POWERBAY

All-in-One Pool Master Installation & User Manual

For Above Ground Pools & Spas Up to 15,000 Litres in Volume

Circulation | Filtration | Heating & Cooling | Treatment



Applicable Model: AIO-SPHP5K

IMPORTANT NOTE:
Thank you very much for purchasing our product.Before using your unit,please read this manual carefully and keep it for future reference.





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FOREWORD

1.1 Read the Manual Before Operation

WARNING

Do not use any tools to clean our system, other than those recommended by the manufacturer. The appliance shall not be installed or be stored in a room with any ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).

Do not pierce the unit or dispose of in a fire.

Be aware that refrigerants contained in this system may not contain any odour.

Qualification of workers

This system needs to be looked at by licensed trades people, IE: Plumber who is licensed in refrigerant handling, and a licensed electrician. Every working procedure that affects safety means shall only be carried out by these licensed people, DO NOT ATTEMPT TO REPAIR THIS SYSTEM BY YOURSELF

Your safety checks shall include:

That no live electrical components and wiring are exposed while charging, recovering or purging the system, by licensed trades people only.

That the system is connected to a GPO which has a RCBO allocated, identified and protecting the circuit that the system is connected to.

Checks to the area

Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. For repair to the refrigerating system, the following precautions shall be completed prior to conducting work on the system.

Work procedure

All works to be performed by the relevant licensed trades personnel

Checking for presence of refrigerant

The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with flammable refrigerants,i.e. non-sparking, adequately sealed or intrinsically safe.

Presence of fire extinguisher

If any hot work is to be conducted on the refrigerating equipment or any associated parts,appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO2 fire extinguisher adjacent to the charging area.

No ignition sources

No person carrying out work in relation to a refrigeration system which involves exposing any pipe work that contains or has contained flammable refrigerant shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing,removing and disposal, during which flammable refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. " No Smoking" signs shall be displayed.

Ventilated area

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere. When breaking into the refrigerant circuit to make repairs – or for any other purpose –conventional procedures shall be used.

Checks to the refrigeration equipment

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt consult the manufacturer's technical department for assistance.

The following checks shall be applied to installations using flammable refrigerants:

1. The recharge amount is in accordance with the manufacturer's specifications.

2. The ventilation heat pump and outlets are operating adequately and are not obstructed.

3. Markings to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected immediately.

4.Refrigeration pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

Repairs to sealed components

During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.

Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.

Ensure that the apparatus is mounted securely.

Ensure that seals or sealing materials have not degraded to the point that they no longer serve the purpose of preventing the ingress of flammable atmospheres. Replacement parts shall be in accordance with the manufacturer's specifications.

Repair to intrinsically safe components

Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use. Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating.

Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

NOTE: The use of silicon sealant can inhibit the effectiveness of some types of leak detection equipment.

Intrinsically safe components do not have to be isolated prior to working on them.

Cabling

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

Detection of flammable refrigerants

Under no circumstances shall any potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halogen lamp (or any other detector using a naked flame) shall not be used.

Leak detection methods

The following leak detection methods are deemed acceptable for systems containing flammable refrigerants.

Electronic leak detectors shall be used to detect flammable refrigerants, but the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed and the appropriate percentage of gas (25 % maximum) is confirmed.

Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe -work.

If a leak is suspected, all naked flames shall be removed/extinguished.

If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Oxygen free nitrogen (OFN) shall then be purged through the system both before and during the brazing process.

Removal and evacuation

When breaking into the refrigerant circuit to make repairs – or for any other purpose – conventional procedures shall be used. However, it is important that best practice is followed since flammability is a consideration. The following procedure shall be adhered to:

1.Remove refrigerant.

2.Purge the circuit with inert gas.

3.Evacuate.

4.Purge again with inert gas.

5.Open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders. The system shall be “flushed” with OFN to render the unit safe. This process may need to be repeated several times.Compressed air or oxygen shall not be used for this task.

Flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. This operation is absolutely vital if brazing operations on the pipework are to take place.

Ensure that the outlet for the vacuum pump is not close to any ignition sources and there is ventilation available.

Charging procedures

In addition to conventional charging procedures, the following requirements shall be followed:

1.Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them. Cylinders shall be kept upright.

2.Ensure that the refrigeration system is earthed prior to charging the system with refrigerant.

3.Label the system when charging is complete (if not already).

4.Extreme care shall be taken not to overfill the refrigeration system. Prior to recharging the system it shall be pressure tested with OFN. The system shall be leak tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of reclaimed refrigerant. It is essential that electrical power is available before the task is commenced.

1.Become familiar with the equipment and its operation.

2.Isolate system electrically.

3.Before attempting the procedure ensure that:

- Mechanical handling equipment is available, if required, for handling refrigerant cylinders;
- All personal protective equipment is available and being used correctly;
- The recovery process is supervised at all times by a competent person;
- Recovery equipment and cylinders conform to the appropriate standards.

4.Pump down refrigerant system, if possible.

5.If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.

6.Make sure that the cylinder is situated on the scales before recovery takes place.

7.Start the recovery heat pump and operate in accordance with manufacturer's instructions.

8.Do not overfill cylinders. (No more than 80 % volume liquid charge).

9.Do not exceed the maximum working pressure of the cylinder, even temporarily.

10.When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.

11.Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.

Labelling

Equipment shall be labelled stating that it has been decommissioned and emptied of refrigerant. The label shall be dated and signed. Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

Information on servicing

Work shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapour being present while the work is being performed.

All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided.

The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.

If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO2 fire extinguisher adjacent to the charging area.

No person carrying out work in relation to a refrigerating system which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion.

All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space.

Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. “No Smoking” signs shall be displayed.

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work.

A degree of ventilation shall continue during the period that the work is carried out.

The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification.

At all times the manufacturer ' s maintenance and service guidelines shall be followed. If in doubt,consult the manufacturer's technical department for assistance.

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures.

If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment, so all parties are advised.

Initial safety checks shall include:

that capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking,

that no live electrical components and wiring are exposed while charging, recovering or purging the system, and that there is continuity of earth bonding.

During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.

Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.

Ensure that seals or sealing materials have not degraded to the point that they no longer serve the purpose of preventing the ingress of flammable atmospheres.Replacement parts shall be in accordance with the manufacturer's specifications.

Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.

Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating.

Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects.

The check shall also consider the effects of aging or continual vibration from sources such as compressors or fans.

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

Electronic leak detectors may be used to detect refrigerant leaks but, in the case of flammable refrigerants, the sensitivity may not be adequate or may need re-calibration.

Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed.

Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.

If a leak is suspected, all naked flames shall be removed/extinguished.

If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak.

When breaking into the refrigerant circuit to make repairs – or for any other purpose – conventional procedures shall be used. However, for flammable refrigerants it is important that best practice is followed since flammability is a consideration. The following procedure shall be adhered to:

- remove refrigerant;
- purge the circuit with inert gas (optional for A2L);
- evacuate (optional for A2L);
- purge with inert gas (optional for A2L);
- open the circuit by cutting or brazing.

In addition to conventional charging procedures, the following requirements need to be met.

- Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
- Cylinders shall be kept in an appropriate position according to the instructions.
- Ensure that the refrigerating system is earthed prior to charging the system with refrigerant.
- Label the system when charging is complete with date and grams.
- Extreme care shall be taken not to overfill the refrigerating system.Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its details. It is recommended good practice that all refrigerants arerecovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before the task commences.

a) Become familiar with the equipment and its operation.

b) Isolate the electrical system:

c) Before attempting the procedure, ensure that:

• mechanical handling equipment is available, if required, for handling refrigerant cylinders.

