



Operating Manual

eWater Reticulated System

Model N. eWS-60SA

Have a Question?
Speak to the eWater Support Team

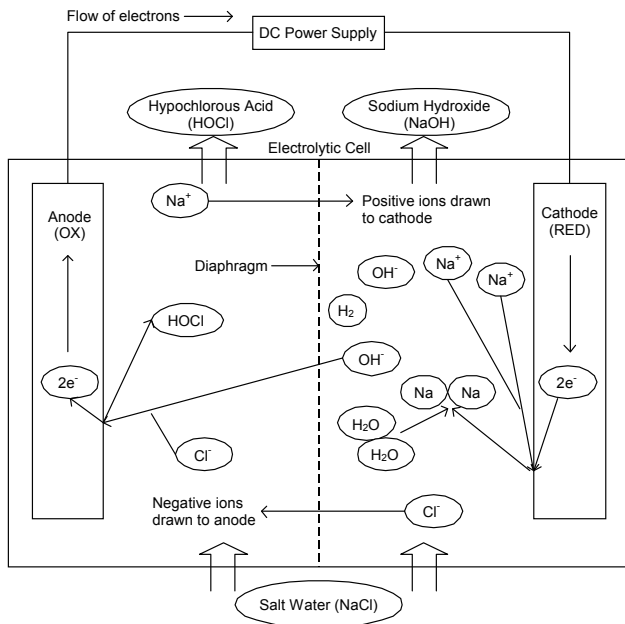
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1300 EWATER

Original Equipment
Manufacturer



In the context of this manual, the term "sanitizing water" refers to acidic water and "cleaning water" refers to alkaline water.

1. PRINCIPLE OF ELECTROLYSIS



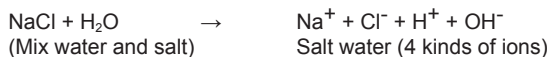
Reactions at Anode

Chloride ions (Cl^-) and hydroxide ions emit electrons (e^-) to the anode, which become hypochlorous acid (HOCl).

Reactions at Cathode

Sodium ions (Na^+) receive electrons (e^-) from the cathode and become sodium metal (Na) which reacts with water (H_2O) and becomes sodium hydroxide (NaOH) and hydrogen gas (H_2).

Salt water contains four kinds of ions; sodium ions (Na^+), chlorine ions (Cl^-), hydrogen ions (H^+) and hydroxide ions (OH^-).



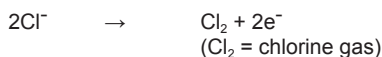
When two electrodes are inserted into salt water and voltage is applied:

Negative ions (Cl^-) are drawn to the anode, and Positive ions (Na^+) are drawn to the cathode.

At the anode, hydrogen chloride (HCl) and hypochlorous acid (HOCl) are generated.



Electrons (2e^-) are emitted to the anode, which means the acidic water ($\text{HCl} + \text{HOCl}$) causes oxidation. [As electrons are emitted, the oxidation/reduction potential becomes positive (+mV).] Chlorine ions also emit electrons and become chlorine gas (Cl_2).



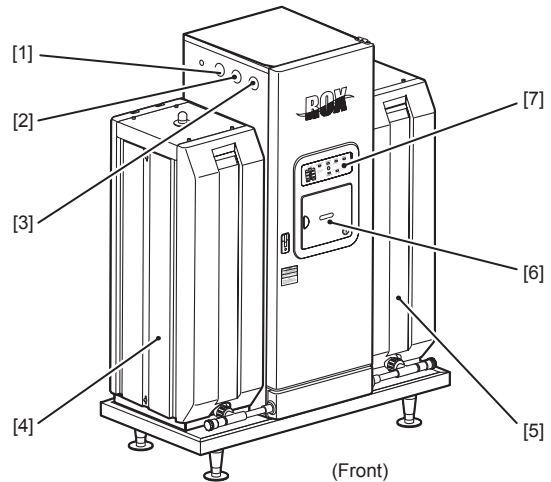
At the cathode, sodium hydroxide (NaOH) and hydrogen gas (H_2) are generated.



