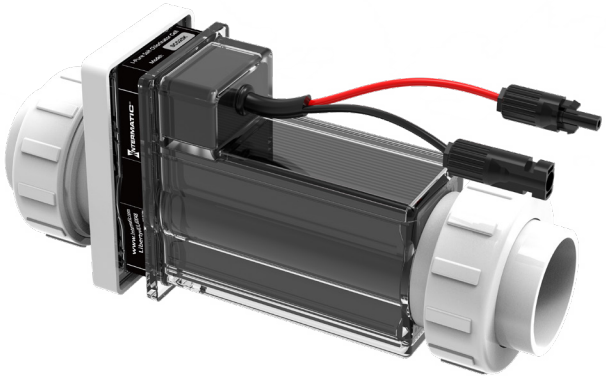
INTERMATIC®

Pure
Salt Chlorinator



IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

Scan this QR code for more information, or visit www.intermatic.com

IMPORTANT WARNINGS AND SAFETY INSTRUCTIONS

INTERMATIC® I-PURE SALT CHLORINATOR SAFETY PRECAUTIONS

RESPONSIBLE ADULT SUPERVISION

Constant and responsible adult supervision is mandatory in the pool or spa environment. DO NOT allow children to operate the Intermatic® I-Pure Salt Chlorinator system. Please read the following safety and warning guidelines carefully.

ATTENTION USER AND INSTALLER: This manual provides important installation, operation, and safe use of the I-Pure Salt Chlorinator system. Please retain this manual at the pool installation site for future reference. The pool builder/installer should give this manual to the owner and/or operator of the I-Pure Salt Chlorinator system. Please follow all safety precautions when installing and using electrical pool equipment, basic safety precautions should always be followed.

- Please follow and comply with all state and local codes referred to in this manual.

This safety signal alert symbol shown in this manual indicates one of the signal words: **DANGER, WARNING, CAUTION and NOTICE,** which you must comply with the signal word information and be alert to the potential hazard. READ AND COMPLY WITH ALL WARNINGS AND SAFETY CAUTIONS IN THIS MANUAL.

⚠ WARNING

- READ ALL RELATED warning labels before installing or attempting to use, service the IPure Salt Chlorinator system. Failure to follow all safety and warnings and instructions can result in severe injury, death, or property damage.

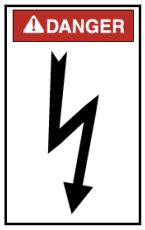
⚠ WARNING

- **GAS BUILD-UP CAN OCCUR WITH IMPROPER WIRING:** To reduce the risk of personal injury the Intermatic chlorinator controller includes a plumbed flow switch connected to the controller that allows the cell to only receive power when the pool filter pump is on, thereby preventing dangerous chlorine gas build-up to occur. Make sure the chlorinator controller and cell is never energized when the pool filter pump is OFF, or water is not flowing through the cell. ONLY plumb the flow switch just before the cell with nothing in between the two (do not use any valves or water diversion between the flow switch and the cell).

  The Intermatic I-Pure Salt Chlorinator controller internally contains live components. There is a danger of electric shock if opened. If the power cord is damaged then it should be replaced by the manufacturer, their agent or similar.

- **When mixing acid with water, ALWAYS ADD ACID TO WATER. NEVER ADD WATER TO ACID. FOR MORE INFORMATION ABOUT CLEANING THE CELL, SEE PAGE 15.**

IMPORTANT WARNINGS AND SAFETY INSTRUCTIONS



RISK OF ELECTRICAL SHOCK OR ELECTROCUTION! ALWAYS disconnect power at the MAIN circuit breaker before servicing the I-Pure Salt Chlorinator system (including the controller, cell and associated wiring connections). Improper I-Pure Salt Chlorinator system installation can cause an electrical shock hazard that can result in death or serious injury.

The I-Pure Salt Chlorinator controller and cell must be installed by a licensed or certified electrician or a qualified pool professional in accordance with US state, local ordinances, installation local codes and current National Electrical Codes (NEC), NFPA 70 or the Canadian Electrical Codes (CEC), CSA C22.1 standards. Improper installation of the I-Pure Salt Chlorinator system can create an electrical hazard which could result in death or serious injury to pool users, installers or others due to electrocution and may also cause damage to pool equipment and property. **Note: BEFORE SERVICING the I-Pure Salt Chlorinator system ALWAYS disconnect power at the main circuit breaker. Failure to do so could result in death or serious injury to pool service personnel, pool users or others due to electrical shock.**

- The electrical supply for the I-Pure Salt Chlorinator system MUST include a suitably rated switch or circuit breaker to open all ungrounded supply conductors that comply with the current National Electrical Code (NEC), NFPA 70 or the Canadian Electrical Code (CEC), CSA C22.1, and must also adhere to all applicable local installation codes and ordinances. The spa, or hot tub electrical disconnecting means MUST BE installed at least five 5ft. (1.52 m), (Canada 3 m (9.75 ft) from the inside wall of the pool and be readily accessible for the occupant.
- **RISK OF ELECTRIC SHOCK! Only qualified, licensed personnel should install wiring to the I-Pure Salt Chlorinator system. A trained professional familiar with pool/spa and equipment must perform all pool/spa equipment installation, including pumps, lights and other wiring connections.**
- **BEFORE WORKING ON POOL/SPA ELECTRICAL EQUIPMENT:** To avoid dangerous or fatal electrical shock, turn all pumps OFF, disconnect the power at its source, and place a tag on the dedicated GFCI circuit breaker indicating the power is to remain OFF before working on electrical connections. If you are not familiar with the pool filtering system and heater operations, DO NOT adjust or service the I-Pure Salt Chlorinator system without consulting a pool dealer or a qualified pool technician.

IMPORTANT WARNINGS AND SAFETY INSTRUCTIONS

⚠ WARNING: IMPORTANT MURIATIC ACID HANDLING

INHALATION: If inhalation of muriatic acid vapors occurs, immediately move to an area with fresh air. Inhaled vapors can cause coughing, inflammation of the nose, throat and upper respiratory tract and death.

INGESTION: If acid is swallowed, seek immediate medical attention, it can be fatal. Contact local poison control center or physician immediately. Give large amounts of water or milk. Allow the person to vomit. If vomiting occurs, keep head lower than hips to avoid aspiration. If the person is unconscious, turn their head to the side.

STORAGE: Store acid in a container in a dry, ventilated location away from excess heat and direct sunlight. Acid must be stored at a temperature below 80°F (27°C). Make sure drainage is located away from the storage location of the acid container.

ACID SKIN CONTACT: Wash the skin with soap and water for at least 20 minutes. Remove contaminated clothing and shoes and clean before re-use.

ACID EYE CONTACT: Flush eyes immediately with water for at least 20 minutes. Seek immediate medical attention.

PERSONAL PROTECTION

VENTILATION: Use a container for the acid in an outside well-ventilated area.

EYE PROTECTION: Use splash-resistant safety goggles.

CLOTHING: Wear chemical-resistant clothing when handling or working with acid and chlorine.

GLOVES: Wear chemical-resistant gloves when handling or working with acid and chlorine.

DISPOSAL: Because acid is corrosive, muriatic acid is classified as hazardous waste when spilled or discarded. Dispose of used acid at an approved hazardous waste facility or at your municipal household hazardous waste collection facility. Use baking soda to neutralize the acid. If this occurs, carefully pour baking soda onto the acid until the fizzing stops, then mop or scoop up the residue. Large acid spills must be handled by the local fire department or hazardous materials experts.

IMPORTANT SAFETY PRECAUTIONS

⚠ CAUTION

- Before installing the chlorinator, review and understand all warnings, safety information in this guide. Failure to follow these instructions or improper installation of the chlorinator can result in damage to the pool finish or the vinyl liner. Intermatic disclaims any liability for repairs or replacement to any of these structures or components of the customer's pool. See page 38 for Limited Warranty information.

Factors that contribute to the life of the pool:

- Over time, deterioration, discoloration and brittleness of any pool finish can be caused separately by, or in combination with, age, an imbalance in pool water chemistry, improper installation and other factors.

  Vinyl-lined in-ground swimming and vinyl liners pools are also affected by the environment, pool water chemistry, and sunlight. Vinyl can also become brittle and weak. Vinyl-liner pools are affected by quality of the composition and installation of the liner and the construction of the supporting walls and pool base. These are all factors which can contribute to liner failure. Intermatic disclaims any liability for repairs or replacement to any of these structures or components of the owner's pool.

  The pool owner must assume all responsibility for the condition and maintenance of the pool's surface, water and deck.

  Before installing the chlorinator, record the serial number here. SERIAL Number: _____

I-Pure Salt Chlorinator Series Models for the run time period of pool filter pump:

- One chlorinator Model 15,000 gallons produces the equivalent of 0.75 lbs/24hr. of pure chlorine.
- One chlorinator Model 25,000 gallons produces the equivalent of 1.15 lbs/24hr. of pure chlorine.
- One chlorinator Model 40,000 gallons produces the equivalent of 1.65 lbs/24hr. of pure chlorine.
- One chlorinator Model 60,000 gallons produces the equivalent of 2.07 lbs/24hr. of pure chlorine.

  Note: (*) In the event of heightened chlorine demands (such as warmer climates, high bathers load, etc.), Calculate the cell size as 20% - 30% less than the sizes shown.

- Adjust sanitizing level in five-percent (5%) increments from 1-100% (e.g. 50% = first 5 LED on. 55% = first 5 LED on and LED 6 blinks

Flow Switch Sensor:

- The flow switch sensor is installed in the pool return pipe after the heater outlet to maintain adequate water flow through the chlorinator cell. If the cell is not properly plumbed and/or does not receive adequate water flow, no chlorine is produced. ONLY plumb the flow switch just before the cell with nothing in between the two (do not use any valves or water diversion between the flow switch and the cell).

  Salt is an inherently corrosive material. Relatively low levels of salt are required for proper operation of the chlorinator system when compared to sea water and other salt solutions. Placing any amount of salt in your pool can increase the potential for corrosion or other deterioration of pool equipment and any surfaces used in and around your pool. Metal parts (including steel pools) and certain natural and man-made surfaces are susceptible to corrosion and deterioration when used in and around saltwater pools. Intermatic does not represent or otherwise guarantee that the proper use of the chlorinator will prevent corrosion or other deterioration of pool equipment and any surfaces used in and around your pool. Consult an experienced pool professional, who can advise you on the proper material selection, installation techniques for those materials, and the proper use, care and maintenance of those materials for your specific pool type and location to minimize the corrosion and deterioration that is inherent in and around saltwater pools.

Salt Usage:

It is recommend adding approximately 30 pounds (13.3 kg) of pool salt per 1,000 US gallons (3,785 L) of pool water. A 25,000 gallon (95, 000 L) new pool needs approximately 750 pounds (340 kg) of salt.

APSP recommended pH Level guidelines:

It is important to test the pH level of your pool water with a reliable test method. Test and adjust according to your pool professional's recommendations. APSP's recommended ideal range for pH is 7.4 to 7.6. An acceptable range under APSP's guidelines is 7.2 to 7.8.

