Aquavoss

AV-2

Owner's Manual

Hot tub and cold plunge combination unit

Important safety instructions inside.
Read this manual completely before installing or using your AV-2, and keep it for future reference.

Revision A, November 2026

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Important safety instructions

Safety messages in this manual use the signal words below. Read and follow every message that follows the safety alert symbol.

⚠ DANGER	indicates a hazardous situation that, if not avoided, will result in death or serious injury.
⚠ WARNING	indicates a hazardous situation that, if not avoided, could result in death or serious injury.
⚠ CAUTION	indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
NOTICE	addresses practices not related to personal injury, such as messages about possible damage to the equipment or property.

When installing and using this equipment, basic safety precautions shall always be followed including the following: IMPORTANT SAFETY INSTRUCTIONS

Read, understand, and follow all instructions

⚠ WARNING

To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

This product contains both a Permanently Connected Unit and a Cord Connected Unit

Heater: Permanently Connected Unit - 240 VAC / 50A GFCI service with 8 AWG copper conductors, or copper conductors appropriately sized to carry a 50A circuit. A wire connector is provided on this unit to connect a minimum 8 AWG solid copper conductor between this unit and any metal equipment, metal enclosures of electrical equipment, metal water pipe, or conduit within 5 feet (1.5 m) of the unit.

Chiller: Cord Connected Unit - 120VAC / 15A GFCI outlet

⚠ WARNING

This product is provided with a ground-fault circuit-interrupter located on the chiller power cord. The GFCI must be tested before each use. With the product operating, push the test button on the GFCI plug. The product should not operate. Now, push the reset button on the GFCI. The product should now operate normally. When the product fails to operate in this manner, there is a ground current flowing indicating the possibility of an electric shock. Disconnect the power until the fault has been identified and corrected.

⚠ DANGER

Risk of Electric Shock. Install at least 5 feet (1.5 m) from all metal surfaces. As an alternative, a spa may be installed within 5 feet of metal surfaces if each metal surface is permanently connected by a minimum 8 AWG (8.4 mm^2) solid copper conductor to the wire connector on the terminal box that is provided for this purpose.

⚠ DANGER

Risk of Electric Shock. Do not permit any electric appliance, such as a light, telephone, radio, or television, within 5 feet (1.5 m) of a spa or hot tub.

⚠ DANGER

Risk of Electric Shock. Do not install the AV-2 beneath or within 10 feet (3 m) horizontally of any overhead power line.

⚠ DANGER

Risk of Accidental Drowning. Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use this spa unless they are supervised at all times.

⚠ DANGER

To reduce the risk of injury, do not remove the Suction Outlet Fitting Assemblies (SOFAs) or any of their components. Never operate a spa or hot tub if the suction fittings are broken or missing. Never replace a suction fitting with one rated less than the flow rate marked on the equipment assembly.

- Do not modify the circulation system to increase the flow rate.
- Missing, broken, or cracked cover/grates, sumps, mud-frames, or any other SOFA component shall be replaced before bathers are allowed to use the spa.
- Loose cover/grates shall be reattached before bathers are allowed to use the spa.

⚠ WARNING

To reduce the risk of injury:

- The water in a spa should never exceed 40 °C (104 °F). Water temperatures between 38 °C (100 °F) and 40 °C are considered safe for a healthy adult. Lower water temperatures are recommended for young children and when spa use exceeds 10 minutes.
- Since excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit spa water temperatures to 38 °C (100 °F).
- Before entering a spa, the user should measure the water temperature since the tolerance of water temperature-regulating devices varies.
- The use of alcohol, drugs, or medication before or during spa use may lead to unconsciousness with the possibility of drowning.
- Obese persons and persons with a history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using a spa.
- Persons using medication should consult a physician before using a spa since some medication may induce drowsiness while other medication may affect heart rate, blood pressure, and circulation.
- This cold spa enables the user to determine the temperature and duration for which they are immersed in the spa. Before using a cold spa, you should always ask a qualified professional if use of this spa is safe and appropriate for you.

For spas installed indoors, care should be taken to ensure adequate ventilation for the indoor space, to avoid undesired build of humidity due to spa water or the accumulation of gasses emitted by the built-in Ozone system (if equipped) or water maintenance chemicals. For additional information on ventilation/humidity guidelines see the ASHRAE Handbook, HVAC Applications, I-P Edition, 4.5, 4.6, and 4.7.

⚠ DANGER

Risk of injury (chiller power cord)

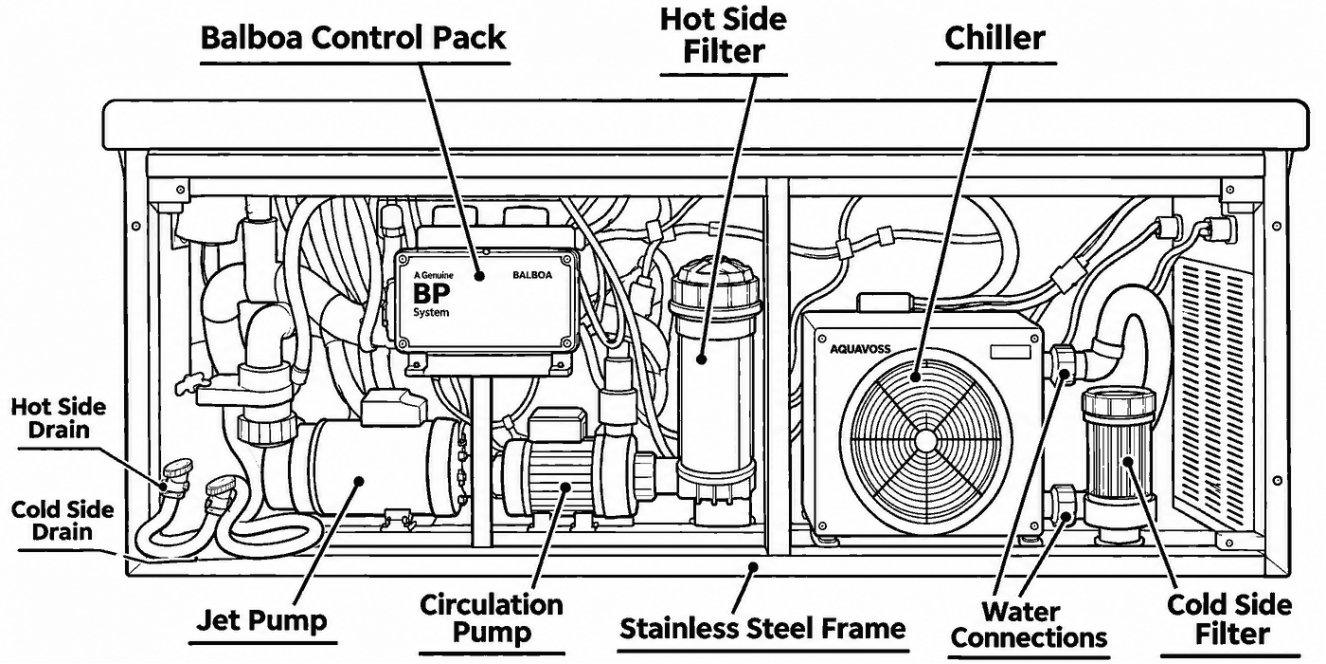
- Replace damaged chiller power cord immediately
- Do not bury the cord. It may be routed to a properly installed GFCI receptacle per an electrician's instructions.
- Connect to a grounded, grounding-type receptacle only

SAVE THESE INSTRUCTIONS

1 Product overview

The Aquavoss AV-2 features independent hot and cold water systems that operate separately while sharing a common shell and cabinet structure.

Each side has its own control panel. The equipment cabinet is behind removable magnetic access panels.



