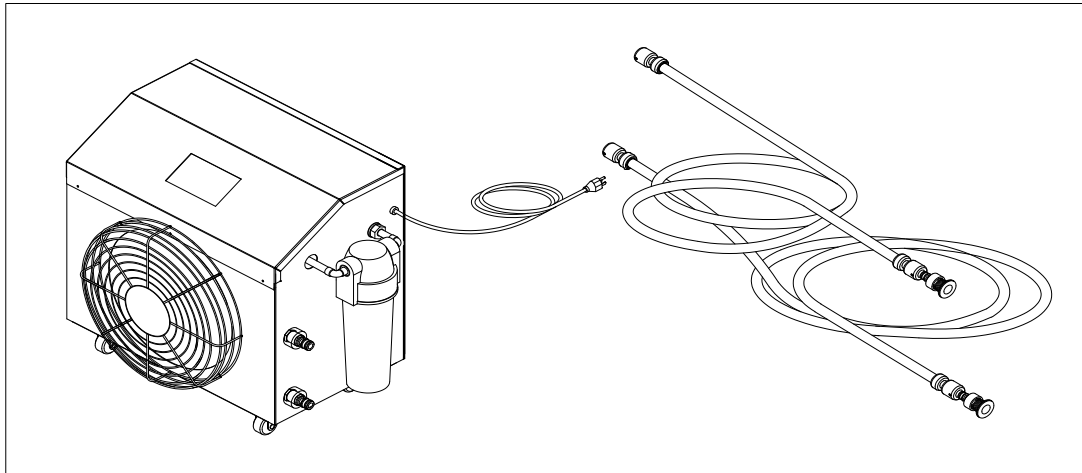


# **B-Chill/B-Heat/B-Dual Thermostat Models User Manual**



Thank you for choosing our products! The B-Chill/B-Heat/B-Dual series are thermostat models that provide cooling, heating, or both for cold water bathtubs, hot water bathtubs, and dual-temperature bathtubs. This equipment incorporates the latest cooling and heating technologies and is one of the most energy-efficient products available on the market. It offers you readily available, fast cooling or heating capabilities.

The series is manufactured using high-quality materials and industrial-grade components, ensuring a long service life. When used with the matching baths, it can be quickly set up, easy to use, and convenient to pack and transport.

This manual aims to assist you in getting started with the series equipment, providing information on its features, specifications, and operating instructions. It also serves as a guide to help you determine the model and voltage for your selection.

Please follow the instructions below for the installation, use, and maintenance of your equipment. Before setting up and using your equipment, please carefully read this manual. Keep this manual for future reference when needed.

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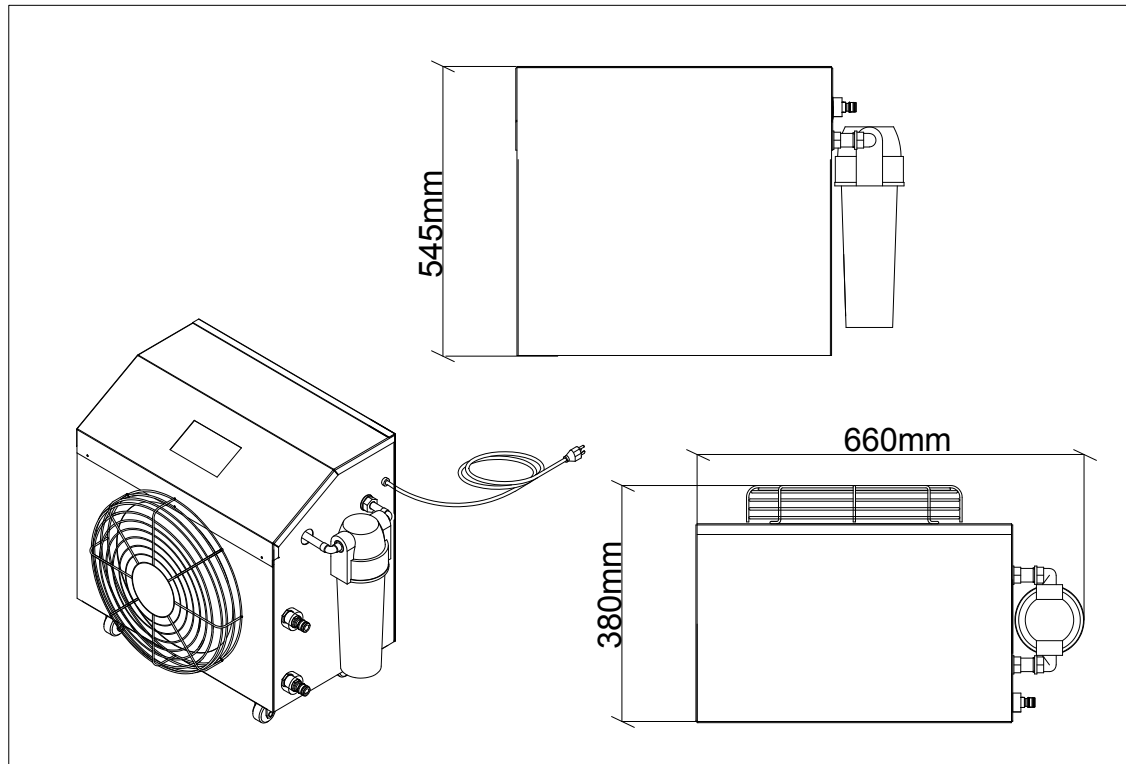
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# 1. External Dimensions and Technical Specifications