Electrons (2e^-) are received from the cathode, which means the alkali water (NaOH) causes reduction. [As electrons are received, the oxidation/reduction potential becomes negative (-mV).]

2. CONSTRUCTION

[a] EXTERIOR



[1] Cleaning water outlet (20A)

[2] Neutralizer vent (25A)

[3] Cleaning water vent (25A)

[4] Water tank (left)

Holds cleaning water in normal dispensing mode and sanitizing water in reverse dispense mode.

[5] Water tank (right)

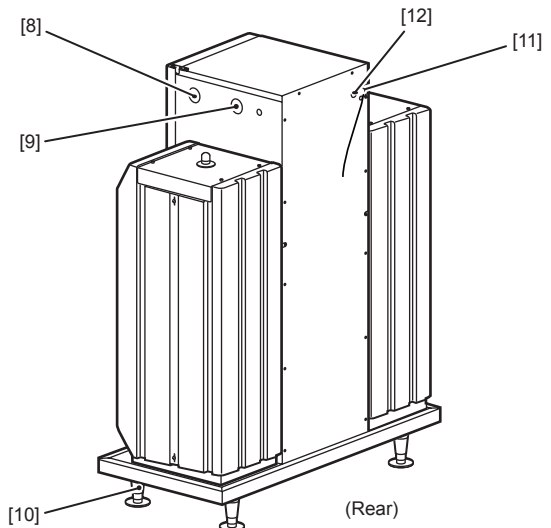
Holds sanitizing water in normal dispensing mode and cleaning water in reverse dispense mode.

[6] Salt chute door

Open to add in salt.

[7] Operation panel

Indicates the state of operation. See "[c] OPERATION PANEL".



[8] Sanitizing water vent (25A)

[9] Sanitizing water outlet (20A)

[10] Adjustable legs

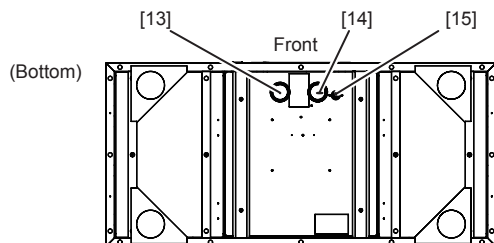
Keep the unit level and stable.

[11] Power cord (with plug)

If the power cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer or its service agent.

[12] Grommet

Receives the cable from the operation box (option).

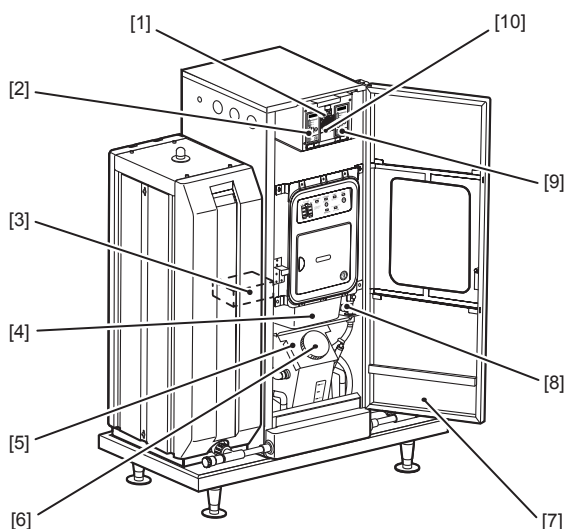


[13] Drain outlet (G3/4 female)

[14] Tank drain outlet (G1/2 female)

[15] Water inlet (Rc1/2 female)

[b] INTERIOR



[1] Power switch (earth leakage circuit breaker)
Turns on and off the power supply.

[2] Control panel (B)
ROX-60SA-EW only. Provided with buttons and display for setting cell functions. See "[d] CONTROL PANEL (A) (B)".

[3] Water softener
Softens tap water.

[4] Salt water tank
Dilutes salt to make salt water.

[5] Neutralizer
Neutralizes sanitizing water pH.

[6] Neutralizer inlet
Open to add in neutralizing agent.

