Pentair Salt Cell Troubleshooting Guide

Salt Cell S/N: _____

Items to bring:

- New Salt Cell
- Plug-in Power Center
- EasyTouch Salt PCB
- IntelliTouch Salt PCB
- Flow Switches
- 10amp Fuses
- In-Line Fuse Holder and wire crimps
- Union O-Rings
- Cleaning Cap

Tools to bring:

- Union Channel Locks
- 1/8" Screw Driver
- ¼" Screw Driver
- #2 Phillips Screw Driver
- ¼" Nut Driver
- Wire Cutters/Crimper
- Needle Nose Pliers

Salt System Troubleshooting – Verify filter pump is running and filter pump light is on in automation system

- Take a picture of the Serial Number Tag

Are Salt Cell Lights ON? (Take Picture of salt cell face showing ALL the lights)

If ALL Salt Cell lights are OFF

Take off power center cover:

Is internal green LED ON?

If Internal Green LED is OFF

Check fuse in power center

If fuse OK

- Replace Power Center (Use Test Power Center to Verify Salt Cell is Functional)

If fuse Failed

- Unplug Salt Cell from Power Center
- Replace fuse

If Internal Green LED is OFF

- Replace Power Center (Use Test Power Center to Verify Salt Cell is Functional

If internal green LED ON

- Plug in Customer's Salt Cell

If Internal Green LED is OFF

- Replace fuse
- Replace Salt Cell

If Internal Green LED is ON

Are Salt Cell lights ON?

If Salt Cell lights ON go to Water Chemistry

If Salt Cell lights OFF go to next step

If internal Green LED is ON then

Plug in Test Salt Cell.

If Test Salt Cell lights are ON

- Replace Salt Cell

If Test Salt Cell lights are OFF

- Plugin Test Power Center into Outlet and connect Customers Salt Cell to Test Power Center

If Salt Cell lights are ON

- Replace Power Center

If Salt Cell lights are OFF

- Replace Power Center & Salt Cell

Water Chemistry Readings

Salinity (meter) _____ppm Salinity (panel) _____ppm

TDS_____ppm Phos _____ppb Iron _____ppm

Hardness _____ppm Total Cl _____ppm Free Cl _____ppm

pH _____ Alkalinity _____ppm CYA _____ppm

Salt Cell Lights ON, but NOT producing chlorine
Take Picture of salt cell face showing ALL the lights

Salt Level Lights: Good: _____ (On or Off) Low: _____ (On or Off) Flashing Good & Low: _____

Status Lights: Cold Water: _____ (On or Off) Cell: _____ (On or Off) Flow: _____ (On or Off)

Sanitizer Output: 20%: _____ 40%: _____ 60%: _____ 80%: _____ 100%: _____

Hold down the "More" button on the salt cell for more than 10 seconds. The lights will start flashing. When they stop flashing one of the Sanitizer Output lights will light. That light corresponds to the amount of life that has been used. Record below

Sanitizer Output: 20%: _____ 40%: _____ 60%: _____ 80%: _____ 100%: _____

If the Flow light is OFF (or RED) and you are absolutely certain you have sufficient flow in the cell
AND/OR
If Salt Cell Salinity differs from Calibrated Salt Meter more than 400ppm

- Remove Salt Cell and Inspect for Calcium Deposits.

If Salt Cell has Excessive Calcium Deposits blocking the flow

- **STOP** – Take Pictures of Inside of Salt Cell – **NOT a warranty**. It is customer Neglect. **MUST get Customer Approval to replace Salt Cell**

If Salt Cell has visible Calcium Deposits

- **STOP** – Take Pictures of inside of Salt Cell – **NOT a warranty**. **MUST get Customer Approval to Clean for $75**.
  Use Muriatic Acid (NOT Sulfuric Acid) – 1part Muriatic Acid to 4 parts Water let set for 15 minutes and rinse. If calcium deposits still present - 1part Muriatic Acid to 1 part Water let set for 15 minutes and rinse. If calcium deposits still present - Use Muriatic Acid and let set for 15 minutes and rinse.
- Replace Flow Switch

With filter pump on, Set Salt Cell Sanitizer Output to 100% and wait for Cell Light to come on
Using Jack's Magic Test kit, test the water in a dead section of the pool away from any returns

Record the Chlorine Level: Free Cl _____ppm
Using Jack's Magic Test kit, test the water directly in front of a return
Make sure there are not tabs in the skimmers or chlorinator

Record the Chlorine Level: Free Cl _____ppm
If the Free Cl in front of the returns is 1+ppm greater than the pool they have a water chemistry problem

Is there a Zinc Anode directly in front of the Salt Cell? _____ (Yes/No) (take picture)
Zinc Anode will increase the effectiveness of the cell, help with metal staining & metal corrosion and increase the life of the heater core.

