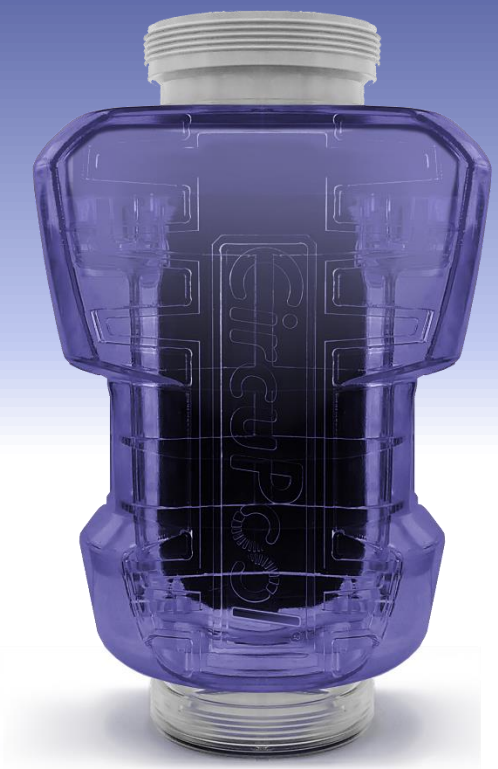
CircuPool® EDGE

Saltwater Chlorination System - Installation and Operation Guide



Models: ***EDGE15*** ***EDGE25*** ***EDGE40***

EDGE-Series Salt Systems

Advanced Swimming Pool Sanitation

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SAFETY INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS. Read and follow all instructions. Ensure all owners / operators of this equipment have access to these instructions. Save all instructions. When installing and using this electrical equipment, basic safety precautions should always be followed, including the following.

⚠ **WARNING**: Follow all aspects of local and National Electrical Code(s) when installing the CircuPool EDGE Series. Disconnect all electrical power during installation & service.

⚠ **WARNING**: To reduce the risk of injury, do not permit children to operate this device. Service should only be attempted by a qualified professional.

⚠ **WARNING**: Heavy pool (and/or spa) usage and higher temperatures may require higher chlorine output to maintain proper free available chlorine residuals. The actual amount of chlorination required by your pool can change, and varies according to factors not limited to bather load, rain, temperature, dirt, debris, and chemical balance.

⚠ **WARNING**: Safe operation of the electrolytic cell requires a minimum water flow rate of 20 gpm. Never operate the unit when the flow of water is restricted. Always turn unit off when operating any plumbing control valves such as for backwashing, water exhaust, or during operation of spa or water features. If operation restricts water flow to the cell, a build-up of flammable gases will result in hazardous conditions.

⚠ **WARNING**: We strongly recommend against the use of isolation valves. If full pump pressure is applied to an isolated component, it may be prone to rupture. Turn off all pumps before changing valve positions. Prevent water pressure spikes at Electrolytic Cell.

- Before installation, ensure that materials and equipment used in and around the pool are compatible with the use of chlorinated water and salt. Avoid high chlorine and high salt levels (above the recommended range); it is possible that certain materials and pool (and/or spa) equipment may be susceptible to damage.
- Ensure that the chlorinator operates only when the circulation pump is operating. When installed with a pool equipment timer or control system, wire the Control Module (wall unit) to the load side of the timer clock or control relay.
- If additional chlorine is required (due to heavy bather loads, for example), use Sodium Hypochlorite to maintain an appropriate chlorine residual in the water.
- DO NOT add acid or other concentrated chemicals directly to the skimmer. This may damage the cell.
- Check the expiration date of any test kits as test results may be inaccurate if used after that date.
- When replacing the cell, only use replacement cells having a label that clearly states that it is the replacement for this EDGE Series model.
- Proper pool chemistry must be maintained at all times. For outdoor pools, chlorine residuals can be protected from destruction by sunlight by addition of stabilizer (cyanuric acid).
- The use of dry acid may damage the salt cell and is not recommended. When using liquid acid, always add acid to water, never water to acid.
- For proper sanitation, spas must be completely drained periodically. The number of days between COMPLETE SPA DRAINAGE is equal to the volume of the spa water in gallons, divided by 10 times the maximum number of daily spa users. Refill spa with water and repeat initial startup instructions on pages 6-8 of this manual.
- Ensure that the EDGE Series installation does not constitute a cross connection with the local potable water supply. Consult local plumbing codes.
- Note: Some local codes may require external grounding source. Check your local ordinances.
- To reduce the risk of electric shock, the ground wire (green wire) on the power cord must be connected to the grounding means provided in the electric supply service panel.

EDGE-SERIES Owner's Manual

INTRODUCTION

Congratulations on your recent purchase of a CircuPool EDGE Series Electronic Chlorine Generator. CircuPool's high performance systems offer escape from the routine of manual pool chlorination and sanitization. The EDGE Series uses a very low level of salt in the pool water to continuously create free chlorine, killing bacteria and algae in the water and helping to maintain a sparkling clean pool. Please take a moment to read through the entire manual before installing your new unit. Your generator must be installed and operated as specified.

GETTING STARTED

READ ENTIRE MANUAL FIRST - To ensure consistent & reliable operation, the pool and equipment must be used and maintained as specified. Most issues are easily avoidable with correct maintenance.

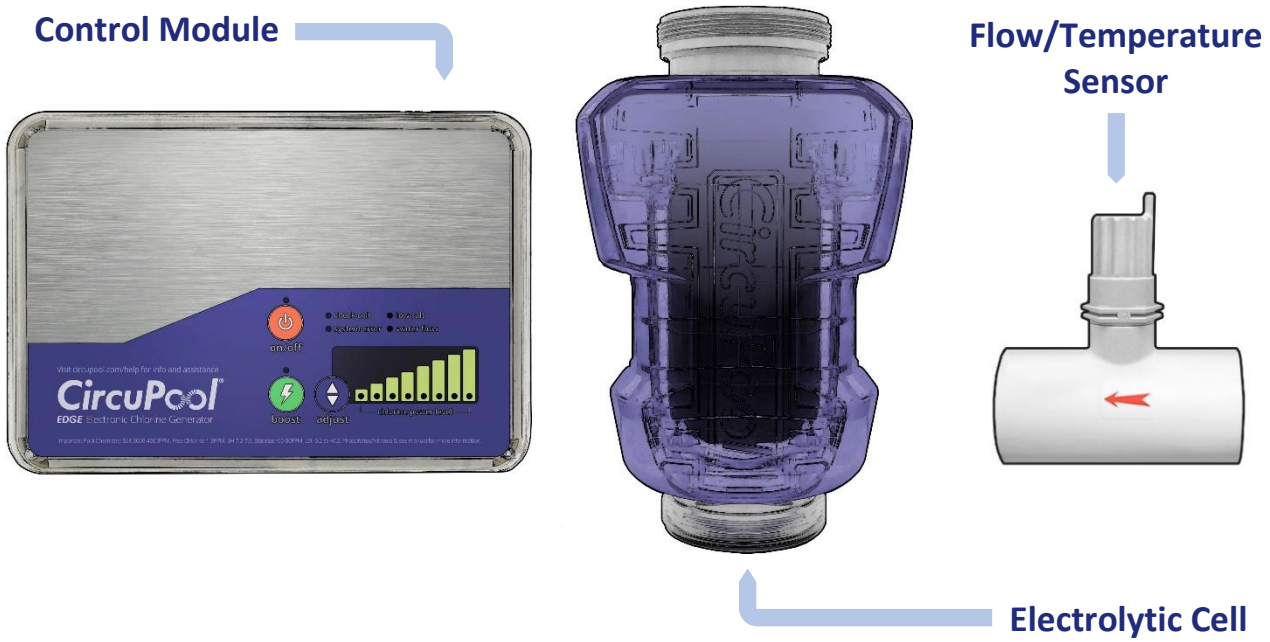
Before installation or operation, please take the time to read this entire manual, compare package contents with the parts list, and gather tools required. Improper installation may void the warranty and create unnecessary hazards. This manual contains step-by-step instructions to help ensure that your installation meets the recommended standards. Spending the time to understand your system and its functions will assure successful, trouble-free operation.

