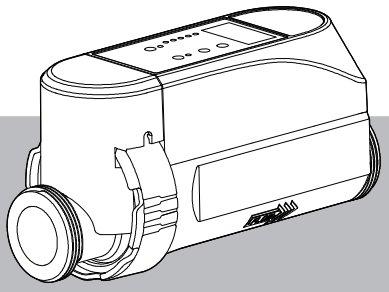
SALT CHLORINATOR EC PRO SERIES

INSTALLATION AND USER MANUAL

EC PRO 4
EC PRO 8
EC PRO 12
EC PRO 16
EC PRO 20



202312

Please Read The Manual Carefully Before Use.

Contents

1.PRODUCT SUMMARY 02

2.PRODUCT SIZE 03

3.CONTROL PANEL OPERATION INSTRUCTION 04

4.INSTALLATION INSTRUCTION 05

5.OPERATION INSTRUCTION 06

6.Wi-Fi OPERATION 10

7.ERROR CODE AND CORRESPONDING SOLUTIONS 18

8.APPENDIX 19

⚠ IMPORTANT WARNING

First of all, thank you for choosing salt chlorinator EC Pro series. For your best experience of the product, to prevent the occurrence of accidents, please carefully read the whole content of this manual before the assembly and the use of the salt chlorinator. 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.

⚠ IMPORTANT PRECAUTION

1. The installation and the maintenance must be done by a licensed electrician. Or else there would be risk of electrocution, grievous injury, property loss and may even cause life safety threatening consequences.
2. Before any maintenance or operation, ensure that the salt chlorinator is power-unplugged, all machineries are turned off and power source is turned off.
3. The external power adapter of the chlorinator must be installed to a power source that contains a leakage switch protection.
4. The chlorinator should be installed in a well ventilated area, to help the chlorinator to cool down. Do not install in an area where the electronic component of the chlorinator could be damaged by moisture and rain.
5. 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.
6. When parts are damaged, please prioritize the purchase of the replacement part at the manufacturer or authorized dealer.

1 PRODUCT SUMMARY

EC Pro Series Salt chlorinator adopts advanced microcomputer technology, is simple to operate, and can be controlled through remote APP. It has the characteristics of prompting the amount of salt to be added when there is a lack of salt, and automatically adjusting the chlorine production level when the salinity is low. You can set the chlorine production to match your need, to achieve the purpose of efficiency and environmental friendliness

PRODUCT FEATURES

1. The salt chlorinator can be controlled by Tuya APP.
2. Water temperature monitoring function. There is an alarm when the water temperature exceeds the range of 10°C-45°C. This can effectively extend the service life of the unit.
3. Low salinity mode: automatically adjusting the chlorine production level when the salinity is low.
4. Salt shortage prompt: When salt shortage will prompt the amount of salt needed to add the pool, reduce manual calculation. (Enter the pool volume for the first using).
5. Voltage and current monitoring function. There is an alarm when the setting value is exceeded.
6. Electrode abnormality monitoring function. There is an alarm when a electrode failure occurs.

7. When the power is turned off and on again, the function of forced flushing electrodes can effectively protect the service life of the titanium plate.

8. When powered-on automatically initiates the last work setting from system memory.

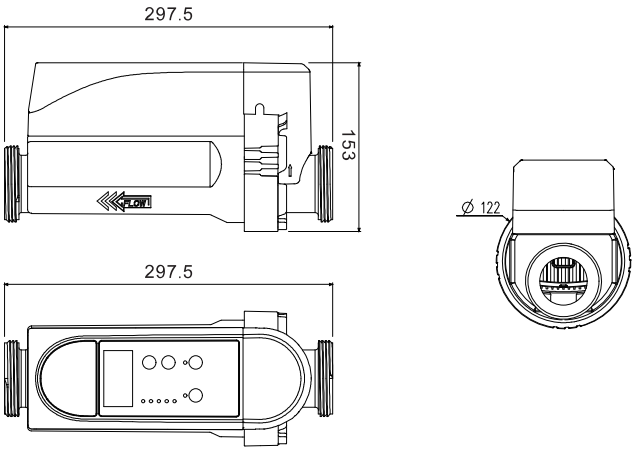
9. Titanium plate self-cleaning function. The titanium plate electrode reverses the positive and negative electrodes at regular intervals, effectively extending the service life of titanium plate.

