



# ZODIAC



## Zodiac LM3 Salt Water Chlorinator Owners Manual

Congratulations on having purchased a Zodiac LM3 Saltwater Chlorinator for your pool. You have made a wise decision and you will benefit from your Zodiac LM3 Saltwater Chlorinator for many years to come. There are two major benefits in owning a Zodiac LM3 Saltwater Chlorinator. The first is that you will save hundreds of dollars which you otherwise would have to spend on sanitising chemicals for your pool. Not only do you save money, but an even greater benefit which you will experience is the remarkable clarity of the water, and the pleasure and exhilaration of bathing in slightly salty water. By following just a few simple steps, your pool will be a thing of beauty and pleasure, and will win the admiration of your family and friends. Please take the time to read through your Owner's Manual. It is set out in such a way that you can see the simple steps to keep your pool or spa in sparkling clean condition. If you would like to know more about how your new LM3 works, or about water chemistry matters, you will find that this owner's manual will provide you with useful information.

And don't forget that your Zodiac LM3 Saltwater Chlorinator is backed by a comprehensive warranty. The exclusive Zodiac warranty is an expression of the confidence which Zodiac Group Australia has in its products, and is your re-assurance of prompt and expert after-sales service by professional technicians. For more information talk to your local pool shop or telephone Zodiac Group Australia: 1800 688 552. Due to constant developments and improvements, specifications may change without notice.

### **IMPORTANT SAFETY INSTRUCTIONS**

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

- 1) Read and follow all instructions**
- 2) WARNING - To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.**
- 3) Do not bury cord. Locate cord to minimize abuse from lawn mowers, hedge trimmers and other equipment.**
- 4) WARNING - To reduce the risk of electrical shock, replace damaged cord immediately.**
- 5) Save these instructions**

## How your Zodiac Saltwater Chlorinator Works

Common salt (sodium chloride) is made up of two elements, sodium and chlorine. When your Zodiac LM3 Saltwater Chlorinator is installed, the installer will dissolve a measured quantity of salt in the pool water to make it slightly salty. As part of the daily filtration cycle, the pool water is passed through the Zodiac electrolytic cell to produce chlorine which is dissolved instantly into the water. Your Zodiac LM3 also produces a small amount of ozone in the cell as a by-product.

In simple, non-technical terms, the chlorine instantly starts to destroy bacteria, viruses and algae, and in doing this reverts to dissolved salt. This cycle continues with more new chlorine being produced from the salt water in the electrolytic cell, sanitising the pool and then reverting to dissolved salt.

Everyday when the Zodiac LM3 and filtration system are switched on, dust and debris are trapped by the filter and the Zodiac LM3 makes the water safe and sanitised

### **Important**

To ensure your LM3 works at maximum efficiency, regularly check and maintain the chemistry of your pool.

**Zodiac recommends the following water chemistry readings for optimal performance of Zodiac LM3.**

	Free Chlorine	pH	Total Alkalinity (ppm)	Calcium Hardness (ppm)	Cyanuric Acid (ppm)	Salt Level (ppm)
Australian Standard	1 – 3 ppm	7.2 – 7.8	80 – 300	90 – 300	30 – 50	4000 - 7000
Ideal reading/range	1 – 3 ppm	7.5	80 – 140	90 – 300	50	4000 ppm at 27°C**
To increase*	Add chlorine or increase output of equipment	Add buffer or soda ash (sodium carbonate)	Add sodium bicarbonate	Add sodium calcium chloride	Add Cyanuric acid	Add Salt
To decrease*		Add muriatic acid	Add muriatic acid or dry acid	Partially drain & refill pool	Partially drain & refill pool	Partially drain & refill pool

\* When using chemicals, always follow manufacturers directions and follow the advice of your pool professional. Always use protective clothing, gloves & glasses. Store & use chemicals out of the reach of children

\*\* Maximum safe salt level for Zodiac LM3 is 13,000 ppm

## Zodiac LM3 Saltwater Chlorinator Operation

The Zodiac LM3 must only operate when the filtration system is ON, and water is flowing through the cell. The chlorine production of the Zodiac LM3 is controlled by the number of hours the Zodiac LM3 and filtration system is ON, as well as the setting of the output control.

For convenience the Zodiac LM3 and filtration system can be operated automatically through the Zodiac LM3 timeswitch. An added feature of your Zodiac LM3 is the Super Chlorinate function which automatically Super Chlorinates the pool over a 24 hour period

Your Zodiac LM3 is also fitted with 3 indicator lights that monitor the operation of the chlorinator and the concentration of salt in the pool. The Zodiac LM3 is designed to require minimum operator maintenance and uses reverse polarity technology to minimise calcium build-up on the cell.

