Infrared
D.R.HEATER®

INSTALLATION & USER MANUAL

Thank you for choosing Inverter pool heat pump

Content

I. General Precautions

Attention

1. Follow the instructions to set a comfortable water temperature and avoid overheating;
2. Please do not stack anything near the heat pump that can block air flow to the inlet or exhaust area, or the efficiency of the heat pump will be reduced and/or stopped;
3. Please do not put hands into the outlet of the pool heat pump, and do not remove the screen of the fan at any time;
4. If there are abnormal conditions such as noise, smell, smoke, or electrical leakage, please switch off the machine immediately and contact the local dealer. Don't try to repair it by yourself;
5. Don't use or stock combustible gas or liquid such as thinners, paint and fuel near the heat pump in order to avoid fire;
6. The piping between the pool and the heat pump should be less than 33ft long, or its performance may be impacted.

Safety

1. Please keep the main power supply switch away from children;
2. If a power outage happens while the heat pump is running, the heat pump will restart automatically when power is restored. Please switch off the power supply when there is a power outage, and reset the temperature when power is restored;
3. Please switch off the main power supply in the event of lightning flash and stormy weather to prevent machine damage from a lightning strike;
4. If the heat pump is stopped for a long time, please cut off the power supply and drain water completely from the heat pump by opening the union of the inlet pipe.

Special Attention

Please read this instruction manual carefully and operate the unit according to the user manual before starting the heat pump.
1. This product is only for heating swimming pool or spa water. It cannot be used for other applications.
2. Inlet and outlet water nozzles are not designed to bear the weight of

external pipes. Support the piping independently.

3. Make sure power is turned off before opening the case and performing service work.
4. The heat pump must be installed by a qualified electrician.
5. Set heating temperature within the recommended range to maximize comfort.
6. Keep the air inlet and exhaust free from obstructions.
7. This heat pump has a power-off memory function.
8. When the ambient temperature is at or below 32℉ (0℃), make sure the main power switch is turned off and all water is drained from the heat exchanger.
9. Never place your hand or any other object into the air inlet or exhaust of the pump.
10. If there are abnormal conditions such as noise, smells, smoke or electricity leakage, please switch off the main power switch immediately and contact the local dealer/installer.
11. Do not attempt to repair the heat pump yourself.

II. Application

1. Set swimming pool water temp efficiently and economically to provide you comfort and pleasure.
2. The user can refer to the technical parameters of each model under the guidance of professionals; this series of pool heat pump has been adjusted to the best state; the heat pump is ready for normal protection after standard wiring water connection.

III. Features

1. Sensitive and accurate temperature control and water temperature display.
2. High and low pressure protection.
3. Protection in case of too low or no water flow.
4. Exceeding low temperature auto stop protection.
5. Temperature control forced defrosting.
6. International brand compressor.
7. High efficient titanium heat exchanger.
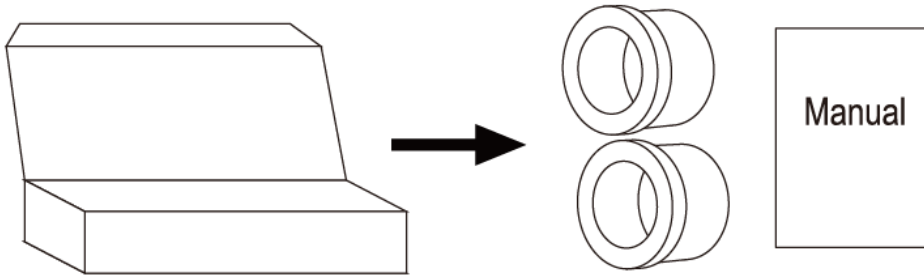8. Easy installation and operation.

IV. Accessory

Please check if you have all the following components :
For DR-650HP and DR-900HP comes with
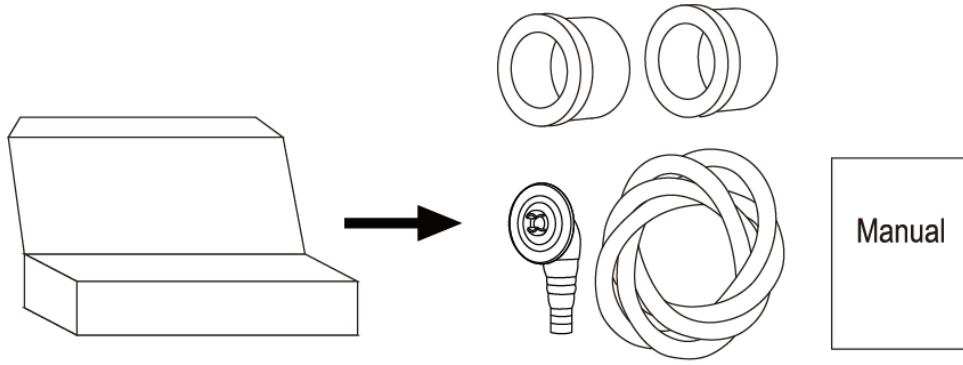

while DR-1100HP and DR-1400HP comes with

V. Technical Parameters

1. The heat pump works well under water temp from 80℉ to 104℉, air temperature 32℉ to 109℉, efficiency will not be guaranteed out of this range. Please take into consideration that the pool heat pump's performance and parameter are different under various conditions.
2. Related parameters are subject to adjust periodically for technical improvement without further notice. For details please refer to rating label.

Model	DR-650HP	DR-900HP	DR-1100HP	DR-1400HP
Applied pool volume (gallons)	≤18000	≤28000	≤32000	≤42000
Operating air temperature (°F)	32~109			
Performance Condition: Air 80°F (27℃)/ Water 80°F (27℃)/ Humidity 80%				
Heating capacity (Btu)	65,000	90,000	110,000	140,000
Heating capacity (Btu) in silence mode	52,000	72,000	88,000	112,000
C.O.P	11.2~5.61	13.6~6.0	13.5~5.8	13.1-5.8
Performance Condition: Air 80°F (27℃)/ Water 80°F (27℃)/ Humidity 63%				
Heating capacity (Btu)	61,500	85,000	104,000	132,000
Heating capacity (Btu) in silence mode	49,200	68,000	83,500	105,500
C.O.P	9.9~5.35	12.3~5.7	12.2~5.6	11.0~5.7
Performance Condition: Air 50°F (10℃)/ Water 80°F (27℃)/ Humidity 63%				
Heating capacity (Btu)	27,000	43,000	54,000	68,000
C.O.P	5.2~4.3	5.5~4.3	5.2~4.2	5.2~4.1
Rated input power (kW)	0.53~3.39	0.54~4.39	0.61~5.9	0.85~6.85
Rated input current (A)	2.30~14.8	2.34~19.1	2.65~25.6	3.69~29.8
Power supply	208~230V/1 Ph/60Hz			
Advised water flux (gallons/min)	28.6~37.6	33~41.8	35.2~44.2	35.2~67.2
Sound pressure 10'FT (3m) dB(A)	38.2~47.3	34.9~46.8	35.0~48.1	39.6~51.2
Heat exchanger	Titanium in PVC			
Casing	ABS casing		Metal or Insertion casing	
Air discharge	Horizontal		Vertical	
Water pipe in-out Spec (inch)	1.5" (48.3mm) PVC		2" (60.3mm) PVC	
Net Dimension LxWxH (inch)	37.8x16.5x25.9	43x16.5x37.7	37.2x35.6x38.5	40.7x32.3x41.5
Net Weight (lbs.)	134	187	276	315

* The values indicated are valid under ideal conditions: Pool is well covered, filtration system running at least 15 hours a day.