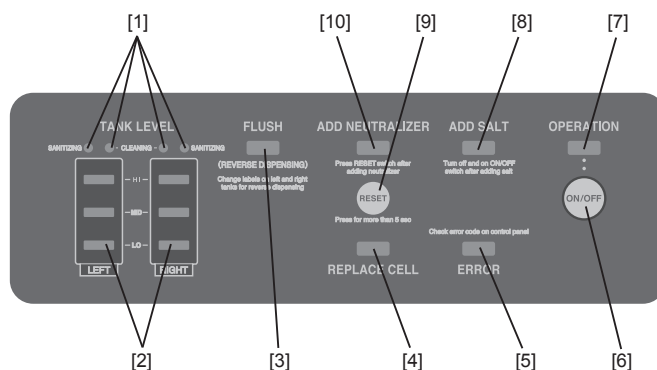
[7] Door
Open/close to evacuate the salt water pump and add in neutralizing agent.

[8] Water sampling tap
Sample water to check water hardness.

[9] Control panel (A)
Provided with buttons and display for setting cell functions. See "[d] CONTROL PANEL (A) (B)".

[10] Water softener timer
Sets the present time and regeneration time. See "[e] WATER SOFTENER TIMER".

[c] OPERATION PANEL



[1] Electrolyzed water lamp
(Blue = cleaning water, red = sanitizing water)
Indicates the type of water stored in the tank.

[2] Tank level lamp (green)
Indicates the water level for each tank in three steps. Electrolyzed water is not available if this lamp is off.

[3] Flush (reverse dispense) lamp (blue)
The sanitizing and cleaning water outlets are switched while this lamp is on. Check with the electrolyzed water lamp.

[4] Replace cell lamp (red)
Flashes when the electrolytic cell needs to be replaced.

[5] Error lamp (red)
Comes on or flashes in case of trouble.

[6] ON/OFF switch
Starts and stops electrolyzing water.

[7] Operation lamp (green)
Stays on while the unit is in operation.
(ROX-60SA-EW: Flashes when one unit is off.)

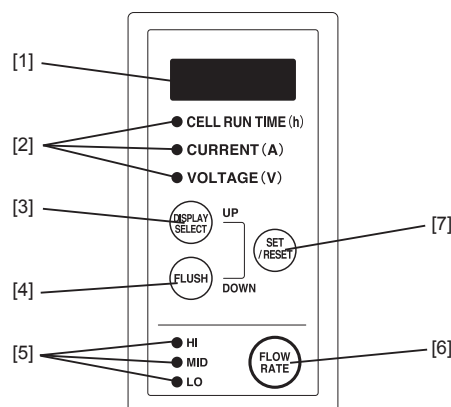
[8] Add salt lamp (red)
Comes on when the salt water tank is running out of salt.

[9] Reset switch
Resets the add neutralizer lamp.

[10] Add neutralizer lamp (red)
Flashes when the neutralizer is getting empty.

Note: Whether the operation lamp is on or off, electrolyzed water is available while the power switch is on, until the tank level lamp goes off.

[d] CONTROL PANEL (A) (B) [ROX-30SA-EW: Control panel (A) only]



[1] Display
Indicates the cell run time, current, voltage, and error code in case of trouble. Shows "STOP" when electrolysis stops for water softener regeneration.

[2] Display lamp (red)
Indicates the displayed item.

[3] Display select button
For use by a trained operator and service personnel only.

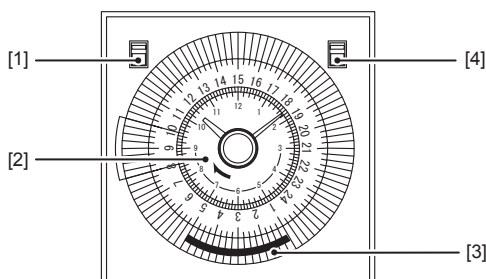
[4] Flush button
Press to flush the electrolyzed water circuit. The flush lamp on the operation panel stays on while flushing.

[5] Flow rate lamp (red)
Indicates the current flow rate.

[6] Flow rate button
Adjusts the flow rate of both sanitizing water and cleaning water.
Reference: HI = for utensil, MID = for food, LO = for food

[7] Set/reset button
For use by a trained operator and service personnel only.