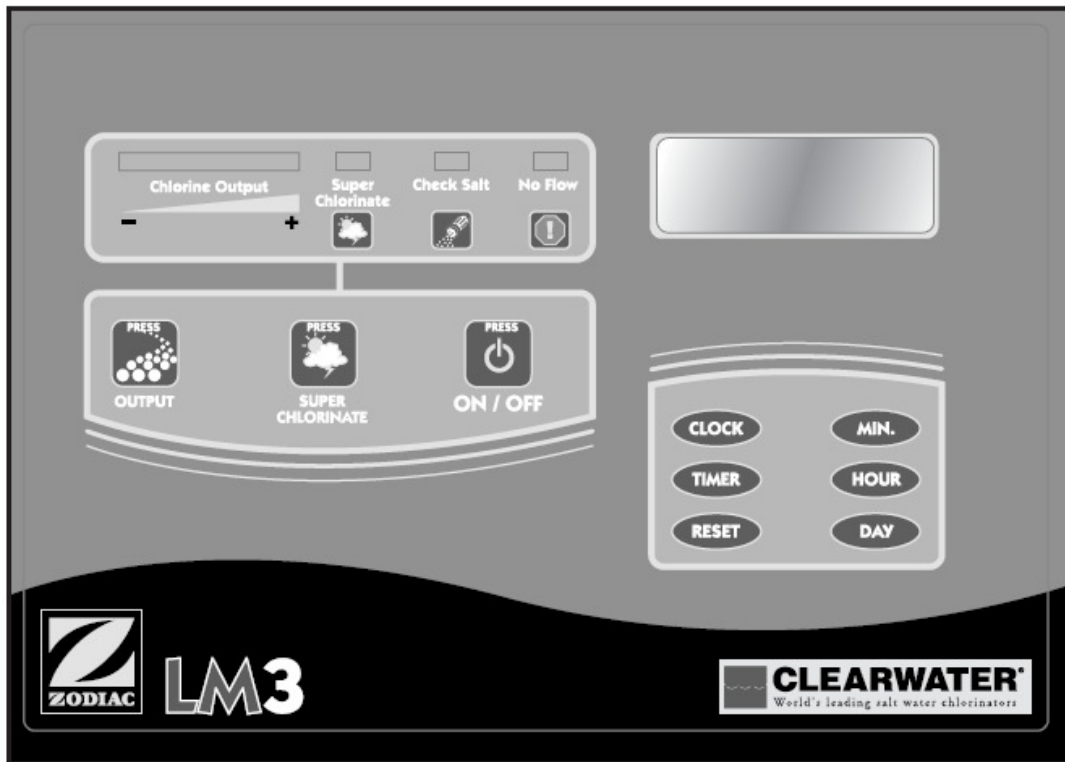
### **Zodiac LM3 - Models not fitted with timeswitch**

Power to these units may be controlled by the external filtration system timer.

The chlorinator functions may only be set when the filtration system is running.

The Super Chlorinate mode will increase the output for the next 24 hours of running time.

To use the Super Chlorinate mode effectively, the filtration system should be run continuously for 24 hours.



## **Control Panel Functions**

### **Output Button**

The output button is used to set the chlorine output of the Zodiac LM3.

Chlorine output is selected by repeatedly pushing this button until maximum is reached on the chlorine output indicator. An extra push of this button will reset the output to minimum.

### **On / Off Button**

This button over-rides any automatic internal time switch setting and switches the Zodiac LM3 and filtration system ON and OFF.

The function is helpful for checking and/or altering the chlorine output settings and other maintenance tasks. Operation of the ON/OFF button will not change the timeswitch settings. In fact the Zodiac LM3 is so smart, it will switch itself back to previously set operation settings automatically.

### **Super Chlorinate Button**

The Super Chlorinate function is used to rapidly add chlorine to the pool.

A detailed explanation of the Super Chlorinate function is given in the Automatic Operation section of this manual.

## Automatic Operation

### **Timeswitch (where fitted, Zodiac "LM3-TS" model only)**

When the chlorinator is disconnected from mains power, the timeswitch display will be blank. Once power is turned on the display will turn on, after first displaying the software revision of the chlorinator. All the timeswitch and clock settings can be cancelled by using the Reset button.

**Please Note:** High ambient temperatures may cause the clock display to 'darken', this will return to normal when the temperature drops.

### **Setting the Clock**

1. Push and **HOLD** the **CLOCK** button.
2. Press the **MIN.** button to set the minutes.
3. Press the **HOUR** button to set the hours. Note the hours are displayed in 24 hour format.
4. Press the **DAY** button to set the day
5. When you have finished setting the clock release the **CLOCK** button.

### **Setting the Timer for automatic operation.**

The timer may be set for up to 3 ON/OFF times each day. For convenience you may select groups of days rather than setting timers for each individual day.

### **To set the ON/OFF time**

1. Press the timer button to step through the timer setting you wish to set for Timer 1 through Timer 3. Typical swimming pool settings are for two timers per day. It is not necessary to select all 3 timers.