As with any electrical device, it is very important that the installation and service of this equipment be performed by a qualified person with the skills and experience required to do it safely and correctly. Improper installation or service can result in severe electrical shock to the installer or user of the equipment or pool. Please choose your installer with great care! Be sure to familiarize yourself with the pool chemistry requirements and maintenance procedures.
Please visit www.circupool.com/help for more information, tips, and troubleshooting assistance.

EDGE SYSTEM OVERVIEW

The advanced compact **EDGE** salt system utilizes three main components for operation:

Complete System Includes:



Control Module: This component supplies power to the cell and allows you to customize the system's operation in order to meet your pool's unique needs.

Electrolytic Cell: This component creates chlorine as the water inside passes through and returns to the pool. The Electrolytic Cell ("Cell") contains a bipolar set of titanium plates that use a low level of DC electrical power to generate chlorine from salt in the water.

Flow / Temperature Sensor: These components ensure that there is adequate salinity & water flow for the Cell to activate, and monitor the temperature in order to protect the cell.

Additional Items Required (Not Included)

PVC Cement, PVC Primer, Hacksaw or Pipe Cutters, Screwdrivers, Permanent Marker

Preparing the Pool Water

It is important that the pool's water chemistry is balanced before the **EDGE**·SERIES is powered on and used. In order for the system to be able to work, there must be a minimum level of salt in the pool water, see "Salt Levels" below. In order to achieve normal pool operation, water chemistry needs to be balanced according to the national standards listed under "Ideal Chemistry Levels" on page 8.

DO NOT add chemicals or salt directly to the skimmer. This may damage the cell. If the system has already been installed, it should not be turned on before adding salt. Additionally, leave the salt chlorinator off any time there is a chance of recently added chemicals going through the salt cell in a concentrated form.

For New Pools / Remodels: wait 30 days or longer if specified by your builder for plaster to cure before adding salt.

For Biguanide (Non-Chlorine) Pools: ensure any Biguanide-based chemicals have been removed prior to startup.

Ideal Salt Levels & Pool Size

The ideal salt level for operation is about 3500 ppm (parts per million), and it is suggested to keep the salinity between 3000-4500 ppm . To achieve this level of salinity, use the chart on page 7, which will help you add approximately 30 lbs of salt for every 1000 gallons of water (or 3.6 Kilograms of salt for every 1000 Liters). If you are unsure of the number of gallons in your pool, double-check with the following equations.

Calculating Gallons (Dimensions in Feet)

Rectangular Pool
Pool Width x Pool Length x Average Depth x 7.5 = Pool Gallons

Round Pool
Pool Diameter x Pool Diameter x Average Depth x 5.9 = Pool Gallons

Oval Pool
Pool Width x Pool Length x Average Depth x 6.7 = Pool Gallons

Example – 15' x 30' Rectangular Pool with 3' shallow end and 6' deep end.

15' wide x **30**' long x **4.5'** Average Depth x **7.5** = **15187 Gallons**

Adding Salt

IMPORTANT: Before adding salt at any time, ALWAYS perform an independent water test to measure pre-existing salt levels.

If your pool holds this many gallons…	If the salt level (PPM) in your pool is currently…								
	0	500	1000	1500	2000	2500	3000	3500	4000
4,000	117	100	83	67	50	33	17	0	OK
6,000	175	150	125	100	75	50	25	0	OK
8,000	234	200	167	133	100	67	33	0	OK
10,000	292	250	209	167	125	83	42	0	OK
12,000	350	300	250	200	150	100	50	0	OK
14,000	409	350	292	234	175	117	58	0	OK
16,000	467	400	334	267	200	133	67	0	OK
18,000	525	450	375	300	225	150	75	0	OK
20,000	584	500	417	334	250	167	83	0	OK
22,000	642	550	459	367	275	183	92	0	OK
24,000	701	600	500	400	300	200	100	0	OK
26,000	759	651	542	434	325	217	108	0	OK
28,000	817	701	584	467	350	234	117	0	OK
30,000	876	751	626	500	375	250	125	0	OK
32,000	934	801	667	534	400	267	133	0	OK
34,000	992	851	709	567	425	284	142	0	OK
36,000	4051	801	751	600	450	300	150	0	OK
38,000	1109	951	792	634	475	317	158	0	OK
40,000	1168	1001	834	667	500	334	167	0	OK
42,000	1226	1051	876	701	525	350	175	0	OK
44,000	1284	1101	917	734	550	367	183	0	OK
46,000	1343	1151	959	767	575	384	192	0	OK
48,000	1401	1201	1001	801	600	400	200	0	OK
50,000	1460	1251	1043	834	626	417	209	0	OK

After measuring for any existing salt content in the pool, add salt according to the chart above. The chart allows you to cross-reference your existing salt level and your pool size to estimate the number of pounds of salt required to achieve 3500 ppm. Without the right amount of salt, the result will be reduced efficiency and a low level of chlorine production. In addition, operation at low salt levels will reduce the longevity of the cell.

When adding the salt to the pool, it is best to empty the required salt into the shallow end of the pool and run the filter and pump simultaneously in order to circulate the water and dissolve the salt (the **EDGE**™ Series is to remain off during this time period). Do not throw the salt bag into the water as chemicals and inks on the bag can interfere with water balance. **Salt may take 24 - 48 hours to dissolve** in summer, and longer in winter. Finer granules of salt will dissolve faster than compressed pellets.

The salt in your pool is constantly recycled and does not normally need to be replenished frequently. The loss of salt throughout the swimming season should be small, and is due primarily to the addition of extra water to replace water lost from splashing, backwashing, and draining. Salt is not lost due to evaporation.

Use only evaporated, granulated, non-iodized salt (Sodium Chloride). The purer the salt (at least 99%), the better the life and performance of the Electrolytic Cell. Water Softener salt (also known as Water Conditioning pellets) is an economical way to buy large quantities of salt. However, only salt that is at least 99% pure NaCl can be used. Pellets are compressed forms of evaporated salt that may take longer to dissolve. Avoid using salt with anti-caking agents (Sodium Ferrocyanide, also known as YPS or Yellow Prussiate of Soda) that could cause discoloration of fittings and surface finishes in pool. Do not use Calcium Chloride as a source of salt. Do not use Rock Salt; insoluble impurities mixed with the rock salt can shorten the life of the unit.

TIP: When adding *large* quantities of salt, independently test the existing salt level and add in portions, retesting at each stage.

Ideal Water Chemistry Levels

It is important to maintain these chemistry levels in order to ensure that the pool can be enjoyed safely, to minimize the amount of effort required to sanitize the water, and to prevent corrosion or scaling. The only unique requirement for a pool with a chlorine generator is the low level of salt (salinity) to be maintained in the water. It may be helpful to provide this manual to any pool professional that you may have performing chemical testing or service, as requirements may vary from brand to brand.