[e] WATER SOFTENER TIMER



[1] Contact select switch
Keep in the "AUTO" position.

[2] Time indicator
Indicates the present time.

[3] Set switch
Sets the water softener regeneration time. Regeneration begins at the red time zone.

[4] Frequency select switch
Set to your local frequency.

[f] ACCESSORIES

Instruction manual	1	Installation manual	1
Operation sheet	1	pH test paper UNIV	1
Key	2	Chlorine test paper	1
Measuring cup	1	Water hardness indicator	1
Neutralizing agent	1	Reducing valve (0.25MPa)	1
Dual check valve	1		

[g] OPTIONS

Automatic dispensing valve (VDW-2PB series)
Valve assembly
Operation box

Note: Ask an authorized Hoshizaki service company for installation of the above options.

3. CHECKS BEFORE OPERATION (DAILY)

[a] SALT LEVEL

* Open the salt chute door to check the salt level in the salt water tank. If it is low, follow steps 1) and 2) below.

* Check the add salt lamp on the operation panel. If it is on, follow steps 1) to 4) below.

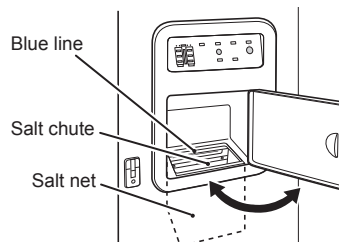
IMPORTANT

1. Use sodium chloride (NaCl) or potassium chloride (KCl) with more than 99% purity. Any other kind of salt may cause failure, clogged pipes, or health problems.
2. To prevent corrosion, do not spill salt.
3. Tightly close the salt chute door to avoid dust and dirt that may cause failure.

- 1) Open the salt chute door. Add in salt.

IMPORTANT

To prevent clogging the salt net, keep the salt level below the blue line.



- 2) Close the salt chute door.
- 3) Press the ON/OFF switch on the operation panel. The add salt lamp goes off.
- 4) Press the ON/OFF switch again. The unit starts.

[b] NEUTRALIZING AGENT LEVEL

* Open the door to check the neutralizing agent level in the neutralizer. If it is close to the "MIN" line, follow steps 1) to 3) below.

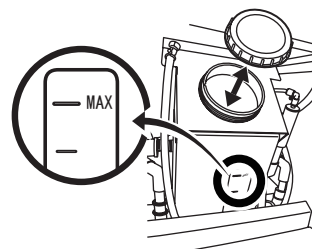
* Check the add neutralizer lamp on the operation panel. If it is flashing, follow steps 1) to 4) below.

- 1) Uncap the neutralizer. Add in neutralizing agent up to the "MAX" line.

- 2) Recap the neutralizer.

- 3) Press and hold the reset switch on the operation panel for more than 5 seconds. The add neutralizer lamp stops flashing, then goes off after 2 seconds.

- 4) Press the ON/OFF switch if it is off. The unit starts.



4. START UP

After water failure, purge the water circuit according to "6. WATER FAILURE".

- 1) Close the drain valve if it is open.
- 2) Open the water supply line shut-off valve.
- 3) Open the water supply valve.

Note: Each installation may have different water supply connections. Locate the shut-off valve, water supply valve and drain valve in your site.

- 4) Open the salt chute door to check the salt level in the salt water tank. See "3. [a] SALT LEVEL".
- 5) Plug in the unit.
- 6) Open the door.
- 7) Turn on the power switch (earth leakage circuit breaker). The unit makes three sounds of initial operation. Then the operation lamp comes on, and the unit starts automatically and runs until the water tanks fill up.

- 8) Close the door. Electrolyzed water becomes available when the tank level lamp comes on.

Note: The dispensing method depends on the dispensing valve installed. Follow the instructions of the installer.

To use other than the optional dispensing valve, consult an authorized Hoshizaki service company.

Refer to the instruction manual provided with the optional dispensing valve.