2 Specifications

Dimensions

SPECIFICATION	VALUE
Length	**84 in**
Width	**84 in**
Height	**33 in**
Dry Weight	**975 lbs**
Filled Weight	**6,500 lbs (including occupants)**

Water Capacity

SIDE	CAPACITY
Cold Plunge	**165 Gallons**
Hot Tub	**285 Gallons**

Seating Capacity

The hot side has four seats and the cold side has two seats. Actual comfortable capacity varies with bather size and height. Do not exceed the seating capacity.

3 Component overview

Hot Tub Components

COMPONENT	FUNCTION
Balboa Control System	**Controls temperature, lighting, and jet functions**
Jet Pump	**Powers the jets**
Circulation Pump	**Provides filtration and water circulation**
Filter	**Removes debris and contaminants**
Ozone or UV System	**Assists with water sanitation**
Control Panel	**User interface for spa operation**
Drain Valve	**Allows water removal**

Cold Plunge Components

COMPONENT	FUNCTION
Chiller	**Cools water to the selected temperature**
Circulation Pump	**Moves water through filtration and cooling systems**
Filter	**Removes debris and contaminants**
Ozone or UV System	**Assists with water sanitation**
Control Panel	**User interface for chiller operation**
Drain Valve	**Allows water removal**

4 Delivery, moving & placement

Delivery Information

The AV-2 is delivered curbside in a palletized crate.

Because the unit weighs approximately 975 lbs empty, Aquavoss strongly recommends hiring professional spa movers for final placement.

Movers, riggers, and other contractors hired by the customer to place the unit are the customer's responsibility. Aquavoss is not responsible for damage to the unit or property, or for injury that occurs during placement by third parties.

⚠ WARNING

Never move or lift the AV-2 while it contains water. A filled unit can shift, tip, or break apart, causing serious injury and damage to the unit.

Clearance Requirements

When moved vertically, allow:

- Minimum 33 inches of width clearance
- Minimum 84 inches of height clearance

Measure all gates, doorways, pathways, and overhead obstructions before delivery.

Foundation Requirements

The installation surface must:

- Be level
- Support at least 6,500 lbs
- Remain stable year-round
- Provide proper drainage

Recommended surfaces include:

- Concrete pads
- Reinforced decks
- Compacted gravel foundations

Do not install directly on grass, soil, or unstable surfaces.

The owner is responsible for confirming that the installation surface can safely support the AV-2's filled weight of approximately 6,500 lbs, including occupants. For elevated decks, rooftops, or other structures, consult a licensed structural engineer before installation. Aquavoss is not responsible for structural damage, settling, or property damage caused by an inadequate foundation, improper drainage, or water from the unit.

Ventilation Requirements

The cold plunge system requires unrestricted airflow.

Required Clearance

Maintain at least 5 feet of open space in front of:

- Large ventilation panel

Maintain at least 2 feet of open space in front of:

- Small ventilation panel

Failure to maintain proper airflow may reduce cooling performance and damage equipment.

Access Requirements

Leave sufficient space around the access cabinet for:

- Filter replacement
- Water draining
- Troubleshooting
- Future service work

Do not permanently block access panels.

Indoor Installations

Indoor installations must provide:

- Adequate ventilation
- Humidity management
- Moisture-resistant surroundings

Aquavoss is not responsible for damage caused by humidity, condensation, mold, or water at indoor installations.

Outdoor Installations

For maximum equipment life:

- Install in a shaded location when possible
- Avoid prolonged direct sunlight exposure
- Consider a pergola, gazebo, or covered structure

Permits, Local Codes & Barriers

The owner is responsible for obtaining all required permits and inspections and for complying with all applicable building, electrical, zoning, and homeowners' association requirements. Many jurisdictions require a fence, barrier, or lockable safety cover around spas and hot tubs; the owner is responsible for meeting these requirements. Aquavoss is not responsible for fines, removal costs, or other consequences of failing to comply with local requirements.

5 Delivery inspection

Before moving or uncrating the unit:

1. Inspect all packaging for visible damage.
2. Photograph all sides of the crate.
3. Document dents, punctures, or impact damage.
4. Report any concerns to Aquavoss before installation.

Do not discard shipping materials until the unit has been inspected and confirmed free of damage.

6 Final positioning checklist

Before proceeding with installation, verify:

- [ ] Unit is level
- [ ] Foundation supports full operating weight
- [ ] Ventilation clearances are maintained
- [ ] Access panel remains accessible
- [ ] Electrical access is available
- [ ] Water source is nearby
- [ ] At least 10 feet (3 m) from any overhead power line
- [ ] Drainage path has been considered
- [ ] Cover clips installed and locked

Once all items are confirmed, proceed with installation.

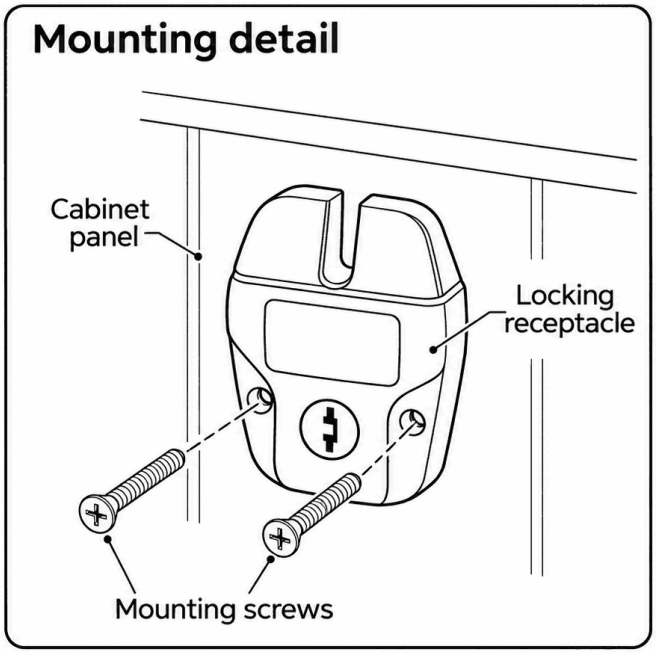
Cover Clip Installation (Required)

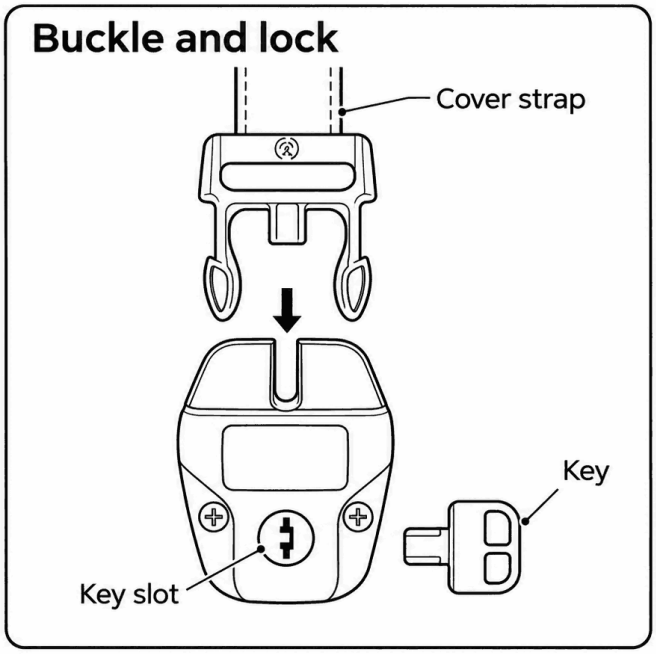
⚠ DANGER

Risk of child drowning. Install the cover clips before the AV-2 is filled or used. A child can lift a cover that isn't clipped and locked. Keep the cover closed and locked with all clips whenever the AV-2 is not in use.

The AV-2 cover, when installed with all cover clips locked, meets ASTM F1346 (Standard Performance Specification for Safety Covers). It protects as designed only when the clips are installed and locked as described in this section.

