

USER MANUAL BW SERIES

SALT CHLORINATOR



- BW-2(RC) • BW-4(RC) • BW-6(RC) • BW-8(RC)
- BW-12(RC) • BW-16(RC) • BW-20(RC) • BW-25(RC)

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SUMMARY

First of all, thank you for choosing our salt chlorinator. For your best experience of the product, prevent the occurrence of accidents, please read carefully the whole content of this manual before installing and using this product. Please strictly follow the manual for your own safety and operation of the salt chlorinator. Neglecting the safety warning may cause serious consequences such as: grievous injury, property loss and may even cause life safety threatening consequences.

SAFETY INSTRUCTIONS

01. The installation and maintenance must be done by a licensed electrician. Otherwise there would be risk of electrocution, grievous injury, property loss and may even cause life safety threatening consequences.
02. Before any maintenance or operation, ensure that the salt chlorinator is power unplugged, all devices are turned off and main power supply is off.
03. The salt chlorinator's external power adaptor must be connected to a main power supply separate from the filtration system (no feedback control), equipped with an earthing system.
04. Installation personnel must carefully read this manual before installation. If any improper or mistaken operation occurs, please contact the nearest authorized dealer or contact technical support department.
05. When parts are damaged, please prioritize the purchase of the replacement part at the manufacture or authorized dealer.
06. To reduce the risk of injury, do not allow children to use this product.
07. Intensive use of the pool (or spa) or high temperatures may require an increased level of chlorine production in order to maintain adequate levels of free chlorine.

01 PRODUCT PRINCIPLE

Salt chlorination of a pool works by using salt electrolysis to disinfect the water; this electrochemical process converts the salt present in the water into a disinfectant (sodium hypochlorite ions- NaOCl). Once this process is complete, sodium hypochlorite turns back into salt after coming into contact with organic material (bacteria, cells) or under the effect of UV rays or other sources of light, starting the cycle over again.

WARNING - Salt water chlorination alone will not clear up green water by itself. In the event of algae appearing (e.g. after a period of high temperatures or frequent use), it may be necessary to supplement with chlorine tablets. Do not put the chlorine tablets directly into the skimmer; use a floating dispenser.

02 FEATURE

01. Controller and the generator are integrated for easier installation and more space-saving.
02. Water inlet and output are designed on the same axis to decrease the need for pipe arrangement.
03. Overall waterproof design for safer and more reassuring use.
04. The electrode plate is made of titanium metal substrate.
05. Designed with detachable structure, whose titanium plate is detachable, for easy clean, installation and maintenance.
06. The panel design is simple, easy to understand and operate.
07. With water flow protection function, which effectively prolong the service lifetime.
08. Low salt alarm & protection and high salt alarm, when the salinity is too low, it will alarm and auto stop to ensure effective disinfection and protect the salt chlorinator; when the salinity is too high, it will alarm but won't effect the functional operation and won't auto stop.
09. Water temperature monitoring function and protection: when the water temperature is lower than 10°C , it will alarm and auto stop to ensure effective disinfection and protect the salt chlorinator; when the water temperature is higher than 42°C , it will alarm but won't effect the functional operation and won't auto stop.

10. Self-clean function of the titanium plate via polarity switching to effectively extend the service life of the cell.
11. Operation modes selection: the user can set the operation modes of the salt chlorinator according to the actual situation of the pool water .
12. Voltage and current monitoring function:when the set value is exceeded, it will alarm.
13. Electrode abnormality monitoring function, when the electrode failure occurs, it will alarm.
14. Memory function:when powered-on,automaticallyinitiates the last work setting from system memory.
15. Child lock: to prevent unintended touch from child.

