

# ***Series***

**User Manual**  
for  
**Ozone with XLM Series Mineral  
Chlorinators**



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## IMPORTANT

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

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

**Never add minerals before testing levels**

Serial Number.....

Date of Installation.....

Installed by.....



# Manufacturer's Warranty

## **Pool Controls Manufacturer's Warranty**

Pool Controls products come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. The benefits under this warranty are in addition to other rights and remedies under a law in relation to the goods.

## **3 Year Warranty on New Domestic Installations**

Pool Controls warrants all its products used in new domestic installations to be free from defects in material and/or workmanship for a period of 3 years from the original date of purchase or installation.

## **2 Year Warranty on Replacement Parts**

Pool Controls warrants replacement parts used in domestic installations, including multi-electrodes (probes), solenoid valves and electrolytic cells (but excluding wearing parts such as tubing and squeeze tubing) to be free from defects in material and/or workmanship for a period of 2 years following purchase.

## **Exclusion for Wearing Parts**

This warranty does not extend to wearing parts, in particular the squeeze tubes fitted in dosing pumps. Squeeze tubes should be replaced every **twelve months** by a suitably qualified technician. Pool Controls is not liable for any failure of its products or other damage caused by failure of a squeeze tube that has been used for more than twelve months.

## **WARRANTY OBLIGATIONS OF POOL CONTROLS**

If a defect in workmanship or materials in any Pool Controls product covered by this warranty is discovered during the term of the warranty and provided the warranty holder follows the procedure set out below, Pool Controls will repair or replace **that item** at the option of the warranty holder.

## **PROCEDURE FOR CLAIMING UNDER THIS WARRANTY**

In order to claim under this warranty, the warranty holder must:

- Contact Pool Controls Service as soon as possible after the discovery of the defect and in any event, within the relevant warranty period;
- Confirm date of installation;
- Confirm that the installation was completed by a suitably qualified technician, as set out in the installation manual; and
- If required, arrange for the relevant Pool Controls' product to be returned to Pool Controls for repair, and the warranty holder is responsible for the cost and risk of any freight or transportation to and from Pool Controls.

## **CALL OUT FEES**

- This is a “Back to Base” Warranty, which means that if the Pool Controls product needs to be serviced, replaced or repaired at a place other than Pool Controls’ premises, a call out fee will be charged to cover the cost of travel by an authorised Pool Controls technician. Please note that this call out fee will NOT be charged when the relevant Pool Controls product is returned to Pool Controls for repair.
- If an authorised Pool Controls technician repairs or replaces a Pool Controls Product and this warranty does NOT apply, a fee for labour and parts supplied will be charged in addition to the call out fee.
- If the Pool Controls product needs to be returned for repairs under this warranty, the warranty holder is responsible for the cost and risk of any freight or transportation to and from Pool Controls.

## **WARRANTY EXCLUSIONS**

- This warranty is for domestic installations only. Where Pool Controls products are installed for a commercial application this warranty does not apply.
- This warranty extends to the original owner only, beginning on the date of installation and is not enforceable by any other party without the prior written consent of Pool Controls.
- Pool Controls is not responsible for any cost of freight or transportation to or from its Service Department.
- Pool Controls is not liable under this warranty if the installation of the Pool Controls product was not carried out by a suitably qualified technician.
- To the extent permitted by law, Pool Controls is not liable for:
  - any incidental or consequential loss incurred in connection with the removal or replacement of the Pool Controls product under this warranty; or
  - product failure resulting from misuse, freezing, accident, negligence, improper installation or inadequate maintenance.
- To the extent permitted by law, Pool Controls disclaims all other warranties, either express or implied, including, but not limited to, implied warranties of merchantability and fitness for a particular purpose with regard to Pool Controls products, parts and/or any accompanying written materials.

## **REGISTER YOUR WARRANTY NOW**

Go to [www.poolcontrols.com.au](http://www.poolcontrols.com.au), click on the warranty registration tab to fill in your details.

## **CONTACT POOL CONTROLS**

Pool Controls is based at 58 Prosperity Avenue, Wangara, WA 6065. We also have service technicians based in NSW, Queensland and Victoria.

