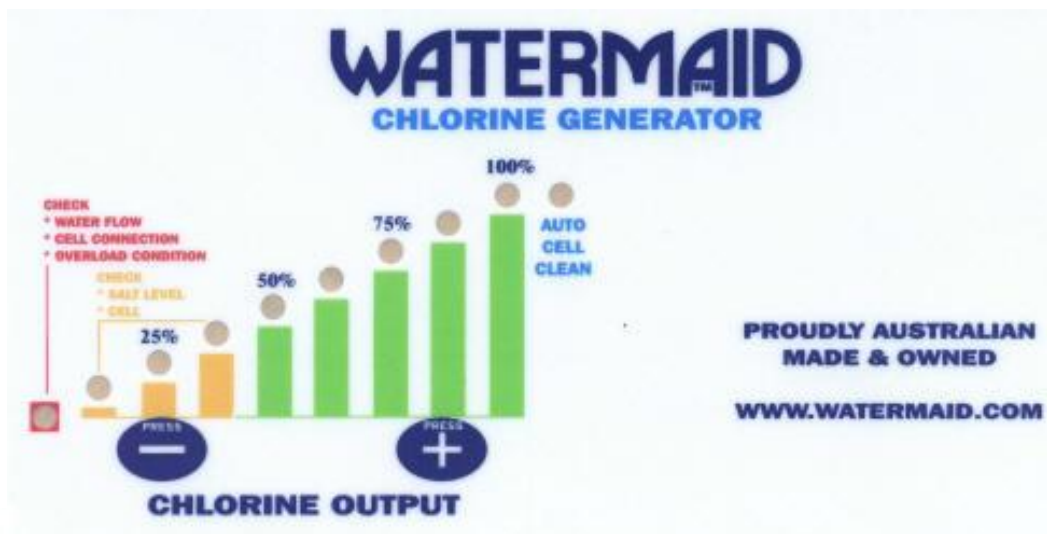


THE WATERMAID WM10 FRONT CONTROL PANEL



The **WATERMAID** WM10 Power Pack has a control panel that consists of an LED, chlorine production readout indicating the percentage (%) of chlorine production being produced by the WATERMAID cell. The Chlorine Production rate of the WATERMAID Unit can be set at a desired level by using the - or + buttons on the front Control Panel.

The % figures shown on the front of the Watermaid WM10 Power Pack correspond to the following chlorine production values below.

% Reading	Amps	Grams / Hour	Liquid Chlorine Equivalent / 10 Hrs (12.5% Available Chlorine)
25%	7.5 A	~ 7.5 gr/hr	600 Millilitres / 0.16 Gallons
50%	15 A	~ 15 gr/hr	1.2 Litres / 0.32 Gallons
75%	22.5 A	~ 22.5 gr/hr	1.8 Litres / 0.48 Gallons
100%	30 A	~ 30 gr/hr	2.4 Litres / 0.63 Gallons

There are Six influencing factors that determine the chlorine output that is produced by the cell.

- 1. THE CONTROL PANEL SETTING** -- This is the level that is set by the user by depressing the - or + buttons. The actual reading that is obtained will also be influenced by the five other factors listed below.
- 2. THE REQUIRED LEVEL SETTING WILL DEPEND** – upon the size of the pool, how many people are using the pool, how well the pH is controlled and filtration running cycle.
- 3. SALT LEVEL** -- The salt level in the water, determines how conductive the water is and how much current (Amps) the cell is able to draw from the Power Pack, proportional to the LED readout on the front panel of the WATERMAID Power Pack.

A recommended Salt Level of 5000 PPM (parts per million) will result in a EZ300 Cell or QT300 Cell drawing approximately 30Amps or 100% reading on the indicator LED's.

A salt level below this range will result in the LED readout to drop to below 100% and therefore less chlorine being produced.

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If the salt level drops to a very low level, ALL the **GREEN LED indicators** on the readout will not illuminate until eventually only the first three **AMBER** lights will illuminate. (Indicating to check the salt level) The illumination of **AMBER** lights also indicates that low levels of chlorine are being produced and that more salt may need to be added to increase the salt level in the pool so that the WATERMAID Chlorinator can produce more chlorine, enough so that the pool remains clean, clear, sparkling and sterile.