The cover clips ship separately. Where they go depends on the AV-2's final position, the cover's orientation, the strap length and the access around the cabinet, so they're installed on site. Installing them is the owner's responsibility, done by the owner or by their installer or handyman. It is not included in Aquavoss installation services.





1. Close the cover in its normal position.
2. Pull each strap taut down the cabinet and mark the receptacle location on the cabinet panel.
3. Fasten each of the 4 buckle receptacles to the cabinet panel with 2 of the supplied screws (8 total), using a Phillips #1 (PH#1) bit.
4. Attach and lock every strap. The clips are keyed to industry locking-device standards. Check that no side of the cover can be lifted.
5. Inspect the straps and clips monthly and after heavy snow. Replace any that are worn or damaged right away.

Cover clips reduce the risk of unsupervised access but do not prevent all access. They don't replace constant adult supervision or any barrier your local code requires (see Section 4, Permits, Local Codes & Barriers).

7 Cold plunge installation

Overview

Most of the cold plunge plumbing, circulation system, filtration system, ozone or UV system, and controls are factory-installed. The only component requiring installation is the chiller, which is shipped separately inside the unit to protect the refrigeration system during transit.

Before beginning installation:

- Ensure the unit is in its final location.
- Verify the unit is level.
- Confirm all required ventilation clearances are maintained.
- Do not connect power until the cold plunge is filled with water.

Step 1: Remove the Chiller

The chiller is packaged inside the tub for shipping.

1. Carefully remove the chiller from the packaging.
2. Keep the chiller upright at all times.
3. Do not lay the chiller on its side.
4. Inspect the chiller for shipping damage.

NOTICE
Compressor oil migration can occur if the chiller is tipped or stored improperly, which can damage the compressor.

Step 2: Access the Equipment Cabinet

The equipment cabinet is located behind the large vented access panel.

1. Remove the magnetic corner trim pieces.
2. Remove the access panel screws.
3. Pull the panel outward using the lower handle.
4. Set all hardware aside.

Once removed, the internal equipment compartment will be accessible.

Note: After initial installation, the screws are generally not required. The magnetic panel system will securely retain the panel during normal operation.

Step 3: Position the Chiller

Place the chiller onto the designated mounting area inside the equipment compartment.

Requirements:

- Fan facing outward toward the ventilation panel
- Unit sitting flat on the support surface
- No strain on electrical cords or plumbing connections

The chiller does not require permanent mounting.

Step 4: Connect Chiller Plumbing

Connect the two plumbing unions between the cold plunge and the chiller. The hook-ups determine the chiller's correct position, so make these connections once the chiller is in place.

Connect the line with the filter on it to the chiller's WATER IN port. Connect the return line to the chiller's WATER OUT port.

Each union has a rubber ring that sits inside a groove on the chiller side of the connection. Confirm the ring is seated before tightening the union. The rings zip-tied to the unions are spares.

Tighten each union securely by hand, and check for leaks after the cold plunge is filled (Step 10).

Step 5: Connect Control Cables

Connect the three factory-installed control connectors between the chiller and the control panel.

Verify:

- Connectors are fully seated
- No pins are bent
- Connections are secure

Loose connections may prevent proper communication between the control panel and chiller.

Step 6: Connect Pump and Ozone or UV Power

Locate the power leads from the circulation pump and the ozone or UV system.

Connect them to the designated power connector supplied with the chiller.

Verify:

- Conductors are fully inserted
- Connectors are locked
- Wiring is secure

Wire color may vary by production batch.

Step 7: Connect Bonding Wire

Locate the green bonding wire on the chiller.

Attach it to the matching grounding wire on the stainless steel frame.

Verify the connection is secure before proceeding.

Step 8: Install the Cold Plunge Filter

1. Remove the filter housing lid.
2. Insert the cold plunge filter cartridge.
3. Ensure the filter is centered properly.
4. Reinstall the housing lid.
5. Hand-tighten until secure.

Do not overtighten.

Step 9: Route the Power Cord

Route the chiller power cord through the designated electrical access opening.

Recommendations:

- Protect the cord from physical damage.
- Prevent standing water from contacting electrical connections.
- Outdoor installations should route cords to minimize exposure to weather.

Do not energize the system yet.

Step 10: Fill the Cold Plunge

Fill the cold plunge with clean water.

If you are filling with well water, have it tested before first use. Well water can contain iron, copper, manganese, or other minerals and metals that stain surfaces, clog filters, and make water chemistry difficult to balance. If testing shows elevated metals, use a hose-end pre-filter or a metal sequestrant when filling.

Recommended water level:

- 2–3 inches above the seating area
- Minimum 1 inch above the highest jet

NOTICE

Never operate the system below the minimum water level. Running the pumps without enough water can damage them.

8 Cold plunge operation

Initial Startup

After filling:

1. Plug the chiller into a dedicated 120V GFCI outlet.
2. Verify the display illuminates.
3. If the display is not already illuminated, press and hold the POWER button for 3 seconds to power on the unit.
4. Set the desired water temperature: press and release the SET button, then use the UP or DOWN arrows to adjust the temperature. The system includes a built-in compressor delay.

⚠ WARNING

Plug the chiller directly into a properly located, grounded GFCI outlet. Never use an extension cord. Extension cords can overheat and defeat ground-fault protection, creating a risk of fire or fatal electric shock.

Startup Delay

After power-up:

- The display lights up right away; cooling begins after a short delay if the water temperature calls for cooling.
- When the water temperature calls for cooling after startup, the circulation pump starts first, followed by the fan and compressor after approximately 3 minutes.

This protects the compressor from damage during startup.

Verify Water Flow

After the startup delay:

1. Place your hand over all four return jets.
2. Confirm water movement is present.
3. Verify circulation at both shallow-end and deep-end jets.

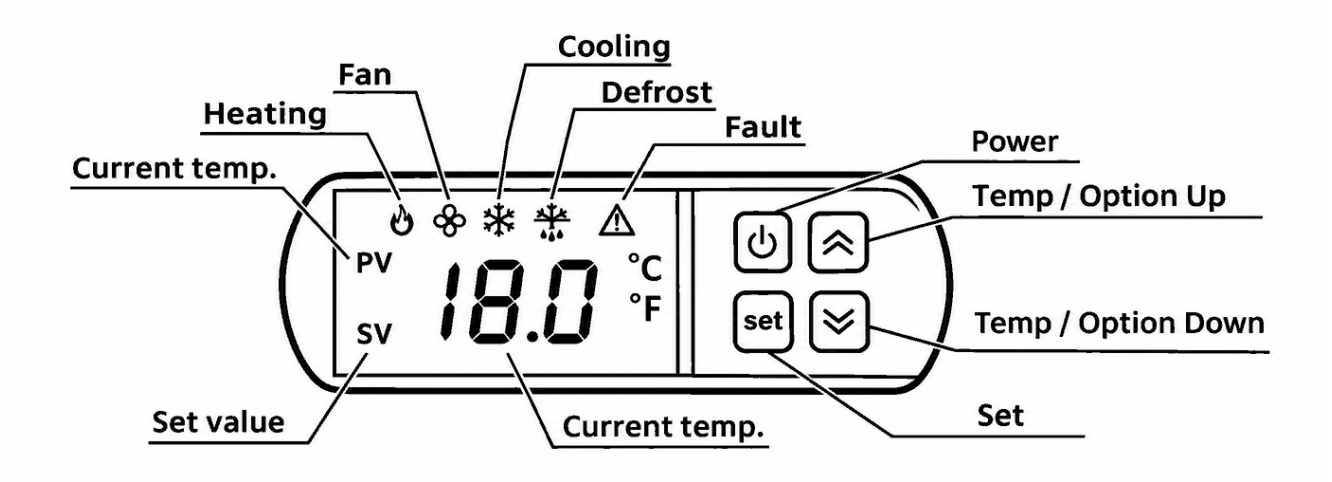
The deep-end jets will not visibly discharge water but should produce noticeable flow.

