AQUASTRONG®
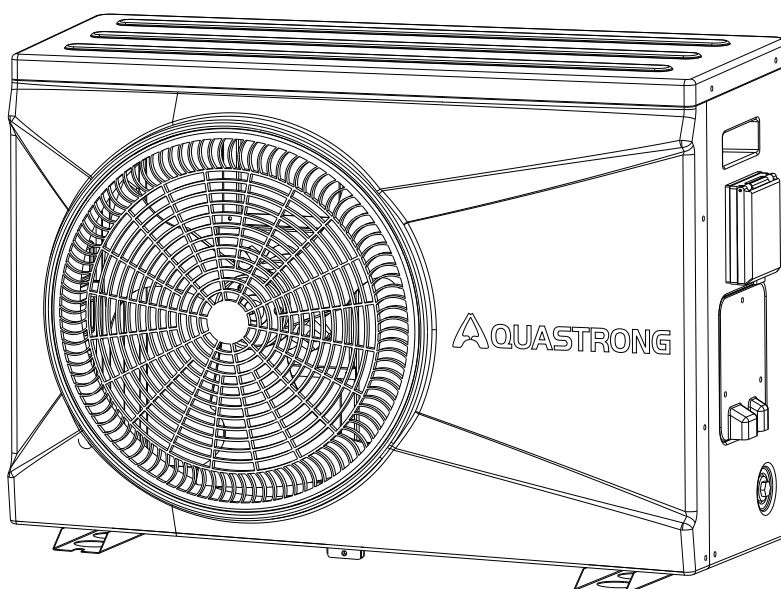
INVERTER SWIMMING POOL HEAT PUMP

OWNER'S MANUAL

MODEL: HEX022 HEX035 HEX055 HEX075 HEX100

Email: service@aquastrong.co   Web: www.aquastrong.co

⚠️ **WARNING: SAVE THIS MANUAL FOR FUTURE REFERENCE**
The manual includes essential safety, operation, maintenance, and storage instructions. Read and understand all warnings and instructions before use to avoid serious injury or property damage.

Tech Support

CONTENTS

SAFETY GUIDELINES

For the safety of users and property, adhere to the following directions:

- Incorrect use could lead to injury or damage;
- Ensure installation conforms to local laws, regulations, and norms;
- Verify the unit's power voltage and frequency;
- The unit should be operated with grounding sockets only;
- An independent switch is required for this unit.

Considerations for Safety

Take into account these safety considerations before installation:

- Review all warning notices prior to installation;
- Inspect all details, especially safety aspects, that require attention;
- Preserve the installation manual for future use after review.

Cautionary Notes

- Confirm the unit is installed securely and functions reliably.
  - A poorly secured or uninstalled unit might result in damage.
  - Consider room size and airflow in tightly enclosed or small spaces to avoid suffocation due to refrigerant leakage.

- Employ proper tools for all electrical installations.

- Accurately connect the power cable as shown in the wiring diagram provided in the manual to prevent unit burnout or fire.
  - Utilize the designated wire and secure it properly to the terminal block to mitigate pressure on parts.
  - Incorrect wiring could lead to a fire.

Additional Safety Warnings

- A grounding mechanism is essential for the unit.

SAFETY GUIDELINES

- ○ Do not connect the unit if the power supply lacks a grounding mechanism.
- Utilize appropriate installation materials.
  - ○ Using incorrect components or materials can result in fire, electric shock, or the unit dropping.
- Ensure the unit is installed stably on the ground, and consult the installation manual.
  - ○ Poor installation might cause fire, electric shock, the unit to fall, or leakage.
- The external unit should be positioned levelly to avoid noise and vibration.
- Only a qualified technician should remove or service the unit.
  - ○ Incorrect handling or servicing might lead to leakage, electric shock, or fire. Engage a professional for these tasks.
- Avoid connecting or disconnecting the power during operation as it might lead to fire or electric shock.
- Refrain from handling the unit with wet hands to prevent fire or shock.
- Keep heaters and other electrical devices away from the unit's power cord to avoid fire or shock.
- Water should not directly contact the unit; ensure it does not seep into the electrical components.
- Do not place the unit in areas with explosive gases.
  - ○ Exposure to flammable gases can cause explosions.
- Follow guidelines for managing the drainage systems and pipes. Faulty systems must be fixed immediately to avoid water damage to nearby items.
- Turn off the unit before cleaning to avoid injury from the high-speed fan or shock.
- Avoid accelerating the defrosting or cleaning process with methods not approved by the manufacturer.
  - ○ Store the unit away from continuous ignition sources, like open flames or operational gas and electric heaters.
  - ○ Ensure the refrigerants are not exposed to open flames or high temperatures.

SAFETY GUIDELINES

More Precautions

- Discontinue using the unit if there are any operational issues or error codes.
  - ○ Shut off the power and stop using the unit to prevent electrical hazards.

- Handle the unit cautiously when unpacked or not installed.
  - ○ Beware of the sharp edges and fins on the heat exchanger.

- Check for refrigerant leaks after any installation or repair.
  - ○ A lack of refrigerant will prevent the unit from operating correctly.

- Do not insert fingers into the fan or evaporator area.
  - ○ The fan's high speed can cause severe injuries.

- This device should not be maintained by individuals (including children) lacking the necessary physical, sensory, or mental capabilities, unless supervised closely.

- Replace a damaged power cable through professional assistance to avoid risks.

- Ensure a fire extinguisher is accessible.
  - ○ When performing any hot work on refrigeration components, keep a fire extinguisher like a dry powder or CO2 unit nearby.

- Eliminate any ignition sources during work on the refrigeration system.
  - ○ Activities involving flammable refrigerants should be far from any ignition risks, including smoking. Check the area thoroughly for any flammable materials or ignition hazards and display "No Smoking" signs.

SYSTEM SPECIFICATION

Included Items

Ensure all these components are included in your package to facilitate proper setup and operation of your equipment. If any items are missing or damaged, please contact our customer support team at service@aquastrong.co.
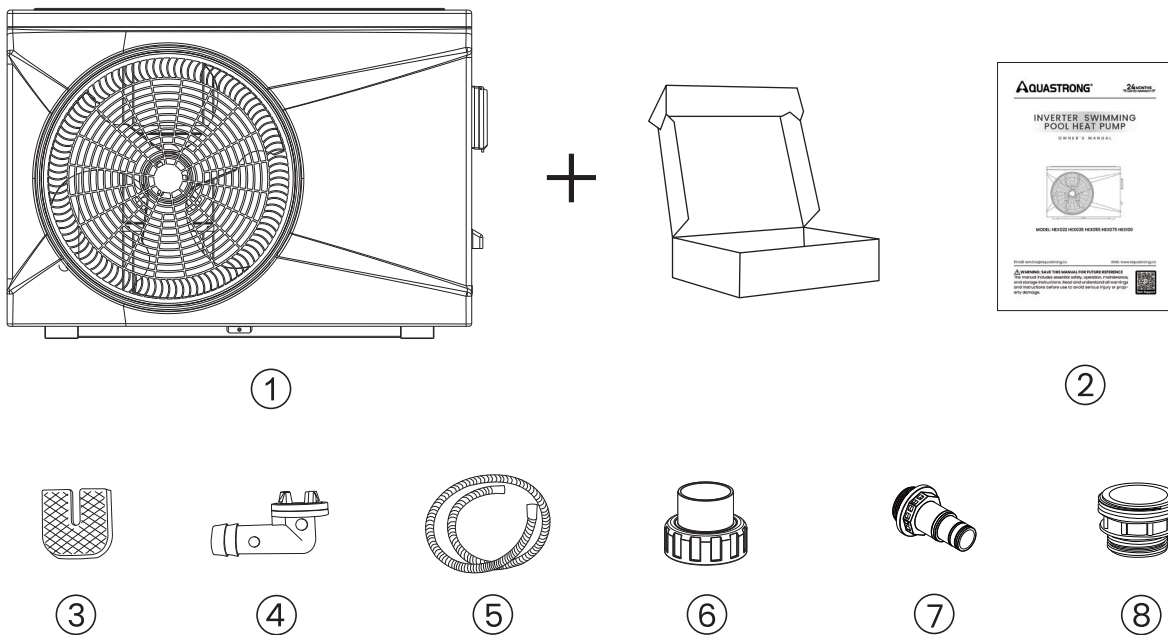
ITEM NO.	COMPONENT	QUANTITY
1	Pool Heat Pump	1
2	Owner's Manual	1
3	Insulation Mats	4
4	Condensate Pipe Connector	1
5	Condensate Pipe	1
6	1-1/2" Union Fitting	2
7	1-1/4" Hose Adapter	2
8	1-1/2" Filter Interconnecting Hose	2

SYSTEM SPECIFICATION

Unit Model	HEX022	HEX035
Heating Capacity A80°F/W80°F/Humid. 80%	22000/5925BTU/H	35000/7850BTU/H
Heating Power Input Max./Min	2940/375BTU/H	4700/490BTU/H
COP A80°F/W80°F/Humid. 80%	6.8-15.8	6.8-15.8
Heating Capacity A59°F/W80°F/Humid. 70%	17800/4780TU/H	23900/6480TU/H
Heating Power Input Max./Min	4340/629BTU/H	5731/853BTU/H
COP A59°F/W80°F/Humid. 70%	4.1-7.6	4.17-7.6
Cooling Capacity A95°F/W85°F/Humid. 70%	10922/3412BTU/H	14334/4437BTU/H
Heating Power Input Max./Min	2730/525BTU/H	3005/672BTU/H
COP A95°F/W85°F/Humid. 70%	4.0-6.5	4.77-6.6
Current	14A	18A
Power Supply	115V/50-60Hz	
Advised Pool Volume (with pool cover)	7000gal	9000gal
Operating Air Temperature	5-109°F	
Water Flow Volume	660GPH	1188GPH
Water Connection	1.25"&1.5"	1.25"&1.5"
Noise (33ft)	46db	48db
Noise (3ft)	60db	62db
Compressor Style	Rotary	Rotary
Heating Exchanger	TITANIUM HEAT EXCHANGER	
Casing	ABS	
Refrigerant	R32/0.77lbs	R32/1.59lbs
CO2 Equivalent	0.24t	0.49t
Net Unit Size (L/W/H)	34*13.7*23.3in	36.4*14.3*25.5in
Carton Size (L/W/H)	36.64*15.76*23.64in	39*17.2*25.6in
Net Weight	93lbs	117lbs
Gross Weight	117lbs	141lbs

SYSTEM SPECIFICATION

Unit Model	HEX055	HEX075	HEX100
Heating Capacity A80°F/ W80°F/Humid. 80%	55000/16400BTU/H	75000/23200BTU/H	100000/30000BTU/H
Heating Power Input Max./Min	7650/1030BTU/H	10600/1470BTU/H	14300/1875BTU/H
COP A80°F/W80°F/ Humid. 80%	6.8-15.8	6.8-15.8	6.8-15.8
Heating Capacity A59°F/ W80°F/Humid. 70%	45000/13000TU/H	67600/19000TU/H	76800/22000TU/H
Heating Power Input Max./Min	10392/1710BTU/H	15191/2500BTU/H	18173/2895BTU/H
COP A59°F/W80°F/ Humid. 70%	4.33-7.6	4.45-7.6	4.18-7.6
Cooling Capacity A95°F/ W85°F/Humid. 70%	25188/9215BTU/H	30717/12970BTU/H	34130/16724BTU/H
Heating Power Input Max./Min	6458/1536BTU/H	8533/2236BTU/H	9751/3040BTU/H
COP A95°F/W85°F/ Humid. 70%	3.9-6.0	3.6-5.8	3.5-5.5
Current	14.5A	23A	30A
Power Supply	220V/50-60Hz		
Advised Pool Volume (with pool cover)	16000gal	21000gal	26000gal
Operating Air Temperature	5-109°F		
Water Flow Volume	1717GPH	2377GPH	5547GPH
Water Connection	1.25"&1.5"	1.25"&1.5"	1.25"&1.5"
Noise (33ft)	50db	53db	55db
Noise (3ft)	64db	66db	68db
Compressor Style	Rotary	Rotary	Rotary
Heating Exchanger	TITANIUM HEAT EXCHANGER		
Casing	ABS		
Refrigerant	R32/1.87lbs	R32/2.54lbs	R32/2.87lbs
CO2 Equivalent	0.57t	0.78t	0.88t
Net Unit Size (L/W/H)	36.4*14.3*25.5in	42.6*15.7*29in	42.6*15.7*29in
Carton Size (L/W/H)	39*17.2*25.6in	45.2*18.2*30in	45.2*18.2*30in
Net Weight	128lbs	194lbs	216lbs
Gross Weight	152lbs	218lbs	243lbs

SYSTEM SPECIFICATION

Important Usage Instructions ⚠️

Please review this operating manual meticulously prior to using the unit.

- This appliance operates with a flammable refrigerant.
- Consult the owner's manual before initial use.
- Refer to the installation guide prior to installing the appliance.
- Consult the service manual prior to any repairs.
- Images in this manual may not exactly depict the actual product. Refer to the actual product for precise details.

Refrigerant Safety Information

- The R32 refrigerant used in this appliance is a specially processed, odorless, flammable gas that poses a low risk of ignition, typically only by direct flame. While it can potentially lead to explosive reactions under specific conditions, these scenarios are not typically a concern under standard operational conditions.

- R32 is an environmentally friendly choice as it does not deplete the ozone layer and has a minimal impact on global warming relative to common refrigerants. It is also thermodynamically efficient, promoting high energy performance and requiring less refrigerant volume compared to other refrigerants.

INSTALLATION AND CONNECTION

> **Caution**
>
> - The installation of the heat pump should only be done by qualified professionals to avoid damage and ensure safety. This information is for reference only and must be adjusted based on actual installation conditions.

Handling and Movement

The heat pump should always be kept upright when stored or moved.
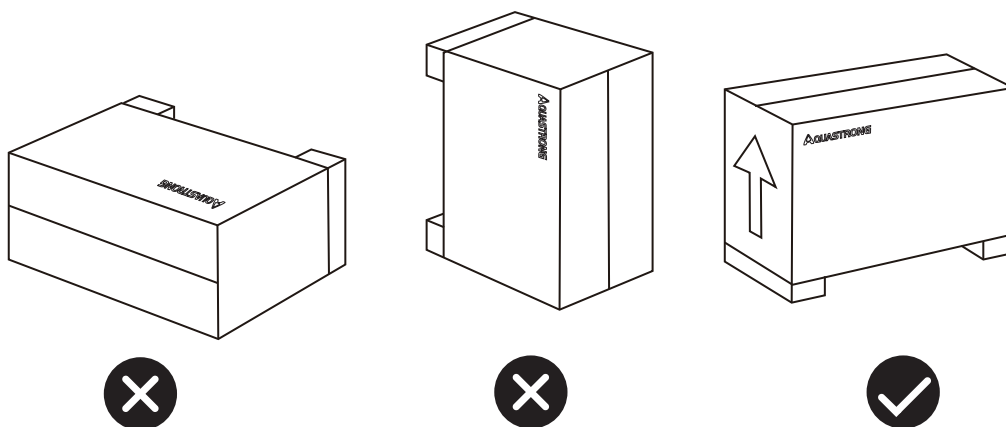
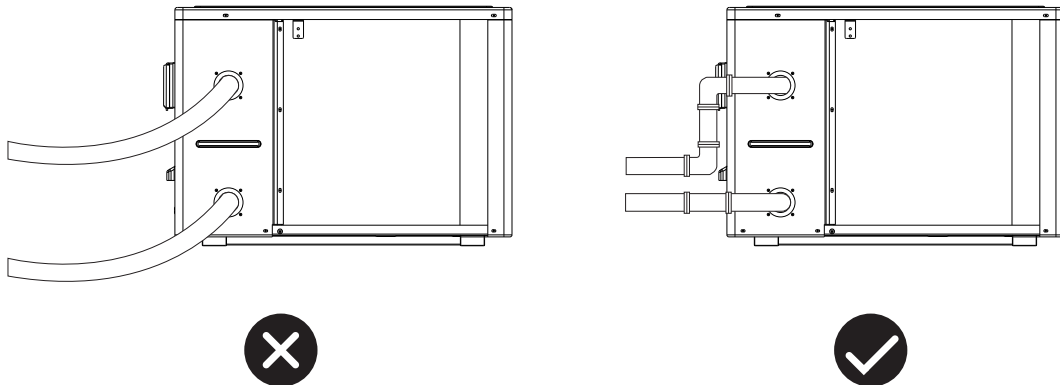Never lift the heat pump by the water connections or heat exchanger to prevent internal damage.

Water Union
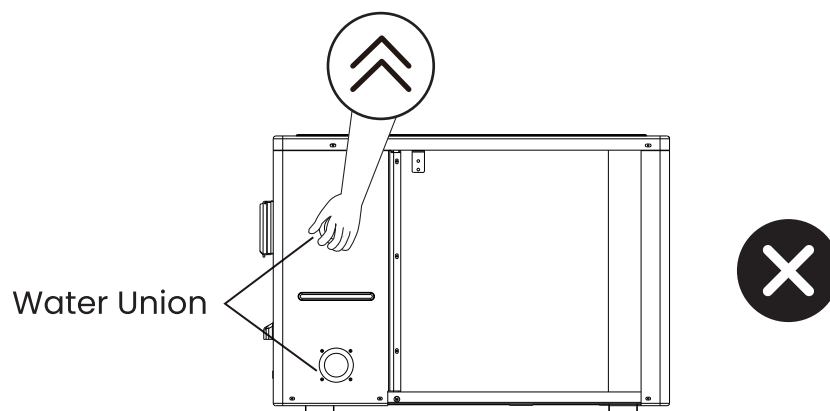
INSTALLATION AND CONNECTION

Preliminary Installation Notes

- Only connect the water inlets and outlets using rigid pipes as flexible pipes may not support the weight.

- Maintain a maximum distance of 32.8 feet between the pool and the heat pump to ensure efficient heating.

Installation Instructions

Preparatory Requirements for optimal installation of your heat pump, ensure the following equipment is available:

- A power supply cable that aligns with the power demands of the unit.
- A bypass kit and a collection of PVC tubing with accessories like strippers, adhesive, and sandpaper for setup (note: these items are not included in the package).
- A variety of wall plugs and expansion screws are required to secure the unit firmly (not included).
- Elevate the unit during installation to allow space for adequate drainage; utilize sturdy fasteners to aid this setup.

INSTALLATION AND CONNECTION

Location and Spatial Arrangement

Ensure that the location for your heat pump adheres to the following:

- **Accessibility:** The installation site must be easily accessible to facilitate effortless operation and regular maintenance.
- **Foundation:** Install the pump on a stable, level surface such as a reinforced concrete floor that can support the weight of the unit.
- **Proximity to Water Drainage:** Position the unit near a water drainage system to protect the surrounding area from potential water damage.
- **Elevation for Support:** If necessary, raise the unit using robust mounting pads designed to sustain its weight.
- **Environmental Conditions:** Avoid locations exposed to oil, flammable gases, corrosive products, sulfur compounds, or areas near high-frequency equipment.
- **Avoidance of Traffic and Noise:** Do not install the unit near roads or areas with heavy traffic to prevent mud splashes and reduce noise interference.
- **Neighborhood Consideration:** Ensure the pump is positioned in a way that minimizes noise disturbances to nearby residents.
- **Safety for Children and Pets:** Keep the unit out of reach to ensure safety.
- **Ventilation:** Verify that the unit is well-ventilated, its air outlets are not directed towards any nearby windows, and that there is no risk of exhaust air recirculation. Provide ample space around the unit for easy access during maintenance.

INSTALLATION AND CONNECTION

Space Requirements Around the Unit

≥59 inches   ≥20 inches

≥20 inches   ≥40 inches   ≥20 inches   ≥20 inches
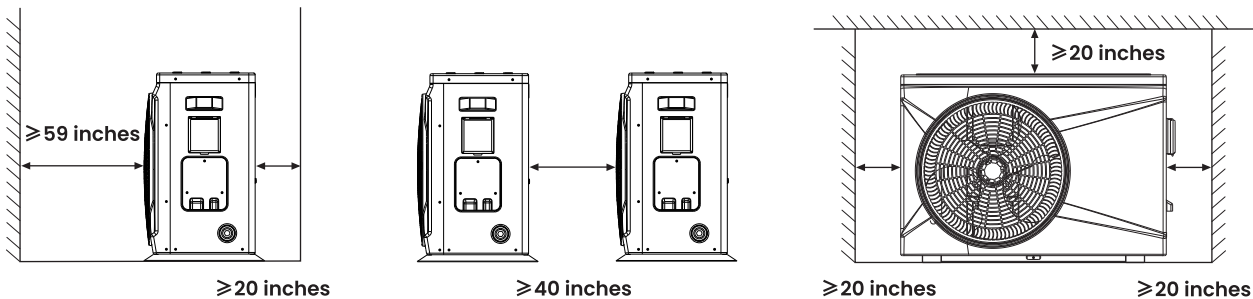
- Ensure no obstructions exist within 59 inches in front of the heat pump.
- If multiple units are installed side by side, maintain a minimum clearance of 40 inches between them.
- Keep at least 20 inches of free space on all sides and the back of the unit for unimpeded airflow.
- Avoid placing any objects above the heat pump to ensure unobstructed air flow. By carefully considering these guidelines during installation, you can ensure optimal performance and longevity of your heat pump, while adhering to safety standards and ensuring effective operation.

Heat Pump Installation Guidelines

Maintenance Advisory: It is crucial to regularly clean the filter to ensure the system remains free of debris and the water stays clean. Secure the drainage valve to the lower part of the water pipe. During the cold season, if the heat pump is not in use, disconnect it from the power source and drain the water through the drainage valve. Keep the water pump operational if temperatures fall below 32°F to prevent the system from freezing.

Installation Diagram Overview: Refer to the attached diagram for details on the correct setup of the heat pump's plumbing, ensuring all components like the water processor, drainage valve, and connections are correctly installed.

INSTALLATION AND CONNECTION

Condensate Drainage

Caution

- As the heat pump operates to heat the pool water, the air drawn into the unit is significantly cooled, which may cause condensation to form on the evaporator fins. In conditions of high humidity, the amount of condensation can reach several liters per hour. This isn't a leak.

Condensate pipe installation method

- **Step 1:** Assemble the condensate pipe and condensate pipe connector.
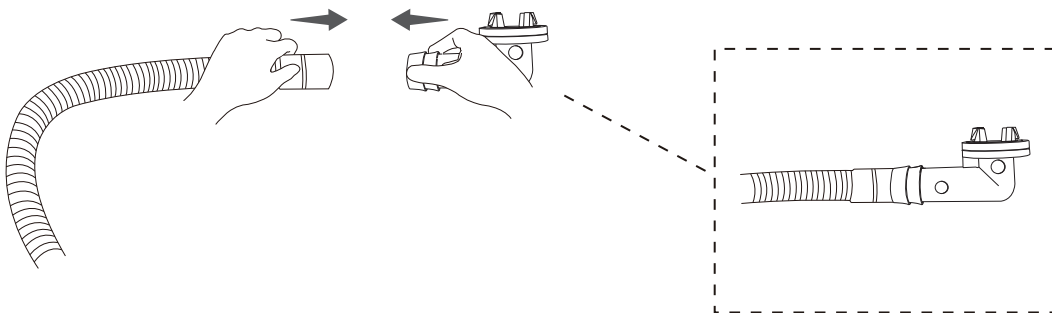
- **Step 2:** Connect the condensate pipe to the bottom drain hole.
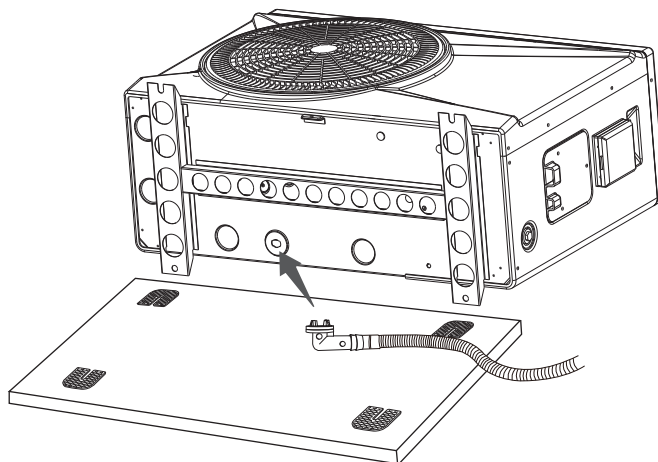
INSTALLATION AND CONNECTION

All Equipment Must be Bonding:

HEX022/HEX035/HEX055/HEX075/HEX100 requires equipotential bonding. Please connect an #8 AWG bare copper wire to a ground rod. This is required for safety and corrosion prevention of the heater's metal chassis.

8ft ← Grounding Rod
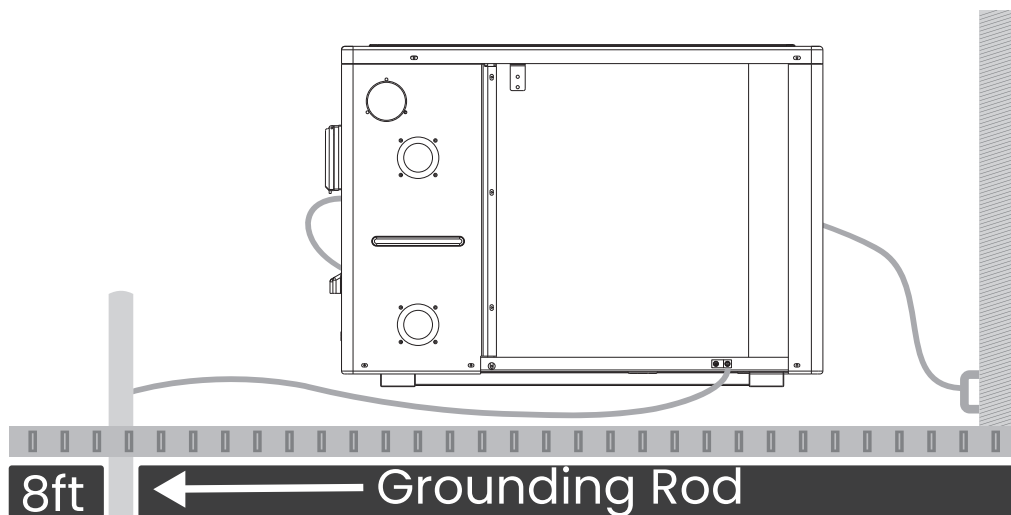
INSTALLATION AND CONNECTION

PLUMBING

- On a typical installation on a pool with a small pump, such as a 1/2 or 3/4 hp pump with 1-1/2" PVC or flexible hoses, only the plumbing IN from the BOTTOM and OUT from the TOP pipe connection is necessary.
- For stronger systems (those with 1-1/2hp and larger pumps and 2-inch plumbing systems), a bypass system should be installed.
- A BYPASS SYSTEM IS NOT NECESSARY FOR ABOVE-GROUND POOLS.
- If the heat pump is connected to a filtration circuit with a bypass valve: We suggest opening the bypass 50% and then adjusting it down to achieve the lowest flow rate into the heater without triggering error messages. This will provide enough water to the heater without restricting the flow. The IN and OUT temperature difference should be 1-5°F. If the difference is too great, increase the water flow through the heater for optimal heating.
- The old system bypass path usually consists of 3 valves. The new AQUASTRONG bypass valve uses just 1 valve. This makes it possible to adjust water flow passing through the heat pump.
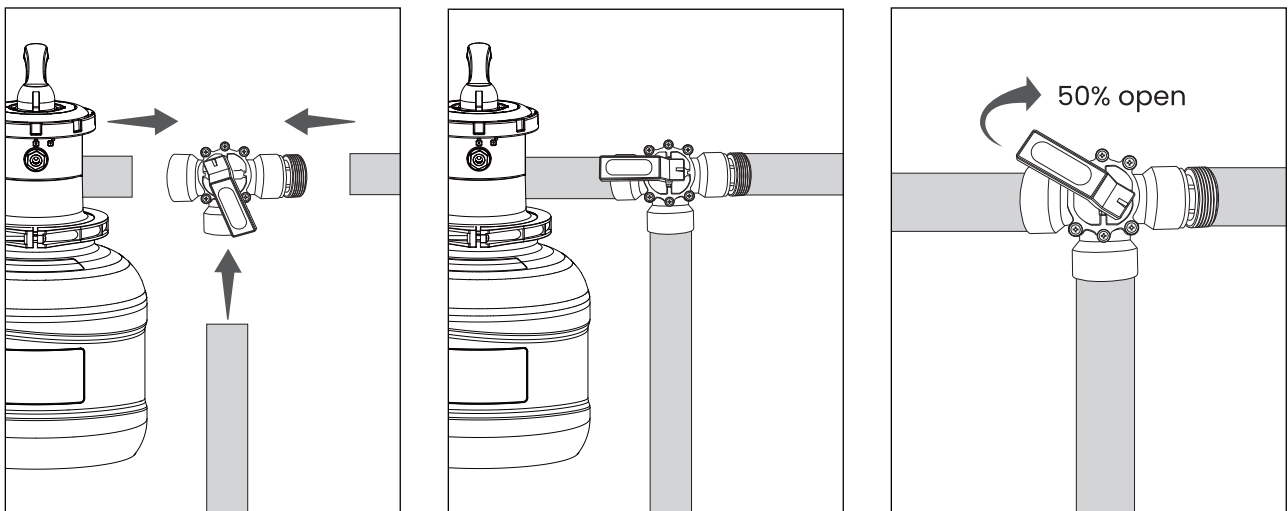
INSTALLATION AND CONNECTION

Foundation Requirements:

A. Installation of a single heater
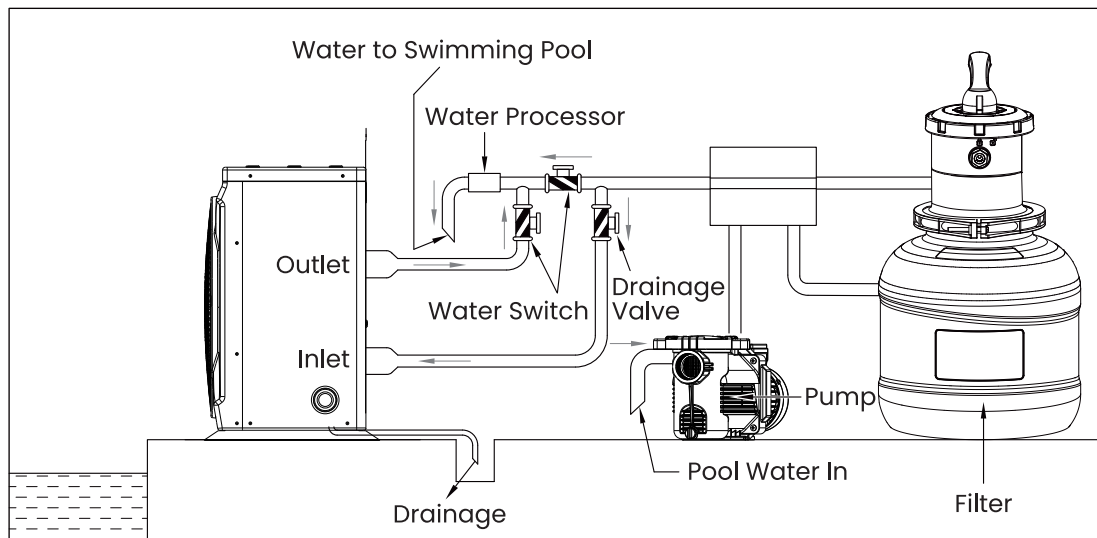
B. Parallel installation for 2 units
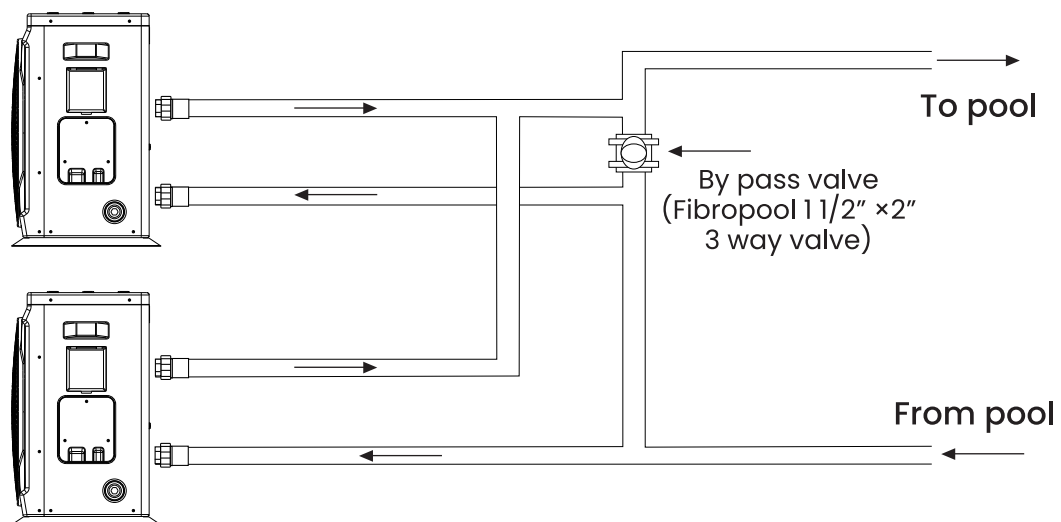
- Anchor the base of the heat pump using M10 bolts into a robust and rust-resistant bracket set on a solid concrete foundation.
- A separate water pump, which the user must provide, is required for the heat pump's operation.

INSTALLATION AND CONNECTION

Electrical Setup Requirements:

To ensure the heat pump operates safely and efficiently:

- Protect the main electricity supply with a 30mA differential switch.
- Link the heat pump to a D-curve circuit breaker, compliant with the local standards where installed.
- Use an outdoor-appropriate electrical cable that matches the required length and power capacity of the unit.
- For installations involving a three-phase electrical system, correctly sequence the connections to ensure the compressor functions properly.
- In publicly accessible areas, it is obligatory to install an emergency stop button near the heat pump to allow for immediate shutdown if necessary.

Model	Power Supply	
	Electricity supply	Specification
HEX022	115V/50-60Hz	RCD Adapter
HEX035		
HEX055	220V/50-60Hz	AWG12
HEX075		
HEX100		

Electrical Connection Guidelines

Caution

- Always disconnect the power before starting any work on the pump to ensure safety.

INSTALLATION AND CONNECTION

Model： HEX022 HEX035

Connection Steps:

Plug in the power cord of the heater, and reset the GFCI, by pushing the TEST and RESET buttons.

Power Cord: 16.5ft →
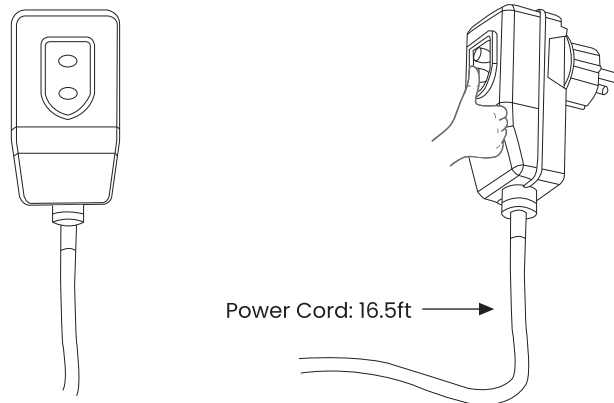
Model： HEX055 HEX075 HEX100

Connection Steps:

L1 : Live

L2 : Live

⏚ : Ground

| L1 | L2 | ⏚ | 1 | 2 |

Power Supply
220-240V/60Hz

Water Pump
220-240V/60Hz
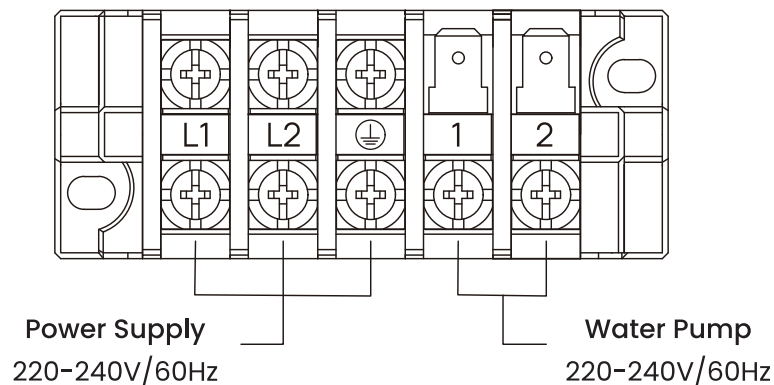
- Remove the electrical panel using a screwdriver to gain access to the terminal block.
- Insert the power cable into the designated port on the heat pump.
- Following the provided diagram, connect the power supply cable to the terminal block ensuring a secure and correct fit.

INSTALLATION AND CONNECTION

Plumbing Connection Instructions

Reminder

- Ensure all water connections are secure to prevent any leaks.

Setup Process:

- Monitor for any condensation that may collect beneath the heat pump during operation. This is normal, but attention is needed to manage it properly.
- Raise the installed heat pump at least four inches off the ground using durable, water-resistant supports.
- Attach the provided drainage pipe to the designated outlet at the base of the pump to facilitate proper drainage.
- Connect the heat pump's water inlets and outlets using the supplied water pipe joint to the external water lines (note: external pipes are not included). Tighten all connections to ensure there are no leaks.

These revised steps are designed to ensure that the heat pump's electrical and plumbing installations are performed safely and effectively, maintaining the system's integrity and functionality.

INSTALLATION AND CONNECTION

To Pool

Water Pipe Joint
(Provided)

From Pump

ID: 1.9inch(48.3mm)

1-1/2" Union Fitting
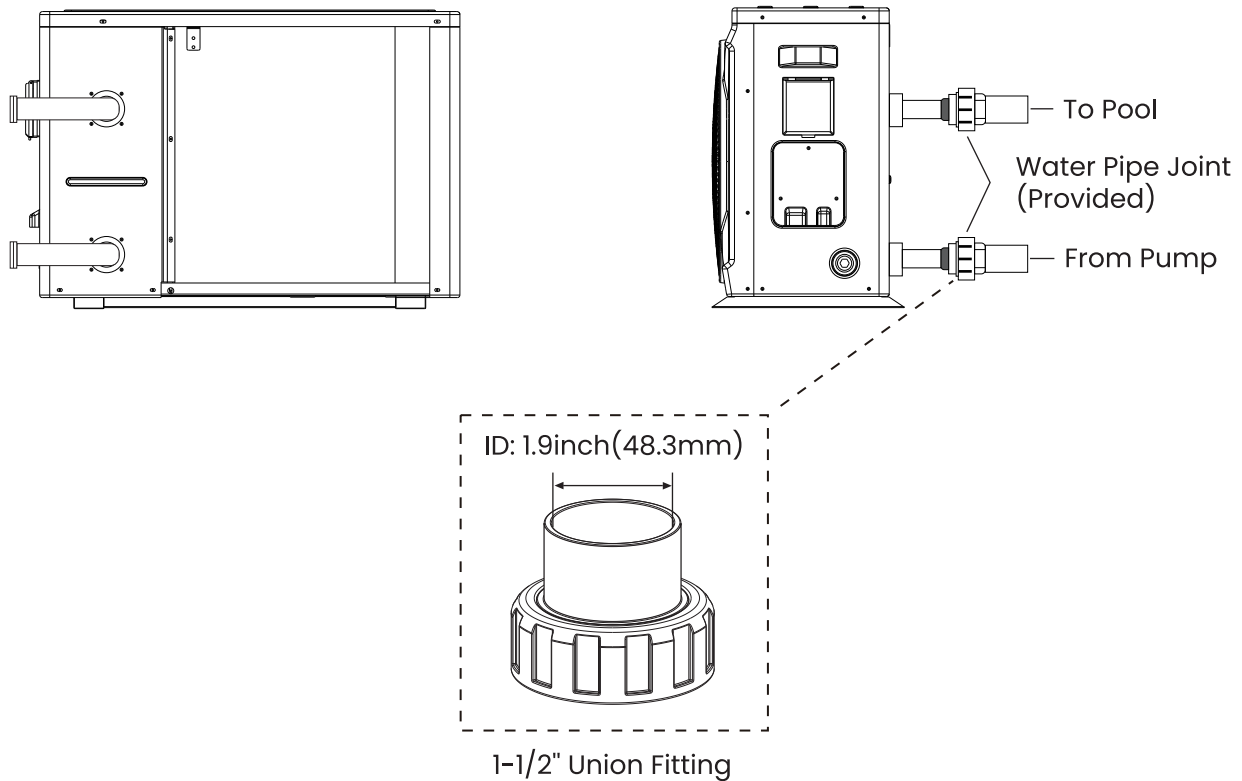
Post-Installation Testing

Caution

- Prior to initiating the heat pump, ensure all electrical wiring is thoroughly inspected to prevent any potential hazards.

Safety and Operational Checks:

- Ensure all capacitors are fully discharged to mitigate any risk of sparking.
- Confirm that no live electrical components are exposed during system startup, maintenance, or system drainage.
- Verify the integrity of the earth grounding.

INSTALLATION AND CONNECTION

Pre-Operational Inspection:

Confirm the installation has been completed correctly.

- Verify that the power supply voltage matches the unit's rated voltage.
- Check all plumbing and electrical connections for proper installation.
- Ensure the air intake and exhaust ports are unobstructed.
- Confirm that drainage systems are clear and there are no leaks.
- Verify that the leakage protector and pipe insulation are functioning properly.
- Check that the ground wire is securely connected.

Operational Trial Procedure:

- **Step 1:** Begin the test run after confirming all installation aspects are correctly completed.
- **Step 2:** Ensure all wiring and plumbing are securely connected and inspected. Fill the water tank prior to turning on the power.
- **Step 3:** Purge all air from the pipes and the water tank by starting the system and adjusting the control panel to the desired settings.
- **Step 4:** Monitor the following during the test:

  1. Check that the unit's power draw is within normal limits during the initial run.
  2. Test each control panel button for functionality.
  3. Ensure the display is functioning correctly.
  4. Inspect the entire heating system for any leaks.
  5. Verify that the condensate drain operates correctly.
  6. Listen for any unusual noises or vibrations.

These revised procedures will help ensure the heat pump is safely and effectively brought into operation after installation.

CONTROLLER OPERATION GUIDANCE

Welcome Screen:

The display shows "Welcome" for three seconds before proceeding to the main interface. If communication fails, the screen remains on this display. Touch the screen to re-activate it after it turns off from two minutes of inactivity.
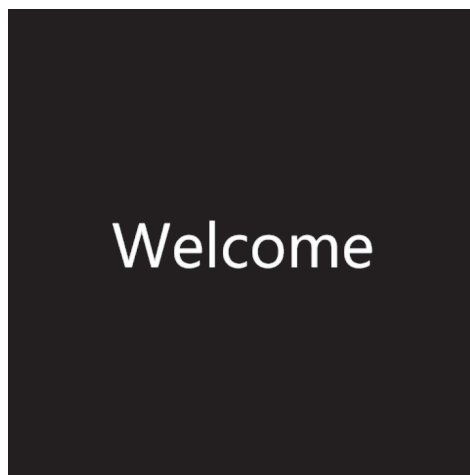
Main Interface:

· **Date and Time:** Displayed at the top left.
· **Temperature Readings:** Central display shows water return and outlet temperatures.
· **System Status:** Icons indicate current settings including ambient temperature, defrosting, mode (cascade, silent/strong), timer, water pump activity, and valve status.

CONTROLLER OPERATION GUIDANCE

Icon Description:

1. Top Bar: From left to right - Date, time, current ambient temperature followed by icons for defrosting, operational mode (cascade, silent/strong), timer settings, water pump activity, and return valve status.

2. Operational Mode: Directly beneath the date and time, indicating the current setting for easy reference.

3. Fault Record: Located under the Wi-Fi icon, providing quick access to the system's diagnostic history.

ICON	FUNCTION	DESCRIPTION
☀	Heating	Active in heating mode.
❄	Cooling	Active in cooling mode.
⚠	Automatic	Auto-switches between heating and cooling.
⊚	Fault	Flashes to indicate a system fault. Click to view real-time fault details.
❄	Defrosting	Constantly displayed; flashes during defrosting or refrigerant recovery operation.
⊞	Cascade	Always shown when the unit network is running.
☾	Mute Mode	Displayed when the unit is in silent mode.
Y	Strong Mode	Visible when the unit operates in strong mode for increased performance.
◷	Timing	Indicates active timing function.
▥	Water Pump	Shown when the water pump is operational.
⊶	Return Water	Appears when the return water valve is activated, ensuring proper circulation.
≈	Electric Heating	Always displayed; flashes at 1Hz for fast heating and 0.5Hz for sterilization.
▤	Compressor	Always displayed when the compressor is running.
✳	Fan	Visible whenever the fan is operational.
⤢	WiFi Connection	Indicates successful connection to WiFi.

CONTROLLER OPERATION GUIDANCE

Wire Controller Operations

1. Temperature Setting:

a: **Adjust Temperature:** Use the "+" and "-" buttons on the main interface to modify the temperature setting for the selected mode.
b: **Slider Adjustment:** Drag the temperature slider to fine-tune the temperature for the current mode.
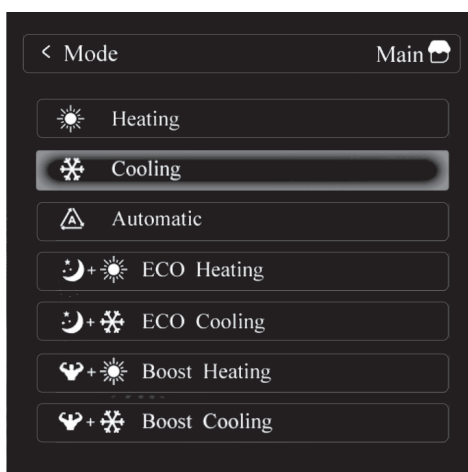
2. Power On/Off:

Operation: Press the power " ⏻ " button to toggle the controller's power state. The display shows 'ON' when active and 'OFF' when deactivated.

3. Mode Menu:

Accessing Modes: In active screen state, press the Mode button " ⊞ " to access the mode selection menu.
Navigation: Tap 'Main ▱ ' in the upper right to return to the main interface.

‹ Mode	Main ▱
☀ Heating	
❄ Cooling	
⚠ Automatic	
☾+☀ ECO Heating	
☾+❄ ECO Cooling	
✿+☀ Boost Heating	
✿+❄ Boost Cooling	

CONTROLLER OPERATION GUIDANCE

4. Function Menu:

Access the function menu by clicking the " " button on the main interface.

4.1 User Command Operation: Navigate to specific user functions by selecting the " " button in the display.

User Functions Include:

ICON	FUNCTION	DESCRIPTION
	Forced Frosting	Activate to enable defrosting when not in cooling mode; the system automatically adjusts based on current conditions.
	Waterway Emptying	Use this to drain the system. The water pump starts automatically and runs until manually turned off.

4.2 Set On/Off Timing Control: Access the timing function from the function selection page by selecting the " " button.
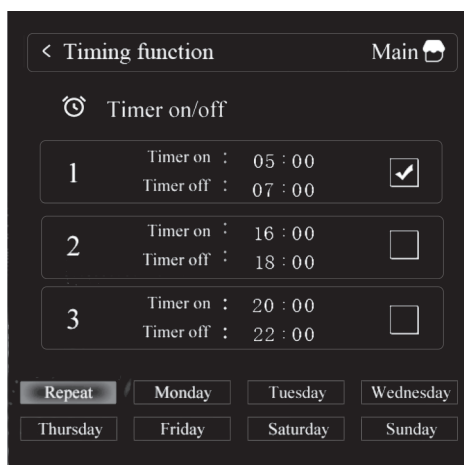
CONTROLLER OPERATION GUIDANCE

Daily Scheduling:

- Daily Repeat: Select Repeat for daily operation. Set the time once, and the unit will follow this schedule daily.

Weekly Scheduling:

- Weekly Timing: Choose any day from Monday to Sunday to set specific times for each day.

- Setting Time: Select the desired time slot, input the start and end times via the keyboard, activate the timer by clicking the " ✔ " button, and press "Enter" to save your settings.
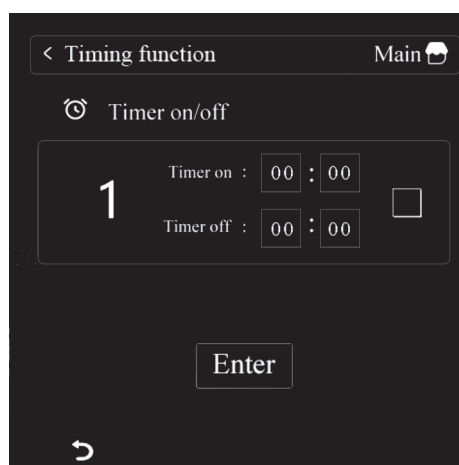

4.3 WiFi Distribution Network: Access the WiFi distribution interface by selecting the " 🛜 WIFI distribution " button from the function selection page.

Configuration Options:

- Intelligent Distribution Network: Choose this for automatic WiFi setup. Ensure the device is connected to a 2.4 GHz WiFi network to ensure compatibility and optimal performance.

- AP Distribution Network: Select this option to configure the access point settings manually. This option also requires a 2.4 GHz WiFi network for proper operation.

CONTROLLER OPERATION GUIDANCE

5. Parameter Query Key

To access the parameter query interface, press the " " button on the main display.

5.1 User Parameter Modification: Navigate to the user parameters modification section by clicking on " " from the parameter query page.

5.2 Modifying Parameters: Select the parameter you wish to modify to open the editing interface.

Input the new value using the on-screen keyboard, confirm by pressing "Enter", and then save your changes by pressing "Enter" again.
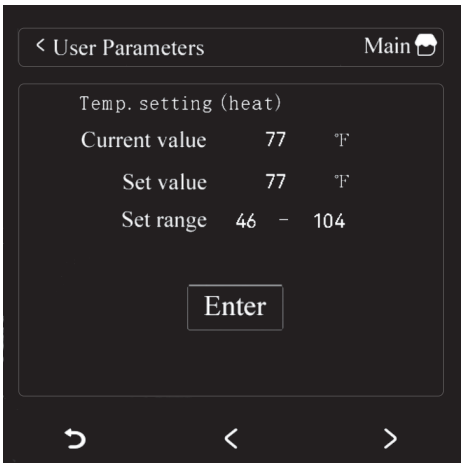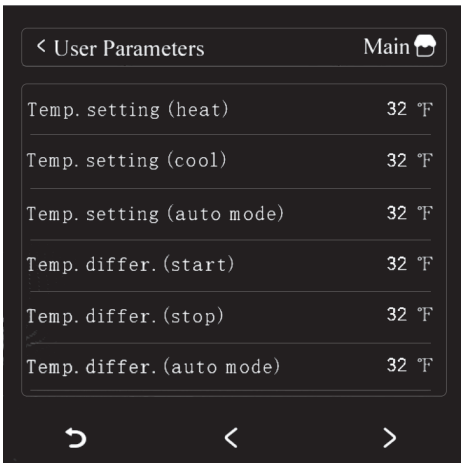
CONTROLLER OPERATION GUIDANCE

5.3 Running Parameter

Access System Parameters:
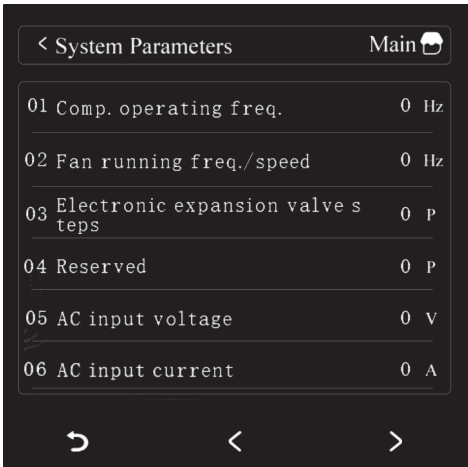
- From the query page, select the " " button to view detailed system parameters. Use the "<" and ">" buttons to navigate through the pages.

5.4 Monitoring Networked Units: While connected to a network, access the operating parameters of an online unit by selecting its corresponding number from the "System Parameters" page. Grayed-out numbers indicate offline units.
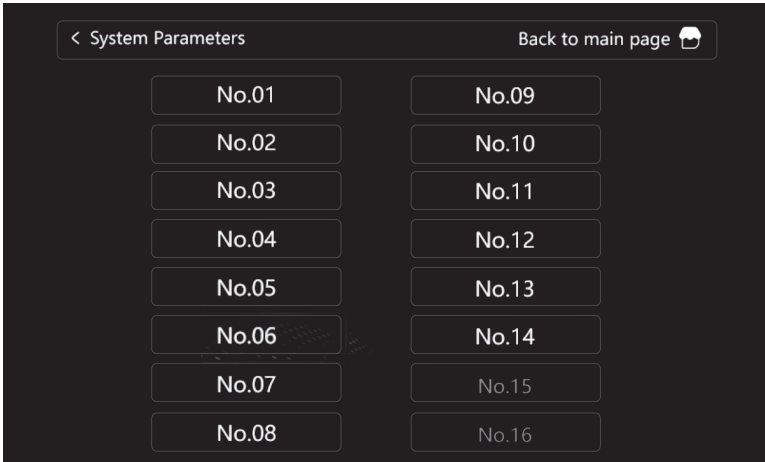
CONTROLLER OPERATION GUIDANCE

5.5 Fault Information

Access Fault Records:
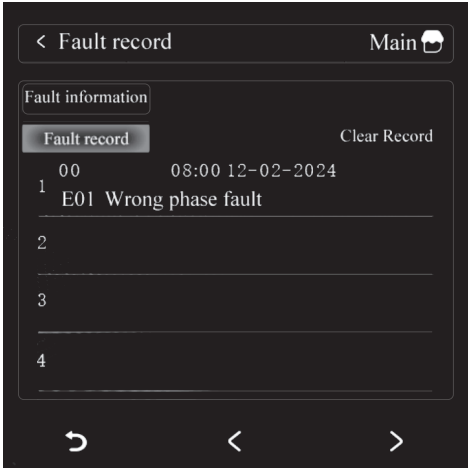
- Navigate to the ' ' from the query page.
- Select ' ' to view detailed logs of system faults.

View and Clear Faults:

- To see current fault details, click on the displayed fault.
- Clear all stored fault records by pressing ' '.

Fault Indicator:

CONTROLLER OPERATION GUIDANCE

- If a fault occurs, the fault icon " ![fault icon] " on the main interface will flash. Once resolved, tap the icon to revisit the fault query page for details.

5.6 Power Consumption Data: Access comprehensive power statistics by selecting 'Power Statistics' from the query menu on machines equipped with a power module.

Monitoring Power Use:

- View total and daily electricity consumption, voltage, and current details directly from the 'Power Statistics' screen.

For Single-phase Modules:
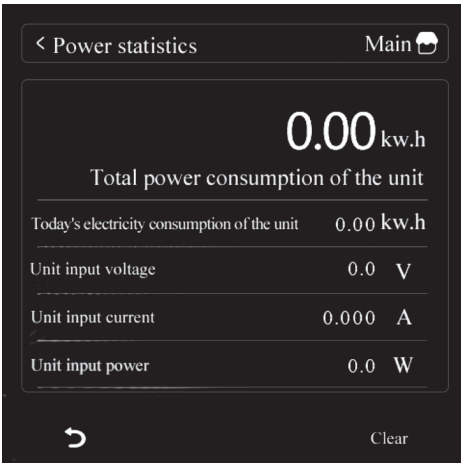
- Check real-time data including voltage, current, and power usage.

CONTROLLER OPERATION GUIDANCE

For Three-phase Modules:
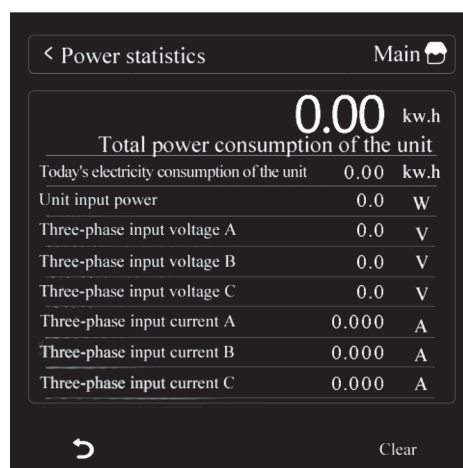
- Monitor phase-wise voltage and current alongside overall power consumption.

Reset Data:

- Clear historical power data by pressing the 'Clear' button, resetting the statistics.

6. Settings Menu

Access the settings menu by pressing the ' ' icon from the main interface.
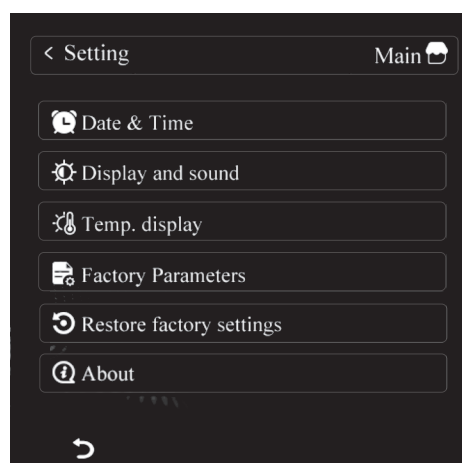
CONTROLLER OPERATION GUIDANCE

6.1 Clock Setting
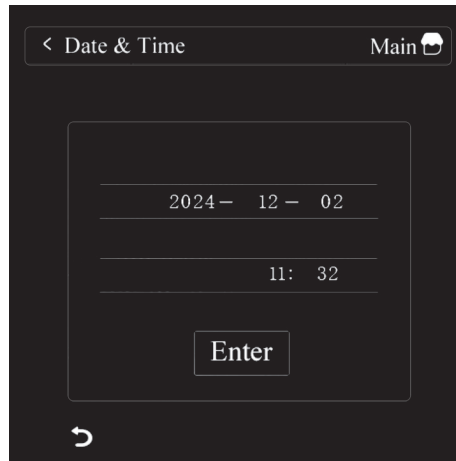
On the settings page, select "Date & Time" to access the date and time settings. Use the keyboard to enter the year, month, and day, then press "Enter" to save your changes.

6.2 Display and Sound Settings
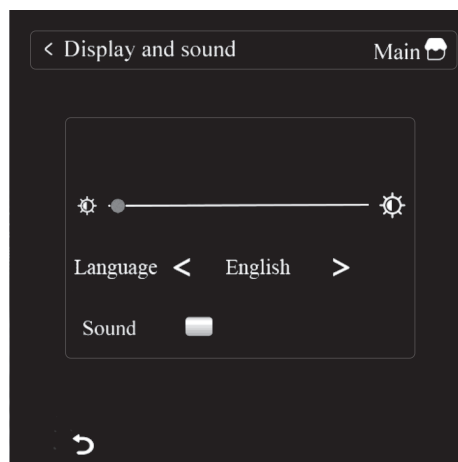
Navigate to "Display and Sound" on the settings page. Adjust the screen brightness using the slider and toggle the sound on or off with the corresponding buttons.

CONTROLLER OPERATION GUIDANCE

6.3 Temperature setting
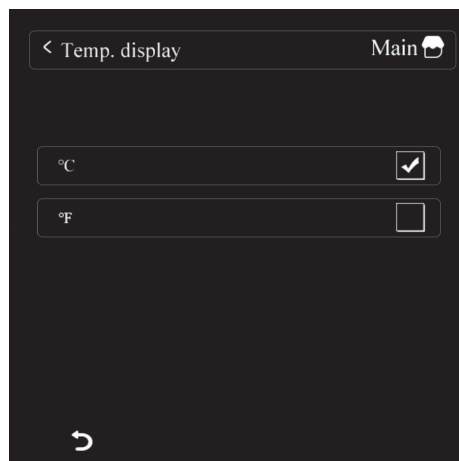
Select " " to choose between different temperature units.

6.4 Restore Factory Settings
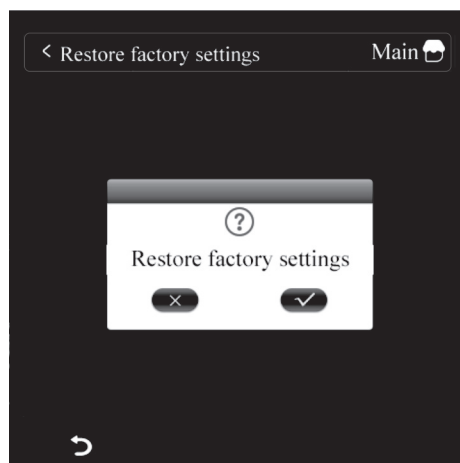
Access the settings page, click "Restore factory settings" to navigate to the reset page, and confirm to revert to factory defaults.

CONTROLLER OPERATION GUIDANCE

6.5 View Software Version
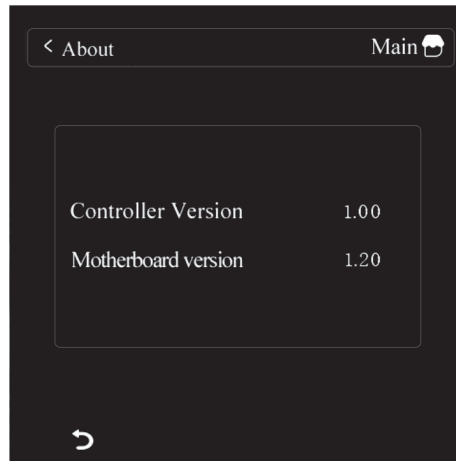
In settings, select "About" to view details of the controller and motherboard versions.

System Status Check

1. Access the system status interface by pressing the "M" button for three seconds, then adjust settings with the "+" or "-" buttons.
2. The interface will automatically close if no action is taken within one minute.

PARAMETERS

Parameter status Browse: Press ◉ to enter Parameter status Browse

Running Parameter

CODE	DESCRIPTION	SCOPE	UNIT
c01	Ambient temperature	32.18°F	°F
c02	Outside coil temperature	32.18°F	°F
c03	Exhaust temperature	32.18°F	°F
c04	Suction pipe temperature	32.18°F	°F
c05	Reserve	32.18°F	°F
c06	Reserve	32.18°F	°F
c07	Inside coil temp (after throttle)	32.18°F	°F
c08	Water inlet temperature	32.18°F	°F
c09	Water outlet temperature	32.18°F	°F
c10	Reserve		
c11	Reserve		
c12	Reserve		
c13	Sensor failure		
c14	System failure		
c15	Driver failure		
c16	Signal output		
c17	Running status		
c18	AC voltage		V
c19	DC voltage		V
c20	Actual frequency		Hz
c21	EEV open degree		
c22	Reserve		
c23	Heat pump current		A
c24	Compressor current		A
c25	DC FAN Speed		Rpm

PARAMETERS

Running Parameter

CODE	ENGLISH MEANING	DISPLAY RANGE
1	Comp. operating freq.	Actual measurement value
2	Fan running freq./speed	Actual measurement value
3	Electronic expansion valve steps	Actual measurement value
4	Reserved	Actual measurement value
5	AC input voltage	Actual measurement value
6	AC input current	Actual measurement value
7	Comp. phase current	Actual measurement value
8	Comp. IPM temp. AC input current	Actual measurement value
9	Reserved	Actual measurement value
10	Reserved	Actual measurement value
11	External ambient temp.	Actual measurement value
12	Outer coil (fin)	Actual measurement value
13	Inner coil (plate exchange)	Actual measurement value
14	Return air temp.	Actual measurement value
15	Exhaust temp.	Actual measurement value
16	Water return temp.	Actual measurement value
17	Water outlet temp.	Actual measurement value
18	Reserved	Actual measurement value
19	Reserved	Actual measurement value
20	Unit Tooling Number	Actual measurement value
21	Reserved	Actual measurement value
22	Reserved	Actual measurement value
23	Driver manufacturer	Actual measurement value
24	Reserved	Actual measurement value
25	Reserved	Actual measurement value
26	Reserved	Actual measurement value
31	Four-way valve	Actual measurement value
32	Reserved	Actual measurement value
33	High pressure switch	Actual measurement value
34	Low pressure switch	Actual measurement value
35	Water flow switch	Actual measurement value
36	Linkage switch	Actual measurement value
37	Unit input voltage	
38	Unit input current	
39	Unit input power	
40	Total power consumption of the unit	

APP CONTROL

1. Preparation before connecting

- Ensure your Wi-Fi router supports 2.4GHz (NOT 5GHz).
- Note: Most 5GHz routers can also be configured to a 2.4GHz band or dual band.
- Verify the Wi-Fi name and password are correct.
- Confirm your smartphone or tablet supports a 2.4GHz network.
- Download the ' **Tuya Smart** ' app from the App Store (iOS devices) or Google Play (Android devices).
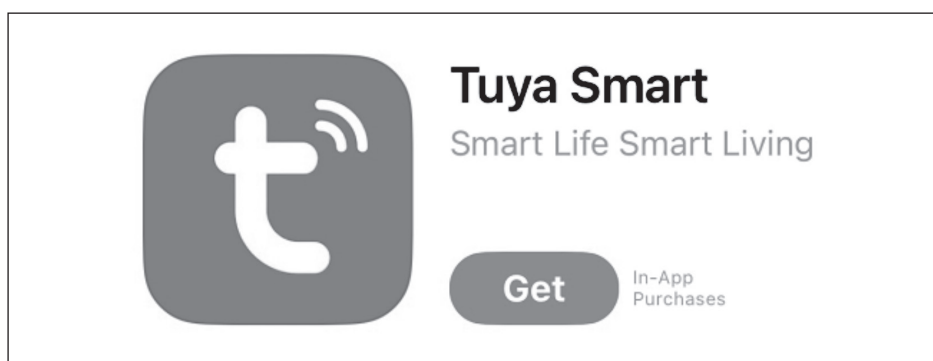
APP CONTROL

2. Launch the Tuya Smart App

- Open the Tuya Smart app on your smartphone or tablet.
- Register an account using your mobile phone number or email address.
- Log in to your account to proceed.

App Login Screen
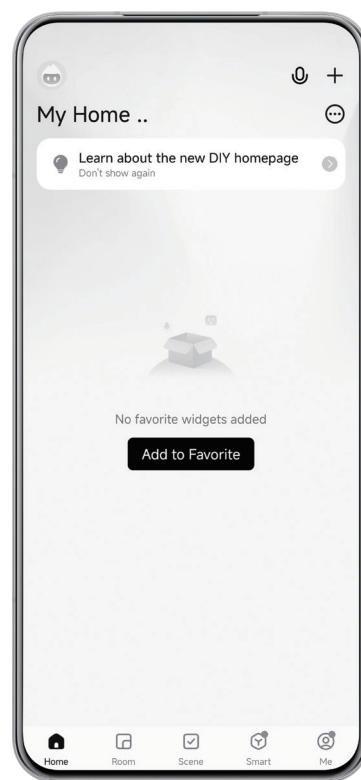
App Main Dashboard

APP CONTROL

3. Pairing Method

Pairing Equipment Preparation

- Select "Function" on the operation page
- Tap"WIFI Distribution" to access the Wi-Fi configuration interface.
- Ensure the controller is in Smart Configuration mode.
- Ensure the Wi-Fi indicator on the controller is flashing rapidly.

step1

step2
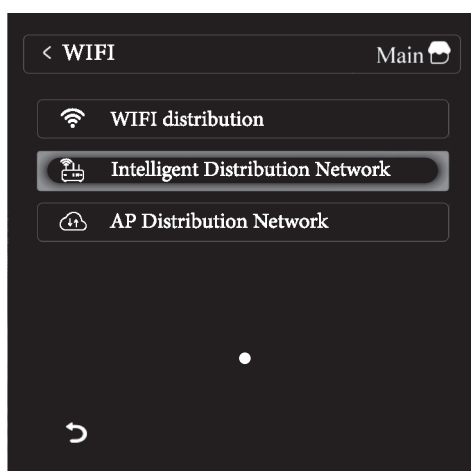
step3
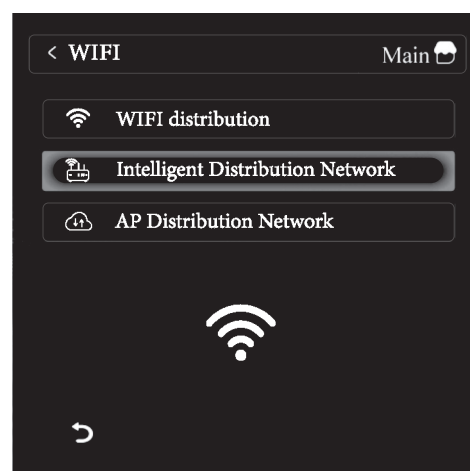
step4

APP CONTROL

3.1 Automatic Mode (Bluetooth Connection)

> **Caution**
>
> - We strongly recommend using the automatic connection. If the automatic connection fails, please try to connect manually or contact customer service for assistance.

- Open the Tuya Smart app and navigate to the homepage.
- Tap the "+" icon in the upper right corner or select "Add Device" to access the device category selection page.
- Grant the app the necessary permissions for Bluetooth and location access, then proceed to the device pairing screen.
- Turn on Bluetooth. The app will automatically search for nearby devices. Once your device is detected, tap to add it.
- Follow the on-screen instructions and tap "Next." The app will automatically pair with the device.
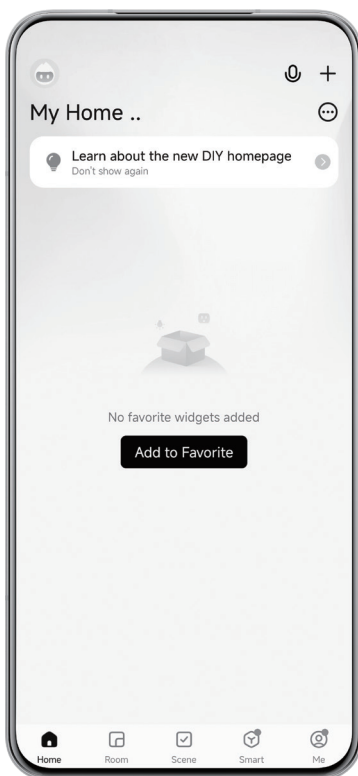
Open Tuya Smart
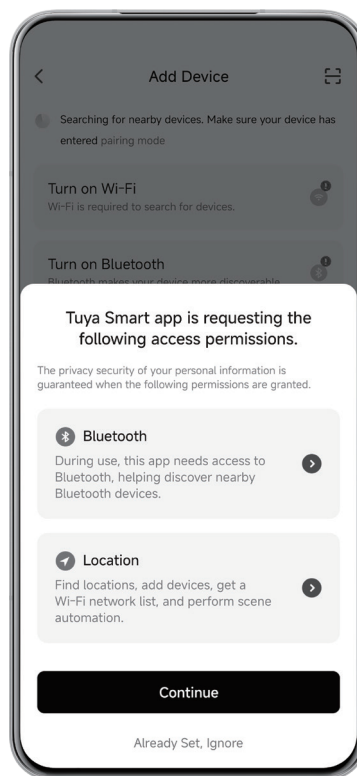
Grant Bluetooth and Location, Access, Pair Device

Choose Device

APP CONTROL

Pairing

Add Device

Searching for nearby devices. Make sure your device has entered **pairing mode**

Add Manually

Electrical

Lighting

Sensors

Large Home Appliances

Small Home Appliances

Kitchen Appliances

Socket

Plug (BLE+Wi-Fi)

Socket (Wi-Fi)

Socket (Zigbee)

Socket (BLE)

Dualband Plug (2.4GHz&5GHz)

Socket (NB-IoT)

Add Device

Add Device

2 device(s) being added

Intelligent Heat Pump
Tap to add this device

Add

Done

Choose Wi-Fi

Enter Wi-Fi Information
Choose Wi-Fi and enter password

Please Choose Your Wifi

Password

Next

Auto-Pair with Device

Add Device

2 device(s) being added

Intelligent Heat Pump
Being added

Done

Pairing Successful

Add Device

1 device(s) added successfully

Intelligent Heat Pump
Added successfully

Done

Enter Software Function Operations Page

Intelligent Heat Pump

Heat Mode

Set Temp.

84°F

−　　　+

Inlet temp.
71°F

Outlet temp.
84°F

Power　　Heating　　Settings

APP CONTROL

3.2 Manual Method

3.2.1. Choose WI-FI Mode

- **Step 1:**
  - Open the Tuya Smart app and navigate to the homepage.
  - Tap the "+" icon in the upper right corner or select "Add Device" to access the device category selection page.
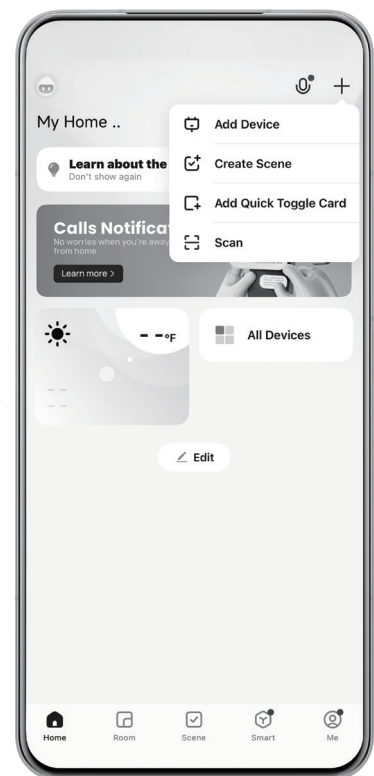 - Under the "Large Home Appliances" category, select "Smart Heat Pump (BLE+Wi-Fi)" to proceed to the device pairing page.
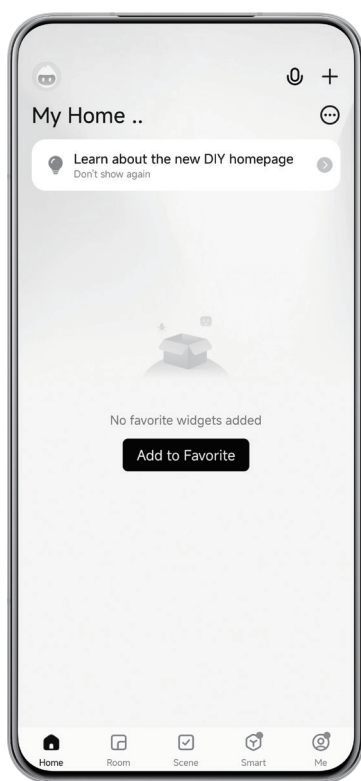
Tap "+" （Add Advice）
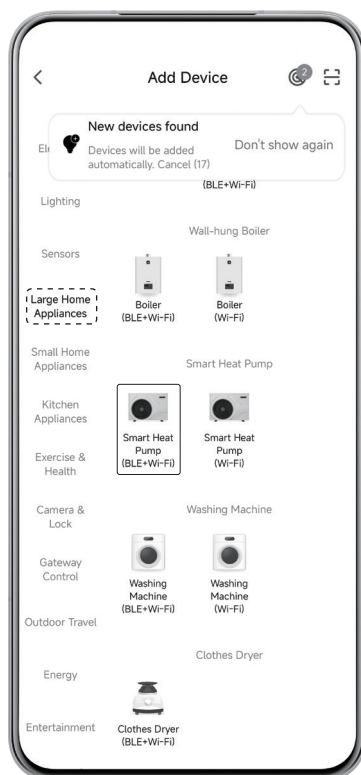
Enter "Large Home Appliances"

Pair Device

APP CONTROL

- **Step 2:**
  - Once the Wi-Fi indicator on the controller is flashing rapidly, tap "Confirm Indicator is Blinking" in the app.
  - Follow the on-screen prompts to complete the Wi-Fi selection and pairing process. The app will automatically connect the device to the network and register it to the cloud.
  - Once complete, the app will redirect to the main device interface.

Tap Blinking Indicator   Choose Wi-Fi

APP CONTROL

Connecting

Pairing Successful

Enter Software Function
Operations Page
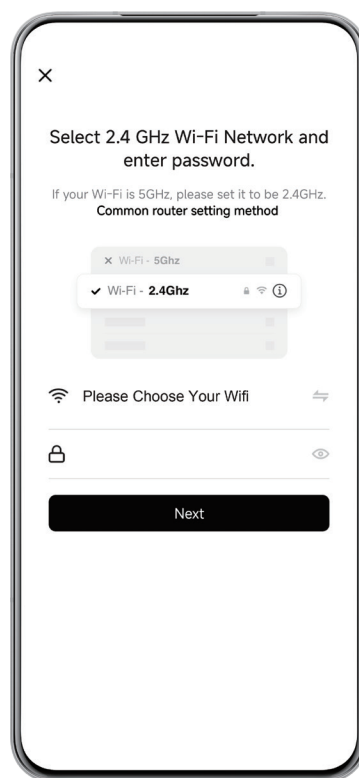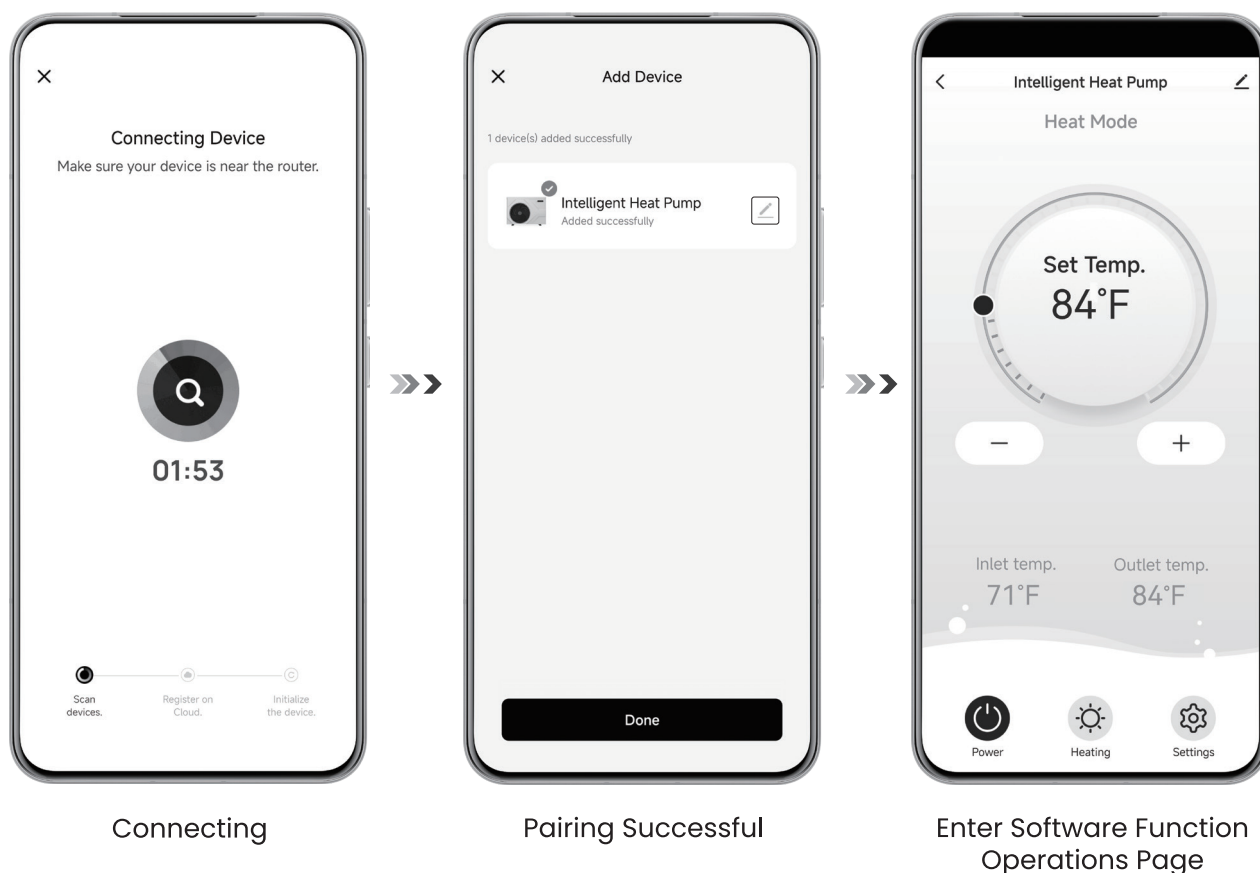
3.2.2. Choose Bluetooth

- **Step 1:**
  - Tap the "+" icon in the upper right corner or select "Add Device" to access the device category selection page.
  - Under the "Large Home Appliances" category, select "Smart Heat Pump (BLE+Wi-Fi)" to proceed to the device pairing page.

  Step 2:
  - Switch to Bluetooth mode in the upper right corner.
  - Follow the on-screen prompts to complete the Wi-Fi selection and pairing process.
  - Once complete, the app will redirect to the main device interface.

APP CONTROL

Enter "Large Home Appliances"

Add Device

New devices found
Devices will be added automatically. Cancel (17)   Don't show again

(BLE+Wi-Fi)

Lighting

Sensors

Wall-hung Boiler

Large Home Appliances

Boiler (BLE+Wi-Fi)   Boiler (Wi-Fi)

Small Home Appliances

Kitchen Appliances

Smart Heat Pump

Smart Heat Pump (BLE+Wi-Fi)   Smart Heat Pump (Wi-Fi)

Exercise & Health

Camera & Lock

Washing Machine

Gateway Control

Washing Machine (BLE+Wi-Fi)   Washing Machine (Wi-Fi)

Outdoor Travel

Clothes Dryer

Energy

Entertainment   Clothes Dryer (BLE+Wi-Fi)

Switch to Bluetooth

Bluetooth

Reset the device

✓ Bluetooth

Wi-Fi Mode

Power on the device and confirm that the indicator is blinking rapidly.
Note: please complete the network distribution within 3 minutes after resetting the device.

Confirm the indicator is blinking

Next

Reset Device Step by Step

Choose Wi-Fi

Select 2.4 GHz Wi-Fi Network and enter password.

If your Wi-Fi is 5GHz, please set it to be 2.4GHz.
Common router setting method

✕ Wi-Fi · 5Ghz

✓ Wi-Fi · 2.4Ghz

Please Choose Your Wifi

Next

Connecting

Connecting Device
Make sure your device is near the router.

01:53

Pairing Successful

Add Device

1 device(s) added successfully

Intelligent Heat Pump
Added successfully

Done

Enter Software Function Operations Page

Intelligent Heat Pump

Heat Mode

Set Temp.
84°F

Inlet temp.   Outlet temp.
71°F   84°F

Power   Heating   Settings

APP CONTROL

4. Software Function Operation

- Open the Tuya Smart app and navigate to the homepage. Under "All Devices," tap "Intelligent Heat Pump" to enter the device control interface.
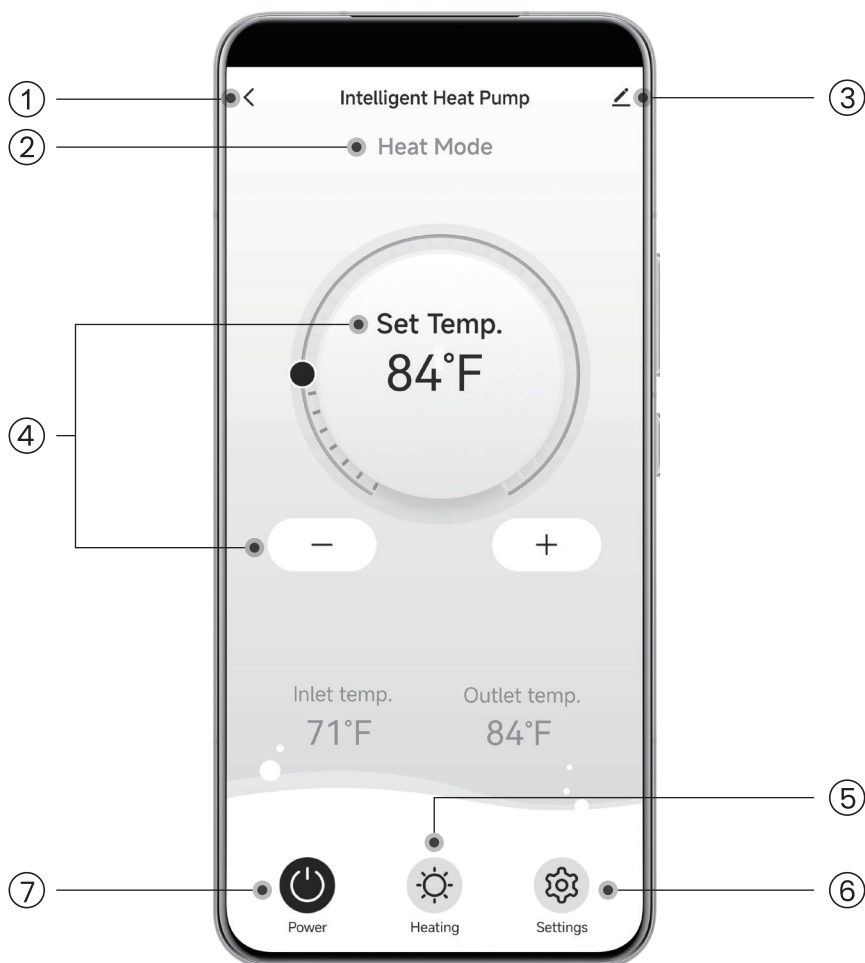
NUMBER	DESCRIPTION
①	Back
②	Current Mode
③	More Settings
④	Set Temperature
⑤	Mode Setting
⑥	Timer Settings: Tap to add On/Off schedule
⑦	Power Button: Tap to Turn On/Off

APP CONTROL

③ **More Settings**
 - You can rename the device, view device information, select the installation location, check network status, add shared devices, create groups, and more.

⑤ **Mode Setting**
 - Access Mode: Tap "Heating" on the main interface.
 - Select Mode: Choose from Cooling, Heating, or Auto in the pop-up menu.
 - Confirm: The selected mode will be applied automatically.

⑥ **Timer Setting**
 - Access Timer: Tap "Settings" and select "Timer".
 - Add Timer: Tap "Add" to create a schedule.
 - Set Details: Choose time, repeat options, power state (ON/OFF), and add notes if needed.
 - Save: Tap "Save" to confirm.
 - Manage: Edit or delete timers in the Schedule page.

MAINTENANCE AND WINTERIZING

⚠ **Warning:** Always disconnect the power supply before conducting any maintenance tasks on the unit to ensure safety.

Cleaning Procedures

- Clean the external casing of the heat pump using a damp cloth. Avoid using detergents or other chemicals that might damage the surface.
- The evaporator located at the back of the unit should be cleaned meticulously using a vacuum with a soft brush attachment to avoid damage.
- Regularly clean the filters and the filtration system to prevent clogs that could harm the unit.
- Remove any ice accumulation near the air intake and exhaust outlets under severe weather conditions to ensure proper airflow.

Annual Check-Up

A qualified professional should perform the following annually:

- Conduct a thorough safety inspection.
- Verify the integrity of all electrical connections.
- Check all startup connections.
- Monitor the pressure gauge and refrigerant levels; contact a professional for repairs or refrigerant replacement if necessary.
- Use a specialized cover for the unit during the winter months to protect it.
- Always check the water flow before restarting the unit to ensure there is sufficient water supply.

Winterization Steps

CAUTION! Disconnect the power supply before beginning any cleaning or repairs, especially during the off-season.

- Completely drain the unit to prevent freezing and potential damage.

  Important Tip: Loosen the water inlet nozzle to allow residual water to drain out, preventing freeze damage to the titanium heat exchanger.

- Ensure that all condensation drains are clear; remove the rubber plug from the drain hole if the temperature drops below 41ºF to facilitate drainage.
- Cover the unit when not in use to protect it from the elements.

TROUBLESHOOTING

Error Code

E01	Wrong phase fault
E02	Out of phase fault
E03	Water flow switch fault
E04	Main board and 4G module communication fault
E05	High pressure switch protection
E06	Low pressure switch protection
E09	Line controller and motherboard communication failure
E11	Time limit protection
E12	Exhaust gas temperature too high fault
E14	Hot water tank temperature failure
E15	Water inlet temperature sensor failure
E16	Coil sensor failure
E18	Exhaust gas sensor failure
E21	Environmental sensor failure
E22	User return water sensor failure
E23	Cooling subcooling protection
E27	Out of the water sensor failure
E29	Return gas sensor failure
E33	High pressure sensor failure
E34	Low pressure sensor failure
E37	Inlet and outlet water temperature difference is too large protection
E38	DC fan 1 failure
E39	DC fan 2 failure
E42	Cooling Coil Sensor 1 failure
E47	Economizer inlet sensor failure
E49	Economizer outlet sensor failure
E51	High pressure over high protection
E52	Low pressure over low protection
E55	Expansion board communication failure
E80	Power supply error
E94	Water pump feedback failure
E96	Press 1 driver and main control board communication abnormal
E98	Fan 1 driver and main control board communication abnormal
E99	Fan 2 driver and main control board communication abnormal
EA1	Network model error

TROUBLESHOOTING

E88/E89	P1	IPM overcurrent/IPM module protection
	P2	Compressor drive failure
	P3	Bit0:Compressor overcurrent alarm
	P4	Input voltage out of phase
	P5	IPM current sampling failure
	P6	Power component overheating shutdown.
	P7	Pre-charge failure
	P8	DC bus over-voltage
	P9	DC bus undervoltage
	P10	AC input undervoltage
	P11	AC input overcurrent
	P12	Input voltage sampling fault
	P13	DSP and PFC communication fault
	P14	Heat sink temperature sensor failure
	P15	Communication failure between DSP and communication board
	P16	Abnormal communication with main control board
	P17	Compressor over current alarm
	P18	Compressor weak magnetic protection alarm
	P19	PIM overheat alarm
	P20	PFC overheat alarm
	P21	AC input overcurrent alarm
	P22	EEPROM failure alarm
	P24	EEPROM refresh completed
	P25	Temperature sensing fault frequency limit.
	P26	AC undervoltage frequency limit protection alarm
	P33	IPM module overheating shutdown
	P34	Compressor out of phase
	P35	Compressor overload
	P36	Input current sampling fault
	P37	PIM supply voltage failure
	P38	Precharge circuit voltage failure
	P39	EEPROM fault
	P40	AC input overvoltage fault
	P41	Microelectronics fault
	P42	Compressor type code fault
	P43	Current sampling signal overcurrent

TROUBLESHOOTING

FAULT	POSSIBLE CAUSE	DETECTION AND ELIMINATION METHOD
Discharge pressure is too high.	• There is air or other non-condensable gas in the system. • Water heat exchanger is scaled or fouled. • Circulation water volume is insufficient. • Refrigerant charging is excessive.	• Vent the air from the water heat exchanger. • Wash and clean the water heat exchanger. • Inspect the water system pipeline and pump. • Drain excess refrigerant.
Discharge pressure is too low.	• Liquid refrigerant flows through the evaporator to the compressor, causing foaming in the oil. • Suction pressure is too low. • Refrigerant charge is insufficient, causing refrigerant air to enter the liquid pipeline.	• Adjust the expansion valve to ensure proper connection and insulation. • Please refer to "Suction pressure is too low".
Suction pressure is too high.	• Discharge pressure is too high. • Refrigerant charging is excessive. • Liquid refrigerant flows through the evaporator to the compressor.	• Drain part of the refrigerant. • Examine and adjust the expansion valve. Ensure the expansion valve temperature sensor bulb is securely connected to the air suction pipe and properly insulated from the ambient environment.
Suction pressure is too low.	• Ambient temperature is too low. • The evaporator liquid inlet or compressor suction pipe is blocked, or the expansion valve is unadjusted or faulty. • Refrigerant is insufficient in the system.	• Adjust the overheat temperature and check for fluorine leakage from the expansion valve temperature sensor bulb. • Examine the system for fluorine leakage. • Inspect the installation conditions.
Compressor stopped due to high pressure protection.	• Water inlet temperature is too high or water flow is insufficient. • Incorrect high-pressure setting. • Fluorine filling is excessive.	• Inspect the water system and pump. • Adjust high-pressure settings • Check the fluorine filling volume and adjust
Compressor stopped due to motor overloading.	• Voltage issues (too high/low). • Discharge pressure too high. • Device loading failure. • Ambient temperature is too high. • Motor or connecting terminal is in a short circuit.	• Ensure voltage is within ±20V of the rated voltage and phase difference within ±30%. • Check the compressor current and compare it with the full loading current specified in the user manual. • Improve air ventilation.
Compressor stopped due to built-in thermostat.	• The voltage is too high or too low. • Discharge pressure is too high. • The refrigerant in the system is insufficient.	• Examine the voltage to ensure it is within the specified range. • Check the discharge pressure and identify the cause. • Inspect for fluorine leakage.
Compressor stopped due to low voltage.	• Dry filter clogging. • Expansion valve failure. • Insufficient refrigerant.	• Maintain or replace the dry filter. • Adjust or replace the expansion valve. • Refill the refrigerant.
High noise in compressor.	• Liquid refrigerant hammering in the compressor.	• Adjust the liquid supply and inspect the expansion valve air suction overheat degree are functioning normally.
Compressor cannot start.	• Overcurrent relay tripped. • Control circuit issues. • No current. • Pressure is too low to activate the pressure switch. • The contactor coil is burnt out. • Water system failure; relay is tripped.	• Set the control circuit to manual mode and restart the compressor after maintenance. • Examine the control system. • Check the power supply. • Inspect whether the refrigerant level is too low. • Reconnect and adjust the wiring.

WARRANTY INFORMATION

Warranty Coverage Aquastrong offers a comprehensive one-year limited warranty to the original purchaser of our products. This warranty assures that the products are free from material and workmanship defects under normal use and service for one year from the date of purchase.

Conditions

- This warranty is non-transferable and is only valid for the original purchaser.
- The warranty covers replacements or repairs of parts that are proven defective in material or workmanship.
- The warranty excludes any problems due to improper use, accidental damage, unauthorized modifications, or misuse.
- The warranty does not cover incidents of natural wear and tear or use beyond intended commercial, rental, or other non-consumer applications.

Exclusions

- Damage from unauthorized repairs or alterations.
- Losses caused by accidents, neglect, or improper maintenance.
- Damage resulting from failure to follow the instructions contained in our user manual.

How to Claim Warranty

- To benefit from your warranty, please contact us via email at service@aquastrong.co or visit our website at www.aquastrong.co to submit a warranty service request.
- We appreciate your choice of Aquastrong and offer an extended warranty option, increasing the initial one-year coverage to two years, subject to registration on our website within 90 days of product delivery.
- Warranty registrations after the 90-day period will be considered invalid.

WARRANTY INFORMATION

Post-Warranty Support

- Should you encounter issues with your Aquastrong product outside the warranty period, we are still here to help. Contact our customer service team for assistance and practical solutions.

Aquastrong's Commitment

- Replacement of defective parts or the entire item, depending on the nature of the defect.
- Refund under certain conditions if a replacement or repair is not feasible.

In no event shall liability exceed the original purchase price paid for the product.

For the latest updates on our warranty terms or any other information, please visit our website or contact our customer support directly. Aquastrong is dedicated to providing outstanding after-sales support to ensure your satisfaction with our products.

AQUASTRONG®

Tech Support

Email: service@aquastrong.co

Web: www.aquastrong.co

If you come across a problem that cannot be resolved, don't hesitate
to reach out to our customer service team for assistance. We're here to help!