- Service Email: [service@poolcontrols.com.au](mailto:service@poolcontrols.com.au)
- Service Phone: (08) 9240 4400

## **What’s in the box?**

- Ozone XLM Series Power Supply, Ozone Injector, Cell and Cables
- User Manual
- 40/50 Bushes and Mounting hardware (raw plugs, screws and paper template)

## How it works:

A mineral chlorinator works by putting a dc current through an electrolytic cell in a flow of mineral salted water. Minerals is mostly made up of magnesium/potassium/sodium and chloride ions. Electrolysis of these minerals 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 ozone added by the system is a highly effective oxidiser that destroys contaminants faster than chlorine, leaving more chlorine to act as a residual sanitiser.

The Ozone XLM Series constantly adds ozone and a dose of chlorine to the water over the operating period of the system. The amount of chlorine added depends upon the cell output and the running time.

Generally, a mineral pool is run for around 8 hours per day in summer and 2 to 4 hours per day in winter. The summer operating periods are usually in the early morning and later evening. This allows a chlorine residual to build up for pool use during the day.

**The filter system should always be running when the pool is being used. If a pool cover/blanket is used the chlorine demand will be greatly reduced. To avoid over-chlorination use the Cover Blanket On/Off button. See pages 4, 14, 17 & 20.**

### pH Control (standard in Ozone XLM unit)

When chlorine is added to water the pH always changes – this is because chlorine is not a neutral chemical. The pH will slowly rise as chlorine is produced in a mineral water system. A rise in pH greatly reduces the effectiveness of the chlorine as a sanitiser, so it is important to ensure that the pH remains in the correct range.

The pH of the water can be lowered by the addition of acid – and if your Ozone XLM Series has the optional pH control, this can be done automatically. The Ozone XLM Series uses a sophisticated algorithm to calculate how much chlorine has been produced by the cell, and how much acid needs to be dosed to correct the resultant pH rise.

The algorithm can be adjusted if installed on a concrete/plaster pool. When adjustments are made it should be in small values with the pool then monitored for effectiveness.

**Note:** while the algorithmic pH control is effective it does not measure pH. pH measurement and checking must be done manually to make sure the pH is correct.

## Initial pool balance

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

### Minerals – only add minerals after checking the levels

There should be between 900 and 2000ppm of TDS in the pool ideally 1200 - 1600ppm. This is achieved by adding 10kg of mineral for every 6000 litres (6m<sup>3</sup>) of pool volume. The conductivity of minerals is different to pure (sodium) salt. All TDS testers are calibrated for sodium chloride salt. You will need more weight of hydrated minerals to achieve an equivalent TDS to salt – follow the mineral instructions.

**Note: keep mineral TDS well below 3000ppm to avoid overloading the cell and causing shutdown. Only add after checking the level.**

## **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 (preferred). 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.

## **Phosphates and Nitrates**

Phosphate and ammonia nitrogen will make your garden green – and they will do the same thing to your pool. Check for phosphates and add phosphate remover if necessary. Don't let fertiliser get into your pool! Phosphates are also in some cleaning products – check the label if using around your pool.

## **Pool Cover Blankets**

Most of the chlorine demand for a pool comes from the action of sunlight on the chlorinated water. When a cover blanket is used it is possible for the chlorine residual to build up to a higher level that can be damaging to the blanket and possibly the pool and fittings.

This unit can adjust the output to compensate for the use of a cover blanket – simply push the button and the display will flash COVER. While the cover is on the chlorine output will be reduced. When the cover blanket is removed simply push the button again and the unit will revert to its normal chlorine output.

# Installation Guide

## Installation Diagrams

For most installations, please refer to the installation diagram on page 7. Pay careful attention to the Venturi Injector detailed on page 8.

## Choosing a good location

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

Choose a well ventilated area to allow for efficient cooling. Installing the unit in a hot and closed shed or box may lead to overheating and activate the internal protective thermal cut-out.

The Ozone XLM Series 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 unit.

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 Ozone XLM Series Power Supply

Locate the Ozone XLM Series Power Supply close to the Cell/Housing and filtration pump so that both may be connected easily.

Mount the Ozone XLM Series Power Supply at least 1.5m above the ground and at least 3m from the pool water. A simple keyhole mount is used, see the back of the unit. When a position is chosen, attach the 10G to 12G screw to the post or wall and hang the unit. Then mark a point for the locator at the bottom of the unit and attach a locator screw.

