



"Pool Technology"

GSC 10/20/30
064250/064260/064270

INSTALLATION – USER MANUAL



Preliminary information

"Thank you for your trust and support in Gemaş branded products. "

GEMAŞ Salt Chlorine Generator; It is designed and manufactured to perform salt electrolysis in small and medium-sized household pools.



The instructions for use must be read carefully before assembly and the assembly process must be performed by experienced technicians. Installed in violation of the assembly instructions; Damaged sand failures that may occur in products with electrical and water connections are not covered by the warranty.

The GEMAŞ Salt Chlorine Generator is a device designed and manufactured only for salt electrolysis in small and medium-sized pools. Using the purchased device for other purposes; It may pose a danger to the device, the place used and the people using it.



The ground connection must be connected to a proper grounding line. Electrical energy should be taken from a line with residual current protection.



ATTENTION! Serious injury or even death can occur as a result of electric shock. So, seek help from experienced technicians.



In terms of life safety and product; It should be installed in places where children cannot reach.



Installation and commissioning must be done by authorized service or experienced electrician and plumber. Otherwise, the manufacturer and the seller cannot be held responsible for the problems that may arise from incorrect installation and commissioning. Repair, maintenance and parts replacement cannot be claimed under warranty.

Documentation Updates

GEMAŞ Genel Mühendislik Mekanik San. ve Tic. A.Ş. always reserves the right to make improvements to the products described in these documents at any time without prior notice. GEMAŞ Genel Mühendislik Mekanik San. ve Tic. A.Ş. also reserves the right to make such a revision of the content in the document at any time and without obligation to notify any person or organization.

Salt Electrolysis and Its Advantages

Salt electrolysis; It is the name given to the water purification method that allows the salt in the water to be treated to be converted into free chlorine, a strong oxidizing agent, by an electrolytic process. With this technique; There is no need to use a significant part of the chemicals that keep the water clean and hygienic, and the risks of accidents and control that may arise from this use are also eliminated. In damp and hot engine rooms; Fatal accident risks that may arise from mixing chlorine and acids that produce heavy gases are eliminated with this system.

Short storage period of purchased hypo solutions in summer conditions, concentration loss due to heat; significantly increases the attractiveness of the system.

In addition to these, an extremely glowing and clear water quality can be achieved with the high oxidation effect of oxygen radicals produced in addition to chlorine in the process. System; The synchrone works together with the filtration system of the pool and makes the disinfection permanent. System ; It works synchronously with the filtration system of the pool and makes the disinfection permanent.

The ease of application of the system is at least as high as the superior water quality and hygiene it provides.

The sparkling and hygienic pool water obtained by the process, the ease of use provided, great savings and safety in chemical usage costs; are the main features that make the system indispensable.

1.PRODUCT FEATURES

- Produces chlorine in water with the same salt concentration as in tears.
- It has a user-friendly interface that provides ease of use with an LCD screen.
- It has an automatic electrode cleaning feature against calcification.
- It has a long-life titanium electrode.
- Has an electrode life of 16,000 hours.
- Provides the opportunity to adjust to the optimum level by increasing or decreasing the polarity change time for cleaning the electrodes.
- Thanks to the Boost operating mode on the device, the instant chlorine need of the pool is provided.
- The pool cover has a closing control input.
- Thanks to the LCD screen, it provides the opportunity to monitor the current during operation.
- The device records the total working time.
- It can be easily applied to the existing pool.
- The recommended minimum salinity is 4000ppm (4kg / m3).
- The device can be used in seawater which is 35000ppm.