10. Operating time setting function. Users can set the operating time of the unit according to the actual conditions of the pool water to save energy.

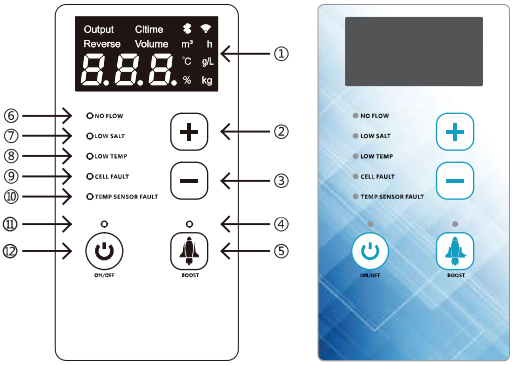
11. One-click restoration of default settings function.

Model	Chlorine production	Ideal operate location
EC Pro 4	4g/h	One unit satisfy the chlorine need for the pool ≤ 18m³ spa and pool.
EC Pro 8	8g/h	One unit satisfy the chlorine need for the pool ≤ 35 m³ of spa and pool.
EC Pro 12	12g/h	One unit satisfy the chlorine need for the pool ≤ 50 m³ of spa and pool.
EC Pro 16	16g/h	One unit satisfy the chlorine need for the pool ≤ 68 m³ of spa and pool.
EC Pro 20	20g/h	One unit satisfy the chlorine need for the pool ≤ 85 m³ of spa and pool.

2 PRODUCT SIZE



3 CONTROL PANEL OPERATION INSTRUCTION



① DISPLAY SCREEN

a. When powered off, the digital display does not show anything

b. After powering on, the current chlorine production level (for example, Output 20%) is displayed when the system is not faulty

c. Press the boost button to switch the display content, which is the OUTPUT (%)-chlorine output, CL time (h)-chlorine production time, Reverse(h)-electrode reverse time, Volume (m³), and the water temperature xx (°C). Automatically returns to OUTPUT(%) display after 5s.

d. When the salt chlorinator detects a fault, it will display the corresponding error code or prompt content (for example: the salinity of the pool, the salt amount that needs to be added)

e. If there are multiple faults, the error code is displayed alternately

f. During polarity reverse time, it displays "---"

② "+" button: increase the chlorine output

③ "-" button: reduce the chlorine output

④ "BOOST" indicator light: displays green when accelerating chlorine production

⑤ "BOOST" button (multi-function button):

a. In the non-"BOOST" state, press and hold the button for 3 seconds to start the "BOOST" acceleration chlorine production function.

b. In the "BOOST" state, press and hold the button for 3 seconds to exit the "BOOST" acceleration chlorine production and return to the previous chlorine production level.

c. In the fault alarm state, press the "BOOST" button once to clear the error code alarm.

d. In the normal state, short press this button to use it as a setting key, and use it in conjunction with the "+" and "-" buttons to set the chlorine production level, chlorine production time, self-clean time, and swimming pool volume.

⑥ “NO FLOW” fault light: when the red light is on, it means there is no enough water inside the cell.

⑦ “LOW-SALT” fault light: when the red light is on, it indicates that the pool salinity is at a low level and salt needs to be added to the pool.

⑧ “LOW TEMP” fault light: when the red light is on, it indicates the temperature is lower than the allowance.

⑨ “CELL FAULT” light: when the red light is on, it indicates that the cell is abnormal.

⑩ “TEMP SENSOR FAULT” light: when the red light is on, it indicates the water temperature sensor is abnormal.

⑪ Power indicator light: off, the unit is powered off. On green light, the unit is operating

⑫ “ON/OFF” button: start/stop button.

