AUSTEK FULL INVERTER
SWIMMING POOL HEAT PUMP

Installation and Instruction Manual

Model:
Austek Enviro 13kw / Austek Enviro 18kw / Austek Enviro 21kw
/ Austek Enviro 25kw / Austek Enviro 28kw / Austek Enviro 32kw



A2L

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

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1. PRECAUTIONS

The following are special precautions that need to be followed strictly.

	The refrigerant used in this equipment is flammable. Exposure of refrigerant to external ignition sources may cause a fire hazard. This equipment needs to be kept away from any source of fire.
	Read this manual carefully before performing any operation of the equipment.
	The installation and maintenance of this equipment must be performed by professional service personnel.
	Service personnel should strictly refer to this manual when installing, operating or maintaining the equipment.
	Before installing the equipment, the power supply, voltage, and frequency must be confirmed to be correct. Connect the power cord correctly according to the wiring diagram on the device.
	The equipment must be properly grounded to prevent the risk of electric shock due to leakage of electricity.
	The equipment must be vacuumed thoroughly before welding. Welding should only be done by professional service personnel.
	The equipment must be placed in a well-ventilated area. Indoors or in enclosed areas is not allowed.

1.1. Risks of Casualties

a. It is strictly prohibited to store flammable, explosive and toxic items in the place where the unit is used to prevent accidents such as fires and explosions.
b. Improper installation may cause fire or electric shock.
c. Improper operation may result in personal injury.
d. Please place the main power switch out of the reach of children and avoid contact by children.
e. Do not touch the edges of fins to avoid cuts.
f. Do not operate or touch this equipment with wet hands to prevent electric shock.
g. Do not put your fingers into the vents, as high-speed fan operation may cause serious injury.
h. Do not touch the refrigerant pipe with your hands to avoid burns.
i. When it is necessary to cut off the power for maintenance, please wait for 1 minute after the power is cut off before touching the circuit board to avoid electric shock caused by capacitor discharge.
j. If refrigerant leakage occurs during installation or use, any operation should be stopped immediately and service personnel should be asked to check.
k. Do not clean the machine while the power is on. Please turn off the power before cleaning. Otherwise, personal injury or electric shock may occur due to the fan operating at high speed.

1.2. Risks of Equipment Damage

a. The equipment must be stored and transported vertically in its original packaging. If this is not possible, do not operate immediately after correct placement and must wait at least 24 hours before applying power.
b. Ensure that the water flow has been established before starting the equipment. Do not start the device until water flow is established. Otherwise, there is a risk of damage to the device.
c. In winter or when the air temperature is below 0°C, the water must be drained when the equipment is not in use. Otherwise, the equipment will be damaged by freezing. In this case your warranty will be void.
d. Improper installation may cause the equipment to fall or leak.
e. Misoperation may cause damage to the equipment.
f. Do not place objects that obstruct airflow near the air inlet and outlet. Otherwise, it will affect the efficiency of the equipment and even cause the equipment to malfunction and stop running.
g. Please turn off the main power supply during thunderstorms to avoid equipment damage or short circuit.
h. Make sure that no water penetrates into the electrical components, otherwise the electrical components will be damaged.

For stationary appliances permanently connected to the fixed wiring, compliance with this requirement is considered to be met if the instruction concerning disconnection incorporated in the fixed wiring ls in accordance with AS/NZS 3000.

1.3. ATTENTION

a. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
b. Children should be supervised to ensure that they do not play with the appliance.
c. 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.
d. The appliance shall be installed in accordance with national wiring regulations.
e. An all-pole disconnection device which has at least 3mm clearances in all poles, and have a leakage current that may exceed 10mA, the residual current device (RCD) having a rated residual operating current not exceeding 30mA, and disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
f. Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
g. The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater.)
h. Do not pierce or burn.
i. Be aware that refrigerants may not contain an odour.
j. Spaces where refrigerant pipes shall be compliance with national gas regulations.
k. Servicing shall be performed only as recommended by the manufacturer.
l. The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
m. All working procedure that affects safety means shall only be carried by competent persons.
n. After receiving the product, carefully inspect it and confirm whether it is in good condition, whether there are fixing screws, and whether the accessories are complete.
o. Before formal installation, unpack the heat pump, cut off the packaging tape, remove the packaging, and take out the bottom wooden pallet. Plastic bags and tape should be disposed of properly and kept out of the reach of children.
p. Ensure that the equipment is installed securely.
q. A circuit breaker must be installed between the equipment and the user's power supply.
r. Check the surrounding environment of the cable to ensure that it is not affected by wear, corrosion, extrusion, sharp edges or any other adverse environment. The cables need to be connected firmly to avoid loosening due to continuous vibration of the compressor, fan, etc.
s. If leakage is found in the pipe connected to the water inlet and outlet, the equipment needs to be shut down immediately.
t. In order to optimize the heating effect, install insulation materials on the water pipes.

u. Set the appropriate temperature for a comfortable experience, too heat or too cold should be avoided.
v. The pool insulation cover can be used during the heat pump heating process, which will help improve the heating efficiency of the heat pump.
w. When the equipment fails to operate normally or reports a fault code, stop operation and contact maintenance personnel.
x. Use only parts specified by the manufacturer to replace components.

1.4. Additional Notes

1.4.1. Transport of equipment containing flammable refrigerants

Compliance with the transport regulations.

1.4.2. Marking of equipment using signs

Compliance with local regulations.

1.4.3. Disposal of equipment using flammable refrigerants

Compliance with national regulations.

1.4.4. Storage of equipment/appliances

The storage of equipment should be in accordance with the manufacturer's instructions.

1.4.5. Storage of packed (unsold) equipment

Storage package protection should be constructed such that mechanical damage to the equipment inside the package will not cause a leak of the refrigerant charge.
The maximum number of pieces of equipment permitted to be stored together will be determined by local regulations.

1.4.6. Information on servicing

1) 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 minimised. For repair to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system.
2) Work procedure
   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.
3) General work area
   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 around the workspace shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material.
4) 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.

5) Presence of fire extinguisher
   If any hot work is to be conducted on the refrigeration 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.
6) 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.
7) 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.
8) 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:
   – The charge size is in accordance with the room size within which the refrigerant containing parts are installed;
   – The ventilation machinery and outlets are operating adequately and are not obstructed;
   – If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant;
   – Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;
   – 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.

9) Checks to electrical devices

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 there no live electrical components and wiring are exposed while charging, recovering or purging the system;

• That there is continuity of earth bonding.

1.4.7. Repairs to sealed components

1) 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 isabsolutely 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.

2) 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 apparatus is mounted securely.

Ensure that seals or sealing materials have not degraded such 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.

NOTE: The use of silicon sealant may inhibit the effectiveness of some types of leak detection equipment. Intrinsically safe components do not have to be isolated prior to working on them.

1.4.8. 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.

1.4.9. 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.

1.4.10. Detection of flammable refrigerants

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.

1.4.11. 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.

1.4.12. 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:

- Remove refrigerant;
- Purge the circuit with inert gas;
- Evacuate;
- Purge again with inert gas;
- 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 pipe-work are to take place. Ensure that the outlet for the vacuum pump is not close to any ignition sources and there is ventilation available.

1.4.13. Charging procedures

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

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

– Cylinders shall be kept upright.

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

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

– 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.

1.4.14. 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.

a) Become familiar with the equipment and its operation.

b) Isolate system electrically.

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) Pump down 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 manufacturer's 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 off.
k) Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.

1.4.15. Labelling

Equipment shall be labelled stating that it has been de-commissioned 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.

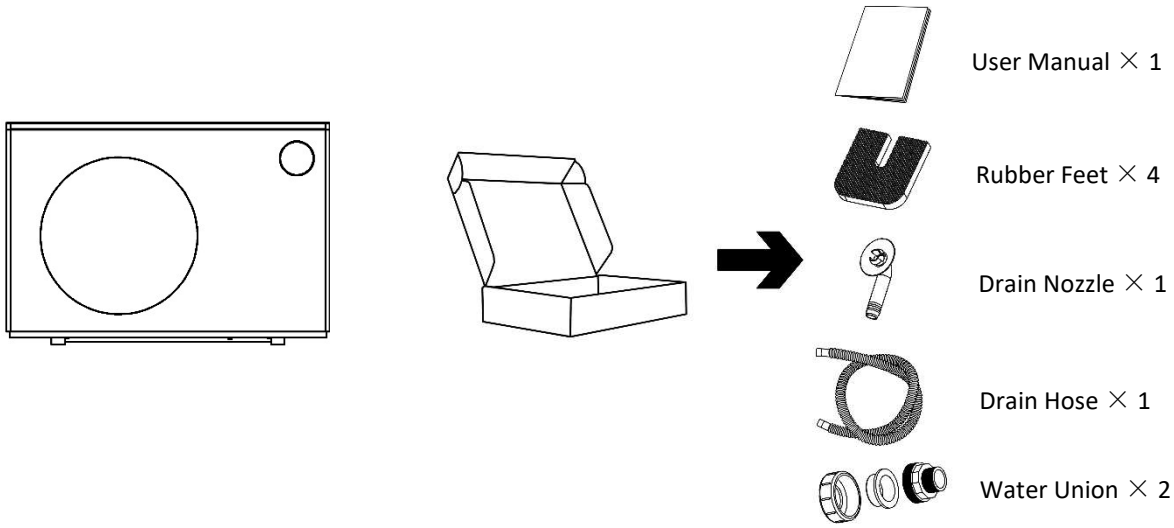
1.4.16. Recovery

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 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.

2. GENERAL INFORMATION

2.1. Accessories

After unpacking the unit, please open the accessory box and then check if you have all of the following accessories.



2.2. Working Mode

In order to realize a better user experience, the heat pump is equipped with three working modes – Boost, Smart and Silence. For every mode, the machine's frequency can be automatically adjusted based on the air temperature and water temperature. To better understand these three modes, please check the following advantages of them.

Mode		Advantage
	Boost	Maximize the performance of the heat pump and realize rapid heating or cooling.
	Smart	This mode can be used if rapid heating or cooling is not required, achieving more energy-saving effect.
	Silence	Achieve a silent state of the heat pump, with the best energy saving effect, while also maintaining water temperature.