Connect the Ozone XLM Series Power Supply to the mains power outlet of the pool area and make sure this outlet meets all applicable Australian Standard at the time of installation.

The PUMP socket outlet in the base of the Ozone XLM Series Power Supply is dedicated to the filtration pump only. Do not use a double adaptor to connect another pump as this will overload the system and void warranty.

## Installing the Ozone XLM Series Cell

The Ozone XLM Series cell housing assembly should be plumbed into the pool return line after all other accessories (and prior to any heating take-offs).

Remember that the cell will need to be removed from its housing periodically for cleaning – do not place it where its removal will be obstructed.

Note any water flow direction on the cell housing and ensure the cell housing is installed so that water will flow in this direction.

Connect the cell cable to the cell connector on the base of the Ozone XLM Series Power Supply. Ensure that all 3 connections (2 for cell power and 1 for gas sensing) are colour matched and not loose.

### **pH Control Feed Line, Ozone Feed Line and Injector**

The pH Control and Ozone systems share an Injector. Refer to the installation diagram on page 7 & 8 for details. Mount the Injector after the Cell – it should be the last item in the return line. There should be minimum backpressure at the Injector outlet.

Cut a length of tubing that will reach from the base of the peristaltic pump to the base of the acid drum. Position the acid drum in a safe and secure location, preferably about 2 metres from the Ozone XLM Series. Connect the one end of this tube to the inlet side of the peristaltic pump (the direction of flow is indicated by an arrow on the front cover of the peristaltic pump.)

Drill an 8mm hole in the lid of the acid drum and pass the tubing through the hole in the drum lid. Place a sinker on to the end of the tubing that will be in the drum and then attach the drum filter. Note that the drum filter incorporates a non-return valve to prevent back-flow into the chemical drum.

Before placing the tubing into the drum, measure the tubing against the outside of the drum and wrap several turns of PVC tape around the tubing above the drum lid so that the drum filter will be 10-15mm above the bottom of the drum. Lower the drum filter and sinker into the drum and screw on the lid.

Cut another length of tubing that will reach from the base of the peristaltic pump to an injection fitting loop. Connect one end of the tubing to the outlet side of the peristaltic pump (the direction of flow is indicated by an arrow on the front cover of the pump.) Connect the other end of the tube to the injection point loop.

Cut another length of tubing that will reach from the ozone outlet to the other injection fitting loop. Connect one end of the tubing to the ozone outlet. Connect the other end of the tube to the injection point loop.