	Swimming Pools	Spas
Free Available Chlorine	1.0 - 3.0 ppm	3.0 - 5.0 ppm
Salinity	3000 - 4500 ppm	3000-4500 ppm
pH	7.2 - 7.8	7.2 - 7.8
Total Alkalinity	80 - 120 ppm	80 - 120 ppm
Calcium Hardness	200 - 400 ppm	150 - 450 ppm
Stabilizer (Cyanuric Acid)	60 - 80 ppm	60 - 80 ppm
Saturation Index (LSI)	-0.2 to +0.2 (0 Best)	-0.2 to +0.2
Phosphates & Nitrates	None (0 Best)	None
Metals	None	None
TDS	<1200	<1200

CHEMISTRY TIPS:

Chlorine Stabilizer (Cyanuric Acid)
Stabilizer is needed to maintain proper levels of chlorine; the sun's UV radiation can destroy unstabilized chlorine in as quickly as 2 hours. Stabilizer should be maintained between 60-80 ppm, as excessive amounts can also reduce chlorine effectiveness.

Nitrates and Phosphates
These chemicals are very common and can cause extremely high chlorine demands and can easily deplete your free chlorine levels to zero. Your local pool professional can test for Nitrates and Phosphates, levels should be at zero.

Saturation Index (LSI)
A calculated number used to predict the calcium carbonate stability of water. If the index is higher than +0.2, it can cause quick and excessive calcium scaling on the salt cell. If the index is lower than -0.2, it can cause the water to be corrosive and damaging to metals and minerals in the water, such as the titanium inside the Cell.

Metals
Metals can cause the loss of chlorine. Also, metals can stain your pool and tint your water. Have your local professional test and recommend methods of removal. Be sure to use a phosphate-free metal remover.

Chloramines / Combined Chlorine
Chloramines should not be present in pool water. When organic materials are not fully oxidized by Free Chlorine, Chloramines are formed. This ties up the Free Chlorine in your pool, and does not allow the chlorine in your pool to disinfect. Chloramines also cloud pool water and burn the eyes. Super Chlorinate (shock) to remove Chloramines at the initial startup of the pool.

pH Levels
pH produced by the Electrolytic Cell is close to neutral pH. However, other factors usually cause the pH of the pool water to rise. Therefore the pH in a saltwater pool tends to stabilize at approximately 7.8. This is within national standards. **pH levels above 7.8 drastically reduce the effectiveness of the chlorine**, and can also contribute to excessive mineral scaling. If high, have a pool professional test to see if other factors such as high Calcium Hardness or Total Alkalinity are the cause, and then balance accordingly.

Total Dissolved Solids (TDS)
Adding salt to pool water will raise the TDS level. While this does not adversely affect the pool water chemistry or clarity, the pool professional testing for TDS must be made aware that salt has been added. The individual performing the TDS test will then subtract the salinity level to arrive at the correct TDS level.

OPERATION

How it works

Think of the **EDGE**·SERIES as a chlorine generator; set it to create a steady supply of chlorine for the pool, instead of buying and adding chlorine by hand.

How it works: Using electrolysis, it creates chlorine from the salt molecules (NaCL) in your water in order to sanitize your pool. A small electric charge is applied across a set of titanium plates inside the Electrolytic Cell. This produces Sodium Hypochlorite (NaOCl). In water, Sodium Hypochlorite dissociates into sodium (NA+) and hypochlorite (OCl-) ions. It is the hypochlorite ions that form with the hydrogen (H+) ions (from the water) to form hypochlorous acid (HOCl), which is the active agent that destroys bacteria and algae and oxidizes organic matter. This form of chlorine works quickly in the pipe, leaving only a mild residual in the pool. In addition, the Electrolytic Cell continuously "shocks" the incoming water- burning off any oils, organic matter, or other particles that need to be oxidized. Best of all, the process continuously recycles the salt: after cleaning the pool, the original molecules reform and the whole process begins again. The salt doesn't get used up!

Initial Start Up

Before starting the system for the first time, verify **1) that the pool water is chemically balanced** (see page 8) and **2) that all installation items are completed** (see page 18)

Press the power button on the **EDGE** controller while the circulation pump is running. This should activate the system and within moments all LED lights should flash briefly while the system checks its status (if the pump is not running, you may see the "system error" or "water flow" light). Once the system is on & ready to operate, the blue "on/off" LED will be solid.

Once powered on, you'll want to set its power level (Chlorine Output). To find the optimum Chlorine Output setting, start at a setting of 75% (6 out of 8 blue lights) and adjust as needed over the initial startup period. Measure your available chlorine in the pool after two to three days and adjust the Chlorine Output level accordingly. If the available chlorine is too high, lower the Output level; if the available chlorine is too low, raise the Output level. It will take a few adjustments to find the ideal setting for your pool. Once set for the pool's current needs, it should only take minor adjustments of the system's power level and/or pump run times throughout the season.

General Operation

By familiarizing yourself with the operation of the **EDGE**·SERIES, you can achieve the maximum performance for your pool. There are three main factors that you can control which directly impact the resulting free chlorine level in the pool:

1) The chosen percentage of Chlorine Output on the Control Module

2) Hours of pump run-time each day

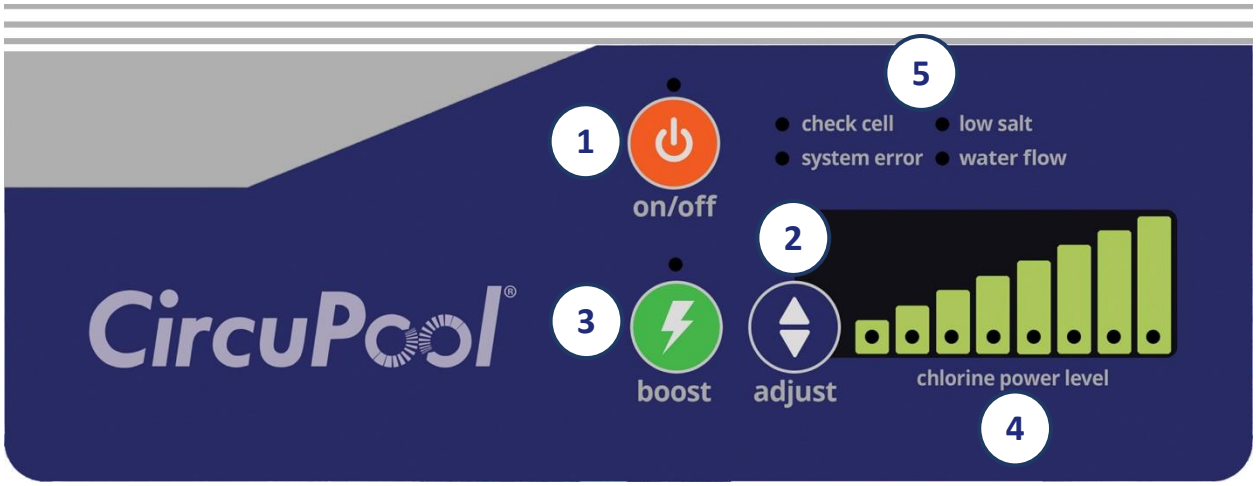
3) Water chemistry balance

- Including the amount of salt in the pool and chemicals that affect chlorine demand, such as chlorine stabilizer, phosphates, nitrates, and more. See "Ideal Chemistry Levels" on page 8 for more important information.