**NOTE:** For each timer setting, you must select in the following sequence:-

#### **1. TIMER 1**

- a. Press 'Timer' button to select – **T1 ON**
- b. Press 'Day' button to select:-  
All days (**MON-SUN**), individual days (**MON, TUE, WED, THU, FRI, SAT, SUN**) or a group of days: (**MON-SUN**) or (**MON-FRI**) or (**MON-SAT**) or (**SAT-SUN**). If the timer is not being used, press the 'Day' button until **NOT USED** is displayed.
- c. Press 'Hour' button until the desired starting hour is shown.
- d. Press 'Minute' button until the desired starting minute is shown.  
**NOTE: --:-- Is an invalid time and must be changed for correct timer operation**
- e. Press 'Timer' button to select **T1 OFF**.
- f. Repeat steps 'b' to 'd' to select the desired 'OFF' time for T1.

#### **2. TIMER 2**

- a. Press 'Timer' button to select – **T2 ON**
- b. Press 'Day' button to select:-  
All days (**MON-SUN**), individual days (**MON, TUE, WED, THU, FRI, SAT, SUN**) or a group of days: (**MON-SUN**) or (**MON-FRI**) or (**MON-SAT**) or (**SAT-SUN**). If the timer is not being used, press the 'Day' button until **NOT USED** is displayed.
- c. Press 'Hour' button until the desired starting hour is shown.
- d. Press 'Minute' button until the desired starting minute is shown.  
**NOTE: --:-- Is an invalid time and must be changed for correct timer operation**
- e. Press 'Timer' button to select **T2 OFF**.
- f. Repeat steps 'b' to 'd' to select the desired 'OFF' time for T2.

Repeat this sequence for timer 3 if required.

Press the clock button to return to the clock display.

## Chlorine Output Setting

Repeated pushing of the Output button increases the chlorine production one step at a time until maximum is reached. An extra push of this adjustment at maximum resets the output to minimum. Use of ON/OFF control on the front panel overrides the timeswitch settings to switch the chlorinator and the connected pump ON or OFF. This function is helpful for checking and altering the chlorine production settings, and other maintenance tasks. The normal timer settings are not altering the chlorine production settings, and other maintenance tasks. The normal timer settings are not changed by this process and will resume at the pre-set time.

## Super Chlorinate:

The Super Chlorinate function is used to rapidly add chlorine to the pool. When the 'Super chlorinate' button is pressed, timer and chlorine output settings are temporarily over-ridden and the chlorinator is set to run for approx. 24 hours at increased chlorine production.

NOTE: The chlorinator must be running for the Super chlorinate mode to be entered. If the chlorinator is off, press the ON/OFF button to turn the chlorinator on, then press the SUPER CHLORINATE button to enable SUPER CHLORINATE.

When in SUPER CHLORINATE mode, the green SUPER CHLORINATE light will illuminate and 'SUPER' will be displayed on the LCD screen.

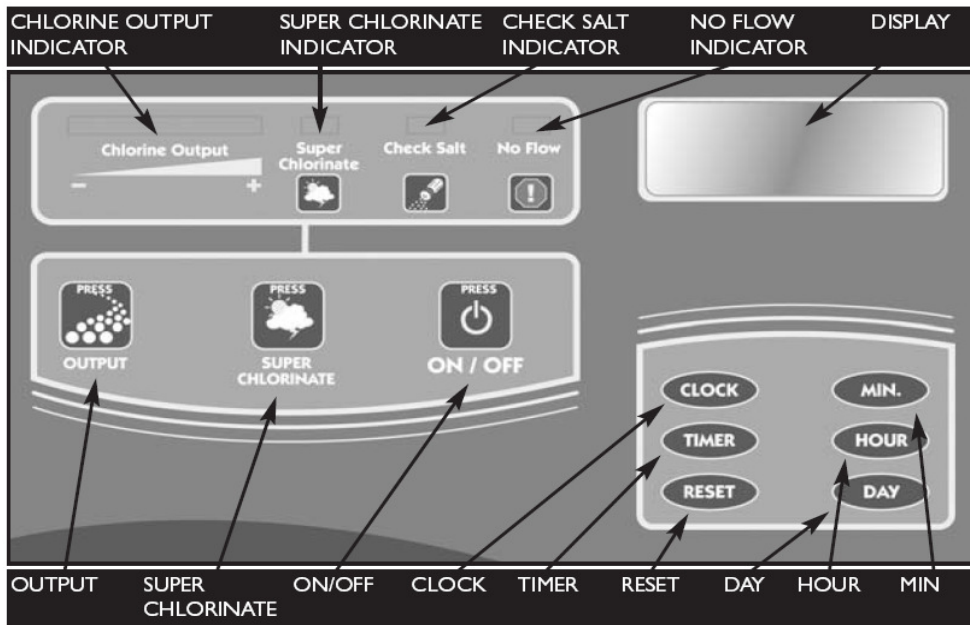
To disable the SUPER CHLORINATE process, press the SUPER CHLORINATE button a second time. Normal timer operation will resume at the conclusion of the pre-set SUPER CHLORINATE period. See 'Problems you may encounter' parts 'B' & 'C' for details regarding when the SUPER CHLORINATE function should be used.