2.3. Technical Specification

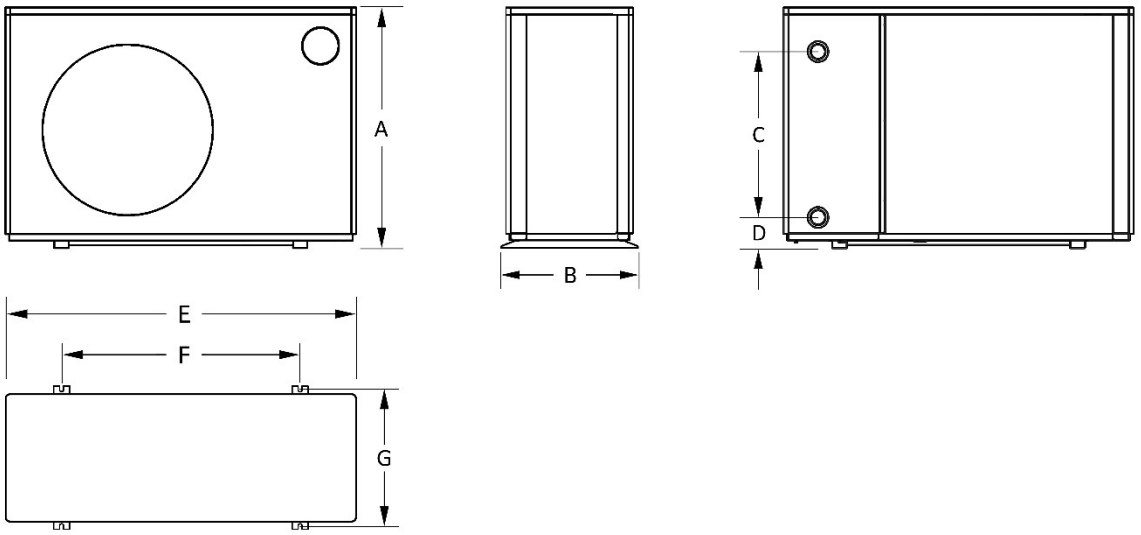
Table 1

Model No.	Austek Enviro	13kw	18kw	21kw
Refrigerant	/	R32		
Rated Voltage/Frequency	/	220-240V~/50Hz		
Performance Condition: Air Temperature 27°C, Inlet Water Temperature 26°C, Humidity 80%				
Heating Capacity	kW	13.15	18.30	21.30
COP	W/W	6.32~18.06	6.33~18.08	6.36~17.52
Performance Condition: Air Temperature 15°C, Inlet Water Temperature 26°C, Humidity 70%				
Heating Capacity	kW	9.66	13.22	14.50
COP	W/W	5.19~8.43	5.33~8.45	5.23~8.68
Operating Air Temperature	℃	-10~43		
Rated Power Input	kW	0.18~2.08	0.25~2.89	0.27~3.35
Compressor	/	Mitsubishi		
Sound Level (1m)	dB(A)	38.0~48.3	39.8~49.4	40.5~50.8
Sound Level (10m)	dB(A)	18.0~28.3	19.8~29.4	20.5~30.8
Max. Current Input	A	12.5	16.5	18.5
Advised Water Flow	m^3/h	5.5	7.5	9.0
Water Pressure Drop	kPa	16	20	35
Water Connection	mm	48.3		

Table 2

Model No.	Austek Enviro	25kw	28kw	32kw
Refrigerant	/	R32		
Rated Voltage/Frequency	/	220-240V~/50Hz		
Performance Condition: Air Temperature 27°C, Inlet Water Temperature 26°C, Humidity 80%				
Heating Capacity	kW	25.29	28.44	31.71
COP	W/W	6.40~17.97	6.31~18.03	6.28~18.29
Performance Condition: Air Temperature 15°C, Inlet Water Temperature 26°C, Humidity 70%				
Heating Capacity	kW	17.41	18.79	22.02
COP	W/W	5.21~8.34	5.59~8.42	5.24~8.19
Operating Air Temperature	°C	-10~43		
Rated Power Input	kW	0.30~3.95	0.32~4.51	0.38~5.05
Compressor	/	Mitsubishi		
Sound Level (1m)	dB(A)	40.8~51.6	41.2~52.1	42.3~52.5
Sound Level (10m)	dB(A)	20.8~31.6	21.2~32.1	22.3~32.5
Max. Current Input	A	20.5	25.0	28.0
Advised Water Flow	m^3/h	10.5	12.0	13.5
Water Pressure Drop	kPa	35	38	40
Water Connection	mm	48.3		

2.4. Unit Dimension



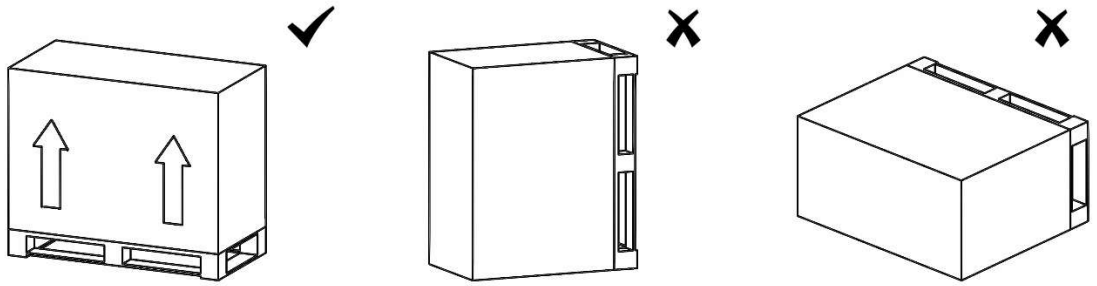
unit: mm

Model	A	B	C	D	E	F	G
13kw	655	405	380	95	970	610	380
18kw	655	405	380	95	970	610	380
21kw	760	435	520	105	1105	750	410
25kw	760	435	520	105	1105	750	410
28kw	760	435	520	105	1105	750	410
32kw	950	435	600	105	1105	750	410

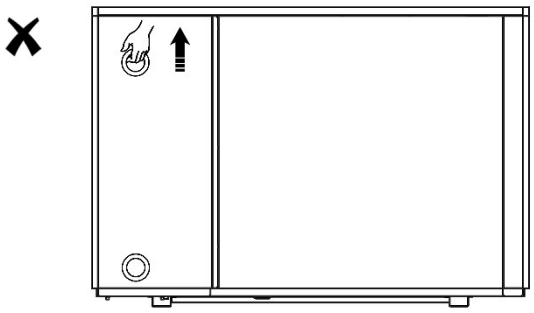
3. INSTALLATION INSTRUCTION

3.1. Transportation

a. When storing or moving the heat pump, always keep it upright and never place it on its side.

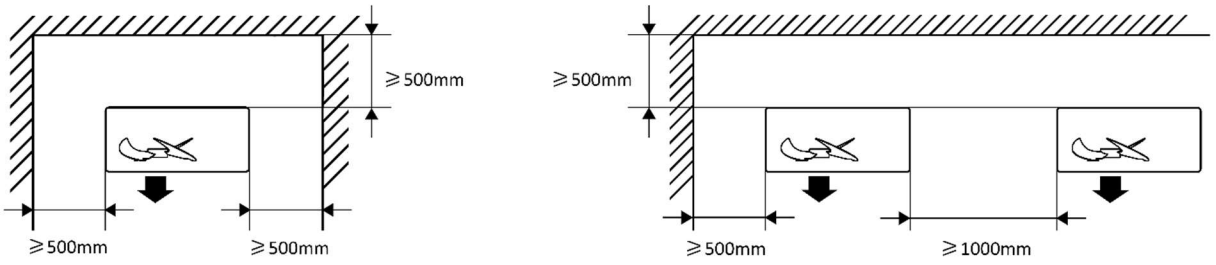


b. When you need to move the heat pump, do not lift the water pipe joint, otherwise the internal titanium heat exchanger will be damaged.



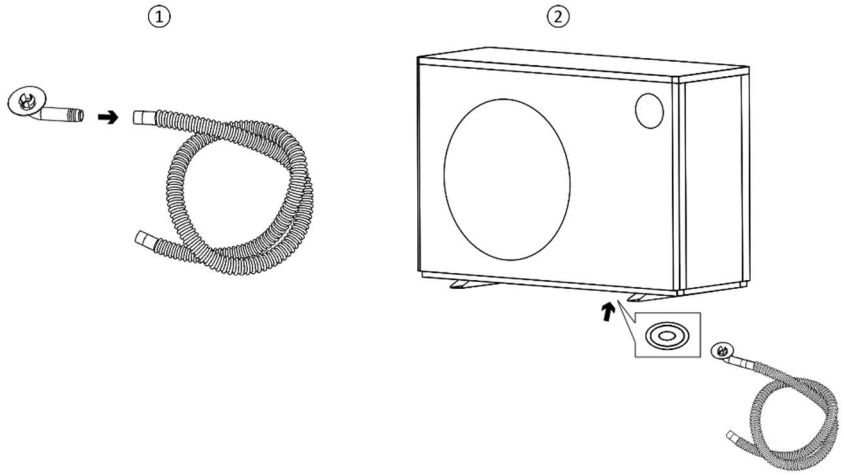
3.2. Installation Distance

The heat pump should be installed in a well-ventilated area. And the location of the unit must be easily accessible for convenient operation and maintenance. It should be installed in the place greater than the following distances:



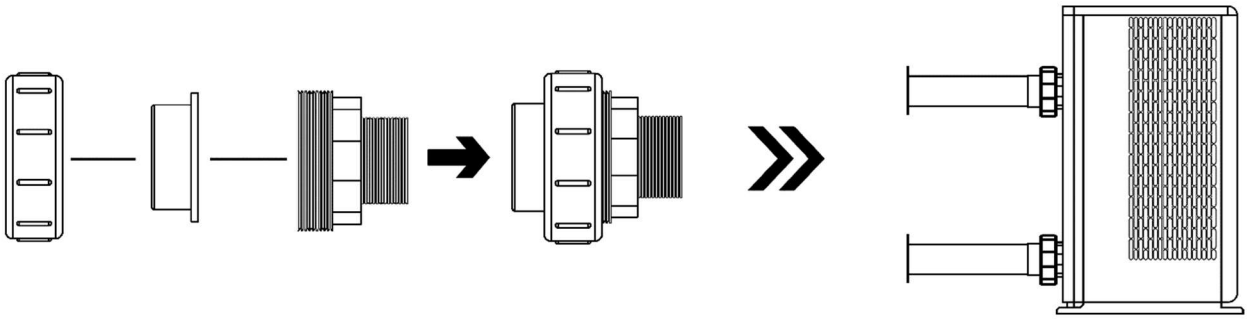
3.3. Installation of Drain Pipe

The drain pipe needs to be installed to the corresponding drain port on the bottom of the heat pump as follows.



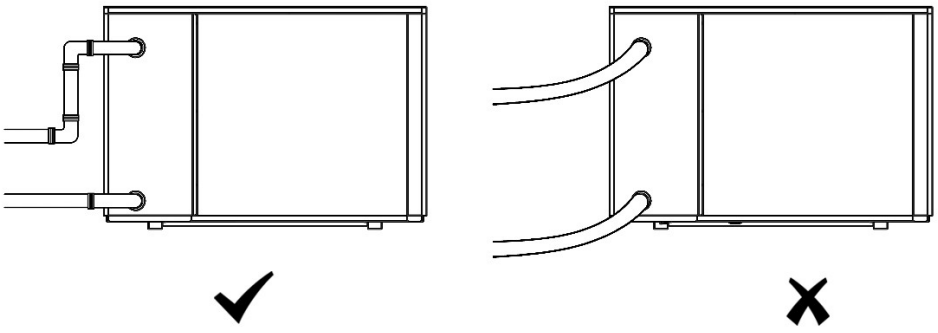
The machine needs to have its feet fixed on the cement ground or metal frame by metal screws.

