Product manual

SPA001



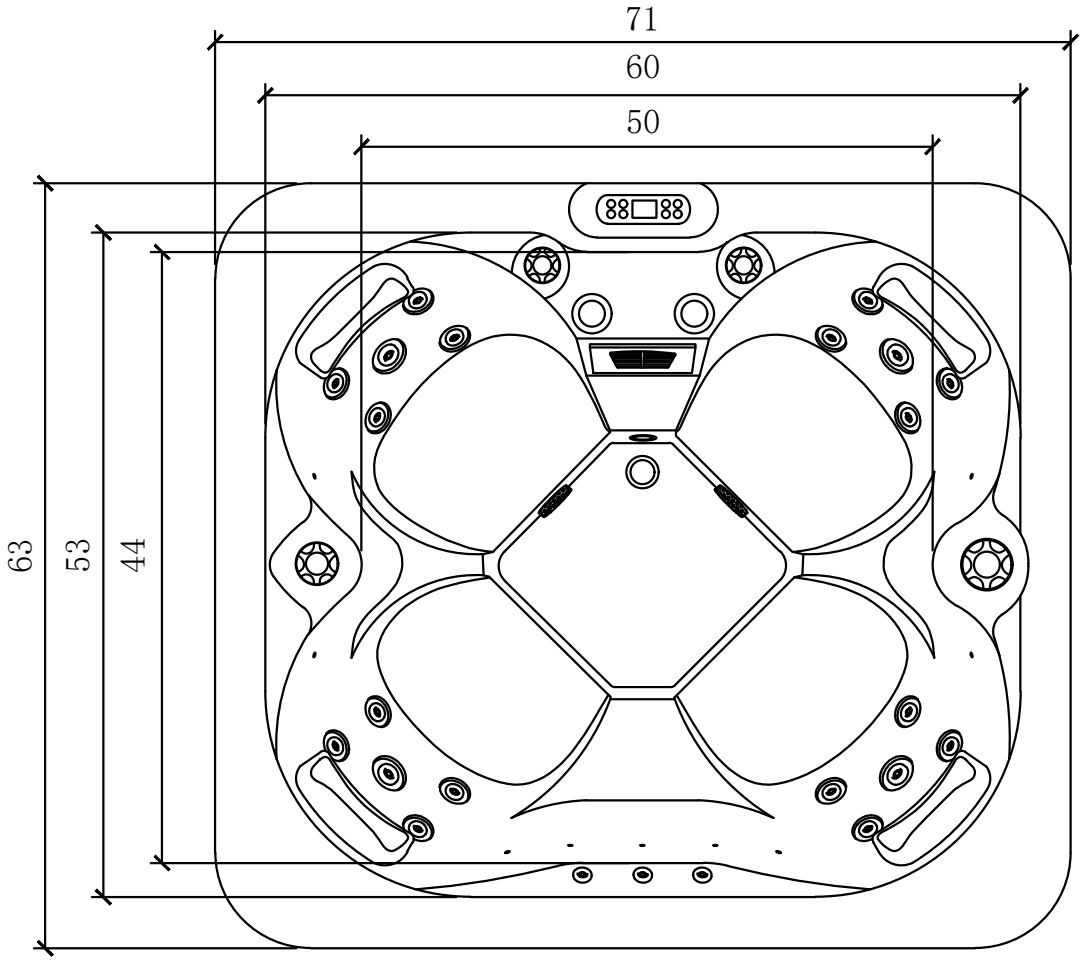
71x63x31 inch

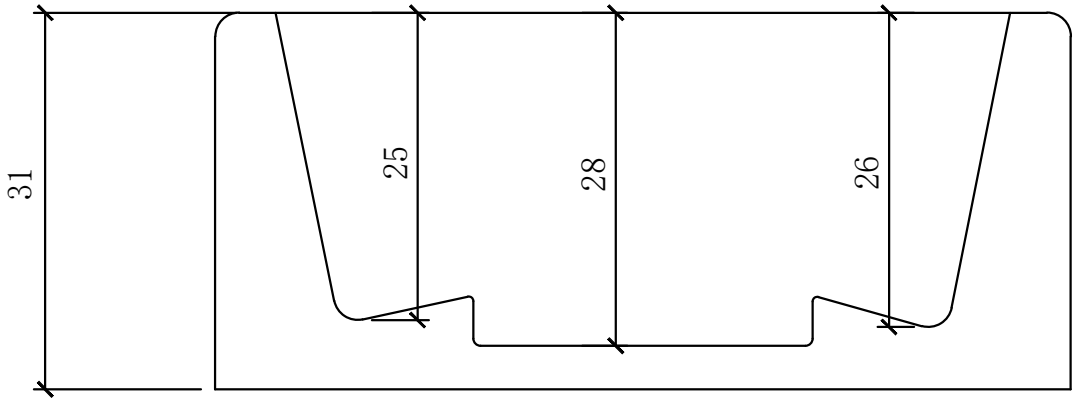
SKU: BG15PC-1B1B0

EN

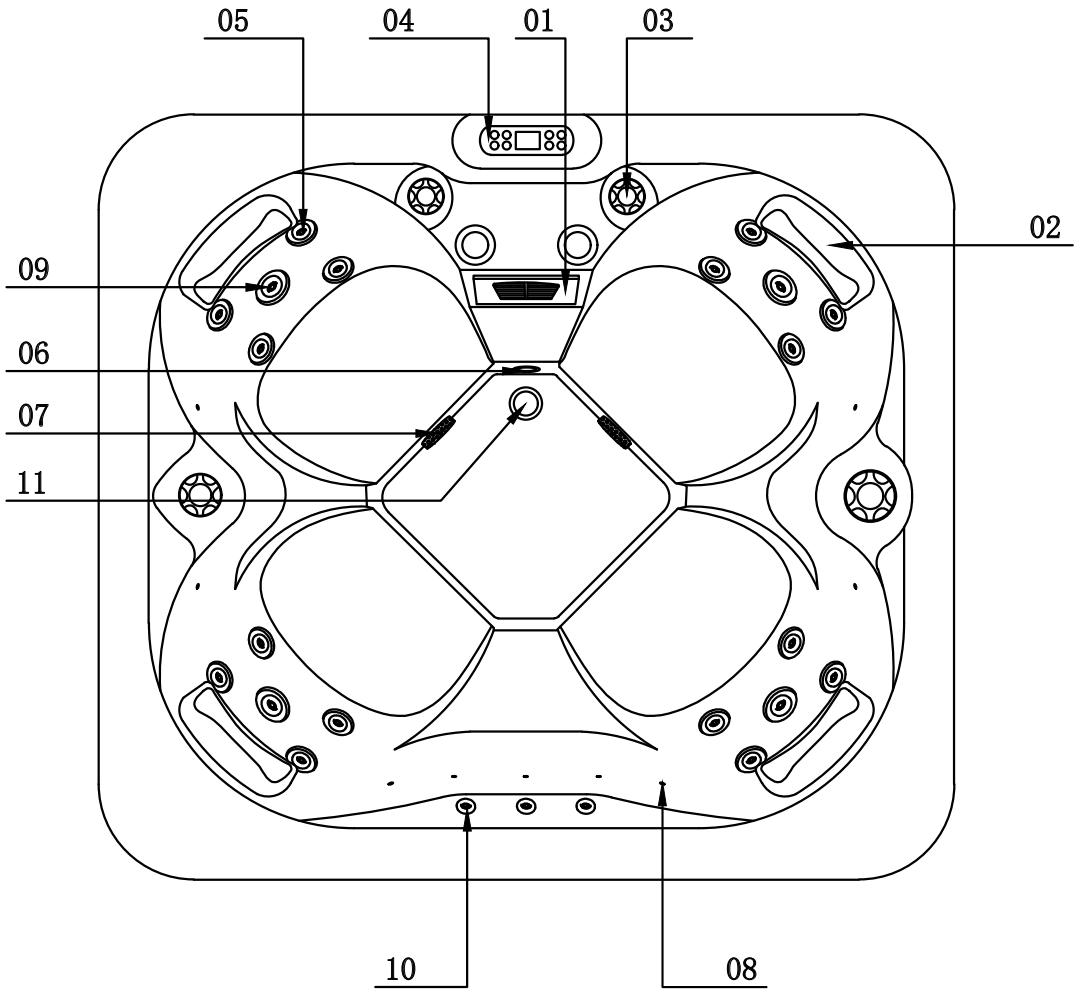
SPA001

BG15PC-1B1B0





unit:±0.8 inch



Parameter List		
No.	Function	Data
01	filter	1pc
02	headrest	4pcs
03	regulator	4pcs
04	PC board	1pc
05	Small nozzle	16pcs
06	Underwater light	1pc
07	backwater	2pcs
08	Skirt lamp	18pcs
09	Big nozzle	4pcs
10	Auxiliary nozzle	3pcs
11	launching	1pc

List of accessory boxes		
No.	Accessories	Data
01	filter	2pcs
02	Pillow	4pcs
03	wire jumper	1pc
04	Dust cover	1pc
05	English instruction manual	1pc
06	Spanish instruction manual	1pc



air valve





shunt valve





regulating valve





TOUCH 3.0

Operation instruction

V0.3 English

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Panel warning information 32 - 39

Warning

WIFI:
Operating Frequency: 2012-2472MHz
Output Power: Max 20dBm
RF Hardware Version: xxx
RF Software Version: xxx

EMF:
These devices comply with RF specifications when the device is used at 20 cm from your body.

EMC:
These devices can be connected only to a supply with system impedance no more than 0.099 ohm for Single-phase input or 0.001 ohm for Multi-phase input. In case necessary, please consult your supply authority for system impedance information.

Importer: xxx

RSS-Gen & RSS-247 statement:
This device complies with Industry Canada licence-exempt RSS standard(s).
Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

RSS-102 Statement:
This equipment complies with Industry Canada radiation exposure limits set forth for an uncontrolled environment.
Cet équipement est conforme à l'exposition aux rayonnements Industry Canada limites établies pour un environnement non contrôlé.

Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution:
Changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

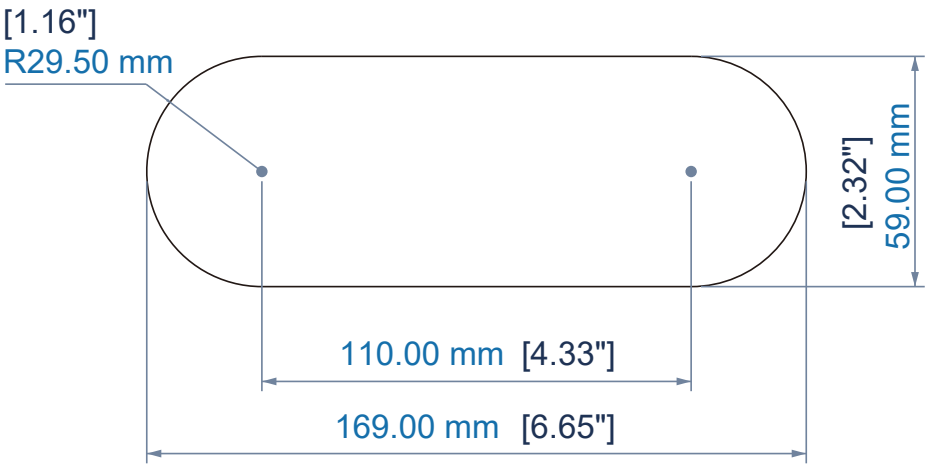
FCC Statement:
"This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help."

This controller is not intend for transportable pool use.

2.4 inch TFT color display screen, 8 capacitive touch buttons

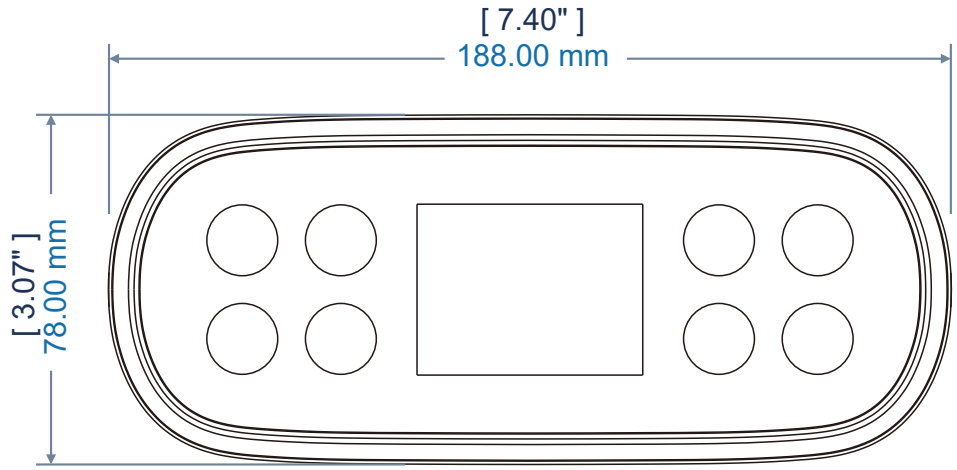


PB562 control panel design

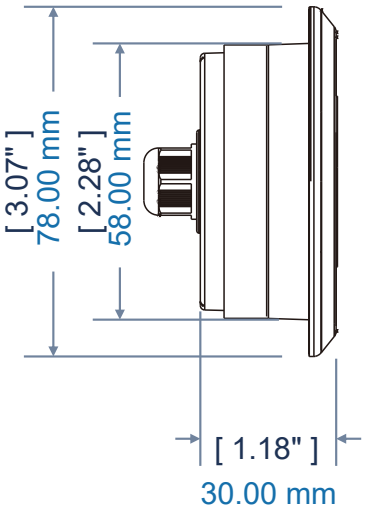


Suggested hole size

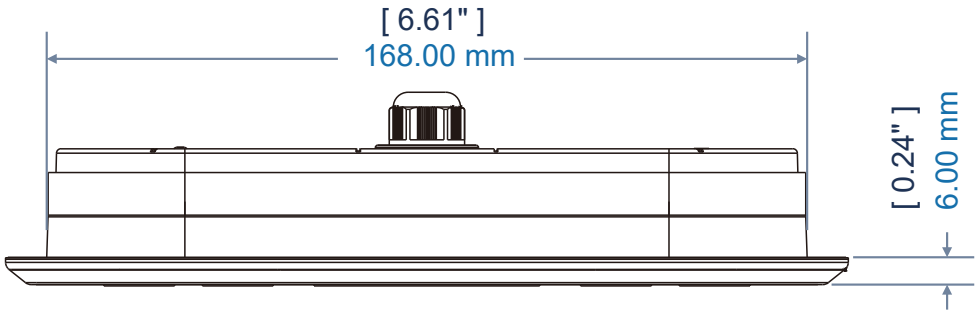
Control Panel Specifications and Installation Instructions



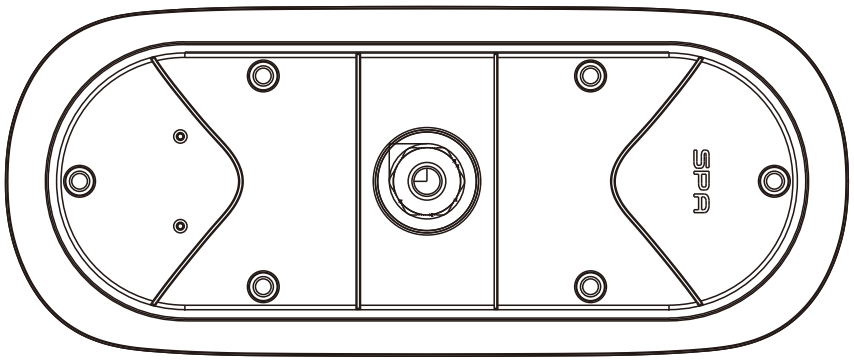
Front view



Left view



Vertical view

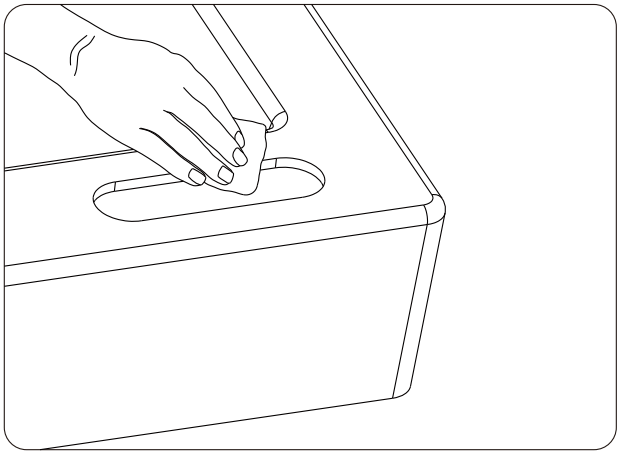


Back view

Control Panel Specifications and Installation Instructions

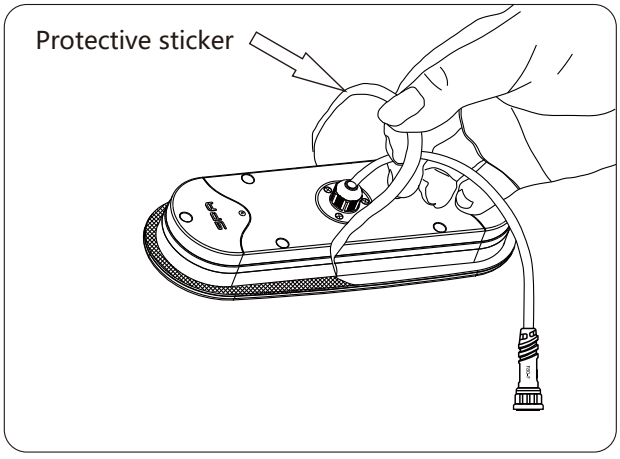
Control Panel Installation Instructions

1



Make a hole in the appropriate position of the hot tub according to the size of the control panel, and clean the surrounding area of the hole, especially burrs, debris, etc., to ensure that the control panel can stick on firmly.

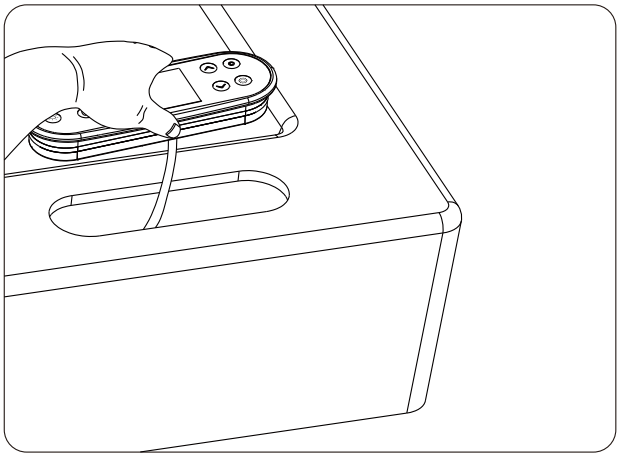
2



As shown in the figure, remove the adhesive protective sticker from the control panel. Special attention: It is strictly prohibited to touch adhesive with hands; It is prohibited to have water or other impurities from touching the adhesive surface; Install the control panel onto the tub within 60 seconds after removing the adhesive sticker.

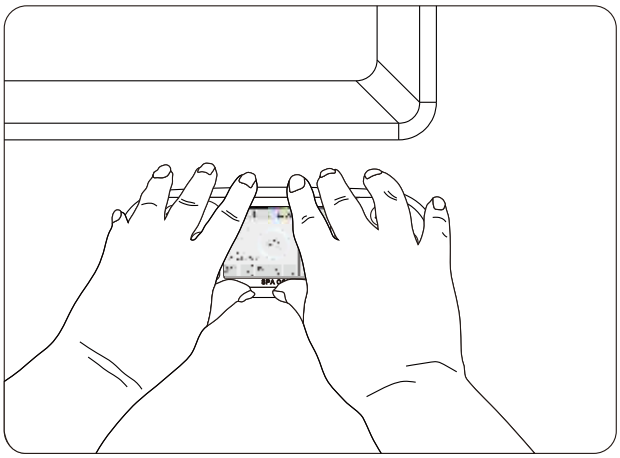
Control Panel Specifications and Installation Instructions

3



As shown in the figure, after removing the with the adhesive protective sticker, install the control panel at the cleaned hole.

4



As shown in the figure, after the control panel is installed, press the control panel tightly with hands for 60 seconds and push the control panel back and forth for 5-10 times.

Button description

Warning

1. Please connect power by strictly following the SPA wiring diagram.
2. Please do not power on the SPA until the water level reaches the water level line inside the tub.

Warning

Please set the date and time before using the SPA control system.



Pump 1 shortcut button

If pump 1 is a single speed pump, it is used to control the on/off of pump 1; If pump 1 is a dual speed pump, press the button continuously to switch between low speed, high speed, or off. The specific sequence is as follows: low speed on ->high speed on ->off.

Light shortcut button

There are two modes for the lights. In the on/off mode, press the button to turn the lights on and off. In RGB mode, press the button to turn the lights on and off,and control lights pattern in lights interface or set lights color in lights color interface. (The "on/off mode" or "RGB mode" has been determined at the factory and cannot be changed by the user)

Button description



Screen reverse button

Used to reverse the display content upside down 180 degrees , and the direction of the navigation buttons also changes accordingly.



Multifunction button

Used for functions such as pump 2 (if equipped) or blower (if equipped) or user mode.



Navigation (Up) button

Used to select functions upwards or adjust parameters upwards in the menu interface.



Navigation (down) button

Used to select functions downwards, or adjust parameters downwards in the menu interface.



Confirm button

Used to activate the cursor in the function area, change the function status, or enter the function page; In the menu interface, confirm or switch the function status.



Set (Return) button

Used as quick access to the set interface, or to save and return when the function status changes.

Main Interface introduction

Main interface



Details are as follows

① 

Current time.

② 

The status of the functions in operation.

Ozone working	WIFI not connected
Heater working	WIFI is connected
Heat pump cooling	NOR mode is on
Heat pump heating	ECO mode is on

Main Interface introduction



The circulating pump is in operation



Bluetooth is connected



Pack number: Displayed when multiple packs are connected at the same time



User mode in operation

③



Current water temperature °F/℃.

④



Preset heating temperature °F/℃.

⑤



Function control area. Please press the button " " to activate the cursor, then press the button " " or " " to move the cursor and select the corresponding function, and then press the button " " to change the function status or enter the function interface.

The water pump will automatically shut down after working for 30 minutes.

The blower will automatically shut down after working for 30 minutes

Music

Pump 1

Pump 2

Pump 3

Pump 4

Settings

Music

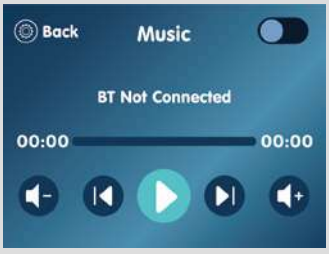
Blower

Light off

Light on

Music connection





The music icon will appear and music function can be used only when the system is connected to a Bluetooth audio amplifier.

Lights

Music connection steps:

① On the main interface, press the button " ○ " to activate the cursor, and then press " ∧ " " ∨ " to move the cursor to select the music icon, and then press the button " ○ " to enter this interface.

② Press the button " ∧ " or " ∨ " to select the " ⏻ " function icon in the music interface, and then press the button " ○ " to turn on the Bluetooth function.

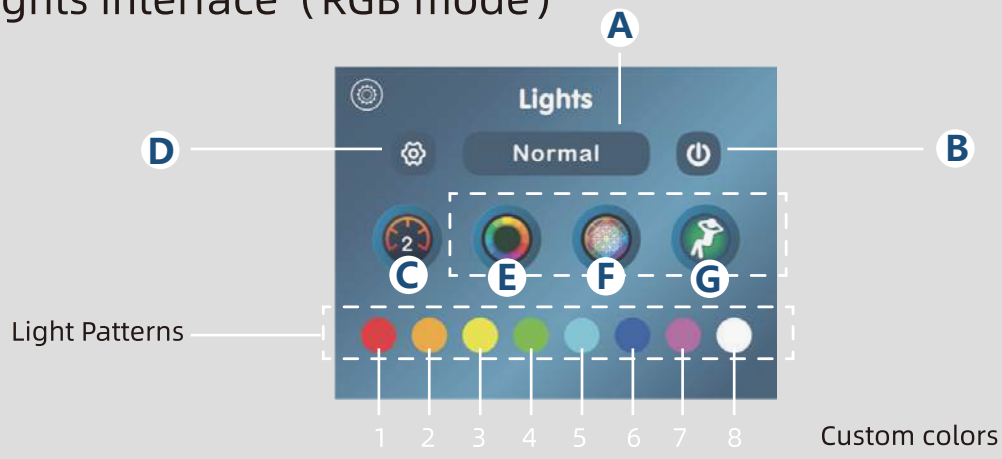
③ Turn on the Bluetooth function on your phone, find the Bluetooth name with the prefix "JOYONWAY_", press Connect, enter the PIN code: 2288, and make the connection.

④ When the "BT Not Connected" prompt on the music interface of the control panel becomes "BT Connected" , the Bluetooth connection is completed.

⑤ Then, you can use the music software on your phone to play music. The control panel can synchronize the phone's operations of pause/play, previous/next song, and high/low volume.

Reminder: Bluetooth connection failed. Please try clicking the button ∧ or ∨ in the music interface or Select the function icon ▶ and press and hold the button for ○ 5 seconds to clear Bluetooth Connection information.

Lights interface（RGB mode）



Press the button " ∧ " or " ∨ " to select the " ☀ " function icon in the main interface, and then press the button " ○ " to enter the lights interface.

Lights

Ⓐ Mode toggle button. Select the button and press the " ○ " button to toggle "Normal"/"Water Temp." mode.

Ⓑ Power button. It powers On/Off all User-Controlled lights. If the button icon has a white ring, at least some User-Controlled lights are powered On. If the button doesn't have a white ring, all User-Controlled lights are powered Off.

Ⓒ Speed control for light patterns.The speed supports 0-2.

Ⓓ Go to the color palette button.

Ⓔ Color wheel light pattern. This smoothly cycles through the full color spectrum.

Ⓕ Party light pattern. This cycles through a festive pattern.

Ⓖ Lounge light pattern. This cycles through a soothing pattern.

In the Lights interface, use the up and down buttons " ^ " /" v " to switch between function icons, and use the OK button " ○ " to confirm the setup.

Water Temperature color chat

RED Above 108°F.
Approximately 42.2°C.

ORANGE Between 2°F above the set temperature and 107°F.
Approximately 1°C above the set temperature and 41.6°C.

GREEN Within +/- 2°F of the set temperature.
Approximately within +/- 1°C ***of the set temperature.***

BLUE Between 46°F and 2°F below the set temperature.
Approximately between 7.7°C and 1°C below the set temperature.

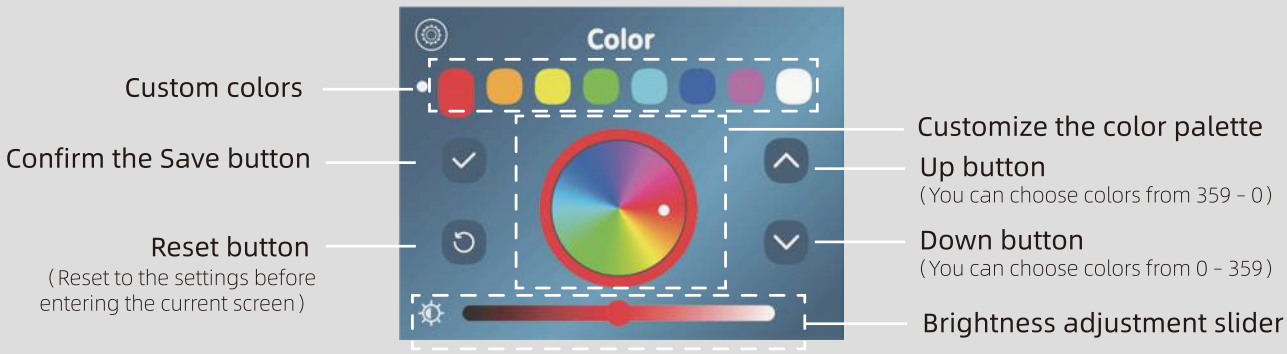
Lights

WHITE Less than 45° F.

Approximately less than 7.2℃.

PURPLE Temperature unknown because the water has not been cycled.

Color interface（RGB mode）



In the lights interface, Select the icon “ ” , and press the button “ ” to enter color interface.

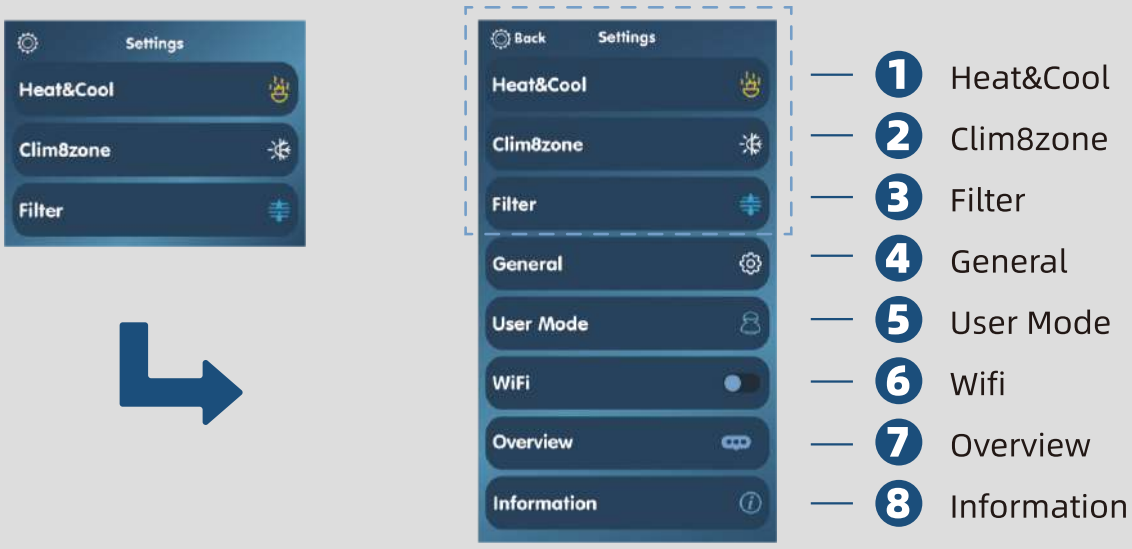
In the color interface, use the up or down buttons “ ” / “ ” to switch the status of the ribbon, and use the OK button “ ” to switch to the next ribbon.

1.1 How to enter the setting interface



Press the button " " to enter the settings Interface and proceed with function settings.

1.2 Settings



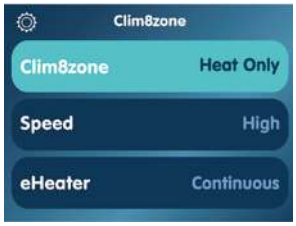
Interface overview

Details are as follows

1 Heat&Cool



2 Clim8zone



Setting instructions

3 Filter



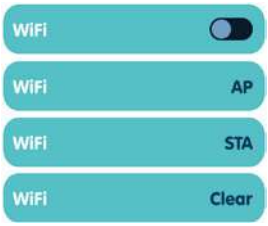
4 General



5 User Mode



6 Wifi



7 Overview



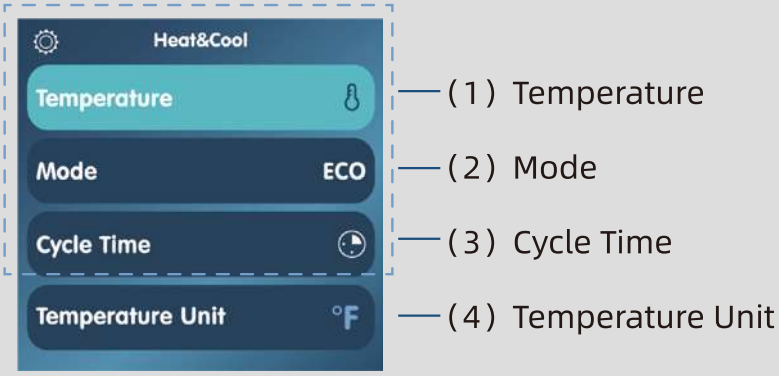
8 Information



1.2.1 Settings / Heat&Cool

1 Heat&Cool





Interface overview

Details are as follows

(1) Temperature



Adjust the preset temperature. Select the "Temperature" function and press the button " ○ " to enter this interface. By pressing the buttons " ∧ " or " ∨ " to adjust the temperature. After the adjustment is completed press the button " ⚙ " to return and save.

The temperature setting range is from 50 °F to 104 °F/ 10 °C to 40 °C.

When the heating function is activated, this temperature value will be the operating target.

(2) Mode



NOR: The heating/cooling is turned on all day long
ECO: The heating/cooling is only turned on during Cycle Time.

(3) Cycle Time

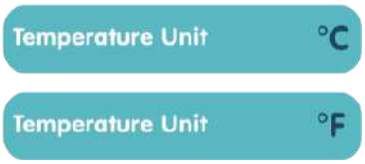


How to adjust the heating time period: First press the button " ○ " to select number " ● ". Then press the button " ∧ " or " ∨ " to activate or deactivate this time period. Then, press the button " ○ " to select the adjusted time period item (starting hours and minutes, ending hours and minutes), and press the button " ∧ " or " ∨ "to adjust the value, Finally, press the button " ⚙ " to return and save.

Set the daily heating operation time period and its on or off.

- On: The heating will start running within the set time period everyday.
- Off: This time period has no effect on the heating operation.
- Select the currently set time period.

(4) Temperature Unit



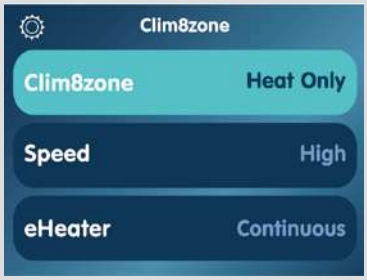
Adjust the temperature unit. Select the "Temperature Unit" , and press the button " ○ " to switch between °C/°F temperature units.

After setting the °C/°F temperature unit, all the temperature units in the system will be based on it.

Setting instructions

1.2.2 Settings / Clim8zone

2 Clim8zone（This set option willl only appear when the system is equipped with a heat pump）



（1）Clim8zone

（2）Speed

（3）eHeater

Interface overview

Details are as follows

（1）Clim8zone



Set the heat pump mode. Select "Clim8zone", press the button " ○ " to cycle through Disabled/Heat Only/Cool Only/Heat&Cool.

Disabled: The heat pump does not operate in any circumstances.

Heat Only: The heat pump only operates the heating function.

Cool Only: The heat pump only operates the cooling function.

Heat&Cool: The heat pump operates heating and cooling functions.

（2）Speed



Set the running speed of the heat pump, select the "Speed", and press button" ○ "to cycles through Low/High/Auto.

Low: Low speed, the heat pump only operates in low speed mode, consuming less energy.

High: High speed, the heat pump only operates in high-speed mode and can quickly reach the preset temperature.

Auto: Automatic, the heat pump automatically adjusts its operating speed according to the environment, taking into account energy consumption and quickly reaching the preset temperature.

(3) eHeater



Set the electric heating collaboration mode, select the "eHeater" function, press the button" ○ "to cycle through Continuous/EBOOST/Disable

Continuous: eHeater will continue to operate when heating is needed. (Clim8zone and eHeater operate simultaneously during heating)

eBOOST: eHeater will only be activated when there is a significant difference between the current temperature and the preset temperature. (During heating, the Clim8zone operates first)

Disabled: eHeater does not operate. (Only Clim8zone runs during heating)

If the "Clim8zone" mode is set to Disabled or Cool Only, the "eHeater" mode can only be Continuous.

If the "Clim8zone" mode is set to Heat Only or Heat&Cool, the "eHeater" mode can be set as Continuous/eBOOST/Disabled.

1.2.3 Settings / Filter

❸ Filter



— (1) Cycle Time

— (2) Filter Life

Interface overview

Details are as follows

(1) Cycle Time



How to adjust the filtering time period: First press the button " ○ " to select number " ● ". Then press the button " ∧ " or " ∨ " to activate or deactivate this time period. Then, press the button " ○ " to select the adjusted time period item (starting hours and minutes, ending hours and minutes), and press the button " ∧ " or " ∨ "to adjust the value, Finally, press the button " ⚙ " to return and save.

Setting instructions

Set the daily filtering running time period and its on and off.

On: The heating will start running within the set time period everyday.

Off: This time period has no effect on the heating operation.

Select the currently set time period.

(2) Filter Life



On the Filter usage interface, select the "Filter Life" , press the " " or " " button to adjust the service life, press and hold " " to clear the number of days in use, and press the " " button to return to the previous interface.

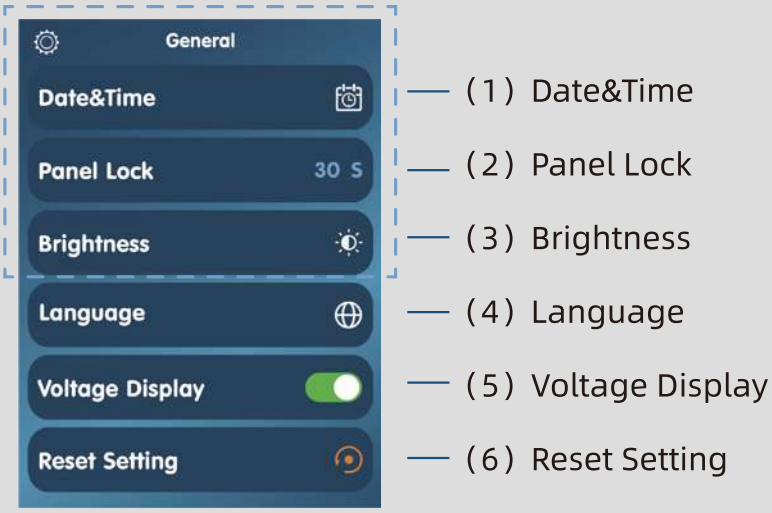
1 The number of days the filter has been used is displayed.

90 The preset usage days of the filter are displayed.

1.2.4 Settings / General

4 General





Interface overview

Details are as follows

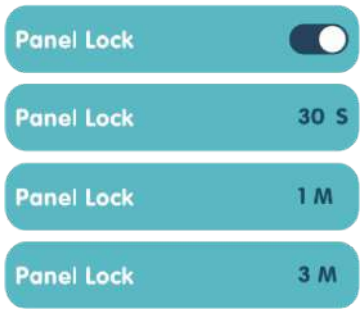
(1) Date&Time



Adjust the date and time. Select the "Date&Time", and press the button " ○ " to enter this interface, then press the button " ○ " to select the items to be adjusted, and finally press the button " ∧ " or " ∨ " to adjust the value.

Set the current time, day, month, and year, and the system time will be based on this.

(2) Panel Lock



Automatic screen lock time adjustment. After selecting the "Panel Lock" function, press the button" ○ " to cycle through ⬭ /30S/1M/3M.

⬭ : Automatic screen lock turned off.

30S: When it reaches 30 seconds without operating on the system, the screen will be locked.

1M: When it reaches 1 minute without operating on the system, the screen will be locked.

3M: When it reaches 3 minute without operating on the system, the screen will be locked.

When the screen is locked, the screen brightness decreases and the " 🔒 " icon appears on the screen, and the buttons will not react to short presses.

Unlocking the screen: When the screen is locked, press any button to activate unlocking, press in sequence the buttons " ❀ " and " ○ " to unlock.

(3) Brightness



Screen brightness adjustment. Select "Brightness" and press the button" ○ " to enter this interface, and then press the button" ∨ " or" ∧ " to adjust the brightness and press the button" ☼ " to return.

The screen brightness range is 1-16.

Setting instructions

(4) Language



Language change: select the "Language" function, and press the button " ○ " to enter this page. Choose the language by pressing the button " ∧ " or " ∨ ". After selecting the language, press the button " ○ " to confirm. Then, press the button " ⚙ " to return to the main interface and the language chosn takes effect.

The system will display the interface in the corresponding language.

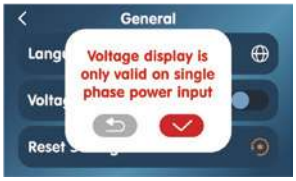
(5) Voltage Display



Turn on or off the display of electrical parameters in the Overview interface. Select the "Voltage Display" function, and press the button " ○ " to switch between ◉ / ○

◉ : Display electrical parameters on the Overview interface.

○ : Do not display electrical parameters on the Overview interface.



Select the "Voltage Display" , and press the button " ○ " to pop up a window. Press the button " ∧ " or " ∨ " to select " ✓ ", and then press the button " ○ " to complete the setup.

↩ : Return

✓ : Voltage Display confirmation

(6) Reset Setting



Reset: select the "Reset Setting" function, and press the button " ○ " to pop up a window. Press the button " ∨ " or " ∧ " to select " ∨ ", and then press the button " ○ " to complete the reset.

: Return

: Reset confirmation

The reset operation restores all settings to their factory default values.

1.2.5 Settings / User Mode

5 User Mode



Save and activate user mode: select "User Mode" and then press the button " ○ " to enter this interface. Then press the button " ∨ " to select the save location, and then press the button " ○ " to save (simultaneously activated) After displaying the effect " 🖫 - 🔒 " or selecting a save location, press the button " ∧ " to activate the data stored (when there is data stored at this location) .

🖫 - 🔒
Not saved, not activated

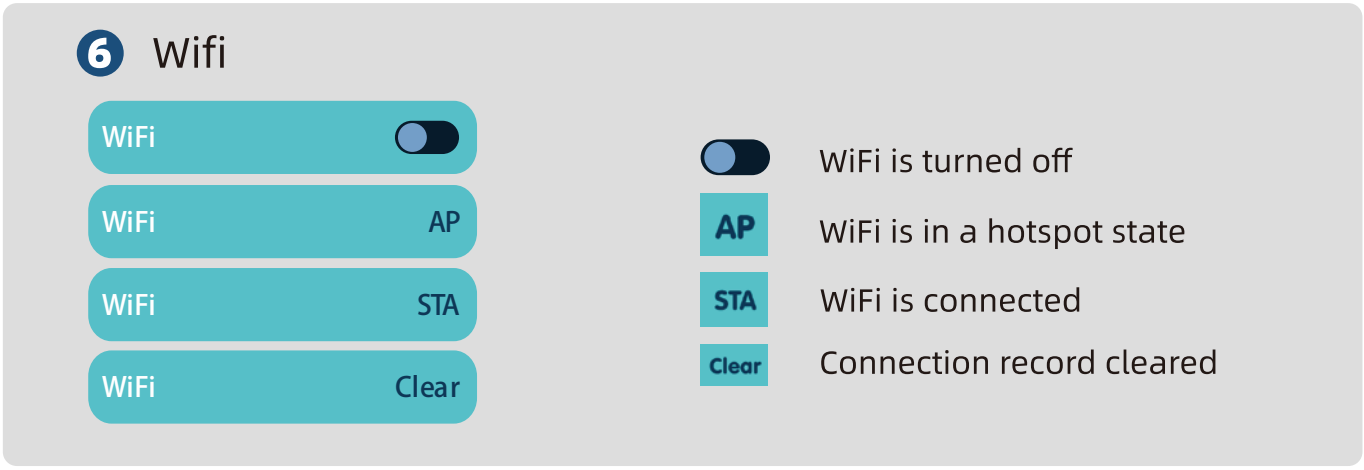
🖫 - 🔒
Saved, not activated

🖫 - 🔒
Saved, activated

The stored data includes temperature units, automatic locking time, screen brightness, heating cycle time, filtering cycle time, etc.

Setting instructions

1.2.6 Settings / Wifi



WiFi connection steps:

① Install the "JOYONWAY" app on your phone. Register and log on the APP. Please first enable your phone's location information, and then connect your phone to a 2.4G WiFi network;

② Connection record clearing: On the control panel, move the cursor to the WIFI interface, and press and hold " ○ " for 5 seconds to change the state to Clear.

③ In the WiFi interface of the control panel, press " ○ " to switch to AP status.



④ In the app, find the "Device" interface, press the " + " icon, and add a SPA controller;

⑤ Press Next and go to the "Connect WiFi" interface. Enter the name and password of the WiFi that the phone is connecting to;

⑥ Press "Connect" and the "Device Connecting" interface will appear. Go to your phone's WiFi and find the WiFi name starting with the "adh" and connect. When connected, return to the APP;

⑦ When the progress bar of the "Device Connecting" interface reaches 100%, Sta will appear on the Wifi interface of the control panel 

, indicating that the connection is made.

⑧ Then, you can control your SPA on your mobile app "JOYONWAY" through the internet.

Scan the QR code on the back of the manual and download the APP .

Panel warning information

When there are some states that require user attention in the control system, the control panel will display warning information of the state on the control panel. If there are several types of information that need to be displayed at the same time, these information will be loop displayed.

The following is the screen status when these information are displayed, as shown in the figure:



Warning message display location

When the following fault message appears, first try to power off the SPA and then power on again a few minutes later to clear the fault; If the fault occurs again, please follow the instructions below to handle the fault; During the troubleshooting process, ensure that the power connection to the SPA is disconnected.

F1:Water temperature sensor is disconnected

Temperature sensor disconnected

The control system has detected that the temperature sensor is not connected.
Please check the temperature sensor and its connections, and replace it if necessary.

F2:Water temperature sensor is short circuit

Temperature sensor short circuit

The control system has detected a short circuit in the temperature sensor.
Check the temperature sensor and its connections, and replace it if necessary.

Panel warning information

F3:Water temperature is too high

Water temperature too high

The control system has detected that the temperature of temperature sensor is too high.
When the heater is started, if there is no water or water flow is small in the heating tube, this message may appear .
Measure: Please ensure that there is sufficient water in the SPA and the heating circulation pipeline is unobstructed.

F4:Water temperature is too low

Water temperature too low

The control system has detected that the temperature of the temperature sensor is too low.
Please pay attention to frost protection.

F5:EEPROM error

Memory Fault

When a memory fault occurs, please power off the SPA and power it back on after a few minutes. If the memory fault occurs again, contact the service provider or manufacturer.

F6:Manual-reset thermal switch is open

Overheat protection switch (manual reset) on

If the overheat protection switch is turned on, there may be overheating in the heating tube. Please manually reset the overheat protection switch or contact the service provider and manufacturer.

Panel warning information

F9:System setting error

System settings error

Reason: The system configuration item read from the motherboard memory by the control system after power on was verified not correct.
Action: Please turn off the power and wait for 10 seconds before powering on again. If this message appears again, please contact the service provider or manufacturer.

F10:Communications error

Control panel and control pack cannot communicate

Reason: The control panel cannot exchange information with the control pack.
Measure: Please turn off the power, and check if the wiring connection between the control panel and the control pack is good and if the connectors are tightly connected. After confirmation, power on again. If this fault cannot be eliminated, please contact the service provider or manufacturer.

F12:Heater PT temperature is too high

Heating tube protection temperature too high

The control system has detected that the surface temperature of the heating tube is too high.
Measure: Please ensure that there is sufficient water in the SPA and the heating circulation pipeline is unobstructed

F13:Heater PT temperature is too low

Heating tube protection temperature too low

The control system has detected that the surface temperature of the heating tube is too low.
Please pay attention to frost protection.

F14:Heater PT temperature sensor is disconnected

Heating tube protecting temperature sensor disconnected

The control system has detected that the heating tube protecting temperature sensor is not connected.
Measure: Please check the heating tube protecting temperature sensor and its connection, and replace it if necessary.

F15:Heater PT temperature sensor is short circuit

Heating tube protecting temperature sensor short circuit

The control system has detected a short circuit in the heating tube protecting temperature sensor.
Measure: check the heating tube protecting temperature sensor and its connection and replace it if necessary.

F20:Controller fault

When a microelectronic malfunction occurs

Please power off the SPA and power it on again after a few minutes. If a microelectronic malfunction occurs again, contact the service provider or manufacturer.

Panel warning information

Heat Pump ER03: Water flow failure

Water flow failure
Cause:
1. The water flow switch fault
2. Low water flow
3. The inlet and outlet water are reversed
4. There is air in the pipe
5. The pipe blocked
Action:
1.Check the water flow switch and replace it if it is faulty
2.Check the water valve and the temperature difference between inlet and outlet water
3.Whether the inlet and outlet water pipes are correctly connected
4.Emptying water system
5.Pipe cleaning

Heat Pump ER04: Winter anti-freezing

Winter anti-freezing
Cause:
The ambient temperature is lower than the antifreeze setting value
Action:
Normal protection procedure

Heat Pump ER05: High pressure protection

High pressure protection
Cause:
1. Low water flow
2.. Pressure switch fault
3. The fan motor unwork or the speed too low
4.Overcharged the refrigerant
Action:
1. Check whether the temperature difference between inlet and outlet water is too large, and whether the outlet water temperature is too high
2. Use a multimeter to check whether the high voltage protection switch works
3. Check the water flow of the water pump and the speed of the fan
4. Refill the refrigerant

Heat Pump ER06:

Low Pressure Failure
Cause:

Action:

Heat Pump ER09: Communication with the upper computer failed

Communication with the upper computer failed
（Communication with Balboa system failed）
Cause:

Action:
1. Replace the main board
2. Check the communication cables between the main board and Balboa system
3. Check whether the Balboa system software matches

Heat Pump ER10: Communication fault of frequency conversion module

Communication fault of frequency conversion module (alarm when communication is disconnected between external board and drive board)
Cause:
1. The mainboard or driver board damaged
2. The connector of the communication cable between the mainboard and the driver board is in poor contact or falls off
3. The communication cable is damaged
Action:
1. Replace the main board or driver board
2. Check the communication cables between the main board and driver board
3. Replace the communication cable

Heat Pump ER12: Exhaust too high protection

Exhaust too high protection
Cause:
1. Less refrigerant or leakage
2. The system blocked
3. Compressor refrigerant oil is insufficient
4. The resistance value of the exhaust probe is offset, and the inlet temperature probe is dropped
Action:
1. Refill the refrigerant
2. Replace the filter
3. Add refrigerant oil to the compressor
4. Replace the exhaust probe and reconnect the water inlet temperature probe

Heat Pump ER15: Inlet water temp. Error

Inlet water temp. Error
Cause:
The sensor plug is in poor contact or off, or the sensor is damaged
Action:
Check and replace the water inlet temperature sensor (T2 sensor)

Panel warning information

Heat Pump ER16: Outer coil pipe temp. Error	Outer coil pipe temp. Error Cause: The sensor plug is in poor contact or off, or the sensor is damaged Action: Check and replace the coil pipe temperature sensor(T3)
Heat Pump ER18: Exhaust gas temp. Error	Exhaust gas temp. Error Cause: The sensor plug is in poor contact or off, or the sensor is damaged Action: Check and replace the exhaust gas temperature sensor(T1)
Heat Pump ER19:	DC Fan Motor Failure Cause: Action:
Heat Pump ER20: Abnormal protection of frequency conversion module	Abnormal protection of frequency conversion module Cause: IPM module internal fault, check related problems according to the attached table Action:
Heat Pump ER21: Ambient temp. Error	Ambient temp. Error Cause: The sensor plug is in poor contact or off, or the sensor is damaged Action: Check and replace the ambient temperature sensor(T4)
Heat Pump ER23:	Cooling outlet water temperature low protection Cause: Action:
Heat Pump ER27: Outlet temperature fault	Outlet temperature fault Cause: The sensor plug is in poor contact or off, or the sensor is damaged Action: Check and replace the water outlet temperature sensor(T6)

Heat Pump ER29: Return gas temp. Error

Return gas temp. Error
Cause:
The sensor plug is in poor contact or off, or the sensor is damaged
Action:
Check and replace the suction gas sensor(T5)

Heat Pump ER32: Heating outlet water high temperature protection

Heating outlet water high temperature protection
Cause:

Action:

Heat Pump ER33: Outer Door Coil High Temperature Protection

Outer Door Coil High Temperature Protection
Cause:

Action:

Heat Pump ER35: Compressor Current Protection

Compressor Current Protection
Cause:

Action:

Heat Pump ER42: Internal Coil Temperature Failure

Internal Coil Temperature Failure
Cause:

Action:

Heat Pump ER44: Ambient Temperature Too Low Protection

Ambient Temperature Too Low Protection
Cause:

Action:

Heat Pump ER46: DC Fan Error

DC Fan Error
Cause:
1.Dc fan failure
2.Plug is in poor contact or off
Action:
1. Replace the DC fan
2. Reconnect cables to the DC fan

CUSTOMER SERVICE GUIDE

Thank you for choosing our product! We are committed to providing you with excellent service. If you find any missing parts, damaged packaging, or product damage after receiving all packages, please follow the steps below to quickly contact our customer service team. We will do our best to resolve your issue.

1. Missing Parts

Verify Parts:

1. Refer to the “Parts List” in the manual to verify the name, specifications, and quantity of the missing parts.
2. Take a clear photo of the parts list and mark the missing parts with detailed information, e.g., “Missing 5 pieces of M6X30mm screws.”

Contact Us:

· By Email:
Send an email to service@grandtunnel.com, with the subject line “Missing Parts Issue.” Include the following in the email:
· A description of the missing parts and a photo of the parts list.
· Order details (order number, purchase platform, purchase date).

2. Product or Packaging Damage

If it affects normal use:
Steps:
1. Take clear photos or videos showing the damaged parts and the extent of the damage (multiangle shots are recommended).
2. Email the photos/videos along with order details to service@grandtunnel.com, with the subject line “Product Damage Issue.”

Resolution:
After verification, we will arrange for a replacement part, product exchange, or refund as quickly as possible.

If it does not affect normal use:
Steps:
1. Contact our customer service team (by email: service@grandtunnel.com).
2. Provide a description of the damage and include relevant photos or videos.

Resolution:
We will provide repair guidance or an appropriate compensation plan based on the specific situation.

Contact Us:

· Customer Service Email: service@grandtunnel.com

Helpful Tips

To process your issue efficiently, please prepare the following information:
· Order details (order number, purchase platform, purchase date).
· Clear photos or videos.
· We are committed to providing quick and professional solutions, no matter the size of the issue, to ensure your satisfaction.

Thank you for your trust and support! We hope you enjoy using our product!