If no flow is detected:

- Power off the system.
- Refer to the Troubleshooting section.

NOTICE
Never allow the chiller to run without water circulation. Running the chiller without water flow can damage it.

Temperature Control



Turning the System On or Off

Press and hold the POWER button for 3 seconds.

Viewing Current Water Temperature

The main display shows actual water temperature.

Changing Set Temperature

1. Press and release the SET button.
2. Use the UP or DOWN arrows to adjust the temperature. The lowest set temperature is 39°F.
3. Wait several seconds for the setting to save automatically.

⚠ WARNING

Do not change the chiller's internal settings or open the chiller unless instructed by Aquavoss Technical Support. The chiller contains live electrical components and a pressurized refrigeration system. Opening the chiller can cause electric shock or injury.

How Cooling Works

The chiller automatically maintains the set temperature. No manual intervention is required during normal operation. The complete control panel user manuals for both the hot tub and the cold plunge can be downloaded from the Help Center on aquavoss.com, under the "Manuals" section.

Expected Cooling Performance

Cooling performance varies based on:

- Ambient air temperature
- Starting water temperature
- Sun exposure
- Ventilation quality
- Cover usage

Under typical conditions, water temperature may decrease approximately:

- 1–3°F per hour

Actual performance will vary.

Cold Water Safety

Cold water immersion presents risks.

Do not use the cold plunge if:

- Under the influence of alcohol or drugs
- You have medical conditions that prohibit cold exposure
- Your physician advises against cold immersion

Discontinue use immediately if you experience:

- Dizziness
- Confusion
- Numbness
- Loss of coordination
- Difficulty breathing

Always have a responsible adult present and watching you while you use the cold plunge.

If you are pregnant or may be pregnant, consult your physician before using the cold plunge. See Section 16, Safety Guidelines.

Hypothermia Warning

Extended exposure to cold water can result in hypothermia.

Exit the water immediately if you notice any signs of hypothermia.

If you suspect hypothermia:

- Leave the cold water immediately.
- Get into dry, warm clothing or use blankets.
- Seek a warm, sheltered area.
- Seek medical assistance as soon as possible.

To prevent hypothermia:

- Keep the water at a temperature you know your body can handle. Work your temperature down gradually as you gain experience.
- Limit the time of your cold water exposure.
- Continuously monitor your body for signs of distress.

Consult a qualified healthcare professional before beginning any cold immersion program.

Hypothermia occurs when the internal temperature of the body reaches a level several degrees below the normal body temperature of 98.6 °F (37 °C). The symptoms of hypothermia include, but are not limited to, shivering, slurred speech or mumbling, slow, shallow breathing, weak pulse, clumsiness, drowsiness, confusion, unconsciousness, and bright red, cold skin (in infants). The effects of hypothermia include failure of the nervous system, respiratory system and heart; failure to recognize the need to exit a spa or cold tub; unawareness of impending hazards; fetal damage in pregnant women; physical inability to exit the spa or cold tub; and unconsciousness resulting in the danger of drowning.

⚠ WARNING

The use of alcohol, drugs, or medication can greatly increase the risk of fatal hypothermia.

9 Hot tub installation

Electrical Requirements

The hot tub side of the AV-2 requires a dedicated 240V, 50A GFCI protected circuit installed by a licensed electrician.

Electrical Specifications

REQUIREMENT	SPECIFICATION
Voltage	**240V**
Service	**50A GFCI**
Wire Size	**8 AWG copper, or appropriately sized to carry a 50A circuit**
Connection Type	**Hardwired**

⚠ WARNING

The hot tub must be energized by a licensed electrician because it requires a hardwired electrical connection. Improper wiring may cause electrocution, risk of fire, and other risks of injury.

GFCI Location: Connect only to a circuit protected by a Class A Ground Fault Circuit Interrupter (GFCI) or Residual Current Device (RCD) mounted at least 5 feet (1.52 m) from the inside walls of the spa/hot tub and in line of sight from the equipment compartment. A GFCI breaker box is not included with the AV-2.

The grounding conductor must be 8 AWG copper or larger. Use copper conductors only. Use a watertight seal and liquid-tight conduit. A wiring diagram is provided on the Balboa Control System for your electrician to reference.

Installation Responsibility

The owner is responsible for hiring a licensed electrician, obtaining all required electrical permits and inspections, and making sure the installation complies with the National Electrical Code (including Article 680) and all local codes. Aquavoss is not responsible for injury, property damage, or equipment failure caused by improper electrical installation, work performed by an unlicensed electrician, or installation without required permits. Damage resulting from improper electrical installation is not covered under warranty.

Filter Installation

The hot tub filter is packaged separately and must be installed prior to operation.

Installation

1. Remove the filter housing lid.
2. Remove the filter retaining cap.
3. Insert the filter cartridge.
4. Reinstall the retaining cap.
5. Reinstall the filter housing lid.

The filter cap may be difficult to remove during initial startup.

Filling the Hot Tub

Fill the hot tub using clean water.

If you are filling with well water, have it tested before first use. Well water can contain iron, copper, manganese, or other minerals and metals that stain surfaces, clog filters, and make water chemistry difficult to balance. If testing shows elevated metals, use a hose-end pre-filter or a metal sequestrant when filling.

Proper Water Level

Maintain water level:

- Approximately 1 inch above the highest jet
- Below the overflow point of the shell

Low water levels may result in:

- Air entering the plumbing
- Excessive splashing
- Poor filtration performance

High water levels may cause overflow when occupied.

Initial Startup

Once the hot tub has been filled:

1. Turn on the GFCI breaker.
2. Verify the control panel powers on.
3. Allow the system to enter Priming Mode.
4. Confirm water circulation.
5. Check for leaks.

The spa will automatically enter normal operating mode after priming is complete.

GFCI Breaker Test

Once the spa has been filled with water, test all of the circuit breakers. Push the “TEST” button on each GFCI breaker and observe it click OFF. Wait 30 seconds, then push the breaker switch to the OFF (down) position and then to the ON (up) position. If any GFCI breaker fails to operate in this manner, there may be an electrical malfunction. Turn off all circuits and do not use the spa until the problem has been corrected by an authorized service agent.

⚠ WARNING

Removing or bypassing any GFCI breaker creates a risk of fatal electric shock and will void the AV-2's warranty.

Airlocks

Airlocks are common during initial startup and after draining.

Symptoms

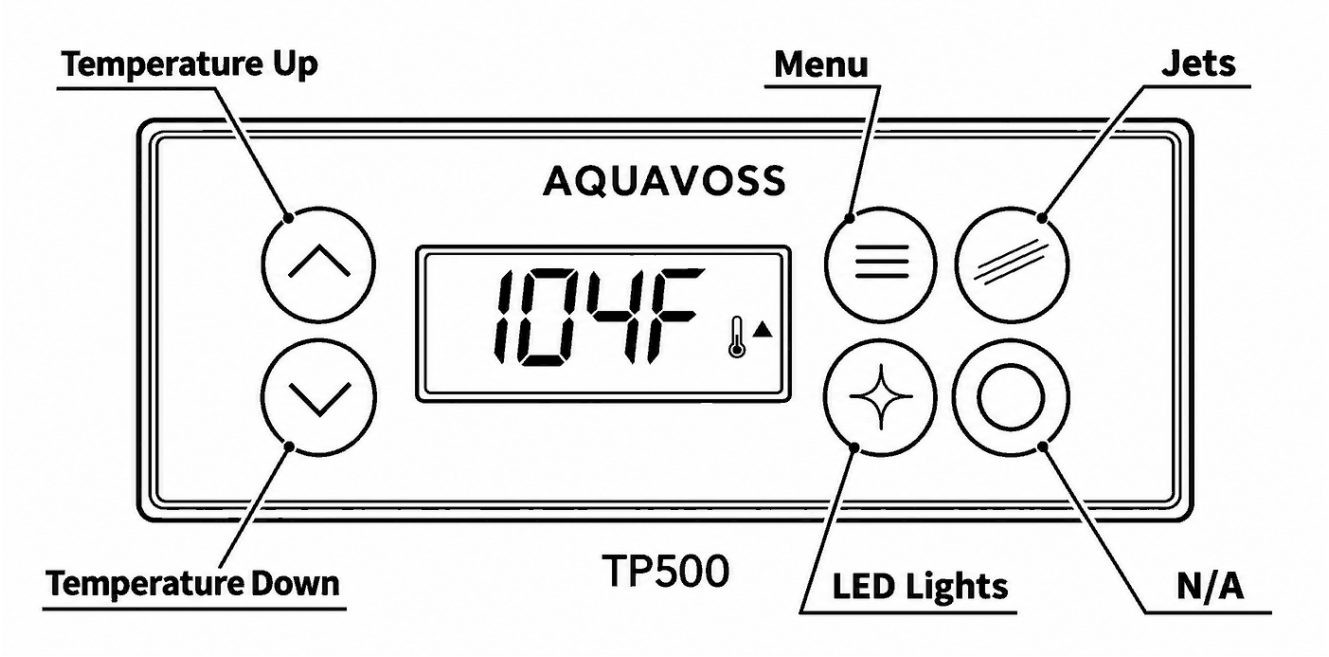
- Pump running with little or no water movement
- Heater not heating
- Flow-related error messages
- Excessive noise from the circulation system

