Warranty Card

Get it right!

ENDURO™ Chlor

SALT CHLORINATOR

SC25–TS

OWNERS MANUAL

Get it right!

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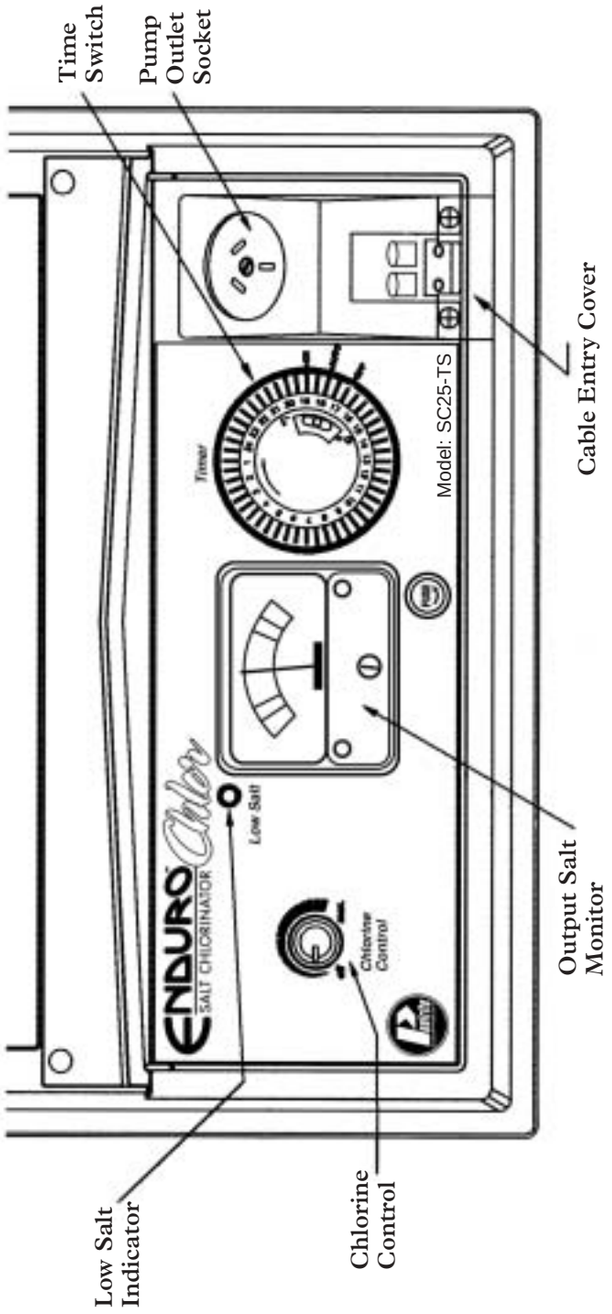
Manufactured by Poolrite Equipment Pty Ltd ABN 11 001 674 004 Website: **www.poolrite.com.au** Email: **info@poolrite.com.au**

PLR/183 (05/05)

Poolrite Enduro-chlor
Power Pack Controls and Connections



WARRANTY CARD

Enduro Chlor Salt Water Chlorinator

Poolrite Equipment Pty. Ltd.

Your Poolrite Enduro Chlor is manufactured to the highest possible standards and most up-to-date technology.

Accordingly the equipment carries the following Warranty, should a fault occur due to faulty manufacture or materials.

Important

In the event of a fault covered by Warranty occurring, the Purchaser must, in the first instance, contact Poolrite Equipment Pty. Ltd. or the closest authorised Poolrite Distributor. Poolrite Warrant the **original** purchaser of the Power Pack and Chlorinator Cell for a period of 1 year (12 months) from the Date of Purchase by the **original** Owner, should examination disclose to its satisfaction that the Cell or Power Pack has failed due to faulty manufacture or materials. In addition, for a further period of 2 years (24 months) the Chlorinator Cell will be repaired or replaced at Pro Rata cost from Date of purchase by the **original** Owner.