• all personal protective equipment is available and being used correctly.

• the recovery process is supervised at all times by a competent person.

• recovery equipment and cylinders conform to the appropriate standards.

d) Vacuum down the refrigerant system, if possible.

e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.

f) Make sure that cylinder is situated on the scales before recovery takes place.

g) Start the recovery machine and operate in accordance with instructions.

h) Do not overfill cylinders (no more than 80 % volume liquid charge).

i) Do not exceed the maximum working pressure of the cylinder, even temporarily.

j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed.

k) Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked.

Recovery

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appropriate

refrigerants including, when applicable, flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.

The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

1.2 Safety Factors

The following safety factors need to be considered:

1.Please read the following warnings before installation.

2.Be sure to check the details that need attention, including safety factors.

3.After reading the installation instructions, be sure to save them for future reference.

⚠ WARNING

Make sure that the unit is installed safely and reliably.

- If the unit is not secure or not installed, it may cause damage. The minimum support weight required for installation is 21g/㎜² ;
- If the unit was installed in a closed area or limited space, please consider the size of room and ventilation to prevent suffocation caused by refrigerant leakage.

1.Install on the ground safely, please read installation instructions.

Improper installation may result in fire, electric shock, falling of the unit, or water leaking.

2.Use a licensed electrical contractor for any electrical work that may be needed, and ensure that the system is installed on an electrical circuit which has an RCBO fitted.

3.The unit should be only removed and repaired by a professional technician.

Improper movement or maintenance of the unit may cause water leakage, electric shock, or fire.

4.Don't unplug or plug power during operation. It may cause fire or electric shock.

Don't touch or operate the unit when your hands are wet. It may cause fire or electric shock.

5. The water must not be discharged directly from the unit.Do not let water permeate into the electrical components.

⚠ WARNING

Do not install the unit in a location where there may be flammable gas.If there is flammable gas around the unit, it may cause and explosion and serious injury or explosion.

According to the instruction to carry out drainage system and pipeline work. If drainage system or pipeline is defective, water leakage will occur. Please dispose immediately to prevent other household products from getting wet and damaged.

1.Do not clean the unit while the power is on or the system operating. Ensure that you disconnect the system from any power source before cleaning the unit. Failure to do so may result in injury from the high-speed fan or electric shock.

2.Stop operating the unit once there is a problem or an error code.

Please turn off power and stop running the unit. Otherwise, it may cause electric shock or fire.

3.Pay attention to sharp edges and fins of heat exchanger.

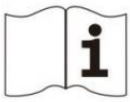
4.Please note: If there is not enough refrigerant, the unit will not work properly.

5.Don’t put your fingers into the system whilst in operation.

6.This device is not designed for people who is physically or mentally weak (including children) and who does not have experience and knowledge of heating and cooling system. Unless it is used under the direction and supervision of a professional technician or has received training on the using of this unit. Children must use it under supervision of an adult to ensure that they use the unit safely. If the electrical cable is damaged, it must be replaced by a licensed electrician to avoid any danger.

1.3 The Symbol Description of the Device

The precautions listed here are divided into the following types. They are quite important, so be sure to follow them carefully. Meanings of DANGER, WARNING, CAUTION and NOTE symbols.

Symbols	Meaning	Description
	**WARNING**	The symbol shows that this appliance uses a flammable refrigerant. If the refrigerant is leaked and exposed to an external ignition source, there is a risk of fire.
	**WARNING**	The symbol shows that this appliance uses a low burning velocity material.Please keep away from fire source.
	**CAUTION**	This symbol shows that the operation manual should be read carefully.
	**CAUTION**	This symbol shows that a service personnel should be handling this equipment with reference to the installation manual.
	**CAUTION**	This symbol shows that information is available such as the operating manual or installation manual.

1.4 Statement

To keep users under safe working condition and property safety, please follow the instructions below：

1.Incorrect operation may result in injury or damage.

2.Please install the unit in compliance with local laws, regulations and standards.

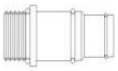
3.Confirm power voltage and frequency.

4.The unit is only used as per manufacturers specifications and must be connected to a GPO which has been identified in the switchboard by labelling the RCBO.

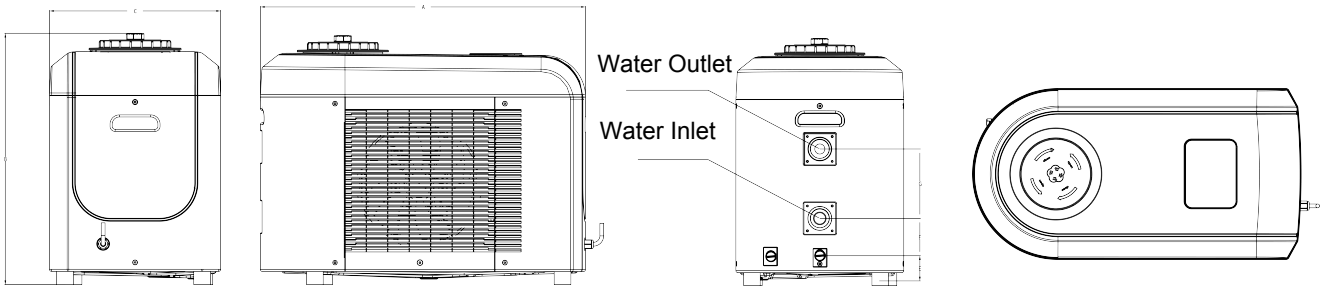
OVERVIEW OF THE UNIT

2.1 Accessories Supplied with the Unit

After unpacking, please check for the following accessories

Name	Quantity	shape
Manual	1	
1.5" stop valve with internal thread	2	
1.5 "diameter to 32 or 38mm connector	4	
1.5" through way with external thread	2	
Foot Mat	4	
Taflon tape	1	
Condensate drain	1	
Φ21-44 Hose clamp	8	
Salt test strip	2	
6 in 1 test strip	5	

2.2 Dimensions of the Unit



Dimensions

A	B	C	D	E	F	G
780	595	406	70	77	85	167

2.3 Parameter of the Unit

Table-1

Recommend area(m^3)		Up to 15
Ambient temperature(℃)		-7~43
Performance Condition 1		Air 26℃Water 26℃/Humidity 80%
Rated heating capacity(KW) 1		5.5
COP 1		5.5
Sound pressure under 1 meter(dB)		52-55
Power supply		230V/1Ph /50Hz
Outlet heating water temperature(℃)		3-40
Connection water pipe external size(mm)		32 or 38
Water flow volume(litres per hour)		2,300
Net Dimension (W×D×H)		780*406*595
Packing Dimension (W×D×H)		905*450*630
Compressor	**Type**	Full DC Inverter
	Brand	GMCC
	Oil Type	RB74AF
Refrigerant	**Refrigerant**	R32
	Quantity(kg)	0.33
Motor	**Type**	Full DC Inverter
	Brand	LT MOTOR
	Power output	40
	Max speed(rpm)	1600
Heat Exchanger	**Titanium tube diameter(mm)**	9.52
Control Board	**Waterproof**	IPX4
	Display board size	/
Throttling way(Brand)		EXV (SanHua)

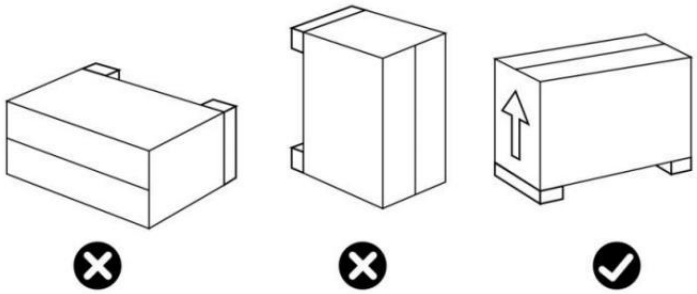
INSTALLATION AND CONNECTION

⚠ **WARNING:** Install the heat pump strictly according to the instructions in the operation manual. Otherwise, the heat pump may be damaged.