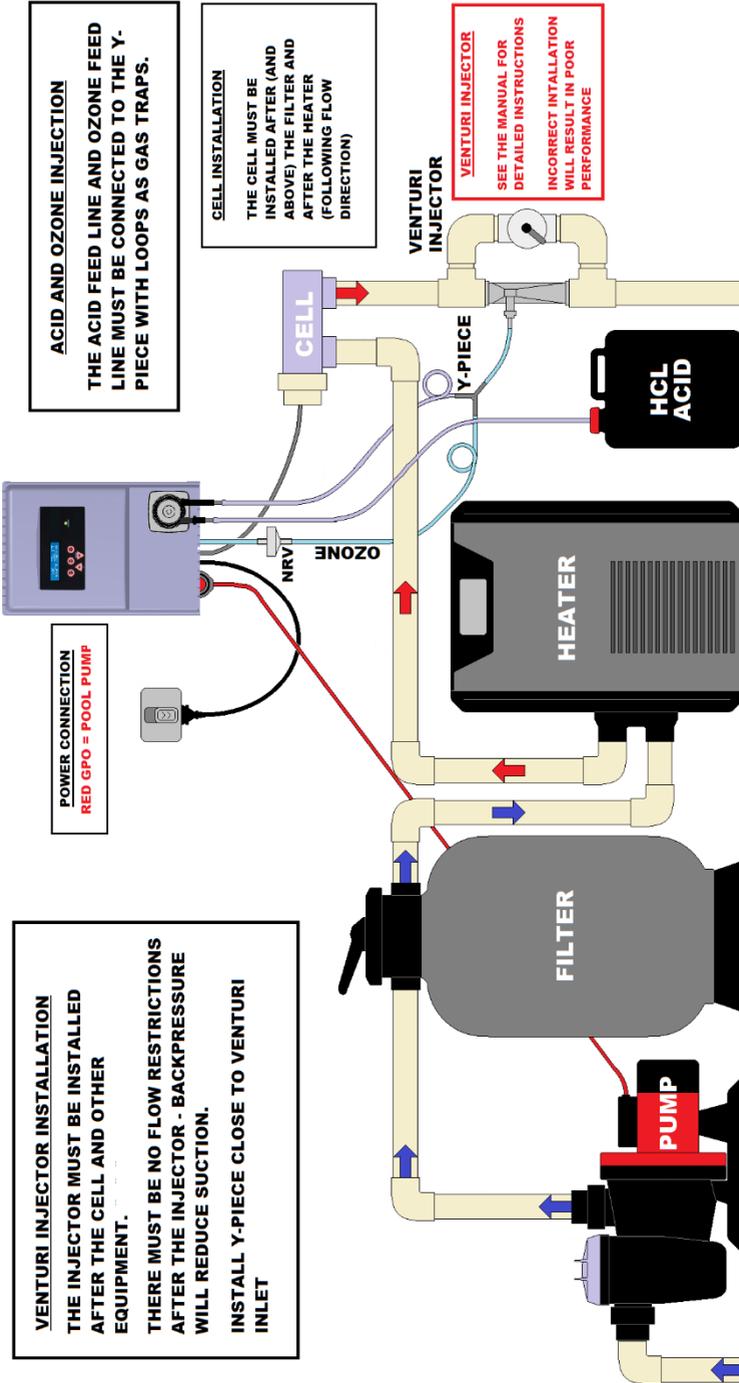
### **Pool Light Outlet**

If your Ozone XLM Series has a light power outlet on its base, this can be used to run up to 150W of pool light power supplies. This outlet is timed, allowing pool lights to be set to come on and turn off automatically.

### **Auxiliary Power Outlet**

If your Ozone XLM Series has a third power outlet on its base, this can be used to run other pool equipment such as a UV unit. This outlet is timed as for the pump outlet, so accessories can be set to come on and turn off automatically with the pump.

# INSTALLATION DIAGRAM





## Cell Cable Connection

### The Venturi Injector

The Venturi Injector uses a bypass valve to create pressure across the venturi to produce a vacuum. Ensure that the water flows in the correct direction.

Any backpressure on the outlet of the Injector will mean that the valve must be closed further to produce suction.

The Injector Manifold should be installed above the water line. For pools that have the equipment installed below the water line **THE MANIFOLD MUST BE INSTALLED AS HIGH AS POSSIBLE**. This reduces the static backpressure of the pool water.

The Manifold should be installed as the last piece in the return line and should avoid pressurised return jets. The returns to the pool should be angled downwards to allow the maximum contact time of the ozone with the water.

The Ozone NRV must be installed between the gas loop and the ozone outlet.

After installation the Injector must be set to create a vacuum. With the pump running the valve must be closed until a hissing sound is heard from the venturi. Check the pool returns for a good amount of air bubbles returning to the pool.

# The OZONE XLM Series Front Panel

## Ozone XLM Series Display

The Ozone XLM Series uses a two line LCD display to provide the user with information.



The first line of the display shows the current time and the cell status and output. In the example above the time is 10.15am and the Cell is "OFF". If the Cell is on, the output of the Cell will be displayed. If the output of the Cell has been set at lower than 100%, "CELL OFF" will be displayed intermittently even while the unit is running as the Cell regulates output. (See Chlorine Output Menu on page 16 for more details)

The second line of the display shows the automatic timer status. In the example above, the automatic timer status is "OFF" and the display is telling you that the Ozone XLM Series will turn on again at 17:00 or 5pm.

Note that the Ozone XLM Series displays the time using a 24 hour clock.

## OZONE XLM Series Operational Buttons

Your Ozone XLM Series has 5 buttons that allow you to control the various functions available via the Ozone XLM Series Menu system.



Each button is labelled with its primary function either on the button itself, or adjacent to it. Secondary functions are labelled within a curved white outline next to the relevant button. The buttons are backlit to show which are active at any given time, although the ESC/OFF button is always available to take you back to the home screen.

### ON Button

Turn the System On Manually: Press ON once to switch the Ozone XLM Series and pool pump on manually. The Ozone XLM Series will default back to AUTO and turn itself off automatically at the end of the next programmed FILTER CYCLE (the time will be displayed on the LCD).

