

DAVEY

ECO  **matic™**

**Commercial
Salt Water
Pool Sanitizing System
Installation &
Operating Instructions
SCMax 77 & SCMax 155**



Please pass these instructions on to the operator of this equipment.

DEPEND ON
DAVEY

WATER PRODUCTS



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Commercial Salt Water Pool Sanitizing System

Congratulations! You are now the proud owner of a renowned ECO-matic High Output Salt Water Chlorinator. Please read all information in this installation and operating instruction carefully before installing or operating your Salt Water Pool Chlorinator.

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Packing List

Included with your ECO-matic system are the following items, please check the contents of the box carefully prior to installing the product:

1. Power Supply
2. Electrolytic Cell
3. Securing brackets and fasteners
4. Cell Adaptors x 2
5. Spare Fuses

IMPORTANT NOTICE

FACTORS THAT WILL IMPROVE THE PERFORMANCE & LIFE OF YOUR SALT WATER CHLORINATOR PLEASE READ THIS BEFORE OPERATING YOUR CHLORINATOR

Salt Water Chlorinators are a valuable piece of pool sanitizing equipment and must be cared for to get the best performance and life span from it.

There are **THREE** main factors that will damage your chlorinator and reduce the life of the product. Please monitor the following factors in accordance with your installation & operating instructions.

1. MAINTAIN THE RECOMMENDED SALT LEVELS:

SALT LEVELS: 4500-6000ppm

- Run chlorinator at the Salt Levels stated within this document and on the product to ensure optimum sanitizer output and cell life.
- Operating this device at low salt levels will damage the cell and reduce its life.
- The chlorinator will not run at full output and the control panel will display red LED indicator warnings when the salt levels are low.
- If no action is taken to rectify the salt levels, damage to the cell may result which will not be covered under warranty.

2. MONITOR & MAINTAIN YOUR CHLORINATOR CELL:

- To keep your salt water chlorinator in the best possible condition, regular monitoring of the electrolytic cell is recommended. The 'Cell' is the clear plastic housing containing the removable cell head.
- During the chlorination process a white powdery Calcium scale may naturally build up on the titanium plates in the cell. Monitor the cell to prevent excessive scale build up. Excessive scale build up will cause damage to your cell, and dramatically reduce its efficiency and lifespan.
- The control panel displays red LED indicator warnings when the cell requires cleaning.
- If Calcium scale builds up please clean the cell, following the cleaning instructions provided on page 10.
- **NEVER:** Use concentrated acid to clean your cell.
- **NEVER:** Leave cell in cleaning solution for extended periods of time
- **NEVER:** Use metal implements, scourers or brushes to clean your cell.

3. BALANCED POOL WATER CHEMISTRY:

- Salt levels **MUST** be maintained at 4500-6000ppm for optimum performance and lifespan.
- Calcium Hardness levels **MUST** be kept to the ideal range of **200ppm - 275ppm** (for concrete and tiled pools) and **0ppm - 275ppm** (for inert surfaces) to prevent excessive scale build up and damage to equipment
- pH levels **MUST** be kept between 7.2 and 7.6 to prevent damage to equipment and pool surfaces and to obtain optimum sanitizer effectiveness.
- Total alkalinity and stabiliser levels must also be kept in an ideal range. Please refer to the RECOMMENDED POOL WATER CHEMISTRY chart on page 13 for more information.

Technical Specifications

| | |
|---|---|
| Input Voltage (ac): | 220-240V |
| Supply Frequency / Phase: | 50/60Hz / Single |
| Maximum Input Current (ac): M4920 M4921 | 2.5 Amp 5.0 Amp |
| Power Consumption @ 230V: M4920 M4921 | 0.58 kW 1.15 kW |
| Output to Cell (dc): M4920 M4921 | 22-24V / 9A 24-26V / 25 A |
| Chlorine Gas Output: M4920 M4921 | 59 g/h, 3.12 lbs/d 118 g/h, 6.24 lbs/d |
| Ideal Salt Range: | 4,500 - 6,000 ppm |
| Cooling: | Fan & Heatsinks |
| Electrolytic Cell Type: | Coated Titanium - Reverse Polarity |
| Maximum water temp (in cell): | 45°C OR 113 °F |
| Minimum flow: M4920 M4921 | > 170 lpm * > 350 lpm * / 95 USgallons/min * Value based on a 10ppm chlorine level at cell outlet Please refer to Flow Rate Requirements pg 6 |
| Head loss @ 350lpm M4920 M4921 | 8kPa 13.2kPa |
| Pipe Connections: | 3" / 80mm or 2" / 50mm with adaptors |

Dimensions – PowerSupply Enclosure

| | Height | Width | Depth | Mounting | Weight |
|-------------|--------|-------|-------|------------------------------|--------|
| inches | 15.7 | 14.6 | 8.5 | 4 Holes: 10.6 W 12.8 H | 37 lb |
| millimeters | 400 | 370 | 215 | 4 Holes: 270 W 325 H | 17 kg |