The Warranty is void if the following occur:

1. Damage resulting from matters beyond Poolrite's control.
2. The Cell or Power Pack has been installed incorrectly and not in accordance with these instructions.
3. The Power Pack has been connected to a power supply other than 240 volt 50 Hz.
4. The Cell or Power Pack has been used for any purpose other than swimming pool or spa sterilisation.
5. Water above the temperature of 45°C has been permitted to flow through the Cell.
6. Water has not been permitted to flow freely through the Cell when turned on.
7. The safety flow detector or connections have been tampered with.
8. The Power Pack has been serviced by a person other than a person authorised to do so by Poolrite or it's agent.
9. The Cell power terminals have been submersed in acid solution when cleaning.
10. Non-swimming pool grade salt has been used in the pool.

This Warranty is applicable to workmanship and materials. Poolrite will repair or replace at no charge, all parts returned freight paid, which display faulty workmanship or materials.

Poolrite Equipment Pty. Ltd. accepts no responsibility for loss, damage or injury to person or property arising from Warranty failure of equipment, or installation of that equipment. Unless with the express prior authority of Poolrite, any repair or replacement shall be provided only by Poolrite or it's authorised distributors and this Warranty shall not extend to any expenditure otherwise incurred.

Warranty Card

Name of Purchaser

Address

Purchased From

Date

Equipment and Model

IMPORTANT: This card must be filled in and returned to Poolrite Equipment Pty. Limited within 14 days of purchase to render the Warranty effective.

Queensland Head Office
Sales & Export Brisbane
415 Creek Road,
P.O. Box 520,
Mt. Gravatt. QLD 4122
Telephone: (07) 3323 6555
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Poolrite Equipment Pty. Ltd.
Unit 22, 761 Great South Road,
Penrose. Auckland
New Zealand.
Telephone: (09) 571 0210
Facsimile: 0800 766 574

INDEX

INSTALLATION INSTRUCTIONS

OWNERS MANUAL

Please hand this Owner's Manual to the pool owner after installation is completed as it contains the Warranty Card and vital information for correctly maintaining the pool and this product!

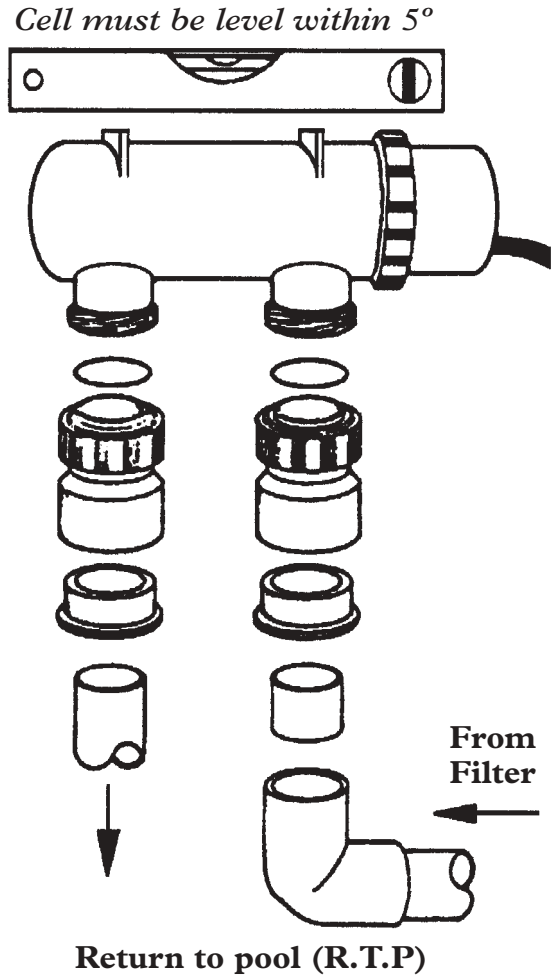
ENDURO CHLOR CELL

Ideally, the electrolytic cell should be installed in a position with 1.5 metres of a vertical wall or fence to allow the Power Pack to be easily mounted without the need to provide an additional post.

The cell must be installed horizontally (level) within 5°, in the return to pool line, with the two plumbing ports and arrow on label pointing down.

