



Installation & User Manual



INVERTER HEAT PUMP



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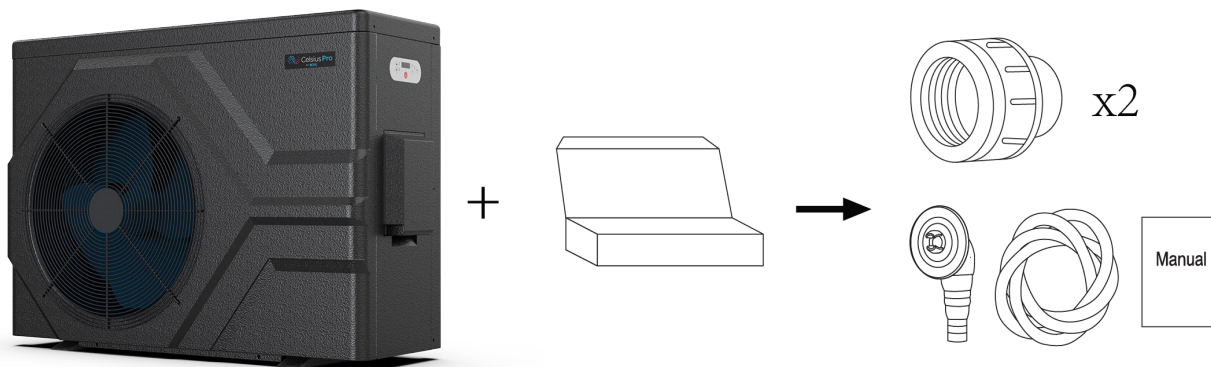
FOR INSTALLERS AND PROFESSIONALS

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1. GENERAL INFORMATION

1.1 CONTENTS

After unpacking, please check that you have all the following components.



1.2 OPERATING CONDITIONS AND RANGE

Items		Range
Operating Range	Air Temperature	10°C - 43°C
Temperature Setting	Heating	12°C - 40°C

The heat pump will have ideal performance in the operation range Air 15°C ~ 25°C

1.3 ADVANTAGES OF DIFFERENT MODES

The heat pump has two modes: Smart and Silence.
They have different advantages under different conditions

Mode	Recommendation	Advantages
	Smart Mode As standard	<ul style="list-style-type: none">• Heating capacity: 20% to 100% capacity• Intelligent optimization• Fast heating
	Silence Mode Use at Night	<ul style="list-style-type: none">• Heating capacity: 20% to 80% capacity• Sound level: 3 dB(A) lower than Smart mode.

1.4 KIND REMINDER

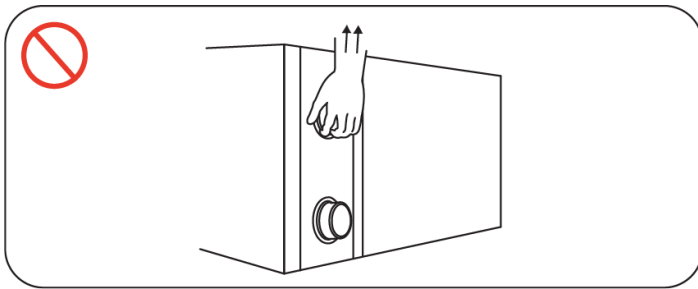


ATTENTION

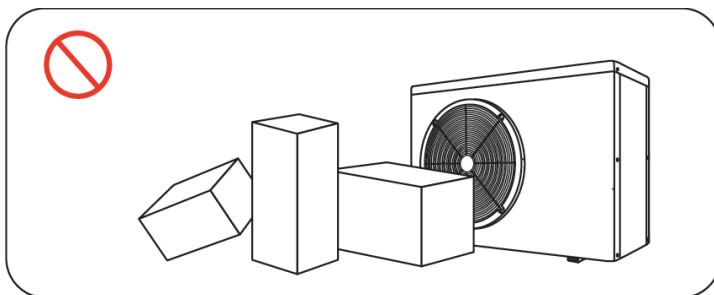
This heat pump has power-off memory function. When the power is recovered, the heat pump will restart automatically.

1.4.1 The heat pump can only be used with pool water. It can NEVER be used to heat or cool other flammable or turbid liquid.

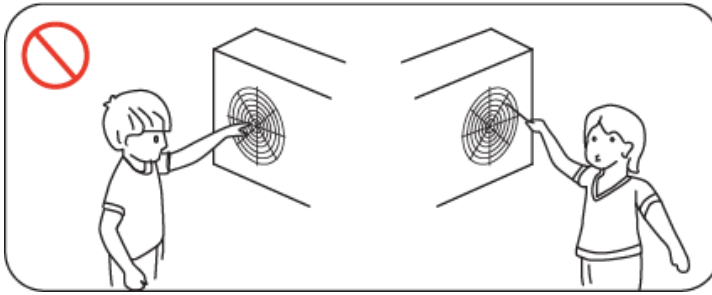
1.4.2 When moving the heat pump, do not lift the water union. This will damage the titanium heat exchanger.



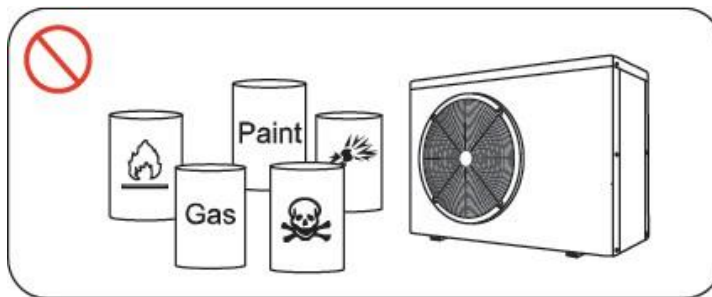
1.4.3 Do not obstruct the air inlet or outlet of the heat pump.



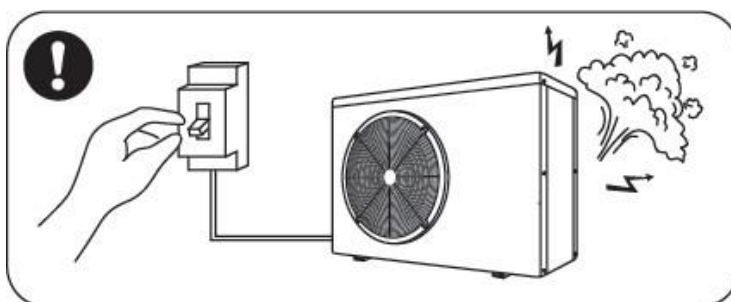
- 1.44 Do not obstruct or insert any objects into inlet or outlet of the heat pump. The efficiency may be reduced or even stopped.



- 1.45 To avoid fire hazards, do not store or use combustible gas or liquids such as thinners, paints or fuels near the heat pump.



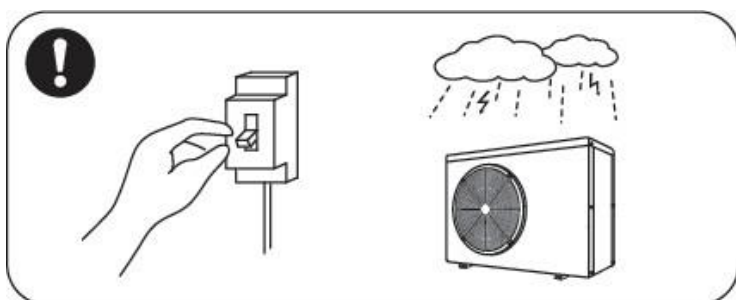
- 1.46 If you detect any abnormal noises, odours, smoke or leaks from the heat pump, immediately switch off the power supply and contact your local dealer. Do not attempt to repair the heat pump yourself.