Dimensions – Electrolytic Cell

| | Height | Width | Depth | Inlet / Outlet (Actual ID) | Plumbing Holes (From centre to centre) | Weight |
|-------------|--------|-------|-------|-------------------------------|--|--------|
| inches | 8.1 | 16.3 | 4.9 | 3.5 | 11 & ³ / ₄ | 6.6 lb |
| millimeters | 206 | 415 | 125 | 89 | 294 | 3 kg |

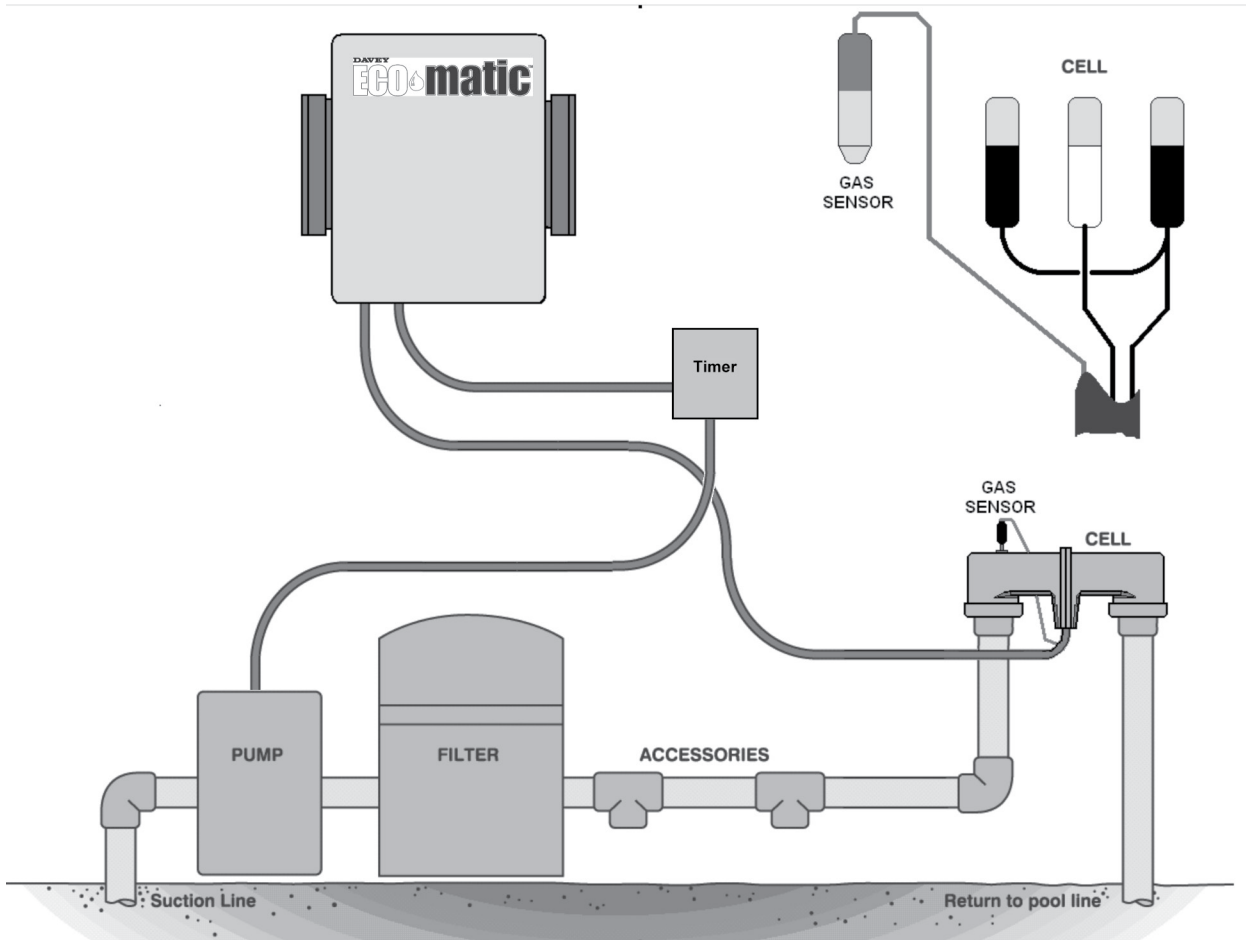
Flow Rate Requirement

| Model | Nominal Rated Chlorine Gas Output | | Minimum Flow Rate in Cell | |
|------------|-----------------------------------|------------|---------------------------|----------|
| SC Max 77 | 53 g/h | 2.83 lbs/d | > 170 lpm | > 45 gpm |
| SC Max 155 | 106 g/h | 5.65 lbs/d | > 235 lpm | > 63 gpm |

NOTE: In certain installations, these minimum flow rates may be insufficient to fill the cell housing completely with water – in these cases the flow must be increased to ensure that the cell plate surfaces are completely immersed, otherwise damage will occur and decreased cell life will result.

Installation Instructions

This system is not intended for outdoor installation. If a pump/filter room is not available, a shelter providing shade and weather protection will be necessary. Please note that the installation area should be well ventilated and free of substances that cause corrosion.