The water can flow in either direction through the cell.

Heaters and other equipment in the return to pool line must be before the cell i.e. between the cell and filter.



Warning: The Warranty will be void if the cell is not installed exactly as specified.

ENDURO CHLOR POWER PACK

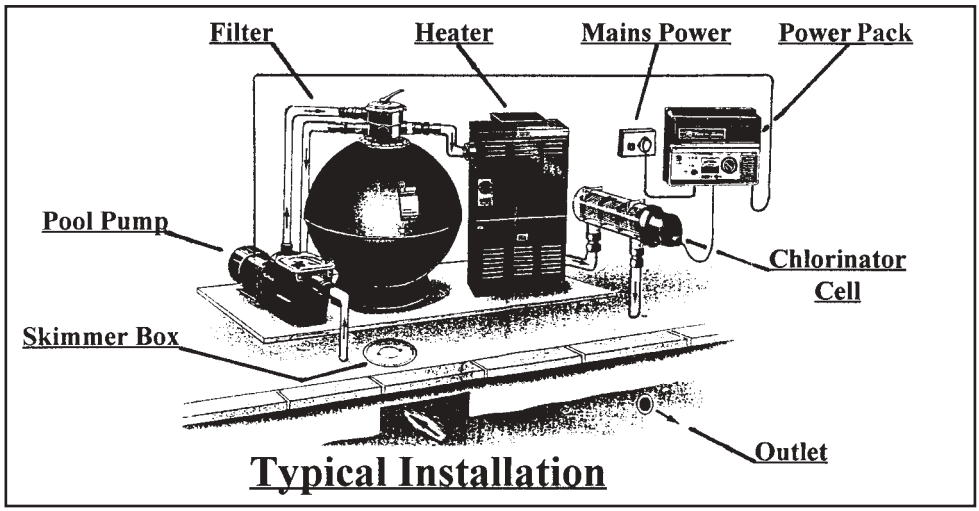
The Power Pack Enclosure is approved and rated to **Degree Of Protection IP24** and therefore can legally be installed in the **Pool Zone** as defined in the AS/NZS 3000 Wiring Rules. It **must** be mounted on a vertical wall or fence within 1.5 metres of the cell and at least 1 metre above the ground. Also, it **must** be in a position to allow its supply lead to be plugged into a 10 amp 240 volt power point.

Remember the filter pump must be plugged into this Power Pack.

Start by selecting a suitable place to attach the Mounting Bracket using the two screws provided. The Mounting Bracket must be fixed with the screws horizontal and the vent louvres above the screws facing upwards.

If no suitable wall is available, then install a 100mm x 100mm hardwood post with a vertical mounting board 400mm wide x 300mm high x 18mm thick attached.

Hook the Power Pack onto the Mounting Bracket by the top edge at the rear of the box. When secure, plug the power lead into a suitable 240 volt power point but do not switch on.



CONNECTING THE POOL PUMP

- Raise the clear Control Panel Cover on the front of the Power Pack and loosen the two retaining screws in the bottom right hand corner and remove the Cable Entry Cover by pulling downwards.
- Plug the pool pump into the pump socket at the bottom of the unit. (see **Note** below about the use of large or 3 phase pumps).
- Refit the Cable Entry Cover making sure all cables pass through the tunnel behind it to ensure they do not interfere with the proper closing of the Control Panel Cover.
- Tighten retaining screws.

Off-Peak Installations

This unit is not suitable for connection to an off-peak tariff supply.

Warning: The Warranty will be void if the Power Pack is installed or operated .....

a) on, or less than 1 metre from the ground.

b) in a position where flooding from ground water could occur.

c) where the airflow is obstructed, i.e. within an unvented auxiliary enclosure.

d) with the weatherproof Control Panel Cover permanently open or removed if installed outdoors.

e) with a load (pump) connected to the 240 volt pump outlet socket greater than 1.5kw (continuous).

e) from an electrical supply socket which is not rated to supply 10 amps at 240 volts 50Hz and is not adequately protected by the correct size fuse or circuit breakers.