5. SHUT DOWN

- 1) Press the ON/OFF switch on the operation panel. The operation lamp goes off, and the unit stops.
- 2) Open the door.
- 3) Turn off the power switch (earth leakage circuit breaker).
- 4) Close the door.
- 5) Unplug the unit or turn off the main power supply.
- 6) Close the water supply line shut-off valve and water supply valve. The water supply valve must be closed to prevent possible water leaks in case of failure.

Note: Each installation may have different water supply connections. Locate the shut-off valve, water supply valve and drain valve in your site.

6. WATER FAILURE

In case of water failure, follow the instructions below:

- 1) Shut down the unit according to "5. SHUT DOWN".
- 2) Wait until water supply is resumed.
- 3) Check that the water supply valve is closed.
- 4) Open the drain valve.
- 5) Open the water supply line shut-off valve. Drain water until no rusty water comes out.
- 6) Close the drain valve.
- 7) Start up the unit according to "4. START UP".

7. MAINTENANCE

IMPORTANT

1. Use a neutral cleaner for daily maintenance. As a sanitizer, we recommend the use of invert soap (benzalkonium chloride) available at a drugstore.
2. To prevent damage to the painted or plastic surfaces, do not use thinner, benzine, alcohol, petroleum, soap powder, polishing powder, alkaline detergent, acid, scrub brush, and especially cleanser for use on fans and cooking ranges. Also, to prevent corrosion, do not use a chlorine bleach.
3. Follow the manufacturer's instructions when using a disposable cloth.
4. Remove heavy soil as required.

[a] STAINLESS STEEL (AS REQUIRED)

The stainless steel parts are easily damaged. Clean them as follows:

- 1) Wipe with a soft cloth containing a calcium chloride based liquid cleanser, tap water, and cleaning water.

- 2) Wipe clean with a damp cloth.

IMPORTANT

1. Do not damage the stainless steel surfaces. Use of a steel brush or steel wool may break oxide film to develop corrosion inside.
2. Use a calcium chloride based liquid cleanser to remove corrosion, dirt, and chlorides.
3. Clean the stainless steel surfaces along with their grains if any.

[b] CLEANING WATER CIRCUIT (MONTHLY)

The cleaning water circuit has calcium and magnesium deposits. Continuous use may build up these deposits and obstruct the water flow, resulting in shutdown or inadequate water properties. To prevent such troubles, flush the water circuit once a month.

Note: The flushing length and frequency depend on water quality, but should be around two hours once a month.

It is best to use the unit for a month with the flush (reverse dispense) lamp on.

Flushing is required if there is a big difference in dispensing volume between sanitizing water and cleaning water.

- 1) Press the ON/OFF switch on the operation panel. The operation lamp goes off, and the unit stops.
- 2) Open the dispensing valves to drain out the left and right water tanks.
- 3) Close the dispensing valves.
- 4) Press and hold the flush button on the control panel (A) for more than 5 seconds. The flush (reverse dispense) lamp comes on, and the water outlets are switched.
- 5) Press the ON/OFF switch on the operation panel. The operation lamp comes on, and the unit starts.

Note: While the flush (reverse dispense) lamp is on, cleaning water and sanitizing water are dispensed from the opposite outlets:

Water tank (left) = sanitizing water
Water tank (right) = cleaning water

- 6) After the flushing process completes, repeat the above steps 1) to 5). This time the flush (reverse dispense) lamp goes off, and the water outlets are switched back to normal.

Note: Cleaning water and sanitizing water are dispensed from the normal outlets:

Water tank (left) = cleaning water
Water tank (right) = sanitizing water

8. INSPECTION

Use a copy of "14. [a] DAILY INSPECTION SHEET" and "14. [b] MONTHLY INSPECTION SHEET" to keep records.

[a] pH, AVAILABLE CHLORINE CONCENTRATION (DAILY)

- 1) Drain more than 1 liter each of sanitizing water and cleaning water. Sample each water from its outlet into separate containers.
- 2) Use the pH and chlorine test papers to check that each value is within the following range. Use the pH test paper to directly check water in the neutralizer.