**Note:** During SUPER CHLORINATE startup the chlorinator may actually switch the cell off for a few minutes as the cell is prepared for the following 24 hours of operation. If this occurs, the yellow minimum output will flash until this process is completed.

## Backup Battery

The Zodiac LM3 is fitted with a rechargeable battery. If the power is removed, the Zodiac LM3 will retain the timeswitch settings, output power settings and Super Chlorinate settings for a maximum period of 20 days.

Note: when power is removed from the Zodiac LM3 the clock display is not visible but the clock continues operating and will keep the correct time. When power is re-applied, the clock display will re-appear.



## Indicator lights: What they mean

### Chlorine Output

A series of six lights indicate the chlorine output setting of the power pack. More lights equals greater chlorine production. **Note:** This setting does not show the actual chlorine reading in the pool, use of a test kit is required to confirm the Free Chlorine reading of the pool water.

### Chlorine Output - Yellow Light Flashing

The yellow (low output) light flashes for a few minutes during electrode reversal (electrode self clean). During the reversal period, there is no chlorine output

### Super Chlorinate - Light ON

This light indicates that the Super Chlorinate feature has been selected, it will turn OFF when the Super Chlorinate period has ended.

### SUPER CHLORINATE - Light OFF

Function not selected.

### CHECK SALT - Light ON

As the salt level drops, the **CHECK SALT** light will come on at any salt level between 3000 ppm and 4000 ppm depending on mains voltage and water temperature. This is not a fault but a precaution to ensure the salt level is never too low. (See 'Salt: When And How To Add It').

**Note:** Operating the Zodiac LM3 at reduced salt levels may shorten the life of the electrode.

### CHECK SALT - Light OFF

Indicates that the salt level in the pool is correct

### NO FLOW - Light ON

This indicates insufficient water flow in cell, usually caused by the pump not running. The chlorine output will also turn off at this time.

### All Lights OFF

All lights OFF indicates the Zodiac LM3 is turned off. Check if the display indicates ON or OFF, or the mains power is disconnected. Check the mains power circuit breaker.

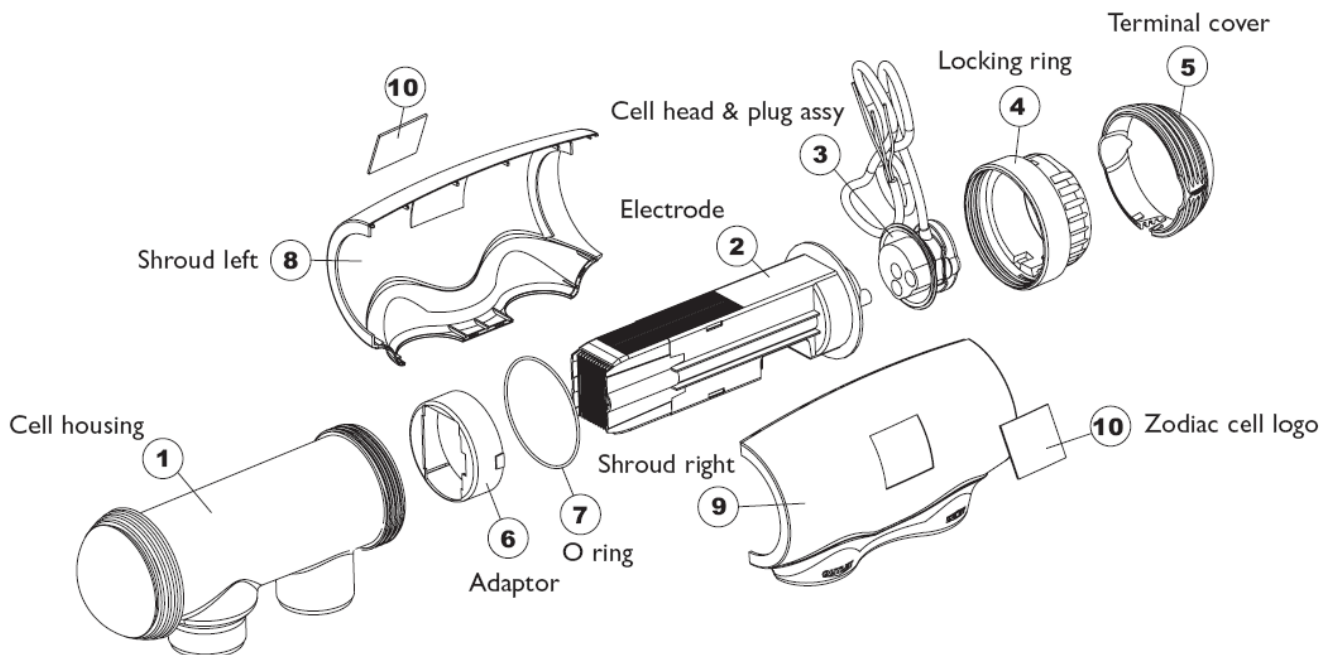
## Chlorinator Maintenance

### How to clean or inspect your electrode

In some pool environments, there is a high level of calcium (referred to as calcium hardness) in the water. In these situations, your LM3 electrode will benefit from manual cleaning on occasion and remove excess build-up of calcium.

To clean your electrode:

1. Switch off the filter pump and chlorinator, close necessary valves.
  2. Unplug the cell terminal cap.
  3. Unscrew the electrode retaining ring and remove the electrode. If you can see any calcium buildup on the electrode, immerse the electrode in cell cleaning solution ensuring that the terminals are not immersed.
- Note:** The use of eye protection is recommended when working with pool chemicals.
4. You can purchase electrode cleaning solution from a pool shop, or mix your own in a suitable plastic vessel by adding one (1) part of Hydrochloric (Muriatic) acid to ten (10) parts water. **ALWAYS ADD ACID TO THE WATER.** Allow the cleaning solution to dissolve the calcium deposits for about 10 minutes. When the electrodes are clean, dispose of the cleaning solution into the sewerage system not into storm water drains
  5. Rinse the electrode in clean water and re-fit the electrode in the cell housing.
  6. Replace the cell head and plug assembly.
  7. Reset valves and switches. Turn pump and Zodiac LM3 on.
  8. Confirm chlorine output and settings on the powerpack. Timer settings are automatically retained.



### Damage caused by insects

The outer casing of your Zodiac LM3 power pack has small vents to allow internal components to remain cool in hot weather. Sometimes small insects may enter the outer casing of the power pack, and this can cause damage to the internal electrical components. To avoid this, spray insect repellent on surfaces around the powerpack.



## Operating Hints

### **A. Filtration and chlorination system operating periods**

The Zodiac LM3 has an inbuilt timeswitch to automatically switch the filtration and chlorination system ON and OFF, up to six times a day.

Run your filtration and chlorination system 8 hours per day, in the swimming season.

For best efficiency, operate the system in the cool hours of the evening, or the early morning.

During very hot weather it might be necessary to run the system for around **10** hours per day, but in winter, it is only necessary to run the filtration system for around **4** hours per day.

Shorter periods will help to lengthen the life of the electrode.

### **B. Chlorine output settings**

Commence operation of the Zodiac LM3 at maximum output. Add salt to the pool if the **CHECK SALT** light is showing.

For a home pool of about 50,000 litres, the addition of one 25 Kg bag of salt will increase the salt concentration by 500 ppm, see 'Salt: When And How To Add It'.

### **C. Free (residual) chlorine reading**

The free chlorine residual in the pool should be around 1 - 3 ppm. Increasing the daily operating period of the system increases the free chlorine reading, and a shorter operating period reduces the chlorine reading. Likewise, operating the chlorinator at maximum output will produce a higher chlorine reading than operating the chlorinator at a lower setting of, say 50%.

Where the salt water chlorinator is used in conjunction with Nature2, the free chlorine level will be maintained at around 1ppm and reduce the need to use the Super Chlorinate feature. This will significantly extend the life of your chlorinator electrode.

### **D. Chlorine stabiliser (Cyanuric acid) level**

Make sure that the water has a satisfactory chlorine stabiliser (Cyanuric acid) reading which is within the band of 30 - 50 ppm. You will need to take a sample to your pool shop to measure this. Chlorine stabiliser helps to keep a satisfactory free chlorine reading in hot climates.

### **E. pH readings**

It is ABSOLUTELY ESSENTIAL that the pH of the pool be maintained in the range of 7.2 - 7.8.

The effectiveness of chlorine as a sanitiser is significantly reduced as the pH rises. At a pH of 8.0, nearly all of the chlorine being added to the pool is wasted, and it will be almost impossible to maintain a satisfactory free chlorine reading.

### **F. Regular maintenance checks**

#### **Weekly:**

- Visually check the electrodes. Remove any debris that may have passed through the filter and lodged in the cell housing.
- Check the free chlorine.
- Check the pH of the water. Adjust if necessary.
- Check the pressure gauge on the filter to see if backwashing is necessary.

#### **Monthly:**

- Check the salt concentration of the pool (see 'Salt: When And How To Add It').
- Check the total alkalinity. Adjust if necessary.
- Check the chlorine stabiliser reading. Adjust if necessary.



## Salt: When And How To Add It

### When to add salt

Take a water sample to your pool shop to ascertain if salt actually needs to be added. The light marked **CHECK SALT** functions automatically when extra salt is needed. Note that the **CHECK SALT** light may switch on at any salt level between 3000 and 4000 ppm, depending upon the water temperature and mains voltage (see note). This is not a fault but a precaution to ensure that the salt level is never too low.

The salt concentration should normally be around 4000 ppm, but should never be allowed to fall below 3000 ppm, as this can reduce the life of the electrode.

Salt is not lost through evaporation. Salt is lost with the water splashed out of the pool or during backwash. Adding fresh water to the pool dilutes the salt concentration. A top-up of salt is needed from time to time, just before and just after summer are the best times.

**NOTE:** Even if the salt concentration is around 4000 ppm, the **CHECK SALT** light may switch ON if the water temperature or mains supply voltage are too low. In this situation, it may not be possible to set the Chlorine Output to maximum. Addition of more salt to the pool will allow the Chlorine Output to reach maximum settings.

### How much to add

Use only refined salt (sodium chloride) when adding salt to the water of your pool. For home pools of about 50,000 litres eight 25 Kg bags of salt are required to reach 4000 ppm concentration, each additional 25 Kg bag of salt will increase the salt reading by about 500 ppm. Larger pools require greater amounts of salt to be added. Add enough salt to obtain a salt concentration of 4000 ppm. Note: ppm (parts per million) is sometimes referred to as mg/l (milligrams per litre).

### How to add salt

When the control panel indicates **CHECK SALT**; empty the contents of no more than two 25 Kg bags of salt at one time into the shallow end of the pool. The salt will slowly drift down to the deep end, helping to disperse the salt.

Do not add the salt to the skimmer box. Run the filter for 4 to 6 hours to help disperse the salt around the pool. **Note:** allow 24 hours for the salt to fully dissolve.

Observe the chlorinator control panel and confirm the **CHECK SALT** is not showing. If the light remains on, wait 24 hours and repeat the procedure with a further two bags of refined salt. The **CHECK SALT** should now be off. If not (the light is still glowing) the cell should be checked to confirm it is functioning correctly. Please contact your Zodiac service technician or your pool shop to have the cell tested. **Note:** Remove your automatic pool cleaner when adding salt or other chemicals.

## Some Tips On Water Chemistry

### **pH is very important**

Do not confuse pH with total alkalinity. pH is a simple numerical scale which expresses the acid/alkaline balance of the water. A pH value of 7.0 denotes neutrality, ie. neither acidic nor alkaline. High pH values (ie. above 7.0) denote alkaline conditions. Low pH values (below 7.0) denote acidic conditions.

### **How to adjust pH**

Aim for a pH range of 7.2 - 7.8 which is ideal for maximum comfort and minimum chlorine demand. Always adjust total alkalinity before adjusting pH.

Low pH (acidic water) leads to stinging eyes and corrosion of open metal fittings. Raise the pH by adding sodium bicarbonate, soda ash, or dry alkali. First pre-dissolve in water, then add no more than 500 grams at a time. Check the pH after each addition is thoroughly dispersed.

High pH (alkaline water) leads to clouding of the water and prevents the sterilising action of chlorine. This means algae and germs can grow. Lower the pH by adding hydrochloric acid to the pool water. The acid demand indicated by a 4-in-1 test kit will show the amount of acid to use (or check with your pool retailer). If it is difficult to maintain the correct pH level check the total alkalinity.

### **Total alkalinity affects pH**

Total alkalinity is a measure of the alkaline chemicals in your pool water (eg. Bicarbonates, carbonates and hydroxides). It can be thought of as the buffering system necessary to control pH. Low alkalinity can be compared to weak shock absorbers on a car, the pH will go up and down like a perpetual yoyo. pH will be difficult to adjust and staining of pool surfaces may occur when total alkalinity is too low.

Total alkalinity should be in the range of 80 - 140 ppm. Total alkalinity is often confused with pH, which it affects.

To raise total alkalinity, add pH buffer (also called pH stabiliser or sodium bicarbonate) at the rate shown in the manufacturers instructions. A small amount is added daily to achieve a total alkalinity reading of 80 - 140 ppm. If total alkalinity is too high, scale will tend to form in the chlorinator cell, on pool walls, and in the heat-exchanger of your heater.

To lower the total alkalinity, add 400 ml hydrochloric acid each day until a total alkalinity reading taken at least 24 hours later is in the range 80 - 140 ppm. When the total alkalinity is finally correct you may need to adjust the pH.

## Troubleshooting

**Note:** If the chlorinator and pump are running it is normal for a cloud of small bubbles to be produced in the cell, indicating chlorine is also being produced.

### Symptom A

#### **Water looks clean but no chlorine residual reading:**

To test for chlorine residual, switch on the filtration system and adjust the Zodiac LM3 to maximum output. After a few minutes take a water sample from the pool. Test this water with your test kit. A minimum chlorine residual of 1– 3 ppm is desirable.

#### **SOLUTION:**

- Adjust the pH within the range 7.2 - 7.8.
- Make sure your cell is clean.
- Check cyanuric acid (stabiliser) levels.
- Increase the setting of the output control.
- Adjust total alkalinity to recommended range.
- Test for phosphate
- Adjust total hardness to recommended range
- Increase the running time of the filter and chlorinator. Make sure that the filter is clean and functioning properly.
- Add salt if the **CHECK SALT** indicator is on.
- 

#### **Use chlorine stabiliser (cyanuric acid) to protect chlorine residual**

This chemical acts as a sun-screen for chlorine and prevents chlorine being too quickly destroyed by the sun. Chlorine stabiliser is essential to prolong the life of chlorine in the pool water. It should be added following the manufacturer's instructions to achieve a level of 30 - 50 ppm. This will probably be about 30 - 50 ppm for every 1,000 litres of water. Take care that chlorine stabiliser levels do not exceed 80 ppm.

#### **Copper based algacides**

It can sometimes happen that some copper based algacides catalyse (break down) chlorine in a pool. This can produce the apparent contradiction that there is no chlorine residual reading, but there is no sign of the pool water going green because of algae. The explanation is that the copper based algacide is controlling the algae, but breaking down the chlorine to immeasurable levels. Usually, over a period of time, the effect of the copper will diminish and the chlorine residual reading will reappear.

### Symptom B

#### **Pool green and no chlorine reading:**

A chlorine residual of 1 to 3 ppm is considered desirable.

#### **SOLUTION:**

Super Chlorinate or shock dosing, especially in hot weather, is one of the solutions. This procedure raises the chlorine residual to a very high level for a short period of time, and reduces chlorine demand.

You will also need to check your stabiliser (cyanuric acid) levels to ensure it is between 30-50 ppm.

#### **1. Superchlorinating with a Zodiac LM3 chlorinator:**

- i) Backwash the filter.
- ii) Adjust the pH to within the range 7.2 - 7.8.
- iii) Press the button marked 'Super Chlorinate'. The Zodiac LM3 automatically increases its output and runs for approx. 24 hours uninterrupted. The internal timer controls the Zodiac LM3 and the filter pump during this period, returning to the original timer settings when the super chlorinate function is complete.
- iv) After 24 hours, backwash the filter.
- v) Re-adjust the pH to 7.2 - 7.8.
- vi) Check the chlorine reading.

vii) If the chlorine reading is too low, repeat steps (iii) to (vi) until the chlorine reading is satisfactory.

**Note:** Remove your automatic pool cleaner when super chlorinating.

## **2. Shock dosing with chlorine or oxidising agents:**

i) Backwash the filter.

ii) Adjust the pH to within the range 7.2 - 7.8.

iii) Add 100ml of liquid chlorine for every 1000 litres of pool water or at the rate recommended by the manufacturer or your pool shop.

When shock dosing, it is most important to add all the chlorine in one dose. If in doubt, or if the problem is severe, use more rather than less, all in one dose.

iv) After shock dosing, re-adjust the pH to within the range of 7.2 - 7.8 and check the chlorine level before using the pool. Up to 5ppm is not harmful.

**Note:** Remove your automatic pool cleaner when adding chemicals.

## **High Phosphate Water Content**

Pools with high phosphate levels will feed algae and go green, especially in rural or open areas, around lawns or when numbers of trees attract bird life. The main food for algae is phosphate and a high level in the water can prevent even high levels of chlorine from killing the algae. Ask your pool retailer to test for phosphate and use phosphate remover to remedy the problem.

## **Symptom C**

### **Chlorine odour:**

CAUSE: Not enough free chlorine.

Surprisingly, the problem here is not too much chlorine as many imagine. Chloramines form by the bonding of chlorine with amines from sweat, urine and other sources. These chloramines make the chlorine odour and can also cause eye and skin irritation. Free chlorine does not smell (up to 10 ppm concentration).

### **SOLUTION:**

See solution for symptom B.

## **Symptom D**

### **Slimy walls of pool or spa:**

CAUSE: Combined algae and bacteria growth.

### **SOLUTION:**

Scrub down the affected walls and follow remedy as for Problem B, using a large shock dose of chlorine, or treat with phosphate remover.

## **Symptom E**

### **Eye and/or skin irritation:**

CAUSE: Incorrect pH levels.

### **SOLUTION:**

Adjust the pH to within the range 7.2 - 7.8.

If the problem continues, follow the remedy as for Problem B.

## **Symptom F**

### **Scale or calcium build up on electrode:**

To clean the deposit from the electrode, see Chlorinator Maintenance section.

CAUSE 1: Incorrect pH and hard water.

### **SOLUTION:**

Adjust the pH to within the range 7.2 - 7.8.

CAUSE 2: Total hardness.

### **SOLUTION:**

Adjust the total hardness to between 150-175 ppm.

## Symptom G

### Chlorine Output will not reach maximum - CHECK SALT indicator may also be on:

CAUSE 1: Salt level below 4000 ppm or water very cold.

#### SOLUTION:

Add salt. (See Salt: When and How to Add it)

CAUSE 2: Electrode reversing (self clean).

#### SOLUTION:

If the electrode is reversing the yellow light on the Chlorine Output indicator will flash, wait around three minutes and the output should return to normal.

CAUSE 3: Electrode may be damaged.

#### SOLUTION:

Replace electrode. The electrode must be replaced with the same model electrode or the chlorinator will not function correctly, see your pool retailer or Zodiac Group Australia.

## Symptom H

### No Flow light on:

CAUSE 1: Insufficient water flow through the cell.

#### SOLUTION:

Ensure sufficient water flow through chlorinator cell. Is the filter-pump on? Is the flow restricted because the filter needs backwashing? Look for a pocket of air trapped in the top of the cell.

CAUSE 2: Sensor disconnected.

#### SOLUTION:

Make sure that the sensor lead from the power pack to the electrode is firmly plugged into the electrode terminals.

## Symptom I

### Chlorinator stops working, all lights OFF:

CAUSE 1: Unit turned off.

#### SOLUTION:

Check power plug is properly connected.

Push ON/OFF button and check ON - OFF indicator on time switch.

CAUSE 2: Mains power off or blown fuse.

#### SOLUTION:

Check mains power source, check fuse.

## Replacing the Fuse:

Switch off and disconnect the Zodiac LM3 from the mains power. An on board mains fuse is located in the bottom rear of the Zodiac LM3 next to the power cord. Check and if necessary replace with a 2 Amp 5x20mm slow blow fuse. Reconnect the Zodiac LM3 to mains power and switch on. If the fuse continues to blow this indicates a serious fault, switch off the power, disconnect the Zodiac LM3 and contact Zodiac Group Australia or a Zodiac service centre for further advice.

## Mains power supply:

Your Zodiac LM3 must be connected to a properly earthed (grounded) electrical power socket, or power source.

## Warning:

If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or similarly qualified person in order to avoid a hazard'. Contact Zodiac Customer Service Support Centre: 1800 688 552 or visit [www.zodiac.com.au](http://www.zodiac.com.au)

## Backup Battery

The Zodiac LM3 is fitted with a rechargeable battery. If the power is removed, the Zodiac LM3 will retain the timeswitch settings, output power settings, and Super Chlorinate settings for a maximum period of 20 days.

# Caution:

## Failure to observe the following could invalidate your warranty and damage pool equipment:

1. Chlorinator must be installed and operated as specified.
2. Your salt chlorinator has been fitted with an electronic flow switch. This device automatically switches the chlorinator 'OFF' when the water through the cell stops. Do not in any way interfere with this system which has been fitted for your protection.
3. Do not scratch or bend the plates in the cell housing.
4. Power to the Zodiac LM3 should be turned off before unplugging the cell connectors.
5. Do not immerse these terminals in acid wash solution, and avoid accidental contact with salt water.
6. Water above the temperature of 40 degrees Celsius must not flow through the cell.
7. Water pressure in the cell must not exceed 200kPa.
8. Check the electrode frequently to prevent the accumulation of pool debris that for any reason may have by-passed the pool filter.
9. Power pack must not be installed directly above any other heat source such as filter pump or heater. It must be at least 300mm from the ground to allow free circulation of air around it. It must not be enclosed in a closed box. If the powerpack is to be installed on a post then it must be centrally positioned on a flat panel of suitable waterproof material at least 240mm wide and 440mm high. As with all electronic equipment, the power pack life will be increased if it is mounted in a shady spot and not in direct sunlight.
10. Never plug more than one pump at a time into the 3-pin socket (where fitted) in the base of the power supply.

## LM3 Saltwater Chlorinator Warranty\*

Your Zodiac LM3 Saltwater Chlorinator has been manufactured with the greatest of care and from the best available materials. The warranty period begins on the date of the manufacture as according to the serial number on the product unless proof of purchase date is supplied or the warranty has been registered with us.

Refer also to the section titled "Caution" in the Owner's Manual. This warranty will be void if parts other than Zodiac approved parts are used for repairs.

## Chlorinator (excluding cell electrodes) Warranty

The manufacturer warrants for a period of 2 years from the date of purchase, in respect of defects found to be solely due to faulty materials or workmanship that it will repair or replace at its option such faulty materials or parts free of charge.

## Electrode Warranty

The cell electrodes and their special coatings are covered by a 12 months full warranty. In addition to the 12 months full warranty, the manufacturer warrants the product for a subsequent 48 month period, pro-rated over four years.

This pro-rata warranty is offered by Zodiac to the chlorinator end-user. Approach your local pool shop or Zodiac Group Australia with any warranty issues.

**\*The warranty applicable to commercial application is limited to 12 months from the date of installation**

For more information talk to your local pool shop or contact Zodiac Group Australia:

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Due to constant developments and improvements, specifications may change without notice.