This section is provided for information purposes only and must be checked and adapted if necessary according to the actual installation conditions.

3.1 Transportation

When storing or moving the heat pump, the heat pump should be at the upright position.



3.2 Notice Before Installation

In order to guarantee the heating efficiency, the water pipe length should be ≤10m between the pool and the heat pump.

3.3 Installation Instruction

3.3.1 Pre-requirements

Equipment necessary for the installation of your heat pump:

1.A By-Pass kit and an assembly of PVC tubing suitable for your installation as well as stripper, PVC adhesive and sandpaper.

2.We recommend that you connect the unit to your installation by means of flexible PVC pipes in order to reduce the transmission of vibration, or please refer to additional plumbing pipework, and connectors.

3.3.2 Location and Space

Please comply with the following rules concerning the choice of heat pump location.

1.The unit ' s future location must be easily accessible for convenient operation and maintenance.

2.The system must be installed on flat, level ground, concrete or paver, and ideally secured to the concrete, or paver by dynabolts. Ensure that the floor is sufficiently stable and can support the weight of the unit.

3.A water drainage device must be provided close to the unit to protect the area where it is installed.

4.If necessary, the unit may be raised by using suitable mounting pads designed to support its weight.

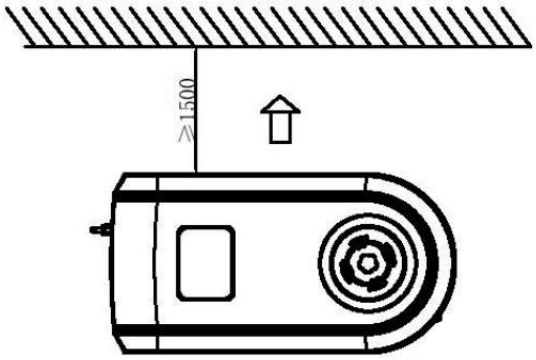
5.Check that the unit is properly ventilated, that the air outlet is not facing the windows of neighbouring buildings and that the exhaust air cannot return. In addition, provide sufficient space around the unit for servicing and maintenance operations.

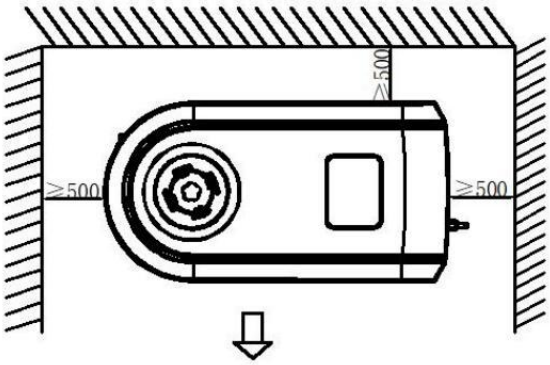
6.The unit must not be installed in an area exposed to oil, flammable gases, corrosive products, Sulphur compounds or close to high frequency equipment.

7.To avoid causing nuisance to neighbours, make sure the unit is installed so that it is positioned towards the area that is least sensitive to noise.

8.Keep the unit as much as possible out of the reach of children.

9.and knowledge, unless they have been given supervision or instruction Installation space requirements.





You must have a minimum of one meter of clearance in front of the heat pump for airflow.

You must have a minimum of 500 mm between objects on the sides and back of the heat pump and must have nothing installed directly on top of the system.

Do not leave any obstacles above or in front of the device!

3.3.3 Installation Layout

Notice: The filter must be cleaned regularly to ensure that water in the system is clean and avoid blocking of filter. It is necessary that drainage valve is fixed on the lower water pipe. If the unit is not running during winter months, please disconnect power supply and let out drain water from unit through drainage valve. If ambient temperature of running unit is below 0℃, please keep water pump running.

The installation diagram is shown in the following figure:



3.4 Trial After Installation

⚠ **WARNING:**Please check all the wiring carefully before turning on the heat pump.

3.4.1 Inspection Before Trial Running

Before running test, confirm below items and write √ in block;

□	Correct unit installation
□	Power supply voltage is the same as unit rated voltage
□	Correct piping and wiring
□	Air inlet & outlet port of unit is unblocked
□	Drainage and venting is unblocked and no water leaking
□	Leakage protector is working
□	Piping insulation is working
□	Ground wire is connected correctly

3.4.2 Trial Running

Step 1: Please test the system after completing the installation.

Step 2: All wiring and piping should be connected well and carefully checked, make sure the water pump storage chamber is full before connection to the power supply.

Step 3: Purge all the air within pipes and water tank, press “on-off” button on display panel to run the unit at setting temperature.

Step 4: The following Items need to be checked whilst the system is working:

1.Each function button on the display panel is working and visible.

2.Display screen is working with every symbol visible while system is running.

3.No leaks in the whole circulation system.

4.Condensate drain is not blocked.

5.No abnormal sound or vibration while the system is on and running.

Pool Master Heat Pump Initial Heating Hours (with Pool Cover)				
Pool or Spa Size	2,500 Litres	5,000 Litres	10,000 Litres	15,000 Litres
Heating Water From 24℃ to 28℃	2.3 Hours	4.7 Hours	9.3 Hours	14 Hours
Please note: the above figures are for reference only and are based on ambient temperature of 25℃, actual performance may vary. For best results, use a pool cover/blanket while heat pump is in operation.				

UNIT ANTIFREEZE

4.1 Startup conditions for anti-freezing protection

When the heat pump is off or in standby:

1. When the outdoor ambient temperature≤4℃ and the inlet water temperature≤6℃ ,the system enters the first-level anti-freezing function; When it is detected that the self-priming pump has been continuously powered off for more than 30 minutes (except for the first entry),the self-priming pump will be forced to start, and the power will be powered off after 3 minutes, and it will run periodically. Until the inlet water temperature≥8℃ or outdoor ambient temperature≥6℃, the heat pump exits the level 1 anti-freezing protection.

2. When the outdoor ambient temperature is≤4℃ and the inlet water temperature is≤4℃,the system enters the secondary antifreeze function; the heating operation is forced to start, the target frequency of the inverter compressor is 60Hz, the target heating temperature (water inlet temperature) is 15℃.The control logic of each control variable such as water pump, outdoor fan motor, four-way reversing valve, electronic expansion valve, etc. is controlled according to the logic in the corresponding heating mode, until the inlet water temperature≥25℃, or the outdoor ambient temperature≥6℃, then exit the secondary anti-freezing protection.

4.2 Anti-freezing protection under some faults

1. If the outdoor ambient temperature sensor is faulty, use the water inlet temperature to determine the anti-freezing protection. If the water inlet temperature sensor is faulty , determine the antifreeze protection based on the outdoor ambient temperature , and enter the antifreeze level 1 only.

2.If the compressor cannot be opened, the system can only enter the level 1 anti-freezing protection, not the level 2 anti-freezing protection.

3. When the outdoor ambient temperature and inlet water temperature are faulty at the same time, if the outdoor coil temperature is less than or equal to 0℃, enter the first-level anti-freezing protection only. When the outdoor coil temperature is greater than or equal to 2 ℃ , exit the anti-freezing protection and enter the standby state.

