CircuPool CORE Series
Troubleshooting Guide

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The complete CORE manual is always available at ***Circupool***.com:
https://www.circupool.com/Help-Guides-User-Guides_ep_41.html

☑ **IMPORTANT - REMEMBER THAT YOUR POOL IS COMPATIBLE WITH CHLORINE AND SHOCK AS NORMAL. IF YOUR POOL IS EXPERIENCING TEMPORARY LOSS OF CHLORINE OR OTHER DIFFICULTIES, ADD SANITIZER AS NEEDED TO MAINTAIN THE POOL.**

⚠ **WARNING - ALWAYS MAKE SURE THE INPUT POWER IS COMPLETELY DISCONNECTED BEFORE ATTEMPTING ANY TROUBLESHOOTING PROCEDURES. ALL TROUBLESHOOTING SHOULD BE DONE BY A QUALIFIED PROFESSIONAL.**

Water Chemistry – Chemistry Requirements & Adding Salt

Standard ranges for pool chemistry. These levels reflect national standards; it is necessary to be within these ranges in order to have effective water sanitation.

Free Available Chlorine	1.0 - 3.0 ppm	**Phosphates**	0 to 100 ppb (0 best)
Salinity	3000 - 4500 ppm	**Nitrates**	0 to 10 ppm (0 best)
pH	7.2 - 7.8 (7.5 best)	**Iron**	0
Stabilizer (Cyanuric Acid)	30 - 50 ppm	**Copper**	0
Total Alkalinity	80 - 120 ppm	**Other metals**	0
Calcium Hardness	200 - 400 ppm	**Ammonia**	0
Saturation Index	-0.2 to +0.2 (0 best)	**TDS**	<1200

Adding Salt. This system is designed to operate most efficiently when maintained between a 3500 and 4000 ppm. When adding large quantities of salt, independently test the existing salt level and add in portions, retesting at each stage.

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

The chart below indicates how much salt is required based on the volume of the pool and the current salt level. Use only salt that is 99% pure sodium chloride.

If the salt level (PPM) in your pool is currently...

If your pool holds this many gallons...	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

WARNING – Always make sure the input power is completely disconnected before attempting any troubleshooting procedures.
All troubleshooting should be done by a qualified professional.

WATER CHEMISTRY - LANGELIER SATURATION INDEX (LSI)

LSI is a measurement of the water's ability to absorb and hold solids in a solution. It is important to know that the scale on which LSI is measured is very narrow, meaning that a small change can indicate a significant difference in your pool. Like pH, the LSI value is logarithmic, meaning that a difference of 1.0 equates to a difference of ten times in reality. A Saturation Index of -2.0 is ten times more corrosive than an SI of –1.0. This is important, as many pool equipment manufacturers may not be able to warranty damage caused by an out-of-balance LSI.

STEPS TO TAKE:

1. Obtain a complete water chemistry test from a pool store for the following items:

    pH, Water Temperature, Alkalinity, Cyanuric Acid (Stabilizer), Calcium Hardness, Total Dissolved Solids

2. Go to www.aquachek.com

    a. Click on "Calculators"
    b. Click on "Langelier Saturation Index"
    c. Plug in your results and obtain your Saturation Index number.

3. Go to www.poolcalculator.com to balance your water accordingly.

If LSI Index is between -0.2 and +0.2 pool water is Balanced. When pool water is balanced, it has no effect on the pool or equipment. There are two values you can readily change to help improve your LSI value to get it into the optimum range: pH and Alkalinity level.

If LSI Index is less than -0.2 pool water is Corrosive. Pool water may cause etching, pitting, dissolving and staining of walls, grouting and plumbing. It will also cause erosion to the titanium salt cell.

- As Stabilizer Increases, LSI Decreases
- As Total Dissolved Solids Increase, LSI Decreases

To raise your LSI value, you should first balance the calcium hardness in the pool. It needs to be between 200-400 PPM at all times. If the calcium hardness is in the correct range, add sodium bicarbonate or baking soda. Consult the calculator at www.poolcalculator.com to determine the target Alkalinity value (recommended range is 80-120ppm; however, you may find that a level lower than 80 may be ideal for a balanced LSI value).

If LSI Index is greater than +0.2 pool water is Scale Forming. Pool water may deposit excess minerals on the pool and equipment. Scale generally appears as white or lightly colored rough blotches on the pool walls. It also adheres to other objects in the pool, piping and filter system. This will cause calcium deposits to rapidly form on the titanium salt cell. Scale can restrict water flow, shortening filter runs and reducing filtration efficiency.

- As Temperature Increases LSI Increases
- As Total Alkalinity Increases LSI Increases
- As pH Increases, LSI Increases
- As Calcium Hardness Increases, LSI Increases

To lower your LSI value, you should first consider adding muriatic acid (can be found in pool supply stores), as it is more difficult to lower Calcium Hardness and especially temperature. Consult the calculator to determine the target pH value.

How to Clean the Electrolytic Cell

IMPORTANT: Using gloves and eye protection during this process is recommended. Always add acid to the water, never water to the acid. The Electrolytic Cell has the self-cleaning Reverse Polarity feature built-in, which prevents mineral deposits from forming rapidly. However, the Cell may eventually need to be manually cleaned. The frequency of mineral build-up is dependent upon the balance of the pool's water chemistry, specifically the Saturation Index (see page 3).

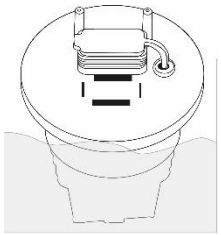
Important: Ensure the electrical connector on the top of the Cell does not come in direct contact with water or acid. If this occurs, rinse immediately with freshwater, then rinse with rubbing alcohol and allow to dry thoroughly.

In most circumstances, the Clean Cell LED indicator will be illuminated solidly when the cell needs to be cleaned. **Do not** insert metal or any hard objects inside the cell during cleaning, this will void the warranty. Follow these steps to clean the cell:

Before removing the Cell for cleaning or replacement:

1) Turn off all pool equipment, disconnect unit from power, close supply line valves if applicable.
2) Detach unit from the plumbing by unscrewing the Threaded Collars around the PVC unions where the Cell attaches to the return line plumbing.
3) Disconnect the Cell from the Control Module by unscrewing the Threaded Collar at the top of the clear Cell Housing. **Place the cap over the electrical connection.** Make sure the electrical connection does not get wet.
4) Remove entire Cell from the Cell Housing, then remove the O-ring from the Cell.

To clean the Cell of mineral buildup:



1) In the Cleaning Vessel, mix one part muriatic acid into ten parts water. Ensure that there is enough cleaning solution to cover the Cell blades. Be sure that Cleaning Vessel is stable so as to remain upright and prevent spilling.
2) Lower Cell into Cleaning Vessel, ensuring that cleaning solution covers Cell blades.
3) Wait for foaming to stop. Allow solution to soak for no more than fifteen minutes.
4) Properly dispose of acid solution, and use a hose to generously flush any remaining debris out of the Cell.
5) Look inside the cell to check that no debris or scaling remains. Repeat steps 2-4 if necessary.
6) Reinstall Cell and Control Module on to return line. Note: The Cell body can only fit in one direction into the Cell Housing, so be gentle and flip the other way if necessary; be sure to remove the cap from the Cell electrical connection.

Note: If mineral build-up is severe, more than one cleaning may be necessary to dissolve remaining solids. The cleaning solution may stop fizzing because the acidity of the cleaning solution has been neutralized by the amount of mineral scale, not because all of the scale has been removed. Inspect cell plates closely with a bright light after cleaning. If you see any remaining scaling, debris, or physical blockages through Cell, repeat the cleaning process as needed. If "CLEAN CELL" comes back on soon after cleaning, verify salinity and then clean cell again.

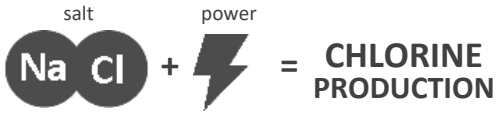
Before proceeding, it is **important** to understand when measuring pool chlorine that **you are detecting the "leftover" amount** in the water, and that measuring a lack of chlorine **does not necessarily mean that your salt system is not working.**

This guide will: **1)** help you verify with certainty whether or not your system is operational and creating chlorine, and **2)** help identify what else may contributing to the low chlorine level in the swimming pool water.

1) Verifying your system's Chlorine Generation

What is required for chlorine production:

There are only two factors required for the system to generate chlorine: salt and electricity. If there is sufficient salinity in the water and electrical power is being sent to the Electrolytic Cell, the system is generating chlorine normally. The system will detect and display errors when there is an issue with the transmission of power through the salt water. Otherwise, the system's ability to transmit power can be verified to confirm chlorine generation.



Verifying Power is present in Cell:

1. **Ensuring Full and Normal Power in the Cell**
   - Turn unit off with main power switch on lower right, then turn unit back on.
   - Use "+" to turn raise the output to 100%. Wait 1-2 minutes. The system has built-in diagnostics to verify that the full and normal amount of power is passing through the cell; you will see the output lights blink as it attempts to reach the chosen output level.
   - Do all four "O**utput**" led lights ultimately illuminate and remain solid green? If yes, the system is detecting & confirming that it is successfully able to send constant power to the Cell.
   - Do all warning led lights remain inactive (dark)? If yes, there are no detected issues with power flow to the Cell.

2. **If you answered "Yes" to all of these questions, you have successfully verified full and normal power**. This means:

3. **The system is fully operational and creating chlorine normally.** Salt present in the water at proper levels and proper power flowing through the Cell causes full & normal chlorine generation.
   - If a low chlorine level persists after continued operation, this indicates an issue in the water causing "high chlorine demand". **See the next pages** to troubleshoot common causes of high chlorine demand.

4. If you answered "No" to any of these questions, then there is an issue preventing proper flow of power to the Cell, which needs to be addressed. See Troubleshooting Guide (pages 9-12).
   - Please note that if your "Cell Life Low" LED is lit, this DOES NOT impact chlorine generation. Your system has tracked the hours of use your cell has experienced and your cell is likely in the later stages of its lifespan. This is simply a reminder that you should plan for eventual cell replacement.

2) Common Causes of Low Chlorine Levels

A) Examine the Water Chemistry

- Water chemistry and environmental conditions are the #1 cause of a low chlorine level in a saltwater pool, as they cause chlorine demand to rise above normal levels. **High chlorine demand** means that chlorine is being consumed quicker than it is being replenished, resulting in the inability to measure the chlorine residual in the water. If operation has been verified (as described on the previous page), this *does not mean* that the chlorine generator is not working, only that the chlorine demand currently exceeds the rate of chlorine production.

- The ideal levels for a salt water pool are

Free Available Chlorine	1.0 - 3.0 ppm
Salinity	3000 - 4000 ppm
pH	7.2 - 7.8 (7.5 best)
Stabilizer (Cyanuric Acid)	30 - 50 ppm
Total Alkalinity	80 - 120 ppm
Calcium Hardness	200 - 400 ppm
Saturation Index	-0.2 to +0.2 (0 best)
Phosphates	0 to 100 ppb (0 best)
Nitrates	0 to 10 ppm (0 best)
Iron	0
Copper	0
Other metals	0
Ammonia	0

The levels that are highlighted levels are the most common causes of high chlorine demand and depleted chlorine levels in pools. Ensure that all three levels are being tested for and that their values are included on your chemistry report.

The **Chlorine Stabilizer** (Cyanuric Acid, or CYA) level must be within range, especially during the spring and summer months. If there is not enough CYA in the pool, then your chlorine will not be protected from the sun and the chlorine being produced by the salt system will be consumed once the sun hits the pool water. Up to 90% of the pool's chlorine can be depleted within 2 hours without a sufficient level of chlorine stabilizer. High levels can also negatively affect chlorine levels & effectiveness.

Phosphates and **Nitrates** that are present in the pool will cause the chlorine demand to rise and/or will consume the chlorine being made by the salt system (Also see page 4). Phosphates are very common. Any Phosphate level near or above 100 parts per billion can greatly increase the chlorine demand in the pool. Any Phosphate level over 200 Part Per Billion will not only consume your chlorine, it will also readily feed algae. To remove phosphates, use commercial grade Phosfree. When trying to lower significant phosphate levels, phosphate products meant for weekly maintenance are usually not effective Nitrates will also rapidly consume your chlorine. If the Nitrate level is high, it is often most effective to drain the pool and refill with new water, being sure to add the necessary amount of salt back to the pool.

Lower salt levels can affect chlorine generation and cause the system to work inefficiently.

Other chemistry imbalances and the presence of metals, ammonia, and other impurities can cause high chlorine demand.

2) Common Causes of Low Chlorine Levels (continued)

B) Ensure that system is being given sufficient chance to generate chlorine

- **Output Level** - The percentage output level that you set tells the system how much of its maximum capacity to use in order to create chlorine. If you are experiencing high chlorine demand, ensure that you have your system turned up to 100% output so that it is doing as much as possible to compensate. Leave the system at 100% output until the pool is balanced again. Since every pool operates differently and has a different level of chlorine demand, during normal operation there is not a standard percentage level at which to set the output.
- **Run time** - When sized right, a chlorine generator can typically achieve sufficient chlorination when run on the filter pump's normal schedule. However, every pool has different equipment and its operation is unique, and you may require (or choose) to run the filter pump more or less than is standard. As a rule of thumb however, run your system one hour for every ten degrees of ambient temperature in order to achieve both sufficient filtration and chlorination. Periods of high use, harsh environmental conditions, or excessive chlorine demand may require extended run times. For example, running your system twice as long will allow it to create twice as much chlorine.
- **Double check power** - Is the salt system turning on and off with the pump as normal? Has the fuse, fuse reset button, or circuit breaker been tripped?

C) Other common high-chlorine demand situations

- **During initial startup** (springtime / new pools) - When being opened, pools typically have much higher than normal chlorine demand. In these circumstances a pool requires a large amount of sanitizer all at once, which means that it is often more effective to add chlorine or shock as needed initially instead of waiting on the system to slowly reach "break-point" chlorination.
- **When organic matter is visible in the water** -
- **After rain storms** – Rain water can dilute pool sanitizer levels and negatively affect the water chemistry balance. Water runoff can introduce impurities, organic matter, and microorganisms into the pool.
- **After heavy pool usage** – Swimmers introduce organic matter that needs to be oxidized (sweat, lotions, oils, waste, etc…). Foot traffic in and out of the pool can introduce impurities, organic matter, and microorganisms into the pool. A high number of swimmers can quickly deplete sanitizer levels and cause chlorine demand to spike.
- **After young swimmers have used the pool** – A young swimmer or swimmers may introduce high levels of organic matter.
- **After nearby lawns and gardens have been fertilized** – Local fertilization can introduce nutrients into the pool water that allow microorganisms to thrive and multiply faster than pool sanitization is able to prevent. Fertilizer can reach the pool through rainwater runoff, wind, or even directly into the pool by being applied too nearby.
- **After pets or other animals have been in the pool** – Animals can introduce dirt, organic matter, and microorganisms.
- **After strong winds or dust storms** – Windy conditions can introduce dirt, organic matter, and fertilizer (even from miles away)
- **During prolonged periods of high temperatures** – High water temperatures require significantly higher amounts of sanitization.
- **When the pool filter needs cleaning** - A full dirty filter could possible contain a large amount of organic matter.

No Flow – Error Light

This error light typically indicates the Flow Switch paddle is “centered” and not being triggered by water flow, or that an air pocket has formed in the cell. This error light causes the Cell to stop generating chlorine.

Troubleshooting:

- Verify that the pump is on and running.
- Verify that you have proper water flow (especially at low pump speeds) without a pocket of air in the Cell housing.
- Verify that water flow is sufficient to fully press the Flow Sensor paddle away from its resting center position. In case you have a variable speed pump, increase flow until the LED turns off.

Additional Troubleshooting:

- Air pocket or air bubbles forming around the salinity sensor (upper backside of cell). Check the following items.
    - This may happen if there is air in the pipe lines or for a few minutes at initial startup. Wait until air bubble disappear. Take steps to ensure the pump doesn’t lose prime and that pockets of air aren’t forming due to other equipment.
    - Clean filters & strainers. Check water level in the pool, especially at skimmers / suction points.
    - Check for closed valves, pump cavitation, faulty or failing pump, etc…
    - Ensure at least 20 GPM water flow (approximate). If Variable Speed Pump is in use, incrementally raise the RPM’s of its lowest setting until air pocket does not form.
    - Slight tilt the cell to lean the controls back to remove air bubble from salinity sensor.
- Flow Switch Paddle is physically stuck at center
    - Remove the cell from its housing and remove debris or scaling that may be causing the paddle to stick.
- Very low or no salinity may cause the water to be unable to be sensed. Ensure proper salinity levels.
- If the “Water Flow” LED remains on, the Cell may require replacement.

Low Salt – Error Light

When this LED is illuminated, salt may need to be added to the pool. This occurs when measured water salinity levels appear below 2400ppm.

Troubleshooting:

- The pool's salinity level may be getting low. Independently measure salt level and adjust to 3500-4000ppm if needed.
- If the salinity level independently tests in range, the Cell may be accumulating mineral scaling or other debris that needs to be removed. Clean the Cell according to the instructions in the manual.
- There may be air bubbles on the salinity sensor in the Cell. See No Flow Troubleshooting
- If the salt level is ideal and the cell has been thoroughly cleaned multiple times in a row, the cell plates or salinity sensor may be damaged.

Clean Cell – Error Light

When this LED is illuminated, the Cell may need to be cleaned. This occurs when the chlorine output level doesn't reach the set point and the salinity and water temperature measure in range.

Troubleshooting:

- Double check the pool's salinity level. Independently measure salt level and adjust to 3500-4000ppm if needed.
- If the salinity level independently tests in range, the Cell needs to be cleaned to remove mineral scaling or other debris. Clean the cell according to the instructions in the manual. Inspect the Cell after cleaning to make sure nothing is stuck between the plates. Sometimes multiple cleanings in a row are required; mix a new batch of cleaning solution and let it soak inside the cell. If "fizzing" still occurs, repeat the cleaning process with new solution each time until fizzing no longer occurs when new solution has been added to the Cell.
- If the salt level is ideal and the Cell has been thoroughly cleaned multiple times in a row, the cell plates may be depleted or damaged and the cell has reached the end of its useable lifespan. If damaged, inspect the cell for plates that are damaged, deteriorated, pitted or physically worn. If so, this indicates corrosive water chemistry (low LSI) that needs to be prevented through regularly ensuring proper water balance.
- **Additional Troubleshooting**:
    - Is the pool losing prime and/or is low-speed pump operation causing air to accumulate in the Cell?

Cold Water – Error Light

When this LED is illuminated, the cell has reduced its chlorine output. This occurs in stages when the measured water temperature is low.

Troubleshooting:

Verify that water temperature is below 68 °F – if so, the system is OK. Below 68 °F, the max output setting will be 50%; below 59 °F, the max output setting will be 25%. If the actual water temperature is higher than 68 °F, the temperature sensor may be damaged. Contact customer support.

Cell Life Low (Flashing) – Indicator Light

This LED may flash when the cell is nearing the end of its lifepsan (**based on usage time tracked**). This occurs when cell **operating hours** are high.

Troubleshooting:

No troubleshooting is required. The Cell can continue to be used until one of the other solid error lights occurs. However, enough operation has occurred that the system is providing a helpful notification so that you can be better prepared.

What is cell lifespan?

A chlorine generator's Cell is comprised of titanium plates coated with rare earth metals to enable electrolysis. As power is passed through the cell to generate chlorine (along with other wear-and-tear factors), the coating is eventually depleted. Once the cell can no longer pass power through itself, the cell has reached the end of its lifespan. While this corresponds to how long the system has been used over its lifespan, the system's usage time ultimately depends on how it has been operated and maintained.

How much more lifespan is left?

The system tracks hours of usage. However based on the unique way that the system may be operated and maintained, this is not always the same as the cell lifespan (the integrity of the titanium plates). Just one of the ways of how this can be different is illustrated below:

- **Scenario 1:**
  The pool uses a variable speed pump and the system is run 24 hours a day at a low chlorine output setting. In this example, the hours of usage will be high and the Cell Life indicator will come on sooner, but the integrity of the cell's

titanium plates may still allow considerable period of time before replacement is needed.

- **Scenario 2:**
  The pool uses a single speed pump and is run for 8 hours a day at a high chlorine output setting. In this example, the hours of usage are likely closely correlated to the integrity of the cell's titanium plates, and replacement may be needed sooner after the Cell Life indicator light comes on.

Since every pool's setup, usage, operation, and maintenance is unique, simply continue to use the chlorine generator as normal until replacement is required. As a convenience, the system alerts you to prepare for replacement based on usage.

How do I know when I need to replace the Cell?

When power is not able to be passed through the cell, additional error lights will be lit. If troubleshooting indicates no other issues and the Cell Life light indicates an older age of the cell, it is likely time for cell replacement.

System Error (Blinking) – Error Light

This occurs when no communication is detected between the Cell and the Control Module. This may occur when:

- The plug on top of Cell is not fully connected to Control Module port (system is not correctly assembled)
  - Remove Control Module from Cell, carefully align connectors, make sure Control Module lock ring is not cross-threaded, and fully tighten lock ring (by hand) to make sure both parts are mated.
- Debris stuck between Cell plug and Control Module port
  - Carefully clean and remove dirt/debris/corrosion from plug & port
- Serious component issue
  - Contact Customer Support

System Error (Solid) – Error Light

This occurs when Control Module detects connection to Cell, but is unable to pass electrical power the Cell circuit. This may occur when:

- Double-check for debris or damage within the Cell plug and Control Module port
  - Disconnect the control box from cartridge and visually inspect the electrical connector. In case debris has settled there, gently remove it and re attach. If damaged, replace.
- Double-check for very high salinity or low salinity. Independently test salinity, ensure between 3000-4500ppm.
- Double check for physically damaged or worn (eroded) Cell plates.
- Serious component issue.
  - Contact Customer Support

Output LED's don't reach set point

- Output level set too low – press the "+" button to set the output level to a higher setting
- Low pool water temperature (will also see Cold Water LED) – see Cold Water troubleshooting.
- Insufficient salinity level (will also see Low Salt LED) – see Low Salt troubleshooting.
- Overheating protection – allow unit to rest 4-24 hours. In extreme conditions, when unit identifies overheating it will automatically reduce chlorine production to protect itself.
- Worn or Damaged Cell.

No Power on Display – Non-functional Control Module

Is the system turned on? Firmly press the on/off button. Is the pump running? The unit should be wired in tandem with the pump, verify that the pump is currently operating. Are all breakers on? Have you verified power going into the unit? If these things are confirmed and the system is not powering on or reacting, allow the Control Module to rest 4-24 hours. If the issue is intermittent, it may indicate temporary water intrusion (check Control Module integrity and check for forcible direct water such as sprinkler or downspouts). If Control Module remains unresponsive, this may indicate internal damage required replacement of Control Module.

Quick Reference

See previous sections for more detailed explanations to common scenarios, diagnostic readings, and warning lights.

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 11).
	Inactive unit, flow switch not triggered	Inspect Flow Switch, verify sufficient water flow
	Inactive unit, power is off	Turn on system, or see "No Power"
Low or no Chlorine residual in pool after recent installation	Water chemistry was not balanced prior to system installation and a high chlorine demand persists	Contact pool professional, ensure all chemicals on p.6 are within range, chemically shock pool if necessary. Run system at maximum output.
	System hasn't been running	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, voltage, or configuration of system wiring	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
Chlorine Output LED blinking	The level has been increased/decreased	This is normal after pressing +/-, or during low temperature
Clean Cell LED is on  (Has priority over salinity LED indicators)	It is time to clean the Electrolytic Cell.	The Cell must be cleaned (see page 11 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 must be replaced.
Low Salt LED is on 	Salinity is out of range	Manually verify salinity (see pages 6-7).
	Cell is dirty or clogged	Inspect and clean Cell if necessary.

WARNING – Always make sure the input power is completely disconnected before attempting any troubleshooting procedures.
All troubleshooting should be done by a qualified professional.

No Flow LED is on 	Insufficient water flow or air bubbles	This may happen temporarily if there is air in the lines at initial startup. Check water level, pump cavitation, air or blockages in plumbing, and all valves & seals. Clean filters & strainers.
	Obstruction or build up on or around flow switch paddle	Dismantle Cell and remove debris to ensure flow switch paddle moves freely.
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.
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)
Cold Water LED is on 	Winter Mode is activated	Water temp is less than 64°. No further action req.
Chlorine Output level does not reach 100%	Cell is dirty or clogged	Clean Cell (see page 11).
	Damaged Cell or Cell cable	Contact Customer Support.
Cell Life Low LED is on 	The hours of usage the system has tracked indicates that the Cell is likely in the later portion of its typical lifespan. Continue to use Cell until other error LED's are lit and have bee troubleshooted.	Replace Cell after "Cell Life" LED is on and other error lights are lit and/or the Chlorine Output setting won't reach 100%. Replacement cells are readily available for purchase from your local dealer or at www.circupool.com
System Error LED is blinking 	Debris is stuck in the electrical connection between Cell and Control Module	Remove Control Module from the Cell. Clean the electrical connection from any debris stuck in it. Wipe with a dry cloth.
	Other communication problem between Cell and Control Module	Contact Customer Support
System Error LED is on 	Debris is stuck in the electrical connection between Cell and Control Module	Remove Control Module from the Cell. Clean the electrical connection from any debris stuck in it. Wipe with a dry cloth.
	Cell blades are dirty or worn	Inspect Cell for debris or scaling, clean if necessary. Replace Cell if damaged or worn.
	A more serious error has occurred	Contact Customer Support.
All LED lights flashing	Salt level may be greatly out of range	Manually verify salinity (see pages 6-7).

For more information or troubleshooting, visit www.circupool.com/help

WARNING – Always make sure the input power is completely disconnected before attempting any troubleshooting procedures.
All troubleshooting should be done by a qualified professional.