Increasing Manual Run-time in Hourly Increments: Press ON repeatedly (or hold the button down) to increase the manual run time in hourly increments. The run time is displayed on the LCD. When the desired run time has been reached, press ENT to confirm your selection and the system will commence operation.

## **ESC/OFF Button**

Turn the System Off Manually: If the Ozone XLM Series and pool pump are running, pressing this button will turn them off manually. The Ozone XLM Series will automatically turn on again at the start of the next FILTER CYCLE (the time will be displayed on the LCD).

Return to Home Screen: If you have unintentionally accessed a Menu that you don't require, pressing ESC/OFF allows you to return to the home screen.

## **ENT/Menu Button**

Use this button to enter the Ozone XLM Series Menu system and access the various Menu options. Use Y/UP and N/DOWN to scroll through menu options and when your desired menu option is displayed, press ENT to access that option.

## **Y/UP Button and Optional Pool Light**

In the Menu system Y/UP will scroll upwards through menu options. Some menu options will prompt a yes or no answer. If you wish to answer "yes", press Y/UP.

If your Ozone XLM Series also controls your pool lighting (optional), you can turn the lights on or off manually by pressing the Y/UP button. For multi-coloured lights, hold the Y/UP button down to cycle through the various colours and release once the desired colour is reached.

## **N/DOWN Button and Cover Blanket On/Off**

In the Menu system N/DOWN will scroll downwards through menu options. Some menu options will prompt a yes or no answer. If you wish to answer "no", press N/DOWN.

Cover Blanket On/Off: When not in the Menu system N/Down will cause the Cover setting to be toggled – that is it will go from Off to On or On to Off. The Cover setting changes the amount of chlorine produced. See pages 4, 14 & 17.

# Navigating the OZONE XLM Series Menu System

There are two aspects to the general Ozone XLM Series Menu system – the Timer Menu and the Chlorine Output Menu.

Access the Ozone XLM Series Menu system by pressing the ENT button and following the prompts on the LCD. If you find you have ended up in a part of the Menu system unintentionally, you can return to the Home Screen by pressing the ESC/OFF button at any time.

Use the Y/UP and N/DOWN buttons to scroll through the various menu options until the desired option is displayed on the LCD. Use the ENT button to confirm that you wish to select that option. Once accessed, use the Y/UP and N/DOWN buttons to adjust operational settings up or down – and confirm adjustments by pressing ENT. To cancel any adjustments, simply press ESC/OFF to return to the Home Screen.

## Timer Menu

### Setting the time

Once you have installed your Ozone XLM Series and turned it on, you will need to set the correct time on the OZONE XLM SERIES Series' 24 hour clock.

First, access the Menu System by pressing the ENT button. The LCD will display the word TIMER MENU. Select this by pressing the ENT button once more.

Line 2 on the LCD will now read SET TIME HOURS. Press ENT to select this option and then use the Y/UP and N/DOWN buttons- to adjust the hours on the LCD. Confirm the correct hours value by pressing ENT again.

The LCD will now show SET TIME MINUTES. Adjust the minutes using the Y/UP and N/DOWN buttons. When complete, press ENT to return to normal operation.

## Filter Cycles Menu

Your Ozone XLM Series has two filter cycles pre-programmed as factory defaults as follows:

Filter Cycle 1:    ON at 07:00 (7am)                      OFF at 11:00 (11am)

Filter Cycle 2:    ON at 18:00 (6pm)                      OFF at 22:00 (10pm)

You can change the start and finish times of each filter cycle to meet your sanitiser requirements and to suit your lifestyle.

To adjust filter cycle start and finish times, press ENT to access the Ozone XLM Series Menu system. Press ENT again to select the TIMER menu and then scroll down using the N/DOWN button until ADJUST CYCLES is displayed on the LCD.

Select this option by pressing ENT and the LCD will show the start (ON) time of the filter cycle being adjusted. Use the Y/UP and N/DOWN buttons to adjust the start time. Press ENT to confirm your selection and then the LCD will show the end (OFF) time for that filter cycle. Adjust the OFF time in the same way as the ON time and press ENT to confirm.