Note: Never use dry acid (sodium bisulfate) to adjust pH in arid geographic areas.

Contents

Technical Support
8:00 AM - 4:30 PM CST [Monday-Friday]

815.675.7000

Email: techsupport@intermatic.com
www.intermatic.com

Intermatic® I-Pure Salt Chlorinator Overview

The Intermatic® I-Pure Salt Chlorinator system can be used standalone or connected to any automation system. The I-Pure features a platinum 1.0 mm coated titanium plate cell. The cell is made of a solid plate cathode and anode with end caps filled with resin to seal and protect the lead connectors.

The chlorinator is designed to maintain your pool water chemistry and produce chlorine from a mild salt solution in the water. Regular water testing, balancing and correction are required to maintain the recommended balanced chemical levels of your pool water. This is an important part of a complete maintenance program that ensures a clean healthy pool.

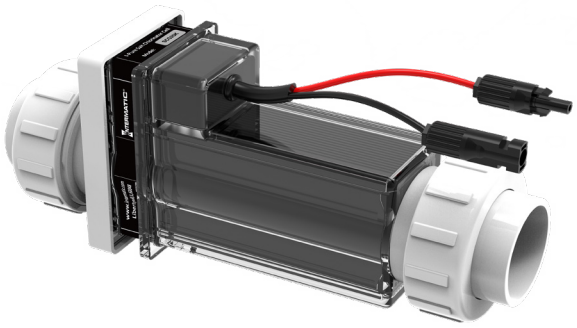
A reverse polarity feature is designed to automatically change direction every 7 hours. The polarity reversing times can be changed from 4 to 10 hours which causes the calcium to dislodge and keep the cell plates clean. Occasional cleaning of the electrode plates may still be necessary in pools with high or extremely hard calcium.

The chlorinator is designed only to produce chlorine and does not monitor or control chlorine levels in the pool or spa water. It is the pool owner's responsibility to monitor and maintain free chlorine levels at the APSP recommended range of 2.0 to 4.0 parts per million (ppm). It is the pool owner's responsibility to check, on a regular basis, the free chlorine level while the pool filter pump is running and adjust the chlorinator accordingly.

Features

- Real-time data for easy monitoring
- Operates at a low flow rate of 20 GPM
- Vertical or horizontal cell installation
- Controller 115/230 VAC, 50/60 Hz

I-Pure Salt Chlorinator Controller



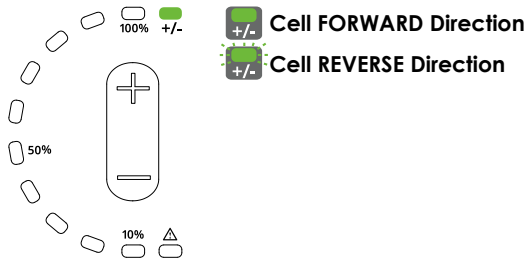
I-Pure Salt Chlorinator Cell

The Controller and Cell Power Switch

The Controller and Cell Power Switch

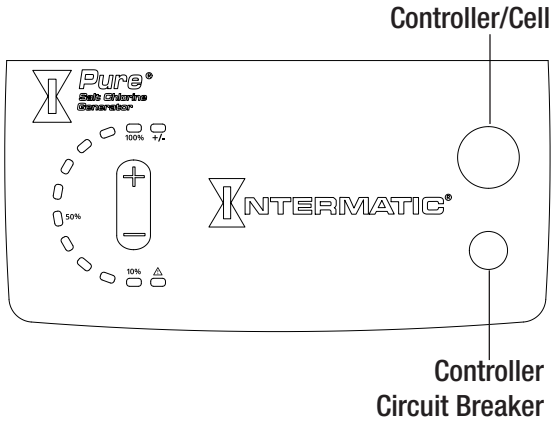
Use the Controller/Cell power switch to power ON/OFF the chlorinator controller and cell:

- O – Press the switch in "O" position turns the cell OFF.
- I – Press the switch in at the "I" position turns the cell ON. The back-light on the cell switch will light up.
- **Changing Direction** – While the chlorinator is running, you can change direction by turning OFF the cell switch, waiting 3 seconds then turning it ON again. The direction should change. Repeat this again if it does not change direction.
  Note: The "+/-" LED is ON for FWD direction and flashes for REV direction.



Controller Circuit Breaker

The controller protection circuit breaker ONLY operates the chlorinator cell circuit, NOT the pool filter pump circuit. The chlorinator circuit breaker protects the unit from damage caused by over-current, overload, or short circuit. Press the circuit breaker button in after it has tripped to reset the circuit breaker. It may be damaged if you supply excessively high levels of salt through the cell.

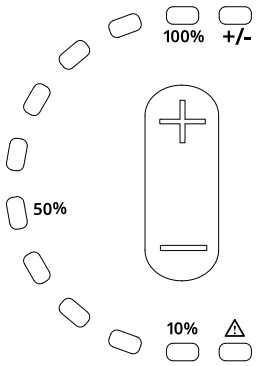


Connecting a Variable Speed Pump to the Controller

⚠ WARNING: The chlorinator controller MUST ALWAYS BE connected to the LOAD SIDE of the Associated AUX RELAY located in the Optimizer system Load Center or Power Center. This ensures the chlorinator receives power ONLY WHEN THE FILTER PUMP IS ON. NEVER power on the Controller when the pool filter pump is OFF and water is not flowing through the cell. This prevents a gas build-up if the pool pump stops or pool valve is closed. **See page 29.**

Controller Status LEDs

The two LEDs (+/- Top) and (⚠ Bottom) locations on the front of the Controller indicate various states, conditions, and faults of the chlorinator.



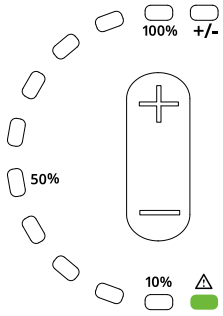
Decrease Button (-)

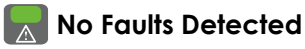
A single press of this button decreases chlorine production by approximately 5%. To turn OFF chlorine production it is necessary to press the button several times to be sure all chlorine indicator LEDs are off or turn the Cell Switch OFF on the Controller.

Increase Button (+)

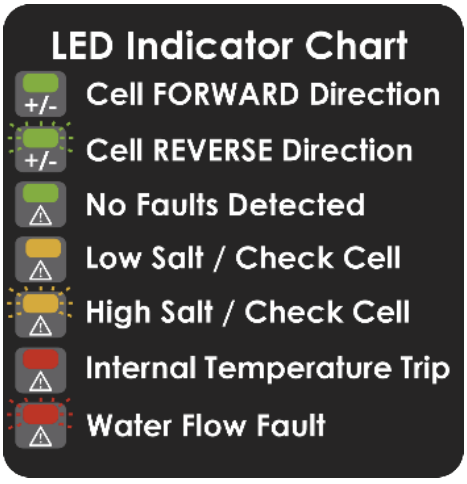
A single press of this button increases chlorine production by 5%. When all 10 LEDs are ON the chlorine production is 100%. Example: when 10% is selected (solid Green), press the + button, to increase to 15% and show the 10% LED (solid Green) and the 20% LED blinking. If you press the + button again, then the 10% and 20% LEDs are solid Green. Continue this process to 100% (all LEDs solid Green).

CAUTION LED is SOLID GREEN: NO FAULTS DETECTED.
The chlorinator is operating normally.





LED Indicators Quick Reference Chart: A Quick Reference Chart is attached to the Controller cell cable.

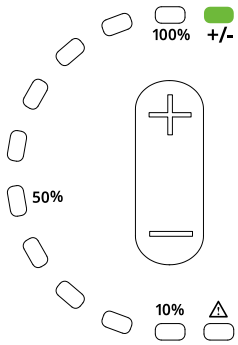


Controller Status LEDs (Continued)

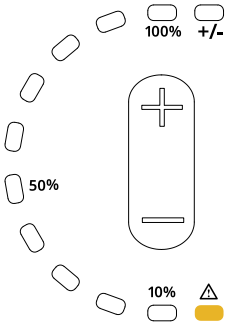
The following describes the I-Pure LEDs status conditions:

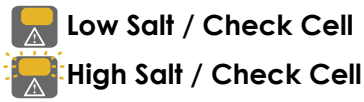
+/- LED is SOLID GREEN: CELL FORWARD DIRECTION. Chlorinator Cell is outputting in the Forward Direction.

+/- LED is BLINKING GREEN: CELL REVERSE DIRECTION. Chlorinator Cell is outputting in the Reverse Direction.



WARNING LED is SOLID ORANGE: LOW SALT/CHECK CELL Check the pool water chemistry at your local pool supplier. Check for calcium build-up on the Cell, insufficient water flow over the Cell, and if the Cell plates are worn meaning the cell is reaching the end of its life. Check the Cell cable connectors from the controller to the Cell. **The pool water salt level is below 1750 ppm. The unit will produce chlorine at reduced efficiency. It is highly recommended to add salt. After adding salt, only run the pool filter pump for at least 24 hours for proper dilution. Take salinity readings after the dilution period.** *Note: The LOW SALT warning LED will be ON if the salt level is lower than 1750 ppm. Under low salt conditions, the chlorinator will NOT stop producing chlorine.*

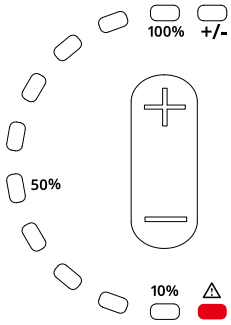




WARNING LED is BLINKING ORANGE: HIGH SALT/CHECK CELL(*): High salt causes excessive heat and wastes electricity. The warning LED is blinking ORANGE when the salt level is greater than 5250 ppm. Keep salt levels within 3000 - 3500 ppm range to save power. **SALT LEVEL**: For every 500 ppm over 4000 ppm, turn the salt level output down by 10%. If the pool water is over salted; drain some of the pool water and add fresh water.

WARNING LED is SOLID RED: INTERNAL TEMPERATURE *Note: The salt level might be too high, check the levels. The fault will reset once the chlorinator cools down.*

WARNING LED is BLINKING RED: WATER FLOW FAULT: Check for air cavities in the cell chamber causing the plumbed flow switch to not be activated by water, raise the speed of the pump or check that pump is working, remove any air locks, check valves and skimmer/pump baskets and check the flow switch. It may take a few minutes for this indicator to reset. At any stage that the Water Flow LED is ON pressing either the INCREASE or DECREASE buttons will try to start up the unit again.



Note (*): The HIGH SALT warning LED will come ON if the salt level is higher than 5250 ppm. Under High salt conditions, the chlorinator will not stop producing chlorine. However, as the chlorinator draws more current at high salt conditions, the internal temperature of the chlorinator will keep rising. If the internal temperature reaches about 230° F (110° C), the chlorinator will turn itself off for 1-2 hours due to excessive heat and a warning LED will be displayed. Once the internal temperature cools down, the chlorinator will come back ON again and produce chlorine at its previous output.