4. If the outdoor ambient temperature, inlet water temperature, and outdoor coil temperature are faulty at the same time, and the outlet water temperature is less than or equal to 6℃, the system enters the first-level anti-freezing function. The error code will be displayed on the screen of the wire controller, and the circulating pump will be forced to start until the outlet water temperature is greater than or equal to 8℃. After the exit, the pump will run again for detection every 5 minutes.

5. If the water flow switch is faulty, the system can enter level 1 anti-freezing protection but cannot enter level 2 anti-freezing protection . After entering the antifreeze protection , if the water flow switch protection occurs , only the fault is displayed , and the water pump still operates according to the antifreeze logic.

4.3 Special attention

When the outdoor ambient temperature < 5℃

1. When the user does not use the pool machine, be sure to cut off the power and empty all the water in the unit and pipeline, otherwise there is a risk of freezing the unit.
2. If the user is still using the pool machine, be sure not to unplug the power supply, the unit has its own anti-freeze control, otherwise it will freeze the risk of unit damage.

SALT CHLORINATION

5.1 The type of salt used

The higher the purity of salt, the better the performance optimization of YOUR SALT CHLORINATOR and the longer its service life. The sodium chloride (NaCl) in salt should be at least 99.6% pure. It is best to use food grade non-iodized salt in granular form that has been dehydrated.

⚠ WARNING

Do not use salt, which contains impurities and mixtures may shorten the service life of CHLORINATOR

Avoid salt that is an anti-caking agent (NaCl, also known as YPS, toxic and corrosive), which may cause discoloration of the pool surface and pool equipment.

Salt pills can be adjusted with water, but they may be dissolved in water for a long time.

Water quality request:

Parameter	Target values
concentration of salt	3 to 4 g/l
PH level	7.2 to 7.8
Free chlorine concentration	From 1.0 to 3.0 ppm
Stabiliser level (Cyanuric Acid)	20 to 50 ppm
Other parameter checks possible	
Total alkalinity (TA)	From 80 to 150 ppm
Water hardness	From 150 to 300 ppm

5.2 Add appropriate salt

Most pools contain some amount of salt, and the concentration of salt in the pool varies depending on the water source and the disinfectant used. A reliable method, such as a handheld NaCl tester or salinity pen, can be used to determine the existing concentration in the pool.

⚠ TIPS

1) The normal working concentration range of CHLORINATOR is 2700 ~ 4300ppm (i.e., the total amount of salt in 1m³ water is 2.7 ~ 4.3Kg)

2) Salt should be added to the pool when using the CHLORINATOR for the first time.

The steps are as follows：

A. Check the existing concentration in the pool with your test kit and other equipment;

B. B. Add proper amount of salt to ensure that the total amount of salt in each cubic meter of water in the pool is 2.7-4.3kg.

3) The PPM value of salt concentration can be regarded as the grams of salt in 1 ton of water. For example, the existing salt concentration of 10m³ pool water is 850ppm(which can be regarded as 850g salt in each ton of water). How many grams of salt should be added to make the chlorinator work normally?

4) Amount of salt to be added (g)= pool water volume *(normal working salt concentration - current pool salt concentration)= 10* (2700-850)= 18500g.

5) In the daily operation of the chlorinator because the pool will take away part of the water and salt, after a period of operation, if the machine shows that the salt content is too low, salt should be added to the salt concentration (2700 ~ 4300ppm) that the chlorinator can work normally.

5.3 The proper way to add salt

A、Turn on the pool pump to circulate water

B、Turn off the power to the salt chlorinator

C、Measure your pool's existing salt concentration.

D、Calculate the amount of salt to be added according to the table.

E、Slowly pour in the salt along the periphery of the pool so that it is quickly and evenly dissolved in the pool water. Do not let the salt accumulate at the bottom of the pool. Stir the bottom of the pool if necessary to completely dissolve the salt, Run the pump for 24 hours so that the salt is evenly distributed throughout the pool.

G、After 24 hours, the salt concentration in the pool was measured again to see if it reached the target adjustment value.

H、When the salt concentration of the pool has reached all the adjusted values, turn on the power supply and equipment of the chlorinator make it in the working state, and set relevant Settings according to needs to make chlorine.

Quick reference table for adding salt according to the salinity measured prior to installation:

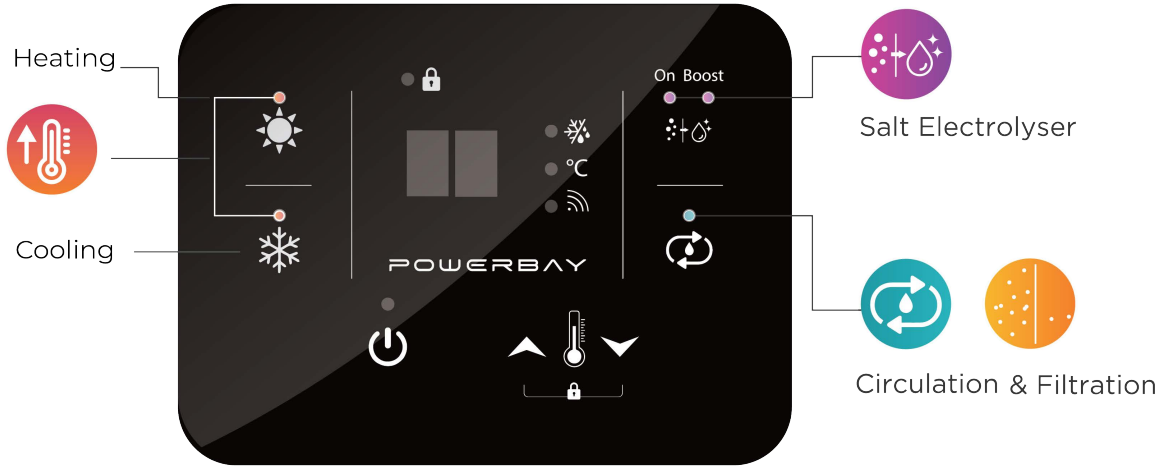
	Salinity before adding salt (PPM)						
	0	500	1000	1500	2000	2500	3000
Volume (m3)	Amount of salt required (kg)						
10	30	25	20	15	10	5	0
15	45	38	30	23	15	8	0
25	75	62	50	38	25	13	0

5.4 Reduce salt concentration

The only way to reduce the salt concentration is to drain some of the pool water and refill some of the pool water.

DISPLAY PANEL

6.1 Display Panel Introduction



The display panel can turn on the functions of each mode of the swimming pool heat pump and display the current operating status. It is connected to the main control of the swimming pool heat pump ,the electrolyser module and the filtration through the communication line. The buttons and lights displaying on the panel are described in the following description.