Water	Test Paper	pH	Available Chlorine
Sanitizing	pH test paper UNIV	Approx. 3	—
	Chlorine test paper	—	20 mg/kg (ppm) or more
Cleaning	pH test paper UNIV	Approx. 11	—
Neutralizer	pH test paper UNIV	5.8 or more	—

* It is not necessary to check the available chlorine concentration of cleaning water.

Note: See the instruction manual of each test paper for details of its proper handling.

If any of the checked values exceeds the specified range, contact an authorized Hoshizaki service company.

If water is not dispensed from its proper outlet, contact an authorized Hoshizaki service company.

[b] SALT LEVEL (DAILY)

Check the salt level according to "3. [a] SALT LEVEL".

[c] NEUTRALIZING AGENT LEVEL (DAILY)

The neutralizer prevents vaporization of chlorine generated from water overflowing the sanitizing water tank. Water overflowing the cleaning water tank is not neutralized but flows through the neutralizer without changing its pH.

Check the neutralizing agent level according to "3. [b] NEUTRALIZING AGENT LEVEL".

[d] WATER LEAKS (DAILY)

Check the unit and surrounding floor for water leaks. If any is found, contact an authorized Hoshizaki service company.

[e] REPLACE CELL LAMP (DAILY)

Check that the replace cell lamp on the operation panel is not flashing. The service life of the electrode in the electrolytic cell depends on water quality. To maintain effective performance of electrolyzed water, the electrolytic cell needs to be replaced every 3000 hours of operation.

If the replace cell lamp is flashing, contact an authorized Hoshizaki service company.

[f] CELL RUN TIME, CURRENT, VOLTAGE (AS REQUIRED)

To check the cell run time, current, and voltage:

- 1) Open the door.
- 2) Turn on the power switch (earth leakage circuit breaker).
- 3) Press the display select button on the control panels (A) and (B) [ROX-30SA-EW: control panel (A) only].
- 4) Press the display select button until the desired item appears in the display.

Note: It is factory adjusted to display the cell run time first.

- 5) Close the door.

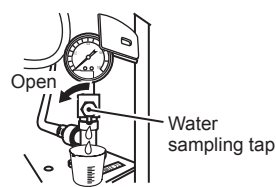
[g] WATER HARDNESS (WEEKLY)

IMPORTANT

Continuous use with hard water may cause clogged pipes, reduction in performance, or failure of the electrolytic cell. If sampled water is hard, contact an authorized Hoshizaki service company.

- 1) Open the water sampling tap. Let water run for more than 5 seconds. Sample water in the measuring cup.

- 2) Pour one or two drops of the water hardness indicator into the measuring cup, and stir a little. Check the water hardness (red = hard water, blue = soft water).



Note: For details, follow the instructions of the water hardness indicator.

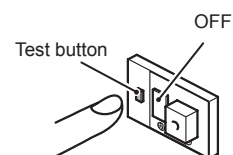
[h] EARTH LEAKAGE CIRCUIT BREAKER (MONTHLY)

WARNING

Check the earth leakage circuit breaker for proper operation once a month. If it is left inoperable, it could increase the risk of electric shock in case of electric leak.

- 1) Press the test button of the power switch (earth leakage circuit breaker).

- 2) Check that the switch turns off. If not, immediately contact an authorized Hoshizaki service company.



[i] ATTACHMENT PLUG (ANNUALLY/BIANNUALLY)

WARNING

Check periodically that the attachment plug blades and their vicinity are free of dust and that the attachment plug is securely plugged into the receptacle. Dusty blades or loose connection may cause electric shock or fire.

Check for the following problems:

Problem	Remedy
The attachment plug or power cord is too hot, damaged, weighed down, or caught in.	Immediately ask an authorized Hoshizaki service company for repair.
The attachment plug blades, their vicinity, and receptacle are dusty.	Clean.
The attachment plug is plugged into a single receptacle with other equipment.	Plug into a separate receptacle.
The unit shares a single power supply with other equipment.	Use a separate power supply.

[j] CONSUMABLE/PERIODIC REPLACEMENT PARTS

Consumable parts:

pH test paper UNIV	Chlorine test paper
Water hardness indicator	Neutralizing agent

Periodic replacement parts:

Electrolytic cell (3000 hours)

9. PREPARING ELECTROLYZER FOR LONG STORAGE

WARNING

When shutting down the electrolyzer for more than a week, turn off the power switch (earth leakage circuit breaker), and unplug the unit to prevent electric leak, heat generation, or ignition.

CAUTION

When shutting down the electrolyzer for more than two days, drain out the unit to prevent foul water from causing bacterial growth and health problems.

Purge the water circuit to prevent possible freeze-up.

- 1) Shut down the unit according to "5. SHUT DOWN".
- 2) Clean the exterior. Follow the instructions in "7. [b] CLEANING WATER CIRCUIT (MONTHLY)".
- 3) Before restarting the unit, follow the instructions in "3. CHECKS BEFORE OPERATION (DAILY)".

10. BEFORE CALLING A SERVICE AGENT

If something seems wrong with the unit, check for possible causes according to the following instructions.

If the problem still exists, turn off the power switch (earth leakage circuit breaker), unplug the unit, and contact an authorized Hoshizaki service company.

Only qualified personnel may repair the unit. Do not attempt to repair it yourself.

[a] OPERATIONAL PROBLEMS

Problem	Possible Cause	Remedy
Abnormal noise	Operating sounds (water supply, pump)	No problem.
	Unstable installation	Turn the adjusting bolts to level the unit.
	Contact with other objects	Keep them away from the unit.
Electrolyzed water is not available	Power failure	Wait until power is resumed.
	Unplugged	Plug in.
	Power switch (earth leakage circuit breaker) is off	Turn it on. If it turns off automatically, there is a risk of electric leak. Contact an authorized Hoshizaki service company.
	Operation lamp (green) is off	Press the ON/OFF switch. See "4. START UP".
Electrolyzed water is not available	Add salt lamp (red) is on	Add salt. See "3. [a] SALT LEVEL". Purge the salt water pump. See "11. PURGING SALT WATER PUMP".
	Add neutralizer lamp (red) is flashing	Add neutralizing agent. See "3. [b] NEUTRALIZING AGENT LEVEL".
	Tank level lamp (green) is off	Wait until the water tank level reaches the minimum level.
Wet floor	Water leaks	Contact an authorized Hoshizaki service company.

[b] WHEN ERROR LAMP COMES ON OR FLASHES

When the error lamp (red) on the operation panel comes on or flashes, open the door and check the error code in the display on the control panels (A) and (B).

Lamp	Code	Problem	Possible Cause	Remedy
Flash	E11	Inadequate water supply	Water failure	Restart the unit after water supply is resumed. See "6. WATER FAILURE".
			Water supply valve is closed	Open.

* After the problem is resolved, press the ON/OFF switch on the operation panel. The error lamp goes off. Press the ON/OFF switch again to resume operation.

When one of the following error codes appears, immediately contact an authorized Hoshizaki service company.

Lamp	Code	Problem	Possible Cause	Remedy
Flash	E14	Water valve defective	Repair or replacement is required. Contact an authorized Hoshizaki service company.	
	E31	Water valve (salt water tank) defective		
	E53	Reversing relay defective		
	E61	Flow switching valve defective		
	E92	Water supply function defective		
On	E12	Flow rate valve defective		
	E74	Thermistor defective		
	E81	Salt water tank float defective		
	E82	Water tank float defective		
	E85	Water pump float defective		
	E91	Water softener defective		

The following indication on the display is not an error.

Display	On	Off
STOP	Electrolysis stops for water softener regeneration.	Electrolysis automatically resumes at the end of water softener regeneration.

11. PURGING SALT WATER PUMP

This unit uses a pump to supply salt water. If the salt water pump contains air, electrolyzed water cannot be dispensed properly. When the add salt lamp on the operation panel comes on and electrolyzed water is not available, purge air from the salt water pump as follows:

- 1) Open the door.
- 2) Press the ON/OFF switch on the operation panel. The operation lamp goes off, and the unit stops.
- 3) Press and hold the display select button on the control panels (A) and (B) [ROX-30SA-EW: control panel (A) only]. The salt water pump starts running and pumping up salt water to purge the salt water hose.
- 4) The sound of the pump becomes lower when the air is removed. Release the display select button.
- 5) Close the door.

12. WARRANTY

Hoshizaki warrants to the original owner/user that all Hoshizaki branded products shall be free of defects in material and/or workmanship for the duration of the "warranty period". The warranty shall be effective for one year from the date of installation. Hoshizaki's liability under the terms of the warranty are limited and shall exclude routine servicing, cleaning, essential maintenance and/or repairs occasioned by misuse and installations not in accordance with Hoshizaki guidelines.

Warranty repairs should be completed by an approved Hoshizaki dealer or service agency using genuine Hoshizaki components.

To obtain full details of your warranty and approved service agency, please contact:

e-Water Systems Pty Ltd
TEL : 1300 EWATER
FAX: +61(3) 9686 1377

13. SPECIFICATIONS

Model	ROX-30SA-EW
Electrolysis System	Membrane technology
Electrolyte	Salt containing at least 99% sodium chloride
Power Supply	1 phase 220 - 240V 50/60Hz
Electric Consumption	250W Pump operation: 550/670W
Performance (Standard)	Sanitizing water: pH3 or less, available chlorine 20 - 60mg/kg Cleaning water: pH11 or more
Production Rate (Standard)	Sanitizing water: Approx. 2.0L/min Cleaning water: Approx. 2.0L/min
Safety Device	Earth leakage circuit breaker (with overcurrent protector)
Exterior	Galvanized steel (polyester powder paint), ABS plastic, polyethylene plastic (tank)
Dimensions	1400mm(W) x 660mm(D) x 1800(-1830) mm(H)
Weight	230kg
Temperature Range	Ambient: 5 - 35°C Water supply: 5 - 30°C
Water Supply	Comply with local water requirements Pressure: 0.10 - 0.75MPa (with pressure reducing valve)

Model	ROX-60SA-EW
Electrolysis System	Membrane technology
Electrolyte	Salt containing at least 99% sodium chloride
Power Supply	1 phase 220 - 240V 50/60Hz
Electric Consumption	460W Pump operation: 760/890W
Performance (Standard)	Sanitizing water: pH3 or less, available chlorine 20 - 60mg/kg Cleaning water: pH11 or more
Production Rate (Standard)	Sanitizing water: Approx. 4.0L/min Cleaning water: Approx. 4.0L/min
Safety Device	Earth leakage circuit breaker (with overcurrent protector)
Exterior	Galvanized steel (polyester powder paint), ABS plastic, polyethylene plastic (tank)
Dimensions	1400mm(W) x 660mm(D) x 1800(-1830) mm(H)
Weight	250kg
Temperature Range	Ambient: 5 - 35°C Water supply: 5 - 30°C
Water Supply	Comply with local water requirements Pressure: 0.10 - 0.75MPa (with pressure reducing valve)

14. INSPECTION SHEET

Make copies of this page.

[a] DAILY INSPECTION SHEET

Date										
Time										
pH	Sanitizing water									
	Cleaning water									
	Neutralizer									
Available chlorine concentration*										
Salt level										
Neutralizing agent level										
Water hardness										
Water leaks around unit										
Water leaks from water circuit										
Cell run time										
Checked by										

* Sanitizing water only

Date										
Time										
pH	Sanitizing water									
	Cleaning water									
	Neutralizer									
Available chlorine concentration*										
Salt level										
Neutralizing agent level										
Water hardness										
Water leaks around unit										
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Cell run time										
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* Sanitizing water only

Date										
Time										
pH	Sanitizing water									
	Cleaning water									
	Neutralizer									
Available chlorine concentration*										
Salt level										
Neutralizing agent level										
Water hardness										
Water leaks around unit										
Water leaks from water circuit										
Cell run time										
Checked by										

* Sanitizing water only

[b] MONTHLY INSPECTION SHEET

Date										
Check power switch (earth leakage circuit breaker)										
Flush cleaning water circuit										

Date										
Check power switch (earth leakage circuit breaker)										
Flush cleaning water circuit										