Note: If a pump load greater than 1.5Kw or the use of a 3 phase pump is required, an interface relay must be installed.

If double adaptors or stackable plugs are employed to operate more than one pump directly from this Pump Outlet Socket the Warranty will be void.

Please refer to your Poolrite State Office for details.

ADDING SALT TO THE POOL

Start up procedure for marble surface pools
For new concrete pools with marble plaster (marblesheen) finishes we recommend that the salt not be added to the pool until the excess calcium compounds in the plaster have leached out and the pH of the water has stabilised.

The recommended stabilising period is:

- For hand mixed/applied plaster 12 weeks.
- For machine mixed/applied plaster 24 weeks.

During this period the pool should be sterilised with liquid chlorine.

Calculating Pool Capacity
Swimming pool grade salt (low mineral content Sodium Chloride) must be added to the pool and allowed to completely dissolve before operating the chlorinator cell.

The amount of salt to be added cannot be calculated until the volume of water contained in the pool is determined.

This water volume can be obtained by:

(a) Referring to the pool manufacturer's data (if pre-moulded fibreglass).

(b) Reading the difference on the water meter before and after filling.

(c) By mathematical calculation.

Formula For Calculating Water Volume
Water Volume (m^3) = [Surface Area (m^2) x Average Depth (m)] minus [Volume occupied by steps, swim-outs, etc.]

Calculating Salt To Be Added
The amount of salt to be added to the calculated volume of water in the pool depends on the salt concentration selected.

$$\textbf{Salt Quantity (kg)} = \frac{\textbf{Water Volume } (m^3) \textbf{ x Salt Concentration (mg/l)}}{\textbf{1000}}$$

For example, if the calculated volume of water in your pool is 60.0 cubic metres (as per previous example) and the minimum salt level of 5000 mg/l is required (for cool climates), the amount of salt needed will be:

$$\text{Salt Quantity} = \frac{60 \times 5000}{1000}$$

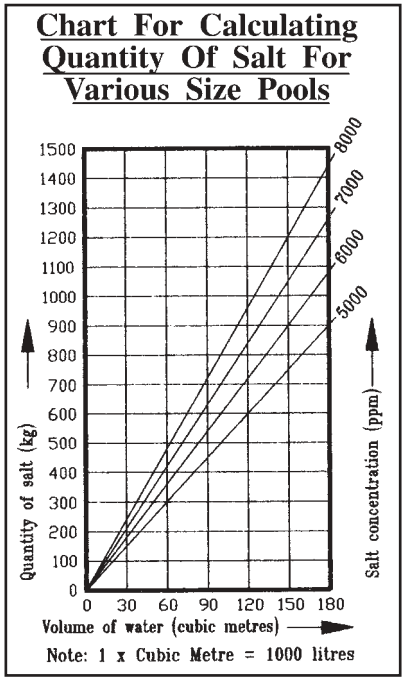
$$= 300 \text{ kg}$$

What Salt Concentration To Use
Although your Enduro Chlor has been designed to operate with a wide range of salt concentrations, the minimum recommended level is 5000 mg/l (P.P.M.). However with heated and outdoor pools in tropical and sub-tropical climates, salt levels between 5000 and 7000 mg/l can be maintained in order to gain the benefits of increased chlorine output, reduced cell maintenance and extended cell life.

The Chlorine Control Knob can be turned fully clockwise if higher salt levels are used without the risk of damage occurring, due to the incorporation of electronic output limiting on all of the self clean model chlorinators.

To make the calculation easier, we have provided the chart below.

To find the correct amount of salt using this chart:



1. Mark the point along the bottom edge which corresponds with the calculated volume of water in the pool.
2. Draw a vertical line from this point which intersects the inclined lines showing salt concentrations.
3. From the point where this vertical line intersects the inclined line showing the chosen salt concentration, draw a horizontal line across to the left. Where this line crosses the left side of the graph, the quantity of salt in kilograms will be indicated.

