

SALTLOGIC LITE INSTALLATION AND MAINTENANCE MANUAL

AN INTRODUCTION TO SALT WATER CHLORINATION

- Salt water chlorination is the healthy alternative to chlorinating your pool; the natural way. Very simply, coarse salt is added to your pool to form a mildly saline solution. The salinity is kept at a pleasantly comfortable level, being typically one fifth or less than that of sea water.
- The system works by producing chlorine in the unique SALTLOGIC cell in low concentrations whenever the pump and filter is running, and as the filter runs for many hours of the day, the pool's total chlorine demand will still be met, even at these low concentrations.
- With the SALTLOGIC system, chlorine is produced by electrolysis of the pool water as it flows through the cell and returns to your pool.
- A unique advantage of the SALTLOGIC system is that the chlorine produced in the SALTLOGIC cell has no effect on your pool's pH, total alkalinity or calcium hardness, which is not the case with other chlorination methods, making it easier and less costly for you, the pool owner, to keep your water in balance.
- By chlorinating your pool this way, many of the problems associated with other chlorination methods, are eliminated. The process is effective, economical, and healthy and only requires minimum maintenance.

INSTALLATION INSTRUCTIONS

A) CONTROL BOX

- Mount the control box vertically, preferably out of direct sunlight and out of the direct path of garden sprinklers.
- The control box must be connected with the pool circulation pump electrical source, so that the cell can only operate when the pool pump is on. Failure to install the control box as per the aforementioned may invalidate your warranty.
- The 'A.C.' mains cable must be connected to the household supply in accordance with the regulations of the local authorities. This must be undertaken or authorised by a registered electrician
- The chlorinator 'earth' lead (green/yellow) must be connected to the 'earth bus' inside the distribution board (if provided), or in accordance with the earthing requirements of the relevant local authorities, if specifically required.

B) CELL

- The cell must be installed in either a vertical or horizontal position and in such a manner as to create a "gas trap", as per the installation diagram on the packing sleeve. This is to ensure that any gasses formed in the cell during abnormal operating conditions cannot escape the cell. As the cell is a sealed unit it is necessary to install it with unions fitted at each end of the cell housing so that the cell can be removed from the return line as and when required. Two unions are provided for this purpose. In the event of the packing sleeve being lost or damaged the installation diagram is available on our website at www.saltlogic.com; www.saltpools.co.za
- The cell must be installed as the last piece of equipment in the pool return line, i.e., downstream of any receptacles, pool heaters, solar heaters and other equipment. There must not be any receptacles or pipe layouts where gasses in excess of two litres by volume, could accumulate.
- If the cell is to be installed below the pool water level, an isolating valve, (PVC ball valve or similar) should be fitted at the cell outlet, so that the cell can be drained and serviced as required. The pump suction line may also need to be isolated depending on particular site conditions.

SUGGESTED FILTRATION RUN CYCLES

- SALTLOGIC recommends operating your chlorinator for two cycles per day (an early morning and late afternoon cycle). These cycles are particularly necessary if the pool is not stabilised. Depending on the season, bather load and sunlight exposure, each cycle could vary from 3 - 6 hours, i.e., a total of 6 - 12 hours per day.
- If it is necessary to operate the chlorinator only during the daytime, then the addition of stabiliser is recommended.
- In winter, a single daily cycle of 3 - 5 hours should suffice.

Note: In extremely hot climates, or during periods of unusually hot weather, it may be necessary to super-chlorinate your pool once every 2 - 4 weeks. Please contact your local pool shop for further information in this regard.

CELL MAINTENANCE AND CLEANING

The cell incorporates a moulded-in strainer at the inlet to prevent any debris that may enter the cell, from fouling the electrodes. Although the chlorinator undergoes periodic polarity reversal in order to keep the electrodes free from scale, scale build-up may occur if calcium hardness exceeds 300ppm. Excessive calcium hardness levels may occur in areas of high water hardness or may be due to incorrect water balance.

The cell is moulded from clear plastic to facilitate visual inspection. Inspect the cell periodically and clean when necessary.

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TO CLEAN YOUR CELL PROCEED AS FOLLOWS

- Turn off mains power to the chlorinator, and turn the multiport valve to the “closed” position.

TO REMOVE THE CELL

- Unscrew the two unions and remove the cell assembly. It should not be necessary to disconnect the cables.
- Carefully remove any debris (if any) from the strainer by hand, or by flushing with a hosepipe. If a hosepipe is used, and the cables have been disconnected from the cell, take time to seal off the cable connections so that they do not become contaminated with water.
- Make up a cleaning solution of 10 (ten) parts water to 1 (one) part pool acid (HCl) in a suitable plastic container or jug of sufficient volume to completely fill the cell. Always add the acid to the water and never the other way around.
- Close off one end of the cell housing and stand the cell up vertically. A 50mm union is useful to effect this.
- Pour the cleaning solution into the cell housing until the electrodes are completely submerged and allow to stand for a while.
- When the electrodes are clean, (approx. 5 - 15 minutes) discard the cleaning solution and rinse the electrodes with fresh water.

REPLACING THE CELL

- Make sure all contact surfaces are clean and then replace the cell in the pool return line.
- Refit the cell power cables if they have been disconnected for any reason.
- If the chlorine output has been set to the 'OFF' position, reset to the position prior to cleaning.
- Turn the multiport valve back to the “filter” position.

SALT REQUIREMENTS AND CALCULATIONS

- High purity salt is recommended. Iodated salt is NOT suitable.
- Remember; higher salt concentrations = longer cell life and higher chlorine output.
- Lower salt concentrations = reduced cell life and poor chlorine output.
- The “low salt” light will illuminate when salt concentration drops to approximately 0,4%. Always keep your salt levels above 0,5% for best performance.

ADDING SALT TO YOUR POOL

- Adding salt may be needed from time to time to maintain an optimum salt level.
- Use a salt test strip to determine the salt level in the pool water prior to adding any salt.
- Use the table below to calculate the quantity of salt required to adjust the pool salt concentration.

Current Salt Concentration%	Pool Volume, litres Pool Volume = Length x Width x Average Depth (usually 1.2-1.4 meters)					
	25000	50000	75000	100000	125000	150000
0	125	250	375	500	625	750
0.1	100	200	300	400	500	600
0.2	75	150	225	300	375	450
0.3	50	100	150	200	250	300
0.4	25	50	75	100	125	150
0.5	0	0	0	0	0	0

KG of salt needed to raise salt concentration to 0.5%.

- When adding salt, place the unopened bags on the stair area of your pool, with some black refuse bags underneath them to prevent staining.
- Check salt levels once a month, more frequently in rainy weather, and adjust accordingly.

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WATER CHEMISTRY

The industry standards for pool water are as follows:

WATER BALANCE	GUNITE	FIBREGLASS
Free chlorine ppm	1.0 – 3.0	1.0 – 3.0
pH	7.2 – 7.8	7.0 – 7.6
Total alkalinity ppm	80 - 120	110 - 150
Calcium hardness ppm	150 - 300	90 - 180
Stabilizer ppm	40 - 60	40 - 60
Salt concentration %	0.5 – 0.7	0.5 – 0.7

Maintain your pool in accordance with these standards.

REGULAR POOL MAINTENANCE CHECKS

WEEKLY:

- Visually check the cell electrodes. Only if necessary, remove the cell and flush with a garden hose to remove any debris that may have passed through the filter and lodged in the cell housing. Avoid inserting objects into the cell which can scratch or bend the cell plates.
- Check the free chlorine.
- Check the total alkalinity. Adjust if necessary.
- 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. Adjust if necessary.
- Check the chlorine stabilizer level. Adjust if necessary.
- Check for calcium scale formation and clean when necessary.

SALTLOGIC CONTROL BOX OPERATION AND SETTINGS

- **"POWER ON"** LIGHT: The control box is receiving power.
- **"CELL ON"** LIGHT: The cell is receiving power.
- **"LOW SALT"** LIGHT: Salt levels are below 0,4%. Have the salt level tested and adjust to 0.5% to ensure adequate levels of chlorine are produced and to avoid foreshortening the life of your cell.
 - **"NO FLOW"** LIGHT: There is no flow, or insufficient water flow for normal cell operation. The power supply will shut down in this event and will only resume normal operation once adequate flow is restored. This light may come on during backwashing, closed valves on either the pump suction or outlet, blockage or restriction within the automatic pool cleaner or skimmer basket, or due to any other possible causes of low or no flow conditions.
 - **"CHLORINE OUTPUT"%**: Begin with your chlorine output set on 50%. Check your chlorine residual levels periodically to ensure your pool is being adequately sanitised. Chlorine levels should be kept in the 1 - 3 ppm range. Adjust the output select dial up or down accordingly.

The chlorinator adjusts total chlorine output by switching the cell on and off during 15 minute intervals in proportion to the percentage setting of the chlorine output dial. For example, at 50% setting the **"CELL ON"** light will be on for 7½ minutes and off for 7½ minutes and will repeat this cycle for the duration of the current chlorinator/pump run time.

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CONTROL BOX OPERATION AND INDICATOR LIGHTS

INDICATOR LIGHTS				CAUSE	ACTION
POWER ON	CELL ON	LOW SALT	NO FLOW		
				Normal operation	No action is required.
				Normal operation, cell is off for the required time. Eg. at 50% setting cell light will be on for approx. 7.5min and off for 7.5 min every 15 min cycle.	No action is required.
				1. Cell cables damaged or disconnected. 2. Low or very low salt level. 3. Low water temperature <15°. 4. Calcium scale build-up on the electrodes. 5. Cell at end of its useful life or cell blade connection damaged.	1. Reconnect or replace cables. 2. Have salt level checked and adjust to 0.5% 3. It is normal for the "CHECK SALT" light to come on at low water temperatures (<15°) even if salt concentration is 0.5% and this is not a fault. Set the "CHLORINE OUTPUT" control to 60% or lower if water temperature is <15°. 4. Replace cell. 5. De-scale the electrodes.
				1. Gas in cell or no water flow. 2. Flow/gas sensor is disconnected. 3. Sensor cable damaged.	1. Locate cause of low or no water flow and rectify. 2. Reconnect flow/gas sensor. 3. Repair sensor cable.
				"CHLORINE OUTPUT" set to "MIN"	Normal operation, no action is required.
				"CHLORINE OUTPUT" set to "MAX"	Polarity reversal occurring too frequently – check jumper positions on the pcb and correct if necessary. Jumpers req on JP4 & JP5. Run/shutdown circuit fault – replace the power pcb.