



User Manual

MagnaMaster and ChloroMaster Electrolytic Chlorinator



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IMPORTANT

***If the power cord is damaged the unit must be returned to
Direct Pool Supplies for repair.***

***Always read the instructions and warnings on chemical
containers before using chemicals.***

Serial Number.....

Date of Installation.....

Installed by.....

Introducing the MagnaMaster & ChloroMaster Chlorinator

What's in the box?

The Chlorinator Box contains the following components:

- Mounting brackets; top and bottom
- Chlorinator Salt Cell
- Chlorinator Power Supply and Mains Cable
- Mounting hardware (wall plugs, screws and paper template)

How it works:

This unit is a salt chlorinator, which works by putting a dc current through an electrolytic cell in a flow of salt water. Salt is made up of sodium and chloride ions and/or magnesium ions if a mineral salt is used. Electrolysis of these salts produces chlorine gas, which dissolves almost instantly to form free chlorine in the water. This free chlorine is a highly effective sanitiser for your pool.

The Chlorinator Unit constantly adds a dose of chlorine to the water when it is operating. The amount of chlorine added depends upon the cell output and the running time.

Installation Guide

Choosing a good location

The Chlorinator is manufactured from weather resistant materials and is designed for operation in full sun and rain. However, it will benefit if it is protected from the weather.

The Chlorinator power supply should not be mounted in areas where chemicals are stored (eg acid and chlorine) as vapours from these chemicals are corrosive and may damage the electronic controls within the units.

Insect intrusion (particularly ants) can cause problems with all equipment. Ensure that the pool equipment area is kept free of insects as much as possible. Insect intrusion is not covered under the warranty.

Installing the Chlorinator Power Supply Unit

Locate the Chlorinator power supply close to the filtration pump so that it may be connected easily. Connect the Chlorinator power supply to the mains power outlet of the pool area and make sure this outlet meets all applicable Australian Standards at the time of installation.

Mount the Chlorinator power supply Units at least 1.5m above the ground and at least 3m from the pool water. A mounting template has been provided with your Chlorinator, which shows you where to place screws on either a wall or post.

Initial pool balance

Before you begin using the Chlorinator, make sure your pool water is balanced as follows:

Salt and Minerals

There should be between 3000 and 5000ppm of TDS in the pool ideally 4000ppm. This is achieved by adding 4kg of salt for every 1000 litres (1m³) of pool volume. Note that this amount of salt will take time to dissolve.

Minerals: the conductivity of minerals is different to pure salt. All TDS testers are calibrated for sodium chloride salt. You will need less weight of minerals to achieve an equivalent TDS to salt – follow the mineral instructions.

Note: keep salt/minerals below 7500ppm to avoid overloading the cell and causing shutdown.

Chlorine

If it is a new installation, add enough chlorine (liquid or granular) to achieve a reading of 3ppm on an appropriate test kit.

Stabiliser

If the pool is outdoors, it is vital that stabiliser (also known as cyanurate and cyanuric acid) be added and maintained at 50ppm. This compound reduces chlorine destruction due to sunlight. However, too much stabiliser will reduce the effectiveness of chlorine and can result in poor quality water so ensure stabiliser does not exceed 80ppm.

pH

For chlorine to be effective, the pH must be within a certain range. This is usually between 6.8 (fibreglass/liner pools) or 7.2 (concrete/plaster) and 7.8.

Adjust pH down with acid – powder, liquid sulphuric or liquid hydrochloric. Be very careful with acid as it can be harmful and corrosive.

Minerals: the magnesium in mineral salts can form a soft scale on the cell even though it is reversing polarity. This is minimised by keeping the pH at the lower range for your pool type. The use of hydrochloric acid is recommended for magnesium mineral systems.

Total Alkalinity (TA)

Total alkalinity is also known as carbonate hardness or TA for short. The recommended level is between 80 and 120ppm.

TA is related to pH in that it stops the pH from varying quickly with small additions of acidic or alkaline chemicals. When the TA is low it is almost impossible to control the pH. To raise the TA, buffer (sodium bicarbonate) is added. This must be done slowly as buffer will also cause the pH to rise. As an approximate rule every increase of 20ppm of TA will also cause a 0.1 rise in pH. Once buffer is added it should be left to mix in the pool for a few hours before reducing the pH.

Chlorinator Front Panel



The Chlorinator Unit uses a simple LED Bar Meter and Alarm LEDs to provide the user with information. There are 3 buttons to make adjustments to the system: ON/OFF, +INCREASE & -DECREASE.

The LED bar meter usually shows the amount of chlorine being produced by the Cell as a percentage of its maximum.

The Output Control turns the Cell ON/OFF over a short period of time.