After making the initial adjustments to your chosen Chlorine Output level, additional adjustments are typically only necessary due to changing seasonal temperatures, or changes in pool use and bather load. Like any pool, ensure that your pump runs long enough for all the pool water to pass through the filter 1.5x to 2x a day (usually at least 8 hours). This is amount of time is typically more than sufficient for chlorination of the pool, but if the pool has high chlorine demand, running the pool pump longer allows for more chlorination. Measure your water chemistry and chlorine level on a regular basis.

As you use the system throughout the season, **make sure that you clean the Cell as frequently as needed** (see page 11). Once the system detects that the Cell needs to be cleaned, it will display a "Clean Cell" warning light, and then will not be able to create more chlorine until all mineral scaling has been removed from the Cell.

Using the Control Module



1) **ON/OFF**: Use this button to manually activate / deactivate the system on or off.

2) **Adjust (Chlorine Output)**: Press to change the system's power level setting (the rate of chlorine production), in order to customize operation for your pool's needs.

3) **Boost (Chlorine Output)**: Press to activate/deactivate super-chlorination mode (maximum output for 24 hours of system run time). When pressed, boost mode is activated and the whole LED bar will be on. After 24 hours (of system run time), chlorine output will automatically return to previous setting.

4) **Chlorine Output Power Level**: Displays the system's chlorine output level that you have chosen. These LED's are also used to display system diagnostics during troubleshooting.

5) **System Messages**: These LED lights display important information about the operations of your system. If any of these orange LED lights are flashing or illuminated, please see the Troubleshooting section of this manual.

- **CHECK CELL**: Inspect for the Cell and soak the Cell in cleaning solution to remove calcium buildup or debris.
- **LOW SALT:** When this LED is illuminated, salt may need to be added to the pool. First, inspect the Cell for mineral scaling and clean if necessary. If this does not solve the problem, manually check the salinity of the pool water and add salt according to the table on page 7.
- **SYSTEM ERROR:** This LED is illuminated when the system is not able to produce chlorine or a critical fault has occurred in the power supply. Please refer to the "Troubleshooting" section on page 20.
- **WATER FLOW**: When this LED is illuminated, the Flow Sensor is not being triggered by water flow. This causes the Cell to stop generating chlorine. Verify that you have proper water flow without air bubbles in the Cell housing, and verify that water flow is fully pressing the flow switch away from its resting center position. In case you have a variable speed pump, increase flow until the LED turns off.

* See Troubleshooting section for more details

MAINTENANCE

Expected Maintenance

Monitor your pool's salinity level as frequently as you check your other water chemistry levels.

After the system has run for a time, your cell will eventually need to be cleaned due to natural mineral scaling. The system will notify you of this by turning on the "CHECK CELL" light. When illuminated, follow the cleaning instructions below under "Cleaning the Electrolytic Cell".

The frequency of cleaning depends on your water chemistry and the Saturation Index of the water. For most people, cleaning is only necessary a handful of times per season. More rapid mineral build up is sure sign of a chronically high Saturation Index; it is possible for imbalanced chemistry to cause scaling to occur quite rapidly. Consult a pool professional for additional help.

Cleaning the Electrolytic Cell

Once substantial deposits have built up on the titanium plates in the Cell, the "CHECK CELL" light will illuminate, and the mineral scaling must to be removed. The Cell may require cleaning even if debris or build-up is not immediately visible to the eye. To do so, follow these steps:

CAUTION: When cleaning the Cell always wear adequate protection, such as rubber gloves and eye protection. Always add acid to water, do not add water to acid. Always work in a well-ventilated area. Splashing or spilling acid can cause severe personal injury and/or property damage.

WARNING: Do not insert anything or use metal or other hard objects to clean the cell, this will void the warranty.

IMPORTANT: If mineral build-up is severe, more than one cleaning may be necessary to dissolve remaining solids. Inspect Cell plates closely with a bright light after cleaning. If you can see any remaining scaling, debris, or physical blockages through Cell, repeat the cleaning process as needed. If "CHECK CELL." comes back on soon after cleaning (check a few minutes after restoring power): 1) verify salinity is in range; 2) ensure Cell is completely full of water during operation; then 3) clean Cell again.

Before removing the Cell for cleaning or replacement:

1) Turn off all power to all pool equipment, close supply line valves if applicable.
2) Unplug the Cell cable connecting the Cell to the Control Module.
3) Disconnect the Cell by unscrewing the Threaded Collars around the unions where the Cell attaches to the plumbing.
4) Remove entire Cell from between the unions. DO NOT pull or hold the Cell by its cable.

To clean the Cell of mineral buildup:

1) Temporarily remove the O-ring from one end of the Cell.
2) Attach Cleaning Cap (included in box with the system) and orient the Cell vertically with the capped end on bottom. Place on the ground and stabilize so as to remain upright and prevent spilling.
3) In a separate bucket, mix one part muriatic acid into four parts water. Pour this weak acid solution directly into Cell. Ensure that the cleaning solution COMPLETELY covers the components the inside of the Cell.
4) Wait for foaming to stop. Allow solution to soak for no more than fifteen minutes.
5) Properly dispose of acid solution, and use a hose to generously flush any remaining debris out of the Cell.
6) Look inside the cell to check that no debris or scaling remains. Repeat steps 2-4 if necessary.
7) Reinstall Cell O-ring, and reinstall Cell into PVC return line.

General Maintenance

Winterizing

Very little chlorine is necessary at low temperatures. The EDGE Series will not produce normal chlorine levels at cold temperatures. This feature extends the lifespan of the Cell.

If you “close” your pool for the winter, you can continue to follow all standard procedures for your local area.

The Electrolytic Cell will be damaged by freezing water just as your pool plumbing would. In areas which experience severe or extended periods of freezing temperatures, be sure to drain all water from the pump, filter, supply and return lines before any freezing conditions occur. The Control Module is capable of withstanding any winter weather and does not need to be removed.

Spring Start-up

When opening the pool after a period of inactivity, do not power on and use the chlorine generator until the pool's water chemistry has been balanced and brought to ideal levels. Salt must be added if water has been drained over the winter.

Replacing the Cell

When the titanium blades inside the Electrolytic Cell have reached the end of their lifespan, replacements are readily available so that the whole system does not have to be removed. Replacements are easily switched out. To ensure quality and value, only genuine CircuPool replacement parts may be used.

When the cell has been run for enough hours of operation that it may be nearing the end of its usable lifespan, the Check Cell LED light will begin to flash. No action is required; the Cell can continue to be used until a solid warning light occurs. However, enough operation has occurred that you should consider purchasing a replacement cell. The flashing LED light can be cleared by following the follow the Reprogramming instructions on the following page.

Whenever a cell is eventually replaced, follow Control Module reprogramming instructions on the following page.

Reprogramming the Control Module

When installing a new cell of the same size – or – clearing the flashing Check Cell LED:

This procedure will reset the system's internal count of production hours. This should be done in order to clear the Check Cell light when flashing and any time a new cell (of the same size) is installed.