3.4. Installation of Water Union



3.5. Installation of Water Pipe

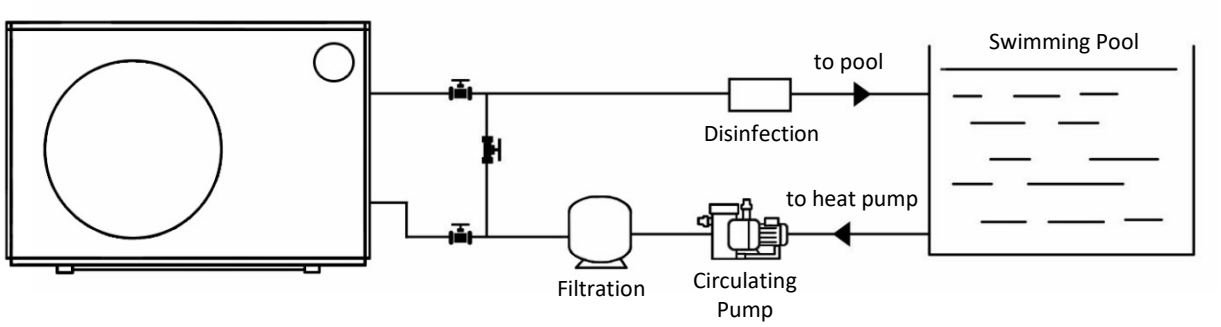
When connecting water pipes, use hard pipes rather than flexible hoses, as hoses will increase the resistance of the pipes.



3.6. Layout of Water System

Keep the water pump running if operating temperature drops below 0°C. To keep the water in your system clean and avoid filter clogging, the filter must be cleaned regularly.

The suggested installation schematic of water system is shown below:



3.7. Electric Installation

(1) Wiring Precautions

For safe operation and to maintain the integrity of the electrical system, wiring must be conducted in accordance with the following regulations:

a. Wiring must be connected by professional technicians according to the wiring diagram.
b. The heat pump must be connected to an appropriate circuit breaker in accordance with the current standards and regulations of the country where the system is installed.
c. Connect to a suitable power supply, and the voltage should comply with the rated voltage of the equipment.
d. For three-phase systems, they must be connected in the correct phase sequence. If the phases are reversed, the heat pump compressor will not work.
e. Make sure the heat pump is well grounded.
f. The power supply cable must be suitable for the rated power of the equipment and the wiring length required for the installation. The cable must be suitable for outdoor use.
g. In places open to the public, an emergency stop switch must be installed near the heat pump.
h. Power cords and signal lines should be arranged neatly and not affect each other.

The recommended cable specification of each model is shown in the following table.
Power cord designations: 60245 IEC 57 or H05RN-F

Model	Power Supply	Cable Specification (Max. Recommended Value)	Fuse Specification
13kw	220-240V~/ 50Hz	3G 1.5mm²	20A
18kw		3G 2.5mm²	20A
21kw		3G 4.0mm²	25A
25kw		3G 4.0mm²	25A
28kw		3G 6.0mm²	32A
32kw		3G 6.0mm²	32A

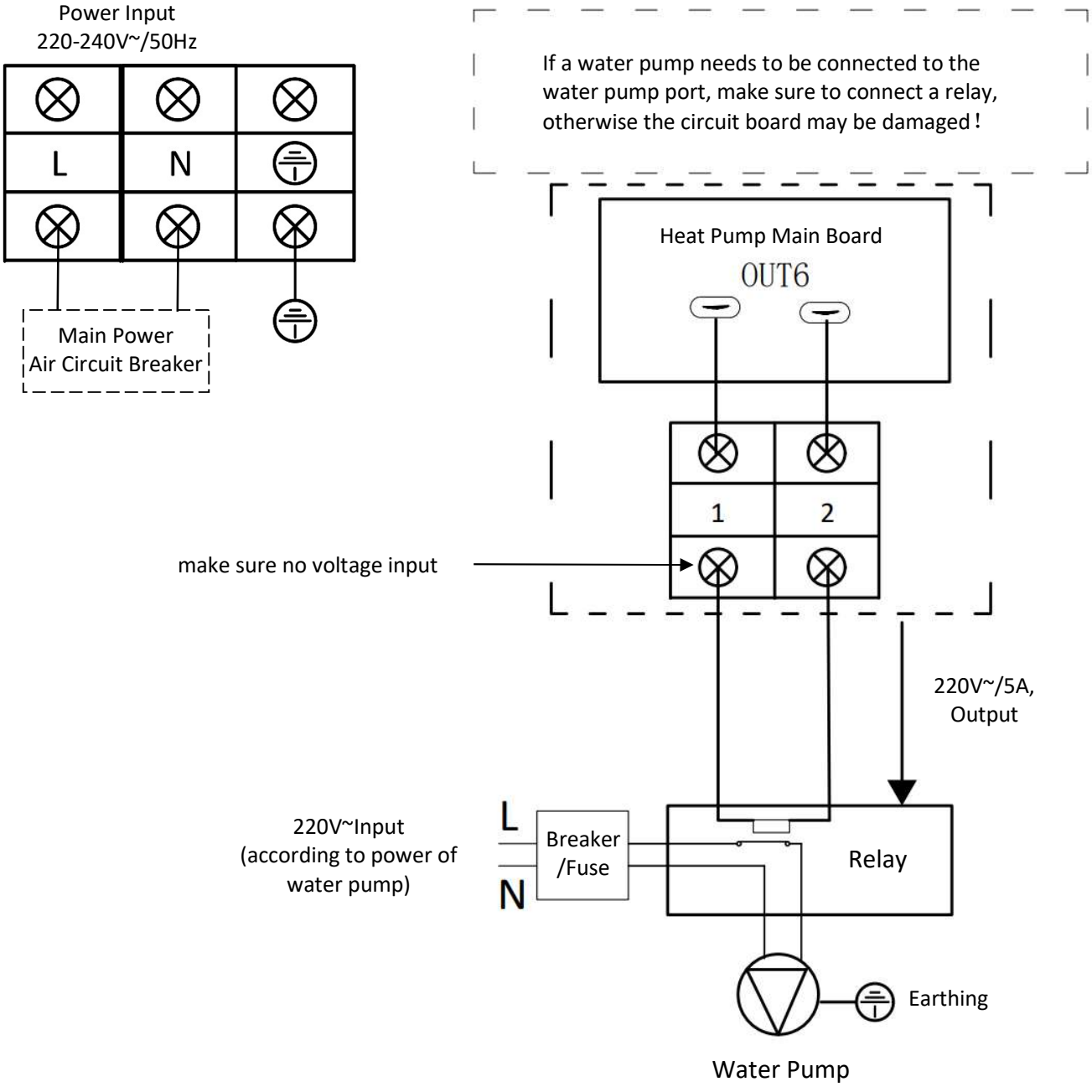
(2) Wiring Instruction

WARNING: Power to the heat pump must be disconnected before performing any wiring work.

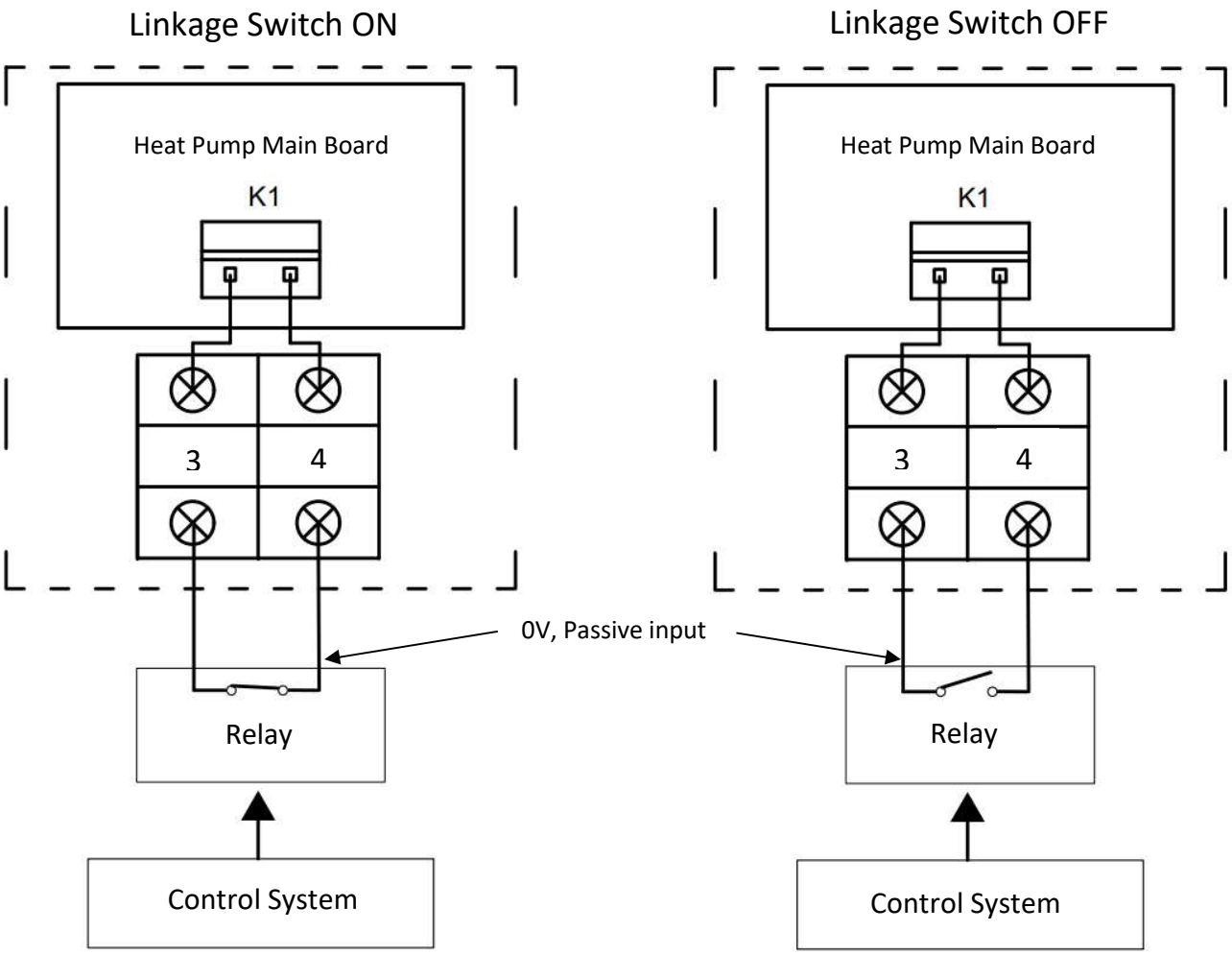
Follow the instructions below to connect your heat pump with cables.

Step 1: Use a screwdriver to remove the **side panel** of the device for wiring.