PLEASE NOTE:

The WATERMAID QT400 Cell only requires a salt level of 4000 PPM to achieve a reading of 100% on the front control panel. This is ideal for pool owners that wish to run with a lower salt level. An even lower level may only be needed for pools that are heated.

The figures given in the table above, assume a water temperature in the pool of 20 Deg. C / 68 Deg. F.

4. **WATER TEMPERATURE** -- Water temperature is also a determining factor in the amount of chlorine production that the cell produces, again proportional to the LED readout on the front panel of the WATERMAID Power Pack.

WARMER WATER TEMPERATURES result in the water being **more** conductive and the cell producing **more** chlorine.

COOLER WATER TEMPERATURES result in the water being **less** conductive and the cell producing **less** chlorine.

PLEASE NOTE:

Swimming Pool & Spa Owners that use **HEATERS** to warm the water can maintain a lower salt level in the swimming pool and still achieve a 100% reading on the LED Control panel.

5. **CALCIFICATION ON THE CELL** -- The build-up of calcium deposits on the centre cell electrode can also determine the chlorine production from the cell.

THICK heavy build-up can result in less chlorine being produced.

VERY HARD, THIN calcium deposits can also reduce the chlorine production from the cell.

PLEASENOTE:

Usually a small build up of calcium will not result in a loss of chlorine production from the unit.

Is advised to inspect the cell every 2 - 4 weeks and check the build up on the cell.

If necessary, clean the cell as per the instructions.

In some cases, a thick calcium build-up may cause the reading on the LED % readout to read normally however result in low levels of chlorine being produced by the cell. It is important that an inspection of the cell is done on a regular basis.

6. **CELL AGE** - Normally a WATERMAID cell will have a minimum life of **5** or more years. Cells beyond this age may deteriorate and result in less chlorine being produced from the cell. This is also indicated by the LED readout dropping below 100% and therefore less chlorine being produced.

When salt levels are maintained within the correct range but the LED readout is low, the cell is clean and the cell is beyond 5 years of age, a **NEW** cell may be needed to produce sufficient amounts of chlorine for the pool.

The **RED** LED indicator light has **TWO** states of operation.

1. If the **RED** LED Indicator is flashing it will indicate that there is a flow fault or problem with the cell. The Cell should be inspected to see if there is water flowing freely over the electrodes and there is no gas (air or hydrogen) inside the cell
2. If the **RED** LED Indicator is **STEADY RED** (not flashing) it will indicate that the power pack is in an overload state and that it has shut itself down to protect itself from any damage.

The cell should also be inspected to see if there are any calcium deposits on the Gas Sensing Tang of the cell.

The cell connections.

The WATERMAID Cell connections to the Power Pack should also be inspected to ensure they are tight and free of electrical corrosion or damage.

The **MOST LIKELY** cause will be that the **SALT LEVEL** in the pool is in excess of what the unit requires to operate efficiently. It may also be that **SALT** has recently been added to the pool and un-dissolved salt is passing over the electrodes. When adding salt to the pool, always ensure the WATERMAID unit has been shut off or the chlorine production turned down to the lowest setting. (By using the - button)

The solution for a Power Pack that is in an overload state is to dilute the water in the pool by emptying the pool approximately 15cm / 6 Inches at a time and refilling with a fresh water source. This may need to be repeated several times until the unit is operating correctly again and all lights are indicating between the 75%- 100% range.

It may also be a good opportunity, if you have a sand filter to give the filter a thorough backwash whilst solving this temporary problem.

THE BLUE, AUTO CELL CLEAN indicator lamp will illuminate when the Power Pack is operating the inbuilt cell cleaning features.

It is designed to come on at regular intervals during a chlorination cycle and will operate for approximately 5 – 10 minutes each time.



No **Green** Light - No Amp Reading - No Chlorine Output

During the normal process of producing chlorine in the electrolytic cell, Calcium deposits will develop on the cathode electrode of the cell. This needs to be removed to ensure proper operation and chlorine production from the Watermaid unit.

