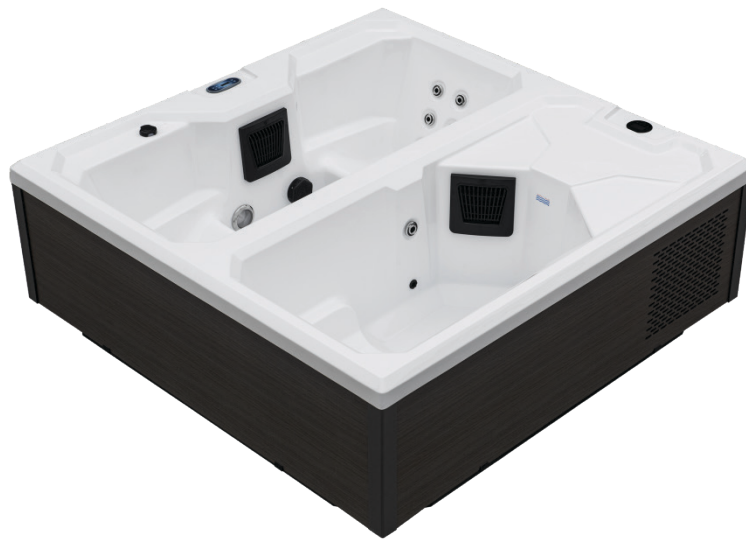


# FINSAUNA®



## **AquaFin** Single/Double Plunge Tub

Installation & User Manual



Thank you for choosing Finsauna. Please read the entire user manual before installing and using the AquaFin plunge tub. The purpose of this manual is to provide you with safety instructions and operating information, as well as some usage tips to help you fully enjoy your bathing experience. The information in this manual is consistent and accurate with the AquaFin at the time of printing. We reserve the right to change or improve its products without notice.



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# 1. Safety Instructions

It's time to relax! You now have your own AquaFin. By fully understanding the specific operation of each function of the AquaFin, you will be able to experience the fun of the AquaFin without worries.

Your safety is of utmost importance to us. We hope that you will carefully read, understand, and follow all the information in this user manual before installing and using your AquaFin. These warnings, instructions, and safety guidelines address some common risks of AquaFin, but they cannot cover all risks and dangers in all situations. Always use caution, common sense, and good judgment when enjoying any water activity. Keep this manual information for future use.

When installing and using any electrical equipment, basic safety precautions should be followed, including the following:

## Read and Follow all Instructions

**WARNING:** To reduce the risk of injury, do not allow children to use this product unless they are supervised by an adult at all times.

**Danger:** Risk of accidental drowning. Extreme care must be taken to prevent unauthorized access by children. To avoid accidents, make sure that children cannot use the AquaFin without any supervision.

**DANGER: RISK OF INJURY.** The return fitting in the AquaFin is sized to match the flow rate of water produced by the pump. If the pump needs to be replaced, make sure the replacement pump

has a compatible flow rate. Do not continue to use if the return fitting is damaged or missing, and do not replace the return fitting with one that has a lesser flow rate than the original return fitting.

**DANGER:** Risk of electric shock. Do not operate any electrical appliances such as lights, telephones, radios, or televisions within 5 feet (1.5 meters) of the plunge tub.

## **WARNING: To reduce the risk of injury:**

**a)** The water temperature of the plunge tub should not exceed 104°F (40°C). Water temperatures between 100°F (38°C) and 104°F (40°C) are considered safe for healthy adults; lower water temperatures are recommended for younger children. People with any medical condition that would cause them to use the plunge tub for longer than 10 minutes should seek medical advice before using the AquaFin.

**b)** Because high water temperatures may cause fetal harm in the first few months of pregnancy, pregnant women or those who may become pregnant should seek medical advice before using the AquaFin.

**c)** Before entering the plunge tub, the user should measure the water temperature with an accurate thermometer as the water temperature display may be erroneous or have tolerances.



**DO NOT PUT FINGERS  
IN THE MESSAGE  
NOZZLES.**

**d)** Using alcohol or drugs before or during the use of a plunge tub may cause coma and possible drowning.

**e)** People should consult a physician before using a plunge tub.

**f)** People who take medications should consult a doctor before using a plunge tub, as some medications may cause drowsiness and may also affect heart rate, blood pressure, and blood circulation.

## Save these Instructions

### Hyperthermia

Hyperthermia occurs when the body's internal temperature reaches a level several degrees above the normal body temperature of 98.6°F (37°C). Prolonged immersion in hot water may cause hyperthermia.

Symptoms of hyperthermia include: dizziness, drowsiness, fainting, and increased body temperature.

Effects of Hyperthermia Symptoms:

- Not aware of impending danger
- Unable to sense temperature
- Failure to recognize a need to exit the plunge tub.
- The body is unable to exit the plunge tub
- Fetal injury in pregnant women
- Unconsciousness, leading to drowning risk

### Hypothermia

Hypothermia occurs when the body's internal temperature drops a few degrees below the normal body temperature of 98.6°F (37°C). Prolonged immersion in cold water can cause hypothermia.

Symptoms of hypothermia include: tremors, lethargy, confusion, unconsciousness, speechlessness or mumbling, slow breathing, weak pulse, coldbright red skin (in infants), and clumsiness.

Effects of hypothermia symptoms:

- Nervous system failure
- Respiratory system and heart
- Failure to recognize a need to exit the plunge tub.
- Failure to recognize impending danger
- Fetal injury in pregnant women
- Physical weakness; difficulty exiting plunge tub.
- Unconsciousness, leading to drowning risk

**WARNING:** Use of alcohol and drugs greatly increases the risk of hypothermia/hyperthermia.

**DANGER:** To reduce the risk of injury to humans, do not remove the filter baffle and return mask. The suction force of the water pipe opening inside the filter is high. The lack of baffles may be dangerous to people with long hair. If any part of the body is sucked into these accessories, turn off the AquaFin immediately. As a precaution, long hair should not float on top of the water.