Step 2: Connect the cable to the corresponding port of the heat pump as shown below.



* For port 3 and 4, make sure to connect a relay with them, and no voltage input, otherwise the circuit board may be damaged !



If the control system controls the relay to be closed, port 3 and 4 are closed. Then the heat pump is turned on.

If the control system controls the relay to be disconnected, port 3 and 4 are disconnected. Then the heat pump is turned off.

4. TESTING

4.1. Initial Inspection

Make sure that the following items are complied with.

a. The heat pump is installed correctly.
b. Pipes and wires are connected correctly.
c. The power supply voltage is the same as the rated voltage of the unit.
d. The leakage protector works normally.
e. The ground wire is connected correctly.
f. Drainage is smooth and there is no water leakage.
g. Pipe insulation is completed.
h. The air in the duct has been exhausted.
i. Refrigeration pipes or components are not installed in corrosive environments.

4.2. Leakage Detection

All the following operations must be performed by professionals.

a. It is prohibited to use fire sources during leak inspection.
b. Leak detection fluid is suitable for most refrigerants, but chlorine-containing cleaners cannot be used because chlorine may react with the refrigerant and corrode the copper pipes.
c. Leak inspection must be done in a ventilated area. It is prohibited to detect the leakage in closed areas.
d. When refrigerant leakage occurs, stop using the equipment immediately and contact the service center professionals.
e. If welding is required, complete vacuuming is required before welding.

4.3. Trial Operation

Step 1: The user must turn on the water pump first and then the heat pump. Turn off the heat pump first, then the water pump. Otherwise the equipment will be damaged.

Step 2: Before starting the heat pump, check for water leaks, set the appropriate temperature, and then turn on the power.

Step 3: Check the following items during trial operation.

a. Is there any abnormal noise or vibration during operation?
b. Is there any leakage in the entire gas system?
c. Are all the keys of wire controller normal?
d. Is the display of wire controller normal?
e. Is the current normal?
f. Is the condensed water discharge normal?

5. OPERATION

5.1. Overview of Wire Controller



5.1.1. Icon

Icon	Meaning		Icon	Meaning
	Auto Mode			Degree Celsius
	Cooling Mode			Degree Fahrenheit
	Heating Mode			Boost Mode
	Defrosting Mode			Smart Mode
	Fault or Protection			Silence Mode
	Wi-Fi			Time or Parameter
	Set Water Temp.			Timer ON/OFF
	Current Water Temp.			Lock

5.1.2. Key

No.	Key	Meaning	Function
1		Mode 1	Switch between Auto, Cooling and Heating Mode
2		Mode 2	Switch between Boost, Smart and Silence Mode
3		Up	Increase the Value
4		Down	Decrease the Value
5		Power	Press to turn On or Off the heat pump; Press and hold for 3 seconds to lock or unlock the wire controller

5.1.3. Keys Combination

No.	Combination	Function
1	Press the keys “  ” and “  ” and then hold for 2 seconds	Enter Parameter Checking Interface
2	Press the keys “  ” and “  ” and then hold for 2 seconds	Enter Timer Setting Interface
3	Press the keys “  ” and “  ” and then hold for 3 seconds	Search for a Wi-Fi Signal and Connect to Wi-Fi

5.2. Operation of Wire Controller

5.2.1. Power

Press the key “  ” to turn on or off the heat pump. Press the same key “  ” and then hold for 3 seconds to lock or unlock the wire controller. When the wire controller is locked, the icon “  ” is displayed on the screen. The wire controller will be automatically locked after 120 seconds of inactivity.

5.2.2. Mode

a. Heating/Cooling/Auto

When the heat pump is on, press the key “  ” to switch between mode Heating “  ”, Cooling “  ” and Auto “  ”.

Note: When Auto mode is chosen, the icon “  ” will be displayed. In this mode, the heat pump intelligently chooses the most appropriate operating mode according to the setting water temperature and the current water temperature: When executing Auto Heating mode, both icons “  ” and “  ” will be displayed; When executing Auto Cooling mode, both icons “  ” and “  ” will be displayed.

b. Boost/Smart/Silence

When the heat pump is on, press the key“  ” to switch between mode Boost “  ”, Smart “  ” and Silence “  ”.

5.2.3. Temperature Setting

When the heat pump is on, press the keys “  ” or “  ” to adjust the setting water

temperature under current mode. The setpoint can be seen in this area “  ”. And the real-time current water temperature is shown in the area “  ”. For rapid adjustment, press the key “  ” or “  ” and then hold for longer than 0.5 seconds.

5.2.4. Wi-Fi Connection

Press both keys “  ” and “  ” and then hold for 3 seconds to connect to Wi-Fi. The icon “  ” will be flashing during connecting. This icon will remain displayed after successfully connected.

5.2.5. View Operating Parameters

a. The way to enter the interface of operating parameter: Press the keys “  ” and “  ” and then hold for 2 seconds. Then the code of operating parameter is shown in the timing display area, and parameter content is shown in the current water temperature display area.

b. The way to view the operating parameters: After entering the parameter interface, press the key “  ” or “  ” to view the operating parameters. To exit this interface, press the key “  ”. If no operation for 60 seconds, it also exits automatically.

List of Operating Parameter

Code	Parameter Name	Unit	Scope	Remark
01	Practical Frequency of Inverter Compressor	Hz	0～130	
02	AC Current	A	0～50	
03	AC Voltage	V	0～300	
04	DC Voltage	V	0～500	
05	Inlet Water Temperature	℃	0～40	

06	Outlet Water Temperature	℃	0～40	
07	Water Tank Temperature	℃	0～40	Not for pool heat pump
08	Tube in Shell Heat Exchanger Temperature	℃	0～40	Not for pool heat pump
09	Outdoor Coil Temperature	℃	-30～150	
10	Outdoor Air Temperature	℃	-30～43	
11	Gas Suction Temperature	℃	-30～70	
12	Gas Exhaust Temperature	℃	0～150	
13	Water Inlet Temperature of Plate Heat Exchanger	℃	0～40	Not for pool heat pump
14	Outlet Water Temperature of Titanium Heat Exchanger	℃	0～40	Not for pool heat pump
15	Step of Electronic Expansion Valve in Main Circuit	P	0～500	Number of pulses
16	Step of Electronic Expansion Valve in Auxiliary Circuit	P	0～500	Not for pool heat pump
17	IPM (Driver Module) Temperature	℃	0～150	Reserved (default value: -30)
18	Speed of DC Fan Motor	RPM	0～900	

5.2.6. Fault and Protection

When the fault or protection occurs, the corresponding codes flash in the timing area and the icon "" is displayed. After this status is eliminated, the codes and icon "" disappear.

List of Fault and Protection

Code	Description	Remark
E01	IPM (Driver Module) Protection	
E02	AC Voltage Over/Shortage Protection	Input voltage inspection
E03	AC Current Over High Protection	
E04	Gas Exhaust Temperature Over High Protection	
E05	Outside Coil Temperature Over High Protection	
E06	Compressor Drive Protection	

E07	Air Temperature Sensor Fault	
E08	Outside Coil Temperature Sensor Fault	
E09	Gas Exhaust Temperature Sensor Fault	
E10	Bus Voltage Over/Shortage Protection	Voltage protection after rectification
E11	Current Sensor Fault	
E12	Compressor Driver Communication Fault	
E13	DC Fan Motor Fault	
E14	Gas Suction Temperature Sensor Fault	
E15	Driver's EE Fault	
E16	Main Control Board's EE Fault	
E17	Low Pressure Protection	
E18	High Pressure Protection	
E19	IPM Temperature Over High Protection	
E20	Power Off Suddenly	Automatic power on after recovery
E21	Evaporation Temperature (T2) Over Low Protection	
E22	Communication Error between Wire Controller and Main Control Board	
E23	Phase-shortage Protection	
E24	Inlet Water Temperature Sensor Fault	
E25	Outlet Water Temperature Sensor Fault	
E26	Water Flow Switch Fault	
E27	Inadequate Water Flow Protection	
E28	Outlet Water Temperature Over High Protection in Heating Mode	
E29	Outlet Water Temperature Over Low Protection in Cooling Mode	
E30	Evaporation Temperature Sensor (T2) Fault	
E33	PFC Hardware F0 Error	Driver error
E34	PFC Software Over Current Protection	Driver error

E35	Compressor Step-lost	
E37	Compressor Startup Failure	

5.2.7. Clock Setting

a. The way to enter clock setting interface: Press the key “  ” and then hold for 3 seconds till the number in hour part of timing area flashes. Then the clock setting interface is entered.

b. The way to set the clock: When the number in hour area is flashing, it means it is adjustable. Press the key “  ” or “  ” to adjust Hour; Then press the key “  ” to confirm and switch to Minute part. Repeat above steps to set the minute. After finishing setting, press the key “  ” to save it and then press the key “  ” to exit the setting interface.

5.2.8. Power ON/OFF Timer Setting

a. Users can set up two groups of timers to automatically turn ON or OFF the heat pump. If the timers of power ON and OFF are set to be the same, the setting will become invalid.

b. Power ON/OFF Timer Setting Method

Press the keys “  ” and “  ” and then hold for 3 seconds till the icons “  ” and “ 1 ” are displayed on the screen. When the icon “ 1 ” is flashing, press the key “  ” or “  ” to select group NO.1 or group NO.2 of timer, and then press the key “  ” to confirm.

When the number in Hour area is flashing and the icon “ ON ” is displayed, press the key “  ” or “  ” to set the hour of timing ON of group NO.1 (or NO.2). Then press the key “  ” to confirm and switch to set the minute while the number in Minute area is flashing. Repeat the above steps and then press the key “  ” to confirm.

c. After finishing the setting of the group NO.1 (or NO.2) timing ON, it will automatically switch to the timing OFF setting interface. When the icons "1"(or "2") and "OFF" are displayed, press the key "" or "" to set the hour of timing OFF of group NO.1 (or NO.2). Then press the key "" to confirm and switch to set the minute while the number in Minute area is flashing. Repeat the above steps and then press the key "" to confirm.

d. The way to exit the interface of timer ON/OFF setting: Short press the key "" during setting, the setting interface will be exited and the current setting will no longer be saved.

e. The way to cancel timer ON/OFF setting: When entering timer group NO.1 (or NO.2) setting interface, press the key "" and then hold for 3 seconds to cancel the current timer group (NO.1 or NO.2).

5.3. Connection and Operation of APP

5.3.1. APP Download

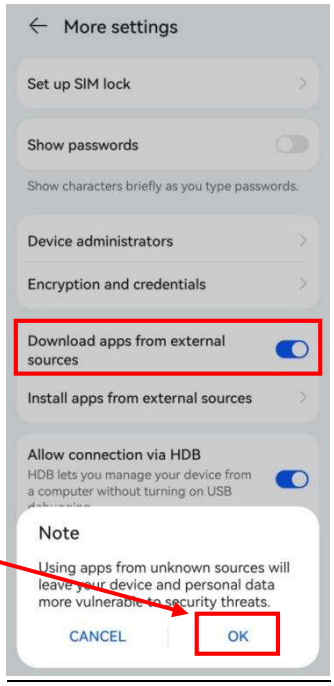
Search “Smart Life” in app store of your mobile phone and then download it.