Adding Salt And Stabiliser To The Pool
If you are quite sure of your calculations then add the calculated amount of salt directly to your pool.

Warning:
Only swimming pool grade salt (Sodium Chloride) should be used. Inferior grades may lead to problems with the chlorinator cell.

Do not attempt to add salt via the surface skimmer as this can cause damage to the filtration system.

Any suction type pool cleaners should also be disconnected before adding salt.

At the same time add the recommended quantity of **cyanuric acid stabiliser.** This is most important as your Enduro Chlor will not operate efficiently during summer months without the correct level of stabiliser in the pool. Recommended level for maximum efficiency is between 30 and 60 mg/l (ppm). pH buffer can also be added now if required.

Dissolving The Salt

Before attempting to operate the Enduro Chlor cell, the salt must be allowed to fully dissolve in the pool water. This is best achieved (after allowing sufficient time for the glue on the pipe fittings to set properly) by running the filter pump without the cell operating for 24 hours to circulate the water.

To assist the dissolving of the salt, regularly brush the floor of the pool with a pool broom until the salt has dissolved.

When The Salt Has Dissolved

Turn on the Enduro Chlor. The Output Salt Monitor should read in the NORMAL range i.e. green range.

Your Enduro Chlor is now generating chlorine!

Should the Salt Monitor read in the yellow region, do not be concerned, just allow the system to run for another 24-48 hours. If the display continues to give a low reading after this period then add more salt gradually over a period of days until the display reads high in the Normal band (i.e. green). Continue brushing floor of pool until the additional salt has dissolved.

SETTINGS AND CONTROLS

POWER PACK OPERATION

CHLORINE CONTROL — all models

Because your Enduro Chlor has been designed to operate over a wide range of salt levels, water temperature, running time, etc., a Chlorine Control has been provided on self clean models to compensate for these variations.

When first starting the unit and where maximum chlorine production is needed the output should be set to maximum.

When first starting the unit and where maximum chlorine production is needed the control knob should be rotated fully clockwise so the Salt Monitor is indicating maximum on the Chlorine Output scale or as high as prevailing conditions will allow.

The Chlorine Control knob on self clean models can be turned fully clockwise if higher salt levels are used without the risk of damage occurring, due to the incorporation of electronic output limiting.

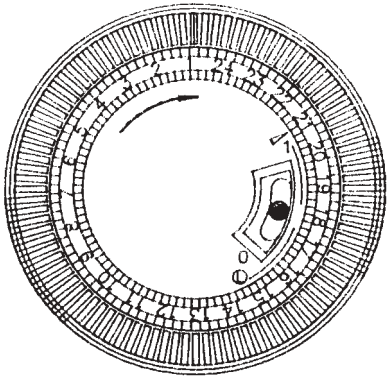
SALT MONITOR

The output Salt Monitor has been provided to allow monitoring of the current passing through the electrolytic cell to allow you to gauge the operation of the cell and the chlorine production. This assists in determining the condition of the electrolytic cell.

It also provides a simple means of indicating the salt level of the pool water.

The self clean models will indicate low salt or dirty cell if the status light is red.

TIME SWITCH



Manual Operation

Move the slide switch on the face of the Time Switch up to the position marked “On”.

Filter pump and cell should now be operating (if the Chlorine Control is correctly adjusted).

To turn the filter pump and cell off, move the slide switch to the centre “OFF” position.

Setting The Time Switch

Using a ballpoint pen, slide the trip pins outwards on the clock dial for morning and late afternoon operation as illustrated. We suggest an initial operating period of 6-8 hours in the Summer and 2-4 hours in the Winter. This will vary depending on the relative size of the pool, filter and chlorinator.

Synchronising The Time Switch

Rotate the dial in a clockwise direction only to align the present time of day with the indicator arrow on the right hand side of the clock face.

Automatic Operation Switch Setting

Move the slide switch on the face of the Time Switch down to the position marked “AUTO”. Filter pump and cell should now operate when the next ON cycle is detected (if the Chlorine Control is correctly adjusted).

To manually turn the filter pump and cell off, move the slide switch to the centre “OFF” position.