1. Press the On/Off switch to deactivate the Control Module. (Leaving power on at power source)
2. Hold down the chlorine Adjust button until the LED's on the chlorine output power graph light up. Take note of how many LED's are displayed: 1 LED (EDGE15), 4 LEDs (EDGE25), or 8 LEDs (EDGE40).
3. Tap the Adjust button once, then let the Control Module sit until the lights turn off.
4. Hold down the Adjust button until the LED's light back up on the chlorine output power graph.
5. Tap the Adjust button twice (confirm that the same number of LED's are lit up as on Step #2 above), let the Control Module sit until the lights turn off, then hit On/Off button to turn unit back ON.
6. Turn off power at the power source (breaker, timer, etc…) for about 30 seconds.
7. Turn power back on at the power source.
8. Allow the salt system and pump to run for at least 5 minutes to calibrate before shutting it off again.

When installing a new cell of a different size:

If a different size cell is to be used (ex: upgrading to a new Cell of a larger size), the Control Module needs to be set in order to work correctly with the new Cell size. Follow these instructions to change the Control Module to the correct Cell Type.

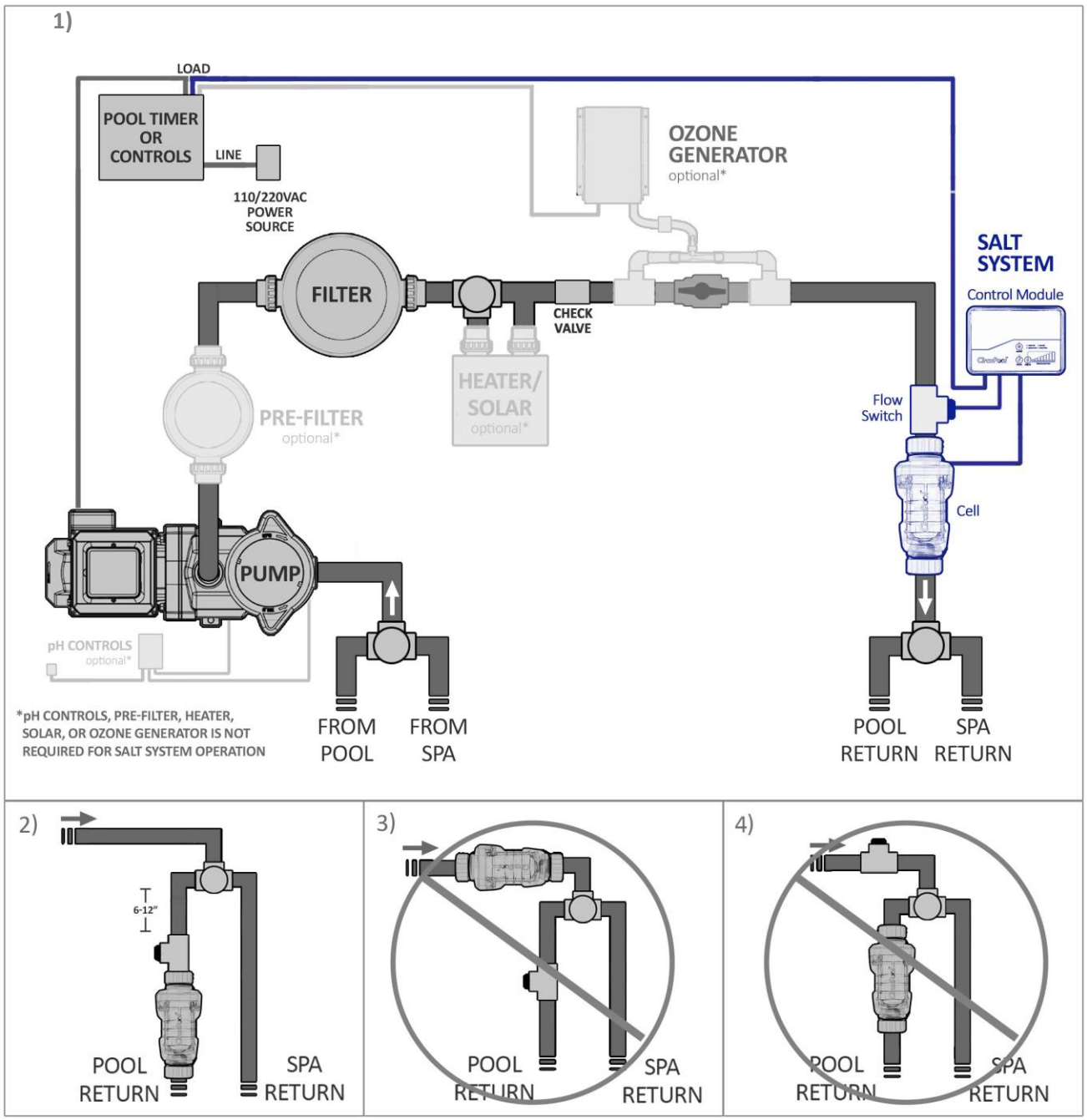
1. Press the On/Off switch to deactivate the Control Module. (Leaving power on at power source)
2. Hold down the chlorine Adjust button until the LED's on the chlorine output power graph light up.
3. Press the chlorine Adjust button to set the Control Module to a EDGE15 (1 LED light displayed), EDGE25 (4 LED lights displayed), or EDGE40 (8 LED lights displayed).
4. Once desired size is chosen, let the Control Module sit until the lights turn off, then hit On/Off button to turn unit back ON.
5. Turn off power at the power source (breaker, timer, etc…) for about 30 seconds.
6. Turn power back on at the power source.
7. Allow the salt system and pump to run for at least 5 minutes to calibrate before shutting it off again.

INSTALLATION

IMPORTANT: If you haven't already done so, it is necessary to balance the pool's water chemistry before the **EDGE**·SERIES is powered on and used. See pages 6 - 8 for more information.

The following are guidelines for the typical installation using 2" plumbing, which should be performed by a qualified individual. If 1.5" plumbing is present, reducers can be used to adapt the system; be sure to note the changes to any listed measurements or dimensions that the addition of reducers may cause. Your installation may vary depending on space available and your specific arrangement of equipment. Double check each measurement before cutting.

Overview



Above are common installation configurations (#1-2). Be sure to avoid any configuration that may potentially allow water to pass through the Flow Switch, but not the cell (#3-4). The main components of the EDGE-Series are the Control Module, Electrolytic Cell, and Flow Switch.

CAUTION: Ensure that the pool pump and all electrical power are turned off before installation.

TIP: Lay out your equipment and wiring to confirm placement and measurements first before cutting and gluing.