6.1.1 Display panel button icons

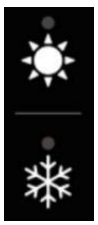
	[Heating] Button		[Cooling] Button
	[Power] Button		[Salt chloride] Button
	[Filter] Button		[Up] Button
	[Down] Button		

6.1.2 Display panel buttons introduction

Button	Function
Power	Turn on/off the heat pump Press when the error occurs:turn off
Heat	Heating mode turns on / off
Cool	Cooling mode turns on / off
Salt	Turn 100%, 50% electrolyser disinfection function on / off
Filter	Turn on / off the filtering function
▼	Set the temperature down by 1℃, long press to decrease 1℃ continuously
▲	Set the temperature up by 1℃, long press to increase 1℃ continuously
▼+▲	Press this Combination buttons for 3S, turn the child lock function on or off
	When the target temperature is set to 40℃ in the heating mode, after the "[▲]→[▼]→[▲]→[▼]→[▲]→[▼]" (press keys 6 times in total) operation within 5s, the unit enters the forced defrost.
Heat +▲	Press this Combination buttons for 3s to enter the parameter query interface
Heat+▼	When the heat pump turns off,press this combination buttons for 3S to enter the parameter setting interface
▲+ Power	When the heat pump turns off, continue to press combination buttons for 5s to enter the WIFI distribution network default mode connection
▼+Power	When the heat pump turns off,continue to press combination buttons for 5s to enter the WIFI distribution network in AP mode
Heat+ Cool	Press combination buttons for 3s to enter or close Auto mode
▲+Filter	Press combination buttons for 3s to Clear reminder time for cleaning or changing filter (CF)

6.1.3 Description of display panel status lights

（1）



Cooling mode：The cooling light is on and the heating light is off

Heating mode：The heating light is on and the cooling light is off

Auto mode：Heating light and cooling light are on at the same time

Off mode：Cooling and heating lights are off at the same time

（2）



Turn on：The power light is on

Turn off：The power light is off

（3）



Open 50% electrolyser：On light is on, Boost light is off
Open 100% electrolyser：On light is off, Boost light is on
Close electrolyser：On light is off, Boost light is off

（4）



Filtration on：Filtration light is on
Filtration off：Filtration light is off

（5）



When child lock function is turned off：Child lock light on
When child lock function is turned on: Child lock light off
When the heat pump is defrosting:Defrost light is on
When the heat pump stops defrosting:Defrost light is off
WIFI is not connected: WIFI light off
When the WIFI is being configured: WIFI light flashing
When the WIFI network is successfully connected: WIFI light on
When pressing [Up] or [Down] to set the temperature:The 2-digits LED lights display the set temperature value; When the heat pump is standby, the inlet water temperature value is displayed
When pressing [Up] or [Down] to check/set the parameter: The 2-digits LED lights show parameter code first, then show the parameter value
When 2-digits LED displays the set temperature or inlet water temperature parameters:℃ lighton
When the digital tube displays a non-temperature parameter value or the C/F parameter is F : ℃ light off

6.2 Functional Operation Instructions

6.2.1 normal state

（1）Each mode and function can be turned on when the heat pump is turned on.The child lock and parameter setting functions can only be set when the heat pump is turned off.

（2）After the heat pump is powered on, press the power button, it enters standby mode, and all mode functions are closed by default.

（3）The temperature cannot be adjusted when the heat pump is off. It can only be adjusted when entering the heating, cooling, and auto modes.

（4）When heat pump is in non-standby mode and press the ▲▼ key to enter the setting temperature state, the 2-digits LED lights will flash to display the set temperature, after 5s or other keys are pressed, it will exit this state, then the 2-digits LED lights will display by default Inlet water temperature.

（5）Setting temperature range

Mode	℃	
	Target Temperature Range	Initial value
Cool	3～30	28
Heat	15～40	28
Auto	3～40	28

6.2.2 Parameter query and setting

6.2.2.1 Parametric query

（1）Long press 'Heat +▲' for 3 seconds to enter parameter query

（2）Press ▲▼ to select the parameter code to be displayed, the parameter number will display in the first three seconds of 2-digits LED lights, and then displays the parameter value all the time if no other operation is taken

（3）Press the [Power] key or no operation for more than 30 seconds to exit the parameter parameter query

class parameter code		Query the current parameters		Display range	Note
Code	Parameter name	query value	Regional display		
01	outside ambient temperature（℃）	The current value	Digital Tube	-7-43（℃）	℃ light on（C/F is C）
02	temperature of coil（℃）	The current value	Digital Tube	-19~99（℃）	℃ light on（C/F is C）
03	Compressor discharge temperature（℃）	The current value	Digital Tube	0-127（℃）	℃ light on（C/F is C）
04	Compressor suction temperature（℃）	The current value	Digital Tube	-30-150（℃）	℃ light on（C/F is C）
05	Inlet water temperature（℃）	The current value	Digital Tube	0-45（℃）	℃ light on（C/F is C）
06	outlet water temperature（℃）	The current value	Digital Tube	0-45（℃）	℃ light on（C/F is C）
07	（reserved）	The current value	Digital Tube	-9~99	

A1	compressor operating frequency	The current value	Digital Tube	0~FF	hexadecimal display
A2	Fan speed	The current value	Digital Tube	0~99	The speed is divided by 20 anddisplayed
A3	Electronic expansion valve opening degree	The current value	Digital Tube	0~99	Open degree divided by 10 display
A4	Auxiliary Electronic Expansion Valve Opening Degree	The current value	Digital Tube	0~99	Open degree divided by 10 display
E1	historical failure 1	Err +**	Digital Tube	See 6.3 Protection and Failure Description for details	Err 1 is the earlier error Err 5 is the most recent error
E2	historical failure 2	Err +**	Digital Tube		
E3	historical failure 3	Err +**	Digital Tube		
E4	historical failure 4	Err +**	Digital Tube		
E5	historical failure 5	Err +**	Digital Tube		

6.2.2.2 Parameter setting

（1）When unit turns off, press the 'Heat+▼' key for 3 seconds to enter the parameter setting

（2）The first time it enters the display state: press ▲▼ to select the parameter to be displayed, the parameter number will be displayed in the first 3 seconds, and the parameter value will be displayed after that

（3）When a parameter is selected, press the [Salt] key to enter the setting state: 2-digits LED lights flashes to display the parameter value, press the ▲▼ key to modify the parameter, press [Salt] key again to confirm and save and return to the display state

（4）Press the [Power] key or if there is no operation for more than 30 seconds, exit the parameter setting and return to the normal display interface

（5）These parameters can be done in two ways: either using the display panel, or through the app

Class parameter code		query current parameters		Adjustment range	DEF	Note
Code	Name	query value	Display area			
C1	Power-down Memory Mode	1:On 0:Off	Digital Tube	On：Restore the state before power off after power off Off：Standby after power off and on	OFF	Display panel itself power-down memory settings

C2	Converter temperature units	1: ℉ 0: ℃	Digital Tube		℃	Fahrenheit temperature is only displayed on the app
C3	Inlet Water Temperature Compensatio Setting（℃）	/	Digital Tube	-9℃～9℃	0	reserved
C4	High ambient temperature	/	Digital Tube	6℃~25℃	20	reserved
C5	low ambient temperature	/	Digital Tube	-20℃~5℃	-20	reserved
C6	Low ambient temperature set point	/	Digital Tube	20℃~55℃	44	reserved
C7	High ambient temperature set point	/	Digital Tube	25℃~55℃	25	reserved
C8	Filtration cycle running set time	/	Digital Tube	1~24h	16	
C9	Salt-chlorine cycle running time S1	/	Digital Tube	1~24h	8	
CA	Salt-chlorine cycle running time S2	/	Digital Tube	1~24h	8	
CC	Set the salt chlorine Reverse polarity time	/	Digital Tube	4h 、6h 、8h	4	

- **Filtering time(C8)**

1.To ensure optimal filtration, the filtration time of 5kW heat pump system must be sufficiently long.

Filtering time=T(water)/2.

2.However, when the water temperature is above 25°C, we recommend significantly increasing filtration time such that filtration is on 24/7 once the water temperature exceeds 28°C.

Water temperature	15°C ~ 20°C	20°C ~ 25°C	25°C ~ 28°C	28°C & above
Filtering time = C8	10h	12h	18h	24h

3.The settings given above are for reference only; you can adjust your settings depending on your personal experience. Please note that filtration time must always be longer than water treatment time: C9 < C8.