1.4.7 The main power supply switch should be out of the reach of children.



1.4.8 Please disconnect the heat pump from the power supply during electrical storms.



1.4.9 Please note that following codes **are not failures**.

	Codes
No water flow	E3
Anti-freezing reminder	Ed
Out of the operating range	Eb
Insufficient water flow or pump blocked	E6
Power abnormal	E5

2. OPERATIONS

2.1 NOTICE BEFORE USING

- 1 To optimise the life-cycle of the system, the user is advised to start the water pump before the heat pump, and turn off the heat pump before the water pump.
- 2 Check for any water leakage in connecting pipework, then turn on the power supply, press the ON/OFF button of the heat pump, and set desired temperature.








2.2 OPERATION INSTRUCTIONS

Symbol	Designation	Operation
	Power ON/OFF	1. Press to power on or off the heat pump 2. Wifi Setting
	Mode	Press to select Smart/Silence mode Smart mode:100%-20% capacity Silence mode:80%-20% capacity
	Up/Down	Press to set desired water temperature
	Compressor	When the light is on, the compressor is running





Note:

- You may set the desired water temperature from 12 to 40°C.
- The center of the screen shows the inlet pool temperature, when the up and down keys are pressed, the digital flashing displays the set temperature.
- After you turn on the heat pump, the fan will start to run in 3 minutes. In another 30 seconds, the compressor will start to run.
- During heating, the icon will display.




2.2.1 Status on display

Symbol	Designation	Operation
	WIFI Connection	Red light <ul style="list-style-type: none">Fast flashing indicates that the network is being distributedAlways on indicates that the WIFI connection is successfulSlow flashing indicates that the configuration record is being cleared
	Standard mode	Red light, when the light is always on, it means the operation is in normal mode
	Silence mode	Red light, when the light is always on, it means the operation is in silence mode
	Heating mode/defrosting	<ul style="list-style-type: none">When the light is always on, it means that the machine is running in heating modeWhen the light is flashing, it means the machine is in defrosting state
	Compressor operation	Green light, the light is always on when the compress is running

1 Mode selections

- A**  will be light as standard when you turn on the heat pump.
- B** Press the  button to enter the Silence mode, the  will be lit up.
- C** Press the  button again to exit and enter the SMART mode.

2 Defrosting

- A** Automatic Defrost
When the machine is automatically defrosted,  will flash, and after the defrost is completed, it automatically jumps to the operation mode before defrosting.
- B** Compulsory Defrost
 - When the heat pump is heating and the compressor is working continuously for 10 minutes, press both  and  buttons for 5 seconds to start compulsory defrosting. (Note: the interval between compulsory defrosting should be more than 30 minutes.)
 - The heating light will be twinkling when heat pump is in compulsory or auto defrosting.
 - The running process and ending of compulsory defrosting are the same as auto-defrosting.

3 Wifi Setting

Please refer to page 22

2.3 MAINTENANCE AND WINTERISING

2.3.1 Maintenance



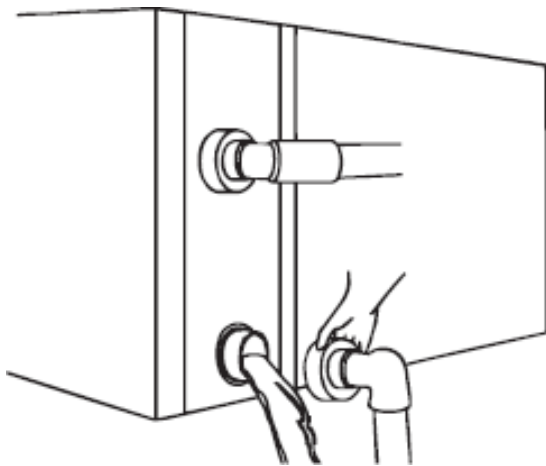
ATTENTION

Please don't forget to cut off power supply to the heat pump

- 1 Regularly clean the evaporator with household detergents or clean water. NEVER use gasoline, thinners or any similar fuel.
- 2 Check bolts, cables and connections regularly.
- 3 Every three months spray a surface insecticide on the surfaces around the unit to prevent and insect ingress.

2.3.2 Winterising - Sub Zero Climates

In climates where the winter season reaches sub-zero temperatures, please disconnect from power supply and drain water out of the heat pump. When using the heat pump under 2°C, make sure there is always water flow.



IMPORTANT

Unscrew the water union of inlet pipe to let the water flow out.

When the water in machine freezes in winter season, the titanium heat exchanger may be damaged.

3. TECHNICAL DATA OVERVIEW

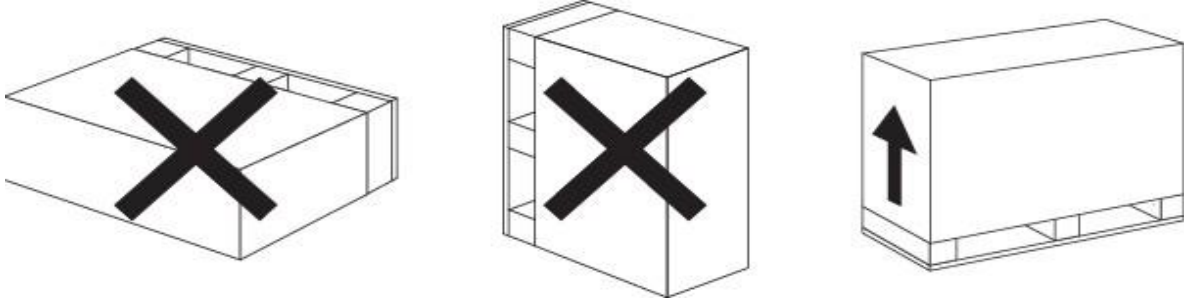
Description	UoM	PR09HP	PR13HP	PR17HP	PR21HP
*Maximum Pool Volume (m ³) - Cool Climate	m ³	15	30	40	50
*Maximum Pool Volume (m ³) - Warm Climate	m ³	18	40	50	60
Operating air temperature		0~43°C			
Performance Condition: Air 26°C, Water 26°C, Humidity 80%					
Heating capacity	kW	9.0	12.5	16.0	20.0
COP		6.8~10.6	7.0~11.6	7.1~11.2	6.5~11.8
COP at 50% capacity		9.6	10.1	9.7	10.2
Performance Condition: Air 15°C, Water 26°C, Humidity 70%					
Heating capacity	kW	6.3	8.5	11.0	14.0
COP		4.5~6.1	4.8~6.3	4.7~6.4	4.6~6.5
COP at 50% capacity		5.7	6.1	5.9	6.1
Sound pressure at 1m	dBA	40.6~52.5	42.9~53.0	45.2~56.3	45.3~57.1
Sound pressure of 50% capacity at 1m	dBA	45.8	48.5	48.7	49.6
Power supply		230V/1 Ph/50Hz			
Fuse (Circuit Breaker)	amps	10	15	20	25
Advised water flux	litre/min	50~66	66~100	108~100	133~166
Fittings (Australian)	mm	50mm			
Refrigerant (Ozone Friendly)		R32	R32	R32	R32
Net Dimension	LxWxH	872×349×654	872×349×654	962×349×654	962×349×754
Net weight	kg	46	49	60	68
Compressor (Twin Rotary)		Twin Rotary GMCCDC Inverter			
Heat exchanger		Spiral titanium tube in PVC			
Casing		ABS Plastic			

*The advised sizing is based on the pool being used for seasonal swimming with the use of a pool cover

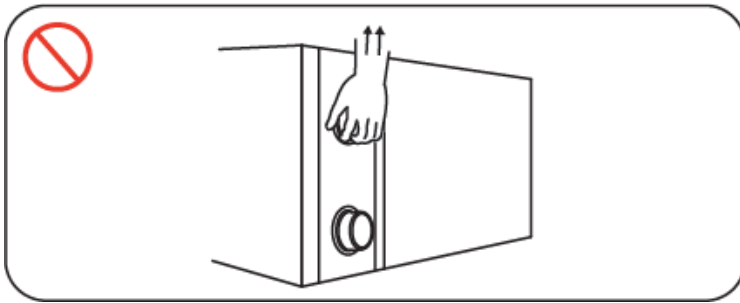
- 1 The values indicated are valid under ideal conditions: Pool covered with an isothermal cover.
- 2 Related parameters are subject to adjustment periodically for technical improvement without further notice. For details please refer to nameplate.

4. TRANSPORTATION

- 4.1 When storing or moving the heat pump, please ensure the unit remains in an upright position at all times.



- 4.2 When moving the heat pump, do not lift the water union. This will damage the titanium heat exchanger.



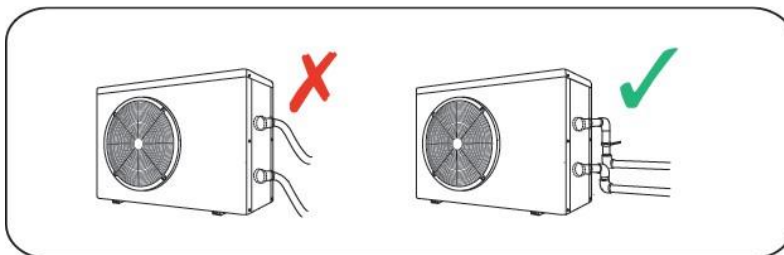
5. INSTALLATION AND MAINTENANCE



ATTENTION

It is strongly advised that the heat pump is installed by a professional. Unqualified installations may result in damage to the heat pump and/or safety risks to the user.

5.1 NOTICE BEFORE INSTALLATION



- 5.1.1 Plumbing connections must be made with solid PVC pipe. Usage of flexible PVC pipe is not recommended.

5.2 INSTALLATION INSTRUCTIONS

5.2.1 Location and size



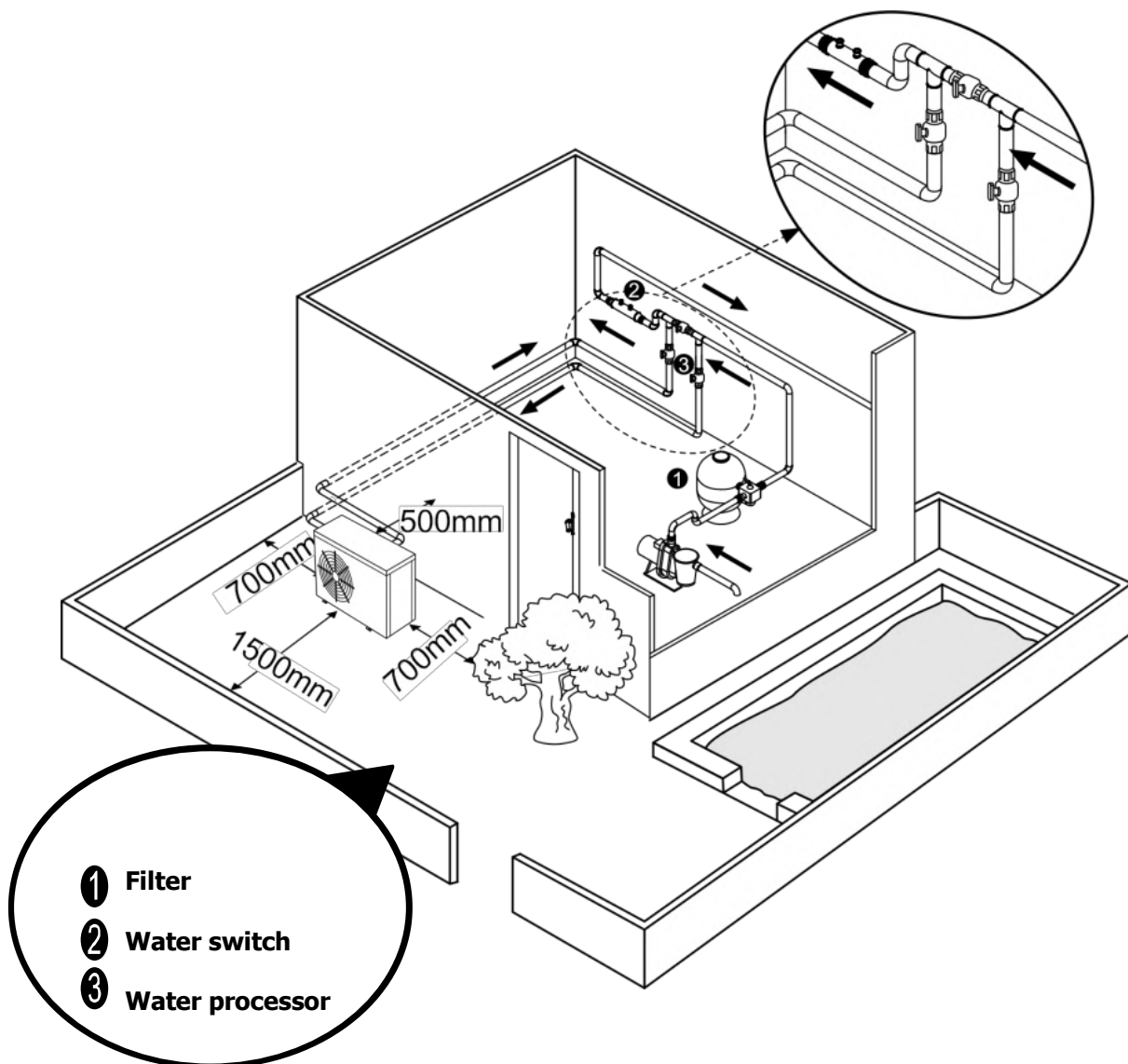
ATTENTION

The heat pump should be installed in a place with good ventilation.

The heat pump is usually installed within a perimeter area extending 7.5m from the swimming pool. The greater the distance from the pool, the greater the heat loss in the pipes. As the pipes are mostly underground, the heat loss is low for distances up to 30m (15m from and to the heat pump; 30m in total) unless the ground is wet or the groundwater level is high. A rough estimate of the heat loss per 30m is 0.6 kWh (2,000 BTU) for every 5°C difference between the water temperature in the pool and the temperature of the soil surrounding the pipe. This increases the operating time by 3% to 5%.

Do not obstruct the air inlet or outlet of the heat pump. The efficiency may be reduced or even stopped.

SIDE DISCHARGE



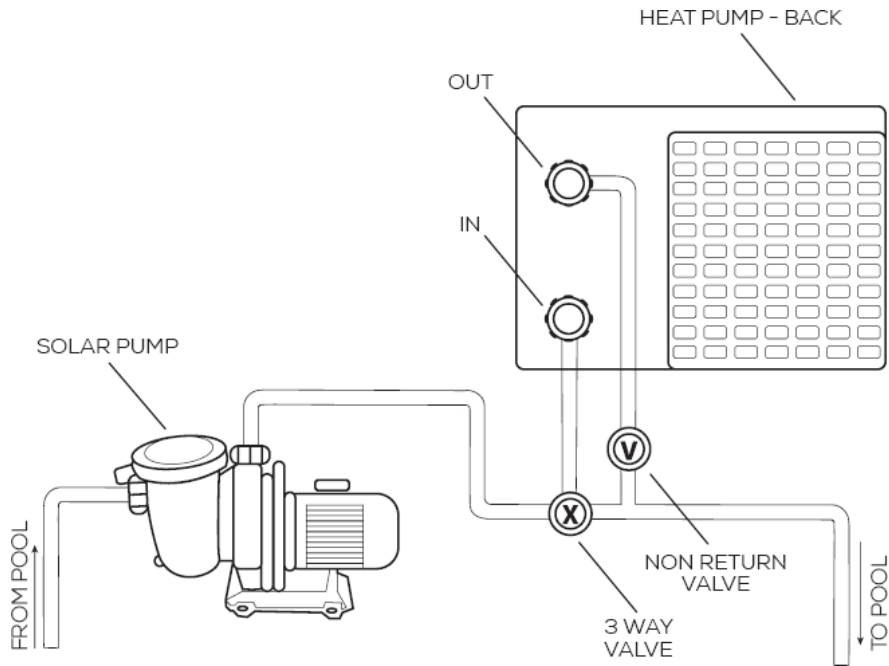
CHECK VALVE INSTALLATION

AUTOMATIC DOSING

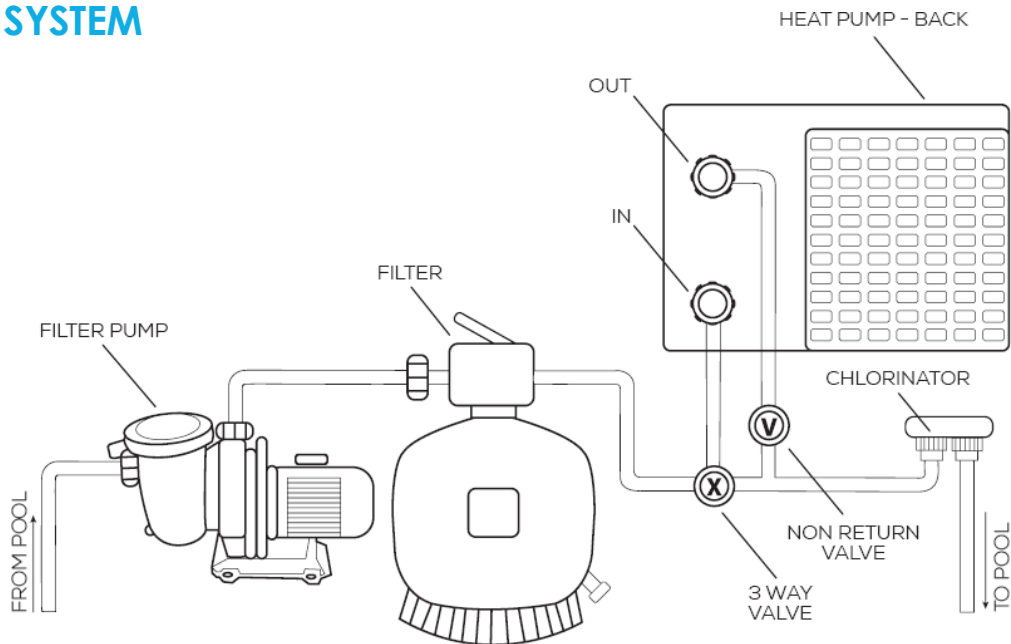


Sanitation and automatic dosing systems must be plumbed after the heat pump. A check valve must be installed between the sanitation/automatic dosing system and the heat pump to prevent chemicals returning to the heat pump. Failure to observe this instruction will void the warranty.

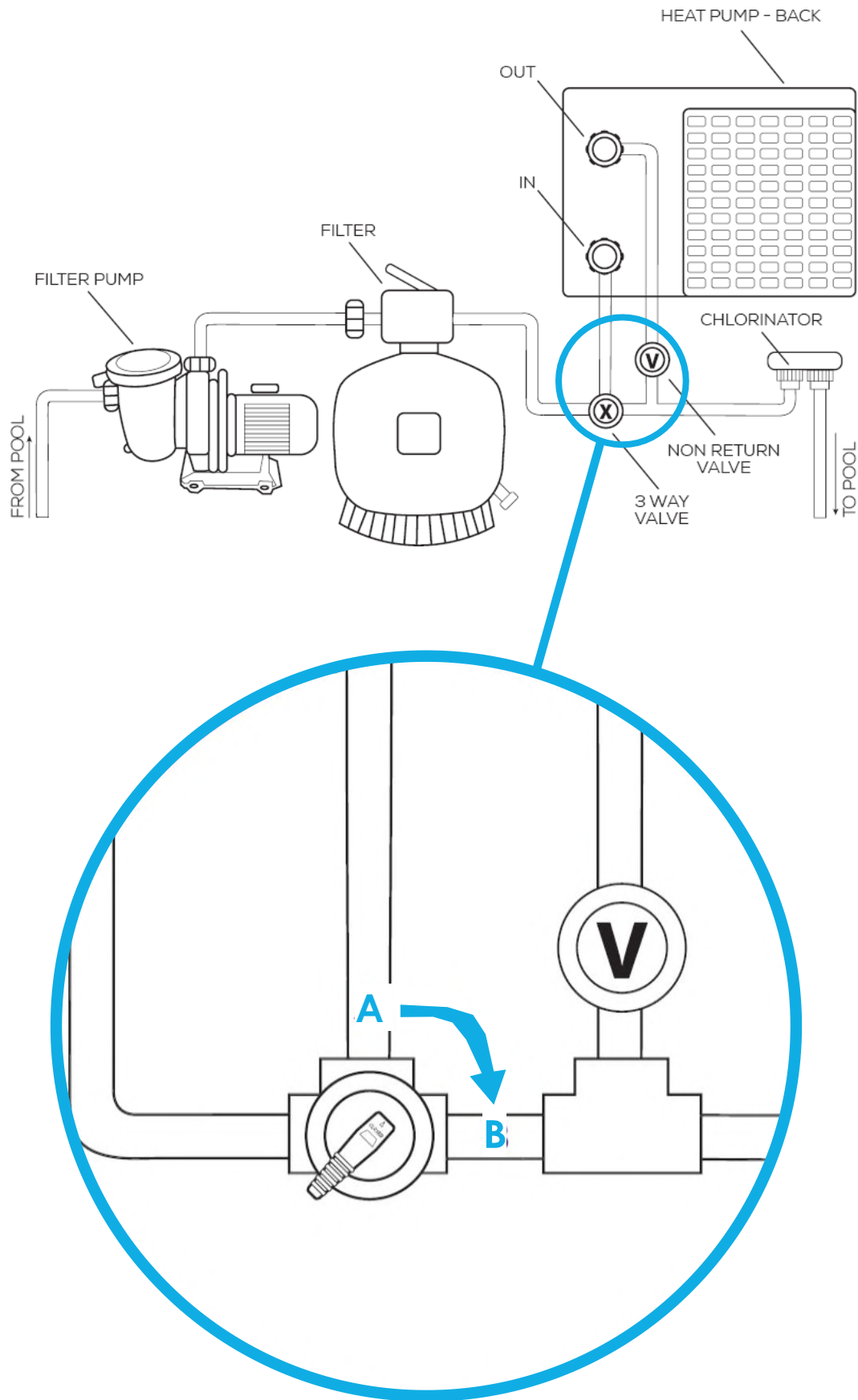
INDEPENDENT SYSTEM



IN-LINE SYSTEM



ADJUSTING THE BYPASS



Use the following procedure to adjust the bypass:

- 1 Close the valve to Position A
- 2 Turn on the circulation pump
- 3 Slowly open the valve towards Position B until the display error code of "E6" disappears.
Once the message clears, the default display is the current water temperature.
Starting sequence will now begin.

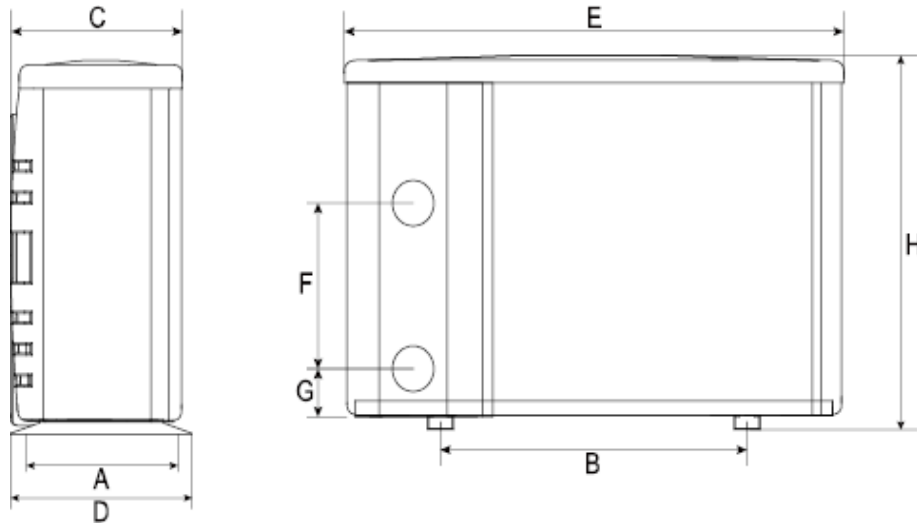
ATTENTION



Bypass Installation

Operation without a bypass or with improper bypass adjustment may result in suboptimal heat pump operation and possible damage to the heat pump. Failure to observe this instruction will void the warranty.

DIMENSIONS



Unit = mm	A	B	C	D	E	F	G	H
PR09HP	324	560	330	349	872	250	74	654
PR13HP	324	560	330	349	872	320	74	654
PR17HP	324	590	330	349	962	350	74	654
PR21HP	324	590	325	349	962	350	74	754

*Above data is subject to modification without notice.

5.2.2 Heat Pump Installation

When the heat pump is running, condensation will occur and drain from the bottom of the unit. This is completely normal. However, consideration should be made for how to drain the condensation away. Drainage nozzle and pipe are supplied.

5.2.3 Wiring & protecting devices and cable specification

- 1 Connect to appropriate power supply. The voltage should comply with the rated voltage of the unit.
- 2 Earth the machine well.
- 3 Wiring must be handled by a professional technician according to the circuit diagram.
- 4 Set leakage protector according to the local code for wiring (leakage operating current $\leq 30\text{mA}$).
- 5 The layout of power cable and signal cable should be orderly and not affect each other.

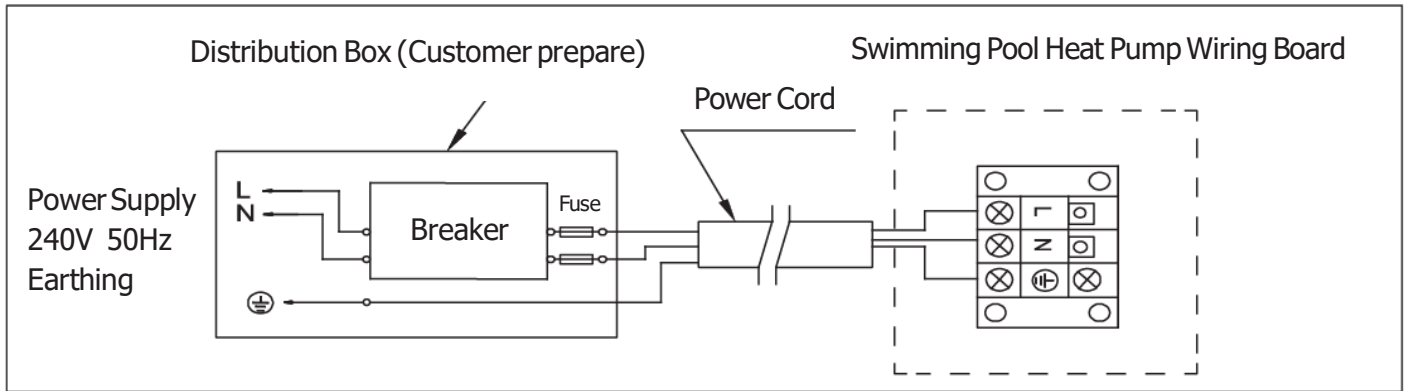


ATTENTION

Switch on after finishing all wiring construction and re-checking.

WIRING DIAGRAM

1 For power supply: **240V 50Hz**



2 Options for protecting devices and cable specification

Model		PR09HP	PR13HP	PR17HP	PR21HP
Breaker	Rated Current A	9.5	15.0	20.5	23.5
	Rated Residual Action Current mA	30	30	30	30
Fuse A		9.5	15.0	20.5	23.5
Power Cord (mm ²)		3x1.5	3x2.5	3x4	3x6
Signal Cable (mm ²)		3x0.5	3x0.5	3x0.5	3x0.5

NOTE: The above data is adapted to power cord $\leq 10m$. If power cord is $>10m$, wire diameter must be increased. The signal cable can be extended to 50m at most.

5.3 TRIAL AFTER INSTALLATION



ATTENTION

Please check all the wiring carefully before turning on the heat pump.

5.3.1 Inspection before use

- 1 Check installation of the whole heat pump and the pipe connections according to the pipe connecting drawing
- 2 Check the electric wiring according to the electrical wiring diagram and earthing connection
- 3 Make sure that the main power is well connected
- 4 Check if there is any obstacle in front of the air inlet and outlet of the heat pump.

5.3.2 Trial

- 1 The user is advised to start the water pump before the heat pump, and turn off the heat pump before the water pump for long life circle.
- 2 The user should start the water pump, and check for any leakage of water; power on and press the ON/OFF button of the heat pump, and set desired temperature in the thermostat.
- 3 In order to protect the heat pump, the heat pump is equipped with start delay function. When starting the heat pump, the fan will start to run in 3 minutes, in another 30 seconds, the compressor will start to run.
- 4 After pool heat pump starts up, check for any abnormal noise from the heat pump.
- 5 Check the temperature setting.

6. TROUBLE SHOOTING GUIDE

Failure	Reason	Solution
Heat pump doesn't run	No power	Check there is power going to the unit
	Power switch is off	Switch on the power
	Fuse burned	Check and change the fuse
	The breaker is off	Check and turn on the breaker
Fan running but with insufficient heating	Evaporator blocked	Remove the obstacles
	Air outlet blocked	Remove the obstacles
	3 minutes start delay	Wait patiently
Display normal, but no heating	Set temperature too low	Set proper heating temp.
	3 minutes start delay	Wait patiently

Display	Description	Reasons/Solutions
E3	Insufficient or no water flow/ protection	<p>Ensure water flow through circulating pump/filtration system;</p> <ol style="list-style-type: none"> <ol style="list-style-type: none"> Ensure circulating pump is primed (independent system). Ensure water flow through filtration i.e. filter pump is primed, check filter pressure, visible water flow (inline system). Adjust flow through bypass valve in order to direct more flow to heat pump (specific to plumbing configuration). Possible blockage. Check flow switch and PCB wiring (technician only).
E5	Power (voltage) supply outside acceptable operating range	Engage electrician to confirm power supply (refer to technical specifications).
E6	Excessive temperature differential between inlet and outlet water (insufficient water flow/protection)	<p>Ensure water flow through circulating pump/filtration system.</p> <ol style="list-style-type: none"> <ol style="list-style-type: none"> Ensure circulating pump is primed (independent system). Ensure water flow through filtration i.e. filter pump is primed, check filter pressure, visible water flow (inline system). Adjust flow through bypass valve in order to direct more flow to heat pump (specific to plumbing configuration). Possible blockage.
Eb	Ambient temperature too high or too low protection	Wait until air temperature returns to heat pump operating range (refer to technical specifications).
Ed	Anti-freezing reminder	<p>Anti-freeze mode is activated;</p> <p>When water inlet temperature $\leq 2^{\circ}\text{C}$ and air temperature $\leq 0^{\circ}\text{C}$, heat pump will automatically start running in heating mode.</p> <p>When water inlet temperature $\geq 15^{\circ}\text{C}$ or air temperature $\geq 1^{\circ}\text{C}$, heat pump will be powered off or on standby.</p>

NOTE: If above solutions don't work, please contact your installer with detailed information and your serial number.

7. ERROR CODES

NO.	Display	Failure Description
1	E1	High pressure protection
2	E2	Low pressure protection
3	E4	Phases lack protection (three phase model only)
4	E7	Water outlet temp too high or too low protection
5	E8	High exhaust temp protection
6	EA	Evaporator overheat protection (only at cooling mode)
7	P0	Controller communication failure
8	P1	Water inlet temp sensor failure
9	P2	Water outlet temp sensor failure
10	P3	Gas exhaust temp sensor failure
11	P4	Evaporator coil pipe temp sensor failure
12	P5	Gas return temp sensor failure
13	P6	Cooling coil pipe temp sensor failure
14	P7	Ambient temp sensor failure
15	P8	Cooling plate sensor failure
16	P9	Current sensor failure
17	PA	Restart memory failure
18	F1	Compressor drive module failure
19	F2	PFC module failure
20	F3	Compressor start failure
21	F4	Compressor running failure
22	F5	Inverter board over current protection
23	F6	Inverter board overheat protection
24	F7	Current protection
25	F8	Cooling plate overheat protection
26	F9	Fan motor failure
27	Fb	Capacitor no charging protection
28	FA	PFC module over current protection

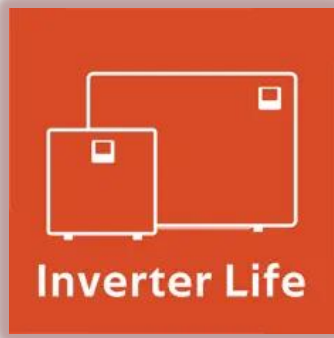


ATTENTION

Please contact your installer with detailed information and your serial number.

8. WIFI SETTING

1 App Download



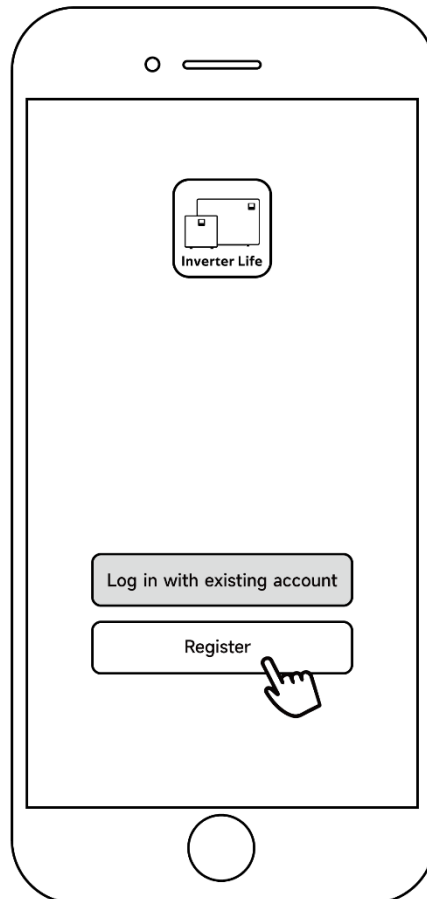
iPhone please download from

Android mobile please download from



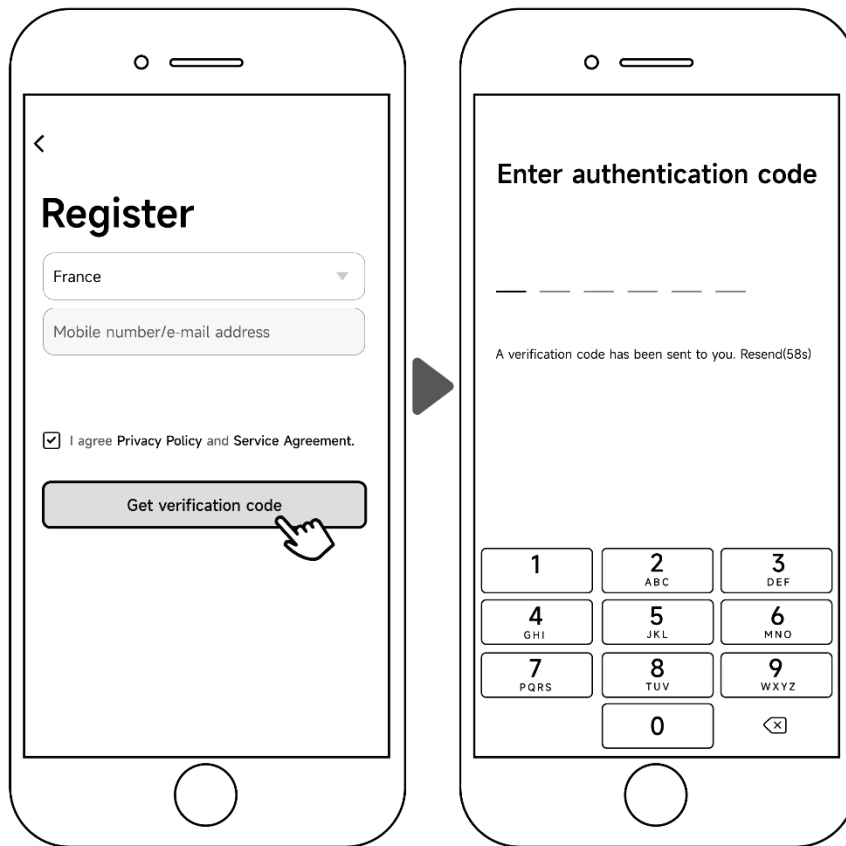
2 Account Registration

1 Registration by mobile number/email



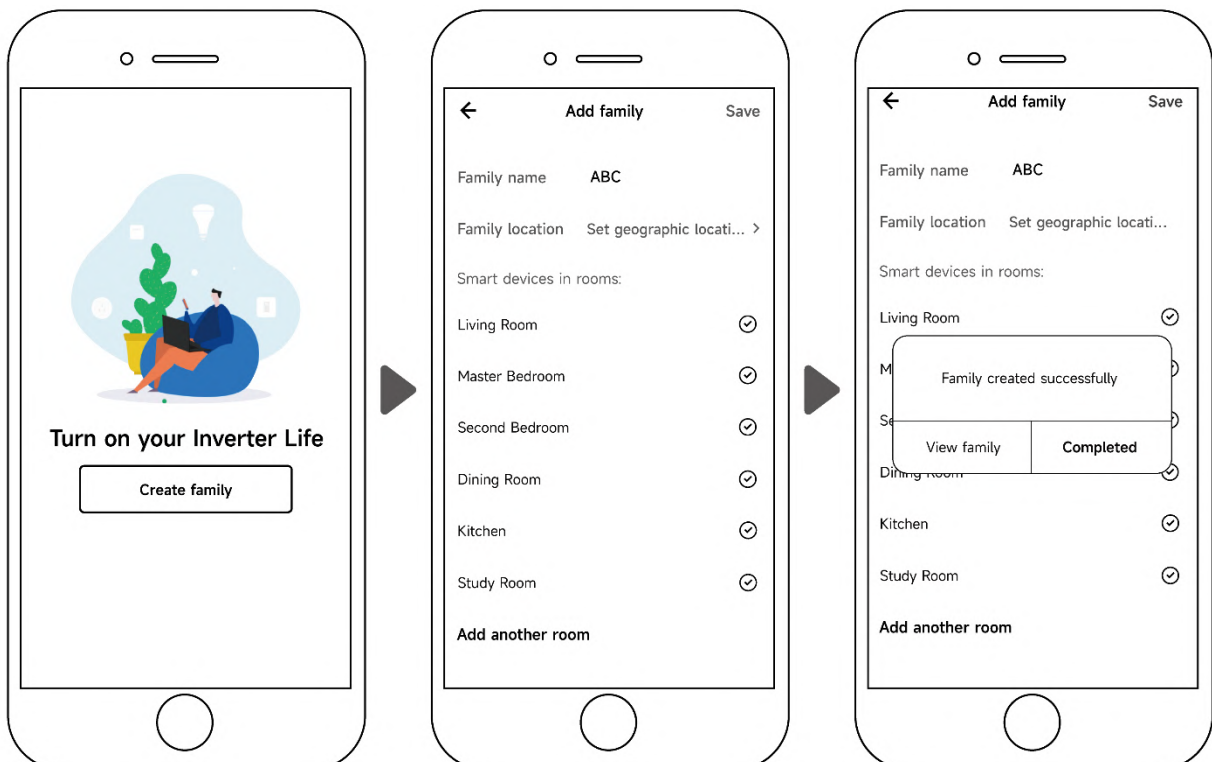
WIFI SETTING

2 Mobile number registration



3 Create family

Please set family name and choose the room of device





WIFI SETTING

4 APP Binding

Please make sure your mobile phone has connected to Wifi



A Wifi Connection

When the heat pump is on, press  three times, and then press  to enter WIFI setting. The display window shows the number of paired phones under this status.

The mobile phone enters the APP to select WIFI and input password to configure network for the device. When pairing, the display window and the WIFI indicator flash. After successful pairing, the display window number is increased by 1 and the setting interface will automatically exit.

B Wifi reset (When the WIFI password has changed or the network configuration has changed):

Under WIFI setting status, press the  and  for 5 seconds to clear pairing. Then follow step above for rebinding.

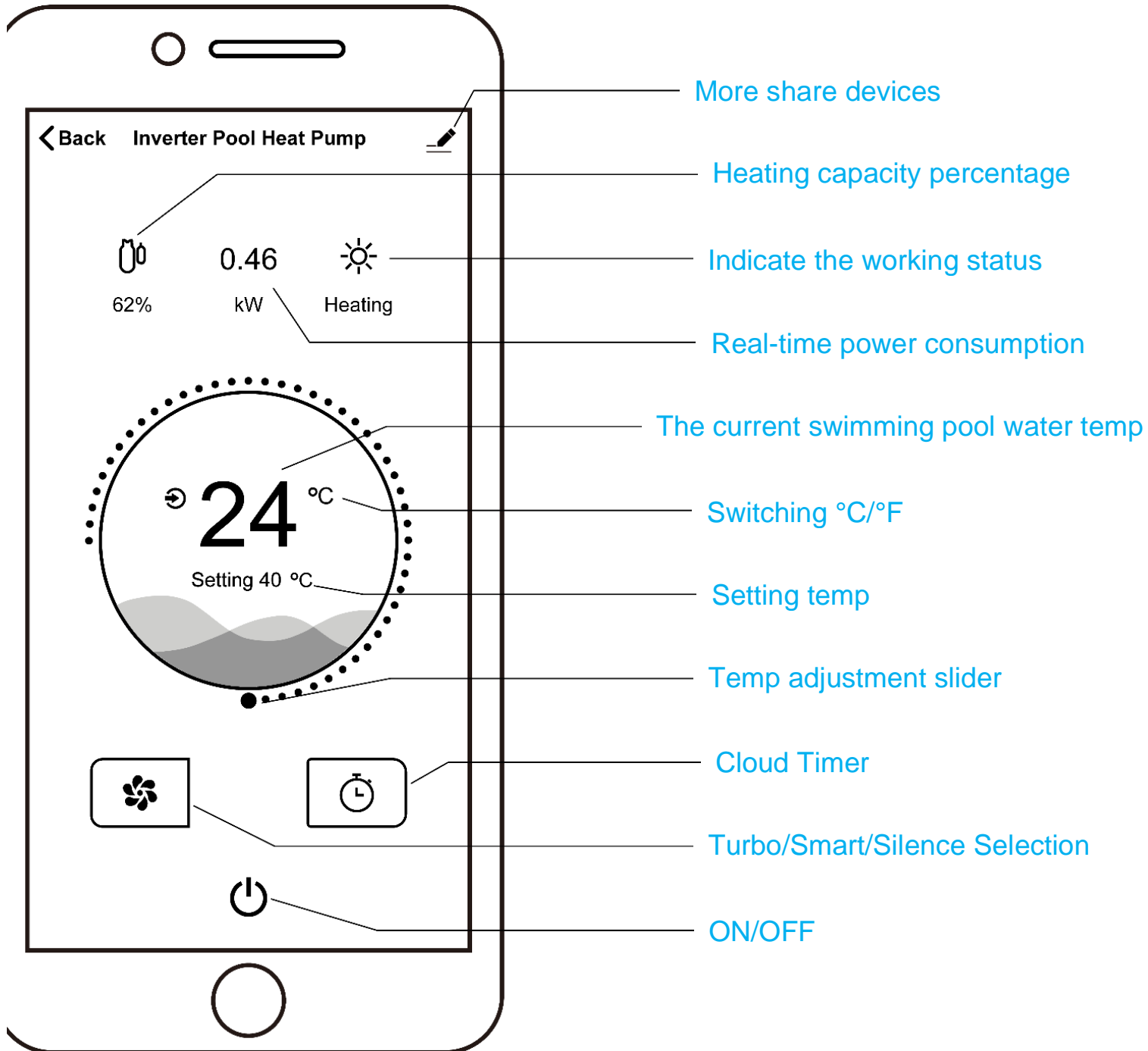
C Exit WIFI setting: during WIFI setting, press or to exit

(Remarks: Please make sure the router is configured at 2.4G. 5G networks are NOT compatible.)

WIFI SETTING

5 Operation

For heat pump with Heating function only.

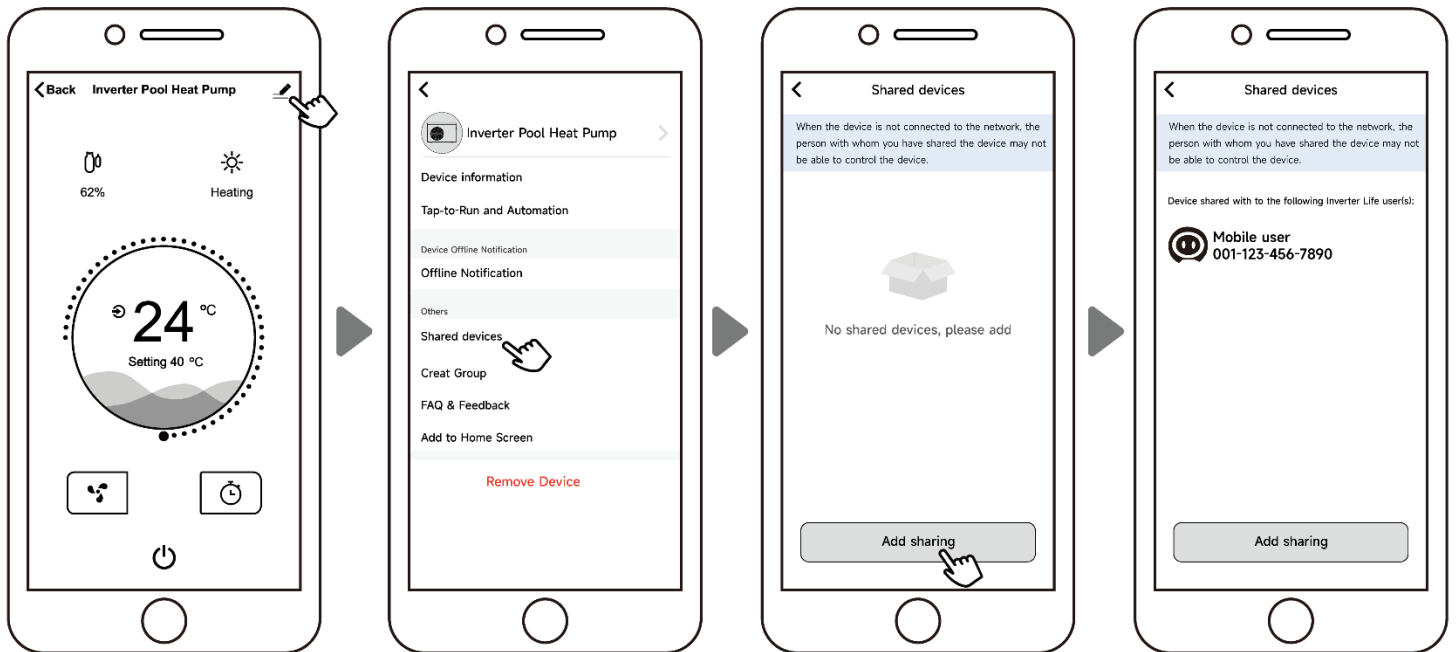


WIFI SETTING

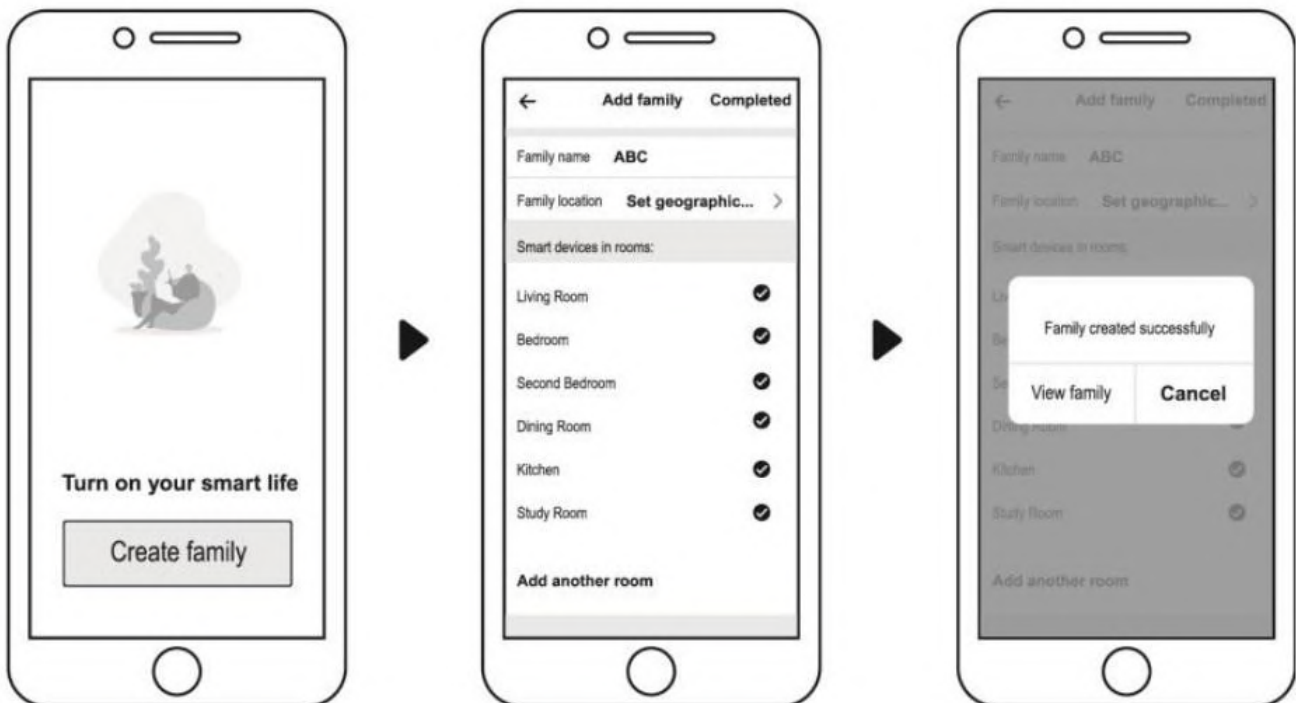
6 Share devices to your family members

After binding, if your family members also want to control the device.

Please let your family members register the APP first, and then the administrator can operate as below (The following pictures are for reference only):



Then your family members can log in as below:



NOTE

- The weather forecast is just for reference.
- APP is subject to updating without notice.



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