**WARNING:** When installing the AquaFin, ensure that there is adequate drainage so that water can drain safely and does not soak the plunge tub. Please leave at least 3 feet of clearance around the AquaFin to provide adequate space for maintenance. Leave at least 6 feet of open space around the air outlet of the AquaFin to effectively provide adequate ventilation.

**WARNING:** When the AquaFin is not in use, it should be covered with an approved insulation cover to prevent unauthorized access and possible injury.

**WARNING:** People with infections, ulcers, or other infectious diseases should not use the plunge tub. The appropriate temperature may cause infectious bacteria to grow and cause infection.

**NOTE:** Replace parts only with identical parts.

**WARNING:** Risk of electric shock. Do not connect any auxiliary components (for example, additional speakers, headphones, additional audio/video components, etc.) to the system.

**NOTE:** Do not service this product yourself, as removing covers to perform servicing may expose you to dangerous voltages. Refer all servicing to qualified service personnel. If the power cord is damaged, water has entered the heat pump, or if there are other signs of potentially dangerous damage, turn off the power and refer servicing to qualified service personnel.

**NOTE:** The unit should undergo regular routine maintenance every quarter to ensure it is functioning properly.

**DANGER:** Do not use cold or hot water baths immediately after strenuous exercise. Use them after your muscles have relaxed or your heart rate has returned to normal.

**WARNING:** Prolonged immersion in a plunge tub may be harmful to your health.

## 2. Product Introduction

Welcome to your new AquaFin plunge tub. With the correct preparation and care your new plunge tub will provide you with many years of fun and relaxation.

This manual has been developed to provide you with the information that you need regarding the preparation, installation, care and operation of your new unit. Please take the time

to carefully read the entire manual to ensure that your preparations are carried out correctly. Also make sure that you familiarize yourself with the important safety instructions before using your unit.

If you have any questions or doubt on the operation or maintenance of this product, please contact your local retailer.

Your new AquaFin may be a dual-zone that combines the cold and hot zones. The hot zone uses a combination of nozzles to mix air and water together for a powerful massage effect. The cold tub zone has circulation nozzles plus a small number of massage nozzles to keep the water moving for a faster cooling effect.

### AquaFin Single Plunge Tub



### AquaFin Double Plunge Tub





## 2.1. Spare Parts

### 1. Nozzle:

The hot side has nozzles on the seat back, providing various treatment combination arrangements.



### 2. Air switch:

These air switch valves are located on the surface of the tank. You can increase or decrease the spray intensity of the nozzle by turning the air switch on or off. When not in use, the air switch should be kept closed. Introducing air for a long time will change the water temperature.



### 3. Control Panel:

You can control some functions of the AquaFin through the control panel. It is used to control water temperature, water pump start and stop, LED lights, filter cycle and other functions. It can also display the parameter value of the plunge tub through the LCD screen. Also provides some self-programmable functions.



### 4. Skirt door:

The skirt panels located around the unit are removable if the AquaFin needs to be serviced. We recommend that you provide at least 3 feet of access around the plunge tub.



### 5. SPA control system:

The main function of the control system is to control the water pump on and off and other functions in the hot tub area. The system contains the heater inside.



### 6. Pull valve:

Maintenance personnel use these pull valves to shut off the water flow so that maintenance work can be done on the system, water pump, and heat pump without draining the water.



### 7. Massage Pump:

Provide water flow to the massage nozzles.

### 8. Circulation pump:

It can run 24 hours non-stop for efficient filtration and provide water flow for the operation of heat pumps and heaters.

### 9. Heat Pump:

The device provides heating and cooling functions through water adjustment.



### 10. Joint:

For electrical appliances that need repair, you can unscrew the joints and disassemble the appliance for repair.



### 11. Heat pump control panel:

This control panel is located in the cold area and provides direct control of the water temperature, lighting, timing and circulation system. We can implement the same function through "Smart Life" app as well. Please read more information from the control panel instruction book directly.



### 12. Circulation nozzle:

These nozzles are water output nozzles of water pumps or heat pumps. Some circulation nozzles are also connected to ozone disinfection facilities to bring in disinfectant gas to disinfect the water.

### 13. Filter Skimmer:

The paper core can be used to filter out tiny debris from the water, and the built-in baffle can filter out larger objects, such as leaves and plastic bags, to keep the water clean.



#### 14. Paper core:

Installed inside the filter skimmer, it filters out fine debris such as algae, hair and dirt.



#### 15. Return water:

The water pump draws water from the return water, providing water flow for the water pump.



#### 16. Ozone generator:

Can produce ozone gas.



#### 17. Ozone mixing cartridge:

Mixes water and ozone thoroughly.

#### 18. Ejector:

Mix water and ozone thoroughly.

## 2.2. Chemical Terms

**Before jumping into Water Maintenance, here are some terms to help you.**

**1. PARTS PER MILLION (PPM):** This is a form of measurement used in most pool or spa chemical readings. Best described as any one million like items of equal size and make up, next to one unlike item, but of equal size. This would be one part per million.

**2. TOTAL ALKALINITY (TA):** Measures substances in your water such as hydroxides, carbonates and bicarbonates. When at the proper levels, these elements keep your water from clouding and growing bacteria, as well as prevent the inner workings of your hot tub from deteriorating or forming scale. TA also helps to stabilize pH. The higher the TA level (as long as it is within the recommended range), the less likely

the pH is to change. With low alkalinity, the pH will fluctuate and be harder to control. With high alkalinity, it becomes extremely difficult to change the pH.