4 INSTALLATION INSTRUCTION

1. Before use, please ensure that the pipe diameter to be installed is the same as the salt chlorinator’s. The nominal diameter of the connection pipe of the salt chlorinator is: 1.5” (metric:ø50mm; inches: 1.5” /ø48mm).
2. Before use, please ensure that the valve of the pipe connecting to the salt chlorinator is closed.
3. Before installation, please clean any clutter or oil off of the pipes and the connection joint.
4. The salt chlorinator should be installed on bypass of the return pipe to the pool of the water treatment. A adjustable valve needs to be installed on the main pipe (as shown on Diagram 1 or Diagram 2)
5. Before installing the salt chlorinator, please ensure that water flow direction is consistent with the salt chlorinator indicates.
6. When connecting the pipes to the salt chlorinator, please use glue specialized for PVC.
7. The power input of the salt chlorinator needs to be installed on the power supply with leakage switch protection (AC110~220V/50~60Hz), which is the same power supply as the pump.
8. The chlorinator should be installed in a well ventilated area, to help the salt chlorinator to cool down. Do not install in an area where the electronic component of the salt chlorinator could be damaged by moisture and rain.
9. In the process of use, it should be avoided direct sunlight to avoid accelerating the aging of the shell of the salt chlorinator.

Diagram 1

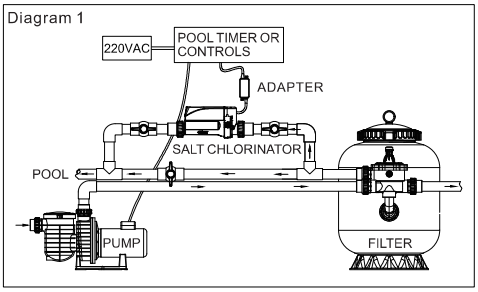
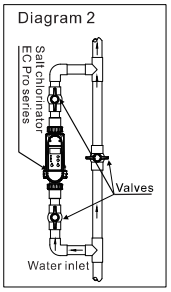


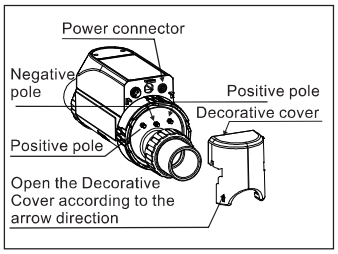
Diagram 2



5 OPERATION INSTRUCTION

PREPARATION BEFORE USE

1. The salinity of the pool water shall be 2700-4500PPM (that is, the total salt content per cubic meter of the pool water is 2.7kg~4.5kg.
2. After the unit is installed, open the valve connected to the salt chlorinator pipeline and close the valve of the main pipeline. Ture on the leakage protection swith.
3. Turn on the pump. Confirm that the water flow passes through the salt chloriator, no water leakage in the connecting parts, and the water flow is closed.



THE USE OF SALT CHLORINATOR

1. ON/OFF button
   After the unit is powered on, the start and stop of the unit can be controlled through the ON/OFF button on the control panel.

① In the power-off state, press the ON/OFF button once, the working indicator light will turn green, the LED display will light up, and the salt chlorinator will start producing chlorine.

② In the power-on state, press the ON/OFF button once, and the working indicator light and the LED display will off, and the salt chlorinator will stop producing chlorine.

2. Restore factory settings
   In the power-on state, long press the ON/OFF button for 3 seconds to restore the factory Settings of the salt chlorinator. The default factory Settings of each model are as follows:

Model	Default factory Settings
EC Pro 4	The chlorine production level is 100%, the chlorine production time is 24h, the reverse polarity time is 4h, and the pool volume is 18m³.
EC Pro 8	The chlorine production level is 100%, the chlorine production time is 24h, the reverse polarity time is 4h, and the pool volume is 35m³.
EC Pro 12	The chlorine production level is 100%, the chlorine production time is 24h, the reverse polarity time is 4h, and the pool volume is 50m³.
EC Pro 16	The chlorine production level is 100%, the chlorine production time is 24h, the reverse polarity time is 4h, and the pool volume is 68m³.
EC Pro 20	The chlorine production level is 100%, the chlorine production time is 24h, the reverse polarity time is 4h, and the pool volume is 85m³.