Apart from cleaning the cell electrodes, it may also be necessary to clean the **Gas Sensing Tang** inside the Watermaid Cell.

It can develop calcium deposits that need to be removed. It is not common, but in some cases can result in preventing the Watermaid unit from functioning and producing chlorine.

Also ensure the Brass Plug is **CLEAN AND A TIGHT FIT** – this can be adjusted by gently prising the two sections of the plug apart clean and smear with ‘Vaseline’ or ‘Silicone Grease’ to prevent atmospheric corrosion.

Watermaid Maintenance - Simple Guide

With all equipment it is necessary to carry out periodic checks to ensure correct and reliable operation.

In all cases the Watermaid manual should be read and understood to ensure reliability and compliance with warranty requirements

The Watermaid system should be checked periodically especially when the swimming pool temperature starts to rise following the winter period.

The main things to check are the power supply lights are indicating correctly and that the cell is clean with minimal calcium build-up.

This is most noticeable in hard water areas and sometimes a clean is required depending on how much calcium is produced.

BEFORE REMOVING ANY PART – ENSURE THE SYSTEM IS SWITCHED OFF AND THE VALVES ARE CLOSED – INCLUDING THE MULTIPOINT VALVE

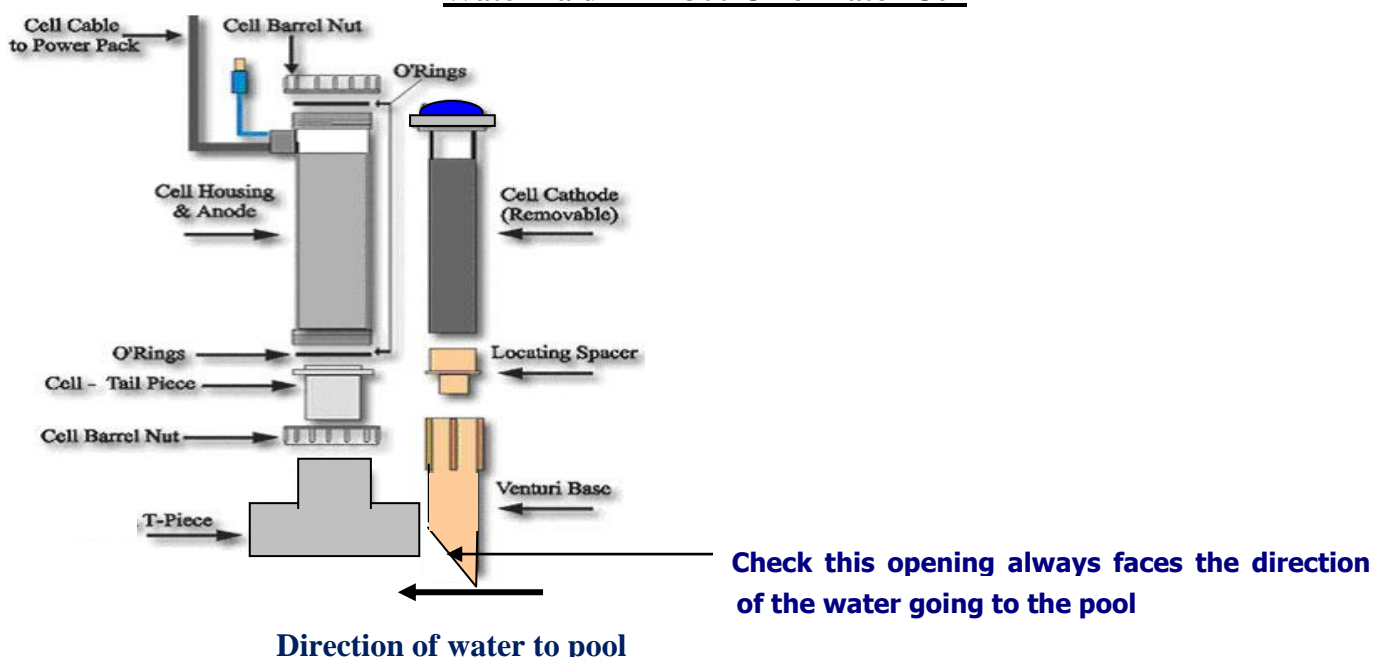
Cell removal:

1. The Cell is connected via a low voltage grey power cable to the terminal box of the power pack.
 2. The cell wires must be connected polarity correct for the cell to work.
 3. The brown lead is connected to the brown or red (positive lead) in the terminal box.
 4. The blue lead is connected to the blue or **black** (negative lead) in the terminal box.
 5. The white or centre gas sensing wire on the cell is connected to the centre terminal in the terminal box
- Make sure the Terminals are kept tight and dry for efficient operation.

2. CLEANING THE EZYCLEAN CELL:

1. Unplug the Brass Connector at the Top of the Cell Head.
2. Unscrew the Top Barrel Nut from the Top of the cell.
3. Gentle Twist the Cell Head and Pull the centre electrode out from the Casing.
4. Simply Scrape the Electrode clean with a Plastic or metal device or use a piece of 32mm PVC Plastic pipe and run this up the Electrode to remove all deposits.
5. If the Cell is heavily encrusted with Calcium Deposits and both Electrodes are built up. Replace the Centre Electrode after cleaning and unscrew the bottom barrel nut and remove the entire Cell from the pipe work.

Watermaid EZY-300 Chlorinator Cell



ONLY IF THE CALCIUM DEPOSIT CANNOT BE REMOVED WITH FINGERS etc.

With the cell assembled and completely removed from the pipe work, place the cell upside down into a bucket and follow the directions below for cleaning the cell with a DILUTE solution of acid.

IN A PLASTIC OR GLASS CONTAINER, dilute one part Hydrochloric (muriatic) (Pool) Acid with ten parts of tap water (Hot Tap Water is more efficient)

WHEN MIXING, ADD ACID TO WATER, **NOT WATER TO ACID
and**

DO NOT MIX ACID AND WATER IN THE CELL

Do not immerse the cell electrodes in a strong acid solution, as it may shorten the cell life and damage the electrodes.

Pour the dilute acid mixture into the cell.

When the effervescing stops inspect the cell and if still calcified repeat the process.

Rinse cell with water and insert into the pipe work when finished.

FOR SOFT DEPOSITS - Try rubbing the deposit off with your fingers or Hosing out the Cell with a strong jet of Water. This will usually clean the cell sufficiently and cell cleaning with acid may be avoided.

To keep the Cell deposits SOFT add 3 - 10 Kg of Magnesium Sulphate (Epsom Salts) to the pool water every 6 Months.

Or if the Calcium is hard and frequent:

Add 25 kg of Magnesium Sulphate (Epsom salts) to the water every 12 months.

This will soften any deposits that form making them soft and slushy. It will also make the cell far easier to clean (usually just with a rag)

Also try putting a cake of PURE soap (no additives) in the Skimmer box. You will notice the calcium deposits become soft and slushy.

On Completion and before switching the pool system back on return all valves back to their original positions

You may now switch the system back on checking for any leaks before leaving the system to run automatically.

Remember in the warmer weather the system will need to operate much longer than in the winter time – Depending on pool size and bather volume.

Remember the pool system should always be running when the pool is being used, normal filtration times are simply to maintain the water ready for use

Always ensure your pool water is in balance, ph should be between 7.2 & 7.6 For Example a higher pH will make the Chlorine less effective. pH 8.6 = Chlorine only 10% - pH 7.2 = 70% effective

An Auto-pH system makes the most economical use of pH minus and maintains the pool far better than possible doing it ourselves

Use **chlorine stabiliser** especially during the hot weather – if you cannot easily obtain this contact **WATERMAID EUROPE S.L.** we normally have this in stock – you should have approximately 50ppm. With all methods of maintaining swimming pools it is recommended to ‘Shock’ the pool every month, especially during hot weather.

Run the pool system for 24 hours with the Watermaid at 100%.

Algae breed during daylight particularly when it is hot and sunny – to kill algae and help prevent occurrence of algae – Pool systems should be run mostly after the sun has gone down, this will kill the algae and prevent them from breeding the next day.

Always operate your pool system when the pool is being used as this is when most contamination occurs.

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