## 1.1 External Dimensions (mm) B-Chill / B-Heat / B-Dual



## 1.2 Technical Specifications

The B-Chill / B-Heat / B-Dual series of equipment offers the following features:

- a. **Rapid Cooling:** This series of cooling and heating devices are best suited for 200L-600L bathtubs. They can cool or heat your water pool within 5 hours.
- b. **Wide Temperature Range:** All models in the series are capable of cooling the water in the bathtub to 5°C (B-Chill), heating it to 40°C (B-Heat), or performing cooling/heating between 5°C to 40°C (B-Dual).
- c. **Portable and Flexible:** The equipment can be used and perform quick cooling or heating wherever you need it.

d. Smart Control: All equipment models can be configured with a large, bright, and aesthetically pleasing high-definition touchscreen featuring advanced technology.

Phone Remote Control (optional): Connect your device to your home network and pair it with your smartphone, tablet, or computer for remote control.

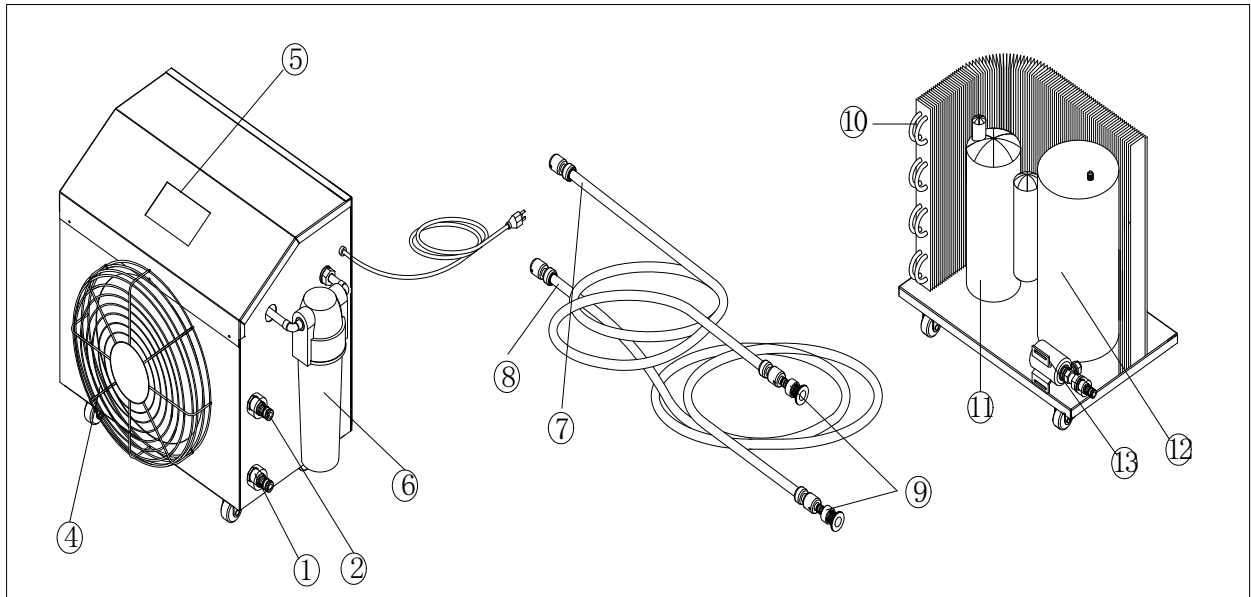
e. Compatible with Various Bathtubs: The equipment can be used with bath tubs produced by our company or with your own tub.

f. All-Weather Operation: All equipment models are designed for 24/7 all-weather use, featuring fully automatic control and low noise levels.