3. Chlorine production level setting
   The salt chlorinator has the function of setting the output chlorine level, which are respectively shown "Output 20%", "Output 40%", "Output 60%", "Output 80%" and "Output 100%" on the display.
   In the power-on state, the current output chlorine level (for example, Output 100%) will be displayed on the salt chlorinator. Then press the "+" and "-" buttons to adjust it (the factory default setting is "100%").



output chlorine level	display
Level 1	Output 20%
Level 2	Output 40%
Level 3	Output 60%
Level 4	Output 80%
Level 5	Output 100%
Boost	Output SUP



4. Chlorine production time setting:
   The chlorine production time setting function is adjustable from 1 to 24 hours. The factory default chlorine production time is 24 hours.

In the power-on state, press the "BOOST" button once to enter the chlorine production time setting function. The current chlorine production time will be shown on the display (for example Cl time 24h), and then press the "+" and "-" buttons to adjust it.

Cl time 1h" means that from the setting time, the equipment will operate for 1 hour, stop for 23 hours, and then operate for 1 hour, and so on.

…

"Cl time 24h" means that the equipment will operate continuously from the setting time.



5. Self-cleaning time (reverse polarity time) setting
   The reverse polarity time can be set to 2h/4h/6h/8h, and the factory default is 4h. The self-cleaning function can effectively eliminate the accumulated attachments on the electrode and keep the electrode in good working condition.

In the power-on state, press the "BOOST" button twice to enter the reverse polarity time setting function. The current reverse polarity time will be show on the display (for example: Reverse 4h), and then press the "+" and "-" buttons to adjust it.



6. Fast way to calculate the salt needs to be added (for the first time use, please key in the volume of the pool):
   The swimming pool volume allowance from 5m³-200m³ (keying in the pool volume is so that when the low salt alarm occurs, the salt chlorinator can automatically calculate and display the required salt amount.)

In the power-on state, press the "BOOST" button 3 times to key in pool volume. The current pool volume will be shown on the display (for example: Volume 40m³), and then press the "+" and "-" buttons to adjust it.



7. Query the water temperature
   In the power-on state, press the "BOOST" button 4 times to enter the pool water temperature query function, and the salt chlorinator will display the current pool water temperature (for example, 25°C).

"BOOST" ACCELERATED CHLORINE PRODUCTION INSTRUCTIONS



8. In the operating state, long press the "BOOST" button for 3 seconds. At this time, the screen displays: Output SUP, and the corresponding "BOOST" indicator light turns green. The default acceleration is 8 hours, and it will automatically return to the normal working level after 8 hours. During the acceleration period, if you long press the "BOOST" button again for 3 seconds, it will exit the accelerated chlorine production mode and return to the normal working level (the normal working level refers to the working level before "BOOST" acceleration).

ABNORMAL WORKING STATUS DISPLAY, ERROR CODE AND SIMPLE PROCESSING

9. Power indicator light: Under normal chlorine production state, the power indicator light turns green. When the chlorine production is stopped, it will be in standby mode, and the green power indicator will flash. In the powered-off state, the power indicator will not on.



10. Salinity adaptive (low-salt automatic downshift): When the salt chlorinator alarms for salt shortage at a high level, it will automatically adjust the chlorine production level when the salinity is low, the display alternately displays E5/salinity/salt amount should be added. If the low-salt fault indicator turns red and no beep. If it is still in salt shortage state after 1 minute, it will automatically reduce the appropriate output level until OUTPUT 60%. If the salt chlorinator alarms in salt shortage state at OUTPUT 60% or below level, it will not automatically reduce the appropriate output level, and the display alternately displays E5/salinity/salt amount should be added, the salinity shortage fault indicator turns red, and the buzzer sounds to prompt and stop chlorine production.

11. Note 1: When the unit stops working due to power supply, the unit will automatically save the parameter settings before the power is off. When power is restored, the unit will restart based on the last settings.

12. Note 2: The pump operating time and the chlorine production time should be set the same, or the pump operating time should be slightly longer than the chlorine production time.

13. Note 3: When you hear a continuous interval sound, please view the display error code and follow the instructions to solve the problem.

6 Wi-Fi OPERATION

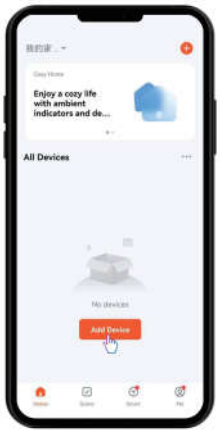
a) APP Downdoad



b) Go to the tuya App and click on Login or Try as Guest

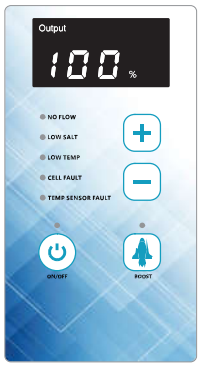


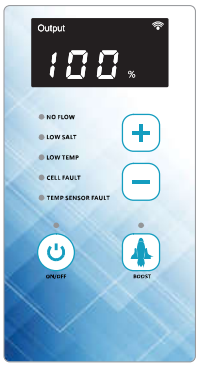
c) Go to the home page and click on Add Device (or click on the + in the upper right corner and then click on Add Device)





d) Press and hold the device + and - buttons at the same time for 5 seconds and wait for the WiFi indicator to flash

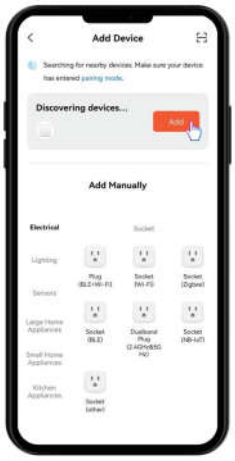




e) Enter the pending network mode, at this time tuya APP automatically search for the device, if the device is searched for, you need to click Add to enter the next step.

⚠ NOTE

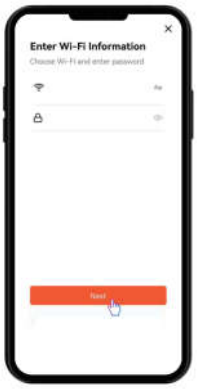
If you can't find the device, please check whether the Bluetooth is on or not, and whether the App permission is disabled or not.



f) Fill in the information of the currently connected wifi.

⚠ NOTE

Please make sure the wifi is 2.4GHz bandwidth, if 5GHz bandwidth is used, it will lead to network failure.



g) Wait for a few moments to complete the network, the product name can be modified after the network is completed, click Done to exit the page.





h) After completing the distribution network, the user can enter the equipment page of the salt chlorinator to control or set up the salt chlorinator.

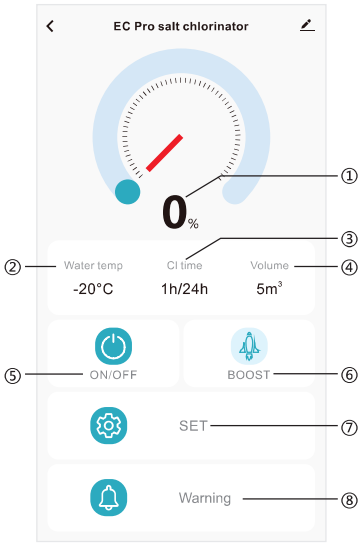


⚠ NOTE

If the WiFi is in the 5G, the network paring will be unsuccessful.

WIFI FUNCTION

After entering the home page of the unit, click “SET” to enter the SET page to set the salt chlorinator properties "Volume", "Level", "CI time" and "reverse". You can also click “Warning” to enter the error page to view the historical error information of the unit.



Home page instruction:

① Displayer: Displays the actual OUTPUT level (such as 100%) during operation. It is displayed as 0% in standby state and hidden in shutdown state. In boost mode, it is displayed as .

② Water temp: displays water temperature.

③Cl time: displays chlorine production time.

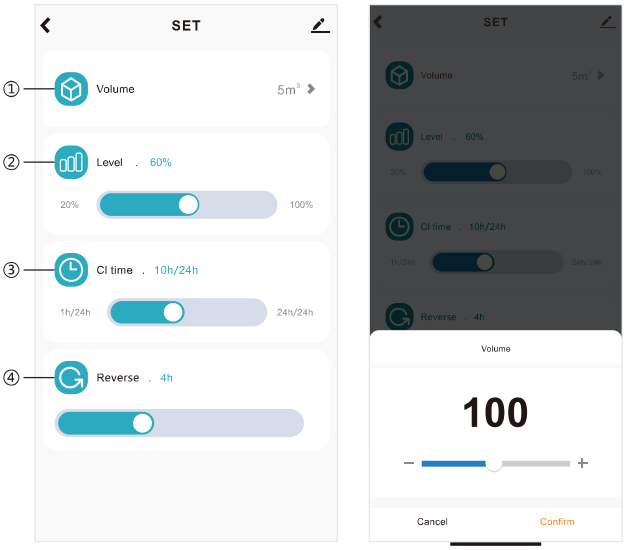
④ Volume: displays the entered swimming pool volume.

⑤ ON/OFF: switch on/off state

⑥ Boost: switch boost on/off state

⑦ SET: parameter setting

⑧ Warning: fault warning. when a fault occurs, the icon will change to yellow color from blue color , and it will be restored after the fault is resolved.



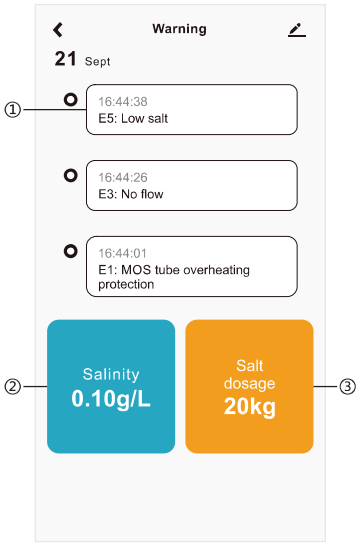
Parameter setting page instruction:
Drag the sliders to adjust the following parameters

① Volume

② Level

③ Cl time

④ Reverse



Error page instruction:

① Record the historical error reason of the salt chlorinator

② Display the current salinity of the pool. It is only displayed in salt shortage state (E5)

③ Display the current amount of salt that needs to be added to the pool; it is only displayed in salt shortage state (E5)

7 ERROR CODE AND CORRESPONDING SOLUTIONS

ERROR CODE

Error code	Reason of error	Remark	Solution
E1	The temperature of the MOS tube is too high	After the malfunction is solved, the fault will be eliminated automatically, and the chlorine production will resume automatically.	First check whether there is an E6 fault code. If there is no E6 fault code, press the “BOOT”to eliminate the error code and then downshift.
E2	The water temperature beyond the normal range The water temperature below the normal range	The normal working water temperature is 10-45°C. After the water temperature returns to normal, the error code is automatically eliminated. When the temperature is more than 45°C,it will stop working.When the temperature is less than 10°C, it will have warning but still work.	First check whether there is an E7 error code. If so, confirm whether the temperature sensor is connected. If it is connected, please replace the sensor. If there is no E7 fault code, you must ensure that it works within the set water temperature range.
E3	The water level inside the generator is low	When water flow resumes, the error code is automatically eliminated.	Check whether the circulation pump is operating. Check whether the water level detection probe wiring is in poor contact. Check whether the electrode connector is in poor contact. Check whether the salinity is less than 300ppm.
E5	The salt concentration is too low	After the malfunction is solved, the error code will be eliminated automatically. On high output chlorine level, the unit will not stop producing chlorine and automatically downshifts. On low output chlorine level, the unit will stop producing chlorine.	It is recommended that the salinity of pool water be kept within the range of 2700-4500ppm. Add the corresponding NaCl according to the prompts. After the NaCl is completely dissolved, press the “BOOST”to manually eliminate the error code.
E6	MOS tube NTC thermistor malfunctioned	The error code will automatically eliminated after the malfunction is solved.	Contact the supplier to repair or replace the controller circuit board.
E7	Water temperature sensor malfunctioned	The malfunction must be removed manually	First check if the corresponding temperature sensor is attached, if it is please replace the sensor
E8	The input voltage is abnormal	The error code will automatically eliminated after the malfunction is solved.	Please replace the power adapter.
E9	The output current is too large	The error code will automatically eliminated after the malfunction is solved.	Contact the supplier to repair or replace the controller circuit board.
EA	Electrode malfunction	The error code will automatically eliminated after the malfunction is solved.	Check whether the electrode is connected normally. Check whether the electrode connector is in poor contact. Check whether the salt content of the swimming pool water is less than 300ppm.

8 APPENDIX

POOL WATER SALT CONCENTRATION ALLOCATION AND MAINTENANCE

1.The calculation of the amount of water

Knowing the capacity of the pool is the first step in adding salt to the pool.

Rectangular pool: length (meter) x width(meter) x average depth (meter) = pool water capacity (cubic meter)

Circular pool: diameter(meter) x diameter(meter) x average depth(meter) x 0.785 = pool water capacity (cubic meter)

Ellipse pool: length (meter) x width(meter) x average depth(meter) x 0.893 = pool water capacity (cubic meter)

Beveled pool: pool volume (cubic meter) x 0.85 = pool water capacity (cubic meter)

2.The type of salt

The purer the salt, the more the advantageous of the salt chlorinator would operate. This will also extend the service life of the chlorinator. The Sodium Chloride (NaCl) in the salt should be at least 99.6%. Best if the salt is dehydrated granular food grade sea salt.

A.Please do not use rock salt, its impurity may shorten the service life of the chlorinator.

B.Do not use Calcium Chloride(CaCl2) as salt, only sodium chloride(NaCl) can be used.

C. Avoid using anti-blocking agent (sodium cyanide NaCN, aka YPS, is poisonous and corrosive) salt, this kind of salt may change the color of the pool surface and the equipments inside.

D. Can use water treatment salt pills, but it make take very long time to melt in the water.

3. Adding the right amount of salt

Most pools contains certain amount of salt, the concentration of the salt in water will vary depending on the water source and the sterilizing agent used. Users can use hand-held NaCl tester or salinity pen to test the current salt concentration of the pool.

The best operating salt concentration level of the salt chlorinator EC Pro series is 3500ppm (3.5kg of salt per cubic meter).

When operating the salt chlorinator EC Pro series for the first time. Add salt to the pool following

the steps below:

A.Use a salinity meter to check the original salt concentration in the pool.

B.Add appropriate amount of salt , ensure that for each cubic meter water add 3.5kg of salt.

The concentration of salt (ppm) can be seen as the gram of salt within 1 ton of water. If the current salt concentration of a 100m³ pool is 850ppm (can be taken as 850g in 1 ton of water), how much salt is needed for the salt chlorinator to normally operate ?

Salt need to be added(unit: gram) = water in the pool x (normal operation salt concentration – the current pool salt concentration) = 100 x (3500-850) = 265000 gram.

4. The correct way of adding salt

a.Turn on the circulation pump of the pool, and let the water circulation begin.

b.Turn off the salt chlorinator.

c.Test the current salt concentration of the pool

d.Calculate the amount of salt to be added to the pool according to the corresponding chart.

e.Add salt to the pool around the side of the pool, so that it can quickly and evenly dilute into the water. Do not let salt accumulate on the bottom of the pool. Stir the water on the bottom of the pool if needed so the salt can completely dissolve.

5.Reduce the salt concentration of pool water

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

FCC Warnning:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection againstharmful interference in a residential installation. This equipment generates, uses and can radiateradio frequency energy and, if not installed and used in accordance with the instructions, maycause harmful interference to radio communications. However, there is no guarantee thatinterference will not occur in a particular installation. If this equipment does cause harmfulinterference to radio or television reception, which can be determined by turning the equipmentoff and on, the user is encouraged to try to correct the interference by one or more of thefollowing measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1)This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.