App Icon	iOS system download it from:	Android system download it from:
Smart Life	Download on the App Store	GET IT ON Google Play

Or you can download the app from scanning the following QR code.

Note: For Android mobiles, it is necessary to activate the option of "Download apps from external sources".

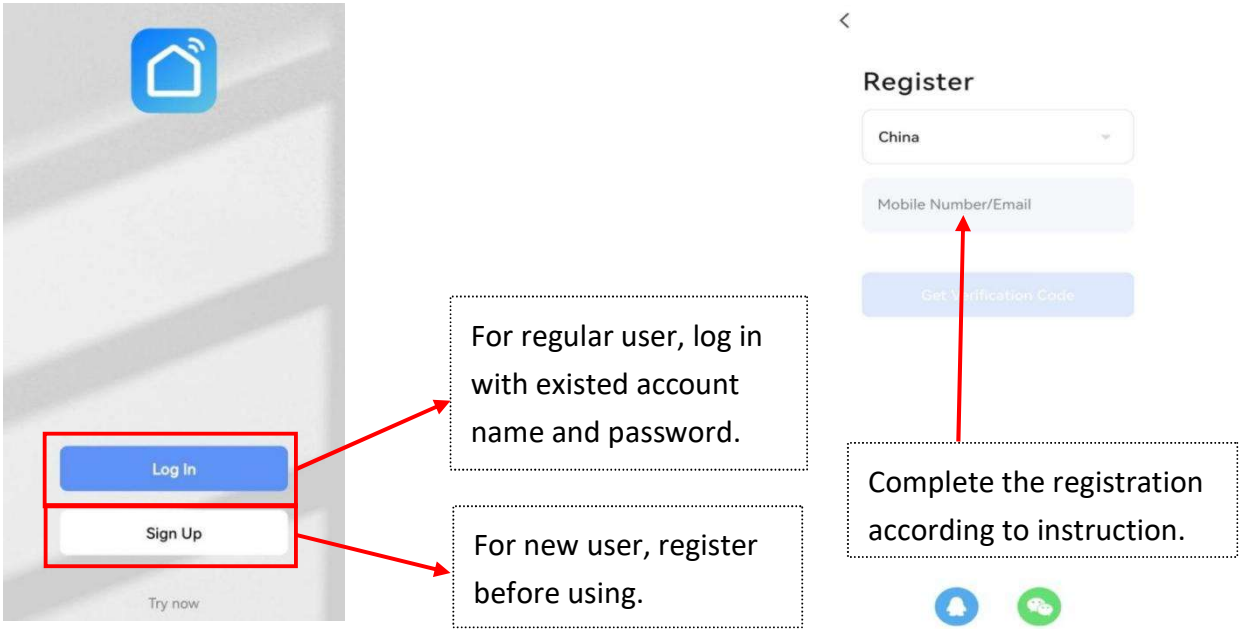
Open the APP and activate the authorization of its positioning.



5.3.2. User Registration

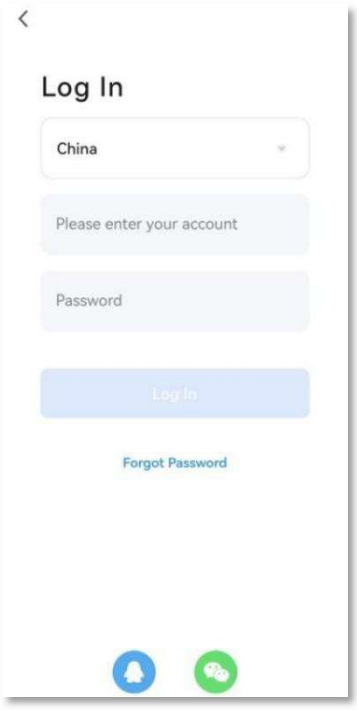
(1). For new user, tap the following “Sign Up” button to register a new account.

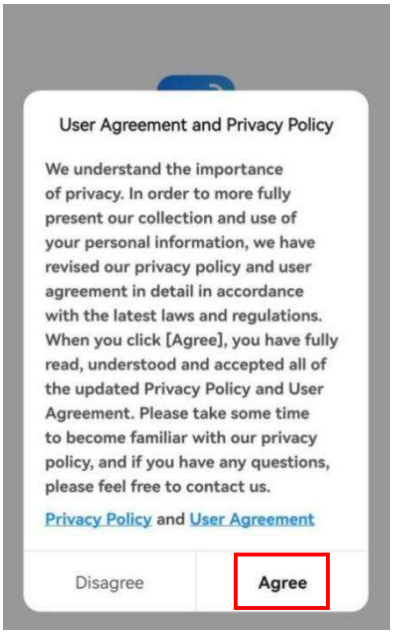
(2). Follow the instruction to finish your registration.



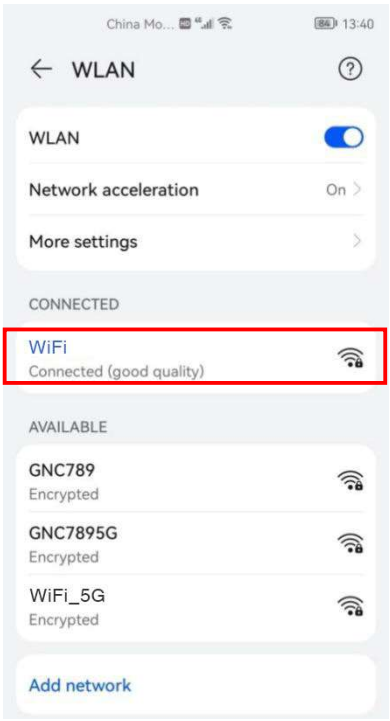
5.3.3. User Login

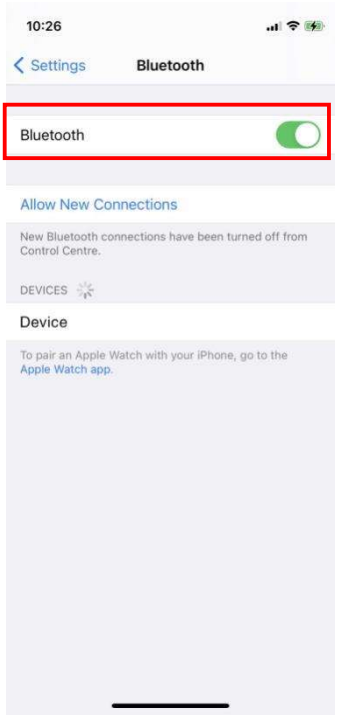
Select your location, enter the account name and password, and then agree the Privacy Policy.



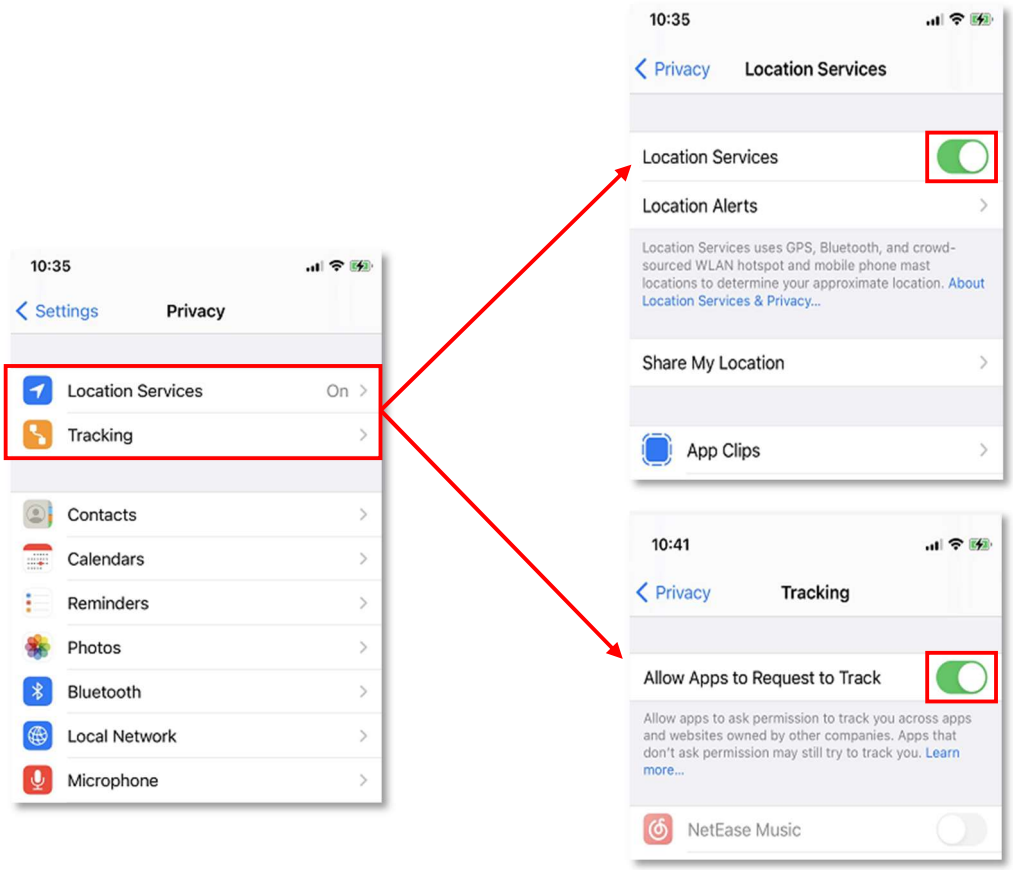


Connect your mobile phone to the accessible Wi-Fi (**the one that the heat pump device is connected to**). Additionally, keep Bluetooth of your mobile phone on during this process.



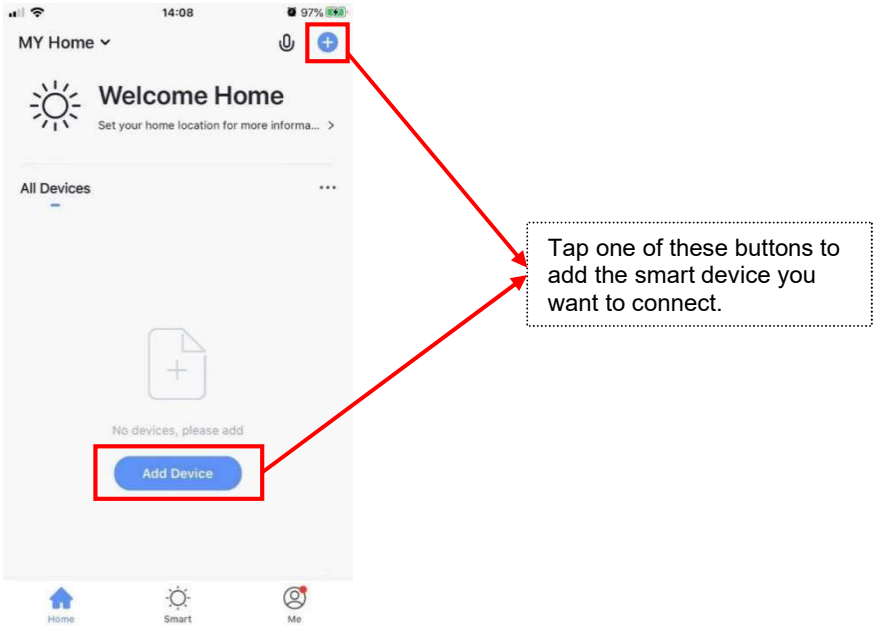


Make sure your Location Services on your smartphone are kept "On" and also enable “Allow Apps to Request to Track”.

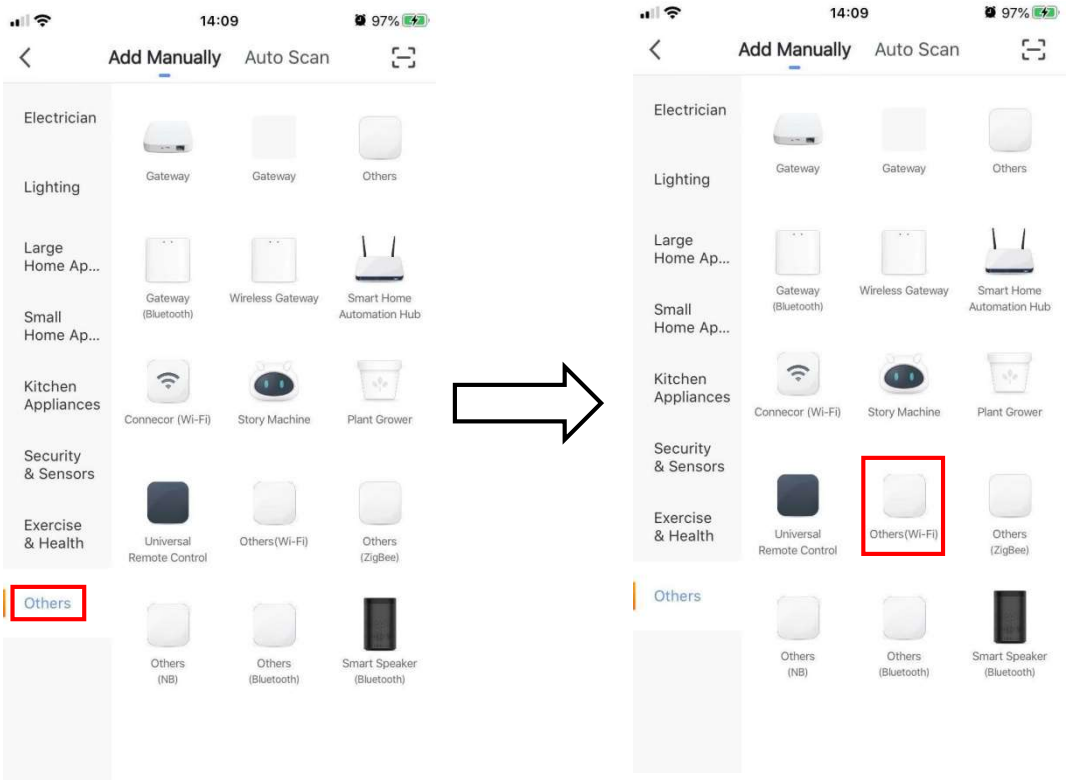


5.3.4. Add Device

Tap the button “+”at the right upper corner, or tap button “Add device” to add the smart device you want to connect.



Select “Others” to enter the “Add Manually” interface. And then select “Others (Wi-Fi)”.



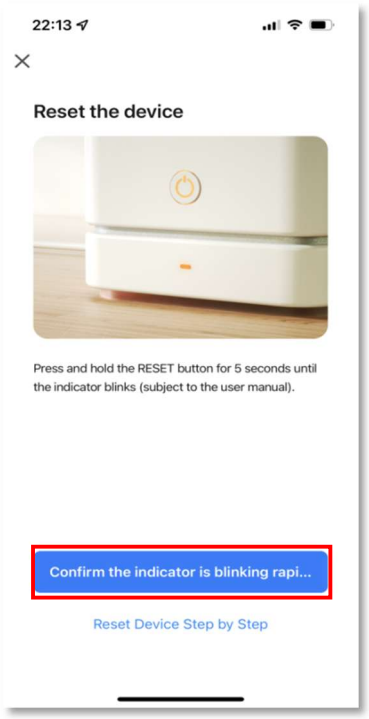
Then enter the account and password of the Wi-Fi (the same Wi-Fi source as the heat pump device connects) in following new interface:

After entering the above information, tap the button “Next”.



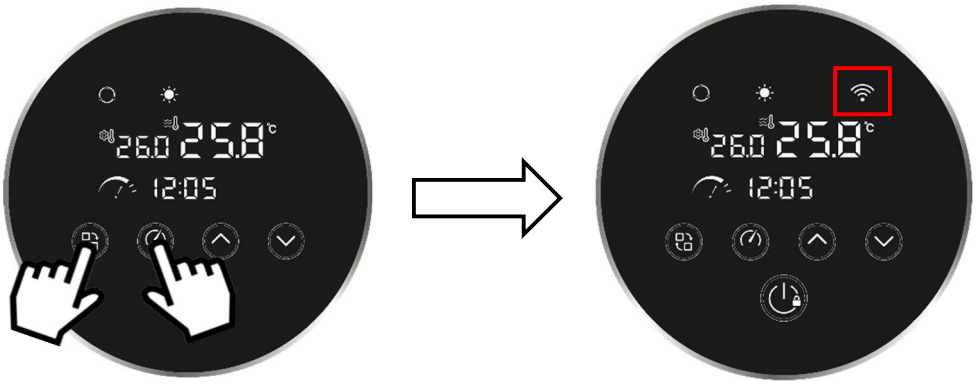
5.3.5. Connection

When you enter this interface, tap button below.



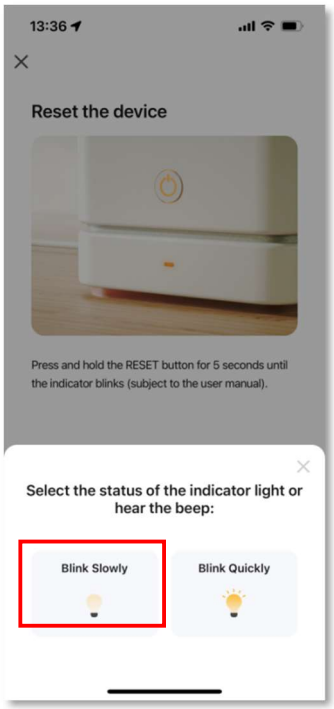
Then, operate the wire controller of heat pump according to the following instruction:

Press these two buttons  and  at the same time until the icon  on the right upper corner starts to flash.



<u>Scene 1:</u>

If the icon  flashes <u>slowly</u>, tap the following button "Blink Slowly" on your mobile phone.



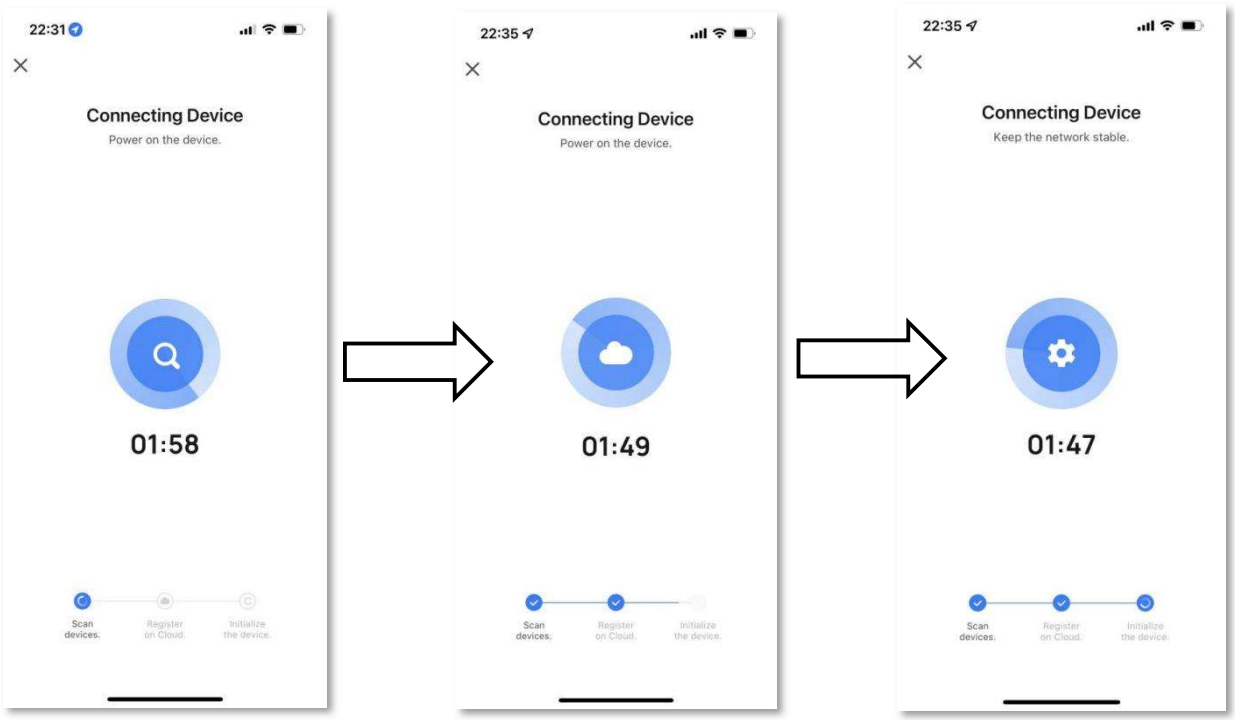
And then tap the following button in the new interface.



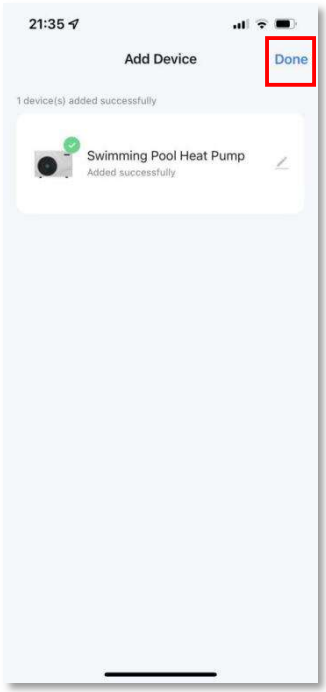
Select the WLAN source of “SmartLife-XXXX” (“XXXX” will be random combination of letters and numbers). And then get back to the Smart Life app.



When the following page appears, it indicates that your mobile phone is scanning for the hotspot signal from the wire controller of the heat pump.