Correcting an Airlock

1. Turn off power at the breaker.
2. Cover the circulation pump (for example, with a tarp or a bowl) to protect it from dripping water, then slightly loosen the right heater union located directly above it. Do not fully unscrew the union, as this can cause significant, uncontrollable water loss.
3. Allow trapped air to escape.
4. Tighten the union.
5. Restore power.
6. Repeat if necessary.

10 Hot tub operation

Control Panel Overview



The hot tub is controlled using the Balboa topside control panel. The complete control panel user manuals for both the hot tub and the cold plunge can be downloaded from the Help Center on aquavoss.com, under the "Manuals" section.

Functions include:

- Temperature adjustment
- Jet control
- Lighting control
- Operating mode selection

Temperature Adjustment

Increase Temperature

Press the Temperature Up button. The maximum set temperature is 104°F (40°C).

Decrease Temperature

Press the Temperature Down button.

The display will briefly show the set temperature before returning to the current water temperature.

Jet Operation

The AV-2 hot tub includes a jet pump that circulates water through the jets.

Jets Button

Press once:

- Pump 1 High Speed

Press again:

- System Off

The system automatically shuts the jet pumps off after 15 minutes.

Lighting Operation

Press the Light button to control interior LED lighting.

Depending on configuration:

- On / Off
- Color selection
- Color cycling

Lighting automatically turns off after a programmed timeout period.

Operating Modes

Ready Mode

Recommended for most users.

The spa continuously monitors and maintains water temperature.

Rest Mode

Heating occurs only during programmed filter cycles. This uses less energy, but the water takes longer to reach temperature. To switch between Ready Mode and Rest Mode, see the complete control panel user manual, available from the Help Center on aquavoss.com under the "Manuals" section.

Freeze Protection

The AV-2 hot tub includes automatic freeze protection through its Balboa control system. Freeze protection applies to the hot tub side only; the cold plunge side has no freeze protection and must be winterized before freezing weather (see Section 13).

If low temperatures are detected:

- Pumps may automatically activate
- Water circulation increases
- Helps protect equipment from freezing damage

Freeze protection operates only while the hot tub is receiving power, its components are functioning properly, and the hot tub filter has been properly maintained. Do not rely solely on freeze protection in severe winter conditions.

Normal Operating Sounds

The following sounds are considered normal:

- Pump operation
- Water movement

- Relay clicks
- Heater activation
- Ozone or UV system operation

These sounds indicate normal system operation.

Safety During Use

Do not use the hot tub:

- Under the influence of alcohol or drugs
- During severe weather, including thunderstorms and lightning
- If suction fittings are damaged
- If water temperature exceeds 104°F (40°C)

Users with medical conditions should consult a healthcare professional before use.

If you are pregnant or may be pregnant, limit hot tub water temperature to 100°F (38°C) and consult your physician before use. See Section 16, Safety Guidelines.

Exit the spa immediately if you experience:

- Dizziness
- Nausea
- Overheating
- Discomfort
- Difficulty breathing

Always have a responsible adult present and watching you while you use the hot tub.

Hot Water Safety

Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 98.6 °F. The symptoms of hyperthermia include an increase in the internal temperature of the body, dizziness, lethargy, drowsiness, and fainting. The effects of hyperthermia include failure to perceive heat; failure to recognize the need to exit a spa or hot tub; unawareness of impending hazard; fetal damage in pregnant women; physical inability to exit the spa or hot tub; and unconsciousness resulting in the danger of drowning.

⚠ WARNING

The use of alcohol, drugs, or medication can greatly increase the risk of fatal hyperthermia.

11 Water care & maintenance

Proper water care is critical to maintaining water clarity, sanitation, equipment longevity, and warranty compliance.

Failure to maintain proper water chemistry may result in equipment damage, poor water quality, and reduced component life.

Water Quality Safety

Entering water that is unsanitary can lead to health issues including, but not limited to, skin irritations, infections, and waterborne illnesses. To reduce these risks, maintain high water quality standards through proper filtration, sanitation, and regular cleaning. Users should shower before entering the water to minimize the introduction of contaminants.

⚠ WARNING

Keep all water care chemicals away from children. Swallowing or contact with water care chemicals can cause serious injury. Follow the instructions provided by your chemical manufacturer for proper use and safety.

⚠ WARNING

Never mix water care chemicals together. Mixing chemicals can cause a violent reaction, fire, or toxic gas. Always add chemicals to water, never water to chemicals. Store chemicals in their original containers in a cool, dry, well-ventilated place, and keep containers closed when not in use.

Recommended Water Parameters

Hot Tub

PARAMETER	RECOMMENDED RANGE
Free Chlorine	**3–5 ppm**
pH	**7.2–7.8**
Total Alkalinity	**80–120 ppm**
Calcium Hardness	**150–250 ppm**

Cold Plunge

PARAMETER	RECOMMENDED RANGE
Free Chlorine	**2–3 ppm**
pH	**7.2–7.8**
Total Alkalinity	**80–120 ppm**
Calcium Hardness	**150–250 ppm**

Water Testing

Minimum recommendation:

- 2–3 times per week for residential use
- Daily for heavy use

Test:

- Free chlorine
- pH

- Total alkalinity

When adjusting water chemistry, adjust in this order: total alkalinity, pH, calcium hardness, then sanitizer. Let the water circulate and retest after each adjustment.

Sanitizer Options

Chlorine (Recommended)

Aquavoss recommends a chlorine-based sanitation program for most owners.

Alternative Systems

Some users may choose:

- Bromine
- Mineral systems

Alternative sanitation methods may require more frequent testing and maintenance.

Mineral systems, such as the Nature2 mineral stick, are acceptable for use in the AV-2. Verify that any other chemicals you use are compatible with these products.

NOTICE

Do not use salt water sanitation systems. The AV-2 is not compatible with salt water. Salt can corrode internal components.

Always follow manufacturer instructions.

Ozone or UV System

Depending on the model, both sides of the AV-2 use either ozone or UV (ultraviolet) sanitation.

Ozone and UV systems are supplemental sanitation systems.

Chemical sanitizers are still required. On UV-equipped units, the UV lamps may need periodic replacement. Contact Aquavoss Technical Support for the recommended replacement interval.

⚠ WARNING

On UV-equipped units, never look directly at an operating UV lamp, which can cause eye and skin injury. Disconnect power before servicing the UV system.

Filter Maintenance

Cold Plunge Filter

Weekly

Inspect and clean:

- Stainless mesh intake filter (positioned behind the suction at the base of the step on the cold side).

Every 2–4 Weeks

Inspect:

- Paper filter cartridge

Clean or replace as necessary.

Hot Tub Filter

Every 2–4 Weeks

1. Remove the filter.
2. Rinse thoroughly with a garden hose.
3. Remove trapped debris.
4. Reinstall filter.

Filter Replacement

Replace filters when:

- Cleaning no longer restores flow
- Filter media is damaged
- Water flow remains restricted

Typical replacement interval:

- Every 6–12 months

Actual lifespan varies by usage.

Water Replacement

Over time, dissolved contaminants accumulate and reduce water quality.

Recommended drain intervals:

USAGE LEVEL	WATER CHANGE FREQUENCY
Light Use	**Every 4–6 Months**
Moderate Use	**Every 3–4 Months**
Heavy Use	**Every 2–3 Months**

Replace water sooner if:

- Water becomes difficult to balance
- Persistent odor develops
- Excessive foaming occurs

Acrylic Surface Care

Cleaning

Use:

- Soft microfiber cloth
- Non-abrasive acrylic cleaner

Avoid:

- Abrasive pads
- Solvents
- Harsh household cleaners
- Dish soap

These products may damage the acrylic finish or cause foaming after refilling.

Cabinet Care

The exterior cabinet should be cleaned periodically.

Recommended:

- Mild soap
- Water
- Soft cloth

Avoid pressure washing directly into vents, seams, or access panels.

Cover Care

Monthly

- Clean with mild soap and water.
- Rinse thoroughly.
- Allow to dry.
- Apply a marine grade vinyl protectant

Avoid

- Petroleum-based cleaners
- Abrasive products
- Dragging the cover across rough surfaces

Ventilation Maintenance

Inspect all ventilation openings monthly.

Remove:

- Leaves
- Dirt
- Dust
- Debris

Restricted airflow may reduce cooling performance and increase equipment temperatures.

Leak Inspection

Inspect periodically for:

- Water around equipment
- Dripping fittings

- Loose unions
- Plumbing damage

Address leaks promptly to prevent equipment damage.

Suction Fitting Replacement

⚠ WARNING

Each suction fitting cover is marked with its service life, "Life 7 Years." The service life begins when the fittings are installed at the factory, so count from your unit's date of manufacture, not the date you received it. Replace all suction fitting covers at or before the end of their service life. Aged covers can crack or break, creating a risk of entrapment and drowning.

Replace a cover sooner if it is cracked, broken, brittle, discolored, or will not stay securely fastened. Use only replacement covers with the same model and flow rating marked on the original. Contact Aquavoss Technical Support for replacement parts, or if you are unsure of your unit's date of manufacture.

Maintenance Schedule

Weekly

- Test water chemistry
- Check sanitizer levels
- Inspect cold plunge mesh filter

Monthly

- Clean filters (every 2–4 weeks)
- Inspect cabinet
- Clean cover
- Inspect ventilation openings

Every 2–6 Months

- Drain and refill water (see Water Replacement for intervals)
- Deep clean shell surfaces
- Inspect plumbing and equipment

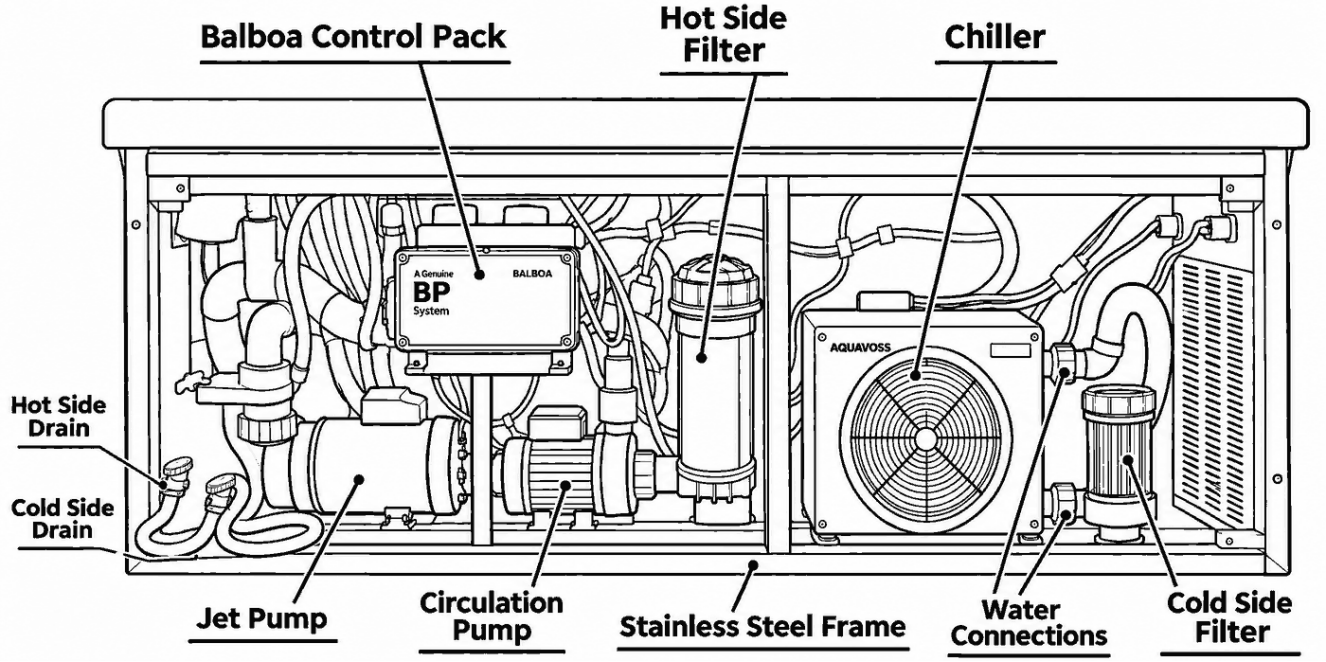
Annually

- Replace filters as necessary
- Perform full equipment inspection
- Verify electrical connections remain secure

12 Draining

Drain and refill the AV-2 on the schedule shown in Section 11, Water Replacement. Draining is also the first step of winterization (Section 13).

Draining Procedure



1. Disconnect power to both the hot tub and the cold plunge.
2. Remove the access cabinet panel.
3. Standing in front of the open equipment compartment, both drain hoses are on the left side, next to the jet pump near the floor. The leftmost hose drains the hot tub; the rightmost hose drains the cold plunge.
4. Remove the cap. Optionally, connect a garden hose to the threaded fitting to direct the water where you want it.
5. Twist the lever parallel to the hose to start draining.

Direct drained water away from the unit's foundation and electrical equipment, and follow local regulations for discharging treated water.

Faster Draining Tip

Draining through the factory drains takes an estimated 4 hours for the hot tub and about 1 hour for the cold plunge. A submersible pump is a worthwhile one-time purchase: placed in the water, it pumps the unit out in an estimated 30 minutes and does not require removing the access panel. Pump time varies with pump capacity and hose setup.

After draining, close the drain valves and replace the caps, then refill and follow the startup steps in Section 8 (cold plunge) and Sections 9–10 (hot tub).

13 Winterization

The hot tub and cold plunge sides must be treated differently during winter. The hot tub side may be operated through winter if properly powered and maintained. The cold plunge side must be winterized in freezing climates.

Important Freeze Warning

Any water left inside the cold plunge plumbing, chiller, pump, filter housing, ozone or UV plumbing, or connected lines can freeze and cause damage.

Frozen water expands and may crack or rupture:

- Plumbing lines
- Pump housings
- Chiller components
- Filter housings
- Unions
- Fittings
- Valves

Damage caused by freezing is not considered a manufacturing defect and will not be covered under warranty.

Cold Plunge Winterization

The cold plunge side must be fully winterized before freezing temperatures occur.

NOTICE
Do not rely on cold plunge operation, residual heat, insulation, or cabinet protection to prevent freeze damage.

Cold Plunge Winterization Procedure

Step 1: Turn Off Power

Disconnect power to the cold plunge before beginning winterization.

Step 2: Drain the Cold Plunge

Open the cold plunge drain and allow the tank to drain completely.

Remove any remaining standing water from the shell using a wet vacuum, sponge, or towel.

Step 3: Remove the Chiller

The chiller must be disconnected and removed from the equipment cabinet for winterization.

1. Disconnect the chiller power cord.
2. Disconnect the control cable connections.
3. Disconnect the pump and ozone or UV power connections.
4. Disconnect the green bonding wire.
5. Disconnect the plumbing unions from the chiller.
6. Carefully remove the chiller from the cabinet.
7. Keep the chiller upright at all times.

Store the chiller in a dry, protected location where it will not be exposed to freezing temperatures.

Step 4: Remove the Cold Plunge Filter

1. Remove the cold plunge filter cartridge.
2. Drain the filter housing completely.
3. Clean and dry the filter housing.
4. Store the filter indoors if it will be reused.

Replace the filter if it is dirty, damaged, or restricted.

Step 5: Clear All Cold Plunge Lines

All remaining water must be removed from the cold plunge plumbing system.

Use a wet vacuum, blower, or both to clear water from:

- Suction fittings
- Return jets
- Filter housing
- Circulation pump
- Ozone line or UV chamber
- Chiller inlet line
- Chiller outlet line
- Drain plumbing
- Any visible low points in the plumbing

Continue clearing each line until no additional water is discharged.

This is the most important step in cold plunge winterization.

Step 6: Clear the Circulation Pump

The circulation pump must be free of standing water.

1. Disconnect or loosen the pump unions as needed.
2. Drain the pump housing.
3. Use a wet vacuum or compressed air blower to remove remaining water.

Leave no standing water inside the pump body.

Step 7: Clear Jet and Suction Lines

Use a wet vacuum or blower at each jet and suction fitting.

Clear each line individually until no water remains.

Pay special attention to low points where water may collect.

Step 8: Final Inspection

Before closing the cabinet:

- Inspect all plumbing lines.
- Confirm the chiller has been removed.
- Confirm the filter housing is drained.
- Confirm the pump is drained.

- Confirm all visible water has been removed.

Leave fittings loose where appropriate to prevent trapped water.

Hot Tub Winter Use

The hot tub side may be used during winter if it remains filled, powered, heated, and properly maintained.

For winter operation:

- Keep power connected.
- Maintain proper water level.
- Keep the cover secured.
- Maintain water chemistry.
- Verify circulation regularly.
- Monitor the unit during severe weather.

NOTICE
Do not allow the hot tub to sit unpowered in freezing temperatures while filled with water. Water left in an unpowered hot tub can freeze and crack plumbing and equipment.

Hot Tub Winterization

If the hot tub will not remain powered and heated during freezing conditions, it must be fully winterized.

Procedure

1. Turn off power at the breaker.
2. Drain the hot tub completely.
3. Remove the hot tub filter.
4. Use a wet vacuum or blower to clear: jets, suction fittings, pump lines, heater plumbing, filter housing, drain plumbing.
5. Remove any remaining water from the shell.

Leave no standing water in the plumbing system.

Snow & Ice Management

For installations in snowy climates, snow load must be managed throughout the winter season.

Remove accumulated snow from:

- Covers
- Cabinet tops
- Surrounding service areas

Excessive snow load can damage the cover and cover hardware.

Power Outages During Freezing Weather

Power outages during freezing conditions can cause rapid freeze damage.

If power is lost during freezing temperatures:

1. Monitor water temperature closely.
2. Restore power as soon as possible.
3. If power cannot be restored, begin emergency winterization.
4. Drain and clear all water from affected systems.

Restarting After Winterization

When freezing weather has passed, return the unit to service as follows:

1. Reinstall the chiller and reconnect its plumbing, control cables, power connections, and bonding wire (see Section 7, Cold Plunge Installation).
2. Reinstall the hot tub and cold plunge filters.
3. Close all drain valves and replace the drain caps.
4. Fill both sides to the proper water level.
5. Follow the initial startup steps in Section 8 (cold plunge) and Sections 9–10 (hot tub).
6. Check for leaks around unions, fittings, and equipment as the system runs.

14 Troubleshooting guide

If the recommended corrective action does not resolve the issue, contact Aquavoss Technical Support.

Cold plunge troubleshooting

Chiller Will Not Power On	**Possible causes:** No power at outlet; Tripped GFCI; Tripped breaker; Loose power connection • Verify the outlet has power. • Reset the GFCI outlet and the GFCI on the chiller power cord. • Verify the breaker has not tripped. • Confirm the power cord is fully connected.
Chiller Powers On But Does Not Cool	**Possible causes:** Compressor startup delay active; Temperature setpoint reached; Poor ventilation; High ambient temperatures • Wait at least 3 minutes after startup. • Verify the set temperature is below the current water temperature. • Inspect ventilation openings for blockage. • Verify ventilation clearances: at least 5 feet at the large ventilation panel and 2 feet at the small ventilation panel. • Confirm the cover is installed when not in use.

Poor Cooling Performance	**Possible causes:** Dirty filter; Dirty mesh intake screen; Restricted airflow; Cover left open; Excessive sun exposure; High ambient temperatures • Clean the paper filter cartridge. • Clean the stainless steel mesh intake screen. • Verify proper ventilation clearance. • Keep the cover closed when not in use. • Reduce direct sun exposure if possible.
No Water Flow	**Possible causes:** Airlock; Dirty filter; Blocked intake screen; Pump issue • Clean the intake screen. • Clean or replace the filter. • Check for airlocks. • Verify circulation pump operation.

NOTICE

Never operate the chiller without adequate water circulation. Running the chiller without water flow can damage it.

Water Flow Is Weak	**Possible causes:** Dirty filter; Dirty intake screen; Partial blockage; Low water level • Clean or replace the filter. • Clean the intake screen. • Verify proper water level. • Inspect for obstructions.
Water Temperature Display Appears Incorrect	**Possible causes:** Recent refill; Active cooling cycle; Temperature stratification Allow water to circulate for several hours and verify temperature again. Minor temperature variation is normal.

Hot tub troubleshooting

Spa Will Not Power On	**Possible causes:** Tripped breaker; GFCI fault; Power interruption • Verify breaker position. • Reset the GFCI breaker. • Confirm electrical service is present.
Spa Powers On But Will Not Heat	**Possible causes:** Water already at set temperature; Flow restriction; Dirty filter; Airlock • Verify temperature setting. • Clean the filter. • Check circulation. • Remove airlocks if present.

Water Not Circulating	**Possible causes:** Airlock; Dirty filter; Pump issue • Clean the filter. • Verify water level. • Bleed trapped air at the right heater union (see Airlocks in Section 9). • Restore power and retest.
Jets Not Operating	**Possible causes:** Pump timeout; Control setting; Electrical issue • Press the Jets button. • Verify the spa is powered. • Reset power if necessary.
Water Temperature Is Lower Than Expected	**Possible causes:** Cover left open; Heavy usage; Cold weather; Rest Mode enabled • Verify the cover is installed. • Verify Ready Mode is selected. • Allow sufficient recovery time after use.

Water quality issues

Excessive Foam	**Possible causes:** Body oils; Soap residue; Water chemistry imbalance • Test and balance water chemistry. • Clean filters. • Drain and refill water if necessary. • Avoid using household soaps or cleaning products inside the spa.
Cloudy Water	**Possible causes:** Low sanitizer levels; Dirty filters; Heavy bather load; Water chemistry imbalance • Test water chemistry. • Adjust sanitizer levels. • Clean filters. • Shock water if appropriate.
Strong Odor	**Possible causes:** Low sanitizer levels; Organic contamination; Water overdue for replacement • Test sanitizer levels. • Balance water chemistry. • Replace water if necessary.
Green Water	**Possible causes:** Algae growth; Metal contamination; Poor sanitation • Test water chemistry. • Adjust sanitizer levels. • Shock water if required. • Drain and refill if condition persists.

Scale Formation	**Possible causes:** High calcium hardness; High pH • Test water chemistry. • Adjust pH and alkalinity. • Use appropriate scale-control products if necessary.

Leak troubleshooting

Water Found Under Unit	**Possible causes:** Loose union; Drain valve not fully closed; Plumbing leak; Condensation • Inspect drain valves. • Inspect visible unions and fittings. • Verify source of water before assuming a plumbing failure. Small amounts of condensation may be normal.

When to contact technical support

Contact Aquavoss Technical Support if:

- Breakers repeatedly trip
- Equipment fails to start
- Cooling or heating performance suddenly changes
- Leaks cannot be identified
- Error messages persist after troubleshooting
- Physical damage to equipment is discovered

⚠ WARNING

Stop using the AV-2 and disconnect power immediately if you smell burning, see sparking, find water in the electrical compartment, or a GFCI trips repeatedly. These are signs of an electrical fault that can cause fire or electric shock. Do not use the unit again until it has been inspected.

Providing photographs and videos will help expedite diagnosis and resolution.

15 Contrast therapy

Safety Awareness

⚠ WARNING

Moving rapidly between hot and cold water places significant stress on the body, especially the cardiovascular system, and can lead to death. Consult a physician before practicing contrast therapy.

Each person's tolerance is different. Never practice contrast therapy alone, and make sure everyone who uses the AV-2, including guests, has read these safety instructions. Do not permit children to use the AV-2 unless they are closely supervised at all times. Anyone who is pregnant or may be pregnant, adults over the age of 50, and anyone with a history of heart disease or another heart condition should consult a physician before using the AV-2 or practicing contrast therapy.

Safe Practice Considerations

Gradual Adaptation: Start with moderate temperatures and short sessions, and increase gradually. Do not move directly between temperature extremes (for example, 104°F to 39°F).

Hydration: Stay hydrated before, during, and after sessions.

Post Recovery: After a session, allow your body to return to a normal temperature gradually before resuming other activities.

16 Safety guidelines

General Safety Note

Use of the AV-2 is at your own risk. Consult a physician before use, and make sure you are supervised by a responsible adult during every session.

Consult a Physician

Consult a physician before using the AV-2, especially if any of the following apply to you.

Cardiovascular: Cold plunging and hot tubbing place stress on the cardiovascular system, as they cause blood vessels to narrow and expand and heart rate to rise and fall. Individuals with a history of heart disease, arrhythmias, or recent heart surgery should consult a physician before using the AV-2. If you have uncontrolled high blood pressure, consult your physician before using the AV-2.

Respiratory: Sudden immersion in cold or hot water can trigger a gasp reflex and affect breathing patterns. Individuals with asthma, chronic obstructive pulmonary disease (COPD), or other chronic lung conditions should consult a physician before use.

Medical History & Medications: Certain medications may affect your body's response to cold and heat. If you have recently undergone surgery or have unresolved injuries, consult your physician before using the cold plunge or hot tub.

Hypersensitivity to Cold/Heat and Skin Conditions: Consult your physician if you experience adverse reactions to cold or heat exposure, such as skin reactions or hives. Conditions such as eczema or psoriasis can worsen with cold and hot exposure.

Supervision

Using the AV-2 without supervision can be risky. A responsible person present can provide immediate assistance in an emergency and watch for signs of distress, hypothermia, or overheating. Always ensure a reliable supervisor is present when using the AV-2.

Children

Do not permit children to use the AV-2 unless they are closely supervised at all times.

Pregnancy

If you are pregnant or may be pregnant, consult your physician before using the AV-2, and limit hot tub water temperature to 100°F (38°C).

Risk of Drowning

⚠ WARNING

Drowning is a potential risk when using the cold plunge or hot tub. If you are not comfortable in the water, do not use the AV-2. Even if you are comfortable in the water, your body may react to cold or hot temperatures in a way that causes you to, for example, lose consciousness. Always be supervised by a responsible adult so you can receive immediate help if something goes wrong. Before any cold plunging or hot tubbing, discuss with that adult your plan of action should you lose consciousness in the water. In an emergency, call 911 immediately.

Entry & Exit Caution

⚠ CAUTION

Exercise care when entering and exiting the AV-2. Sudden movements or slips can lead to accidents or injuries, so proceed slowly and attentively.

Slippery Surfaces

⚠ CAUTION

Wet surfaces can become slippery. Walk carefully and consider non-slip footwear when moving around the AV-2. A slip or fall can cause injury.

Electrocution Risk Awareness

⚠ WARNING

Ensure electrical equipment near your AV-2 is properly installed and maintained. Keep all electrical cords and outlets away from water. Do not allow any electrical appliances, such as lights, telephones, radios, or televisions, within 5 feet of your AV-2; this may result in death or serious injury due to electrocution if an appliance falls into the spa. Make sure your AV-2 is installed with proper drainage away from the electrical compartment and all electrical components. Disconnect the cold plunge and hot tub from the power supply before draining the spa or servicing any electrical components. Do not use the cold plunge or hot tub with the equipment compartment panel removed.

Cover Safety

⚠ WARNING

Keep the cover closed and locked with all cover clips whenever the AV-2 is not in use, to help prevent unsupervised access by children and accidental drowning. The cover is not designed to support weight. Do not sit, stand, walk, or lie on the cover, and do not allow children or pets on it. Never use a cover with missing or damaged clips or straps. The AV-2 cover meets ASTM F1346 only when all cover clips are installed and locked.

Suction Fitting Entrapment

⚠ DANGER

Never sit on, block, or play near the suction fittings. Keep hair, loose clothing, and jewelry away from suction fittings, as they can become entangled and hold a person underwater. Never use the AV-2 if a suction fitting cover is missing, broken, or loose.

Residential Use

The AV-2 is designed for private residential use. Commercial, rental, or public use may require health department permits and compliance with additional regulations, which are the owner's responsibility. Contact Aquavoss before any non-residential use, as warranty coverage may differ or not apply.

Not Medical Advice

The information in this manual is provided for general safety and product use purposes only and is not medical advice. Consult a qualified healthcare professional about your individual health and whether using the AV-2 is appropriate for you.

17 Support & warranty information

For technical support, warranty assistance, replacement parts, or service guidance, contact Aquavoss directly.

Before contacting support, please have the following information available:

- Model number
- Serial number
- Date of purchase
- Description of the issue
- Photos or videos when applicable

Technical Support

Phone: +1 213-459-6534

Email: support@aquavoss.com

Warranty Information

The complete warranty document, including all terms, limitations, exclusions, and coverage details, is available at aquavoss.com/pages/warranty.

Warranty coverage applies only when:

- Installation instructions are followed
- Proper maintenance is performed
- Water chemistry is maintained
- Freeze protection and winterization requirements are followed
- Electrical requirements are met

Failure to follow the instructions in this manual may affect warranty coverage.

Service, Repairs & Modifications

Repairs or service performed by anyone not authorized by Aquavoss, modifications to the AV-2 or its equipment, and the use of non-original or unapproved replacement parts are not covered under warranty. Aquavoss is not responsible for injury, damage, or equipment failure resulting from unauthorized service, modifications, or parts.

Manual Updates

Aquavoss may change product specifications and these instructions without notice. Contact Aquavoss or visit aquavoss.com for the latest version of this manual.

Important safety reminder

Retain this manual for future reference. If you sell or transfer the AV-2, give this manual to the new owner.

AQUA VOSS

Aquavoss Technical Support

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Revision A, November 2026

Aquavoss may change product specifications and these instructions without notice. Visit aquavoss.com for the latest version of this manual.