**3. PH OR POTENTIAL HYDROGEN:** This indicates the acidity or basicity of the water. The goal is to have a neutral, stable pH to prevent damage and unhealthy conditions. Low pH levels can corrode metals, etch or stain fiberglass or acrylic, cause unsanitary conditions that irritate the eyes or skin and destruct the total alkalinity of the water. High pH can cause cloudy water, eye or skin irritation, scale formation and poor chlorine efficiency. Note that the chemicals you are using to sanitize and clean your hot tub can also lower or raise the pH level in the water. Unfortunately, there are lots of variables to preventing high pH in your AquaFin.

**4. SHOCKING:** By shocking the water in your hot tub, you remove organic compounds from the water, kill bacteria, remove bromamines or chloramines and reactivate the bromides in the hot tub for cleaner water. You should shock your water once a week, after heavy bathing use or any time free chlorine levels test lower than total chlorine levels. To do this, either add oxidizer/non-chlorine shock to burn off the chloramines or add extra chlorine to raise the chlorine level. Oxidizer/non-chlorine shock acts by releasing oxygen in the water, which serves a similar function as chlorine. An advantage to using this type of shock is that the water is safe to enter after 15 minutes of application and excessive sanitizer (chlorine) levels do not occur. However, an oxidizer/non-chlorine shock doesn't disinfect the water for bacteria. If you use chlorine to shock, you must wait until the total chlorine reading is at a level safe to re-enter the water.



**5. SEQUESTERING:** This can be defined as the ability to form a chemical complex which remains in solution, despite the presence of a precipitating agent (i.e. calcium and metals). If the minerals and metals in water are not sequestered, they can cause a reaction, turning the water brown, red, orange or green depending on the minerals and metals present in your water. It is important to add a sequestering agent when adding water to your spa and even on a regular basis (if bottle instructions recommend doing so). Common names for sequestering chemicals are: minquest, stain and scale control, metal-x, spa defender, spa metal gone, etc.

**6. FILTRATION:** Filters are necessary to remove particles of dust, dirt, algae, etc., that are continuously entering the water. If the system is not operated long enough each day for the filter to do a proper job, this puts a burden on the chemicals, causing extra expense. Filtration time will depend on the water capacity, pump, filter size and, of course, bather load. Spare filter cartridges should be kept on hand to make it easy to frequently clean the cartridge without the need for a long shut down. This will also allow the cartridge to dry out between usages, which will increase the cartridge life span as much as twice. Replace the cartridge when the pleats begin to deteriorate. Cartridge cleaning should be done at least once a month. More often with a heavy bather load.

**7. SANITIZERS:** Germs and bacteria enter the water from the environment and the human body; a sanitizer keeps the water balanced and safe to use. Chlorine can be used as the sanitizer to create a healthy water environment. **Chlorine:**

1. Only one type is approved for hot tub use. Sodium dichlor which is granular, fast dissolving and pH neutral chlorine.
2. Chlorine is an immediate sanitizer and will be added as needed to maintain free chlorine levels.

**NOTE:** Bromine is not recommended in the AquaFin.

**8. TOTAL DISSOLVED SOLIDS (TDS):**

Materials that have been dissolved by the water, i.e. like what happens when you put sugar in coffee or tea.

**9. USEFUL LIFE OF WATER (IN DAYS):**

Water should be drained at least once every 180 days. Useful life may vary by usage and bather load.

**10. DEFOAMER:** A chemical used to temporarily reduce foaming. Causes of foaming include body oils, cosmetics, lotions, surface cleaners, high pH or algae, as well as other organic materials. Low levels of calcium or sanitizer can also cause increased foaming. Note that you may need to physically remove the foam and/or drain all or part of your water to remove or dilute the causes of the foam.

**11. CALCIUM HARDNESS:** This measurement tells you how much magnesium and calcium are in your water. However, calcium hardness can react with all the chemicals, bacteria, dirt and other substances that your water dissolves and get thrown out of balance. Just like the other elements, calcium levels must remain balanced and need to be monitored, or you run the risk of metal deterioration, water foaming or clouding and scale formation at the surface of your water.

**12. BIOFILM:** This is any group of microorganisms in which cells stick to each other and often these cells adhere to a surface (ie. AquaFin plumbing and shell). Biofilm can occur over time during the use of your plunge tub.

## WHY ARE CHEMICALS IMPORTANT IN A PLUNGE TUB?

**1. EVAPORATION:** As water evaporates only pure water evaporates, leaving the salts, minerals, metals, and any unused chemicals behind. Adding water adds more salts, minerals, and metals. In time, the water can become saturated with these dissolved solids and can cause stains or scale to form on the walls of the AquaFin or a scale build up inside the equipment. Colored or cloudy water and possible corrosion of plumbing and fittings may also occur.

**2. HEAT:** Heat causes much quicker evaporation and will cause minerals and metals to precipitate out of solution.

**3. AIR:** Dust and other airborne contaminants are introduced into the plunge tub.

**4. ENVIRONMENT:** The environment surrounding the AquaFin can also impact the water quality. Items such as pollen, grass, sand, dirt, lawn fertilizer, airborne dust, insects, leaves, and pets can all affect the water quality of the AquaFin.

**5. BATHERS:** As the plunge tub is used, bathers introduce contaminants to the water. Increased bather load, length of use and frequency will increase the amounts of contaminants added in to the water.

**NOTE:** The maintenance routines set forth in this manual may need to be adjusted depending on bather load and how much the AquaFin is being used.