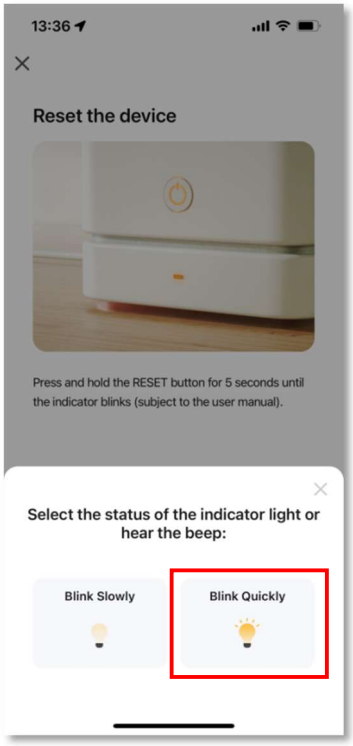


Upon the appearance of this page, it implies that the connection has been established successfully. Subsequently, tap on the button "Done" to access the Wi-Fi control interface.

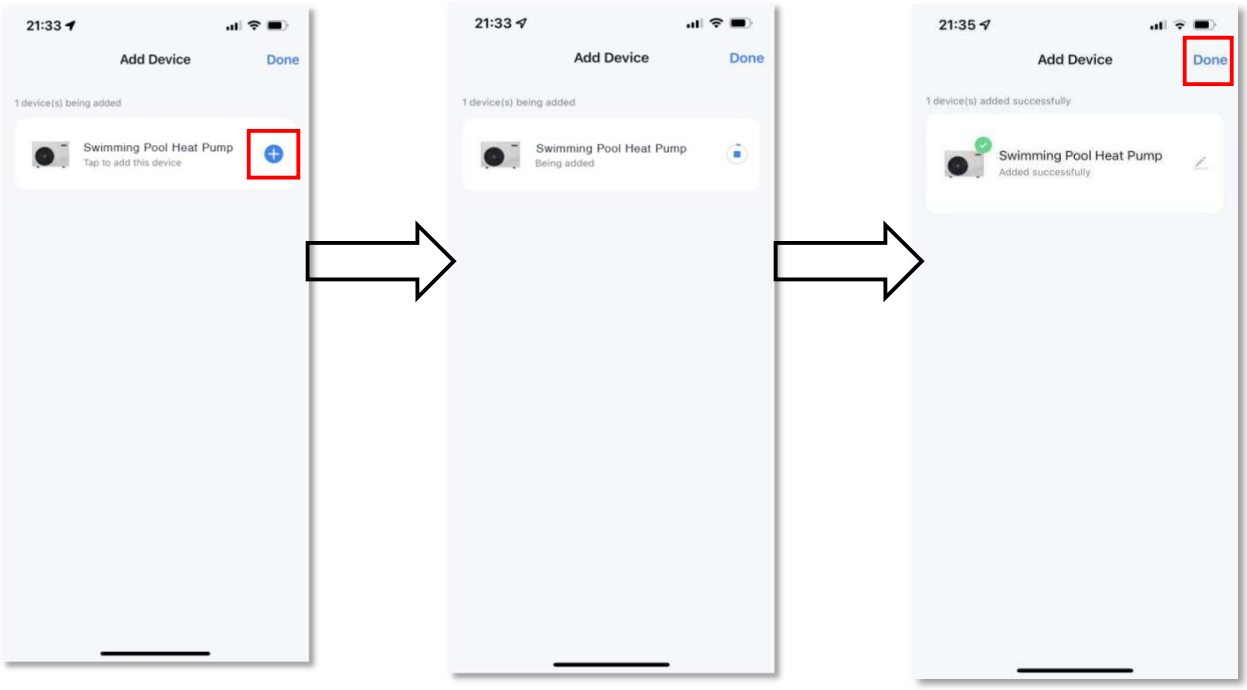


Scene 2:

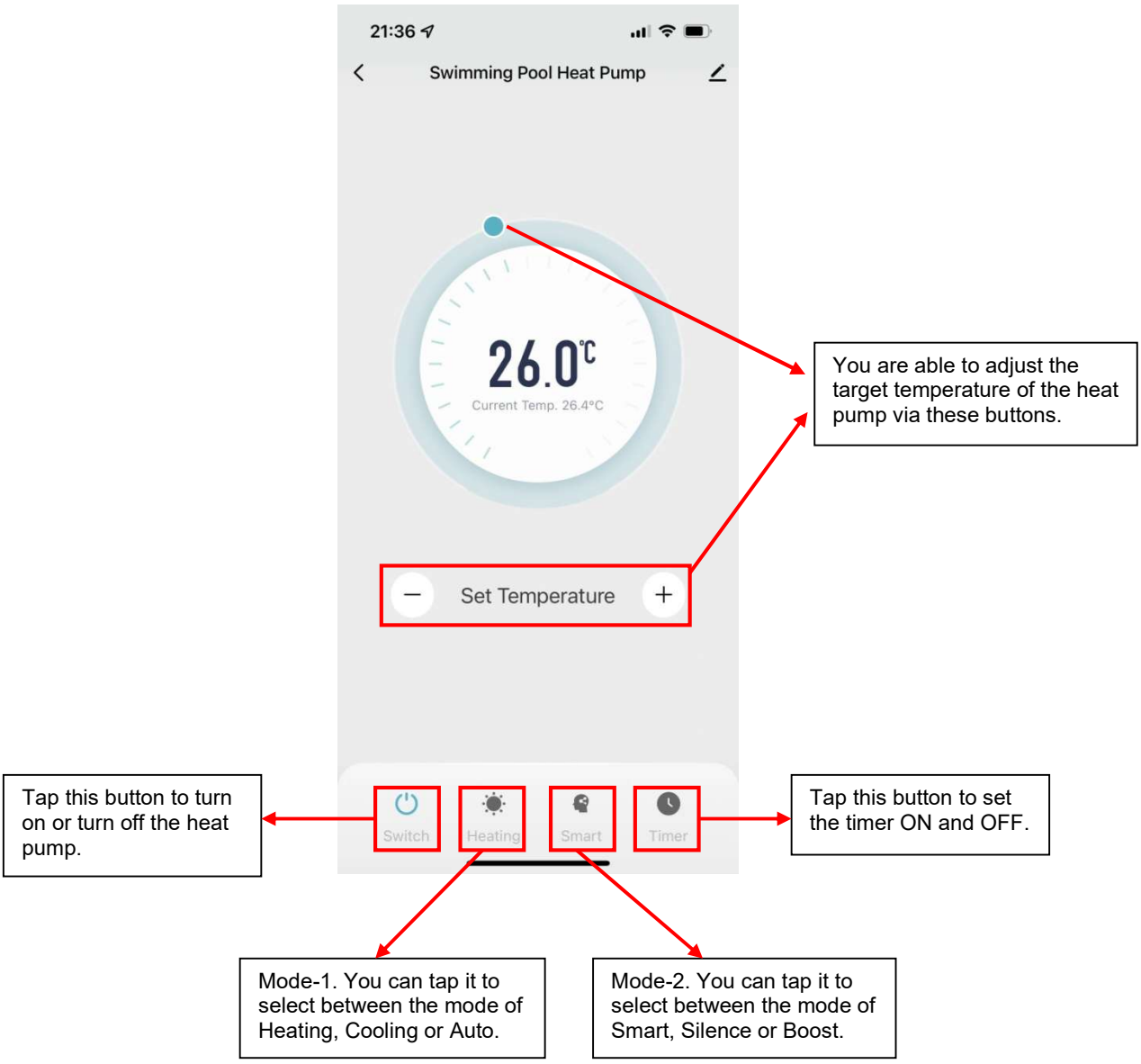
If the icon  flashes rapidly, tap the following " Blink Quickly" button on your mobile phone.



Then tap the following button "+" in the new interface. After the connection is successful, tap on the button "Done" to access the Wi-Fi control interface.

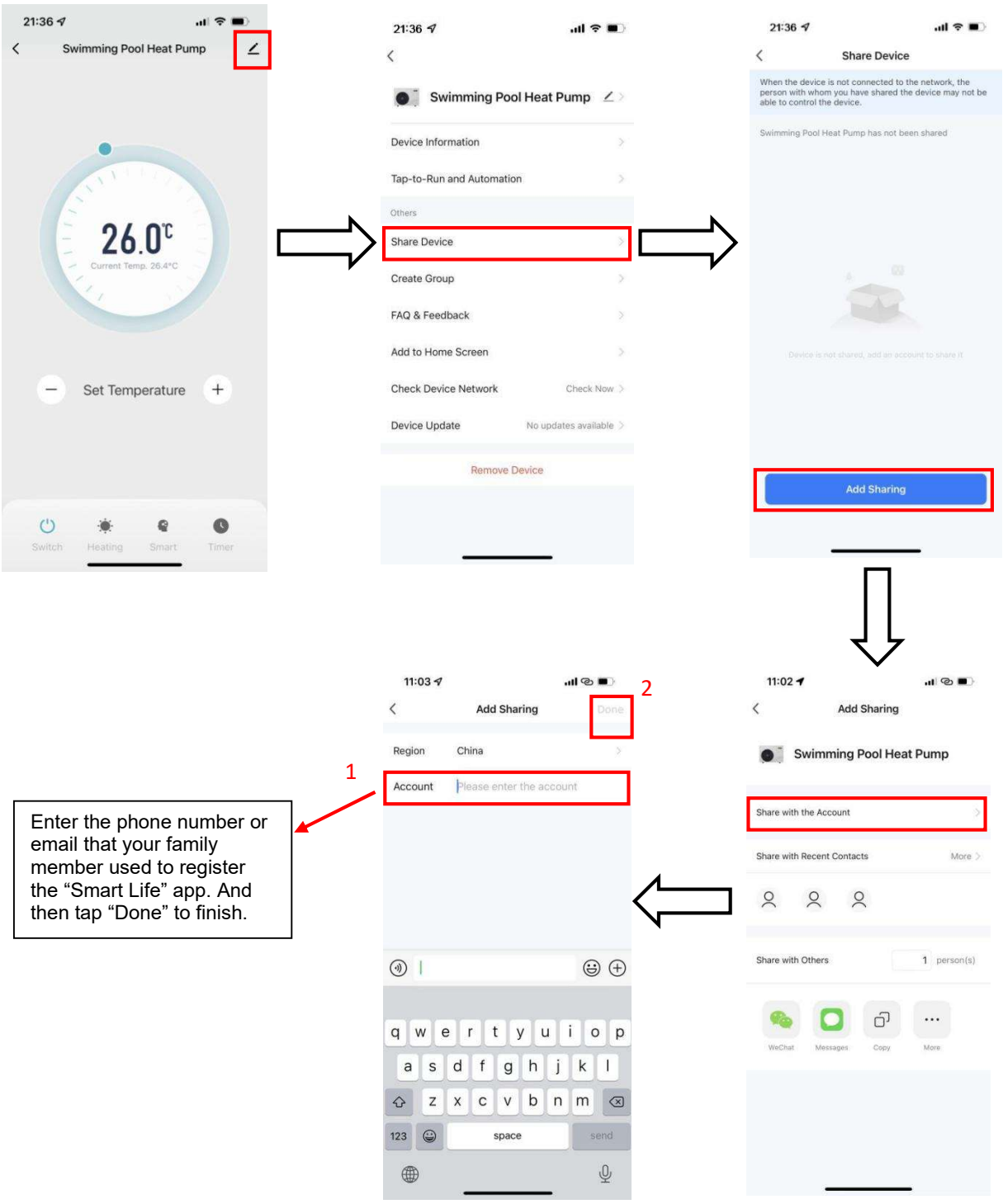


5.3.6. Wi-Fi Control Interface



5.3.7. Share Device to Your Family Members

After the connection is established, if other family members wish to control the heat pump as well, they are required to register for "Smart Life" initially. Subsequently, the administrator can follow the steps below to share the device:



Remark: The app is subject to updates without notice.