Controller Operation

Chlor Boost (Super Chlorination)

The CHLOR BOOST feature can be set to “Chlor Boost” (Chlorine Boost) for 24 hours by default and automatically sets the chlorine output to 100% during that time.

To enter Chlor Boost, hold the + and - buttons at the same time for 3-5 seconds. After releasing the buttons, the LED’s 2 and 4 will flash on for 5 seconds to indicate the unit has entered “Chlor Boost”. To change the “Chlor Boost” time setting, press the + or - buttons to cycle through settings.

Press + to increase the hours from 24 up to 28, 32, 36 and back to 4, 8, 12, 16, 20, 24 hours.

Press - to decrease the hours from 24 to 20, 16, 12, 8, 4 and then back up to 36, 32, 28 and 24 hours.

LED’s 1 through to 10 will turn on for 5 seconds and then off for 1 second to indicate that “Chlor Boost” has been activated.

To turn OFF Chlor Boost at any time before its running time, press and hold the + and - buttons together for 3-5 seconds. The unit will indicate that it is deactivating Chlor Boost by causing the FLOW FAULT LED (LED 12) to flash three times. The unit will revert to normal operations and the LED indicating regular output.

Output LED Indicators

There are 10 green chlorine production LED indicators, each solid LED represents 10% chlorine output. A blinking LED represents 5%.

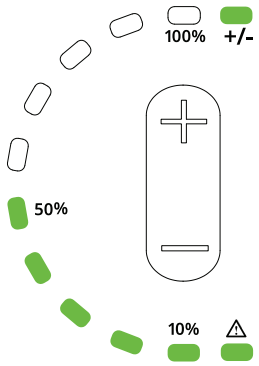
Examples:

0% = no LEDs are on - No chlorine produced.

50% = 10% to 50% LEDs are solid GREEN - Produces chlorine 50% of each hour of pump run time.

75% = 10% to 70% LEDs are solid GREEN, 80% LED flashing GREEN - Produces chlorine 75% of each hour of pump run time.

100% = 10% to 100% LEDs are solid GREEN - Produces chlorine 100% of each hour of pump run time.

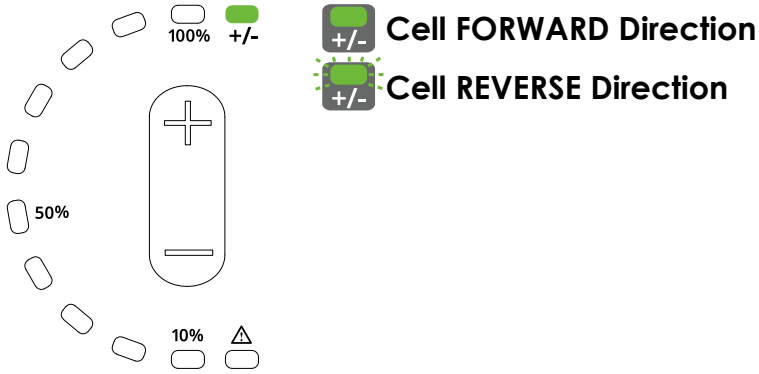


The above indicates 50% output display

Controller Operation (Continued)

Temporary Change of Polarity

1. Start with the unit “ON” and identifying if it is operating in the “Forward” or “Reverse” direction.
2. Turn the unit OFF at the Cell Switch.
3. Wait 3-5 seconds and then turn the Cell Switch ON.
4. The polarity should change and the direction LED “+/-” should display the opposite direction.
5. Repeat steps 1-3 if necessary.
6. The unit will stay in this direction for 2 minutes and then revert to the original direction.



Modifying the Polarity Change Times

Note: The polarity will change every 7 hours in normal operation (factory set). This polarity change can be permanently set to between 4 and 10 hours if required. Only lower this time if the Cell is not cleaning (due to very high calcium levels).

CAUTION: The precious metal coating on the cell plates may not last as long with quicker change over times as a percentage of wear on the coating is related to the number of polarity changes.

To change the polarity change frequency, follow the directions below:

1. Start with the unit “OFF”.
2. Press and hold the “DECREASE (-)” button.
3. Turn the unit “ON”.
4. Release the button and the current reversing time setting will display. The default will be set to 7 hours, and LED 7 will display. If LED 4 displays, this indicates that the reversing time is 4 hours, and this can be increased by increments of 1 hour which will correspond with the number of LEDs displayed. If LEDs 1, 2 and 3 display this means the reversing period is 10 hours.
5. To change the reversing hours, press the “DECREASE (-)” or “INCREASE (+)” button to switch from one reversing hour to another.
6. Once you have selected the reversing time you require, turn the unit “OFF”. The new setting will apply next time you turn the unit “ON”.

Water Chemistry

The chlorinator is designed for use with swimming pool water balanced in accordance with the Langelier Saturation Index with a pH range of 7.0-7.6 ppm.

For the best performance and operation of the chlorinator, certain water balances must be maintained within your swimming pool. Have the pool water professionally tested on a regular basis. Transport the test water in an opaque container and have the test done as soon as possible for the best results.

Chlorine: Measurement Interval: Once a week

Ideal Chlorine (Free Chlorine) Levels: 1-3 ppm (1-3 mg/L) and no more than 4 ppm (4 mg/L). A single press of the [+] button will increase chlorine production by 5%. A single press of the [-] button will decrease the chlorine production by 5%. Running the unit for longer or shorter hours can also achieve the result of increased or decreased chlorine levels.

Salt: Measurement Interval: Every 2-4 weeks (or after heavy rains)

Ideal Salt Levels: The ideal salt level for the chlorinator should be **3000-3500 ppm** and NEVER more than 4500 ppm.

Although salt is not consumed by the chlorinator, salt is lost during back-washing, pool overflow, splashing and on bathers that use it. The correct salt level allows for the most efficient production levels and electricity consumption.

The salt level SHOULD NOT go below 3000 ppm as the output will drop. If the level goes lower than 1000 ppm you will damage the Cell plates.

Salt is the essential element by which your unit operates. Not enough salt means not enough chlorine - this simple rule governs the total operation of the chlorinator, and insufficient salt will damage your Cell. Use Ultrafine Salt or Premium Salt to keep optimum salt levels.

The unit will operate with good stability on higher salt levels, but it is still advisable to run at the correct level to prevent damage. Salt levels above 4500 ppm may overload the unit and cause excessive heat.

CAUTION: NEVER ADD SALT DIRECTLY TO THE SKIMMER BOX. This high concentration of salt will pass through your filtration, pump, and other pool equipment.

Note: The colder the water, the lower your output, but this does not mean you need more salt. There will always be less chlorine demand in colder water.

We recommend adding approximately 30 pounds (13.3kg) of pool salt per 1,000 US gallons (3,785L) of pool water. A 25,000 gallon (95,000L) new pool needs approximately 750 pounds (340kg) of salt.

Salt should always be added to the shallow end of the pool and allowed to dissolve. Do not let the salt settle on the floor of the pool as this may cause damage to the surface. Use your pool brush to mix the salt into the water. Running the pump will mix the water and help the salt to dissolve.

CAUTION: Very low salt levels (<1000 ppm) will damage the coating on the Cell, be sure to always check salt levels.

Cyanuric Acid: Sample the pool water and test for cyanuric acid level using a reliable test method. Ideal cyanuric acid level is 30-50 ppm.

CAUTION: Metals Test: Periodic testing for metals such as copper, iron, and manganese is recommended. These metals can damage the chlorinator cell and other pool equipment and should not be present in the pool water. If those metals are present, contact your pool professional.

Water Chemistry (Continued)

pH: Measurement Interval: Once a week

Ideal pH Levels: Concrete Pools: 7.4 - 7.6
Fiberglass/Vinyl Pools: 7.2 - 7.4

A pH of 8.0 results in a chlorine level of about 26% efficiency, which is why it is critical to keep the pH level in range.

A correct pH level must be maintained to prevent problems such as black spot, staining, cloudy water, etc. An incorrect pH level can damage the surface finish and walls of your pool.

When pH is high add Hydrochloric Acid to lower the pH.

When pH is low add pH Increaser - sodium bicarbonate (soda ash) to increase the pH.

Total Alkalinity: Measurement Interval: Every 4-6 weeks

Ideal Total Alkalinity Levels: Concrete Pools: 80 - 150 ppm
Fiberglass/Vinyl Pools: 80 - 120 ppm

Total Alkalinity should not be confused with pH, although the two are closely related. Total Alkalinity determines the speed and ease of pH change, it is measured in ppm. You should use a test kit which includes a test for Total Alkalinity. Low Total Alkalinity can cause unstable pH levels. This causes an inability to keep the pH constant and may cause staining, etching and corrosion of metals. High Total Alkalinity will cause constantly high pH levels.

When Total Alkalinity is high you can add Hydrochloric (a little at a time) to lower the Total Alkalinity. When Total Alkalinity is low you can add pH Increaser - sodium bicarbonate to raise the Total Alkalinity.

Calcium Hardness: Measurement Interval: Every 3 months

Ideal Calcium Hardness Levels: Concrete Pools: 250 ppm - 300 ppm
Fiberglass/Vinyl Pools: 150 ppm - 190 ppm

In addition to pH and Total Alkalinity, Calcium Hardness must be kept in balance so that your pool water does not become too corrosive or end up scaling the surface of your pool. These conditions are symptoms of swimming pool water that is unbalanced.

Stabilizer: Measurement Interval: Every 4-6 weeks

Ideal Stabilizer Levels: 30 ppm - 60 ppm

Pool Stabilizers are an essential part of helping retain chlorine in your pool. Chlorine rapidly dissipates in sunlight. The use of stabilizers can reduce the chlorine dissipation. Without stabilizers, it may be necessary to run the chlorinator for longer hours.

CAUTION:

Only add chemicals using the method and quantities as instructed on the packaging provided. If in doubt about the chemical results achieved, then consult your local pool professional.

Chlorinator Maintenance

The chlorinator cell requires some basic maintenance as described below:

- While water chemistry will always be the most important form of maintenance there are also other hints and pointers to take note of.
- DO NOT cover the Controller with towels or similar. There are vents that could be closed and these need air to keep the unit cool.
- To extend the life of your unit we always recommend installation in an undercover area away from the elements and under a cover if in full sun.
- Placing the unit in a closed shed or similar environment with chemicals, fertilizers and other corrosives will damage the unit and could void your warranty.
- Always keep the controller OFF when back washing the sand filter. Please remember to turn it ON once the backwash is done.
- Check that the Cell plug connections and Cell lead wires are tight and are in sound condition at least once a year.

Inspecting and Cleaning the Cell Electrode

The chlorinator is designed with a reverse polarity cell and should not normally require cleaning. However, in areas with very hard water all calcium may not be removed. A calcium deposit might form on the lower areas of the cell, between the plates, or on the sides of the cell plates. This will affect the operation of the chlorinator however, you can use Cell Cleaner to clean the cell.

The chlorinator cell must be cleaned before scale/calcium builds up to the point where the electrode gaps in the cell are bridged. If the cell has an excessive calcium deposit, this may damage the electrode coating, as the bridging causes a rubbing on the plate coating, and this will affect the cell operation. Check the cell to prevent the accumulation of pool debris that may have by-passed the pool filter, particularly after back-washing.

Check that the o-rings are clean, greased with silicone grease (DO NOT use petroleum-based jelly) and securely located between the Cell Housing and union tails, see page 28.

Cleaning the Cell

When mixing acid with water, ALWAYS ADD ACID TO WATER. NEVER ADD WATER TO ACID.

Eye Protection, mask and gloves should be worn when cleaning the cell.

NOTICE: FOLLOW THE ACID MANUFACTURERS SAFETY AND HANDLING PROTOCOLS INCLUDING HAND, BODY AND EYE PROTECTION WHEN TRANSFERRING OR HANDLING ACID. SAFETY PRECAUTIONS SHOULD BE USED WHEN HANDLING MURIATIC ACID TO CONTROL PH WATER LEVELS. MURIATIC ACID CAN CAUSE SERIOUS BODY INJURY AND DAMAGE POOL EQUIPMENT. EXTRA CARE MUST BE TAKEN WHEN INSTALLING, MAINTAINING AND OPERATING ACID PUMP FEED SYSTEMS. ACID IS DANGEROUS TO HANDLE AND SHOULD BE PROPERLY CONTAINED, TRANSPORTED, POURED, STORED, AND DISPENSED.

Continue to next page for cell cleaning instructions.

Chlorinator Maintenance (continued)

Cleaning the Cell (Continued):

Note: Before acid washing, use a garden hose to remove the calcium buildup in the cell. Use eye protection, a mask and gloves when cleaning the cell.

1. Switch the CONTROLLER/CELL POWER SWITCH OFF.
2. Unscrew the Cell Locking Ring and remove the electrode for inspection. If calcium build-up is present, immerse the electrode in Cell Cleaner.
3. A solution can be made by mixing 1-part hydrochloric acid to 10 parts of water. If excessive build up is present a stronger solution may be used to remove the calcium. **Note: When mixing acid with water, ALWAYS ADD ACID TO WATER. NEVER ADD WATER TO ACID.**

WARNING: WHEN CLEANING THE CELL, TO AVOID TIPPING THE CELL OVER AND SPILLING ACID OUTSIDE THE BUCKET, ALWAYS STAND THE CELL SECURELY UPRIGHT IN THE BUCKET.

4. Use the Cell Cleaning Cap provided with the unit or place the cell in a plastic bucket. Submerge the blades in the solution for about 10 minutes.

   NOTE: DO NOT SCRATCH OR BEND THE ELECTRODE PLATES IN THE CELL HOUSING. ENSURE THAT THE O-RING IS CLEAN, GREASED AND PROPERLY SEATED.
5. Allow the acid solution to bubble and foam, and to clean the cell. The scale (calcium carbonate) will dissolve from the blades. Allow the cell to remain immersed in the solution until the foaming has stopped. To avoid cell blade damage, do not leave the cell in the acid solution for more than 30 minutes.
6. Remove the cell from the acid solution and place in an empty bucket of clean water. If calcium deposits are still visible on the blade, repeat the acid cleaning process.

IMPORTANT: DO NOT return the mixture to the pool. Dispose of the used mixture in a safe manner.

Inspecting the I-Pure Controller

The controller power AC wires MUST plug into one of the high power AUX Relays located in the Intermatic Load Center or Power Center.

The chlorinator controller has a heat sink on the back to allow internal components to remain cool in hot weather. The chlorinator controller has a special oil spray applied to the inside of the unit during production to stop the insects from entering the unit. To help keep insects away, spray the surface periodically on the wall or post that the unit is mounted on. DO NOT spray directly into the controller and make sure the power is off when you use a spray. Allow adequate time for the spray to dry before turning power on again.

Winterizing the Chlorinator

In cold water/winter climates low chlorine production can be maintained at 2.0 ppm to 4.0 ppm. The cell will continue to produce chlorine at much lower output to extend the life of the cell. The cell will not automatically turn off. To prevent freeze damage to the cell, run the pool filter pump continuously or drain the pool water from pump, filter and all intake and return lines. Remove the chlorinator cell and store it during the winter months.

Salt (Lbs/Kg) Addition Chart 1

Approximate pounds (lbs) and kilogram (kg) of salt needed to obtain 3,400 ppm in pool water.

Current Salt Level (PPM)	Pool Size - US Gallons (Liters)			
	10,000 (37,854)	**20,000** (75,708)	**40,000** (151,461)	**60,000** (151,461)
	Pool Salt Required - lbs (kg)			
0	267 (6,5)	534 (13.5)	1069 (27)	1069 (27)
200	251 (6.4)	501 (12.5)	1002 (25)	1002 (25)
400	234 (6)	468 (12)	935 (28.5)	935 (28.5)
600	217 (5.5)	434 (11)	868 (22)	868 (22)
800	200 (5)	401 (10)	802 (20)	802 (20)
1000	184 (4.5)	367 (9)	738 (18.5)	738 (18.5)
1200	167 (4)	334 (8.5)	668 (17)	668 (17)
1400	150 (4)	301 (7.5)	601 (15)	601 (15)
1600	134 (3.5)	267 (6.5)	534 (13.5)	534 (13.5)
1800	117 (3)	234 (6)	468 (12)	468 (12)
2000	100 (4)	200 (5)	401 (10)	401 (10)
2200	83 (2)	167 (4)	334 (8.5)	334 (8.5)
2400	67 (1.5)	134 (3.5)	267 (6.5)	267 (6.5)
2600	50 (1.5)	100 (2.5)	200 (5)	200 (5)
2800	33 (1)	67 (1.5)	134 (3.5)	134 (3.5)
3000	8 (0.5)	33 (1)	67 (1.5)	67 (1.5)
3200	Ideal	Ideal	Ideal	Ideal
3400	ok	ok	ok	ok
Above 4,000	Dilute	Dilute	Dilute	Dilute

Salt (Lbs/Kg) Addition Chart 2

Salt required in pounds (lbs/kg) to obtain 3.400 ppm in pool water.

Pool Gallons/Ltrs		0 ppm	250 ppm	500 ppm	750 ppm	1000 ppm	1250 ppm	1500 ppm	1750 ppm	2000 ppm	2250 ppm	2500 ppm	2800 ppm	3000 ppm
10,000	lbs	284.00	263.12	242.24	221.35	200.47	179.59	158.71	137.82	116.94	96.06	75.18	50.12	33.41
(37,800)	kg	128.82	119.35	109.88	100.41	90.93	81.46	71.99	62.52	53.04	43.57	34.10	22.73	15.16
12,000	lbs	340.80	315.74	290.68	265.62	240.56	215.51	190.45	165.39	140.33	115.27	90.21	60.14	40.09
(45,400)	kg	154.59	143.22	131.85	120.49	109.12	97.75	86.39	75.02	63.65	52.29	40.92	27.28	18.19
14,000	lbs	397.60	368.36	339.13	309.89	280.66	251.42	222.19	192.95	163.72	134.48	105.25	70.16	46.78
(53,000)	kg	180.35	167.09	153.83	140.57	127.31	114.05	100.78	87.52	74.26	61.00	47.74	31.83	21.22
16,000	lbs	454.40	420.99	387.58	354.16	320.75	287.34	253.93	220.52	187.11	153.69	120.28	80.19	53.46
(37,800)	kg	206.12	190.96	175.80	160.65	145.49	130.34	115.18	100.03	84.87	69.72	54.56	36.37	24.25
18,000	lbs	511.20	473.61	436.02	398.44	360.85	323.26	285.67	248.08	210.49	172.91	135.32	90.21	60.14
(37,800)	kg	231.88	214.83	197.78	180.73	163.68	146.63	129.58	112.53	95.48	78.43	61.38	40.92	27.28
20,000	lbs	568.00	526.24	484.47	442.71	400.94	359.18	317.41	275.65	233.88	192.12	150.35	100.24	66.82
(37,800)	kg	257.64	238.70	219.76	200.81	181.87	162.92	143.98	125.03	106.09	87.14	68.20	45.47	30.31
22,000	lbs	568.00	526.24	484.47	442.71	400.94	359.18	317.41	275.65	233.88	192.12	150.35	100.24	66.82
(37,800)	kg	257.64	238.70	219.76	200.81	181.87	162.92	143.98	125.03	106.09	87.14	68.20	45.47	30.31
24,000	lbs	681.60	631.48	581.36	531.25	481.13	431.01	380.89	330.78	280.66	230.54	180.42	120.28	80.19
(37,800)	kg	309.17	286.44	263.71	240.97	218.24	195.51	172.77	150.04	127.31	104.57	81.84	54.56	36.37
28,000	lbs	795.20	736.73	678.26	619.79	561.32	502.85	444.38	385.91	327.44	268.96	210.49	140.33	93.55
(37,800)	kg	360.70	334.18	307.66	281.14	254.61	228.09	201.57	175.05	148.52	122.00	95.48	63.65	42.44
30,000	lbs	852.00	789.35	726.71	664.06	601.41	538.76	476.12	413.47	350.82	288.18	225.53	150.35	100.24
(37,800)	kg	386.47	358.05	329.63	301.22	272.80	244.38	215.97	187.55	159.13	130.72	102.30	68.20	45.47

Approximate Pounds (lbs) Kilograms (kgs) of Stabilizer to obtain 50 ppm

Cyanuric Acid Level - 0-40 ppm	Pool/Spa Size US Gallons (Litres)					
	10,000 Gal (38,000 L)	15,000 Gal (57,000 L)	20,000 Gal (76,000 L)	25,000 Gal (95,000 L)	30,000 Gal (114,000 L)	35,000 gal (132,000 L)
0 ppm	4.2 lbs (1.9 kgs)	6.3 lbs (2.9 kgs)	8.4 lbs (3.8 kgs)	10.5 lbs (4.8 kgs)	12.6 lbs (5.7 kgs)	14.8 lbs (6.7 kgs)
10 ppm	3.4 lbs (1.5 kgs)	5.1 lbs (2.3 kgs)	6.7 lbs (3.1 kgs)	8.4 lbs (3.8 kgs)	10.1 lbs (4.6 kgs)	11.8 lbs (5.4 kgs)
20 ppm	2.5 lbs (1.1 kgs)	3.8 lbs (1.7 kgs)	5.1 lbs (2.3 kgs)	6.3 lbs (2.9 kgs)	7.6 lbs (3.4 kgs)	8.9 lbs (4.0 kgs)
30 ppm	1.7 lbs (0.8 kgs)	2.5 lbs (1.2 kgs)	3.4 lbs (1.5 kgs)	4.2 lbs (1.9 kgs)	5.1 lbs (2.3 kgs)	5.9 lbs (2.7 kgs)
40 ppm	0.8 lbs (0.4 kgs)	1.3 lbs (0.6 kgs)	1.7 lbs (0.8 kgs)	2.1 lbs (1.0 kgs)	2.5 lbs (1.2 kgs)	3.0 lbs (1.3 kgs)