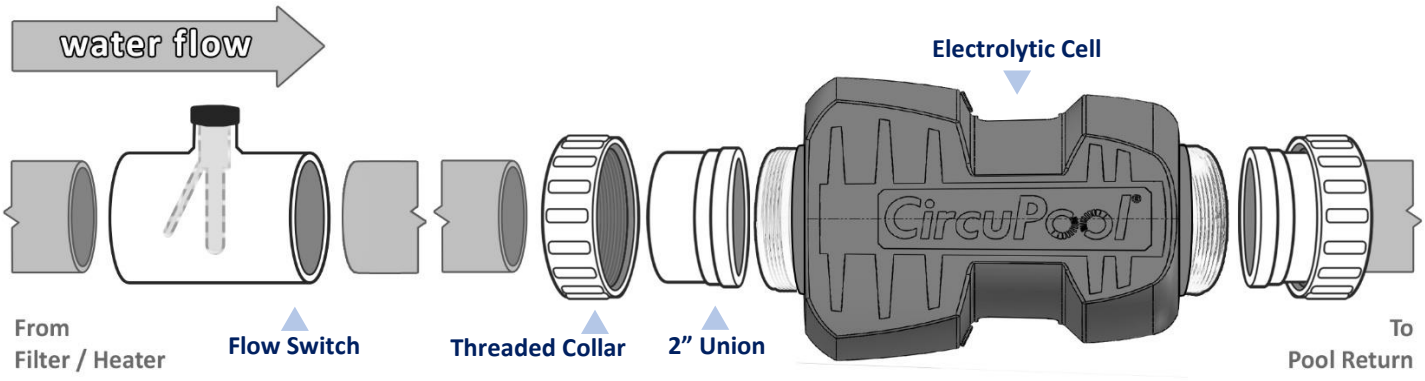
TIP: Be sure to clean & smooth cut pipe. When gluing PVC, parts will slip in place easier once glue is applied. Be sure to apply firm, constant pressure between both glued parts for up to a minute to prevent potential slippage.

Installing the Electrolytic Cell and Flow Switch

The Cell and Flow Switch are to be fitted into the return line (horizontally or vertically) as the last pieces of equipment the water passes through before returning to the pool: always after the pump, filter, heater (if applicable), etc. If a heater is present, all equipment must be a minimum distance away, per heater manufacturer recommendations.

Refer to the overview diagram on page 14 for alternate configurations. For combined pool and spa systems with a spillover, configurations #2 or #3 allow chlorination for both the pool and spa during spillover but preventing possible over-chlorination when operating the spa only. Vertical Installation Kits are also available to minimize plumbing space required and increase ease of installation (sold separately, available at www.circupool.com).

IMPORTANT: These instructions are for 2" plumbing (typical). For installations using 1 ½" plumbing, you will use 2"-to-1 ½" reducer bushings to adapt the Cell Unions and Flow Switch. For 1 ½" installations, be sure to note any new or additional measurements before cutting pipe.



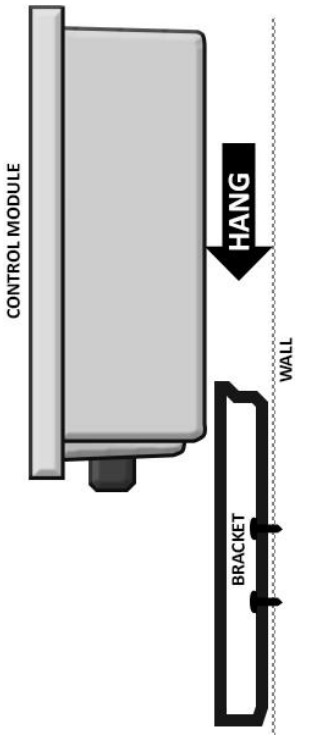
1. Lay out your equipment to ensure there is enough pipe space available.
2. On the pipe where the Cell will be installed, mark two lines 11 ¾" apart and then cut the pipe (for 2" plumbing).
3. Unscrew and removed Threaded Collars from Cell. Slide these over the pipe on each side of the cut, then glue each Union to the cut pipe. Ensure O-Rings are in place on Unions.
   - **TIP**: Glue one Union first, then when gluing second Union use Cell body to gauge the final distance need between each Union; make small adjustments to second union's slip connection while glue is still wet.
4. Only after the glue has fully cured, place the Cell into the opening between Unions and tighten the Threaded Collars (by hand only) to ensure that the Cell fits securely in place. DO NOT OVER-TIGHTEN.
5. Install the Flow Switch next to the Cell. Ensure that any excess glue does not become contact with movable switch.
   - **IMPORTANT:** If positioning the Flow Switch horizontally, you must orient the wires to be facing upwards.
     - This portion is threaded and can be turned during service to align arrow with water flow; additional thread seal tape may be added if necessary.
   - **IMPORTANT:** When positioning the Flow Switch, ensure that there is no valve between the Cell and Flow Switch.
   - **IMPORTANT:** When positioning the Flow Switch, it should be upstream from the cell and there must be at least 6 to 12" (30cm) of straight pipe before the Flow Switch.
   - To ensure proper operation, verify that the arrow on the flow switch points in the direction of water flow; the water flow must depress the hinged activator inside of the Flow Switch.

Installing the Control Module

Mount the Control Module as close to the pump and filtration system as possible. For safety concerns, do not install the Control Module within 10 feet of the pool edges, and follow all applicable codes. Verify that the Cell and Flow Switch cables can reach the Control Module from the section of pipe selected for plumbing.

The Module is fully rated for outdoor use; common sense considerations such as minimizing direct exposure to rain, sunlight, water runoff, and lawn sprinkler systems will enhance longevity. As with most electronics, avoid placing the controls above a heater or in tightly enclosed or insulated spaces to avoid a build-up of excess heat.

Using screws and anchor hardware kit (included), secure the Control Module's mounting bracket at a comfortable level on a wall or vertical support, at least 3 feet above ground level. Hang Controls on bracket.



Connecting to Power

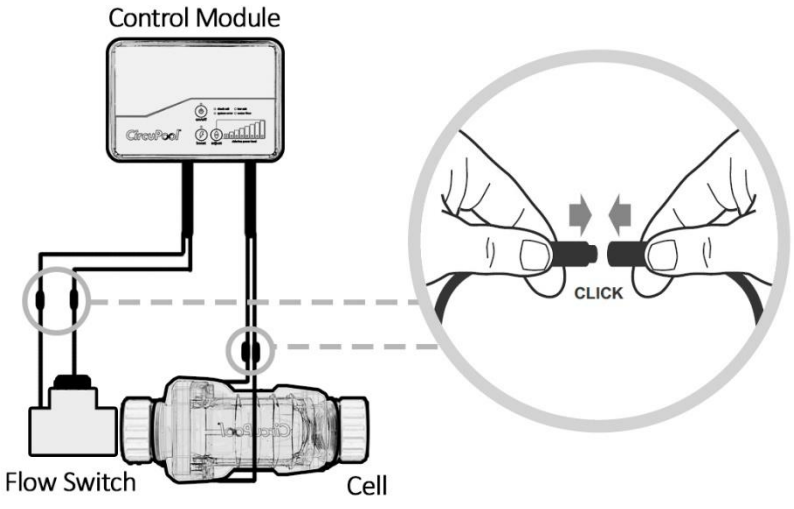
CAUTION: **Power must be shut off at the circuit breaker before performing any wiring.** Be sure to follow local and NEC/CEC electrical codes. It is best that the outlet be wired parallel to the pump so both the unit and pump are working simultaneously. The system has been designed to easily wire into typical in-ground pool systems. To provide safe operation, the unit must be properly grounded. The Control Module uses a switch-mode power supply designed to automatically accept either 120VAC or 220VAC.

Electrolytic Cell and Flow Switch Connections:

The Cell and Flow Switch cables have easy plug-in connectors, which attach easily to the Control Module. Refer to the diagram below for the location of these connections. Carefully align each connector to avoid damage.

For the Cell, connect the two black wires from the Control Module to the two Quick-Connects on the sides of the Cell. Ensure the connections are perfectly clean of any debris. The two cell cable wires are interchangeable.

For the Flow/Temp. Sensor, Find the sensor cable from the Power Supply with the 2 small connect terminals and connect them to their respective connectors; these cables can only be connected to one way to their corresponding sensor connector.