After ON and OFF times for the first filter cycle have been adjusted, the ON time for the second filter cycle is shown on the LCD. This can be adjusted in the same way, or if you do not wish to make any changes, simply press ENT to confirm the time shown on the LCD. Follow the same process to either adjust or confirm the OFF time for the second filter cycle, and once this has been confirmed the LCD will display the home screen.

Note: an additional 2 filter cycles can be enabled and programmed via the Advance Settings Menu. For details on how to access this menu, please refer to the Advance Setting Manual (available to download from [www.poolcontrols.com.au](http://www.poolcontrols.com.au)) or call Pool Controls Service on 1300 550 010.

## Running Times

We recommend your system be operated for ***at least 8 hours per day and always run the system when using the pool.***

The amount of chlorine being added to the pool each day is determined by the cell size, the chlorine output settings (See Chlorine Output Menu below) and the number of hours that the Ozone XLM Series is operated. As sunlight destroys chlorine, it is recommended that the Ozone XLM Series be run mostly in the evening.

Chlorine is added for sanitation but the filter is needed to remove pollutant particles (dust, sand etc) and keep the water looking good. The filter must operate for a reasonable number of hours per day to remove pollutants.

In very hot weather and/or with large bather loads, the pool may need to run for even longer and if necessary, extra chlorine should also be added manually. If there are adverse local conditions – such as windborne dust and debris - the chlorine demand will be higher than normal and you will likely need to operate the system for longer periods to adequately filter the water.

## Light Timer Menu

You can use your Ozone XLM Series to turn your pool or garden lighting on and off automatically, you can set the ON and OFF times using the light timer menu.

Press ENT to access the Ozone XLM Series Menu system. Press ENT again to select the TIMER menu and then scroll down using the N/DOWN button until LIGHT MENU is displayed on the LCD.

Line 2 on the LCD will now read "AUTO? Y/N". To enable automatic light operation press the Y/UP-button. Line2 will read "Auto ON" for short period before displaying "ON hh:mm".

Adjust the ON time using the Y/UP and N/DOWN-buttons and confirm by pressing ENT. The LCD will now prompt you to set the OFF-time, which is accomplished using the Y/UP and N/DOWN-buttons as before. Press ENT-to confirm the new OFF-time and the LCD will return to the home screen.

To disable automatic light operation, access the LIGHT menu in the way described above and when asked "AUTO? Y/N" - press the N/DOWN button. Line 2 will read "Auto OFF" for short period then the system will return to normal operation and the light can only be operated manually (see below for how to do this).

## Manual Light Operation

If the Ozone XLM Series is turned on, the light can be turned on or off manually by pressing the Y/UP-button.

If you have multi-coloured LED lights that cycle through different colours and requiring a power pulse to change effects, you can hold down the Y/UP-button to cycle through the options and release when the desired colour or effect is achieved.

## Controlling the Chlorine Residual

There are two ways of controlling the amount of chlorine entering the pool – by altering the running times and by reducing the Ozone XLM Series Output. If the pool chlorine residual tests high you can reduce the operating time and/or decrease the Output. If the chlorine residual tests low and the output is already at maximum you will need to increase the operating time and/or add supplementary chlorine.

### Ozone XLM Series Output Control

Ozone does not form a residual in the pool, this is why it is running with a chlorinator. The ozone system is on whenever the pump is on. The LCD display usually shows the amount of chlorine being produced by the Cell as a percentage of its maximum.

However, this is not the same as the Ozone XLM Series Output. 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. This is why the Cell will turn ON/OFF if the Ozone XLM Series Output is below 100%.

## Chlorine Output Menu

To adjust the chlorine output on your OZONE XLM SERIES Series, press ENT to access the Ozone XLM Series Menu system. Scroll down using the N/DOWN button until CHLORINE OUTPUT is displayed. Press ENT again to select this menu and then used the Y/UP and N/DOWN buttons to adjust the output level. Confirm the adjusted settings by pressing ENT once more.

### Superchlorination

When bathers enter a pool there is a reaction between nitrogen/ammonia compounds from the bathers and the chlorine in the pool. These reactions form chloramines (also called combined chlorine) which are responsible for the “chlorine” odour and for some minor irritations. Ozone helps to destroy these compounds.

These compounds can also be broken down by adding free chlorine to a level above 5ppm by the addition of a shock dose of chlorine – also known as superchlorination.

Levels of chlorine immediately adjacent to the Ozone XLM Series Cell anodes far exceed 5ppm and so a lot of chloramines are destroyed as water passes the Cell.

If the chloramine levels still become high, simply add a shock dose of chlorine or run the Ozone XLM Series for a long period overnight.

### Cover Blanket On/Off – when chlorine demand is reduced

To adjust the chlorine output to compensate for the use of a cover blanket the unit must be made aware that a cover blanket is in place over the pool. Simply push the N/DOWN button for on and off selection. When the system is on COVER will flash in the display and the chlorine output will be reduced.

## Advanced Settings Menu

If you are interested in learning more about additional functionality of your Ozone XLM Series, a detailed **Advanced Settings Manual** is available to download from the Pool Controls website – [www.poolcontrols.com.au](http://www.poolcontrols.com.au) – or call Pool Controls Service on **1300 550 010** for further information.

Advanced Settings comprise:

- WATER TEMP - allows you to compensate for cold water
- SYSTEM DATA - shows service information
- FILTER CYCLES - allows for up to 4 Filter Cycles to be activated and is very useful for seasonal timer adjustments.
- LIGHT controls automatic light operation



## Automatically Dose Acid – the ADJUST AutoDOSE Sub-MENU

*Note: fibreglass and liner pools are unlikely to need adjustment of auto dose amounts.*

This sub-menu allows you to adjust the amount of acid added as an automatic dose. Adjustment of the DOSE# is in increments of 10. Press Y/UP when Line 2 of the LCD asks “ADJUST Auto DOSE?” to enter this sub-menu.

Line1 of the LCD will display: “hh:mm Auto DOSE”

Line2 of the LCD will display: “<90> 90 DOSE#” (note that <nn> denotes the default value)

Use the Y/UP and/or the N/DOWN buttons to adjust the amount of acid to be dosed automatically. The value will be used by the algorithm to determine how much acid and when to add it automatically.

Press ENT to confirm and return to the Home Screen and normal operation.

## Priming the Dosing Pump

To prime the acid feed line – go to the +ACID Menu and do a manual feed of 100mL (or more if necessary due to length of feed tube). Note: the dosing pump will only start after the filtration system has been running for 2 minutes’ “start delay”. Once the dosing pump is running, double check the pump rotor direction and ensure it is correct (otherwise water will be pumped into the acid drum.)

## Adjusting the pH Control for Dilute Acid (Advanced Settings Menu)

If a unit has been installed with the pH Control Dose Pump this setting has likely already been made by the installer.

To enter the Advanced Settings Menu hold the OFF-button down for approximately 4 seconds and when Advanced appears in the display press ENTER. Use Y/UP or N/DOWN buttons to scroll through the menu until LCD Line2 shows “ACID Dilution” and press ENTER. The LCD will show:

“Dilution NO”

“Dilution Y/N?” Press Y/UP for dilute acid use.

There are three possible dilution rates to select from using the Y/UP and N/DOWN buttons:

“Acid approx 10%”

“Acid approx 14 - 16%”

“Acid approx 20%”

“1 Acid : 2 WATER”

“1 Acid : 1 WATER”

“2 Acid : 1 WATER”

Note that undilute acid is generally 28 – 32%. Note also that dose pump run times are longer when dilute acid is used.

## OZONE XLM Series Status Indicator, Warnings and Safety Shutdowns

There is a STATUS indicator on the front panel that simply shows green (OK) and red (WARNING). The reason for any WARNING will be written on the LCD display. Possible warnings are explained below.

### Low Water Temperature & TDS



Low water temperature and lower than recommended mineral levels can both cause low conductivity of the water to be detected.

The Ozone XLM Series will, however, continue to function and will display this without a red warning indication. Simply check the TDS level and make sure it is well above 800ppm (ideally around 1000ppm or a little more).

Check the temperature of the water, and if it is lower than 20°C, you may wish to adjust the Water Temperature setting using Advanced Settings Menus (information on Advanced Settings available via [www.poolcontrols.com.au](http://www.poolcontrols.com.au) or by calling Pool Controls Service on 1300 550 010).

### Gas Detection & Dry-Run Pump Shutdown

This is an important safety feature of the Ozone XLM Series as a build-up of chlorine gas can be dangerous.



The display above left shows the Cell being turned OFF after chlorine gas is detected for approximately 10 seconds. If gas is still detected after approximately 2 minutes the pump will also be turned OFF – and the display will read as shown above right.