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## 2.3. Product Specifications

Model	Dimensions (inches)	Electrical Requirements	Capacity	Water Capacity (gallons/m <sup>3</sup> )	Net Weight (lbs/kg)	Overall weight (lbs/kg)
AquaFin Single	85 " x41 " x29.5 "	110V, 60Hz	1 person	113/0.43	359/163	1492/677
AquaFin Double	85 " x85 " x29.5 "	Hot:220V/60Hz Cold:110V/60Hz	3 people	Hot :132/0.5; Cold:113/0.43	772/350	3377/1532

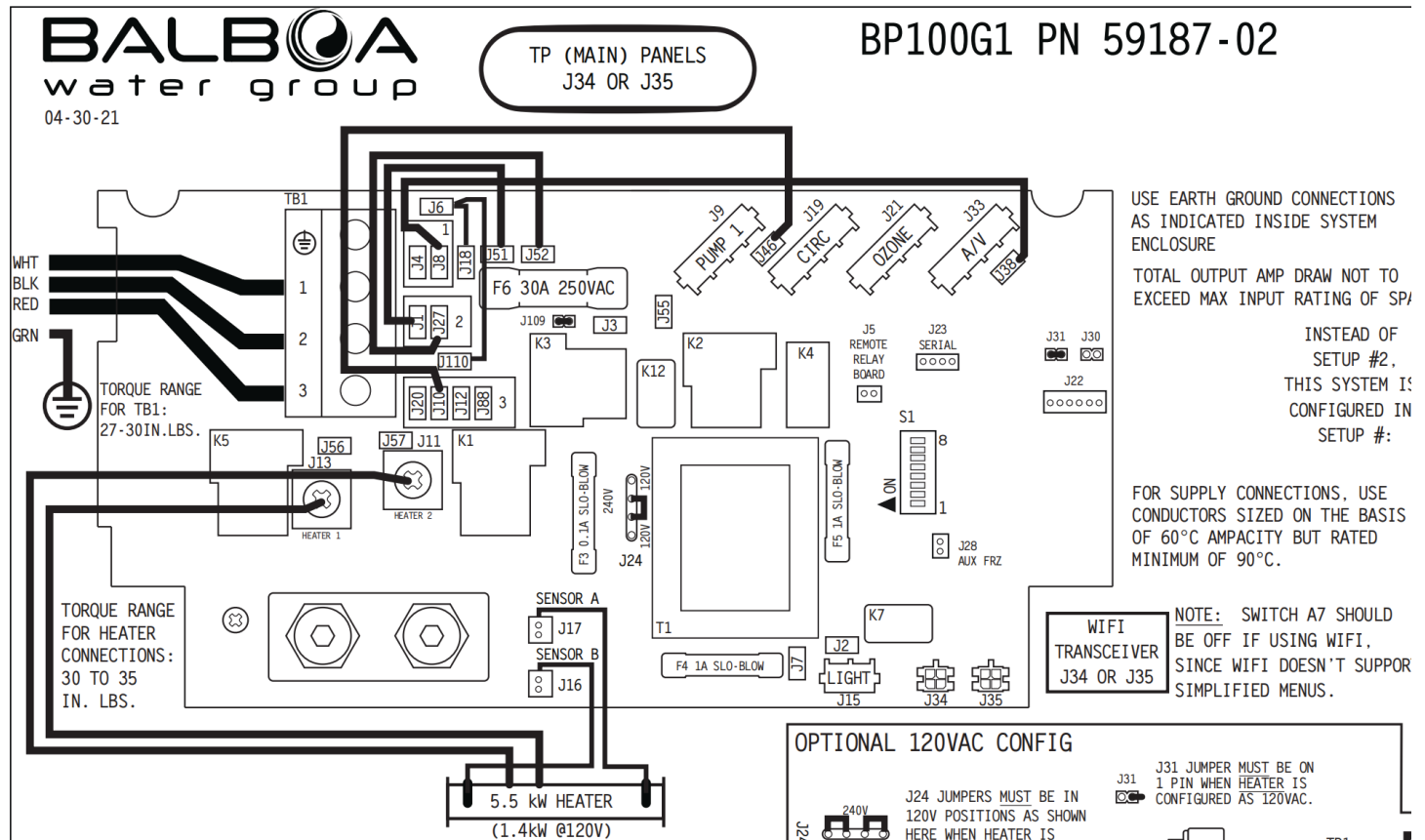
1. The capacity of the AquaFin represents the number of users. The number of users must not exceed the specified seating capacity. If too many users cause the water level to overflow, water may enter the internal equipment area and damage the equipment, so additional users are not allowed to enter.

2. Overall weight is based on net weight plus water capacity and weight of maximum occupants (based on average adult weight of 185 pounds); 1 gallon of water equals approximately 8.4 pounds.

3. Due to the existence of tolerance, the final overall weight of the plunge tub will deviate. It is recommended that 15% should be added to the overall weight during installation as a reference for load-bearing capacity.



### 3.2.6. AquaFin Double Wiring Diagram



For your safety, please choose an electrician to install the wiring of the AquaFin. According to the local national electrical code, reserve a safe distance between the power socket and the plunge tub (qualified electricians will be clear about this code).

**NOTE:** Consult your local code agency to determine if your installation requires covered electrical outlets. If necessary, appropriate outlet covers can be purchased from your dealer. The AquaFin is equipped with approximately 16 feet (5 meters) of usable power cord. The power cord is stored inside the plunge tub for easy transport. Open the AquaFin skirt door and locate the power cord.

### 3.3. Trial Operation

**Note:** Please check all wiring carefully before trial operation.

### 3.3.1. Checking the form

Please confirm the following items before trial operation and fill in  $\sqrt{\quad}$ :

<input type="checkbox"/>	Correct unit installation
<input type="checkbox"/>	Power supply voltage is the same as unit rated voltage
<input type="checkbox"/>	Correct piping and wiring
<input type="checkbox"/>	Air inlet & outlet port of unit is unblocked
<input type="checkbox"/>	Drainage and venting is unblocked and no water leaking
<input type="checkbox"/>	Leakage protector is working
<input type="checkbox"/>	Piping insulation is working
<input type="checkbox"/>	Ground wire is connected correctly

### 3.3.2. Condensate pipe

Connect the heat pump condensate pipe to the drainpipe or discharge it to the ground outside.

### 3.3.3. Instruction

Step 1: Running test can begin after completing all installation.

Step 2: All wiring and piping should be connected well and carefully checked, then fill water tank with water before power is switched on. (Injection: Fill water into the skimmer port to the water level line as required.)

Step 3: Press the "on-off" button on the control panel to make the unit run at the set temperature.

Step 4: Items need to be checked during running test:

- 1- During the first run, unit current is normal or not.
- 2- Each function button on control panel is normal or not.
- 3- Display screen is normal or not.
- 4- Are there any leakages in the whole heating circulation system.
- 5- Condensate drain is normal or not.
- 6- Are there any abnormal sounds or vibrations during running?

## 4. Heat Pump Controller Operation

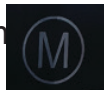
### 4.1. Operation Instructions

#### 4.1.1. Turn [ON/OFF]



Press the button for 5 seconds.

#### 4.1.2. [MODE] switching



Press button to switch heating/cooling

Cooling =



Heating=



### 4.1.3. Working mode

The choice of mode affects the speed and power consumption of cooling and heating. From the powerful, smart and silent mode, the speed and powerful consumption will be slower and fewer.

Powerful mode=



Smart mode=





Silent mode=








### 4.1.4. Temperature unit Fahrenheit/Celsius adjustment

Turn Off Power and then long press [ON/OFF] and [MODE] for 5 seconds.



### 4.1.5. Temperature setting

Long press [ON/OFF] to turn on, then press  or  to preset the water temperature. After setting, press [ON/OFF] for confirmation.

### 4.1.6. Timing setting

The temperature will not go up/down during the time setting period. The display is showing the local time. Press  and  at the same time to adjust the time. Then Press  or  to preset. If you want to change the seconds/hours, press the .

### 4.1.7. Cycle pump

Long Press  to turn on/off the water pump, until seeing . The cycle pump will turn off automatically after running for 30 minutes.

### 4.1.8. Children lock protection setting

Long press  and  until seeing .

#### 4.1.9. Antifreeze system

If the temperature is going to the antifreeze process, the controller and app will show an error code.

Level 1 antifreeze: When the ambient temperature is  $\leq 41\text{F}$ , the machine enters level 1 antifreeze protection, and the water pump turns on for 30 seconds every 10 minutes and runs in a cycle; when the ambient temperature is  $\geq 46\text{F}$ , the machine exits level 1 antifreeze protection.

Level 2 antifreeze: When the ambient temperature is  $\leq 41\text{F}$  and the outlet water temperature is  $\leq 36\text{F}$ , the machine enters level 2 antifreeze protection and automatically turns on.



## 4.2. Error Codes

Check list of unit fault codes

Code	Fault description
Er 03	Water flow fault
Er 04	Winter antifreeze
Er 05	High pressure fault
Er 06	Low pressure fault
Er 09	Mainboard-wire control communication fault
Er 10	Frequency conversion module communication fault (alarm when the communication between the external board and the driver board is disconnected)
Er 12	Exhaust high protection
Er 15	Inlet water temperature fault
Er 16	External coil temperature fault
Er 18	Exhaust temperature fault
Er 19	DC fan 1 fault
Er 20	Frequency conversion module abnormal protection
Er 21	Ambient temperature fault
Er 23	Cooling water outlet temperature too low protection
Er 27	Water outlet temperature fault
Er 28	CT overcurrent protection
Er 29	Return air temperature fault
Er 32	Heating water outlet temperature too high protection
Er 33	Outdoor coil high temperature protection
Er 42	Internal coil temperature fault
Er 44	Cooling environment temperature too low protection
Er 45	Heating environment temperature too low protection

## 4.3. Troubleshooting

NO.	Fault	Analysis	Solution
E03	Water flow failure	<ol style="list-style-type: none"> <li>1. The water flow switch is poorly connected to the main board.</li> <li>2. The water flow switch is installed in the wrong direction.</li> <li>3. The water flow switch is broken.</li> <li>4. The circuit board is defective.</li> <li>5. The water flow is too low.               <ol style="list-style-type: none"> <li>5.1 The waterway is blocked.</li> <li>5.2 The water pump is too small.</li> <li>5.3 The water pipe is too small.</li> <li>5.4 The water flow switch is stuck and cannot be reset.</li> </ol> </li> <li>6. No water flow.               <ol style="list-style-type: none"> <li>6.1 The valve on the water line is not open.</li> <li>6.2 The water pump does not work.</li> <li>6.3 Water pump failure.</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>1. Connect the water flow switch.</li> <li>2. Install the water flow switch in the correct direction.</li> <li>3. Replace the water flow switch.</li> <li>4. Replace the main board.</li> <li>5.1 Clear the clogged pipe.</li> <li>5.2 Replace the water pump with a suitable one.</li> <li>5.3 Replace water pipes.</li> <li>5.4 Reset the water flow switch.</li> <li>6.1 Open the valve.</li> <li>6.2 Turn on the water pump.</li> <li>6.3 Replace the water pump.</li> </ol>
E04	Anti-Freeze protection	When the ambient temperature is $\geq 8^{\circ}\text{C}$ or the water outlet temperature is $\geq 15^{\circ}\text{C}$ , exit Freeze protection.	Freeze protection.
E05	High pressure protection	<ol style="list-style-type: none"> <li>1. Loose wiring or poor connection of high-pressure switch</li> <li>2. There is something wrong with high pressure switch</li> <li>3. Main board is broken</li> <li>4. Poor condensing               <ol style="list-style-type: none"> <li>4.1 Water temperature is too high (over range operation).</li> <li>4.2 Low water flow                   <ol style="list-style-type: none"> <li>4.2.1 The valve in water system is not open.</li> <li>4.2.2 Waterway blockage may appear in the heat exchanger or valve part.</li> <li>4.2.3 Improper water pump selection</li> <li>4.2.4 The water pump is broken.</li> </ol> </li> </ol> </li> <li>5. Refrigerant system blockage may appear in the throttle part.</li> <li>6. Refrigerant system is mixed with air, maybe the vacuum is not enough.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reconnect the wire.</li> <li>2. Replace the high-pressure switch.</li> <li>3. Replace the main board.</li> <li>4.1 Operate within the allowable range.</li> <li>4.2.1 Open the valve.</li> <li>4.2.2 Clean the blocked part or replace it.</li> <li>4.2.3 Change the pump according to the water flow and water head.</li> <li>4.2.4 Replace the water pump.</li> <li>5. Clean or replace the clogged part.</li> <li>6. Vacuumize and refill the refrigerant.</li> </ol>

E06	Low pressure protection	1. The low-pressure switch wiring is loose or poorly connected. 2. There is a problem with the low-pressure switch. 3. The motherboard is broken. 4. Refrigerant leakage. 5. The expansion valve is not functioning properly	1. Reconnect the wires. 2. Replace the high voltage switch. 3. Replace the main board. 4. Find the leak, evacuate and refill with refrigerant. 5. Confirm the expansion valve function.
E09/ E10	Communication failure	1. The wire controller is poorly connected to the mainboard. 2. The wire controller is faulty. 3. Mainboard failure. 4. Communication lines and power lines are placed together, causing power interference with communication	1. Reconnect the remote-control cable. 2. Replace the remote controller. 3. Replace the main board. 4. Communication lines and high-voltage lines should be placed separately.
E12	Exhaust too high protection	1. Temperature sensor failure. 2. Leakage occurs, and refrigerant is insufficient. 3. Low water flow 3. 1. The water system is clogged. 3.2 The water pump is not suitable 3.3 Small water pipe 4. No water flow 4.1 Valve not open. 4.2 The water pump does not work. 4.3 The water pump is broken.	1. The temperature sensor needs to be replaced. 2. Repair the leak and add refrigerant according to the nameplate. 3.1 Clean or replace blocked parts. 3.2 Replace the water pump according to the water flow and water head. 3.3 The water pipes need to be replaced. 4. 1 Open the valve. 4. 2 Turn on the pump. 4.3 The water pump needs to be replaced.
E15	Inlet water temperature sensor Device failure	1. The temperature sensor is poorly connected to the main board. 2. Temperature sensor failure. 3. The sensor resistor on the main board is faulty.	1. Reconnect the temperature sensor cable. 2. Replace the temperature sensor. 3. Replace the main board.
E16	External coil temperature barrier	1. The temperature sensor is poorly connected to the main board. 2. Temperature sensor failure. 3. The sensor resistor on the main board is faulty.	1. Reconnect the temperature sensor cable. 2. Replace the temperature sensor. 3. Replace the main board.
E18	Exhaust temperature fault	1. The temperature sensor is poorly connected to the main board. 2. Temperature sensor failure. 3. The sensor resistor on the main board is faulty.	1. Reconnect the temperature sensor cable. 2. Replace the temperature sensor. 3. Replace the main board.

E19	DC fan failure	1. The DC fan has a bad connection to the mainboard. 2. DC fan failure.	1. Check the DC fan motor and its connection with the PCB Wiring. 2. Replace the DC fan.
E21	Ambient temperature fault	1. The temperature sensor is poorly connected to the main board. 2. Temperature sensor failure. 3. The sensor resistor on the main board is faulty	1. Reconnect the temperature sensor cable. 2. Replace the temperature sensor. 3. Replace the main board
E27	Outlet water temperature fault	1. The temperature sensor is poorly connected to the main board. 2. Temperature sensor failure. 3. The sensor resistor on the main board is faulty	1. Reconnect the temperature sensor cable. 2. Replace the temperature sensor. 3. Replace the main board.
E29	Return air temperature fault	1. The temperature sensor is poorly connected to the main board. 2. Temperature sensor failure. 3. The sensor resistor on the main board is faulty.	1. Reconnect the temperature sensor cable. 2. Replace the temperature sensor. 3. Replace the main board.
E42	Internal coil temperature barrier	1. The temperature sensor is poorly connected to the main board. 2. Temperature sensor failure. 3. The sensor resistor on the main board is faulty.	1. Reconnect the temperature sensor cable. 2. Replace the temperature sensor. 3. Replace the main board

## 4.4. Wi-Fi Settings

**Please see the control panel manual.**

## 5.1. General Maintenance

### Cleaning and maintenance of acrylic

The tub surface is made of high gloss acrylic plastic. It is recommended to clean above the water line once a week to remove accumulated dirt and scum. When the plunge tub begins to drain, the entire surface of the plunge tub should be cleaned as follows:

Clean the surface with a damp towel. You can use a neutral detergent and a soft towel. Do not use detergents containing ketones or chlorine water.

If there are slight scratches on the surface, you can sand it with fine sandpaper and then polish it with fine polishing compound.

Please do not use any chemical solution or rough tools to clean the bathtub surface, and do not scratch the surface with hard objects or knives.

Please do not clean the surface with nail polish, nail polish remover, dry cleaning detergent, acetone, paint remover, etc. They will age the surface.

Do not allow any heat source exceeding 70°C to come into contact with the plunge tub surface.

When not in use, always cover with a rain cover or thermal cover, especially in outdoor environments, and avoid long-term exposure to outdoor weather conditions and sunlight.

### Cleaning and maintenance of skirt doors

The skirt door is made of UV-resistant PS plastic. The skirt door only needs to be cleaned regularly by flushing with a hose. If necessary, wipe the skirt door surface with mild soapy water and a soft cloth.

### Nozzle cleaning and maintenance

Place the nozzle in a container and completely submerge it in white vinegar. Allow the nozzle to soak overnight and then rinse with water. Reinstall the nozzle. If necessary, use a stiff-bristle brush to clean any deposits from the nozzle.

### Insulation cover and rain cover maintenance

When not in use, always use the included thermal cover and rain cover to protect the plunge tub. Covering the AquaFin with the thermal cover during non-use will significantly reduce energy consumption and allow the water to cool or heat more quickly. Water loss and chemical use will also be reduced.

Follow the manufacturer's instructions and make sure the insulation cover is installed tightly to achieve maximum insulation.

Be sure to lock all straps on the thermal cover after each use

Do not expose the AquaFin to direct sunlight. Heat and UV rays from direct exposure to sunlight may damage the exposed housing surface, as well as damage and discoloration of other components.

## 5.2. Water Maintenance

### Recommended range

Before treating your water, refer to the Specifications section of this manual for the correct water capacity for your AquaFin to ensure that the chemicals you add are within the correct range. Before using chemicals, always refer to the chemical manufacturer's instructions, which vary by manufacturer. When adding chemicals, disperse them on the water surface while the pump is running. Refer to the table below for recommended ranges.

Category	Refer To
Turbidity of water	The bottom is clearly visible
Water color	There should be no color
Total alkalinity (TA)	80-150 ppm
pH	7.2-7.6
Chlorine	2-4 ppm
Calcium hardness	50-150 ppm

**NOTE:** Improper use of chemicals may result in unsanitary and unsafe water conditions, as well as discoloration, degradation, damage and other defects to the AquaFin surfaces and components.

If the water in your plunge tub has not been changed for a long time, you need to test the water quality, such as pH value, total alkalinity and calcium hardness. You can purchase relevant testing equipment to test it yourself. Confirm whether the water quality meets the requirements. During the test, the test agent will affect the water quality, so it is recommended to take samples for testing.

When using chemicals, pay attention to the specifications and models to understand the correct water capacity of the AquaFin, and then determine the amount to be used based on the instructions on the chemicals.

Always leave the insulation cover open for 15 minutes after adding chemicals to prevent chemical fumes from damaging the insulation cover, pillows, stainless steel hardware, and other critical components.

### Schedule

**Before each use:** test the plunge tub for proper pH and sanitation levels. Refer to the "Water Maintenance - Recommended Ranges" section and make appropriate adjustments if values are out of range. Before using the plunge tub, users should not enter the tub if chlorine levels are outside the recommended safe range.

**After each use:** test water quality and treat it accordingly to maintain the correct pH and free chlorine levels, so that good hygiene conditions are maintained after use.



**Once a week:** you should clean your filter regularly. Remove the filter and use a high-pressure hose to remove debris out of the filter.

**3 times a week:** test the water using chemical test strips or a test kit. Follow the directions on the chemical manufacturer's packaging and adjust the disinfectant, pH, and total alkalinity accordingly. If the free chlorine level is lower than the total chlorine level, additional oxidation treatment is necessary.

**Once a Quarter:**

You should soak the filter. The filter should be replaced at least once a year. With time and use, microorganisms and algae may appear, and chemicals can help remove them. Use according to the manufacturer's instructions

**NOTE:** Your drain valve is located on the base. To drain the water, follow these steps:

1. The drain valve is in closed state at this time.
2. Pull the center pull valve out of the first stage (it will get stuck).

**If you do not need to connect an extended drain hose:**

3. Turn the valve counterclockwise to open the lid and drain the water immediately.

**If you need to connect an extended drain hose:**

3. After completing the second step above, slightly rotate the valve left and right to find the appropriate position and pull the valve out to the third stage.
4. Turn the valve counterclockwise to open the lid. The valve is not closed at this time.
5. Use the adapter we deliver to connect one section to the extended drainpipe; then install the adapter clockwise at the valve.
6. Turn the valve left or right to the appropriate position, and push it inward to the second stage. The water can be drained immediately.

**Warning:** Before removing the filter, make sure the power to the AquaFin is off. If the pump is still running after removal, anything may enter the pump or heater. Failures caused by these will not be covered by the warranty.

**Note:** If draining water in freezing temperatures, caution and careful planning should be used to ensure that the water is quickly replenished again. When temperatures drop below freezing, excess water in the pipes may freeze in a short period of time and damage the pipes and other parts.

## 5.3.1. Water Maintenance Troubleshooting

Question	Cause Analysis	repair
Chlorine smell	Chlorine Excess or not enough	Treatment with oxidizing agents after testing
	Low pH	Adjust pH if necessary
Water has smell	Low disinfectant content	Adjusting disinfectant levels using chlorinated granules
	pH value out of range	Adjust pH if necessary
	Bacterial or algae growth	Use disinfectant/algaecide, if present, water may need to be changed
The water becomes cloudy	Dirty filter paper core leads to insufficient filtration	Cleaning the filter paper
	Unbalanced water chemistry	Test and adjust to achieve water quality balance
	Long use time	Drain, clean and refill the inner shell
The water becomes cloudy and green	Low total alkalinity levels	Use pH Adjusters
	Low disinfectant content	Treatment with oxidizing agents
The water is clear and green	High iron or copper levels	Use of chelating agents
	Low disinfectant content	Treatment with oxidizing agents
Water turns brown	High in iron or manganese	Use of chelating agents
Generate foam	High in body oils, lotions,	Add less antifoam (an enzyme product) and test
	Low calcium hardness	Use calcium hardness increasers
	Unbalanced water chemistry	Test and adjust to achieve water quality balance
Irritating to eyes and skin	Unclean water	Test and adjust water quality, replace water if necessary
	Total chlorine content above	Treatment with oxidizing agents
	Low disinfectant content /	Adjust pH if necessary
There is scum on the water level	Body Oil and Dirt	Use a multi-purpose cleaner to clean the surface of the tank and add an enzyme product
White precipitate	Minerals in water	After draining, use all-purpose cleaner or white vinegar and scrub with a soft cloth

**Note:** If there is a problem that cannot be found or solved, please contact your local dealer for processing.

**WARNING:** Add the exact amount specified to water. Do not mix products to avoid possible reactions. Do not smoke when handling these products - they may be flammable. Do not add chemical products to water if someone is using them. Keep chemical product containers sealed in a dry, well-ventilated area and use these products away from children. Do not inhale chemical products and be careful not to let them come into contact with the eyes, nose or mouth. Wash hands after use. In case of accident or ingestion, follow the emergency instructions on the product label.

## 5.3.2. Failure Issue Troubleshooting

Fault description	analyze	Solution
The control panel displays an error code and the Spa Plunge stops working	Judging by the error code displayed	Please refer to the error code troubleshooting in the Panel Operation Manual. If you still cannot solve the problem, please contact a local dealer.
Spa Plunge cannot start	<ol style="list-style-type: none"> <li>1. Power outage</li> <li>2. Control panel lock</li> <li>3. Control panel failure (error code displayed)</li> </ol>	<ol style="list-style-type: none"> <li>1. Check whether the power switch is on or the leakage switch is on</li> <li>2. Check if the control panel is unlocked</li> <li>3. Refer to the Panel Operating Instructions for error code troubleshooting</li> </ol>
Unit automatically starts	<ol style="list-style-type: none"> <li>1. Filtering is running</li> <li>2. Heating function is running</li> <li>3. Antifreeze function is working</li> </ol>	When the program is finished, the control system will stop automatically
Pump off	<ol style="list-style-type: none"> <li>1. The pump running time exceeds the system default maximum running time</li> <li>2. The water pump motor is protected from overheating</li> </ol>	<ol style="list-style-type: none"> <li>1. Press the pump button again to restart the pump.</li> <li>2. Turn off the water pump and cool it for 1 hour, then start the water pump</li> </ol>
The pump is running, but there is no water flow from the nozzle	<ol style="list-style-type: none"> <li>1. The nozzle is closed, or the force is reduced.</li> <li>2. The water pump is blocked by air</li> </ol>	<ol style="list-style-type: none"> <li>1. Open the nozzle by twisting it left and right</li> <li>2. Open and close the water pump several times to expel the blocked air. Unscrew the union on the water pump, release the air, and then tighten it. Note: Filling water through the filter port will increase the risk of the drain pump being blocked by air.</li> </ol>
Hot tub heats slowly or not at all	<ol style="list-style-type: none"> <li>1. Temperature setting low</li> <li>2. Filter is blocked</li> <li>3. No insulation cover, heat loss</li> <li>4. The nozzle connected to the circulation pump is closed</li> <li>5. Heater failure</li> </ol>	<ol style="list-style-type: none"> <li>1. Set a higher temperature</li> <li>2. Clean or replace the paper core</li> <li>3. Use insulation cover</li> <li>4. Open the nozzle</li> <li>5. Contact your dealer to replace the heater</li> </ol>
Cold water bathtub does not heat/cool	<ol style="list-style-type: none"> <li>1. Wrong temperature setting</li> <li>2. Circulation pump/heat pump not running</li> <li>3. No insulation cover, energy loss</li> <li>4. The nozzle connected to the circulation pump/heat pump is</li> </ol>	<ol style="list-style-type: none"> <li>1. Set the appropriate temperature (significantly higher/lower than the actual water temperature)</li> <li>2. Check the error code on the control panel, refer to the Error Code Troubleshooting in the Panel Operating Instructions.</li> </ol>

	not open	3. Use insulation cover 4. Open the nozzle
Small water flow from nozzle	1. The nozzle is not fully open and is clogged 2. Air valve closed	1. Turn left and right to fully open the nozzle; if the nozzle is clogged, clean it. 2. Open the air valve

Note: If there is a problem that cannot be found or solved, please contact your local dealer for processing.

## 5.4. Storing Your AquaFin

### How to Store Your AquaFin in Winter

Your AquaFin is designed for use in environments with temperatures between -1F and 104F. When the ambient temperature is below 30F, drain the water before storing.

1. Completely drain the interior of your plunge tub using the drain valve. Refer to the "Water Maintenance - Schedule" section for instructions.
2. The skirt door can be removed to loosen all the water pump and heat pump joints.
3. Use the vacuum cleaner's blowing mode, insert the air outlet into the nozzle, and blow the accumulated water out of the pipe. (The vacuum cleaner is not included with the product)
4. Install the skirt door.
5. Clear any accumulated water from the area inside the plunge tub.
6. Clean the cylinder surface with a soft cloth and non-abrasive cleaner.
7. Cover the plunge tub with a rain cover and lock it in place to prevent water from getting inside. Check it regularly.

### Storing Your AquaFin

If the device is not used for a long time and needs to be stored, the outer shell surface must not be left unprotected and uninsulated. Transparent plastic packaging or cover materials

must not be used to cover the plunge tub.

Prolonged exposure to direct sunlight can damage the plunge tub. Always cover and protect with an insulated rain cover. Damage caused by this, such as cracking, warping, or discoloration of the skirt door, will not be covered by the warranty.

After delivery, an empty AquaFin should not be exposed to ambient temperatures below 0°F (-18°C) as extreme cold can cause damage to parts. If your AquaFin is exposed to such temperatures, keep it filled with water and running.

## 5.5. Warranty

**Please contact your sales manager for any warranty information.**

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