirect

damage caused by the failure of O-rings, sand filters or cartridge filters, or damage caused by running the pump with inadequate amounts of water.

<u>Limitation of liability</u>

This is the only warranty provided by the manufacturer. No one is authorized to make any other warranties on our behalf.

This warranty is in lieu of all other warranties, expressed or implied, including but not limited to any implied warranty of fitness for a particular purpose and saleability. We expressly disclaim all liability for consequential damage, accidental damage, indirect loss or loss related to a breach of the expressed or implied warranty.

This warranty gives you specific legal rights, which may vary by country.

<u>Complaints</u>

In the event of any warranty claim a valid purchase receipt must be presented.