HOW YOUR ENDURO CHLOR SALT WATER CHLORINATOR WORKS.

Common salt (Sodium Chloride) is made up of two elements, sodium and chlorine. When your Poolrite Enduro Chlor is installed a measured amount of salt is dissolved in the pool water to make it slightly salty (about 15% of the salt found in sea water).

When the filter system is operating this pool water also flows through the clear Electrolytic Cell where a very low voltage electric current is passed through the salty water which causes chlorine to be produced. This chlorine instantly dissolves in the pool water.

Put very simply, this dissolved chlorine starts to destroy bacteria, viruses and algae almost instantly and in doing so reverts back to dissolved salt. This cycle continues with more new chlorine being generated from the salty water in the cell, the pool being sanitised and the chlorine reverting back to dissolved salt.

As your Enduro Chlor is operating each day during normal operation of the filtration system, solid particles are trapped by the filter while your Enduro Chlor sanitises the water to make it safe, clear and sparkling.

MAINTENANCE OF POOL WATER CHEMISTRY

CHLORINE LEVEL

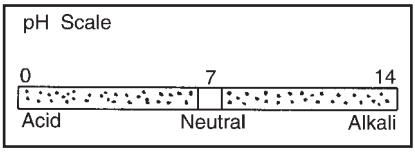
Using a 4 in 1 test kit, test the pool water daily at first then at least once a week to ensure sufficient chlorine level is being maintained. A free chlorine reading of 1.5 mg/l (ppm) and above is adequate when taken near the skimmer.

Should the level fall below 1.5 mg/l (ppm) check salt level and/or increase the daily running time of filter and Enduro Chlor.

pH CONTROL

Check the pH of your pool at least once a week after your Enduro Chlor is first installed.

The pH of your pool is a measure of the balance between acidic and alkaline products in the water. It is measured on a scale of 0 to 14.



A pH level of 0.0	is pure acid.
A pH level of 7.0	is neutral.
A pH level of 14.0	is pure alkali.

The recommended range for swimming pool water is 7.2 to 7.6 for concrete pools, and you should refer to your builder's recommendations for other types of pools.

Controlling the pH of your pool is vital to the correct operation of the Enduro Chlor and the effectiveness of the chlorine produced to kill algae and bacteria and the comfort of bathers. Correct pH also effects the life of metals, cement products and plaster finishes in the pool.

If a pH test indicates a low pH then add sodium bicarbonate (pH buffer) to raise the pH. If the pH is high then add acid (hydrochloric or dry acid) to lower the pH.

Adding Acid

If the addition of acid is indicated, be careful not to add too much at one time as this may destroy total alkalinity or cause harmful effects. We suggest you turn on the filter, add the acid to water in a plastic watering can to dilute, then distribute evenly around the pool away from walls, steps, etc.

TOTAL ALKALINITY

Check the Total Alkalinity at least once a month and maintain correct level for proper pool water balance.

Total Alkalinity is a measure of the acid neutralising capacity of water which indicates its ability to buffer (resist) changes in pH.

The addition of sodium bicarbonate will increase the level and acid will reduce it. Measurements can be made with a 4 in 1 test kit.

Correct levels depend on other factors such as hardness, pH and temperature, however the following levels can be used as a guide.

Concrete Pool — 150 to 250 mg/l Fibreglass Pools — 80 to 100 mg/l max.

Vinyl Lined Pools — Above 100 mg/l

CYANURIC ACID STABILISER

Have a water sample tested at least every 4 months by your pool shop to determine the level of Cyanuric Acid Stabiliser. It is most important that a level between 30 and 60 mg/l (ppm) be maintained in order for your Enduro-chlor to work efficiently during Summer if your pool is outdoors.

CALCIUM HARDNESS

Calcium Hardness is a measure of the calcium compounds dissolved in the water.

Recommended levels should be as low as practical to minimise problems with calcium deposits forming in the cell, therefore don't add any further calcium chloride (to raise hardness) or calcium hypochlorite (granular chlorine) to your pool once the decision has been made to install saltwater chlorination.