1.1.Technical Specifications

		GSC10 064250	GSC20 064260	GSC30 064270
Chlorine Production		10gr/hour	20gr/ hour	30gr/ hour
Supply Voltage		220V AC		
Electrode Current		Max. 2A	Max. 4A	Max. 6A
Electrode Voltage		Max. 24V		
Power consumption		50W	100W	150W
Max. Pool Dimensions	Temperate	50m ³	100m ³	170m ³
	Tropical	35m ³	65m ³	110m ³
Maximum Flow		450 l/min		
Maximum Pressure		320 Kpa		
Pressure drop		5 Kpa		
Cell Type		Bipolar		
Salt Concentration		4-35gr/l		
Cell Material		PMMA		
Electrode Material		Titanium		
Device Dimensions		24X32X13cm		
Device Weight		2.4Kg		
Box sizes		63X35X15cm		
Box Weight		3.6Kg		

2.ASSEMBLY - INSTALLATION



Assembly and installation must be done by authorized service or experienced electrician and plumber. Otherwise, the manufacturer and the seller cannot be held responsible for the problems that may arise from incorrect installation and commissioning. Repair, maintenance and parts replacement cannot be claimed under warranty.

Before starting the assembly, make sure that the following conditions are met by taking the safety precautions regarding electricity and water for the device to work smoothly and for your life and property safety.

Electrical Disclosure



Electrical and mechanical measures have been taken to protect the safety of life and property in the Salt Chlorine Generator. For electrical measures to fulfill their function, warnings regarding residual current relay and grounding must be taken into account.

- **Leakage relay:** Use a CE certified residual current relay that you are sure it works. Make sure that the relay you will use controls the Salt Chlorine Generator. Strictly test the Residual Current Relay every year.



The manufacturer/seller cannot be held responsible for any problems that may arise from failure of the Leakage Current Relay, subsequent failure, cancellation, not connecting the grounding cable, and poor grounding.

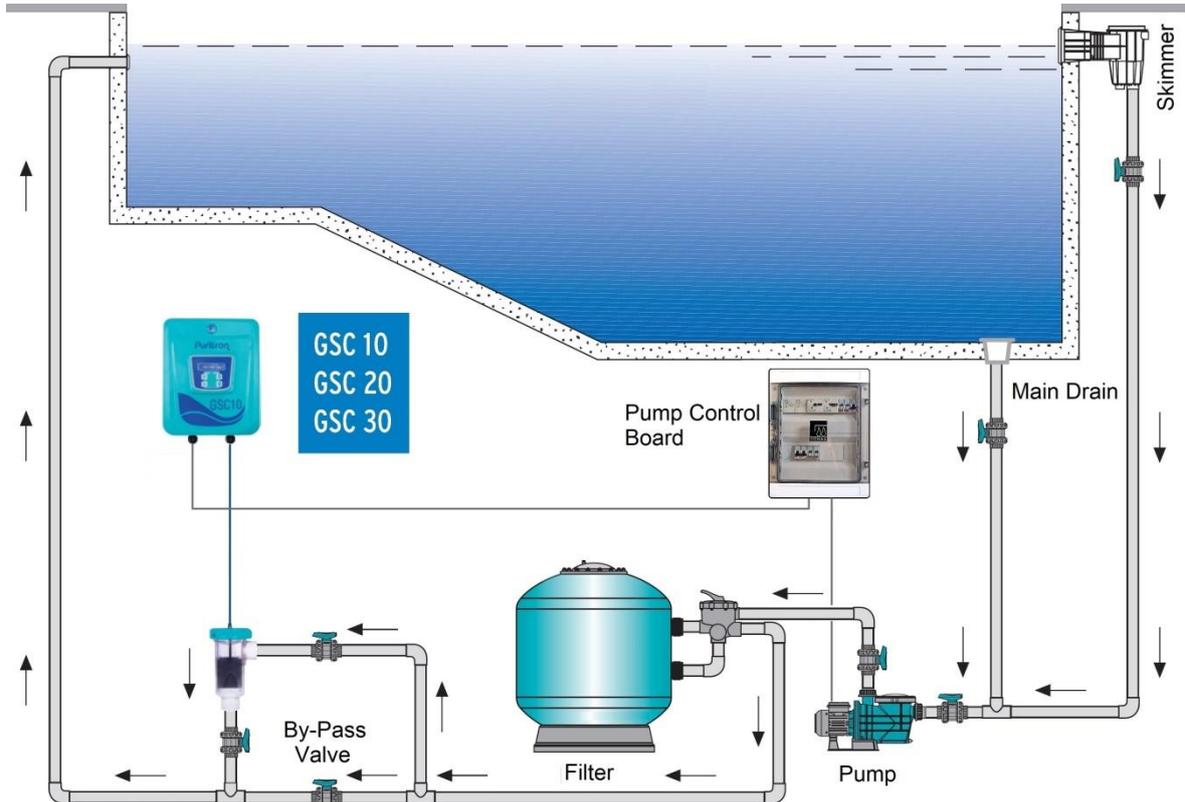
- **Supply Cable:** The device supply cable should be at least 3x1.5 mm.
- **Grounding:** Make sure that the grounding in your facility is well established. Connect the grounding line of the installation to the device. Test the ground line if necessary. You should see the voltage value you see between phase and neutral also between phase/ground. The voltage value between neutral and ground should be at most 2 V AC.

L-N: 220V AC

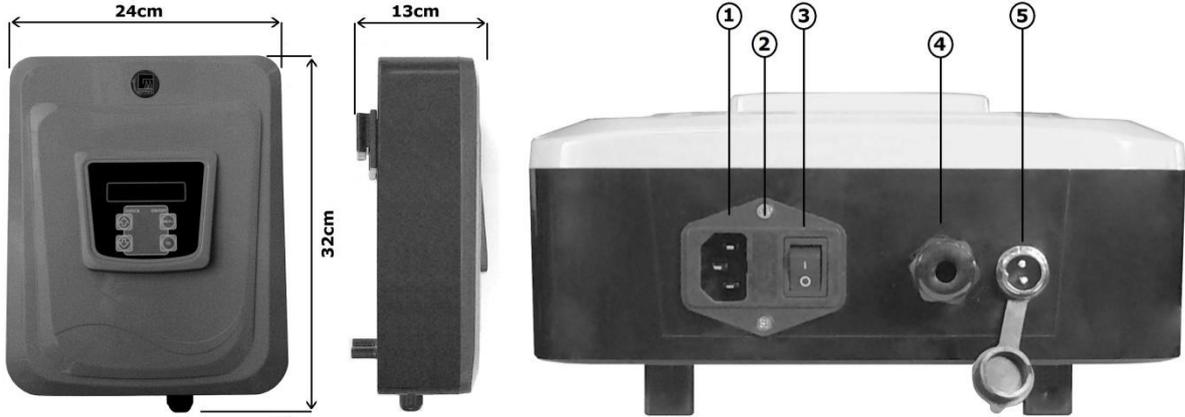
L-PE: 220V AC

N-PE: Maximum 2V AC

Installation Diagram



2.1. Control Unit Installation



1. Power Cord Input Socket
2. Glass Fuse Holder
3. Device On / Off Switch
4. Electrode Cable Output Coupling
5. Pool Cover Closing Control Connection Socket (Dry Switch)

- For the mounting of the control unit, a place that provides easy access and reading should be determined.
- The control unit must be in a place where there is airflow, protected from rain and there is no danger of water leakage.
- If there are acid tanks in the area where the control unit is located, there must be airflow in the environment. Otherwise, electronic components may corrode due to the acid effect.
- The control unit should be considered to be within 1.5m of the electrode cell.
- For the assembly process; Mark the hole locations on the wall you will mount on the hanging bracket.
- Drill holes in the marked places, fix the hanging bracket with the help of dowels and screws and place the control unit on the bracket.
- Connect the ground wire (yellow and green) of the 220V AC power unit cable to the grounding line of the installation. Connect the phase (brown) and neutral (blue) wires to the outputs of the pump contactor.



Salt chlorine generator should be used in parallel with the pump and while circulating in the water electrode cell. The device should never be operated without water flow in the cell.

2.2. Electrode Cell Assembly



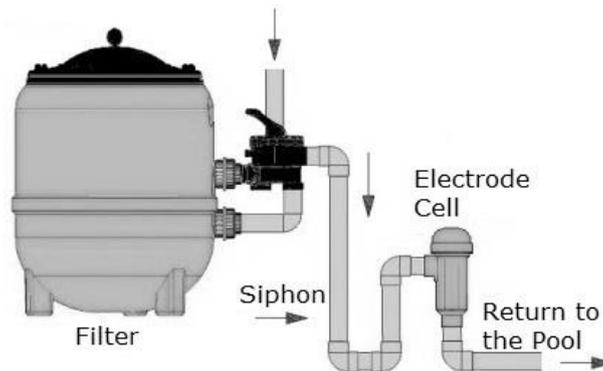
1. Electrode Cable Choke Gasket
2. Electrode Head with Union
3. Cable Connection Terminals
4. Electrode
5. Silicone Gasket Between Electrode and Chamber
6. Electrode Chamber
7. Water Inlet Connection Part
8. Water Outlet Connection Part

The electrode cell should be installed after the last element (filter, heater, etc.) that the water enters in the direction of return to the pool.



If an automatic pH regulator is installed in the system, the acid injection should be after the electrode cell. Otherwise, the electrodes interact with the acid and corrode. The manufacturer and the seller cannot be held responsible for any damages or problems caused by this. Repair, maintenance and parts replacement cannot be claimed under warranty.

- Rigid PVC glue should be used for pipe mounting to the electrode barrel and it should be allowed to dry completely before attaching the electrode.
- Electrode; it must be seated in the chamber in the right direction. The open part of the electrode should be towards the water inlet pipe connection. Make sure that the silicone gasket is in place and seated in a leak-proof way.
- Connect the electrode cable through the choke gasket and the screwed electrode head to the cable connection terminals. Close the threaded electrode head.
- It is recommended to install a three-valve bypass circuit whenever possible. In this way, it enables the adjustment of the amount of water passing through the cell and the operation of the pool while it is removed from the electrode chamber. In the pump operating at a certain power, the bypass circuit reduces the transition speed and prevents the electrodes from being damaged by vibration.
- The electrode cell can be used in vertical and horizontal positions, but vertical use is recommended as far as the environment allows. The vertical position allows the tank to be emptied without spilling water. Also, sufficient space is provided to remove the electrode head and electrode.
- If the cell is installed at a height below the filter outlet, gases formed as a result of electrolysis may accumulate in the chamber, which may damage the filtration elements. It can be prevented by making an installation as seen in this picture.



2.3.Pool Water

It is recommended to use mains water for the pool. If you are sourcing water from other sources, please have the water analyzed and make sure it is free of high concentrations of metals and calcium that are unsuitable for system operation. Also check the water's compliance with human health standards.

Before starting the salt water chlorinator , adjust the pool water values and take 1 kg of chlorine stabilizer for 25 m3 of water (20-30 ppm or as specified by the stabilizer manufacturer)



The stabilizer prevents the loss of chlorine from UV rays. The lack of stabilizer forces it to produce more chlorine, which shortens the life of the cell. On the other hand, a high stabilizer also affects the disinfection feature of chlorine in a way that will decrease.

The water of the pool should meet the following values.

Salt		5 – 6 Kg/m ³
pH	Concrete Pool	7.2 – 7.6
	Polyester	6.8 – 7.0
TAC		60 – 100 ppm
TH		15 – 20 French
Stabilizer		20 - 30 ppm (or manufacturer's recommendation)
Temperature		>10°C

2.4. Adding Salt

- During the salt addition process, the system should be completely shut down until all of the salt is dissolved. If the system is operated before the salt is completely dissolved, the cell can be irreversibly damaged. Any damage caused by this reason causes the product to be out of warranty.
- Calculate the water volume of the pool, salt should be added to a salt concentration of 5-6 kg per square meter. Make sure the salt water chlorinator, is not connected during this process and do not operate the 24-hour filtration system.
- In a newly coated pool, wait until 4 weeks after coating without salt.
- The dissolution rate of salt can be accelerated by using a pool broom. Make sure the salt concentration is 5-6 kg / m3.
- Salt water chlorinator, has no salt consumption, but its concentration may drop due to rain and water supplements.

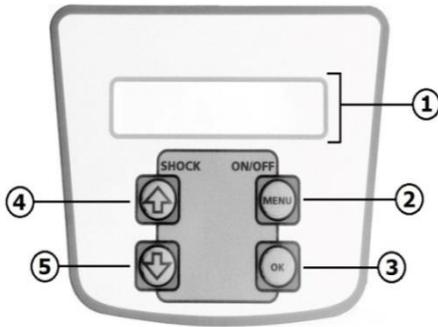


In cases where you need to add salt, pour the salt as close to the return line as possible. Never pour it into skimmers or suction strainers.

3.COMMISSIONING - USE

- Re-examine the electricity and water supply. Be sure to follow the assembly instructions written above correctly. If there is no deficiency or error, you can start the commissioning process.
- Open the water inlet and water outlet valves, turn down the bypass valve. Make sure there is no water leak in the valves and chamber.
- Make sure that phase, neutral and ground cables are connected correctly. Do not forget that the device will work with the pump and turn off with the pump. Turn on residual current relay/fuse. Check the supply terminals with the control pen or gauge.
- Turn on the device from the on / off switch at the bottom of the device. The control screen on the front of the device will be energized. There will be a closed mode screen on the control screen.
- The generator will operate in factory settings. If you want to change these settings, you can make the necessary changes with the help of the user manual.

3.1.Control Panel and Settings



1.2x16 LCD screen; Information and warnings about the device are displayed.

2.The device performs the functions of ON / OFF (turning on and off), entering the setting menu (holding the device off, holding down for 3 seconds while it is OFF) and leaving the pages and parameters in the setting menu.

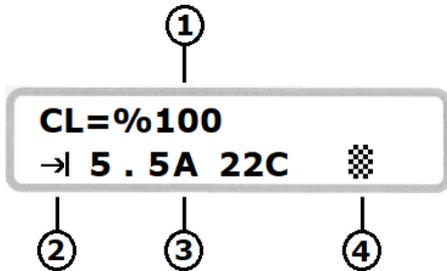
3.It performs the functions of making selections in pages and parameters in the setting menu, confirming and saving the adjusted parameters.

By holding it down for 3 sec. during the operation, the device switches to boost mode and runs at full capacity for 8 hours.

4.It performs the functions of switching to a higher page or parameter in the setting menu and increasing the parameter values.

5.It performs the functions of switching to a subpage or parameter in the setting menu and decreasing the parameter values.

3.1.1.Control Panel Operation Screen Icons and Values



1.CI Production Rate: This section shows the instant CL production rate. It can be increased or decreased by using the arrow keys. When the device is in boost mode, "BOOST" appears in this section.

2.CL Production and Polarization Icon: 3 different icons appear in this section:



Correct directional polarization icon.



Reverse directional polarization icon. Operating in reverse polarization does not harm the device. The lime cleaning feature on the electrodes is activated.



No polarization. Cl is not produced. Polarization change is made.

3.This section shows errors and warnings that affect Cl production. By pressing the OK button once, the instantaneous current value drawn during production is shown. Detailed information about faults is explained in **the Fault Codes and Suggested Solutions** section.



4.It is the symbol of pool cover. It is available in the devices with the pool cover closing control. Thanks to the pool cover closing control on the device; It provides the ability to adjust the chlorine production rate when the cover is closed. A switch with N.O contact (Dry Contact) is connected to the pool cover closing control connection socket. When the pool cover is closed, the signal coming from the switch turns the device to the cover mode and the icon appears on the screen. When the device is operating in the covered mode, the desired production value is increased and decreased with the direction buttons.

3.2.Setting Menu

The setting menu is an interface where the settings pages and parameters of the device are located. Allows the device to work at an optimum level with the changes and adjustments made. The device is turned OFF to enter the setting menu. An image will appear on the LCD screen as shown. While the device is in the OFF position, press the **MENU** button for 3 seconds. The device will automatically switch to the setting menu.

The contents of the setting menu are shown in the adjacent table. The table indicates the setting pages and parameters within the pages.

3.2.1. POLARITY PERIOD

Although the physical properties of the water used vary according to geographical regions, it inevitably contains certain proportions of calcium, magnesium, iron and other minerals. When the water is cold, these suspended minerals separate from the water during electrolysis, some of which adhere to the electrodes in the reservoir. After a certain time, the electrodes are completely covered with a substance called lime. Since the lime layer is insulating, it makes the electrical flow between electrodes difficult. As a result, chlorine production efficiency drops. This lime formed on the electrodes should be cleaned periodically.

This cleaning process device; It has the feature of automatically changing the polarization. Polarity period page is the page where the polarization change time is set. The page is entered by pressing the **OK** button once, and the **MENU** button must be pressed once to exit the page. When entering the setting page, the parameter value is changed with the **UP** and **DOWN** direction buttons. When the desired value is given, it is selected and saved with the **OK** button.

3.2.2. LANGUAGE

This is the page where the operating language setting of the device is made. The languages defined on the device are ENGLISH - TURKISH - FRENCH - BULGARIAN - GERMAN - HUNGARY - SPANISH. The page is entered by pressing the OK button once, and the MENU button must be pressed once to exit the page. The working language is changed with UP and DOWN direction buttons. When the desired working language is displayed, press the OK button once, the working language is selected and saved.

3.2.3.P.COVER PROC.

Thanks to the pool cover closing control on the device; It provides the ability to adjust the chlorine production rate when the cover is closed.

A switch with N.O contact (Dry Contact) is connected to the pool cover closing control connection socket. When the pool cover is closed, the signal coming from the switch turns the device to the cover mode and the icon appears on the screen. When the device is operating in the covered mode, the desired production value is increased and decreased by the direction buttons.

3.2.4.PROGRAM MENU

It is the setting page where GEMAŞ technical personnel can intervene. Making changes to this page may harm the general operation of the device.

**PURITRON
GSC30**

Settings	
1 - POLARITY PERIOD	POLARMA CLOCK
2 - LANGUAGE	ENGLISH TURKISH FRENCH BULGARIAN GERMAN HUNGARIAN SPANISH
3 - P.COVER PROC.	P.COVER CL
4 - PROGRAM MENU	PASSWORD

POLARTY PERIOD



**POLARTY PERIOD
POLARTY HOUR=8**

LANGUAGE



**LANGUAGE
ENGLISH**

P.COVER PROC.



**P.COVER PROC.
P.COVER CL= 40**

3.3. Use of the device

3.3.1. Switching the Device to On (ON) - Off (OFF) Mode

When the GSC Salt Water Chlorinator is powered and started, the switch at the bottom of the device (2.1. Control Unit Installation, Item 3) must be turned on. The device will be in On (ON) or Off (OFF) mode according to the last mode it was in. The mode in which the device is can be understood from the status of the LCD display. The production screen is displayed when the device is in the ON mode, and the "PURITRON" is displayed in the OFF mode.

3.3.2. Switching the Device to Chlorine Production

The device is turned on with the on / off button (3.1. Control Panel Item 2). Instantaneous CL production percentage, polarity direction icon will appear on the screen of the device. In the meantime, the CL production percentage can be increased or decreased by pressing the direction buttons. Also, if the OK button is pressed once, the current drawn by the electrodes is shown and then it will disappear automatically.

3.3.3. Switching the Device to Boost Mode

The chlorine need of the pool is provided quickly, thanks to the Boost Mode on the device. Device runs at full capacity for 8 hours and then returns to the production capacity set in the normal operation with the Boost Mode. When the device is in ON mode, the device is switched to Boost mode by holding down the OK button for 3 seconds. When the device is in boost mode, "BOOST" appears where CL production rate is shown.



While the device is working in Boost mode ; changing the production capacity with the directional buttons takes the device out of Boost mode.

3.3.4. Operating the Device with the Pool Cover

Thanks to the pool cover closing control on the device; it allows adjustment of chlorine production rate when the cover is closed. A dry contact switch is connected to the pool cover closing control connection socket. When the pool cover is closed, the signal from switch brings the device to the cover mode and its symbol appears on display. When the device operates in the "covered" mode, the desired production value is increased and decreased by the direction buttons.

4. CLEANING - MAINTENANCE INSTRUCTIONS

4.1. Electrode Cleaning

Although the physical properties of the water used vary according to geographical regions, it inevitably contains certain proportions of calcium, magnesium, iron and other minerals. While the water is cold, these suspended minerals separate from the water during electrolysis, some of which adhere to the electrodes in the reservoir. After a certain time, the electrodes are completely covered with a substance called lime. Since the lime layer is insulating, they make the electrical flow between electrodes difficult. As a result, chlorine production efficiency drops. This lime formed on the electrodes should be cleaned periodically.

This cleaning process device; It has the feature of automatically changing the polarization. However, in cases where the calcium concentration is too high, this feature may not completely remove the limescale. The lime residue in the cell should be checked regularly and the cell should be cleaned manually when necessary.

1. Turn off the pump and salt chlorine generator.
2. Close the water inlet and water outlet valves of the electrode cell.
3. Open the threaded electrode head, remove the electrode cable from the terminal properly and take the electrode out of the chamber.
4. Ideally, if the electrode is allowed to dry for a day, the limescale will release itself. Take care and pay attention not to damage the sensitive cap of the electrode during the procedure. During this process, never hit the electrode with metal material that could scratch it. Pressurized water can be used to dissolve limescale.
5. If the pressurized water could not remove the scale residue, you can immerse the electrode in a 20% hydrochloric acid solution. The terminals on the upper part of the electrode should not come into contact with the solution.
6. Immediately after cleaning, the electrode should be rinsed with clean water, the location of the terminals should be carefully dried and reassembled.



Never keep the electrode in acid for more than 5 minutes! Do not scratch the electrode with metal objects! For safety reasons, dilute the acid with water!

4.2.Advices

The bipolar cells of the GSC salt water chlorinator, have been produced using a special technique, with an extraordinary duration and resistance under high-quality standards. However, some factors prevent you from getting the full and longest performance from the electrode. These:

- Operating with a limescale on the surface of the electrode.
- Operating the device in a system with excessive chlorine concentration. (Chlorine over 3.00 ppm is corrosive.)
- Operating the device in a system with a high or low pH.
- Operating the device in a salt-free system or a system with a high salt concentration.
- Operating the device in water below 10 ° C.
- Adding salt while the appliance is running.
- Injecting pH regulator without skimmer or bottom strainer in place.

It is recommended to periodically check the cell terminals and lubricate them against sulfurization. Situations where you need to turn off the equipment:

- If there is not enough water in the cell.
- While the filter is being cleaned.
- While the pool is being drained.
- When the water is frozen.
- While the cell is being cleaned.

4.3.Fault Codes and Recommended Solutions

Fault Code	Possible Fault	Solution Way
ERR1	Cable is broken or not making contact.	Check cable and connection terminals, replace if necessary.
	There is a problem with the electrode cable connection.	Check the electrode cable connection terminals.
	Dense lime	Remove scale from the cell and lower the polarity period.
ERR2	There is lime	Remove scale from the cell and lower the polarity period.
	The water is too hard	Soften the water.
ERR3	There is a short circuit at the device output.	Check the device electrode cable, electrode connection terminals and replace if necessary.
ERR4	Electronic card failure	Contact the manufacturer.
LOW SALT	There is not enough salt in the pool water.	Add salt to the pool water.
Device Does Not Work - No Display Screen	220VAC-50Hz energy is not supplied to the device.	Check the energy of the power cable ends connected to the panel.
		Check the power cable.
		Check the fuse in the glass fuse holder.
		Make sure that the device On / Off switch is in the on position.
	The device is in Stand-By mode	Press the MENU Button once.

5.WARRANTY - AFTER-SALES SERVICE - SPARE PARTS

1.Control unit and electrode cells are under a two-year warranty.

2.Products are excluded from the scope of warranty by the following items.

- a. Malfunctions arising from the use of the product contrary to the instructions for use.
- b. Malfunctions arising from incorrect electrical connections.
- c. Malfunctions arising from crash, fall, breakage and similar accidents.
- d. Faults are caused by liquid contact in the control unit.
- e. Malfunctions arising from the operation without the bypass circuit (by the connection diagram).
Malfunctions arising from the liquid contact in the control unit.
- f. Malfunctions caused by acid spillage into the skimmer without shutting down the control unit.
- g. Malfunctions caused by insufficient air circulation in the engine room.
- h. Control unit; It must not be kept in the same environment with cleaning equipment including pump, filter and multiport valve.