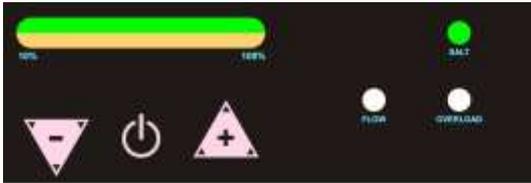
The Output setting determines how long the ON time is – for example if the Output setting is 60% the Cell will be ON for 60% of the period and OFF for 40% of the period.

To adjust the output, simply press the INCREASE or DECREASE buttons. The LED bar will change to a point meter (in red) while any adjustment is being made to indicate output from 10% to 100%.

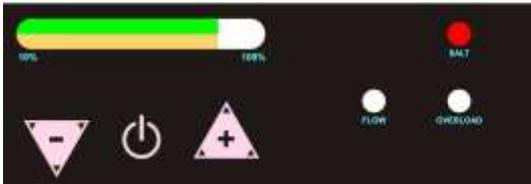
The LED bar meter will return approximately 10 seconds after any adjustment is made.

Status Indicators, Warnings and Safety Features

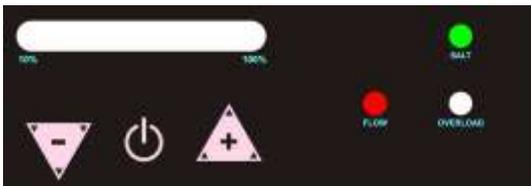
Illustrated below are the possible status indicators, warnings and safety features that may be observed on the Chlorinator in various circumstances.



Normal Operation
Cell at full current and TDS above minimum. Note that the Cell current can be green or orange depending on polarity.



Low Salinity/TDS
Salt/TDS alarm is red and Cell current is less than maximum. Check salt and/or check Cell. Cold water can cause this alarm – check before adding salt/minerals



Flow Fault detected.
Cell has been turned off.
Turn off, then on again to clear and restart.



Overload detected, Cell has been turned off.
Turn off, then on again to clear and restart. High TDS levels can cause this alarm.

Maintenance

Like all equipment, the Chlorinator Unit will look better and last longer if it is maintained and operated in accordance with these instructions.

The Chlorinator Power Supply

The Chlorinator Power Supply has been design for operation in full sun and weather. However, it will benefit from being under cover.

There is little maintenance required, however – some Do's and Don'ts –

Don't:

- Install it in a small sealed enclosure (so it does not overheat)
- Install it in a very hot unventilated shed (so it does not overheat)
- Allow insects to nest in the unit (because they will prevent it from functioning)
- Install chemical drums under or close to the unit (to prevent corrosion)
- Forget about the unit once installed – it should be checked regularly to ensure that it is working for you

Do:

- Install it as per the instructions
- Check it regularly
- Make sure the pool balance is checked regularly, particularly the pH for mineral systems.

Cell Cleaning

The Chlorinator Cell is self-cleaning, however, some conditions such as very hard water can cause the cell to become scaled over time. The magnesium of mineral salts can also cause a soft scale to form.

The Chlorinator Cell uses an electronic means (polarity reversal) to remove scale from its cathodes. This system works very well in most pools unless there is extreme hardness and/or mineral levels. Even in the extreme cases where scaling does occur the rate at which it occurs is far slower than for normal Cells.

If scale has become thick enough to nearly bridge between the Cell electrodes, it is time to clean the Cell. Cells can be cleaned in a solution of hydrochloric acid.

Please read the warnings and instructions on the acid container.

To make the acid solution, add 1 part hydrochloric acid to 4 parts water in a suitable container. This solution can be used a number of times so a re-useable container with a lid can be used, but make sure it is stored safely.

Alternatively a commercial Cell Cleaning solution can be used according to the manufacturer's instructions.

The Chlorinator Power Supply Unit and pump should both be turned off until after the Cell is clean and back in its housing.

Remove the Cell from its housing and immerse in the acid solution. Note that it may foam up and overflow the sides of the container – so take care!

The Cell should not take longer than a few minutes to clean. It may also be possible to remove some or most of the scale with a jet of water.

Never use a stiff brush or hard implement to clean the cell because this will damage the coating.

Trouble-shooting

Before requesting service, you may wish to run through the check list below but feel free to call Pool Controls Service on 1300 550 010 or log a service call via our website – www.poolcontrols.com.au.

If there appears to be low or no Chlorine Residual:

1. Check stabiliser level is 50ppm. Add if necessary and wait for it to dissolve.
2. Have you added any chemical additives recently?
3. Check pool for phosphates and remove if necessary
4. Is the System turned on?
5. If the unit is not running at all, check the fuse in the bottom of the unit.
6. Is the Chlorine Output set to 100%?
7. Is there enough TDS in the water? (4000ppm on a salt tester)
8. Is the temperature of the water low?
9. Is the Cell scaled heavily?

If either unit is not running at all **check the fuse** in the bottom of the units.