To re-start the pump, simply press the ON-button (as instructed by the display). This will reset the warnings and allow the pump to run (for a maximum of 3 minutes if gas is still detected).

## High TDS

Too much mineral in the water results in high conductivity and the Ozone XLM Series Cell may overheat. The Ozone XLM Series will shut down to prevent this.



If the above warning is present, the Ozone XLM Series will have shut down to avoid an overload (mandated by electrical standards).

Check the salinity/TDS and water temperature. Salinity/TDS should be kept below 3000ppm, and ideally will be above 900ppm.

**The Ozone XLM Series is not designed for operation in seawater or brine.**

## Cover Blanket On/Off

When the cover blanket is on the display will alternate between time and COVER:



The Status LED will alternate orange (red + green) when COVER is displayed.

## Operation Following a Power Failure

The Ozone XLM Series unit comes with a timer function built into the operating software. The timer is a 24-hour type with quartz-crystal control. This Timer is backed-up by a Real-Time Clock (RTC) similar to those found in computers.

During a power failure the Ozone XLM Series will keep time and maintain AutoMode functions.

If a Filter Cycle is active when power is returned the pump will be turned ON within 1 minute. The Ozone XLM Series will keep all its settings and will not need to be re-programmed.

The Ozone XLM Series is ideal for use in systems where repeated power cuts occur, such as off-peak power circuits and Queensland's Tarriff33 system.

## Maintenance

Like all equipment the Ozone XLM Series will look better and last longer if it is maintained and operated in accordance with these instructions.

### The Ozone XLM Series Power Supply

The Power Supply has been designed 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

### The Ozone XLM Series Cell

The Cell does not have an unlimited life because its anodes (active electrodes) will wear away slowly as it produces chlorine.

Scale forms on the Ozone XLM Series Cell cathodes (negative electrodes). Scale is a combination of calcium/magnesium and other mineral salts (usually carbonates or hydroxides). The rate of scale build-up is determined by the amount of use, the pH/total hardness/TA and the temperature of the pool water. Generally concrete and plaster pools will scale much faster than fibreglass pools due to higher calcium levels in the water caused by leaching of minerals from the pool surface.

The Cell is manufactured from extremely expensive materials so if it fails early due to lack of maintenance, the pool operating cost will not be as economical as it could have been. Note that bore water generally contains far more minerals than scheme water. If bore water is used it is likely that faster Cell scaling will be seen.

## Cell Cleaning

The Ozone XLM Series Cell is self-cleaning, however, some conditions such as very hard water can cause the cell to become scaled over time.

**Do not remove the cell straps (holding the electrodes in place) when cleaning.**

The Ozone XLM Series 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.

**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. Soft mineral scale can generally be hosed off with a strong jet of water.

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 Ozone XLM Series unit should be turned off so that any AutoMode functions cannot turn it back on 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.***

## Troubleshooting

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](http://www.poolcontrols.com.au).

### If there appears to be low or no Chlorine Residual:

1. Check stabiliser level is 40ppm – 60ppm. Add if necessary and wait for it to dissolve.
2. Is the Cover setting on when the cover is off the pool? if yes turn Cover setting off.
3. Have you added any chemical additives recently?
4. Check pool for phosphates and remove if necessary
5. Is the unit turned on and operating the filter pump?
6. Are the operating hours sufficient?
7. Is the Output set to 100%?
8. When running is the Cell ON? Is it reading 100?
9. Is there enough TDS in the water? (absolute minimum 900ppm)
10. Is the temperature of the water low?
11. Is the Cell scaled heavily?

If the Cell is ON but not reading 100, check the Temperature Compensation setting in the WATER TEMP MENU (located in Advanced Settings – see [www.poolcontrols.com.au](http://www.poolcontrols.com.au) for Advanced Settings Manual). Also check the pool salinity is within correct range. Very cold water will reduce the Cell output

If the unit is not running at all **check the fuse** in the bottom of the unit. Note that the fuse is a ceramic (HRC) slow-blow type, see example below:



Fuse size is M205 (20mm x 5mm), TD5A or TD6.5A (TD – Time Delay / slow-blow), HRC (High Rupture Capacity).

Do not use standard glass fuses as these may rupture under current in-rush conditions.