Warning

Water supplies from bores/rivers/dams etc., can be high in mineral contaminants resulting in poor chlorine production, therefore water may require additional chemical treatment.

ALGAECIDES

Adherence to the above water chemistry recommendations should alleviate the need to use algaecides in your pool.

MAINTAINING SALT LEVELS

Before attempting to add salt to your pool ensure that the cell is clean. Then, with the filter and cell operating, note the reading on the Salt Monitor.

If this reading indicates the level of salt is too low it must then be increased. This will normally be required about 4 times a year on average domestic pools but will vary depending on the type of filtration, climatic conditions, etc.

Note: Higher salt levels are recommended in hot weather conditions where maximum chlorine production is needed. We suggest levels as high as 7000 mg/l (ppm) in these situation

MAINTENANCE OF YOUR ENDURO CHLOR SC25-TS

Your Enduro Chlor Self Clean has been designed to operate for extended periods with a minimum of maintenance. The cell cleaning function is performed automatically via the inbuilt electronic control module.

In the event that your cell needs to be manually cleaned, follow the instructions under maintenance of your Enduro Chlor NSC25 and NSC35.

MAINTENANCE OF YOUR ENDURO CHLOR SC25-TS

Your Enduro Chlor has been designed to operate for extended periods with a minimum of maintenance, however periodic cleaning of the cell electrodes is required.

Cell Cleaning

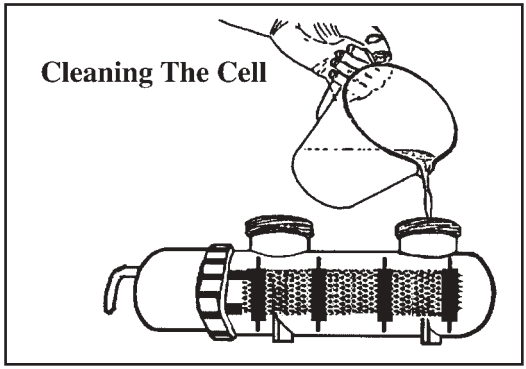
1. Remove Enduro Chlor Power Pack plug from 240 volt power point.
2. Remove cell from plumbing line.
3. Turn cell upside down (ports facing upwards) and place on a level non-metallic surface in a well ventilated area.

Warning: Rubber gloves and protective eyeware must be worn before proceeding to the next steps!

4. Prepare an 8:1 acid cleaning solution by firstly measuring 2 litres of water into a plastic bucket and then carefully adding 250ml of Hydrochloric Acid. Stir thoroughly with a wooden stick.
5. Carefully pour sufficient cleaning solution into upturned cell so as to fully cover metal electrodes.
6. Allow to stand for 10 minutes then flush out with clean water. Do not put used acid solution into pool.
7. If electrodes still show white deposits, repeat the above steps.

Note: It is recommended that a warm water detergent solution be used to soak the electrodes at this point if there is any evidence of body fats, oils or greases.

8. Re-fit cell to plumbing line making sure both rubber "O" ring seals are in place.
9. Re-connect plug of Power Pack to 240 volt power point and switch on.
10. Reset time switch if fitted.



OVERLOAD PROTECTION

In addition to the electronic current limiting and overload protection circuit built into the Power Pack, there is an internal Type M205 1.5A Slow Blow fuse fitted to further protect the power supply for the Cell.

Should this fail (as indicated by the Salt Monitor failing to show any reading despite the Chlorine Control knob being correctly set) it is an indication that a fault has occurred related to the electronic circuitry.

In the event that this should occur, please call for service.

HOW LONG SHOULD YOUR CHLORINATOR CELL LAST?

When installed on a normal domestic pool, Poolrite cell electrodes have a nominal life expectancy of approximately four years if they are correctly maintained.

With operating conditions varying widely in different pools, the actual life of the cell electrodes can be quite different from the nominal life.

For example, a chlorinator cell operating for only 3 hours daily can be expected to last twice as long as the same cell operating for 6 hours daily. Likewise, the same cell operating 24 hours daily may suffer electrode failure after just one year!