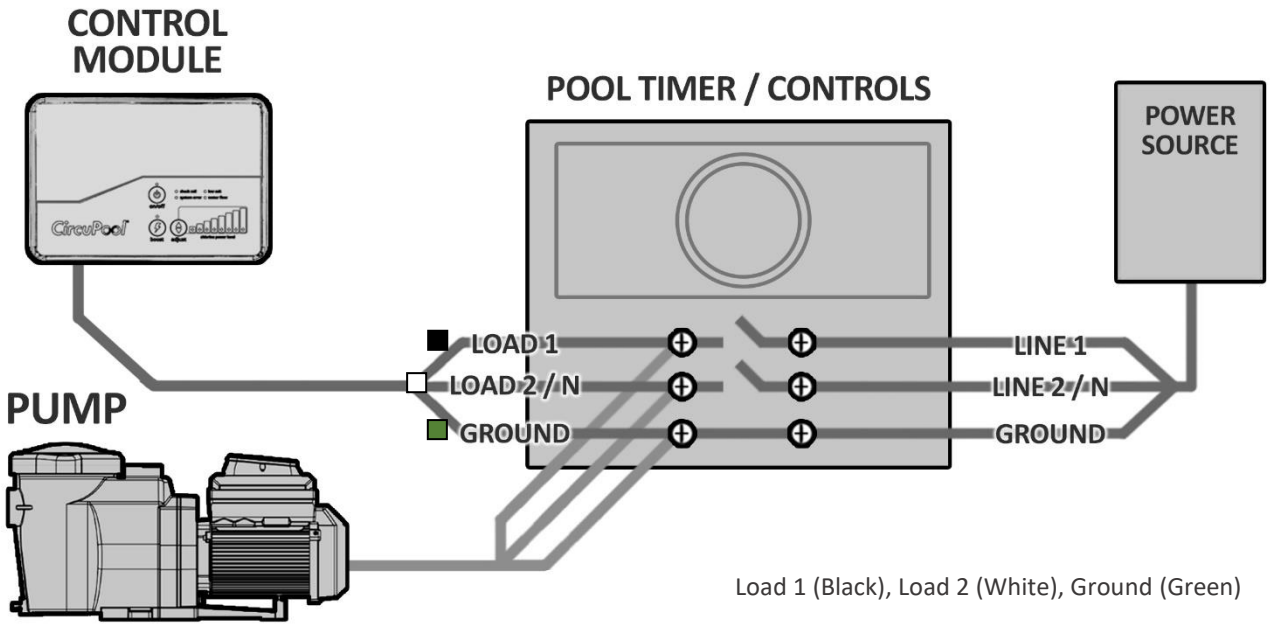
Connecting to Power (Continued)

Wiring to Power Source:

Always double-check the voltage of your power source. Connection to improper voltage can: a) cause severe damage/harm, or b) cause lights and screen to power on without system function.

For operation, the Control Module may be wired in to the pump's power source so that both turn on and off together, or energized continuously for use with variable speed pumps (Flow switch will control Cell power but lights will remain on).

The Control Module comes with an un-terminated Power Cord (AC Input) which is typically connected to an external timer, which will turn the pump and Control Module on and off together. Have the Control Module wired to the load side of the timer by a qualified person. See the following diagram for typical wiring.



Load 1 (Black), Load 2 (White), Ground (Green)

In some parts of the United States and Canada, the Control Module must be connected to a circuit protected by a Class A ground fault interrupter (GFI). Check local codes before connecting.

For use with Variable Speed Pumps: When used with variable-speed or other electronically controlled pumps, you may wish to wire the Control Module directly to your power source. This will allow the pump to determine when the Cell is energized or dormant by activation of the Flow Switch.

Power Protection Mechanisms:
The Control Module's advanced digital switch-mode power supply has built-in power protection mechanisms. There are no additional fuses or circuit breakers that you need to access on this unit..

At this point, this installation of your equipment is complete. If the water has not yet been prepared, then you are ready to begin adding salt and balancing your water chemistry, see pages 6-8. Turn the Control Module to the Power Off mode until enough salt has been dissolved in the water.

INSTALLATION CHECKLIST

□ Cell Unions installed and glued into pipe work.

□ Threaded Collars on either side of the Cell are hand tight.

□ Flow Switch is installed and oriented properly.

□ Control Module is affixed to wall and wired correctly.

□ Cell Cable and Flow Switch are connected to Control Module.

□ You have checked and confirmed that Control Module switches ON and OFF concurrently with filter pump, or is energized continuously for use with variable speed pump.

□ You have checked all connections and joints for leaks.

□ Sufficient salt has been added and fully dissolved and circulated throughout pool water.

□ Pool has properly balanced water chemistry.

HELPFUL HINTS

For more detailed information and useful tips, visit www.circupool.com/help.

Proper operation of the chlorine generator can be easily verified by checking the lights on the control panel. However, if the pool remains cloudy, or the chlorine residual tests low, then the chlorine being produced is being lost due to high chlorine demand or improper water conditions.
To reduce the chlorine demand, check the pH and Stabilizer (Cyanuric Acid) reading. Check for phosphates and nitrates, which commonly contribute to severe chlorine demand. If tests show correct, then a shock treatment with an oxidizer agent is advised. Generally, superchlorination is not necessary if the pool is maintained at correct levels.

Recommendations and Helpful Hints:

Recommended List
- Read and keep your manual in a safe place.
- Increase Chlorine Production when temperature goes up.
- Increase Chlorine Production when number of guests goes up.
- Use Stabilizer (Cyanuric Acid) to protect free chlorine in pool.
- Mount Control Module in shade or out of the direct sunlight whenever possible.
- Decrease Chlorine Production when temperature goes down.
- Take pool water sample to a Pool Professional at least once per month.

Not Recommended List
- Do not allow fertilizer anywhere near your pool. Fertilizers are one of many sources that contain Nitrates or Phosphates which cause severe chlorine demand in pool water.
- Never use dry acid to adjust pH. A build-up of by-products can damage the Cell.
- Do not add any chemicals (including salt) to the skimmers.
- Do not let salinity level drop below 3000 ppm.

Definitions:

Algae
Plant-like organisms which grow in water. Especially active in summer conditions, where chlorine disinfectant level is too low to destroy them. Algae may be green, brown, pink, or black (Black Spot) in color.

Chlorine Demand
The amount of chlorine that should be added to the water to provide proper bacteria and algae control.

Chlorine Residual
The amount of chlorine left over, after the “demand” has been met.

Combined Chlorine
Weak chlorine which is combined with the contaminants in the water.

Free Chlorine
Active chlorine in the water with the potency to destroy contaminants.

Shock Treatment
The removal by means of oxidation of those materials that have chlorine demand.

Superchlorination
An extra large amount of chlorine added to the water.