VI.　Dimension
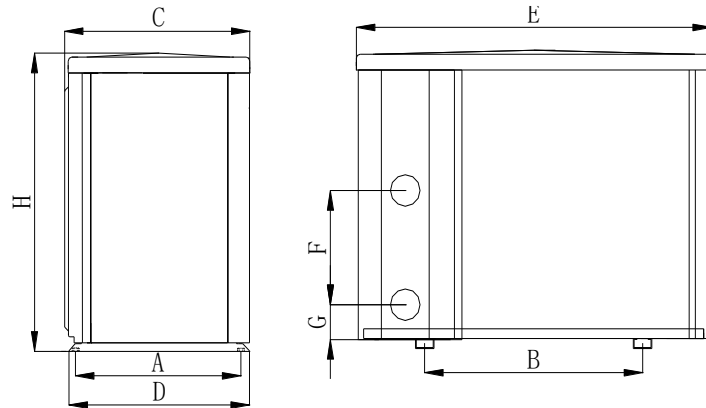
Size(inch) Name Model	A	B	C	D	E	F	G	H
DR-650HP	15.6	23.2	15.4	16.5	37.8	14.2	2.9	25.9
DR-900HP	15.6	28.3	15.4	16.5	43.0	24.4	2.9	37.7
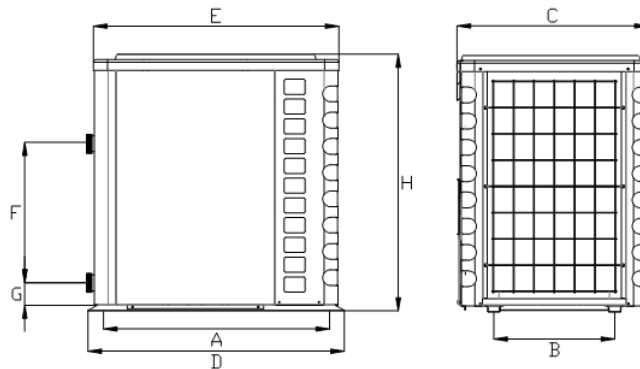
Size(inch) Name Model	A	B	C	D	E	F	G	H
DR-1100HP	36.3	17.6	35.6	37.2	27.8	20.9	3.3	38.5
DR-1400HP	39.8	20.5	32.3	40.7	39.2	20.9	3.3	43.7

*Above data is subject to modification without notice.

VII.   Installation instructions

Warning: This heat pump is an electromechanical machine that incorporates a pressurized refrigerant gas in a sealed system. ONLY trained and qualified service personnel are authorized to install or service this equipment. Without proper training and knowledge of such equipment, any attempt to install or service the unit could result in serious injury or even death.

1. Drawing for water connection

Swimming Pool Heat Pump Piping Diagram
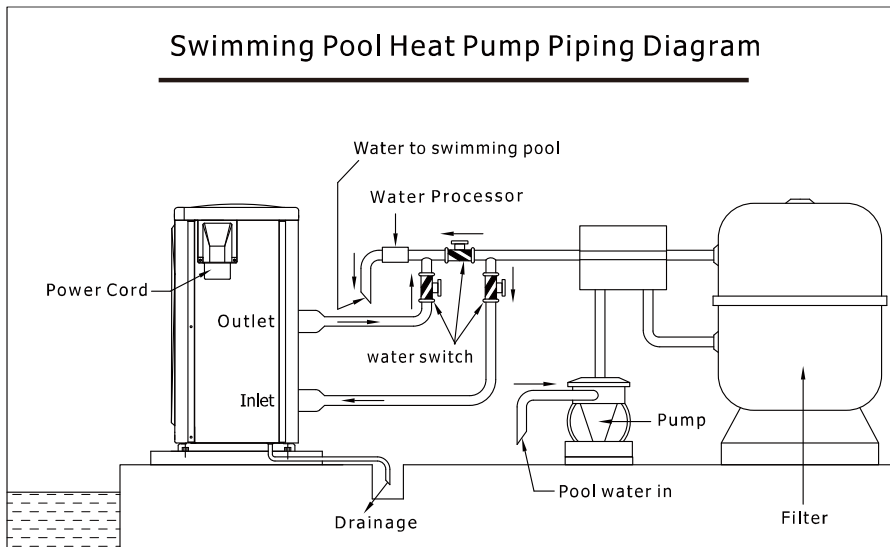
Reference only

2. Electrical Wiring Diagram
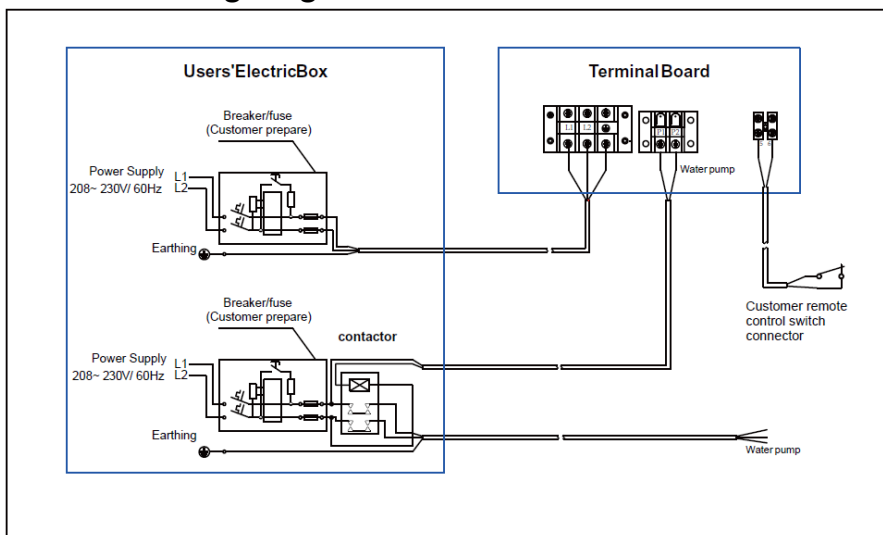
Note：

Wiring must be installed by a professional installation technician and follow the circuit diagram.

a)   Make sure the power supply is at the rated voltage of the appliance.

b)   Ground the heat pump.

c) WARNING: Before obtaining access to terminals, all supply circuits must be disconnected.

Automation control 2-Wire system connection (Heat Only):

The inverter models have a temperature sensor for temperature automation control.

a) Install wires from the automation controller for 'Heat' on the terminal strip inside the heat pump's electrical compartment on the side of the heat pump;

b) Remove the jumper wire on the terminal block from terminals marked #5 and #6;

c) Install the automation control wires for 'Heat' to terminals #5 and #6;

d) Set temperature setting on the heat pump to 104℉ (40℃).

CUSTOMER REMOTE
CONTROL SWITCH
CONNECTOR

POWER
208 -230V/60HZ

PUMP CONTROL
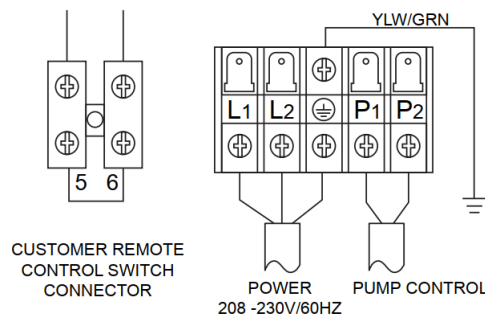
NOTE: When the automation controller has a HEAT command the unit will be in the HEAT mode. When the automation controller does not have a HEAT command the unit will be in the OFF mode.

3. Options for protection devices and cable specifications

Model		DR-650HP	DR-900HP	DR-1100HP	DR-1400HP
Breaker	Rated Current (A)	20	26	40	44
	Rated Residual Action Current (mA)	30	30	30	30
Max input current (A)		16.8	21.5	32.5	40
Fuse (A)		20	26	40	44
Power Cord (AWG)		3×11	3×10	3×8	3×8
Signal cable (AWG)		3×20	3×20	3×20	3×20

※Above data is subject to modification without notice.

Note: The above data is adapted to power cord ≤ 393.7 inch. If it is > 393.7 inch, wire diameter must be increased. The longest signal cable can be extended to 1968.5 inch.

4. Installation and Requirements

The heat pump must be installed by a pool professional. End users are not qualified to install the heat pump. Damage may occur to the heather or threaten the safety of the user.

Notes:

1) The inlet and outlet water unions of this machine can't support the weight of the external piping. The heat pump must be connected with hard pipes!
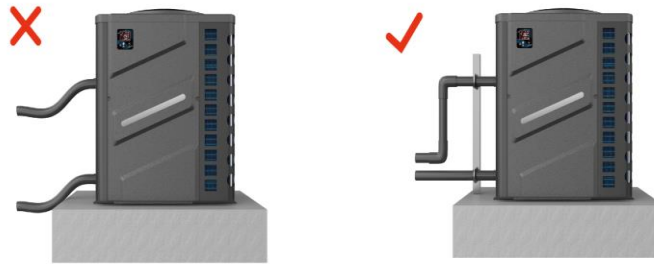
2) The piping between pool and the heat pump should be less than 33ft, or its performance cannot be ensured.

A. Installation of the heat pump

The heat pump must be installed by a pool professional. End users are not qualified to install the heat pump. Damage may occur to the heat pump or threaten the safety of the user.

The heat pump must be installed OUTSIDE in a well ventilated area to avoid air re-circulation, and in a place with adequate room for both installation and maintenance. Please refer to the following illustration: The unit requires a minimum of 59.1 inch (DR-650HP, DR-900HP)/39.4 inch (DR-1100HP, DR-1400HP) of clearance from walls, shrubbery, equipment, etc. around the entire perimeter of the heat pump. This allows for ample air intake. Ample clearance around the air outlet is required to prevent re-circulation of air. We recommend not placing the unit underneath eaves, decks, or porches, as this causes re-circulation of discharged air, thereby reducing the efficiency of the heat pump, or even stopping it

1) Be sure to fix the bracket with bolts (M10) to install the machine. The machine can be fixed on a concrete foundation or on a bracket. The concrete foundation should be solid and sturdy, and the bracket should be strong enough and rust-proof.

2) Don't stack anything that will block air flow near the inlet or outlet areas, or have any barrier within 20 inch behind the main heat pump, or the

efficiency of the heat pump will be reduced;

3) The heat pump needs a pool pump (to be supplied by user). For recommended pump flow rates, please refer to Technical Parameter, Max. lift ≥393.7 inch;

4) When the heat pump is running, there will be condensation water discharged at the base. Place the drainage nozzle into the condensation outlet and attach it securely, then contact a drainage pipe from it to the drain.
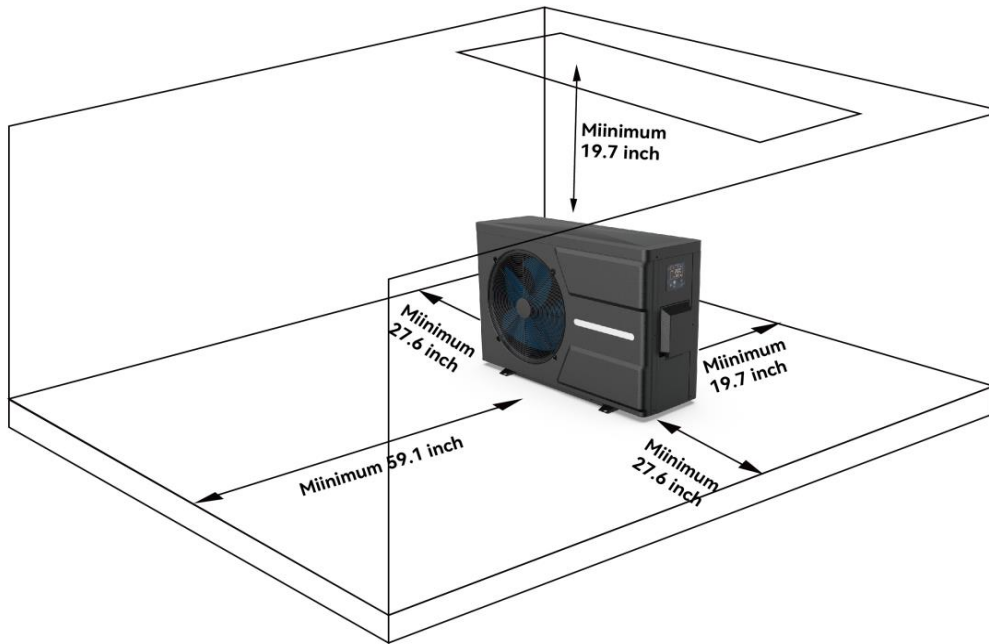
DR-650HP, DR-900HP
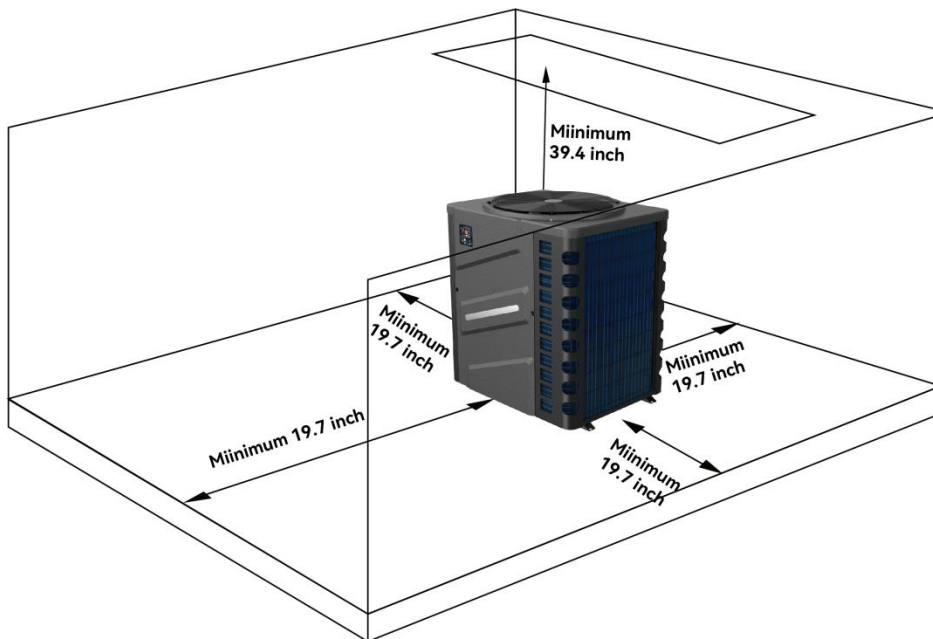
DR-1100HP, DR-1400HP

B.   Wiring

1) Make sure the power supply is at the rated voltage of the appliance.
2) Ground the heat pump.
3) Wiring must be installed by a professional installation technician and follow the circuit diagram.
4) Set leakage protection device according to the local code for wiring (leakage action current ≤ 30mA specification).
5) The layout of power cable and signal cable should be orderly and not interfere with each other.

C.   Switch on the heat pump after finishing all wiring construction and re-checking.

VIII.   Operation instructions

Symbol	Designation	Function
⏻	ON/OFF	1. Power On/Off 2. Wi-Fi Setting
🔓	Unlock / Mode	1. Press 3 seconds to unlock/lock screen. 2. After screen is unlocked, press it to select mode.
❀	Speed	Smart/Silence mode
▲▼	Up / Down	Temperature adjustment

Note:

Screen lock: Only after screen is unlocked, any other buttons can be functioning.

a. If no button is used within 30 seconds, the screen will lock automatically. At this point, the backlight will turn off and 0% will display.

b. Alternatively, you can lock the display by pressing the LOCK button 🔒 for 3 seconds to achieve the same result.

c. To unlock the screen and use any other button, follow the Power On Instruction above.

d. Press 🔒 for 3 seconds to lock screen and it will be dark.

Water inlet temperature	☀ 🛜 Ⓜ 80%	
	-⊙ **74°F**	
Water outlet temperature	⊙→ **78°F** 📶	**Smart/Silence mode**

☀	Heating
Ⓜ80%	Heating capacity %
🛜	Wi-Fi connection
-⊙	Water inlet
⊙→	Water outlet

1. Power On: Press the LOCK button 🔒 for 3 seconds to light up screen, then press POWER button ⏻ to power on heat pump.

2. Adjust/Set Temperature: When screen is unlocked, press UP ▲ or DOWN ▼ to display or adjust the set temperature; To change from Fahrenheit (℉)to Celsius (℃), press the UP ▲ and DOWM ▼ together for 5 seconds.

3. Smart/Silence mode selection:

① Smart mode, as default, will be activated when heat pump is on, and the

screen shows ⅈⅈ.

② Press FAN 🌀 to enter Silence Mode. The display screen will show ⅈⅈ.

(Suggestion: select Smart mode for initial heating)

4. Defrosting

a. Auto Defrosting: When heat pump is defrosting, HEATING ☀ will continually flashing. After defrosting, HEATING ☀ will stop flashing.

b. Manual Defrosting: When heat pump is heating, press FAN 🌀 and MINUS ▼ together for 5 seconds to start manual defrosting, ☀ will flash continuously. After defrosting, HEATING ☀ will stop flashing. (Note: Manual defrosting intervals should be more than 30 minutes and the compressor should run for more than 10 minutes.)

5. Wi-Fi setting

Please kindly check the last page.

IX.   Starting

NOTE: The user must start the pool pump before the heat pump, and turn off the heat pump before the pool pump, or the heat pump will be damaged.

A. The user should start the pool pump, and check for any leakage of water; Power on and press the ON/OFF button on the heat pump, and set a suitable temperature at the thermostat.

B. In order to protect the heat pump, the heat pump is equipped with a time-delay starting function. When starting the heat pump, the blower will run for 1 minute before than the compressor.

C. After the heat pump starts up, check for any abnormal noise from the heat pump.

Ⅹ. Maintenance

> CAUTION: Turn off its power supply before service work including cleaning, examination, or repair. Do not touch any electronic components until the LED indication lights on the PCB is off.

1. When a power outage happens while the heat pump is running, the heat pump will restart automatically when the power is restored. Please switch off the power supply when there is a power outage, and reset the temperature setting when power is restored.
2. If the heat pump is stopped for a long time, please cut off the power supply and drain water completely from the heat pump by opening the union of the inlet pipe.
3. Check bolts, cables, and connections regularly for looseness and adjust as needed.

Cold Weather Operation

In the 'off' season, when the pool is not going to be used at all:

1. Cut off the power supply to avoid damage to the heat pump.
2. Drain water from the heat pump by removing the piping connection on both inlet and outlet side, from the pool to the heat pump. As needed, use a shop dry/wet vac or air pressure to purge any excess water.
3. Unscrew the water union of the inlet pipe (top) to let water flow out completely from the outlet (bottom).
4. Cover the heat pump when not in use to protect it from the weather.
5. Clean the heat pump's exterior with standard household detergent to clean water. Never use gasoline, paint thinner or other flammable liquids.
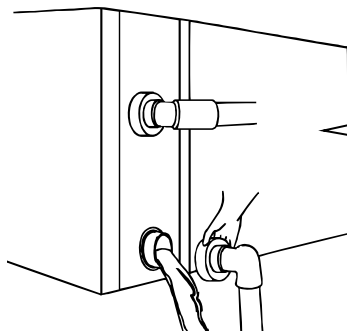
!!CAUTION:

If water is left in the system during freezing weather, the titanium heat exchanger may be damaged.

Testing:

Inspection before use

A. Check installation of the entire heat pump and pipe connections according to the pipe connecting drawing;

B. Check the electric wiring according to the electric wiring diagram; and grounding connection;

C. Make sure that the main heat pump's power switch is off;

D. Check the temperature setting;

E. Check the air inlet and outlet.

XI. Troubleshooting

Failure	Reason	Solution
Swimming pool heat pump does not run	Main power off	Wait for the power to be restored
	Power switch is off	Turn on switch
	Fuse burnt	Replace fuse
	Circuit breaker tripped	Turn circuit breaker back on
Heat pump runs but not heat	Air inlet blocked	Remove obstructions
	Air outlet blocked	Remove obstructions
	3-minute protection	Please wait more than 3 minutes for warming to start
	Temp set too low	Set temperature setting
If these above solutions do not work, contact your dealer. Do not attempt to repair the heat pump yourself.		

Failure code

| NO.	Display	Failure Description
1	E3	No water protection
2	E5	Power supply excesses operation range
3	E6	Excessive temp difference between inlet and outlet water (Insufficient water flow protection)
4	Eb	Ambient temperature too high or too low protection
5	Ed	Anti-freezing reminder
NO.	Display	Failure description
1	E1	High pressure protection
2	E2	Low pressure protection
3	E4	3 phase sequence protection (three phase 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	Heating (Evaporator)coil pipe temp sensor failure
12	P5	Gas return temp sensor failure
13	P6	Cooling (Titanium heat exchanger) 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-power protection
28	FA	PFC module over current protection

XII. Wi-Fi setting

1. APP Download
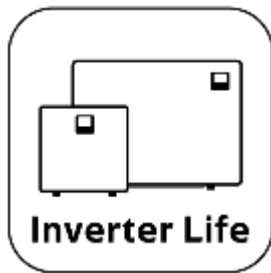
Android mobile please download from

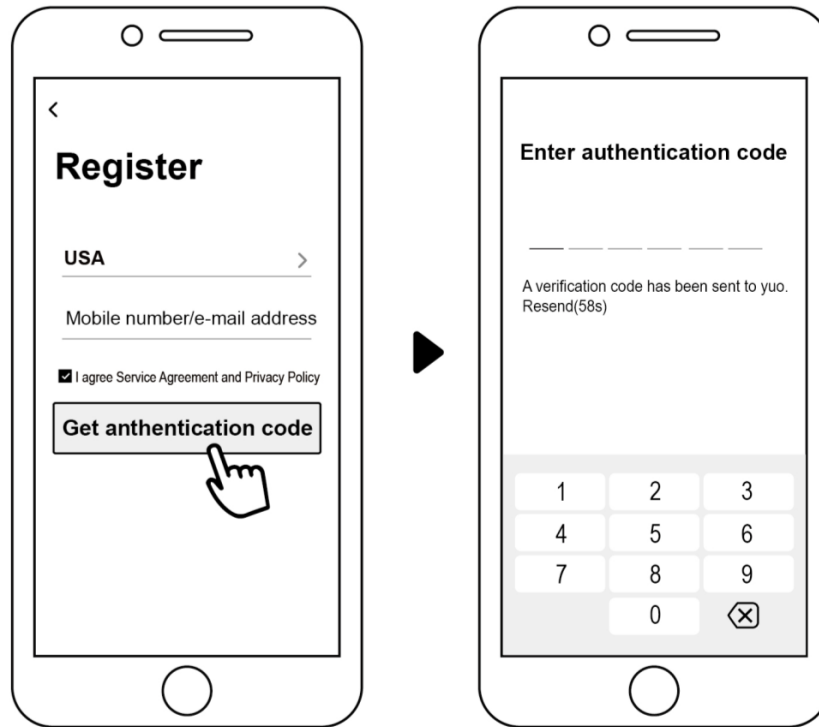iPhone please download from
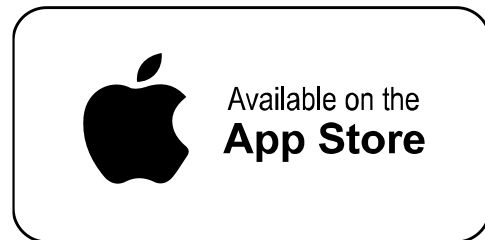
2. Account registration

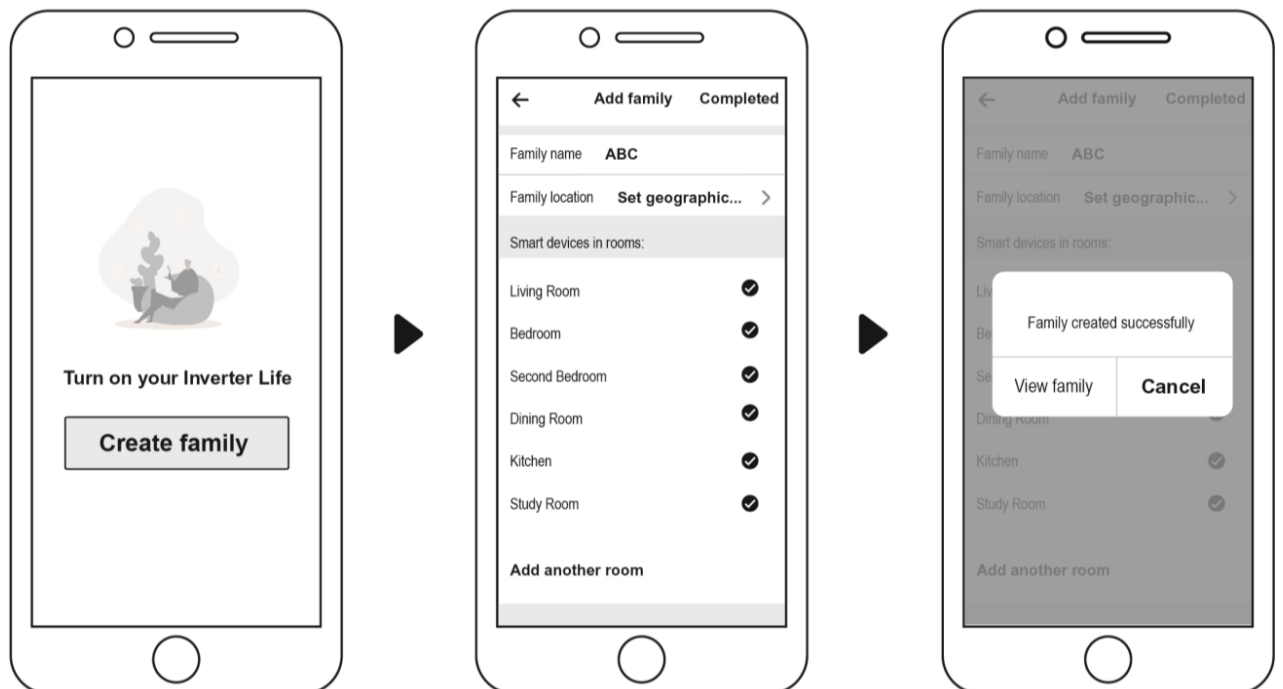a. Registration by Cell phone number/Email
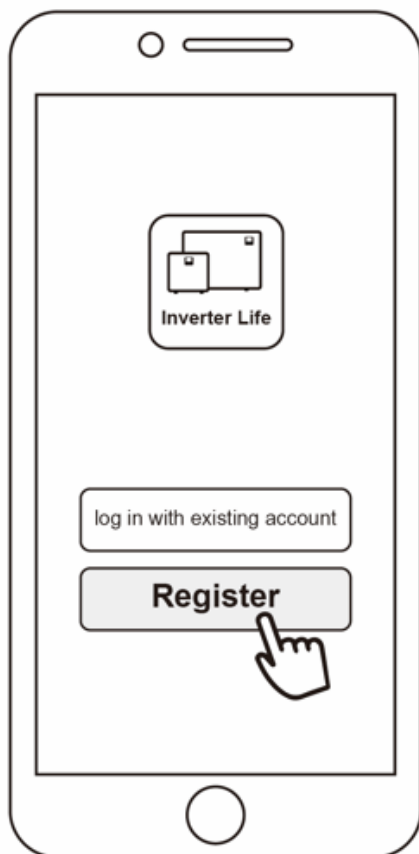
b. Cell phone number registration

3. Create a family account

Please set a name for family and choose the room of device.

4. Three methods of device binding

Please connect your phone to the Wi-Fi network first.

a. Auto Discovery (Bluetooth)

a) Please make sure the Bluetooth function is enabled on your phone.

b) Press ⏻ for 3 seconds after screen unlock, 📶 will be flashing rapidly to enter Wi-Fi binding status.

c) Click "Add Device", wait for the app to search for the device and then click "add", then follow the instructions below to finish the device binding.
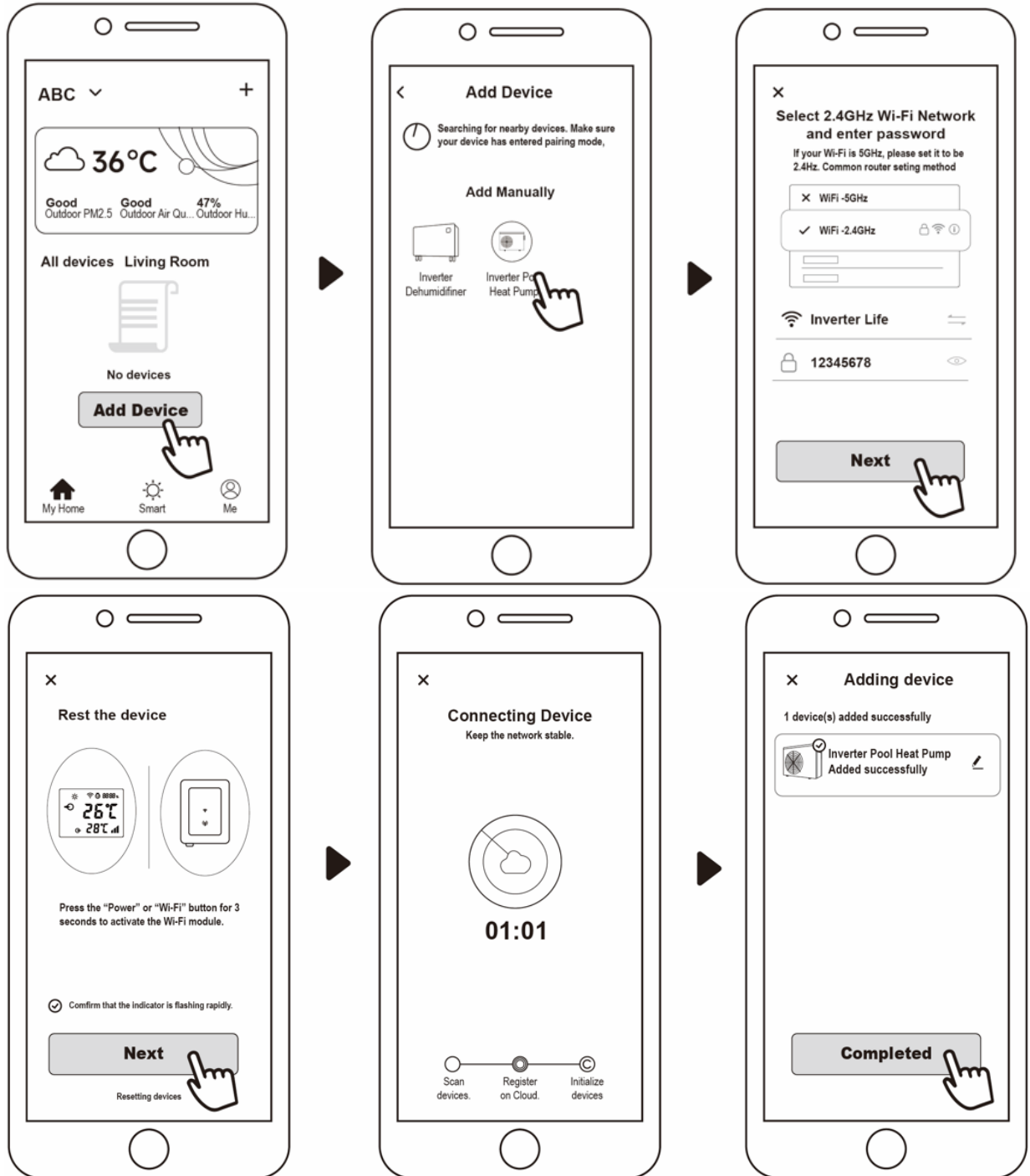

Note:

1. It will take some time to scan, please be patient.

2. Only Wi-Fi modules with Bluetooth function can use this binding method.

b. EZ Mode (Easy-connect)

a) Activate Wi-Fi module

Press ⏻ for 3 seconds after screen unlock, 📶 will be flashing rapidly to enter Wi-Fi binding status.