For water temperatures <15° C, we recommend winterizing your Unit (see chapter 10.4).

By default, filtration time C8 is set to 8h. To adjust filtration time and achieve adequate filtration, modify the C8 parameter.

- **Salt-chlorine ON time(C9)**

Regularly test (weekly) free chlorine levels (following the instructions on page 9).

C9	Off-season	Spring	Peak season	Summer	Comfort
Volume \ Water T°	10°C ~ 20°C	20°C ~ 25°C	25°C ~ 28°C	28°C ~ 30°C	30°C et +
5 m3 to 10 m3	C9 = 1	C9 = 2	C9 = 3	C9 = 4	C9 = 5
10 m3 to 15 m3	C9 = 2	C9 = 4	C9 = 6	C9 = 8	C9 = 10

- **Salt-chlorine BOOST time (CA)**

Normal time = CA	Frequent use
Volume \ Water T°	BOOST
5 m3 to 10 m3	CA = 5
10 m3 to 15 m3	CA = 10

- **Reverse polarity time = CC**

Reversing polarity allows the cell to be “cleaned”; more specifically this function prevents calcium de-posits on the plates and scale build-up in the cell. By default, the reverse polarity time is to set to 4h.However, for soft or very soft water, this time can be extended to 6 or 8h.

Water hardness	Total hardness (TH) of water	Reverse polarity time
Hard to normal	TH > 150 ppm	CC = 4h
Soft	8 < TH < 150 ppm	CC = 6h
Very soft	TH < 70 ppm	CC = 8h

6.3 Protection and Error Description

（1）When the system fails, the display panel will display the error code in 2-digits LED lights. When multiple errors occur, the faults will be displayed cyclically at 8-second intervals

（2）All error codes are always on and displayed. If there is a temperature adjustment operation at this time, the 2-digits LED lights is replaced by the temperature flashing display.

（3）The corresponding description of the error code is as follows:

No	type	Error code	Note
1	Filtration Cleaning Reminders	CF	Just a reminder, the whole heat pump continues to run
2	Water flow switch protection	d1	recoverable
3	Inlet water temperature sensor failure	d2	recoverable
4	Outlet water temperature sensor failure	d4	recoverable
5	Water temperature protection (antifreeze level 1)	d6	
6	Antifreeze Level 2	d7	
7	Water flow is too small protection (the temperature difference between inlet and outlet is too large)	d8	recoverable
8	water temperature protection	d6	recoverable
9	Internal and external communication failure	E0	recoverable
10	Tube temperature sensor fault	E3	recoverable
11	System exception	E4	recoverable
12	Outer ring temperature sensor failure	E7	recoverable
13	Exhaust sensor failure	E8	recoverable
14	drive failure	E9	recoverable
15	Communication failure with the drive board	EC	recoverable
16	EE fault	EE	recoverable
17	DC fan failure	EF	recoverable.3 power outages within 10 minutes to recover
18	Inhalation sensor failure	EH	recoverable
19	case top protection	EP	recoverable
20	Voltage sensor failure	EU	
21	Failed to communicate with salt chlorinator	F1	electrolyser error code
22	high salt content	F2	
23	low salt content	F3	
24	Electrode working abnormally (must be cleared manually)	F4	
25	System detection circuit abnormality (must be cleared manually)	F5	
26	Abnormal working water temperature range of electrolyser	F6	

27	high pressure protection	H1	Recoverable. It can be recovered after 3 power failures within 30 minutes, and it can be recovered after 3 power failures within 30 minutes.
28	low pressure protection	H2	
29	AC low voltage protection	P1	recoverable
30	High current protection	P2	recoverable
31	system protection	P3	
32	discharge temperature is too high	P4	recoverable
33	Refrigeration and supercooling failure under self-cleaning	P5	
34	Refrigeration outer coil is too high	P6	recoverable
35	Heating protection against overheating	P7	
36	Outdoor ambient temperature is too high and too low protection	P8	
37	drive protection	P9	Drive protection. Drive failure is reported 3 times within 10min, power off and recovery
38	Inverter compressor running fault	P9	
39	IPM overcurrent	P9	
40	Compressor drive failed	P9	
41	compressor overcurrent	P9	
42	Input voltage phase loss	P9	
43	IPM current sampling fault	P9	
44	Radiator overheat shutdown	P9	
45	Precharge failed	P9	
46	DC bus overvoltage	P9	
47	DC bus undervoltage	P9	
48	AC input undervoltage	P9	
49	AC input overcurrent	P9	
50	Input voltage sampling fault	P9	
51	DSP and PFC communication failure	P9	
52	temperature sensor failure	P9	
53	Communication failure between DSP and communication board	P9	
54	Abnormal communication with the motherboard	P9	
55	IPM module overheat shutdown	P9	
56	Compressor model failure	P9	

6.4 WI FI control

6.4.1 WI FI connect

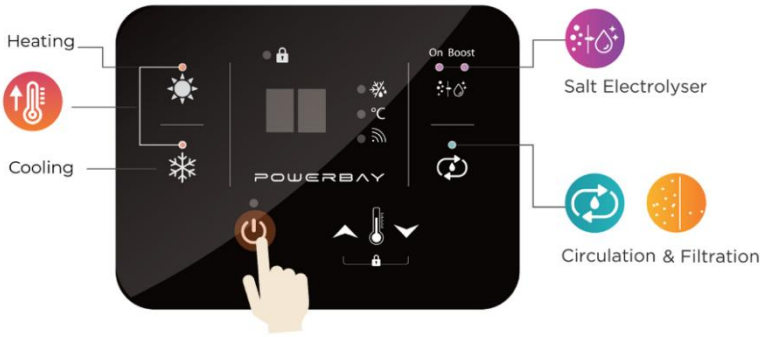
• Download the App:

Download the **Smart Life App** or **Tuya Smart App** from the **Google Play Store** or **Apple App Store** to your mobile phone.

Tuya Smart Smart Life

• Power Off the System:

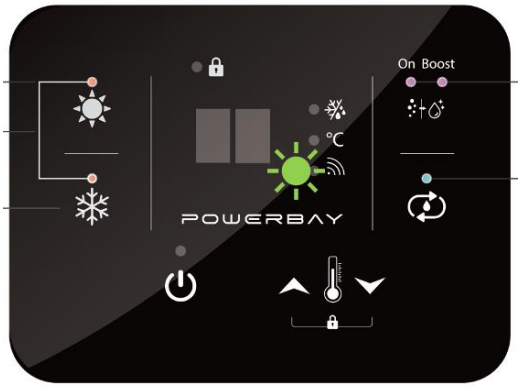
Ensure the pool master is connected to electricity. Press Power Button to turn off the pool master:



• Enter WiFi Setup Mode:

Press & hold the Power Button & Up Button on the display screen at the same time for a 3 - 5 seconds. This will initiate the WiFi connection process. Once in WiFi setup mode, the WiFi light on the display screen will start flashing, indicating that the system is ready to connect to your WiFi network.

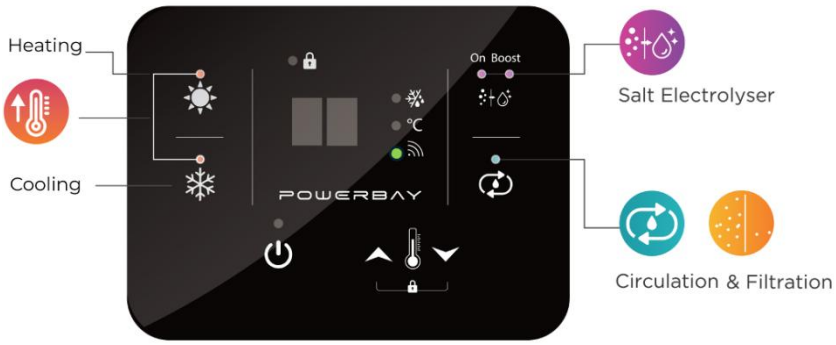




• Complete WiFi Setup:

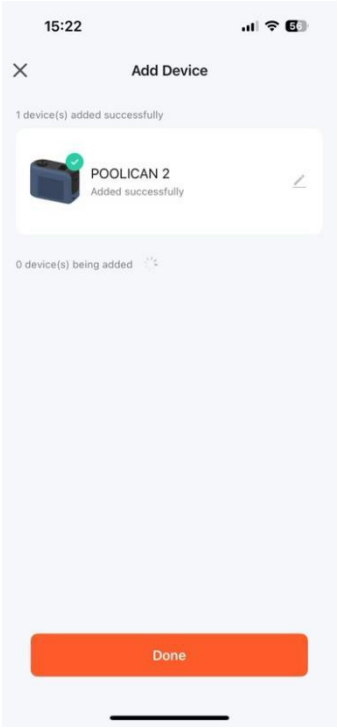
Note: wifi network must be in the 2.4ghz frequency band

Use the corresponding mobile app to complete the WiFi setup process and connect to your desired network. Ensure your WiFi network is within range and the correct credentials are entered for a successful connection. You will be prompted to connect your phone to the WiFi network. The WiFi light will be steady green once WiFi is connected.



• Add the Device to the App:

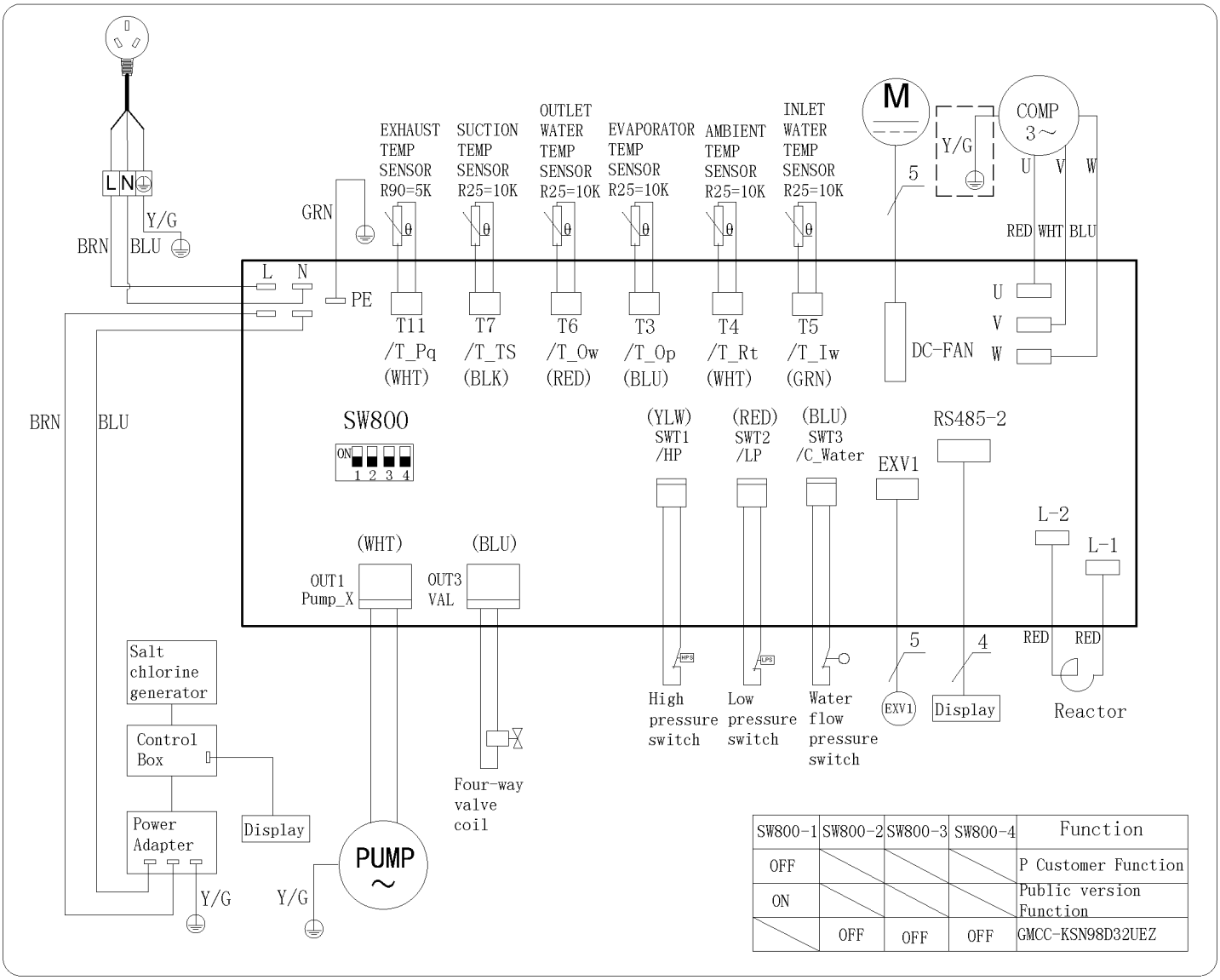
You can add the pool master to your app by pressing “Add a Device” in the app, or the app will automatically search for nearby pool master unit. Once added successfully, a green tick will appear. You can rename your pool master using the pencil editing icon .





Note: Please ensure your mobile phone & pool master are connected to the same WiFi network during the setup process for seamless integration.

WIRING DIAGRAM



SW800-1	SW800-2	SW800-3	SW800-4	Function
OFF				P Customer Function
ON				Public version Function
	OFF	OFF	OFF	GMCC-KSN98D32UEZ

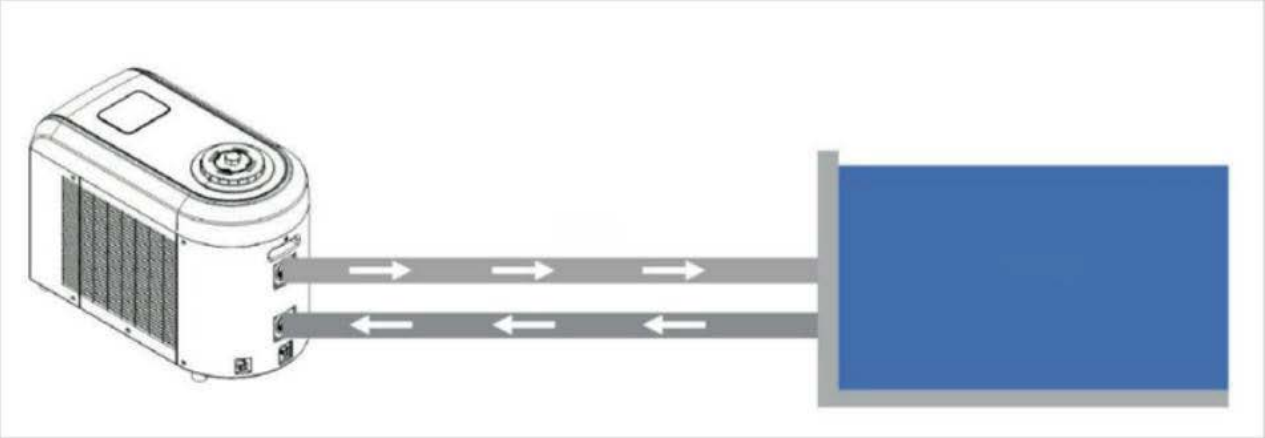
8.1 Water system:

Hydraulic installation must be carried out by an authorized technician or appropriately trained professional

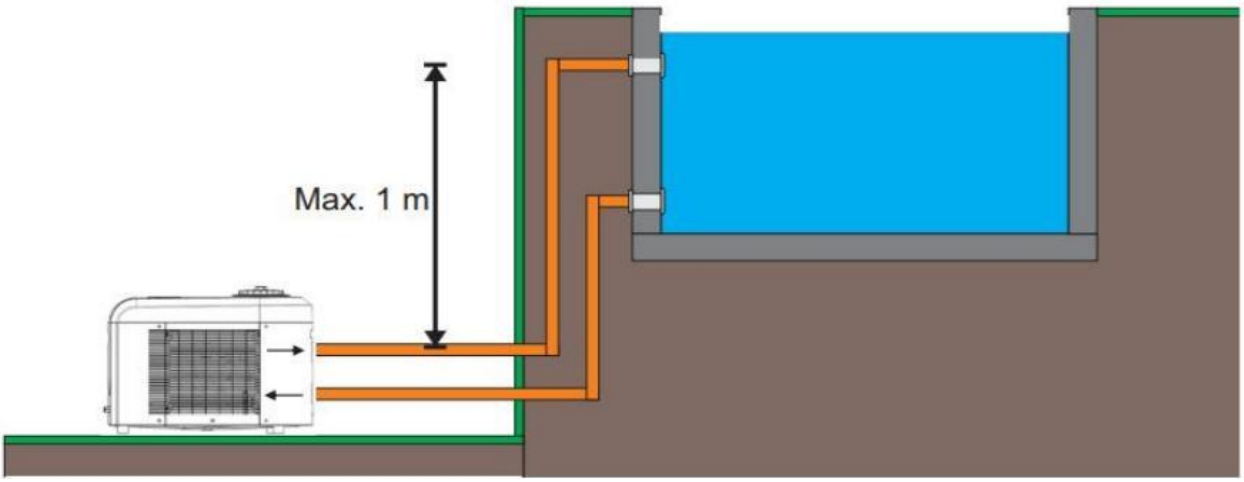
8.1.1 Technical

Requirements Attention:

• Equipment should be installed no more than 3.5 meters away from the pool.



• When the equipment is installed below the pool level, the maximum clearance between the product discharge connection and the pool return connection shall be 1 meter.



• A prefilter must be installed to prevent debris that could damage the pool pump. The prefilter should be installed as close to the product inlet connection as possible.

• Hydraulic project with PVC pipe completed in advance.

• Use requirements, and record, assembly and maintenance convenience.

• The water inlet and outlet must be installed and easily accessed;

• Between plumbing fixtures, the swimming pool should be a minimum diameter of 1¼ "(40 mm).

8.1.2 Installation of filter cartridge

The filter element is provided inside the product, appropriately packaged. Before the product is released,used, please follow these guidelines.

• Remove filter top cover and rotate counterclockwise.

• Remove the plastic covering of the cartridge filter inside of the filter tank (if any).

• Reinstall the cartridge filter back into the system by rotating the filter lid.

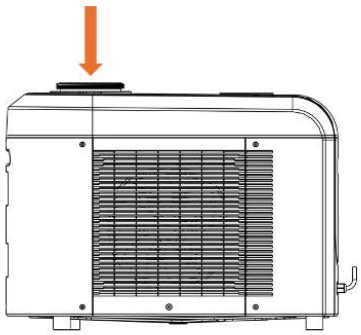
• Open the cleaning valve.

• Record, allow water to pass through the product.

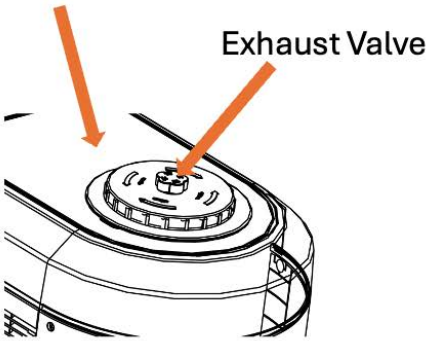
• Ensure that there is a natural circulation of water, i.e Check whether the exhaust valve is leaking.

• Wait for air to vent out of the valve.

• Close the exhaust valve.







Attention:

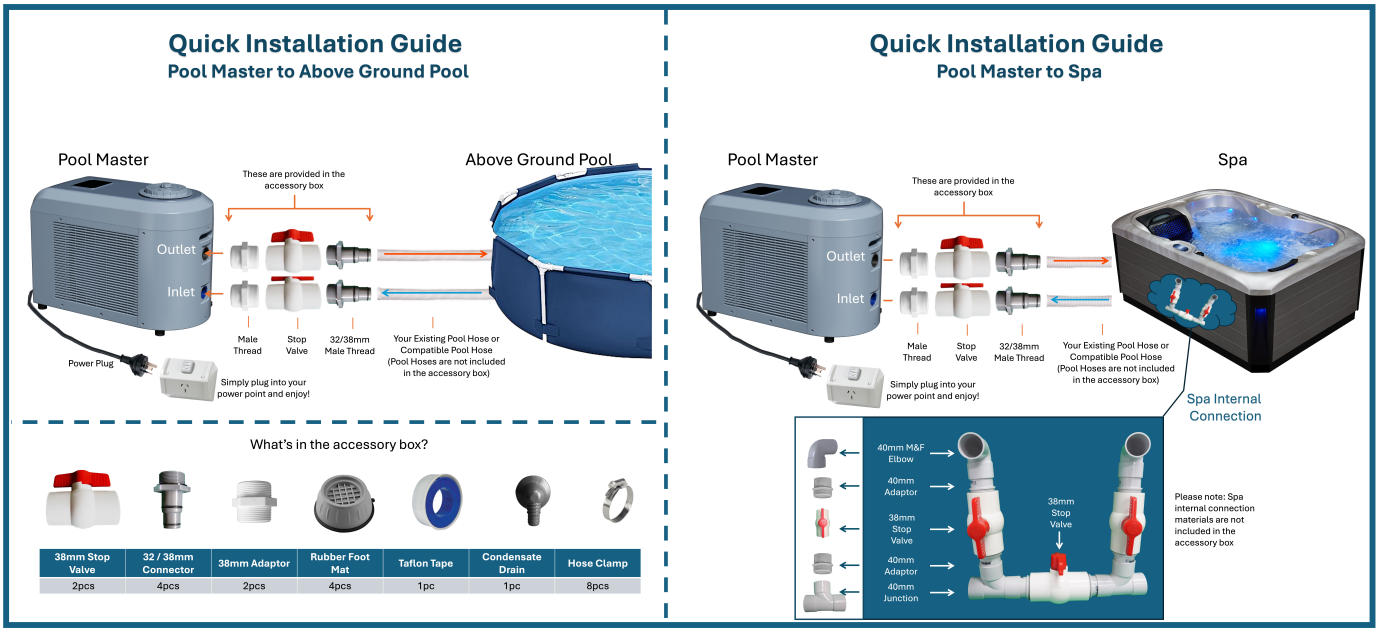
• The filter cover should be closed only after the water level has reached its highest level.

• When closing the filter cover, drain vale should be opened to allow excess water to overflow.

• The exhaust valve can only be closed when the water overflows.

• If the water level is not reached after adding a large amount of water, check that the check valve is intact or installed in the correct position.

8.2 Easy to Install




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