TROUBLESHOOTING

SCENARIO:	POSSIBLE CAUSE:	SUGGESTED ACTION:
Low or no chlorine residual in pool	Insufficient Chlorine Output Level	Increase Output Level. This is often required seasonally with increasing temperatures.
(Also cloudy water, green pool)	Insufficient run time	Increase run time to at least 1 hour per 10° ambient temp. Ensure 1.5-2x filter turnover.
	Heavy pool use, inclement weather, organic matter	Activate Super CL mode or chemically shock pool.
	Water chemistry issues, such as: Low Chlorine Stabilizer Low salt in pool Phosphates in pool Nitrates in pool	Contact pool professional, ensure all chemicals on page 8 are within range.
	Cell is dirty, clogged, or has excessive scaling or mineral build-up	Remove Cell from plumbing, inspect and clean (see page 12).
	Flow switch not triggered, or excessive bubbles / air in cell	Inspect Flow Switch, verify sufficient water flow
	Inactive unit, power is off	Turn on system, or see “No Power”
Low or no Chlorine residual after new installation	Water chemistry was not balanced prior to system installation.	Contact pool professional, ensure all chemicals on page 8 are within range, chemically shock pool if necessary. Run system at 100% output.
	System hasn’t been running, or has been set to run at insufficient levels	Raise system to 100% output and run continuously to achieve sufficient chlorination. Double check all connections, verify system runs in sync with circulation pump.
No Power	System is turned off	Turn system on, verify circulation pump is active
	Problem with input power, or configuration of system wiring	Check house circuit breaker. Have a professional test input power & ensure correct wiring configuration & connections.
	Reset has tripped	Allow one hour to cool.
	Other malfunction in unit	Contact customer support
Check Cell LED is on, or Low Salt LED is on	It is time to clean the Electrolytic Cell.	The Cell must be cleaned (see page 12 for instructions).
	Salinity is out of range	Verify salinity (see pages 6-7).
	Cell efficiency has been greatly reduced	Inadequate water flow exists, or Cell is damaged/worn and must be replaced.
	Incorrect Cell Version set	Verify Cell Version (see pages 12-13)
Check Cell LED is flashing	Notice that Cell may be near end of lifespan	Reset Indicator (see page 13)

Troubleshooting continued on next page

Water Flow LED is on	Pump is off	Verify that pump is set to run with salt system.
	Flow Sensor is not connected to Controls	Check cable connector
	Flow Sensor is not facing correct direction	Ensure red arrow on Flow Sensor points with the correct direction of water flow in return plumbing
	Air in plumbing	Ensure that there is not a pocket of air in the Cell or Flow Sensor
	Insufficient pump RPM's	Set variable speed pump RPM's higher in order trigger Flow Sensor and keep the Cell completely filled with water.
	Incorrect Installation	Verify correct orientation, cable is plugged in, 6-12" of straight pipe before Flow Switch
	Flow Sensor is damaged	Contact customer support
Water leak	O-Ring improperly seated	Ensure O-Rings are clean and in good condition.
	Threaded collars are cross-threaded or pipes are misaligned	Inspect threads for damage, ensure that each screws back on without resistance.
System Error LED is on	Ongoing typical issue, see previous sections	Verify 3500ppm salt, clean cell, no air in cell during operation, no debris or damage in cell.
	Incorrect wiring	Have professional check wiring.
	Loose, dirty, or damaged system cables	Check system's connectors are properly seated
	Internal system error	Check dedicated Troubleshooting Guide for EDGE models at www.circupool.com/help, see chapter "How to Diagnose System Error Codes"
Cell frequently has mineral buildup	This is due to imbalanced water chemistry and a high Saturation Index	Ensure that your Saturation Index is at or near zero, in order to avoid damage or premature Cell failure. (page 8)
Cell never or rarely has mineral buildup	Water may be corrosive due to imbalanced water chemistry and a low Saturation Index	Ensure that your Saturation Index is at or near zero, in order to avoid damage or premature Cell failure. (page 8)

CIRCUPOOL LIMITED WARRANTY

CircuPool EDGE Series Electronic Chlorine Generators carry the following Limited Warranty should failure occur due to faulty manufacture or materials, during normal use and service. For residential use, the manufacturer warrants to the original purchaser that the equipment shall be free of manufacturer's defects at the time of sale, and upon examination shall provide replacement parts in accordance with the following schedule:

Year One - No charge for parts.
Year Two - No charge for parts.
Year Three - Parts supplied at 40% of base price.
Year Four - Parts supplied at 60% of base price.
Year Five - Parts supplied at 80% of base price.
Year Six - Parts supplied at 80% of base price.
Year Seven - Parts supplied at 80% of base price.

For Commercial use (any pool that is not for private single-family use, or the use of which is subject to regulation), parts are warranted against defect for a period of one year.

This limited warranty is subject to the following terms, conditions, and exclusions:

1. To obtain the benefits of this warranty, contact the warranty department for troubleshooting. You may obtain current contact information at www.circupool.com/help. Warranty claims must be initiated in a timely manner. Upon discovery of a defect, the warranty department will issue a Return Merchandise Authorization (RMA) and defective items and parts are to be shipped by customer to an authorized service representative, freight prepaid.

Upon examination, the determination of the cause of failure shall be made solely by CircuPool Products. The date upon which the claim is submitted and an RMA is issued shall solely serve to determine at what point the claim falls within the schedule of warranty proration, in comparison with the original purchase date. **No packages will be accepted without a RMA number.**

2. Should a defect in any item or part covered by the warranty become evident during the warranty's term, CircuPool Products will at its sole discretion repair or replace such item or part. CircuPool Products reserves the right to replace defective parts with new or refurbished parts. This warranty does not include the cost of labor or transportation charges for equipment or component parts to or from CircuPool Products, or the removal, reinstallation, or any such costs incurred in obtaining warranty replacements or repair.

3. This warranty extends to the original retail purchaser and original installation site only, beginning at the original date of purchase, and is non-transferrable.

4. The warranty contains the following exclusions. O-Rings, rubber gaskets and seals, electrical fuses, and circuit-breaker components are normal replacement items subject to wear and are excluded from the warranty. Product discoloration, or any other cosmetic or superficial damage or deterioration, regardless of its cause, is not covered by this warranty. The warranty is not applicable to problems arising from circumstances outside the control of CircuPool Products, including, but not limited to the following:

A. Damage or premature wear due to improper pool chemistry, and failure to maintain pool water chemistry in accordance with the recommendations contained in the owner's manual.

B. Damage due to improper installation or connection to improper voltages, including materials and workmanship supplied by others.

C. Damage due to negligence or failure to properly maintain equipment, including operation with insufficient water flow or the maintenance of clean and tight electrical connections.

D. Damage due to improper service, as well as unauthorized equipment modifications and use of non-genuine replacement parts.

E. Damage due to misapplication, misuse, abuse, or failure to operate equipment as specified in the owner's manual.

F. Problems resulting from tampering, accident, fire, flood, freezing, lightning, insects, or other natural elements, or other circumstances beyond the control of CircuPool Products.

G. Damage due to over-tightening of threaded components or excessive pressure or stress.

The liability of CircuPool Products shall not exceed the repair or replacement of defective items or parts under the referenced limited warranty terms. There are no implied warranties of merchantability or fitness for a particular purpose that apply to this equipment. Under no circumstances shall CircuPool Products, its agents, employees, and affiliates be liable for any loss, damage, injury, inconvenience or loss of time, incidental expenses such as labor and material charges, or any other incidental, or consequential damages, which may result from the use, installation, removal, or reinstallation of its equipment and parts.

This warranty is valid only in the United States of America. This warranty gives you specific legal rights and you may also have other rights, which vary from state to state. This warranty supersedes all previous publications. Any dispute between the original purchaser and CircuPool Products will be settled by binding arbitration, conducted in Harris County, Texas, under the rules of the American Arbitration Association.

CircuPool Products, 5730 B Greens Rd, Houston, TX 77032. (888)-206-9938. www.circupool.com/help

Notes: