



EcoClean Operation

Salt Chlorinating System for Residential Spas

The natural alternative to maintaining clean and clear water in your spa.

MODEL ST1 REGISTRATION NUMBER 27899.02 PEST CONTROL PRODUCTS ACT.

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**SECTION 01
INTRODUCTION & IMPORTANT SAFETY INSTRUCTIONS**

INTRODUCTION

Congratulations! You have purchased a Spa with an EcoClean system, one of the most technologically advanced spa sanitation systems in the world.

**IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS**

EQUIPMENT RELATED, INSTALLATION AND GENERAL USE:

Installation of all EcoClean models

When installing and using the EcoClean unit, basic safety precautions must always be followed, including the following:



WARNING Risk of electrical shock. Plug the unit into an approved G.F.C.I. electrical outlet (110VAC ONLY).



WARNING Do not use spas or hot tubs unless all suction grates are installed to prevent body and hair entrapment.



WARNING To reduce the risk of electric shock, replace damaged cords immediately.



WARNING To reduce the risk of electric shock, do not use extension cords to connect unit to electrical supply.

- People using medication and/or having an adverse medical history should consult a physician before using a spa or hot tub.
- People with infectious diseases should not use a spa or hot tub.
- The maximum spa water usage temperature is 40°C (104°F). Duration in spa water at 40°C (104°F) should not exceed 15 minutes. Lower water temperatures are recommended for young children and when spa use exceeds 10 minutes.
- Water temperatures in excess of 40°C (104°F) may be dangerous to your health.
- Pregnant or possibly pregnant women should consult a physician before using a spa or hot tub.
- Since excessive water temperatures have a high potential for causing fetal damage during the 1st trimester of pregnancy, pregnant or possibly pregnant women should limit the spa water temperatures to 38°C (100°F).
- The use of alcohol, drugs, or medication before or during spa or hot tub 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/hot tub.
- Persons using medication should consult a physician before using a spa or hot tub since some medication may induce drowsiness while other medication may affect heart rate, blood pressure, and circulation.
- Do not use a spa or hot tub immediately following strenuous exercise.
- Prolonged immersion in a spa or hot tub may be dangerous to your health.

WARNING To reduce the risk of injury do not permit children to use this product unless they are closely supervised at all times. Children should not use spa or hot tub without permanent adult supervision.

WARNING Risk of Accidental Drowning. Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use a spa or hot tub.

DANGER To reduce the risk of injury, do not remove the suction grates. Never operate a spa or hot tub if the suction grates are broken or missing. Never replace a suction grate with one rated less than the flow rate marked on the equipment assembly.

DANGER Risk of Electrical Shock. Do not permit any electrical appliance such as a light, telephone, radio or television within 1.5m (5 feet) of spa or pool.

To avoid injury, exercise care when entering or exiting the spa or hot tub.

WARNING The use of alcohol or drugs can greatly increase the risk of fatal hyperthermia in hot tubs and spas.

Consult your spa/hot tub manufacturer's manual for the proper adjustment of water temperature. Prolonged immersion in hot water may induce hyperthermia. Hyperthermia occurs when the internal temperature of the body reaches several degrees above the normal body temperature of 37°C (98.6°F). Hyperthermia symptoms include drowsiness, lethargy, and an increase of internal body temperature.

The effects of hyperthermia include:

- unawareness of impending hazard
- physical inability to exit the spa
- failure to perceive heat
- fetal damage in pregnant women
- failure to perceive the need to exit the spa/hot tub
- unconsciousness and danger of drowning

EXPOSURE TO DIRECT SUNLIGHT

Spas that are exposed to large amounts of direct sunlight will also burn through sanitizer at a higher rate. Ensure that the cover is closed when the spa is not in use and that the air control dials on the topside of the spa are also closed as this too will reduce your sanitizer levels if left on.

**SECTION 02
SPECIFICATIONS**

The operation of the Eco Clean system is very dependant of the water chemistry in your spa. Proper spa water conditions need to be in place to ensure that the system will perform at its best.

The EcoClean is designed to maintain the sanitizer level while the spa is not in use. If the bather load increases and/or the temperature are always set to 40°C (104°F), then there may be the need to add sanitizer as a supplement. The EcoClean runs in 30 minute cycles. There is an Output

control dial on the front of the Eco Clean. This will determine the length of each cycle.

- i) If the dial was set to 100% then the cell would be producing chlorine for the entire 30 minutes. Once the 30 minutes is up the cell would reverse the polarity and then it would run for another 30 minutes.
- ii) If the dial was set to 50% then the cell would be producing chlorine for the 15 minutes and then it would be off for 15 minutes. Once the 30 minutes is up the cell would reverse the polarity and then it would run for another 15 minutes. The reverse polarity function is designed to maximize the cell's ability to manufacture chlorine or bromine.

This dial should originally be set around 75%. Based on the water chemistry the first few days this can be adjusted until you find the correct setting for your usage.

**SECTION 03
PREPARATION, MONITORING AND OPERATION**

Manually balance the spa water chemistry to meet all suggested ranges of water balance factors listed below before startup of the EcoClean unit.

Fill your spa following instructions in your Owner's Manual. Upon a fresh fill of the spa you need to perform the following steps:

- 1) Completely balance the spa's water (as if there was no Eco Clean installed)
 - a. Sanitizer (Chlorine between 1ppm - 3ppm) (Bromine between 2ppm – 3ppm)
 - b. pH must be between 7.2 and 7.6
 - c. Alkalinity should be between 80ppm - 120ppm
 - d. Calcium hardness should be between 150ppm – 200ppm

2) Once the water is in full balance you will need to add the salt. (If you want to be running with a Chlorine system then you will need to use a Sodium Chloride and if you want to be on a bromine system then you need to use a Sodium Bromide). You need to ensure that the salt that you are using does not contain any Iodine or YPS. Chemicals can be obtained from any authorized dealership. At this point you will add the salt to the water when pumps are running. You want to have between 2200ppm – 3000ppm of salt. Once the salt has been added allow the salt to completely dissolve (15-20min) then you will need to re-adjust the pH level in the water.

3) You can now plug the Eco Clean into the pack (If not plugged already). This is a 120VAC application (should be on the audio/video plug). This will allow the unit to receive power 24hrs a day. Once this is connected and pump#1 is running you will see the ozone knob glow with a slight blue/green tinge. The Eco Clean light will also begin to blink Green for up to 30 seconds. During this time the EcoClean is measuring the salt content of the water.

4) If the light stays Green then the unit is now running and converting salt to sanitizer. If the light goes Red then there could be a problem with the salt levels or the Cell itself.

NOTE: Maintaining constantly high level of salt and bromine above the recommended range can contribute to corrosion of the pool equipment. Salt level exceeding the recommended concentration can be reduced by diluting the spa water with fresh water.

NOTE: Heavy uses of spa (excessive contamination) may require longer recovery times. Recovery time may be reduced by adding a shock compound to the water. Follow instructions of the shock compound being used.

MANUAL CLEANING OF CELLS

In normal conditions the EcoClean unit should not require manual cleaning. If manual cleaning is required, check water chemistry for possible imbalances or call the Dealer for consultation.

Use the following procedure:

STEP 1 Remove the cell.

STEP 2 Using a bucket, add 1 part muriatic acid to 4 parts of water. PUT WATER IN BUCKET FIRST.

STEP 3 Submerge the cell in the solution.

STEP 4 After 10-15 minutes of foaming, remove the cell. Rinse with fresh water.

STEP 5 If cell blades still have white crusty scale deposits on them, repeat the process, not to exceed 15 minute intervals.

CAUTION Always add acid to water, never water to acid.

NOTE: DO NOT try to remove any scale from the cell blades with any tools. This may scratch or damage the coating on the blades and will VOID WARRANTY.

BOOST OPTION

There is also a "BOOST" button on the system. This feature should only be used when there is a large increase in usage. If the bather load is 2 people twice a week and you end up having 8 people use it on a Friday night, then it is suggested that the "BOOST" button be pressed at the end of the night. This button will override the dial setting and automatically take the output to 100% for the next 24 hours.

POWER SUPPLY AND CELL

The power supply should be plugged into an 110VAC (Audio/Video) outlet on the circuit board. Cell is equipped with a DC cord. Cell is installed in a spa near the equipment area for easy access to the cell.

SECTION 04 - TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE	RECOMMENDED ACTION
Insufficient sanitizer production.	<ul style="list-style-type: none"> The test kit reagents or test strips are old or expired. The unit is set too low in relation to sanitizer demand. Low salt. 	<ul style="list-style-type: none"> Retest with new reagents or test strips. Increase the feed rate on the output dial. Check the residual salt level and add if necessary.
Scale build-up within the cell.	The water being sanitized contains high pH, alkalinity and calcium hardness.	Adjust the water chemistry. Dilute spa water with fresh water if necessary.
Premature cell failure.	Debris in cell.	Inspect cell monthly and clean if required.
DC Plug burned.	<ul style="list-style-type: none"> The cell cord plug is not securely pushed onto the power supply allowing moisture to seep into the plug. Completely failed cell. 	<ul style="list-style-type: none"> Ensure that the cell cord plug is pressed completely on the power supply. Replace the cell.
White flakes in the water.	This occurs when excessive calcium hardness is pre- sent in the water being sanitized. This should cease after a few days.	Monitor the pH and adjust if necessary.
No solid green "OK"	Incoming 110VAC power not present.	Ensure that the Spa circuit breaker is set to "ON"
Solid Red Light.	<ul style="list-style-type: none"> The cell is scaled. The cell DC cord is disconnected. Low Salt. Possible cell failure. 	<ul style="list-style-type: none"> Clean cell and re-install. Reconnect the DC cord properly. Check the residual salt level and adjust if necessary. Return power supply to your dealer for service or replacement.