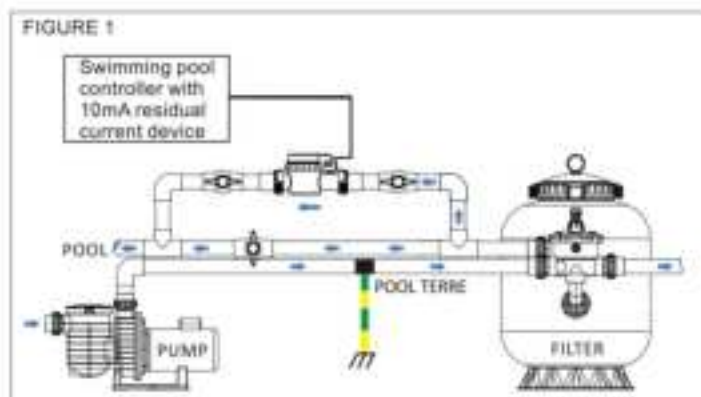
03 TECHNICAL SPECIFICATION SHEET

Model	BW-2(RC)	BW-4(RC)	BW-6(RC)	BW-8(RC)	BW-12(RC)	BW-16(RC)	BW-20(RC)	BW-25(RC)
Production (g/h)	2	4	6	8	12	16	20	25
Pool volume (m³)	≤10	≤20	≤30	≤40	≤60	≤80	≤100	≤120
Working Voltage	DC12V	DC12V	DC24V	DC24V	DC24V	DC24V	DC29V	DC29V
Optional	adapter32mm/38mm			DN40 or 50 mm				
Power input	AC100-240V/50-60HZ							
Protection	IPX5							
Operating mode setting	Standard mode: 25%(3h)/ 50%(5h)/ 75%(9h)/ 100%(12h) Boost mode: 150%(18h)/ 200%(24h)							
Self-cleaning time setting	4h/8h/12h							
Alarms	Water flowdetection/ water temperature detection / Low salt / High salt / Over voltage / Over current / Short circuit/Overheating							

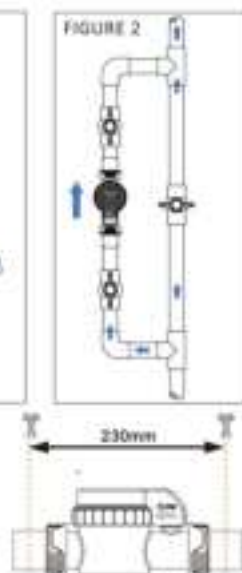
04 INSTALLATION INSTRUCTIONS

CASE1:Using D50mm PVC pipes:

If you need to cut existing D50mm PVC pipe, the length of the cut must be 230 mm. Make sure to use special PVC cement for 1,5"(D50)connectors.

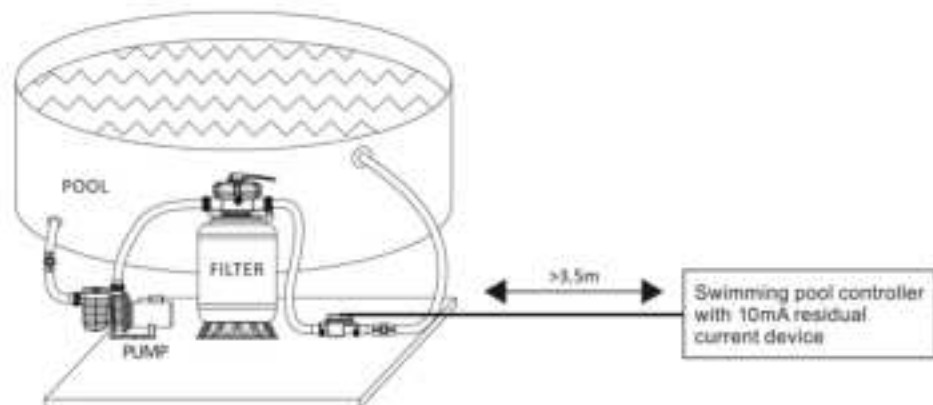


If you want to insert the chlorinator into an existing pipe (or fit on to a pipe), you must cut out a section measuring 230mm in length.



CASE 2:Using D38mm or D32 pipe:

When using this type of pipe, another length of pipe, minimum 50cm (not supplied), equivalent to the one in place must be added to the outlet of the filter; consider adding a valve (if not already present) just after the chlorinator to be able to isolate this section and facilitate maintenance.



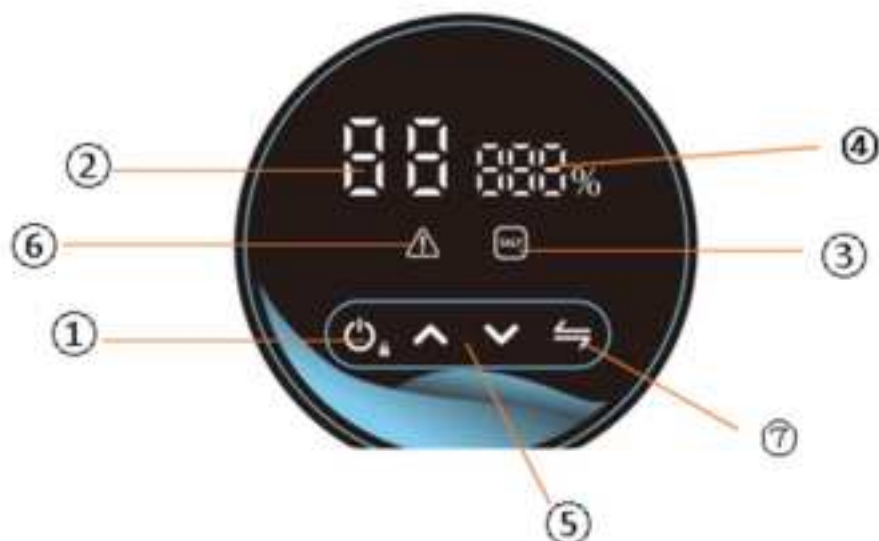
WARNING

01. Before install, please ensure that the electricity and water circulation system are switched off, and the pipeline valve connecting with the chlorinator is closed.
02. Before installation, please clean the sundries or oil stains on the pipes and connecting joints.
03. Installation without a bypass is possible if your pump has a flow rate of $<10\text{m}^3/\text{h}$, however, using a bypass is strongly recommended to allow the hydraulic circuit to be isolated. If the flow rate of your pump is $>10\text{m}^3$, a bypass is required. There must be an adjustable valve installed on the main pipeline. The salt chlorinator must be installed on the return line carrying water from the pool filter back to the return inlets, as shown in Figure 1 (horizontal assembly) and Figure 2 (vertical assembly).
04. Before installation of the salt chlorinator, please ensure that the water flow is consistent with the direction on the chlorinator, otherwise the device will not work.
05. If using with a water heating system, install the chlorinator downstream from the latter. The chlorinator must be the final element of the circuit.
06. The chlorinator shall be installed in a well-ventilated area, facilitating the heat dissipation of electrical control devices.
07. The external power adapter of the chlorinator must be installed on the power supply with leakage switch protection (100-240 V ~ 50/60 Hz), sheltered from the rain and at least 3.5m away from the pool. In the event of tripping the residual current device, check system integrity before resetting.
08. There are two methods to install the salt chlorinator. The horizontal installation is as shown in the figure. When the chlorinator is installed vertically, it is suggested that the water shall flow from bottom to top.
09. Do not install in places where water can easily ingress to prevent damage to the electrical components caused by humidity or rain.

05 PREPARATIONS BEFORE USE

01. Ensure that the salt concentration of the pool water is within the normal working range (2500-5000PPM). Please refer to the mixing and maintenance of water and salt in this manual to adjust the salt concentration. The suggested range is 3000-4000PPM.
02. When the device is installed and connected, open the valve connecting with the salt chlorine generator and adjust the valve on the main pipeline. Turn on the leakage protection switch.
03. Start the pump, ensure that there is water flowing through the salt chlorine generator, and there is no water leakage at each joint, and the water flow switch is closed. (The water flow must meet the following conditions: $2\text{m}^3/\text{h} \leq \text{water flow} \leq 10\text{m}^3/\text{h}$)
04. The adapter of the device has been connected to the power supply, and the power supply has been turned on.

06 CONTROL PANEL



07 CONTROL PANEL INSTRUCTION

① On/Off key and lock indicator

01. Press on/off button to operate or shut the device(3-digit display screen will display "OFF".

ON/OFF button is with red/white indicator, red for OFF and white for ON.

02. When there are no any operations of buttons in 60 consecutive seconds, system will lock all buttons except of on/off key, and lock indicator indicates orange.

Panel will only indicate 2-digit display, 3-digit display, salinity indicator, on/off button and lock indicator with brightness reduced.

Rest of buttons will not indicate. Long press on/off button for 3 seconds to unlock.

② 2-digit display screen

ON status: display water temperature (ordinary and consecutive display)

Alarm status: display error code. It will display in turn if there are several error codes in the meanwhile.

③ Salinity button and indicator

When the salinity is in normal range, the indicator will indicate green.

When salinity is too low to alarm value, the indicator will indicate red and blink together with beep.

And device will pause, 2-digit display screen display "F5" error code.

When add suitable salt in pool to make salinity back to normal range, long press salinity button for 3 seconds to clear the alarm and resume the operation.

Please note that it is not allowed to change the operation modes when in alarm status.

④&⑤ 3-digit display screen and up & down button

Use up & down button to change operation modes.

There are 6 modes including "25% for 3 hours" and "50% for 6 hours" and "75% for 9 hours" and "100% for 12 hours" and "150% for 18 hours" and "200% for 24 hours".

For example, if user choose "25%" mode, the device will operate for 3 hours then in standby status for rest of 21 hours.

Press up & down button to select the operation modes, and 3-digit display screen will display and blink the choosing mode. Once there are no operation of selection in 5 seconds, the device will enter choosing mode.

Default mode is "75%".When user set "150%" or "200%" modes and once the operation complete, the device will automatically resume to "75%" mode.

Operation modes time:

device "ON" time is as starting time of operation for any selection modes.

Latest device "ON" time is as starting time of operation if changing the modes during the operation.

When operation reach to time according to selected mode and complete,device will enter standby status,3-digit display screen display "--" and "%" indicator will not indicate.

When device restart after power is off,starting time will be revised.

Operation modes guidance:

Model	Covered	Spring	Comfort	Summer	BOOST1	BOOST2
	25%	50%	75%	100%	150%	200%
T ^o water	10℃<T ^o <20℃ or covered pool	20℃<T ^o <25℃	25℃<T ^o <28℃	T ^o >28℃	T ^o >28℃ or intensive use	T ^o >30℃ or intensive use
Treatment time	3h	6h	9h	12h	18h	24h
Filtration time	5h to 10h	10h to 12h	12h to 16h	16h to 24h	24h	24h

⑥ Status alarm indicator and troubleshooting button

When device is normal,the indicator will indicator white; When there are troubles,the indicator will indicate red and blink.

For troubles needed troubleshoot manually,long press troubleshooting button for 3 seconds and resume the operation.

⑦ Polarity switch cycle timer button

Press to indicate selecting time(4、8、12 hours).When there are no any operations in 5 seconds, device will set choosing time.Take 4 hours cycle as example,when operation time reach to 3 hours and 57 minutes,operation will pause and 3-digit display screen display "--" for 3 minutes.When time reach to 4 hours,the polarity in electrode will switch then operation resume,3-digit display screen display water temperature.

08 RELATED OPERATION AND SPECIFICATION INSTRUCTION

① Device detect water flow via water flow switch

01. Device detect water flow automatically. When there is water flow detected (water flow switch is close), device operate normally. When there is no water flow detected (water flow switch is open), operation will pulse.
02. When device is in standby status, close (no current) or open (with current) for water flow switch are normal.
03. When device is in operation modes and water flow switch is detected to be open (no current), status alarm indicator indicates red and blink together with beep. 2-digit display screen display error code "F2" until water flow switch is detected to be close (with current).

② Water temperature detector

01. Range of operation water temperature is 10-42°C. When temperature is out of range, 2-digit display screen display error code "F1".
02. When water temperature is higher than 42°C and last for 30 seconds, operation will continue but status alarm indicator will indicate white and blink until water temperature is lower than 42°C.
03. When water temperature is lower than 10°C and last for 30 seconds, device will pulse and status alarm indicator will indicate red and blink together with beep until water temperature is higher than 10°C.

③ Memory function

if device is not in "OFF" status before power is off, device will resume operation automatically after power is on, on/off button indicator indicates white, 3-digit display screen display according mode before power is off, and 2-digit display screen display error code "FP" then display water temperature. If device is in "OFF" status before power is off, on/off button indicator indicates red and 3-digit display screen display "OFF".

④ When power is on first in first time

on/off button indicator indicates red and 3-digit display screen display "OFF".

⑤ Factory data reset function

When device is unlocked, long press on/off button for 5 seconds, display screens will blink for 3 seconds then device will reset with default mode "75%".

⑥ Low salinity alarm

When salinity is lower than alarm value, salinity alarm indicator will indicate red and blink together with beep, operation will pulse and 2-digit display screen display error code "F5".

When user add suitable salt in pool to make salinity back to normal range, long press salinity button for 3 seconds to the alarm and resume the operation.

Please note that it is not allowed to change the operation modes when in alarm status.

⑦ High salinity alarm

When salinity is higher than alarm value, salinity alarm indicator will indicate green and blink but operation won't pulse and 2-digit display screen display error code "F6".

When user add suitable clean water to make salinity back to normal range, long press salinity button for 3 seconds to clear the alarm.

09 GUIDE OF TROUBLESHOOTING

Error code	Error	Comments	Solution
F1	Water temperature is outside of normal operating range	The normal operating range for water temperature is between 10°C to 42°C.	First to check if there is error code "F3". If yes, then check if water temperature sensor is connected or not. If yes, then sensor breakdown please replace. If not, then ensure water temperature is in normal range.
F2	Water flow error	Normal status is that switch is off when there is water flow detected and open when no water flow detected.	Ensure water flow is more than 2m ³ /h. Otherwise, the switch is break and please replace.

F3	Water temperature sensor break down	Alarm must be cleared manually.	Check if sensor is connected or not,if yes,then sensor breakdown and please replace.
F5	Low salinity	Normal range should be 2500-5000ppm.	First to use salinity meter to detect salinity. When salinity is lower than 2500ppm,add suitable salt to make salinity in normal range,then long press salinity button for 3 seconds to clear alarm and resume operation.
F6	High salinity	Normal range should be 2500-5000ppm.	First to use salinity meter to detect salinity. When salinity is higher than 5000ppm,add suitable clear water to make salinity in normal range,then long press salinity button for 3 seconds to clear alarm and resume operation.
F8	Low input voltage.	Alarm must be cleared manually.	Please replace power supply.
F9	High output current	Alarm must be cleared manually.	Please contact with supplier to repair and replace.
F4	Electrode abnormal	Alarm must be cleared manually.	Please ensure salinity is higher than 1000ppm,shut pool pump and device off and close valves on both sides. 1. Check if there are scales on titanium plates,if yes,detach the device from pipe and block one side,then add HCL cleaning fluid from another side until scales dissolve completely,and wash out with clean water. 2. Open cover of device to check if electrode is loose or fall off,if yes,then connect correctly to ensure tightness. 3. Check if titanium plates is corroded or not,if yes,then replace the titanium plates,if not, please contact with supplier.
FC	Circuit abnormal	Alarm must be cleared manually.	Restart the power,if device start normally,then error code clear,if error code display repeatedly, please contact with supplier to repair or replace.
FP	Power is off abnormal.	2-digit display screen display error code for a while then display water temperature	Check reason of abnormal power shut down.
Fb	Communication failure of PCB and display board.	Alarm must be cleared manually.	Restart the power,if device start normally,then error code clear,if error code display repeatedly, please contact with supplier to repair or replace.

10 GUIDANCE OF APP OPERATION FOR RC MODEL



Scan and download App-Open the App



Set language



Add Device -
Click top - right
"+" and click
"Add Device"



Bluetooth is
enabled for the
first connection





Long press ^ v for 5s so App can search device. After searching, please click the product icon.



If Wifi is not connected, please connect.

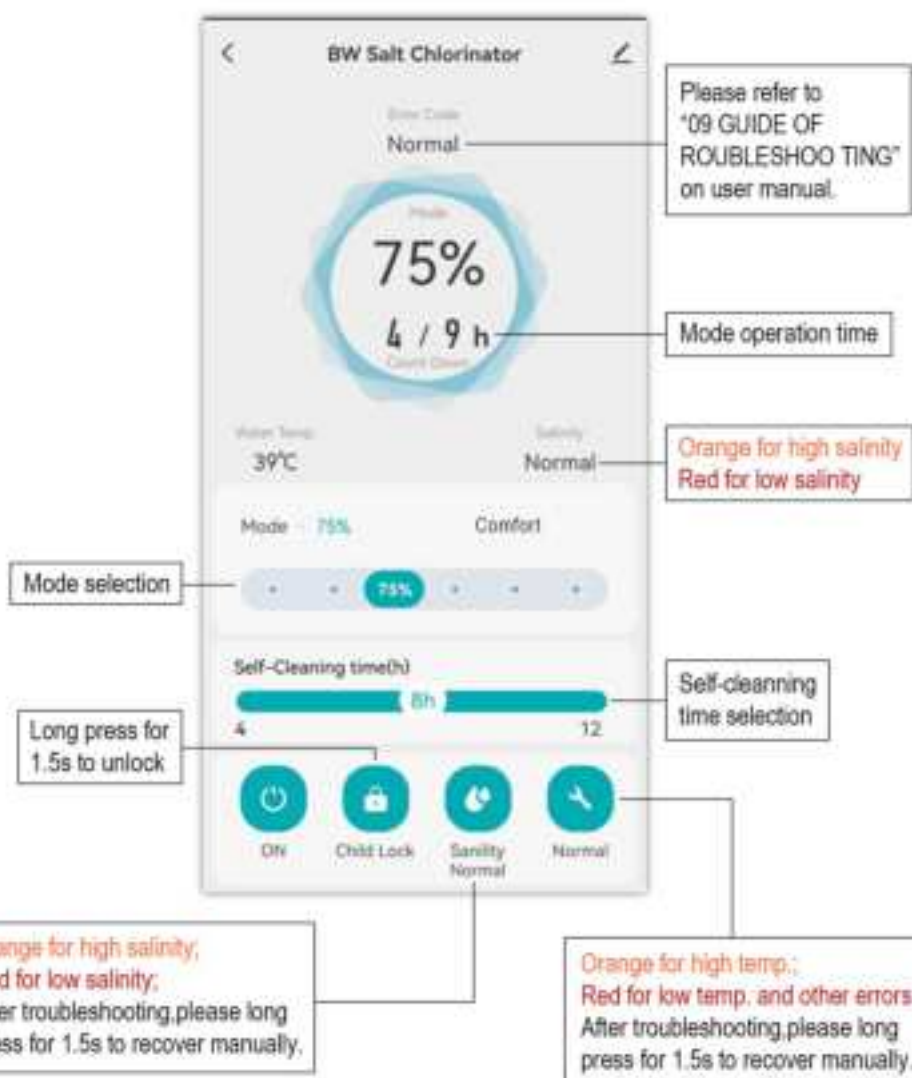


After Wifi is connected, please wait for device adding.



Device added successfully.





11 TIPS AND MAINTENANCE OF SALT CHLORINATOR

① Calculation of water flow

Knowing the pool capacity is the first step to add salt to the pool.

01. Rectangular pool: Length (m) * width (m) * average depth (m) = pool capacity (m³).

02. Circular pool: Diameter (m) * diameter (m) * average depth (m) * 0.785

= water capacity of the pool (m³).

03. Elliptical pool: Length (m) * width (m) * average depth (m) * 0.893 = pool water capacity (m³).

04. Sloping pool: Pool volume (m³) * 0.85 = pool water capacity (m³).

② Salt type

The purer the salt is, the greater the advantages of the salt chlorinator will be. And the service life of the salt chlorine generator will also be prolonged. The sodium chloride (NaCl) in the salt should be at least 99.6%, preferably dehydrated granular food-grade sea salt.

01. Do not use rock salt, as its impurities may shorten the service life of the chlorinator.

02. Calcium chloride cannot be used; only sodium chloride is allowed.

03. Salt of anti-blocking agents (sodium cyanide, also known as YPS, toxic and corrosive) shall not be used, as it may change the color of swimming pool equipment.

04. Salt pills may be treated by water, however, it takes a long time to melt in water.

③ Addition of appropriate salt

Most pools contain a certain content of salt, and the concentration of salt in the water will vary with the water source and disinfectant used. Users can use hand-held tester or salinity pen to test the current salt concentration of the pools.

The optimum concentration level for salt operation of LC series salt chlorine generator is 3,500ppm (3.5kg salt per cubic meter).

For the first use, add salt to the pool in accordance with the following steps:

01. Check the original salt concentration in the pool with a salinity meter;

02. Add a proper content of salt to ensure that 3.5kg salt is added per cubic meter of water.

The concentration of salt (ppm value) can be regarded as the grams of salt in 1 ton of water.

If the current salt concentration in a 100M³ pool is 850ppm (850g can be taken from 1 ton of water), how much salt is needed for the normal operation of the chlorinator.

Salt to be added (unit: g) = water quantity in the pool (unit: M³) (normal operating salt concentration - current pool salt concentration) = 100 * (3,500 - 850) = 265,000g. Therefore, the weight of salt is 265kg.

④ Correct method to add salt

01. Turn on the circulating pump in the pool and let the water start circulating.
02. Turn off the salt chlorine generator.
03. Test the current salt concentration of the pool.
04. Calculate the content of salt to be added to the pool in accordance with corresponding charts.
05. Add salt around the pool edge, so that the salt can be quickly and evenly diluted into water.

Do not let salt accumulate at the bottom of the pool. If necessary, stir the water at the bottom of the pool to completely dissolve the salt.

⑤ Lowering of salt concentration

The only way to reduce the salt concentration is to drain part of the pool water and replace with fresh water.

⑥ Clean the cell

To maintain optimal performance of your chlorinator, the cell should be inspected at least once every 3-4 months (there should be no debris obstructing the flow sensor or between the electrode plates).

The cell has a self-cleaning function which uses reverse polarity. In most cases, this self-cleaning function will keep the cell operating efficiently and will prevent formation of scale deposits.

The cell should be cleaned once or twice per season.

In areas where the water is very hard (i.e., high calcium concentration), or in pools with poorly balanced water, the cell may require additional cleaning. Remember to set your reverse polarity time (4h/8h/12h) according to your water hardness. As water hardness increases, the time should decrease. This chlorination process which creates chlorine(hypochlorite) from salt naturally leads to the formation of mineral deposits on the titanium electrodes of the cell. The reverse polarity self-cleaning function helps prevent these deposits and scale formation. If the water is very hard, with a high degree of general hardness, the formation of deposits is inevitable and these deposits must be removed.

To clean the cell:

Disassembly:

Shut off the power supply and close any return valves.

Unplug the power cable from the transformer.

Unscrew the threaded nuts around the PVC connectors which connect the cell to the piping.

Remove any residual water (drain into a receptacle and put it back into the pool).

12 METHOD TO DETACH AND ASSEMBLE THE LID

A. Method to detach the lid

01. Hold the salt chlorinator
02. Press the lid with palm and twist the lid 10 degrees clockwise.



B. Method to assemble the lid

01. Hold the salt chlorinator
02. Press the lid with palm and twist the lid 10 degrees counterclockwise.





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- * First of all, we express our most sincere gratitude to you choosing our products.
 - * Please be sure to carefully read this manual before using.
 - * Please put the instructions in the position easy to get and please keep it properly.