b) Click "Add device", follow instructions below to finish binding. 📶 display on the screen once Wi-Fi connection success.
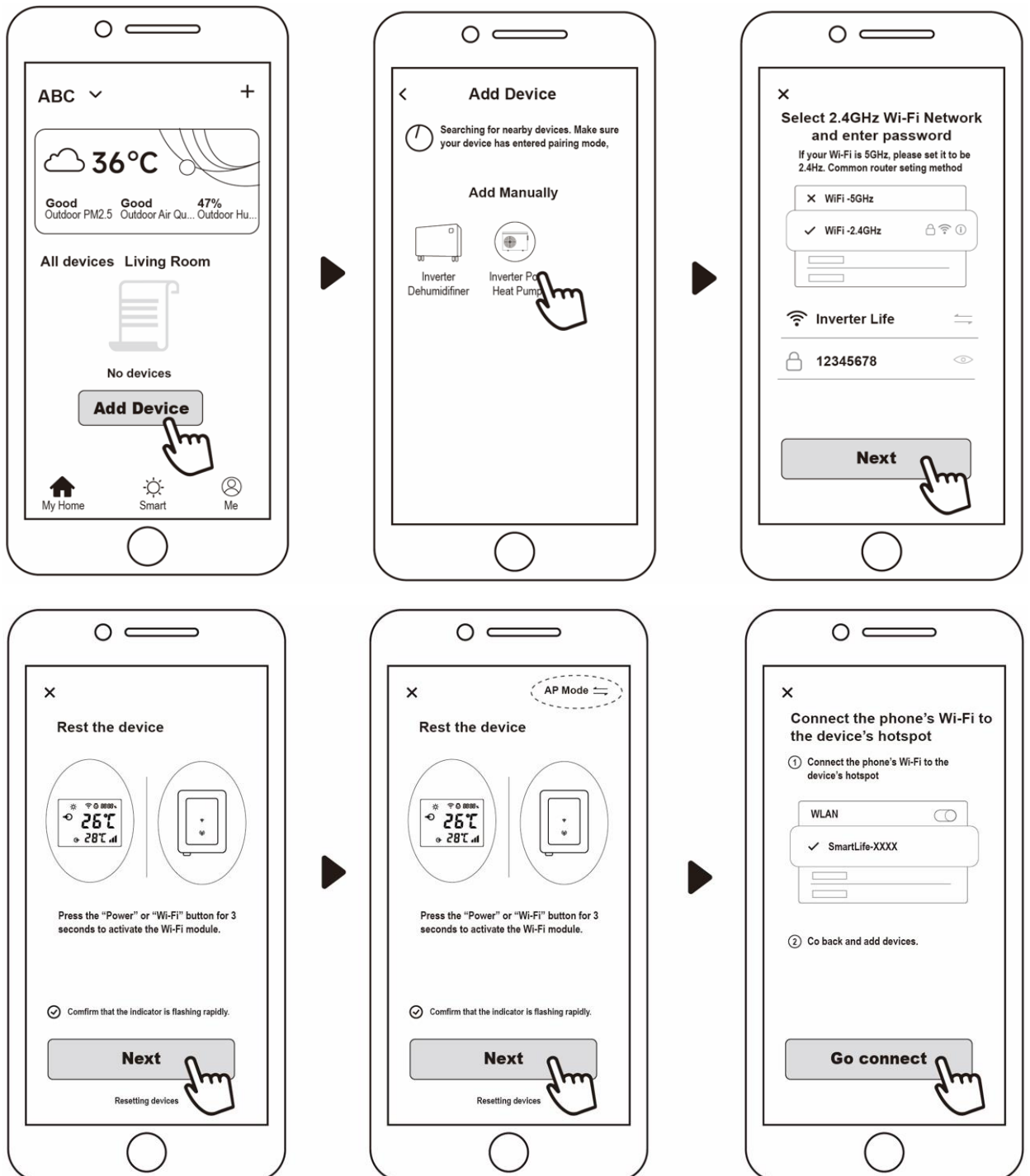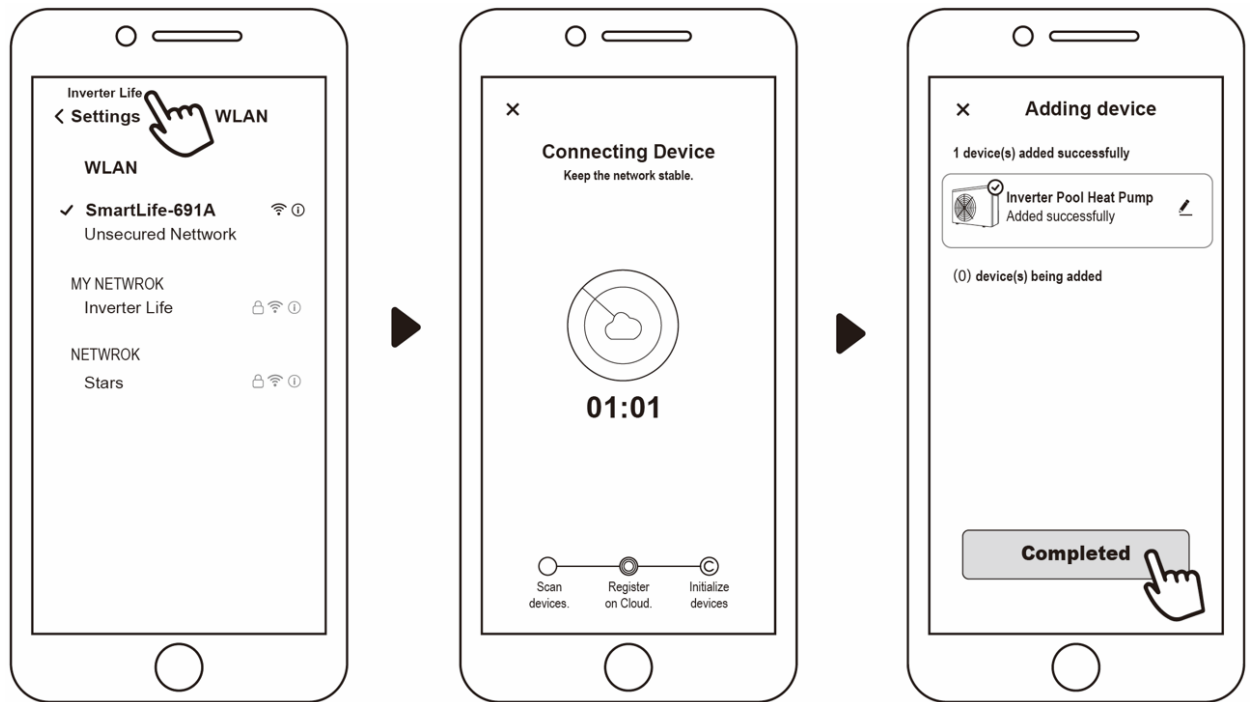

Note:
After allowing the APP to locate, it can read the Wi-Fi name automatically.

c.   AP Mode

Activate Wi-Fi module

a)   Press ⏻ for 10 seconds after screen unlock, 📶 will be flashing slowly
     to enter Wi-Fi binding status.

b)   Click "Add device", follow instructions below to finish binding. 📶
     display on the screen once Wi-Fi connection success.

Note: If it doesn't jump automatically, click "Confirm hot spot connection, next".

d. If connect fails, please make sure your network name and password is correct. And your router, mobile phone and device are as close as possible.

e. Wi-Fi rebinding (When Wi-Fi password changes or network configuration changes)
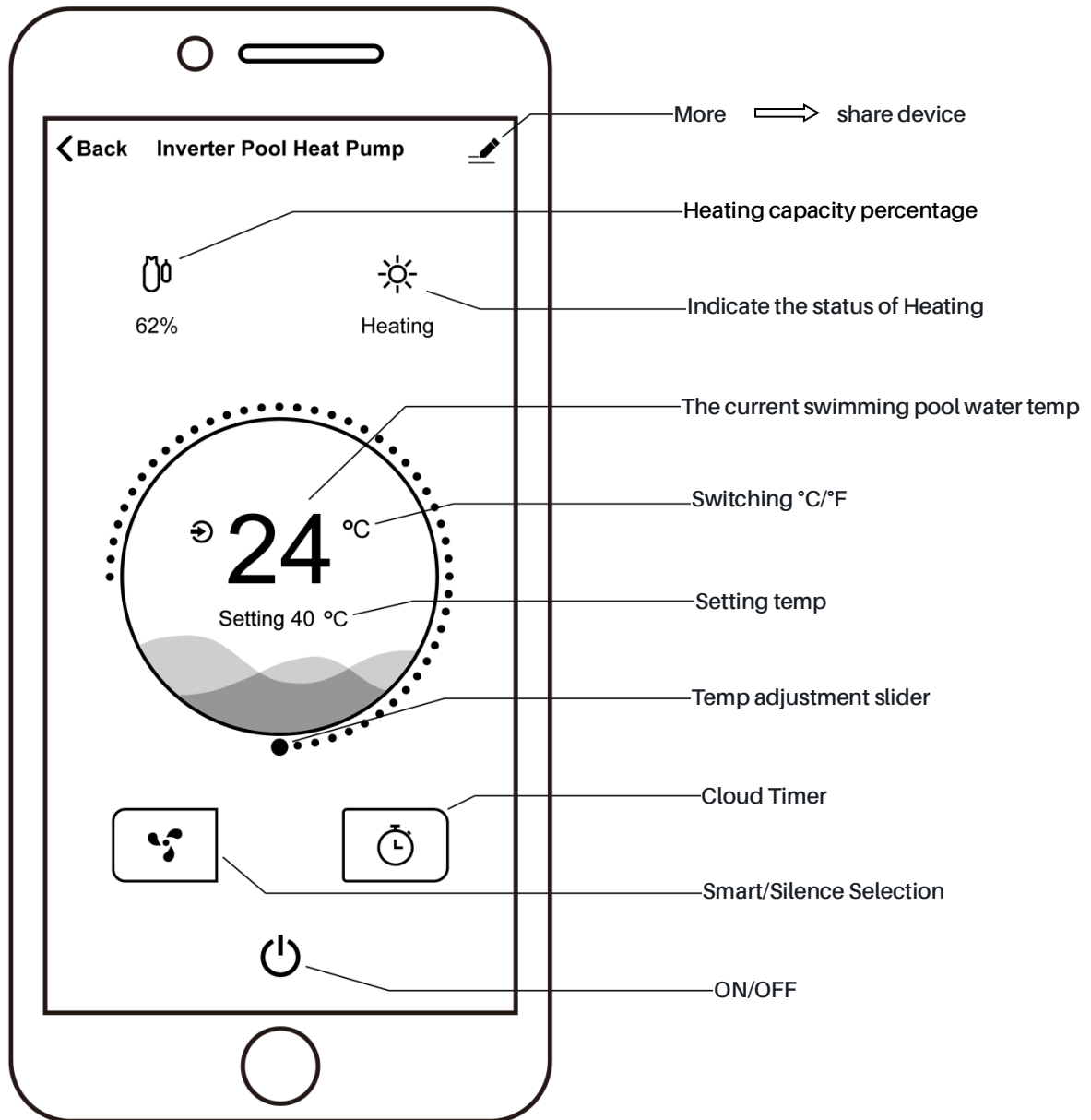
Press ⏻ for 10 seconds, 📶 will be flashing slowly for 60 seconds.

Then 📶 will be off. The original binding will be removed. Follow step above for rebinding.

Remarks: Please make sure the router is configured at 2.4GHz.

5. Operating instructions

The following instructions are for heat pumps with heating function only.

More ⟹ share device

⟨Back   Inverter Pool Heat Pump   ✎

Heating capacity percentage

Indicate the status of Heating

62%   Heating

The current swimming pool water temp

Switching °C/°F

24 °C

Setting temp

Setting 40 °C

Temp adjustment slider

Cloud Timer

Smart/Silence Selection

ON/OFF

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）:
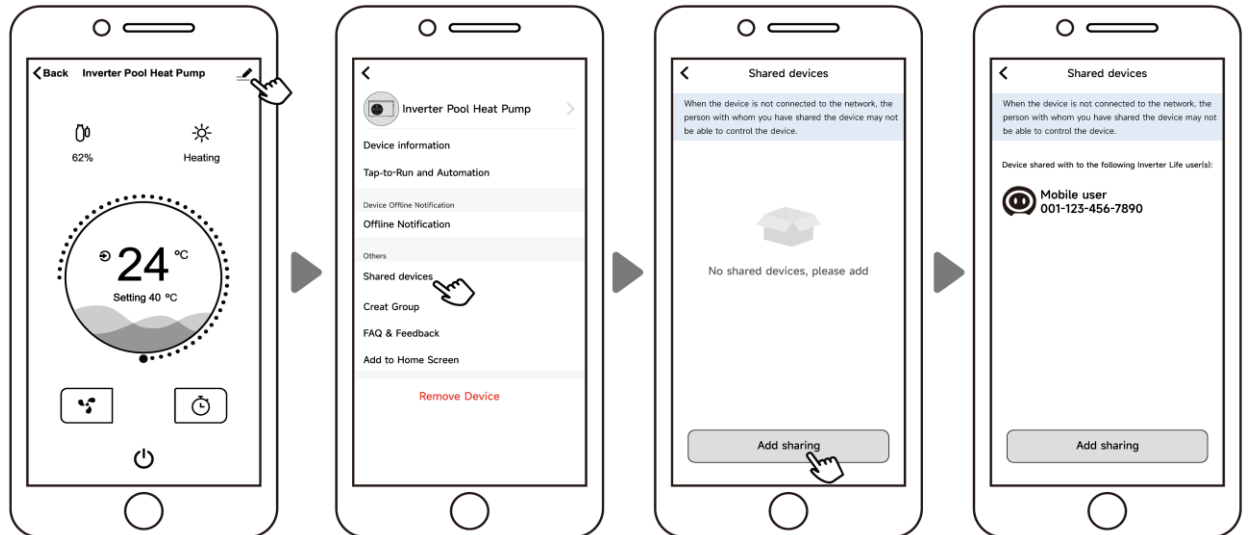
Then your family members will see this heat pump once they log in to the
APP.

Notice: 1. The weather forecast is just for reference.
           2. APP is subject to updating without notice.

XIII. Warranty information

Register your product at our website:

Or visit DrHeaterUSA.COM/register-your-heater.

Feedback

Love it? Help us make the product more for you.

Let us know with a customer review.

Please visit: https://www.amazon.com/review/review-your-purchases#

At Dr. Heater USA, we are committed to bringing top quality alternative and supplemental heating products to our customers.

How long is the warranty?

This heater comes with a THREE-YEAR LIMITED COMPONENT WARRANTY. If your unit does not appear to be working properly, please contact our service center via email. Prior to contacting us, we encourage you to visit our service related website www.DrHeaterUSA.com for troubleshooting tips and service instructions if needed.

Dr. Infrared Heater

860 Mahler Rd, Burlingame CA 94010

EMAIL: SERVICE@DRHEATERUSA.COM

Dr Heater USA
@DrHeaterUSA
Dr. Heater USA

Thank you for choosing Inverter pool heat pump

The factory reserves the final interpretation right.
And keep the right to stop or change product specification and design
without prior notice at any time, no need to bear the resulting obligations.

Version: FQ3IN-2