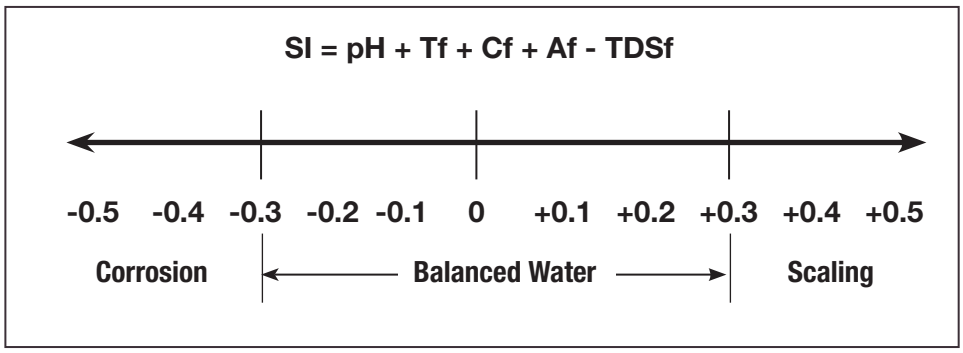
Langelier Saturation Index Factor Formula and Factor Chart

Langelier Saturation Index Factor Formula:

(pH) + (Temperature ºF factor) + (Calcium Hardness factor) + [(Total Alkalinity ppm) - (CYA ppm x correction factor @ current pH)] - (TDS factor) = LSI

Note: Change -12.1 to -12.2 if total dissolved solids (TDS) is measured at 1,000 ppm or greater.

Langelier Saturation Index Factors Chart



Langelier Saturation Index Factor Chart

Total Carbonate Alkalinity		Temperature			Calcium Hardness	
ppm	AF	F°	C°	TF	ppm	CHF
25	1.4	32	0.0	32	25	1.0
50	1.7	37	0.1	37	50	1.3
75	1.9	46	0.2	46	75	1.5
100	2.0	53	0.3	53	100	1.6
125	2.1	60	0.4	60	125	1.7
150	2.2	66	0.5	66	150	1.8
200	2.3	76	0.6	76	200	1.9
250	2.4	84	0.7	84	250	2.0
300	2.5	94	0.8	94	300	2.1
400	2.6	105	0.9	105	400	2.2
800	2.9				800	2.5

Langelier Saturation Index Factor Chart

Approximate amount (LBS) of stabilizer (Cyanuric Acid) to obtain 40 ppm in pool water

Current Cyanuric Acid Level (ppm)	10.000 GL (38,000 L)	12.000 GL (45,425 L)	14.000 GL (53,000 L)	16.000 GL (60,000 L)
0	3.25 (1,47 kg)	3.90 (1,77 kg)	4.55 (2,6 kg)	5.20 (1.47 kg)
10	2.43 (1,10 kg)	2.92 (1,32 kg)	3.40 (1,54 kg)	3.89 (1.76 kg)
20	1.62 (0,73 kg)	1.94 (0,88 kg)	2.27 (1,03 kg)	2.59 (1.17 kg)

Current Cyanuric Acid Level (ppm)	18.000 GL (68,137 L)	20.000 GL (76,000 L)	22.000 GL (83,300 L)	24.000 GL (90,850 L)
0	5.85 (2,65 kg)	6.50 (2,94 kg)	7.15 (1,47 kg)	7.80 (3.53 kg)
10	4.37 (1,98 kg)	4.86 (2,20 kg)	5.35 (2,42 kg)	5.83 (2.42 kg)
20	2.92 (1,32 kg)	3.24 (1,47 kg)	3.56 (1,61 kg)	3.89 (1.76 kg)

Current Cyanuric Acid Level (ppm)	26.000 GL (98,421 L)	28.000 GL (106,000 L)	30.000 GL (134,000 L)	40.000 GL (151.461 L)
0	8.45 (3,83 kg)	9.10 (4,12 kg)	9.75 (4,42 kg)	10.61 (5.27 kg)
10	6.32 (2,85 kg)	6.80 (3,08 kg)	7.29 (3,30 kg)	8.25 (3.39 kg)
20	4.21 (1,91 kg)	4.54 (2,05 kg)	4.85 (2,20 kg)	5.34 (3.15 kg)

Current Cyanuric Acid Level (ppm)	60.000 GL (227,124 L)
0	11.75 (6,42 kg)
10	9.20 (4,20 kg)
20	6.15 (4,30 kg)

Total Alkalinity	Calcium Hardness	Temperature
5 ppm = 0.7 (Af)	5 ppm = 0.9 (Cf)	32 °F = 0.0 (Tf)
25 ppm = 1.4 (Af)	25 ppm = 1.0 (Cf)	37 °F = 0.1 (Tf)
50 ppm = 1.7 (Af)	50 ppm = 1.3 (Cf)	46 °F = 0.2 (Tf)
75 ppm = 1.9 (Af)	75 ppm = 1.5 (Cf)	53 °F = 0.3 (Tf)
100 ppm = 2.0 (Af)	100 ppm =1.6 (Cf)	60 °F = 0.4 (Tf)
15 ppm = 2.2 (Af)	150 ppm =1.8 (Cf)	66 °F = 0.5 (Tf)
200 ppm = 2.3 (Af)	200 ppm =1.9 (Cf)	76 °F = 0.6 (Tf)
300 ppm = 2.5 (Af)	300 ppm = 2.1 (Cf)	84 °F = 0.7 (Tf)
400 ppm = 2.6 (Af)	400 ppm = 2.2 (Cf)	94 °F = 0.8 (Tf)
800 ppm = 2.9 (Af)	800 ppm = 2.5 (Cf)	105 °F = 0.9 (Tf)

Saturation index 0 is balanced.
Saturation index of +0.3 or -0.3 is ideal.

Installation

General Information

- Please read and understand all safety and warning information before operating the chlorinator.
- To stop the sun from removing chlorine, it is recommended to use a stabilizer in the swimming pool.
- Maintain your salt levels between 3000-3500 ppm for optimum performance.
- Decrease the output when the water temperature goes down to less than 59° F (15° C) to extend cell life as high chlorine levels are not needed in winter.
- Increase chlorine production when the temperature goes up again.

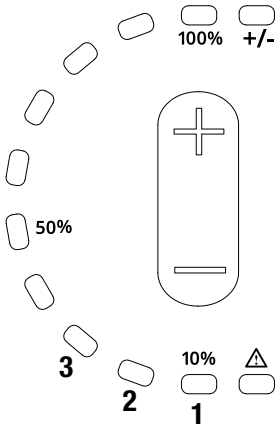
START UP (SUPER CHLORINATION) CHLORINATOR PROCEDURE (AFTER CONTROLLER INSTALLATION)

Before the Optimizer pool system start-up, and switching on the chlorinator, it is recommended to super chlorinate the pool/spa water in case a high demand from the starting up the chlorinator does not produce enough chlorine. Wait until the chlorine level is between 2.0 to 4.0 ppm. The chlorination system will provide proper chlorine levels for sanitation after a few hours.

1. Be sure the chlorinator cell plug connectors and the flow switch cable connector are connected to the controller.
2. Turn ON the Optimizer associated AUX Relay from the Optimizer app to energize the system.
3. Turn ON the cell switch.
4. Note: The pump must be primed and running in order for the flow switch to engage.
5. These LEDs come on at the same time:

   LED 7 goes GREEN indicating 7 hours cell reversing time (or LED 4 to 9 = 4 to 9 hours or LED 1,2&3 = 10 hours).

   LED 10 (100%) goes GREEN indication that flow switch mode is engaged.



6. Then two LEDs light up indicating your model size (1&5 = 15K, 2&5 = 25K, 4&10 = 40K, 6&10 = 60K)
7. Then the last saved output set point is displayed on the ten output LEDs. If set to 100% then LED 1 - 10 is GREEN.
8. The Forward or Reverse LED status will be displayed on the +/- LED.
9. Lastly after all is correct and running the Warning Indicator LED should be SOLID GREEN.

Note: Run the chlorinator for 6-10 hours per day in the summer and 3-6 hours per day in the winter.

Important Installation Information

WARNING: RISK OF ELECTRIC SHOCK! Only qualified, licensed personnel should install the I-Pure Salt Chlorinator to the Intermatic Optimizer Load Center or Power Center enclosures. A trained professional familiar with pool/spa and equipment must perform all pool/spa equipment installation, including pumps, lights and other wiring connections.

WARNING: POOL/SPA EQUIPMENT SAFETY. BEFORE WORKING ON POOL/SPA ELECTRICAL EQUIPMENT: To avoid dangerous or fatal electrical shock, turn all pumps OFF, disconnect the power at its source, and place a tag on the dedicated GFCI circuit breaker indicating the power is to remain OFF before working on electrical connections.

Calculate Pool Size - Gallons (Liters) of Water in Your Pool

- Rectangular Pools: Length x width (meters) x average depth x 7.5 (1000)
- Circular Pools: Diameter x diameter x average depth x 5.9 (785)
- Oval Pools: Length x width (meters) x average depth x 6.7 (893)
- Sloping Sides: Multiply total gallons by 0.85 (liters) = gallon (liter) capacity

Pool Preparation

Before operating the I-Pure Salt Chlorinator, please read the following:

Note: Check the salt levels in your pool before starting your unit.

CAUTION: Salt levels should ideally be 3000-3500 ppm. DO NOT EXCEED 4500 ppm. To achieve this salt level, using minerals you may need to add 20-30% more product to the pool water. Contact your local pool professional for further assistance.

Salt levels above 4500 ppm may overload the unit, cause excessive heat, and void your warranty. We recommend you lower the output by 10% for every 500 ppm over 4000 ppm. You could also drain your pool water to achieve the optimum output. Your electricity saving will be greater than the costs of the water loss.

For all new pool installations please seek advice from your pool builder or your local pool Professional before adding salt, as some new surfaces request no salt to be added when initially completed.

NEVER ADD SALT DIRECTLY TO THE SKIMMER BOX. This high concentration of salt will pass through your filtration, pump and other pool equipment.

GENERAL TIPS

CAUTION: Never use dry acid (sodium bisulfate) to adjust pH in arid geographic areas with excessive evaporation and minimal dilution of pool water with fresh water. A buildup of by products can damage the chlorinator.

The colder the water the lower your output but this does not mean you need more salt. There will always be less chlorine demand in colder water.

We recommend adding approximately 30 pounds (13.3 kg) of pool salt per 1,000 US gallons (3,785 L) of pool water. A 25,000 gallon (95, 000 L) new pool needs approximately 750 pounds (340 kg) of salt.

Salt should always be added to the shallow end of the pool and allowed to dissolve. Do not let the salt settle on the floor of the pool as it may cause damage to the surface. Use your pool brush to mix the salt into the water.

Running the pump will mix the water and help the salt to dissolve.

Only run the pump in the first 8-12 hours (ensure the cell is switched off) to allow the salt to dissolve.

CHECK IF THERE IS ENOUGH SALT IN THE POOL: Press the Increase Button (+) until all 10 LEDs are ON, then wait 5 seconds and if all 10 LEDs remain ON then there is enough salt. DO NOT ADD ANY MORE SALT.
Note: If only 9 are ON, then the salt level is at 90% of the required level.

Dummy Cell Installation

After a new pool construction has been completed, to prevent debris from entering the chlorinator cell it is recommended to install a Dummy Cell before installing the chlorinator cell in the pool hydraulics. After the pool system has flushed out the debris from the pipes, remove the Dummy Cell and install the chlorinator cell, as shown on page 27.

Pool Preparation (continued)

ADDING SALT TO THE POOL

NEW CONSTRUCTION POOL OR RESURFACED PLASTER POOL: Do not operate the chlorinator after newly poured or resurfaced pool plaster because the salt can damage the pool surface before it is cured. Please wait one month after the construction has allowed the plaster to cure. After that period add the required salt. The manufacturer's guidelines have specific pool requirements.

VINYL LINER POOL: Follow the manufacturer guidelines before adding salt.

1. Verify the salt level in pool water before adding salt to the pool water.
2. Pour the salt around the outer perimeter of the pool.
3. DO NOT add salt through the skimmer or surge tank.
4. Brush the pool bottom and allow water to circulate for 24 hours to dissolve salt completely.
5. After 24 hours, verify correct salt level reading by checking the LED indicators on the chlorinator and by a separate reliable test method.
6. Switch the power on to the chlorinator and set the sanitizer output level to the proper setting to maintain the appropriate free chlorine levels in the pool water (2.0 - 4.0 ppm, APSP recommended range).

Types of Salt to Use

The purer the salt, the better the life and performance of the chlorinator. Use salt that is at least 99.8% pure NaCl, sodium chloride. The preferred and recommended salt is an evaporated, granulated, food quality, non-iodized salt with no additives. Consult your pool professional/salt supplier.

- Avoid using salt with anti-caking agents (sodium ferrocyanide, also known as YPS or yellow prussiate of soda). Filling agents can cause some discoloration of fittings and surface finishes in pool.
- Water conditioning salt pellets are compressed forms of evaporated salt and may be used but will take longer to dissolve. Such pellets could damage pool plaster and other surfaces in and around the pool.
- Do not use calcium chloride or potassium chloride as a source of salt. (Use sodium chloride only).
- Do not use Rock salt (insoluble impurities mixed with the rock salt can shorten the life of the chlorinator).

Ideal Chemical Pool Water Balance

Free Chlorine: 2.0 - 4.0 ppm. Above 4.0 ppm may cause corrosion of metal components

Combined Chlorine (Chloramines): None (super chlorinate to remove all chloramines)

pH: 7.2 - 7.8 (USE MURIATIC ACID to lower pH and Soda Ash to raise pH.)

Cyanuric Acid: 30 - 50 ppm

Total Alkalinity: 80 - 120 ppm

Calcium Hardness: 200 - 400 ppm

TDS (includes salt): Typically 300 - 500 ppm greater than the salt reading (i.e 3500 - 4000 ppm)

Salt: 3000 - 3500 ppm (high salt warning comes on at 5250 ppm)

Metals (Copper, Iron, Manganese): None

Nitrates: None

Phosphates: Less than 125 ppb

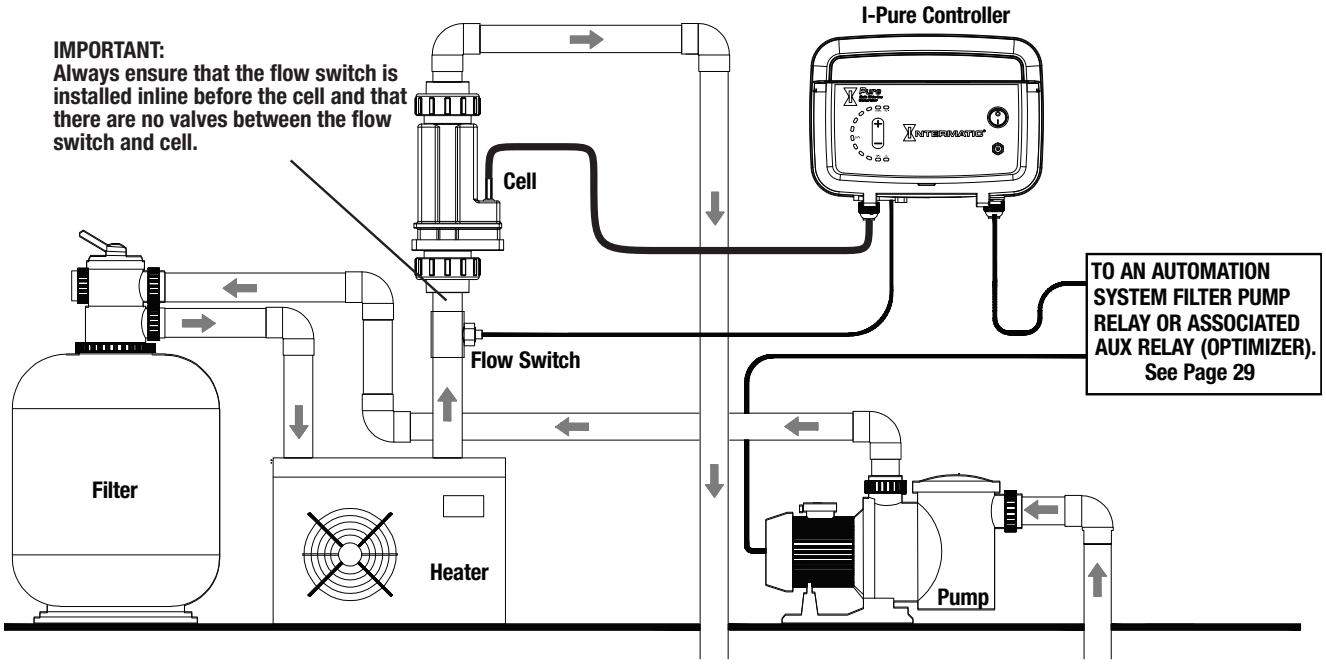
Saturation Index: -0.3 to 0.3 (0.0 is best)

Controller and Cell Installation

IMPORTANT: The Cell must be installed after the filter, gas heater, solar heating, or heat pump.

⚠ WARNING: It is NOT recommended to use valves on the inlet or outlet of the cell housing. If you do use a valve, then it is important to ensure the valve cannot deadhead (lock closed) while the pump is running. It is the installer's responsibility to ensure some form of flow control is installed in this instance and it disables the pump and chlorinator. ONLY plumb the flow switch just before the cell with nothing in between the two. Do not use any valves or water diversion between the flow switch and the cell.

- ALWAYS ensure that pipework and equipment do not allow gases generated from the cell to collect and build up in any part of the installation.
- DO NOT apply priming fluid to the cell Housing, it is not needed and may react with the plastic.



Controller and Cell Plumbing Diagram

Mounting the Controller

Mounting the Controller

⚠ WARNING

TO PREVENT ELECTROCUTION, INSTALL THE I-PURE SALT CHLORINATOR CONTROLLER AT LEAST 6 FT. (1.8M) FROM INSIDE WALL OF POOL OR SPA. THE CHLORINATOR INSTALLATION MUST COMPLY WITH STATE AND LOCAL CODES AND/OR WITH THE NATIONAL ELECTRICAL CODE (NEC).

The controller should be installed in a well-ventilated position away from sunlight and rain to prolong life and at least 3.2 ft (1 m) above ground to prevent run-off water entry.

Ensure that the controller is not stored near chemicals, fertilizers or in a closed unventilated shed with similar products as the fumes will cause excessive corrosion and damage to the electronics of the controller and may void warranty.

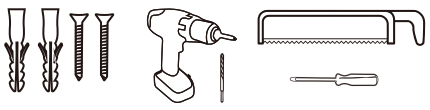
When mounting the controller on a post it is recommended to install a flat panel the same size to act as a waterproof backing plate.

Mount the controller with the mounting bracket, Green Plugs and screws provided.

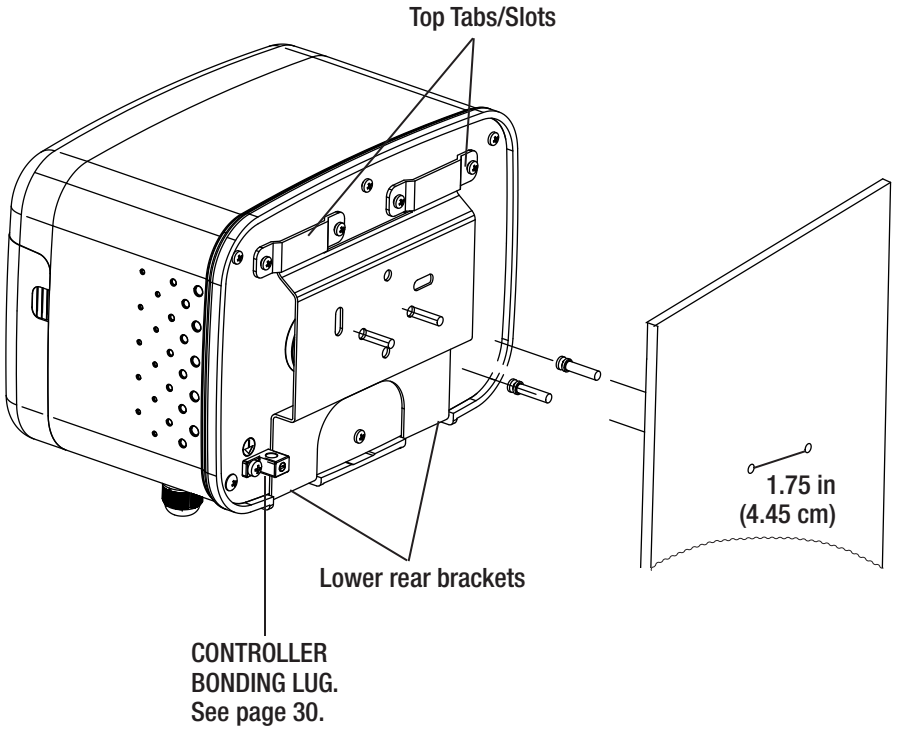
The controller should be mounted no further than 5 ft (1.5 m) from the chlorinator cell for ease of operation. 7.2 ft (2.2 m) for this cell (the cable is 8.2 ft (2.5 m) long. Recommended length is 7.2 ft (2.2 m).

Mount the controller to the mounting bracket as follows:

1. Mount the controller near the Optimizer Load Center or Power Center in a well-ventilated location, not in direct sunlight and rain at least 3.2 ft (1 m) above the ground to prevent run-off water entry.
2. Place the controller mounting bracket against the flat surface. Using the mounting bracket as a template, drill two holes 1.57 in (40 mm) apart.
3. Secure the mounting bracket to the flat surface with the two screws (provided).
4. Align and mount the two (2) upper rear controller slots onto the two (2) mounting bracket tabs.
5. Seat the Controller onto the lower brackets to secure in place.



Tools for mounting the controller



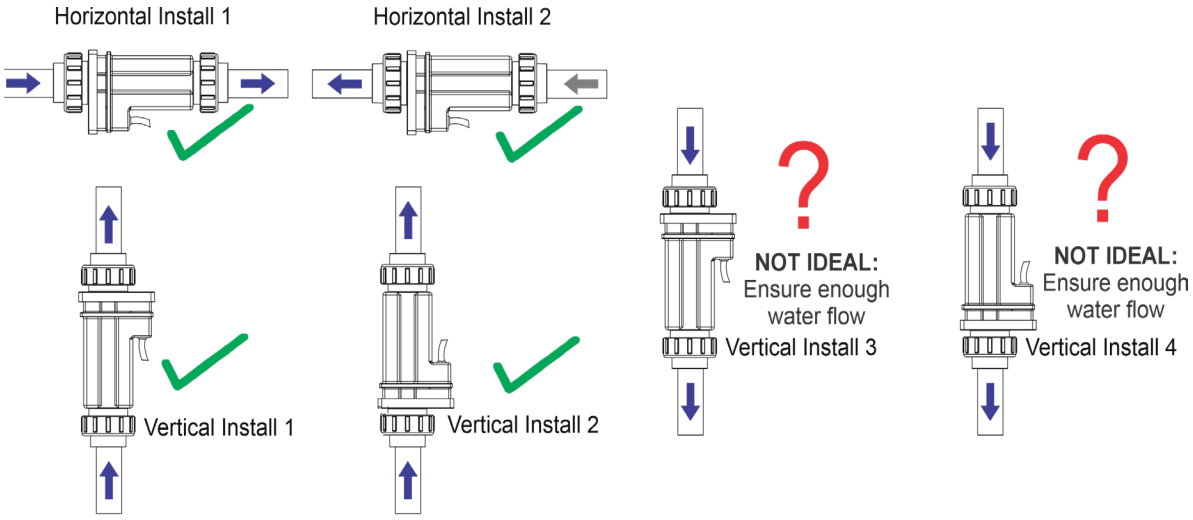
Cell Installation

Cell Installation

To install the I-Pure Salt Chlorinator cell:

CAUTION

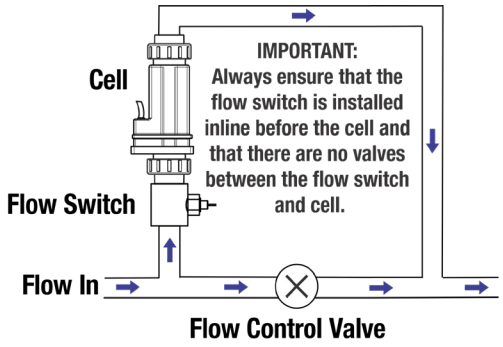
1. Connect the I-Pure Salt Chlorinator cell housing horizontally or vertically in the return line to the pool using high pressure PVC glue. The direction of water flow through the cell housing is not critical.



Cell Installation Orientation

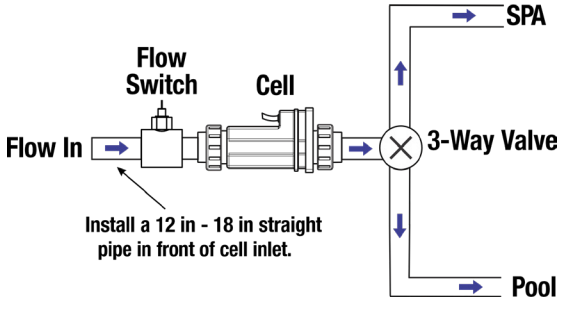
Loop Plumbing

Loop plumbing (includes a Flow Control Valve to maintain the flow rate through the cell) is only applicable when the pool flow rate is over 105 gpm. The chlorinator cell operates with water flow rates from 20 gallons per minute (gpm) up to 105 gpm.



Plumbing the Chlorinator Cell

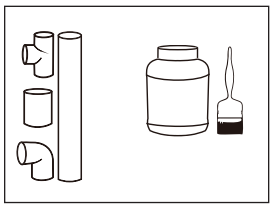
Install the chlorinator cell AFTER the filter and heater. The cell should be at least three (3) feet (91.4 cm) away from the heater outlet. For a pool/spa combination system, to avoid creating a gas trap in the pipes, install the cell BEFORE the pool/spa return valve to provide proper



Cell Installation (Continued)

Cell Installation

To install the Cell Nut Couplings:



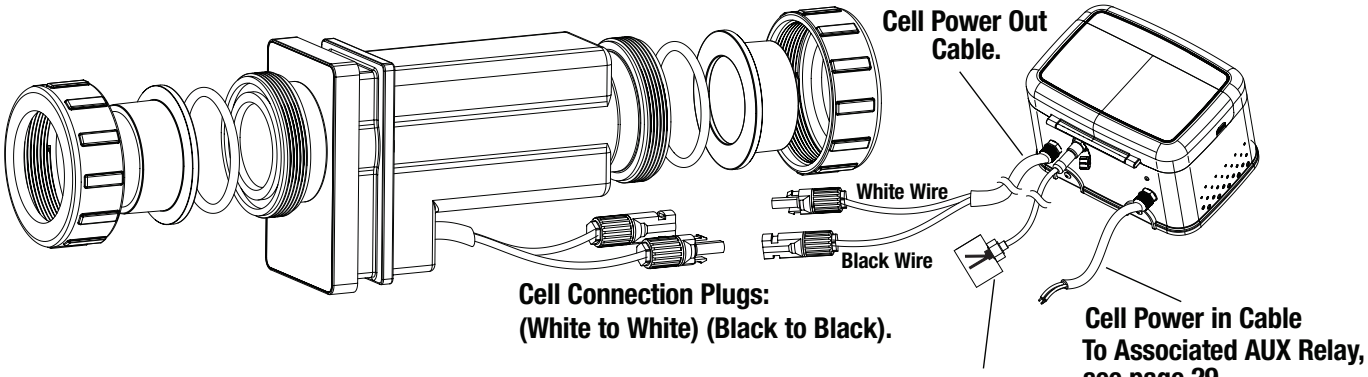
1. Mount both ends of the cell using the nut couplings to the return pipe. Allow the glue to dry.
2. Be sure the locking coupling nuts are firmly tightened by hand ONLY (DO NOT use a tool to tighten the coupling nuts). Note: The Schedule 80 locking coupling nuts have a maximum pressure 75 psi at 70° F (21° C).

   IMPORTANT: Provide at least 12”-18” (3.7 - 5.4 m) of straight pipe in front of the cell inlet.
3. Verify the O-ring is clean, greased with silicone grease (DO NOT use petroleum-based jelly) and securely seated in the cell housing.

Connect the Cell cable to the Controller:

1. Connect the Cell cable plugs to the Cell Power Out cable plugs as shown below. Note: Connect the White to White wire and Black to Black wire). The plugs are keyed to the each matching plug.
2. After the installation has been completed, switch on the pool filter pump and visually inspect the cell for leaks around the cell housing and nut couplings.

CAUTION. To avoid damage to the I-Pure Salt Chlorinator and the Optimizer system, CHECK THAT ALL CELL PLUGS are connected to the Controller Power Out cable plugs before powering up the I-Pure Controller..



Cell with Nut Couplings, Cell plugs and Controller cable

Wiring the Controller to an Automation System Relay

⚠ WARNING: IF THE CHLORINATOR UNIT IS NOT CONNECTED CORRECTLY TO THE INTERMATIC OPTIMIZER SYSTEM, HAZARDOUS CHLORINE GAS CAN BUILDUP AND CAUSE PERSONAL INJURY.

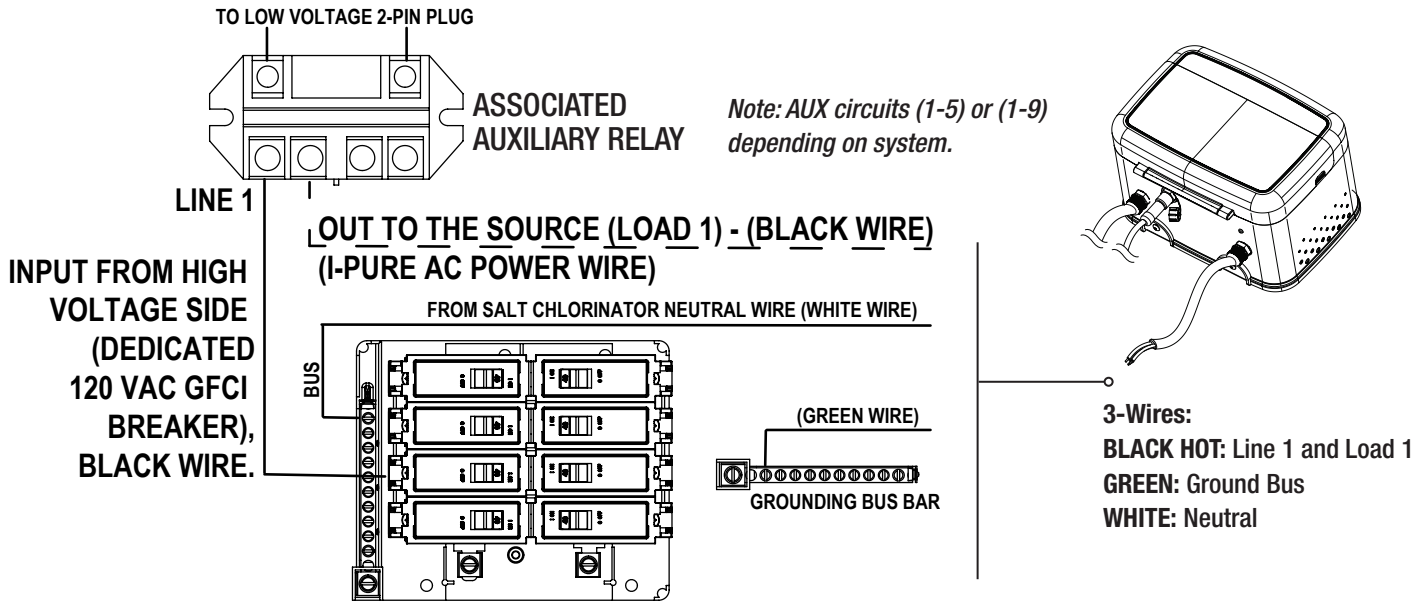
IMPORTANT: For third party automation systems, the controller power wires MUST BE connected to the LOAD SIDE of the filter pump relay.