Installation must be done in accordance with any local regulations.

When deciding on the position of the unit, take care to allow for the cable lengths available. The power supply and electrolytic cell are very heavy, allow for this during installation. If any components are dropped, damage will occur. The electrolytic cell can be plumbed in using 3" (80mm) or 2" (50mm) Imperial size PVC pressure pipe.

Power Supply

The power supply box should be wall mounted using the brackets provided which are designed for masonry bolts/wall plugs. The brackets provide a gap between the back of the unit and the wall for sufficient air flow. The unit can be lifted on and off the brackets. Instructions for the mounting brackets are inside the bracket package.

The power supply box should be mounted approximately 4ft - 5ft above ground level.

NOTE: The unit is heavy – Approx. 37.5 lbs (17 kg). Please allow for this when installing.

Electrical Connections

Mains Connection

The Power Supply has a power cord attached to the left-hand side of its bottom panel. The power cord should be connected to mains power using the correct sized male plug or by hardwiring straight into the control box. The earth must be connected. The General Purpose Outlet / Control Box to which the unit is connected should be protected by a Residual Current Device (RCD Safety Switch), see local electrical regulations.

The electrical supply to the unit should be interlocked to the main pump(s). That is, if the main pump(s) are turned off, so is power to the unit.

Connecting the electrolytic cell to the power supply

The Power Supply is fitted with a flexible power lead terminated with brass compression connectors. These must be securely fitted to the rod terminals on the underside of the cell. Fit black connectors to the outer rods and fit the white connector to the middle rod. Use spanners to tighten the nuts on the brass connectors for a secure fit.

The blue flow sensor must be pushed onto the thread of the small bolt on the top of the cell and fitted securely.

Pre Start-Up Procedure

Before operating your ECO-matic chlorinator please ensure the following items have been added to your pool:

Salt

Load salt into the pool at a minimum rate of 35 to 50 lbs per 1,000 gallons. It is best to allow 24 Hrs for salt to dissolve, use vacuum system if fitted to assist in dispersing salt.

Brushing may be necessary to move salt towards the main drain

Salt is available at most pool supply stores, home improvement centers, hardware stores, etc, usually in 40 lb, 50 lb, or 80 lb bags.

Chlorine

For a new pool installation that has not yet been chlorinated, add sufficient chlorine (liquid or granular) to achieve a reading of 3 ppm (free Cl₂) (with a suitable test kit), or run the chlorinator system continuously for at least 24 hours or until a reading of 3 ppm (free Cl₂) is reached.

Stabilizer

For outdoor pools it is essential that pool stabilizer be added and maintained at the rate of 25 ppm (25 mg/L) at all times. Do not exceed 50 ppm.

Operation of the ECO-matic System

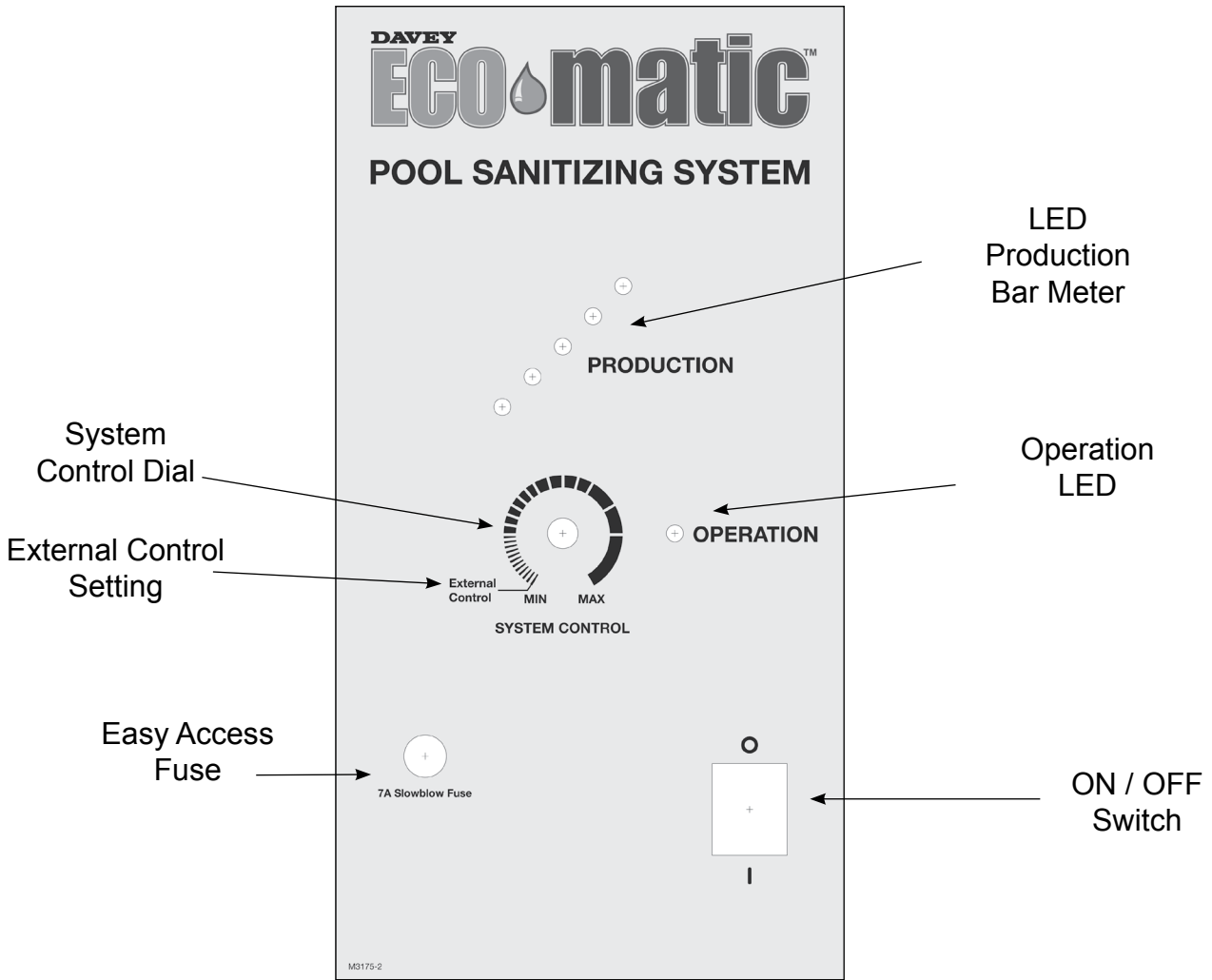
The electrolytic **Cell Output** is shown on a **PRODUCTION** meter made up of a bar of five **LEDs** on the left-hand side of the control panel. Normal cell operation is indicated by five green LEDs being on.

The Unit is fitted with an electronic control and warning system. This regulates the output of the Unit to a preset maximum. The warning system consists of an **OPERATION LED** which will glow Red to indicate possible faults with the Unit or damaging operating conditions.

Once the salt level in the pool is correct the Unit may be switched ON. The **OPERATION LED** will be Green and no **Cell Output** will be seen for approx. 60 seconds, this allows the pump and filter to prime and the Cell Housing to fill with water. After this start-up delay, the bar meter should light up showing all five LEDs. At this point the **WARNING LED** should be Green; if it is Red it indicates that there is a problem and please refer to the table below.

| Production Bar Meter | Operation LED | Reason / Action |
|----------------------|---------------|--|
| Off | Green | <ol style="list-style-type: none"> 1. Start – up delay functioning. 2. System Control dial set below MAX. Cell is turned off. (Refer System Control page 12). |
| 5 LEDs | Green | System operating normally |
| Less than 5 LEDs | Green | <ol style="list-style-type: none"> 1. Salt level is too low. Add a rate of 8.5 lbs per 1,000 gallons until recommended salt level reached. 2. Cell is calcified. Clean cell. 3. Water temperature low. Add salt to compensate |
| Less than 5 LEDs | Red | <ol style="list-style-type: none"> 1. Salt level is very low. Add a rate of 8.5 lbs per 1,000 gallons until recommended salt level reached. 2. Cell is calcified. Clean cell. 3. Water temperature low (<77°F). Add salt to compensate |
| Off | Red | <ol style="list-style-type: none"> 1. Gas detected. Check pump/pipes for damage or blockage. 2. Gas sensor not connected to cell |

ECO-matic Control Panel



Special Features

System Control

The System Control varies the amount of time the Cell operates during the filtration cycle. The **System Control** will **not** vary the electrical current supplied to the Cell. As an example, if one filtration cycle is set at 5 hours, and the **System Control** is set to 80%, then the total amount of time the Cell will operate during the 5-hour cycle will be 4 hours. If the **System Control** is set to 60%, the Cell will operate for 3 hours total over the 5-hour filtration cycle.

During the filtration cycle, the Cell will be turned ON and OFF a number of times each hour, unless the **System Control** is set at MIN or MAX.

When the **System Control** is set to MIN, the Cell will be OFF for the duration of the filtration cycle. When the **System Control** is set to MAX, the Cell will be ON for the duration of the filtration cycle.

If the Cell is OFF and you wish to check its operation, simply turn the **System Control** to MAX and the Cell will turn ON. Once checked, adjust the **System Control** back to the desired position and after a few minutes the Cell will turn OFF again.

To turn the Cell OFF, simply turn the System Control to MIN. This will be convenient for backwashing.

Warning LED

Your ECO-matic chlorinator is fitted with a number of protective systems including the **Warning LED**. As the salt level in the pool decreases, the wear on the Cell increases. Although salt is not consumed in the electrolysis process, it is lost through splashing, back-washing and on bathers as they leave the pool. The salt level is also reduced by rain, which causes dilution. Salt is not lost to evaporation. As the salt level in the pool falls below the minimum the **Warning LED** will turn RED. At this point the salt level should be increased by adding 55lb of salt per 6600 gallons of pool water. *It is recommended that manual testing of chemical levels be tested over time to ensure correct levels are maintained.

There are other factors that can cause the Unit not to work correctly:

1. **Heavy Rain** - can dilute the salt level in the pool . Low levels of salt may cause damage to cell
2. **Scaled Cell** - a scaled Cell will not draw as much electrical current as a clean Cell when first started.
3. **Cold Water** - cold pool water reduces the conductivity of the water, lowering the effectiveness of the unit.
4. **Failing Cell** - as the Cell ages there will come a time when the electrical current draw will drop. This can be compensated for with the addition of extra salt. A Cell is considered failed when it draws less than 80 % of maximum current. To keep a failing Cell in operation extra salt can be added. There will come a time when the Cell will not respond to extra salt. It will then need to be replaced.

Please note that the **Warning LED** is not like T.D.S. meters, which are temperature compensated Scientific Instruments. The accuracy will be within ± 500 ppm salinity and it is water temperature dependent.

Maintenance of the Power Supply

Little maintenance is normally required with the exception of replacing blown **Fuses**. These **7 Amp Slow Blow Fuse** can be sourced from your local ECO-matic dealer. However it is essential that the wall to which the Unit is installed be sprayed (not the Unit itself) periodically with a good surface type insect repellent, since penetration by insects may cause damage which is not covered by your warranty.

The Unit will become warm to hot when in operation, this is normal.

Safety Notice

Certain local electrical regulations state that if the supply cord is damaged, it must be replaced by a genuine cord available from the manufacturer or its service agent.

Maintenance of the Electrolytic Cell

The ECO-matic system uses a patented **electronic reverse polarity cleaning** system to clean the cell and reduce operational maintenance. In ideal conditions reverse polarity systems will require little or no manual cleaning, however in areas with hard water (high calcium hardness), reverse polarity systems may require occasional manual cleaning.

Calcium and other minerals are deposited on the cell plates as electrolysis takes place. This build up will interfere with the flow of electrical current in the Cell and thus lowers sanitizer production. It is essential to inspect the Cell regularly and clean when necessary.

The rate at which deposits will form on the plates differs with each pool and can be influenced by the following:

- Calcium hardness of the water
- Water Temperature
- pH control
- Water which has been chlorinated with calcium hypochlorite for an extended period
- Calcium in the plaster surfaces of a concrete pool

Because these conditions vary so much, check the Cell at least weekly to begin with to see if any deposits appear on the plates. You will then be able to determine the cleaning cycle necessary for your pool (obviously more in summer).

The intervals between cleaning could get longer to the point where cleaning is only necessary a few times each year. One exception is the use of bore water or ground water, in which case cleaning may always need to be as frequent as once a week.

If the cell remain dormant for a period of time or there is evidence of rust within the cell or on the cell plates, an acid wash clean of the cell (please refer to page 10 – How to clean you ECO-matic cell) is required prior to use of the sanitising system.

Life of ECO-matic electrolytic cells will vary substantially from one installation to another due to variations in operating time, water quality and composition, system and cell maintenance. Please ensure that when cell replacement is necessary you use the correct genuine ECO-matic replacement cell to match your system.

Note: Only an ECO-matic reverse polarity cell is approved for use with an ECO-matic (formerly known as Eco-salt SC MAX) Power Supply.

Serious damage may result to the electronics inside the unit if copy cells are used and may therefore void the warranty.

How to clean your ECO-matic Cell

First disconnect the cell from the Power Supply Unit and remove from the pool return line by undoing the unions. Take care not to lose the o-rings and always make sure the pump is turned off.

Always wear personal protective clothing such as rubber gloves and glasses while cleaning your cell.

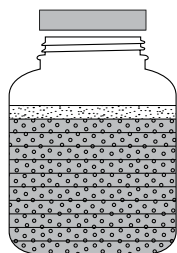
Method 1:

Add 1 part (3% active strength) Hydrochloric Acid (Muriatic Acid) to 10 parts water in a suitable container. The Cell should be placed on a surface that allows it placed upside-down to form a U shape. The solution can be poured into the up-turned cell. Take care when doing this as the solution can foam and create a spill which must be cleaned up by dilution. When clean, the Cell should be rinsed thoroughly with water and the connection should be dried carefully to avoid connector corrosion. It should not take longer than a few minutes to clean; if it does the Cell should be cleaned more frequently. Return the Cell to its position and re-connect it.

Method 2:

As an alternative, an approved commercial Cell cleaning solution can be used a number of times effectively. Frequent cleaning of cell required in areas with water containing high iron content.

Warning: NEVER add water-to-acid. ALWAYS add acid-to-water



**3% Active
Strength
acid in
water**

The weak acid solution can be stored in a safe place (where children cannot access it) and re-used several times before becoming ineffective (saves having to make the solution each time). Avoid getting the acid solution on skin or in your eyes. If you accidentally do so, wash off immediately with fresh water (or use the pool/spa water).

Please do not hesitate to contact your ECO-matic Dealer for any assistance regarding 'Cell' cleaning.

Safety Device

Hydrogen Gas is a by-product of the chlorine production process. A Gas Sensor has been incorporated into the Unit and Cell, which will switch off chlorination if gas is detected in the Cell Housing or there is no water flow.

WARNING: This safety device should not be altered with in any way.

Day to Day Operation

These prime rules must be observed if your unit is to give the best possible service:

1. Stabilizer:

Measure the stabilizer level using an appropriate test kit. It should be between 30 and 50ppm.

If the pool has never had stabilizer added, then approx. 50ppm of stabilizer should be added. Follow the directions for adding it or load it directly into the pool pump inlets.

If there is some stabilizer present, but it is below 20ppm, add 30ppm to the pool and re-measure the level once it has dissolved. Then add enough to make up the 50ppm. The amount of stabilizer to add is calculated as follows:

$$\text{Stabilizer (lb)} = \frac{(\text{Level required} - \text{Level measured}) \times \text{Pool Vol. (ft}^2\text{)}}{1000}$$

E.g. a 820m³ pool has 30ppm of stabilizer present. Need to add 20ppm or 11lb.

IMPORTANT: Stabilizer is for use in outdoor pools only. It is used to reduce the loss of chlorine due to the effect of sunlight. It should not be used in indoor pools as it may adversely affect pool chlorine demand.

IMPORTANT: Stabilizer is very slow to dissolve and if it is loaded into the pump inlets it can sit in the filters for a number of days. If the filters are backwashed it will be lost. Monitor the stabilizer after back washing.

2. pH and Total Alkalinity

A correct pH level must be maintained to prevent problems such as black spot, staining, cloudy water, etc. An incorrect pH level can damage the pool. Correct pH levels are as follows:

- Concrete & Tiled – 7.4 to 7.6
- Inert Surfaces – 7.2 to 7.4

If you allow the pH level to rise to 8.0 or above the chlorine required could be as much as three times the normal amount and can cause increased cell scaling. To lower the pH add Hydrochloric (Muriatic) acid. To raise the pH level add Sodium Bicarbonate or Soda Ash.

Total Alkalinity should not be confused with pH, although the two are closely related. The correct Total Alkalinity buffers the pool water against rapid changes in pH and prevents what is known as pH 'bounce' where the pH value rises and falls sharply. It is measured in ppm; the ideal range is 80 to 120 ppm, or refer to your pool professional.

You should use a test kit which includes a test for Total Alkalinity. Low Total Alkalinity can cause unstable pH levels – i.e. An inability to keep the pH constant may cause staining, etching and corrosion of metals. High Total Alkalinity will cause constantly high pH levels. To lower, add Hydrochloric Acid (a little at a time). To raise, add Sodium Bicarbonate.

3. Salt Levels

Salt levels **MUST** be maintained at 4500-6000ppm for optimum performance and lifespan. Operating the Unit with too little salt in the pool will cause damage to your Cell.

Salt is the essential element by which your Unit operates. Low salt means low chlorine production - this simple rule governs the total operation of your ECO-matic and insufficient salt **WILL** damage your Cell.

Salt is NOT consumed in the process of producing chlorine or by evaporation. Salt is only lost through back - washing, splash - out, overflow or by leakage from the pool or plumbing. Rain can dilute the salt solution in your pool; therefore salt levels should be checked after heavy rainfall.

Colder water lowers the conductivity of the pool water. This will reduce the unit output and turn the WARNING LED red. If this occurs extra salt should be added or damage to the cell will result. If water temperature is below 65 °F, it is suggested the ECO-matic unit be switched off .

Low salt levels will destroy the coating on the Anode plates and will void all Warranty.

The ECO-matic unit has a built in warning system to minimize damage resulting from insufficient salt levels, however, the ultimate responsibility is on the owner to ensure adequate salt levels are maintained all year round.

WARNING: Monitor water chemical levels at regular intervals. If overdosing of chemicals occur, ensure bathers are prevented from entering the pool until water chemical levels are returned to normal range..

Chlorine Production

The ECO-matic unit must be run daily to generate sufficient chlorine to sanitise the pool. If the level is too low either longer running times are required or the **System Control** needs to be adjusted higher. Harsh local conditions such as traffic pollution or windborne dust require different running times; in which case, seek advice from your pool shop. Without sufficient filtration/chlorination, your pool will never function correctly. **Always run the filtration system when swimming in the pool.**

In some cases you may find your chlorine level to be too high. To determine if this is the case, run your filter/chlorinator for the suggested times/chlorine production level and test your pool water on the morning after operation. If your chlorine test shows a high level of chlorine, either the running times can be reduced slightly, or the **System Control** can be turned anti-clockwise. Test your chlorine level again the following morning at around the same time. If your chlorine level is still high, repeat the above process until the correct level is attained.

Super Chlorination

Periodically, especially during extremely hot conditions, it may be necessary to boost the amount of chlorine in your pool in order to maintain absolute sanitation of the water. This can be achieved by adding either liquid or granulated chlorine. If granulated chlorine is added, the Cell must be checked regularly, since the additives from this product will clog the electrodes. Alternatively, extend the running time of your ECO-matic.

General Information

| Recommended Pool Water Chemistry | | | | | | |
|----------------------------------|---|---|----------------------------------|--|---|---|
| POOL WATER BALANCING | Free Chlorine (ppm) | pH | Total Alkalinity TA (ppm) | Calcium hardness (ppm) | Stabilizer – Cyanuric Acid (ppm) | Salt Level (ppm) |
| Ideal reading / Range | 1 – 3 | 7.2 – 7.6 | 80 – 120 | Concrete & Tiled Pools: 250-400 | 25 – 50 | 4500 – 6000 |
| To increase | Increase output of chlorinator. Add chlorine. Increase filtration time. | Add buffer or soda ash (Sodium Carbonate) | Add Sodium Bicarbonate | Add Calcium Chloride | Add Cyanuric Acid | Add Salt |
| To Decrease | Decrease output of chlorinator. Reduce filtration time. | Add Hydrochloric (Muriatic) Acid | Add Hydrochloric (Muriatic) Acid | Partially drain & refill pool with lower hardness water to dilute. | Partially drain & refill pool to dilute | Partially drain & refill pool to dilute |

Algae - Microscopic forms of plant life which enter the pool by rain, wind and dust. There are numerous varieties - some are free floating whilst others grow on walls and in cracks and come in different colours. Some are more resistant to chemical treatment than others.

Bacteria - The germs that contaminate your pool. Introduced by swimmers, dust, rain storms and other elements.

Balanced Water - The correct ratio of mineral content and pH level that prevents pool water from being-corrosive or scale forming.

Chloramines - Compounds formed when chlorine combines with nitrogen from urine, perspiration, etc. Chloramines cause eye and skin irritation, as well as unpleasant odours.

Chlorine Demand - The chlorine required to destroy germs, algae and other contaminants in the pool.

Chlorine Residual - The amount of chlorine remaining after chlorine demand has been satisfied. This is the reading obtained with your test kit.

Cyanuric Acid - Also known as stabiliser or conditioner. It reduces dissipation of chlorine by direct sunlight.

Liquid Acid - Chemical used to reduce the pH and total alkalinity in the pool water, and for cleaning chlorinator Cell.

ppm - An abbreviation for Parts Per Million the accepted measurement of chemical concentration in swimming pool water. 1 ppm = 1 mg/L.

IMPORTANT: Always insist on genuine Davey ECO-matic replacement cells and parts. If it is necessary to replace the Electrolytic Cell, beware of “look alikes”. Only the Genuine ECOmatic Cell is designed and warranted to operate with the ECO-matic.

Serious damage may result to the electronics inside the unit if copy cells are used and may therefore void the warranty.

Patent Information

ECO-matic Reverse Polarity systems are protected by Australian Standard Patent Number 684550.

Trouble Shooting

No Chlorine Production:

- Check for:

1. Main power outlet switched off
2. Chlorinator not plugged into mains power outlet
3. Pump not operating
4. Power switch turned OFF
5. **System Control** turned to “O” setting
6. Chlorinator slow blow amp fuse blown
7. Dirty Cell
8. Filter needs backwashing
9. Gas Sensor not connected

Low Chlorine Production:

- Check for

1. Dirty Cell - clean if required
2. Filter needs backwashing
3. Display not at correct production level/Cell failing
5. Pool stabilizer too low
6. pH too high
7. Salt level too low
8. ECO-matic running time inadequate
9. **System Control** turned too low

WARNING: If flow sensor is incorrectly installed or a no flow condition exists it may result in potentially hazardous conditions due to hydrogen gas build up or elevated chlorine concentration within the cell. If these situations occur, ensure bathers are prevented from entering the pool and ensure sufficient flow is returned to the cell to flush gas and chemical concentration back into the pool. Bathers should only return to the pool once chemical levels are returned to normal.

Warranty Information:

(This warranty is applicable to the USA and Canada only)

The ECO-matic® & EcoSalt® product is warranted that if any component, other than fuses, proves to be defective within a period of 36 months for the ECO-matic® & Eco-Salt® product, and for a period of 12 months for the ECO-matic® replacement Cell from the date of purchase, that the defect will be repaired or the product will be replaced free of charge.

To find an authorized ECO-matic® warranty station near you, call ECO-matic® Customer Service at (877) 885-0585 or go to www.ECOMaticusa.com

During the Warranty period any defective product shall be repaired or replaced by an authorized warranty station or returned by the customer to its place of purchase, accompanied by proof of date of purchase. Product will either be repaired or replaced and returned freight prepaid.

There is no responsibility other than the repair or replacement of defective product and this Warranty specifically excludes product failure due to accidental damage, abuse, misuse, negligence, damage due to non-compliance with Installation or Operating Instructions or unauthorized alterations or modifications to the product. No responsibility or liability accepted for any extended warranties or variations to this warranty offered by re-sellers.

ECO-matic Manufactured by:

Davey Water Products Pty Ltd

Member of the GUD Group
ABN 18 066 327 517

Head Office and Manufacturing

6 Lakeview Drive,
Scoresby, Australia 3179

Help to find a Dealer: www.ecomaticusa.com Parts or Service: Phone 877-885-0585

Your local ECO-matic Dealer:

Selection Guides

Selecting the right Chlorinator

| | Run Time | Pool Volume Cool Climate (<80°F) Cool Climate (<25°C) | Pool Volume Temperate Climate (80-85°F) Temperate Climate (30-35°C) | Pool Volume Hot Climate (>85°F) Hot Climate (>35°C) |
|---|----------|---|---|---|
| Chlorinator Residential | | | | |
| ESC16 / ESC6000 16 grams / hour | 8 Hours | 80,000 litres 21,000 gallons | 65,000 litres 17,000 gallons | 50,000 litres 13,000 gallons |
| ESC24 / ESC7000 24 grams / hour | 8 Hours | 120,000 litres 32,000 gallons | 95,000 litres 25,000 gallons | 75,000 litres 20,000 gallons |
| ESC36 / ESC8000 36 grams / hour | 8 Hours | 180,000 litres 48,000 gallons | 145,000 litres 38,000 gallons | 115,000 litres 30,000 gallons |
| ESC50 / ESC9000 50 grams / hour | 12 Hours | 250,000 litres 66,000 gallons | 200,000 litres 53,000 gallons | 160,000 litres 42,000 gallons |
| EcoSalt™ Residential | | | | |
| EcoSalt8 8 grams / hour | 8 Hours | 40,000 litres 10,000 gallons | 30,000 litres 8,000 gallons | 24,000 litres 6,000 gallons |
| EcoSalt13 13 grams / hour | 8 Hours | 65,000 litres 17,000 gallons | 50,000 litres 13,000 gallons | 40,000 litres 10,000 gallons |
| EcoSalt20 20 grams / hour | 8 Hours | 100,000 litres 26,000 gallons | 80,000 litres 21,000 gallons | 64,000 litres 17,000 gallons |
| EcoSalt26 26 grams / hour | 8 Hours | 130,000 litres 35,000 gallons | 100,000 litres 26,000 gallons | 80,000 litres 21,000 gallons |
| Chlorinator Light Commercial | | | | |
| SC Max 77 50 grams / hour | 20 Hours | 600,000 litres 160,000 gallons | 480,000 litres 125,000 gallons | 384,000 litres 100,000 gallons |
| SC Max 155 100 grams / hour | 20 Hours | 1,200,000 litres 320,000 gallons | 960,000 litres 250,000 gallons | 768,000 litres 200,000 gallons |

Table should be used as a guide only.

- All sizes based on low to moderate bather load. If high bather load anticipated, recommended to use next size up.
- All sizes based on NO water features - i.e. Water feature, fountains etc
- All sizes based on a non-heated pool.
- All sizes based on low environmental factors - i.e. dust, leaves, pollutions etc.
- Higher run times and outputs than quoted may reduce the life of the chlorinator light commercial sanitizer cell and may void product warranty.
- Run times quote for chlorinator light commercial are for use on light-commercial applications only as specified in the pool product selection chart.

Selecting the right Pump

| LITRES | GALLONS (US) | Run Time | Pump |
|---------|--------------|----------|---------------------------|
| 30,000 | 8,000 | 6 Hours | SLS100 |
| 50,000 | 13,000 | 6 Hours | SLS150 SLL150 |
| 70,000 | 18,500 | 6 Hours | SLS250 SLL250 PM200 |
| 100,000 | 26,000 | 6 Hours | SLS300 SLL300 PM250 |
| 120,000 | 32,000 | 6 Hours | SLL300 PM350 |
| 150,000 | 39,000 | 6 Hours | PM450 PM4503P |
| 200,000 | 53,000 | 6 Hours | PM4503P |

HOW TO CALCULATE POOL VOLUME

The formulae below require all dimensions to be in metres. If the depth of the pool varies, the average depth should be used.

Rectangular Pools

Length x Width x Depth x 1000 = Volume in litres

Circular Pools

Diameter x Diameter x Depth x 785.5 = Volume in litres

When you have calculated the pool volume go to page 37 to select the right chlorinator and pump.

Useful Information

Measurements

| UNITS | CALCULATION |
|-----------------------|--------------------|
| Volume | Multiply By |
| UK gallons to litres | 4.546 |
| litres to UK gallons | 0.22 |
| US gallons to litres | 3.79 |
| litres to US gallons | 0.264 |
| Linear | Multiply By |
| feet to metres | 0.305 |
| metres to feet | 3.281 |
| inches to millimetres | 25.4 |
| millimetres to inches | 0.0394 |
| Pressure | Multiply By |
| psi to kPa | 6.89 |
| kPa to psi | 0.145 |
| kPa to metres head | 0.102 |
| metres head to kPa | 9.81 |
| psi to feet head | 2.31 |
| feet head to psi | 0.433 |