6. MAINTENANCE

WARNING: Before maintaining the equipment, make sure the power supply is turned off.

6.1. Cleaning

a. Do not use a hard brush to scrub the surface of the machine.

b. Use household cleaners or water to clean the machine. Do not use gasoline, thinner or any similar fuel.

c. If there is garbage attached to the air inlet or outlet, it needs to be cleaned up in time.

d. Clean the finned-tube heat exchanger of the heat pump by using a vacuum cleaner or soft brush.

6.2. Inspection

The following checks should be performed regularly:

a. Clean the pool and filter system to avoid dirty or clogged filters that could damage the unit.

b. The water supply system should be checked to avoid air entering the water system and low water flow, which would reduce the performance and reliability of the unit.

c. Check and confirm that there is enough water flow before starting the unit again.

The following operations must be performed by qualified personnel at least once a year:

a. Check for refrigerant leaks.

b. Check the connections and integrity of the wires.

c. Check that the machine is still grounded.

d. Check if there is any abnormal sound when the device is running

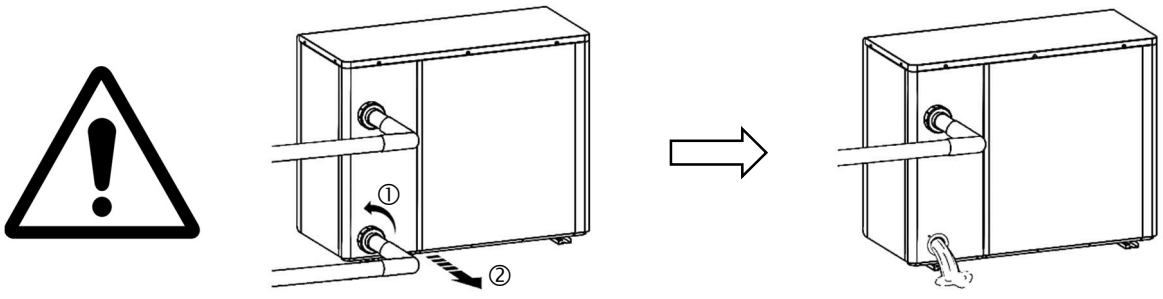
e. Check for loose bolts and screws.

6.3. Winterizing

When not swimming in winter:

a. Cut off the power supply to prevent damage to the equipment.

b. Drain the water in the machine: Unscrew the water joint of the water inlet pipe and let the water flow out. (The water in the machine freezing in winter may damage the titanium heat exchanger.)



Keep your heat pump covered with a winter cover when not in use.

6.4. Warranty

Our product range comes with a limited 3-year warranty covering any component failure or defective workmanship from the installation date a further 5 years on the compressor and 15 years on the titanium components in the heat exchanger.

GENERAL

1.1 This warranty is provided by Austek pool heaters Pty Ltd.
1.2 For the purposes of this document, the Austek heat pump swimming pool heater is referred to as the "unit."
1.3 Austek offers a trained and qualified national service network to repair or replace components at the location of the heat pump, subject to the terms of this warranty. Austek Service can also provide preventative maintenance and operational advice; however, it cannot give site-specific advice and would be recommended to speak to the original installer or dealer.
1.4 For more details about this warranty, please visit www.Austekpoolheaters.com.au
1.5 If a subsequent version of this warranty is published, the terms of that warranty will apply to units manufactured after the date specified in the subsequent version.
1.6 The application of this warranty is contingent upon payment for the unit being made in accordance with the Company's Standard Terms and Conditions.

1. **TERMS OF THE AUSTEK WARRANTY AND EXCLUSIONS**

   2.1 The warranty period commences from the end user's date of purchase.
   2.2 The decision to repair or replace a faulty component is at Austek's sole discretion.
   2.3 If you require a call-out and the fault is not covered by the Austek warranty, you are responsible for our standard call-out charge. If you wish to have the relevant component repaired or replaced by Austek, that service will be at your cost.
   2.4 Where a failed component is replaced under this warranty, the balance of the original warranty period remains effective. The replacement does not carry a new Austek warranty.
   2.5 If the unit is installed in a position that does not allow safe or ready access, the cost of that access, including the cost of additional materials handling and/or safety equipment, will be the owner's responsibility. This includes the cost of dismantling or removing cupboards, doors, or walls, and any special equipment to bring the pool heater to floor or ground level or to a serviceable position.
   2.6 This warranty only applies to the original and genuine Austek unit in its original installed location and any genuine Austek replacement parts.
   2.7 The Austek warranty does not cover faults resulting from:
   a) Accidental damage to the unit or any component (e.g., acts of God such as floods, storms, fires, lightning strikes, and third-party acts or omissions).
   b) Misuse or abnormal use of the unit.
   c) Installation not in accordance with the Owner's Guide and Installation Instructions or with relevant statutory and local requirements in the State or Territory where the unit is installed.
   d) Connection of the unit in any way that does not comply with the guidelines outlined in the Owner's Guide and Installation Instructions.
   e) Repairs, attempts to repair, or modifications to the unit by anyone other than Austek Service or an Austek Accredited Service Agent.
   f) Faulty plumbing or faulty power supply.

g) Failure to maintain the unit in accordance with the Owner's Guide and Installation Instructions.
h) Transport damage where freight is arranged by others.
i) Fair wear and tear from adverse conditions (e.g., corrosion).
j) Cosmetic defects.

2.8 Subject to any statutory provisions to the contrary, this warranty excludes all claims for damage to furniture, carpet, walls, foundations, or any other consequential loss either directly or indirectly due to leakage from the unit, or from fittings and/or pipe work of metal, plastic, or other materials caused by water temperature, workmanship, or other modes of failure.
2.9 This warranty is void if the unit is installed by an installer not approved by Austek or by persons who are not qualified to do so in the opinion of Austek.
2.10 The warranty on the unit's internal heat exchanger covers failure due to water imbalance. It does not cover failure caused by hydraulic damage, such as excess pressure. The extended parts warranty covers the cost of a replacement heat exchanger but excludes labour or associated costs or the cost of any subsequent damage.
2.11 This warranty does not cover the replacement or replenishment of refrigerant within the unit.
2.12 It is a condition of this warranty that the customer has correctly and precisely stipulated the capacity and performance required of the System and the conditions under which the System shall operate. Any performance figures given in the Quotation or mentioned or referred to before the contract are expectations based on tests but are not guaranteed. All such performance figures, whether analytical or financial, are estimates only, and the customer must independently satisfy themselves of their accuracy and completeness. Failure to perform as specified should be notified to us in writing, and we shall be given every reasonable opportunity to investigate the cause of the failure and recommend remedial action. If it is clearly established that the fault is due to an error in calculation by us or failure by our employees to carry out instructions, we will rectify the fault at no cost to the customer within a reasonable time period.
2.13 This warranty does not cover damage to the unit or its components caused by the entry, presence or activity of animals, insects, reptiles, rodents or other foreign objects, including damage to electrical components or circuit boards caused by short circuits, contamination, nesting, chewing or obstruction.

3. **WHAT IS COVERED BY THE AUSTEK WARRANTY**

   3.1 Austek will repair or replace a faulty component of your unit if it fails to operate in accordance with its specifications in the opinion of Austek.

4. **ENTITLEMENT TO MAKE A CLAIM UNDER THIS WARRANTY**

   4.1 To make a claim under this warranty, you need to:
   a) Be the owner of the unit or have the consent of the owner to act on their behalf.
   b) Contact Austek Service without undue delay after detection of the defect and within the applicable warranty period.
   4.2 You are not entitled to make a claim under this warranty if your unit:
   a) Does not have its original serial numbers or rating labels.
   b) Is not installed in Australia.

5. **HOW TO MAKE A CLAIM UNDER THIS WARRANTY**

   5.1 To make a claim under this warranty:
   a) Contact Austek at info@austekpoolheaters.com.au and provide the owner's details, the address of the unit, a contact number, and the date of installation of the heater, or if that's unavailable, the date of manufacture, model, and serial number (from the rating label on the heater).
   b) Austek will arrange for the heater to be tested and assessed on-site.

c) If Austek determines that you have a valid warranty claim, Austek will repair or replace the heater in accordance with this warranty.
5.2 Any expenses incurred in making a claim under this warranty will be borne by you.

6. **THE AUSTRALIAN CONSUMER LAW**
6.1 Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.
6.2 The Austek warranty is in addition to any rights and remedies that you may have under the Australian Consumer Law.

Making a Claim

The following steps should be taken when making a warranty claim with Austek Pty Ltd.

1. Owners experiencing issues with their system are to contact Austek Pty Ltd service department's online portal and provide the requested information.
2. A service agent will review the provided information and will contact you on the provided phone number to try and solve the issue.
3. If the issue cannot be dealt with over the phone, owners will be supplied with details of a service agent in their area.
4. Owners will need to contact and deal with service agents directly in relation to the booking and payments for works related to the service or repair of their Austek Pool Heat Pump.
5. Owners can claim reimbursement for costs of works covered under the product warranty when completed by an approved Austek Service Agent. When making a claim, owners will need to provide the following documents:
    - Proof that you are the original system owner – original invoice showing owner name and property address
    - Copy of the invoice from an approved Austek-approved service agent
    - For a major defect, a copy of the report for major defects from an approved Austek Service Agent

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Please complete all the details below from the installer and store this card along with the purchase docket in a safe place.
Please take 2 or 3 photos of the installation and with this information and send them to info@austekpoolheaters.com.au

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Installation Details

- Make .....
- Model .....

- Serial .....
- Commissioning .....
- By-pass valve fitted? .....
- Temperature difference .....
- Notes .....
- Supplied by .....
- Date of Purchase .....
- Installed by .....
- Installer No (if applicable) .....
- Date of Install .....
- Owner's full name .....
- Address of Premises .....
- Telephone number .....

AUSTEK POOL HEATERS

Austek Pool Heaters Pty Limited

info@austekpoolheaters.com.au

6/14 Burns rd Heathcote nsw 2233

* If the instruction manual is damaged or lost, please check it via www.austekpoolheaters.com.au