What is Salt level? _____ ppm (per your calibrated digital salt meter)
Ideal: 3500ppm Minimum: 3000ppm OK: 4000ppm Max: 6000ppm

How long is the pump running? _____ hours

Most of the pools we service, the pumps need to run 16-24 hours. Electricity is much less expensive than adding shock chlorine or tabs

What is the Sanitizer Output? _____

Most of the pools we service, this NEEDs to be set to 100%

What is the CYA/Stabilizer? _____

This level needs to be 30ppm-40ppm

What is the Phosphate Level? _____ ppb

This level needs to be <200ppb

Add Enzymes thru the skimmer to help reduce Bio-Nasty-Stuff that eats Chlorine
MUST get Customer Approval to add $28

What is the TDS? _____ ppm

This level needs to be <5000ppm

What is the Iron/Metal? _____ ppm

This level needs to be <1ppm

Look for metal staining on inlets, returns, skimmer and pump baskets and pool surface. If you find staining the Iron/Metal level is most likely too high

Water Chemistry Potential Issues

Table 1: Troubleshooting

Problem	Possible Cause	Corrective Action
Low or no chlorine.	Low stabilizer (cyanuric acid) level in pool water (outdoor pools only).	Add cyanuric acid in outdoor pools only to maintain 30 - 50 PPM per pool professional's recommendations. See Stabilizer Chart, Table 1, page 13.
	Insufficient operating hours of the IntelliChlor SCG.	Increase the SCG operating time per day. See page 15 for pump run time information.
	SANITIZER OUTPUT percentage set too low or off at 0%.	Increase SANITIZER OUTPUT by pressing the MORE button. See page 8.
	Recent increases in weather temperature without increasing the SCG Sanitizer Output.	Increase SANITIZER OUTPUT by pressing the MORE button. See page 8.
	Temporary loss of chlorine due to heavy organic load, rain, leaves, fertilizer or heavy bather load, recent party, or pets using pool.	Set "Boost" mode and allow to run for 24 hours. Recheck, If still too low, super-chlorinate by using an outside source. (Take pool water sample to pool professional).
	Low (less than 2600 ppm) salt level in pool water, shuts off chlorine production.	Observe Salt Display lights. See "Salt Level Status LEDs," page 7.
	High nitrate and phosphate level.	Contact Pool Professional.
	Metals present in pool water.	Contact Pool Professional.
	New pool water, or not shocked properly upon startup.	Super Chlorinate Pool. See "Start-up Procedure (Super Chlorination)", page 16.
	Clogged or dirty cell.	Remove cell for inspection. Clean if necessary. (see page 19).

IntelliChlor Diagnostics

Rev 3.00 to 3.06

Blinking cell light ("Clean cell" alarm) is a condition where the cell has low conductivity (*the cell voltage could rise up to 29V, causing the unit to stop generating chlorine until the "alarm" condition is corrected*) this can be attributed to:

1. Low salt level <2,900 ppm, which reduces the conductivity of the water
2. Calcified cell which restricts voltage through the plates
3. Low water temperature which reduces conductivity of the water
4. Air in the cell – which reduces the conductivity of the water.
5. If you have low salinity and if the temperature sensor is bad (shorted), it could think the salt is normal, but the actual conductivity is low, which will trip the alarm.
6. Phosphates / High pH level

To test the temperature sensor you can push and hold the "More" button" for at least 3 seconds. This puts the cell into diagnostic mode where you can test the temp sensor to see if it is good or bad

1. If the "cold" water light turns "red" you have a bad temperature sensor. Replace flow switch (part number 520736
2. If the cold water light "flashes" "red" it is telling you that the temp sensor is reading a temperature of 100 plus degrees. Then you can compare the water temperature with a thermometer to see if the IntelliChlor sensor is reading correctly.
3. You will also notice that the 20, 40, 60, 80 or 100% LEDs will be lit which displays the cell hours used - meaning if the 20% light is lit, it indicates that the cell has run more than 2,000 hours but less than 4,000 (which would be the 40% light) and has 80 to 60 percent of its life left. If the 40% light is lit, it indicates that the cell has run more than 4,000 hours but less than 6,000 and has 50 to 40 percent of its life left.
4.

While in diagnostic mode if you press the "More" button again the % LEDs will show you the temperature (plus or minus 5 degrees) So if you have the 80% LED lit, that is 80 degrees plus or minus 5, so the temperature could be 75 to 85. If two lights are lit the temp is between those lit lights - say you have 80% and 100% lights lit, which would be 90 degrees plus or minus 5 degrees.

You can toggle back and forth between the "temperature" reading and the "cell hours used" by pushing the "More" button.

Another function of the diagnostics is:
If you push and hold the "Less" button the % LEDs will display the cell reversal cycle, if the 20% LED is lit, that is telling you that the cell reversal is set at 2 hours. The cell coming out of the factory is set at the 2-hour cycle and after so many hours (approx. 1 month) it will change to a 3-hour cycle.

When you take a Wand reading, remember to switch the power to the cell off (wait until all lights turn OFF) and then back on to make sure the cell takes a fresh salt reading. If the cell is not powered down, the cell reading from the Wand will be a stored value from the last time the cell checked for salt, possible 12 hours ago. The IntelliChlor takes a new salt reading at every power up and after every 12 hours of cell run time. After recycling power you should run the cell at 100% output for a minimum of 3 min to get an accurate cell voltage reading.

If all checks out OK and you have replaced multiple cells and they all have the cell light flashing, it is usually related to water quality, or something in the water that could plate out on the blades and cover them with a very thin film that could cause resistance, pushing the voltage >29v. It is difficult to tell you without analyzing the cells, so we need samples sent to Damaso Gallo in Deerfield Beach.

Very important –

- Have you tested the salinity level of the pool? Try to keep it at or above 3,400 ppm
- Test the water chemistry
    - If the pH is >7.8 this can cause calcification issues
- Phosphates will cause a higher chlorine demand. This is a food supply for algae
    - Keep phosphate levels below <0.1 ppm (or <100 ppb)
    - Phosphates are known to bind to the cathode of chlorine generating electrode cells causing a reduction or elimination of chlorine production.
- Nitrates will cause a higher chlorine demand. This is another food source for algae and other microorganisms.
    - Keep nitrates below <10 ppm
- Cyanuric Acid levels should be maintained between 50 to 80 ppm for an outdoor pool.