Note: Below are the actual test data for the cooling/heating series equipment under the condition of both ambient temperature and water temperature being 25°C:

Test Bathtub Name	Rectangular Small Bathtub (Built-in type)	
Test Bathtub Model	BATH-Heat (T1)	BATH-Dual(T1)
Bathtub Inner Dimensions	1200x610x560(mm)	
Water Capacity(L)	340(L)	
Cooling/Heating Equipment Models	B-Chill/B-Heat/B-Dual	
Power	Cooling Power, Heating Power, Cooling/Heating Power: 2500W	
Power Supply	Voltage: 220/110(V), Current: 6.5/13(A), Frequency: 50/60(Hz)	
Control Water Temperature	5°C to Room Temperature, Room Temperature to 40°C, 5°C to 40°C	
Test Data 1	Time taken for the test water temperature to rise 20°C or fall 20°C: <= 4.3 hours	
Test Data 2	Time for temperature recovery after normal use: <= 25 minutes	

Operating Mode	Automatic operation upon startup, 24/7 all-weather operation
Control Method	Digital display controller
Cool/Heat Model External Dimensions	680x390x415mm



- ① Water Inlet ② Water Outlet ③ Main Control Box  
 ④ High-Definition Touchscreen Control Panel ⑤ Fan ⑥ Filter  
 ⑦ Inlet Pipe ⑧ Outlet Pipe ⑨ Water Pool Connector ⑩ Condenser  
 ⑪ Compressor ⑫ Heat Exchanger ⑬ Water Pump

## **2. Model Selection**

### **2.1 Basic Model Information**

There are three types of models available:

- B-Chill (Cooling Model)
- B-Heat (Heating Model)
- B-Dual (Dual-Temperature Model)

### **2.2 Determining the Equipment Voltage**

Our equipment is designed to be used with two standard power supply options:

- (1) For countries/regions with a 220V power supply, it requires a minimum current of 6.5A.
- (2) For countries/regions with a 110V power supply, it requires a minimum current of 13A.

Note: During normal operation, the equipment requires much less power. However, during each startup, it needs more power for up to 1 minute, which must be provided.

### **2.3 Determining the Equipment Power Plug**

The power plug must be a three-pin plug. The three-pin power plugs in the UK, North America, Australia, and the European Union have different external dimensions. Therefore, when purchasing the equipment, it is essential to specify the country and region of use to ensure the appropriate power plug is provided.

## 3. Quick Setup

### 3.1 Preparations Before Setup

To ensure a smooth setup process, please carefully follow the instructions below. Do not start your equipment until you have read the entire manual. Improper installation or operation may result in machine damage, which is not covered under warranty.

(1) Unboxing: We recommend keeping the original packaging of the bathtub during the warranty period. If you need to relocate your bathtub, you can reuse the packaging for safe transportation.

**(Note: The equipment must not be tilted more than 15° or tipped on its side when lifted or moved.)**

(2) Placement Requirements: Your equipment can be placed anywhere you desire, including outdoor areas, but it should be protected from direct sunlight and rain to avoid corrosive environments. For example, avoid placing it too close to the sea or exposing it to extreme temperatures for extended periods. We recommend short time outdoor exposure and covering it when not in use. The ideal operating temperature for the equipment is between 10°C and 25°C to achieve optimal performance.

(3) Extreme Weather Considerations: When using your equipment in extremely cold temperatures, ensure that water does not freeze, as severe damage may occur and is not covered under warranty. If freezing is expected due to weather changes, empty the water or add antifreezer to the water. If your equipment has a heating function, activate it. In extremely hot climates exceeding 42°C, the system may not be able to run at full power due to overheating.

(4) Positioning: Your equipment must be placed on a flat, level surface and should not be positioned more than 2 meters away from the bathtub. Make sure to place the water pool and equipment in an area that can support the weight of the bathtub when filled with water. If unsure, consider seeking assistance from a professional engineer. The equipment is fully movable but should not be moved while running. Consider the

drainage and connection points of the water pool before filling it with water to drain any excess water.

(5) Airflow: Ensure that your equipment is positioned at least 300mm away from any obstacles, walls, or structures on all sides to allow proper air circulation. Also, keep it away from any heat sources. Adequate ventilation must be provided to keep the equipment within a safe operating temperature range. It requires a well-ventilated area so that your cooling machine can effectively dissipate heat into the air. Do not place the equipment in a sealed space, as it may reach unsafe temperatures, triggering the built-in safety system.

(6) Water Condensation: Please note that your equipment is a powerful cooling device, and condensation may occur inside the machine. You may notice a small amount of water at the bottom. Moisture in the air might condenses into water or even ice on the extremely cold surfaces inside the machine. This is more noticeable in high-temperature environments with high humidity in the air.

### **3.2 Connection of Bathtub Drain Hose**

Assembly involves using specialized hoses to connect the equipment to the water pool. The water pool can be our company's ice bath products or your own spa, bathtub. Different accessories/connectors are provided based on the type of water pool being used. Below is an illustration of connecting to our round ice tub. (The connection is similar for all other bath tubs.)