Common Causes Of Premature Cell Failure

a) Operating the cell with too little salt in the water (this can often happen after heavy rain).

b) Excessive accumulation of calcium deposits on electrodes.

c) Low water flow through cell (poor filter maintenance or a faulty pump are typical causes).

d) Physical damage to electrode coating caused by scraping with a screwdriver, etc.

e) Cleaning of electrodes in too strong an acid solution (greater than 1 part hydrochloric acid in 8 parts water).

f) Acid washing for too long (10-15 minutes max. In contact with 1:8 acid/water should be more than sufficient).

To assist you in prolonging the life of your Enduro Chlor Cell Electrodes, we have provided this chart of Common Causes Of Premature Cell Failure based on our extensive experience in designing, manufacturing and servicing salt water chlorinators in Australia.

In order to achieve the longest Enduro Chlor cell, we recommend that the owner bear these important points in mind as it is sometimes difficult to determine which of the above points was responsible when inspecting a cell which has failed prematurely.

CUSTOMER RESPONSIBILITIES

BEFORE YOU CALL FOR SERVICE read the Operating Instructions carefully and check the following points which are your responsibility.

- A service charge will be made for service as a result of:
- Power point not turned on or faulty (check with another appliance).
- Time incorrectly set.
- Unit incorrectly installed.
- Pump not plugged into Enduro Chlor Pump Outlet Socket.
- Controls incorrectly set.
- Poor water chemistry (Salt Level, pH, etc).
- Cell not being cleaned (acid washed) properly.
- Poor water flow (check filter is clean / pump operating / skimmer free of obstructions).
- Unit being tampered with by unauthorised persons.

Operational Check List

Low Salt Message	Low Chlorine In Pool	Filter Pump Will Not Run	Erratic Reading On Monitor	No Power	No Chlorine Output	Probable Cause	Remedy
●	●		●		●	Cell dirty	Visually check cell and acid wash cell if dirty
●	●		●		●	Low salt	Use Salt Monitor and add salt if required
●						Low water temperature	Normal for Winter (accept lower readings)
	●		●		●	Poor water flow	Filter dirty/leaves in baskets/valves closed
	●					Insufficient daily running time	Increase running time of filter and Enduro-chlor
	●					Insufficient chlorine stabiliser	Have pool checked and add stabiliser if needed
	●	●		●	●	Power point not switched on	Check power point
●	●		●		●	Excessive air in cell	Pump lid/pipe connections/low pool water
●	●				●	“Chlorine Control” turned down	Check Chlorine Control Knob setting
	●			●	●	Internal fuse blown	Call serviceman
	●	●		●	●	Time switch not correctly set	Check settings and read instructions
	●			●	●	Pump not running	Check motor overload from blockage in pump
●	●	●	●	●	●	Pump problems	Check for locked rotor or call serviceman
		●		●	●	Pump not plugged into unit	Check pump is plugged into Power Pack
				●		Damaged power cord	Return to supplier or authorised service agent

ELECTRICAL SPECIFICATIONS
POOLRITE ENDURO CHLOR
SALT WATER CHLORINATOR

INPUT = 240V / 50Hz

POWER CONSUMPTION (Max.) = 250 VA

OUTPUT (Max.):

Pump Socket = 240V 50Hz
= 1.5Kw (2.0HP)
= 8.0A

Cell SC25 TS = 5VDC 32A

OVERLOAD PROTECTION:

- Electronic current limiting on Cell output (SC models).
- Replaceable fuses as follows:)

Cell Fuse (all models) = Type-M205 / Slow Blow / 3.15A (Fitted Internally)

APPROVALS

- All Poolrite Enduro Chlor Salt Chlorinators have been fully tested and approved. These have been issued with a Certificate of Approval.
- The Power Pack Enclosure is rated as complying with IP24 as per AS1939 and as such can be legally installed within the designated Pool Zone as defined in section 7 of AS/NZS 3000.

Poolrite Equipment Pty. Ltd. reserves the right to change these specifications without prior notification.