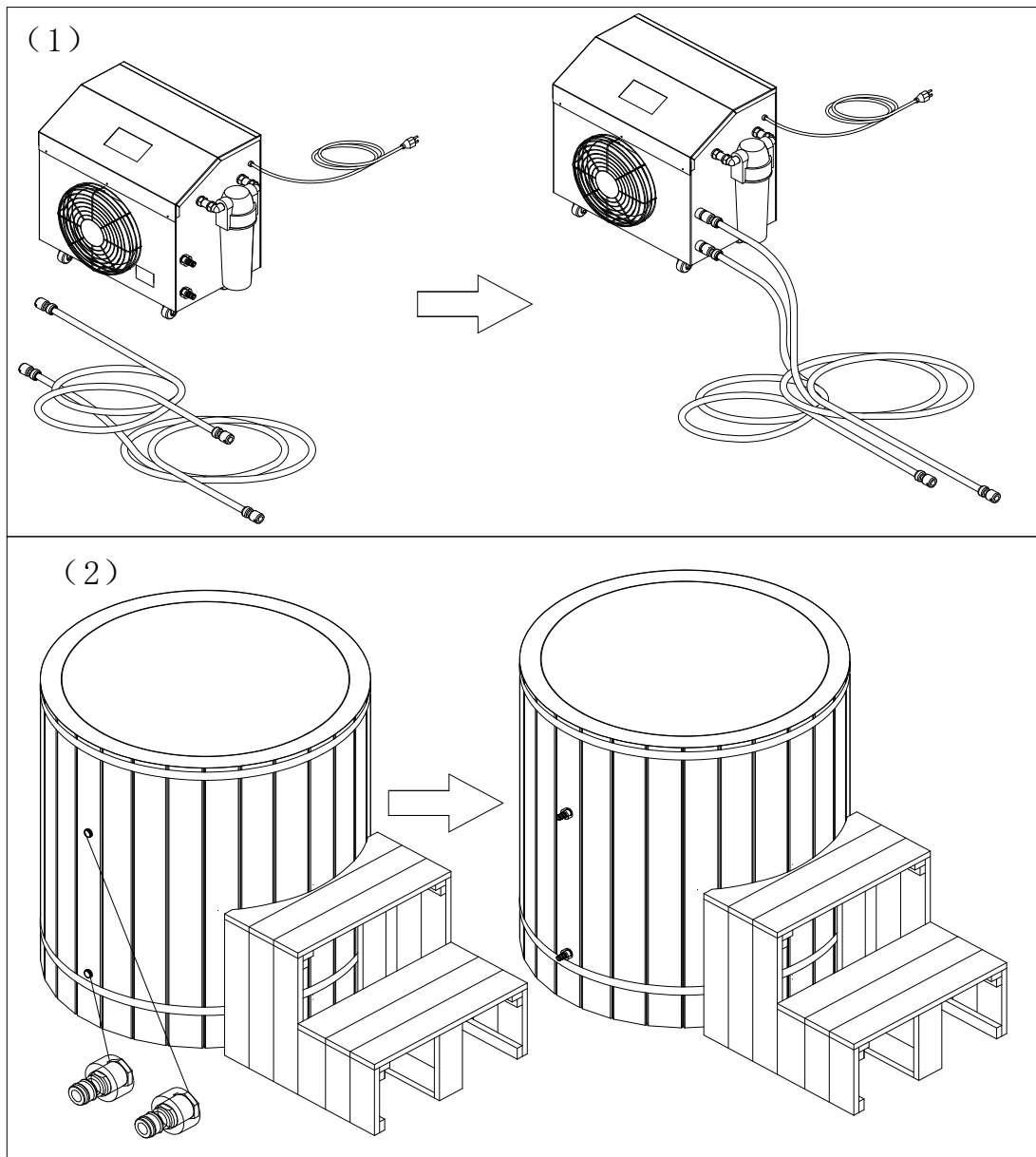
(1) Connect the hose to the quick coupler on the chiller, ensuring that the colors match;

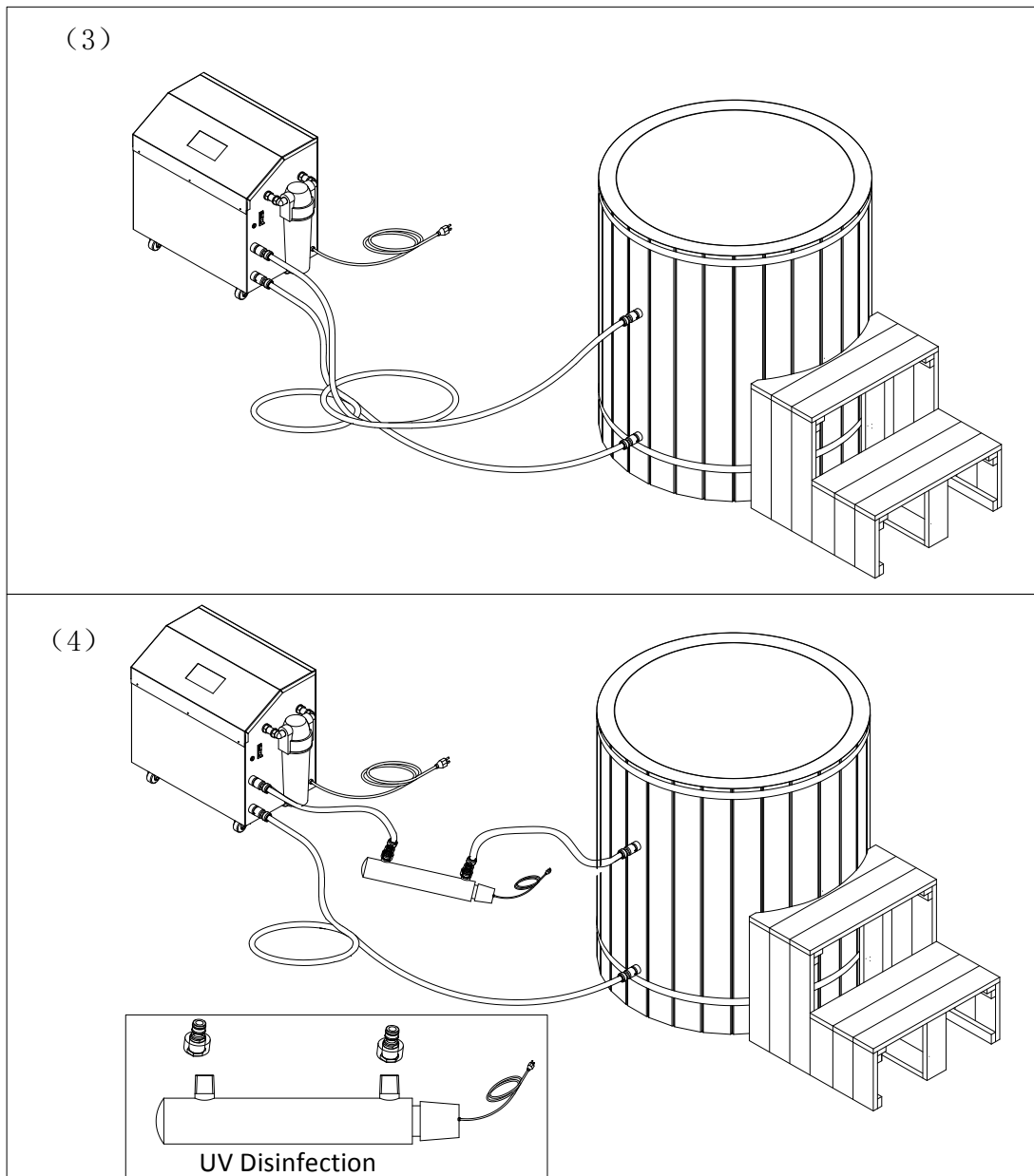
(2) Attach the quick coupler to the ice bath tub;

(3) Connect the hoses to ice bath tub. Please note: Connect the green hose to connector 1 on the chiller, and connect the red hose to connector 2 as shown in the diagram below. Please ensure that the pipe color matches the color label on the chiller.



(4) Fill the wooden barrel with water after connecting the two hoses. Ensure that the water level is above the top of the water inlet to avoid any water flow issues. Double-check that all hose connections are tightly secured. Additionally, consider the volume of the bathtub users' bodies and avoid filling the bathtub with too much water to prevent overflow.





**The UV disinfection equipment should be purchased separately**

If your pipeline has valves, please open them to allow water to flow between the equipment and the water pool.

Note: If you are using your own bathtub, you could drill two holes in the water pool and install two Ø19mm connectors, then use standard hose kits and water pool accessories to connect to the chiller machine.

### **3.3 Power Connection**

After connecting the hoses, the next step is to connect the equipment to the power supply. You must absolutely ensure that the equipment is not

connected to the wrong voltage, as this could cause severe damage that is not covered under warranty. Check the voltage indicated on the label above the power plug of the equipment to determine if it is a 220V or 110V type.



### **Connecting to Power**

The equipment must be connected to the voltage as indicated; they are not multi-voltage devices, and using a different voltage could cause serious damage. Avoid using long extension cords, as they may cause voltage drop, triggering the built-in safety system.



### **Warning:**

All AC power connections used must have a proper grounding connection in compliance with local electrical safety regulations.

(1) Connect to the Main Power Supply: Insert the equipment's power plug into a standard AC power outlet. In countries/regions with a 220V power supply, the current will be at least 6.5A; in countries/regions with a 110V power supply, the current will be at least 13A. While the system requires much less power during normal operation, it needs more power for up to 1 minute during each startup, and this is necessary. For user safety, a 3-pin grounded power outlet must be used. Never use a 2-pin plug as it can be dangerous! The cooling/heating equipment is equipped with electrical safety devices (ground fault circuit interrupter) to protect users.

(2) Power On: Turn on the power switch to start the equipment.

(3) Connect to the phone APP control: This feature is optional and might at extra costs, it comes with a separate instruction manual.

## **4. Power On**

### **4.1 Switching on Power & Startup Sequence**

Turn on the main power switch and check the display on the control panel to ensure it is correctly powered on.

If there is no display on the control panel when you turn on the power switch, please check:

(1) Ensure the power plug of the main power cable is directly inserted into the wall socket without extension cords.

(2) Verify if the wall socket has electricity.

(3) Start the Water Flow: Your equipment will automatically start the circulation water pump, and water will begin to flow in the tub. The pump indicator on the control panel will light up, indicating that the pump is running and the automatic startup process is in progress. If everything is working correctly, proceed to the next step.

(4) Activate the System: After a few seconds, the motor of the cooling/heating compressor will start. You should hear the compressor humming. If everything is functioning properly, proceed to the next step.

Note: If your bathtub's built-in system detects any potential electrical safety risks, this switch will immediately shut down all power. In such a case, it is essential to have an electrician check the safety of your bathtub before attempting to restart it. If both of the above steps do not resolve the issue, please contact the supplier.

## **5. Safety Procedures**

### **5.1 Important Safety Warning**

(1) Power Voltage: The cooling/heating water machine can only be connected to the voltage marked on the machine. They are manufactured to be used with either 110V or 220V power supply. Connecting to a power supply with voltage different from the marked specification may cause severe damage. All models can be used with 50/60Hz AC power.

(2) Power Connection: The power input plug on the side of your equipment must be connected to the specified current power supply. In countries/regions with a 220V power supply, the current will be at least 6.5A; in countries/regions with a 110V power supply, the current will be at least 13A. While the system requires much less power during normal operation, it needs more power for up to 1 minute during each startup, and this is necessary.

#### **Approved grounding connection is essential for safe operation.**

To ensure safe operation, the AC power supply must have a proper grounding connection in compliance with local electrical safety regulations.

(3) Emergency Shutdown: In emergency, press the orange button on the main power switch or turn off the power supply, then all high-voltage power to the water pump and cooling system will be immediately cut off. Ensure that all users of the bathtub are familiar with this function. Make sure that the operating personnel and users know where the orange button is located to cut off all power. The button is located on the switch beside the filter on the right side of the equipment.

(4) Electric Shock Protection: All equipment is equipped with electrical safety grounding leakage protection. It also protects the water pump and UV sterilizer connected to the cooling/heating equipment. Do not risk using unprotected electrical devices near water!

Approved grounding connection is essential for safe operation. To ensure safe operation, the AC power connections used must have a proper

grounding connection in compliance with local electrical safety regulations.

(5) Safe Temperature Settings: According to international safety recommendations, your bathtub should not accept water temperature settings below 5°C, as it may pose a risk of hypothermia to users. Additionally, it should not accept heating temperature settings above 40°C to prevent scalding sensitive skin. Also, please be cautious about prolonged exposure to extremely cold or hot temperatures!

(6) Built-in Safety System: Your equipment has many basic safety features to prevent the following situations:

A. System overheating B. Electric shock C. Freezing/Frosting

If any of the above potential dangers occur, the system may temporarily or permanently shut down in most cases! In case of overheating, the ventilation fan may still continue to run for a while after shutdown until the temperature returns to a safe level.

For user safety, even a small amount of current leakage will immediately cause the ground fault circuit interrupter to cut off all power to the system. The maximum allowable leakage current is 30mA. This device is part of the user's main power supply.

**Warning:**

Do not restart the equipment without identifying and correcting all malfunctions. If your system shuts down for any reason, you must identify and correct the issues causing the safety system to activate before allowing anyone to use the bathtub.

(7) Advice on Bathtub Chemicals: The provided water pump in the equipment can be used in water with normal concentrations of chlorine and salt, but the use of chemicals should be within the recommended concentration range typically used in swimming pools to extend the life of the water pump and the heat exchanger water tank inside the cooling/heating water machine.

(8) Extreme Weather Conditions: If your bathtub is placed outdoors, any damage caused by extreme conditions (rainwater, sunlight, rust, salt, freezing temperatures, dust, dirt, or any other debris) is not covered under warranty. Therefore, your equipment should be stored in a dry and protected area to avoid direct exposure to extreme environment. Extremely dirty, dusty, damp, and corrosive environments can lead to electrical issues that are not covered under warranty.

## **5.2 Maintenance**

It is recommended to regularly clean your equipment to prevent rust and dust accumulation, which can reduce performance or cause other issues. For best results, use a microfiber cloth to clean the equipment.

(1) Equipment Operation: The ideal operating temperature indoors is between 10-28°C. You must protect the equipment from rust, dust, dirt, freezing temperatures, and direct sunlight.

(2) Disinfection: Chlorine, salt, and mild chemical disinfectants can be used within a safe concentration range, but avoid the use of bromine as it is corrosive.

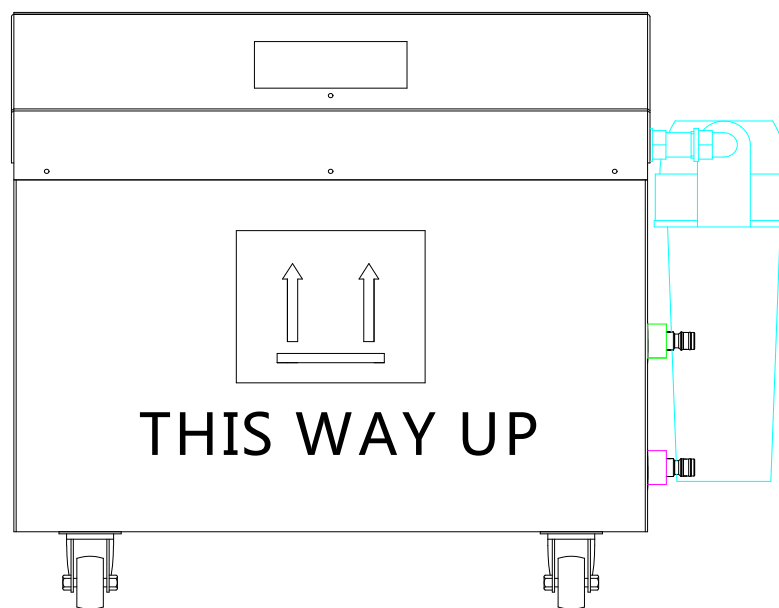
(3) Water Filtration: For household use, we recommend cleaning the reusable filter cartridge every 3-4 weeks and replacing the filter cartridge approximately once a year. For commercial use, it is recommended to clean the reusable filter cartridge every 1-2 weeks and replace the filter cartridge every 6 months.

(4) Storage: If not in use, the cooling/heating machine must be emptied and stored in a dry environment with temperatures preferably between 15-28°C. Always avoid exposing it to extreme weather conditions.

(5) Transportation: Always hold the handles and move the equipment in a straight or backward direction. We strongly advise keeping the equipment in an upright position at all times. Do not place the equipment on its front or backside (see diagram below).

(7) Operating in Extreme Weather: If your bathtub operates in conditions below 10°C (above 0°C), the machine inside the bathtub may occasionally

stop to defrost due to frosting. If operated in hot weather, the temperature inside the machine can exceed 70°C due to the need to remove waste heat from the powerful heat pump. In this situation, the overheating protection safety circuit will activate and shut down the equipment. This may occur during extremely hot weather or if airflow is obstructed by walls or obstacles, or if towels or other objects block the airflow. If extreme cold conditions are expected, please empty the water from the equipment. Do not let the internal water tank freeze if not in use. After emptying the water, add salt or antifreezer to avoid freezing. If not in use for an extended period, drain the equipment and store it at room temperature.



**Warning:**

Do not place the side of the bathtub within 300mm of walls or any other obstacles that may restrict the cooling airflow.

Do not operate the equipment in an enclosed space, and always ensure sufficient airflow.



## 6. Troubleshooting

### 6.1 Water Flow Issues

In order to protect the pump and heat exchanger tank, the system will not operate unless there is normal water flow.

(1) Insufficient Water Flow:

**A. Causes of insufficient water flow:** Trapped air in the pipes or pump, restricted flow due to blockage in the hoses, leaking hoses or pipes connected to the equipment, or the presence of air trapped in the system.

**B. Serious consequences:** Running the machine without sufficient water flow can cause severe damage, as the heat exchanger may quickly freeze and potentially rupture the water tank. Insufficient water flow can also severely damage the pump due to lack of lubrication and cooling.

**C. Solutions:**

- a. Ensure an adequate water supply, and make sure the water level is above the outlet on top to avoid water flow issues.
- b. Check if there are water valves in the hoses or pipes connecting the bathtub and the machine. Ensure that the valves are open and water can flow smoothly.
- c. Disconnect and clean each hose separately, as sometimes debris (such as adhesive bandages, clothing fragments, etc.) can block the water flow.
- d. Disconnect the fittings on the hoses connecting the equipment and the bathtub. You may find debris or objects blocking the water flow.
- e. If the above methods do not resolve the water flow issue, open the equipment's casing and further check and clean the fittings of the pump, UV sterilizer, filter, and heat exchanger. There might be debris or objects obstructing the water flow. If all the above methods are unsuccessful, please contact your supplier.

(2) Insufficient Water flow velocity:

A. Cause: Insufficient power of the pump.

B. Consequence: Insufficient power of the pump results in inadequate force to push the water, leading to insufficient water flow velocity, which could not provide safe water flow. In such case, the system will not start.

C. Solution: Increasing the circulation pump's power size will resolve this problem.

(3) Solid Freezing of the Heat Exchanger Tank:

A. Cause: If the temperature is set below 7°C, under certain climate conditions, the heat exchanger tank may occasionally freeze. It should be understood that to cool the water in the bathtub to these extremely low temperatures, the system must cooled below the set temperature by at least 5°C because of heat losses. This brings it very close to the freezing point of water.

B. Consequence: This condition will prevent most or all water flow. In most cases, your equipment has an antifreeze circuit to address this issue, but the entire system will stop operating until the heat exchanger thaws and starts again.

C. Solution: If this occurs, allow the ice to thaw for 30 minutes, then raise the temperature slightly (no lower than 8°C or 9°C to prevent the water tank from freezing again) and restart. Setting the temperature higher than 8°C is generally sufficient to prevent the water tank from freezing in any circumstance. Additionally, if extreme freezing weather is anticipated, we recommend adding salt to the water to lower the freezing point.

## **6.2 Operational Issues**

In the event that your system shuts down for any reason, you must identify and rectify the issues causing the safety system to operate before allowing anyone to use the equipment again. Do not restart the device without identifying and resolving all faults.

### **(1) Cooling/Heating Issues with the Bathtub Equipment:**

A. Cause: Your equipment has multiple safety systems, including one that prevents the water pressure from reaching dangerous levels, which only occurs when the machine is extremely overheated.

a). If the machine is operating in extremely hot conditions or in a confined space, or if the airflow has been obstructed for a period of time, or if the machine is placed too close to walls, towels, heat sources, or other objects, it may cause the internal temperature to rise and overheat.

b). For cooling models only, if your cooling machine is running normally but the temperature does not change after 45 minutes, the reason could be that the target temperature is higher than the current actual water temperature, as cold-water machines do not have a heating function.

c). Coolant leakage

B. Consequence: This will trigger the safety system, the device will start cool.

C. Solution: For above reason a), lower the ambient temperature or ensure proper ventilation, and make sure there are no obstacles within 300mm of the bathtub.

#### (2) "System Overheating" Warning Displayed:

Your equipment generates a large amount of heat per hour, which must be dissipated into the surrounding air. Powerful fans can typically handle this, but if the airflow around the machine is restricted, preventing the heat from escaping, or if the external air temperature exceeds 45°C, the system will eventually reach the limit of its safe operating range, and if the temperature inside the cabinet reaches 70°C, the safety system will shut down the machine. Ensure that the fans are operational, the condenser fins on the equipment are not covered or restricted, and there is good fresh air circulation in the area. In extremely hot weather with temperatures exceeding 45°C, the system may not be able to operate at full power due to overheating.

Cooling pre-heated water can also cause the water to overheat and trigger a warning to shut down the machine. This only happens when the water temperature inside the tub is too high. It is best to let the heated water naturally cool down to below 30°C before starting the cooling cycle, as this also saves energy.

#### (3) Water Leakage:

Note: Your equipment is a very powerful cooler, and internal condensation can occur. Water may leak from the rear of the cold-water machine, and this is completely normal. If necessary, you can place a drip tray under the equipment to catch any overflow. If leaks occur around the accessories on the machine, remove the accessory and wrap the joint with pipe sealant tape to help seal the connection. Waterproof sealant tape is available at any hardware store.

#### (4) Safety Switch Tripped:

If the safety switch on your equipment trips, ensure that the plug is inserted into the panel with the same voltage as indicated. If the voltage

is correct, continue to check at which step of the machine's operation the switch tripped:

- a. If the cold-water machine trips when the water pump starts – check the connected water pump.
- b. If the cold-water machine trips when the compressor motor starts – please contact the dealer.
- c. If the cold-water machine trips when the fan starts – please contact the dealer.