For the Optimizer system, the controller power wires MUST BE connected to the LOAD SIDE of the ASSOCIATED AUX relay. This ensures that the chlorinator cell receives power ONLY WHEN THE FILTER PUMP IS ON.

See illustration below.

Connect the chlorinator controller AC power wires to the Optimizer Load Center Associated AUX relay as follows:

1. ACCESS THE OPTIMIZER LOAD CENTER BREAKER BASE AND POWER RELAYS: To access the Optimizer Load Center and Power Center, see pages 32 and 33 for details.
2. Route the chlorinator controller AC power wires through a grommet located on the bottom of the Load Center to the circuit breaker base and power auxiliary relays.
3. Connect the chlorinator controller AC power wires to the LOAD SIDE of the associated AUX relay as shown below.



Chlorinator controller AC Power wires connected to the Optimizer Load Center Breaker Base and Associated AUX relay.

NOTE: POWER CENTER WITHOUT CIRCUIT BREAKER BASE: Connect the chlorinator controller AC power wires to Power Center Associated AUX relay as described above, with exception of an external GFCI which is located outside the Power Center. Wire the chlorinator AC power wires from the GFCI to the Optimizer Associated AUX relay.

Chlorinator Controller Ground Bonding Lug

⚠ WARNING

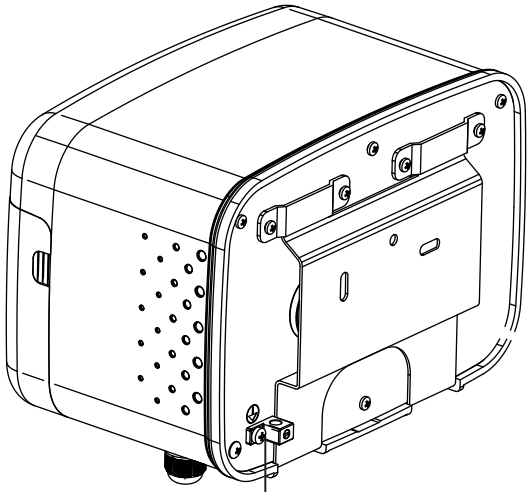
The chlorinator controller MUST be grounded to reduce voltage gradients in and around the pool location. The chlorinator Controller and the pool system equipment MUST be electrically grounded and BONDED together using a solid copper conductor (8 AWG or larger) connected to the controller bonding terminal lug located on the rear of the controller.

Risk of electrical shock and damage to the controller can occur if the controller is not properly bonded as described above.

Be sure all wiring comply with all applicable state and local codes. The installed controller, must be electrically grounded and BONDED together and comply with state and local codes and/or with the National Electrical Code (NEC).

Connect a copper conductor (8AWG or larger) to the chlorinator controller bonding lug located on the rear of the controller chassis. Connect the other end of the copper wire to the pool rebar or an in-ground gas pipe. Note: The copper wire can be one continuous piece or joined together with separate pieces of wire.

- **GROUNDING**: Bonding is NOT the same as grounding. Grounding is for equipment and fire protection, it is designed to provide a path for short circuit currents high enough so that a short in the circuit breaker in the main panel will trip.
- **BONDING and GFCI**: Is for personnel protection and designed to keep the pool equipment voltages level.
- Testing and bonding of the pool system should be done annually during a normal maintenance and service.



CHLORINATOR CONTROLLER
GROUND BONDING LUG

Flow Switch Installation and Replacement

Installing the flow switch:

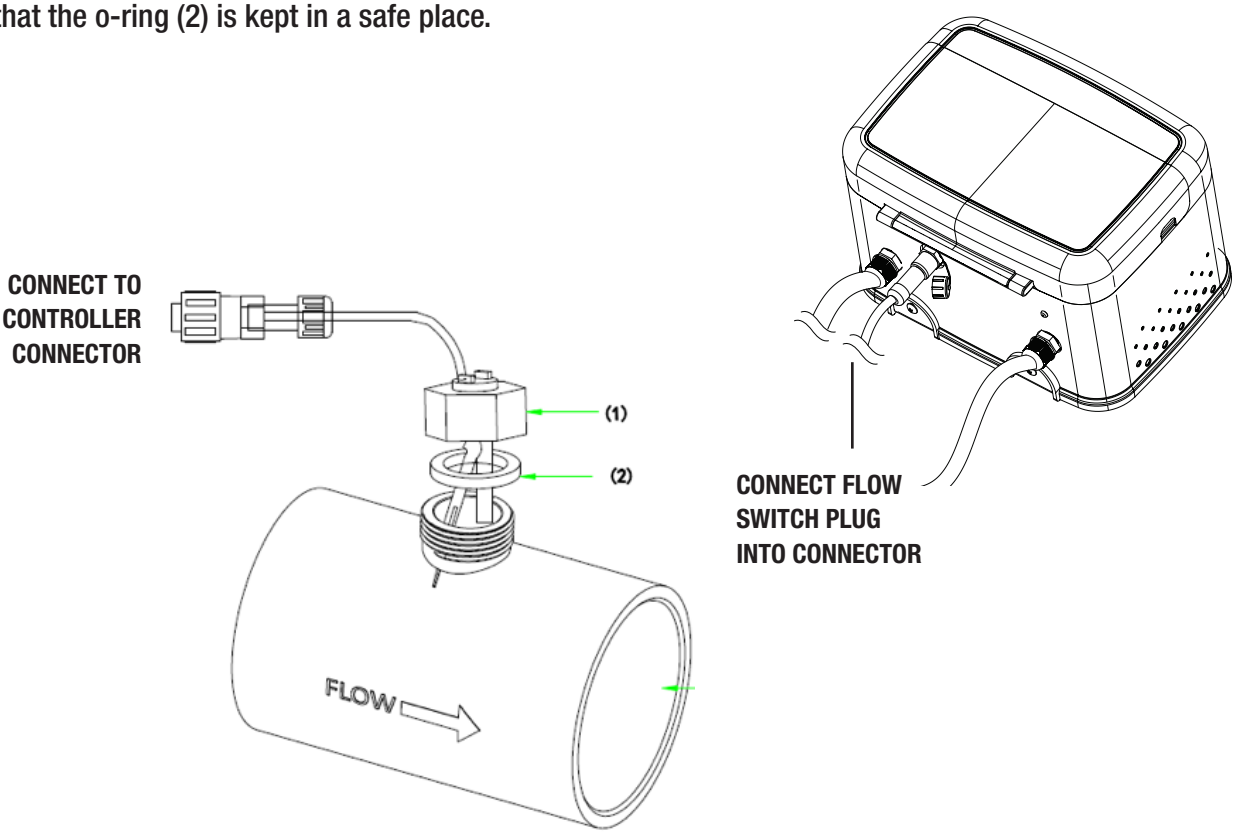
Note: Install the Flow Switch and attached cable in the RETURN PIPE, between the heater and filter, see page 25.

ONLY plumb the flow switch immediately before the cell with nothing in between the two. Do not use any valves or water diversion between the flow switch and the cell.

1. Install the acrylic tee fitting in the return pipe.
2. Ensure that the flow switch o-ring (2) is fitted to the bottom of the flow switch assembly
3. Mount the flow switch assembly into the acrylic tee.
4. Screw the flow switch cap (1) onto the acrylic tee. Do not over-tighten the cap.
5. Connect the provided flow switch cable plug to the flow switch connector at the bottom of the controller.

Removing the Flow Switch:

1. Unscrew the flow switch cap (1) from the acrylic tee.
2. Disconnect the flow switch cable plug from the connector at the bottom of the controller.
3. Remove the flow switch assembly from the clear acrylic tee.
4. Ensure that the o-ring (2) is kept in a safe place.



Flow Switch Water Sensor with attached cable

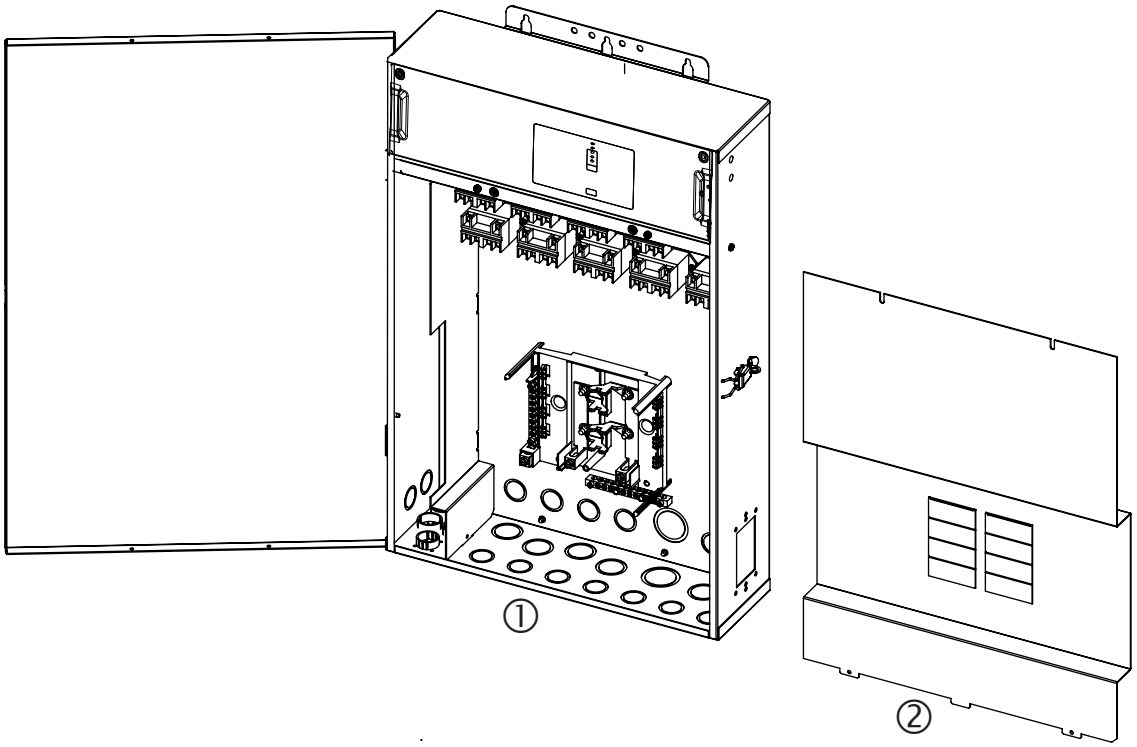
Load Center: Accessing the High Voltage Compartment

To access the Intermatic Optimizer Load Center breaker base and power relays in the high voltage compartment:

1. Turn OFF the main AC power to the Load Center.
2. Unlatch the front door. Open the front door.

> ⚠ **WARNING ELECTROCUTION HAZARD. To avoid personal injury and/or equipment damage to the Optimizer system and the I-Pure Salt Chlorinator, be sure to disconnect AC POWER to the Optimizer system enclosure before connecting the I-Pure Salt Chlorinator to the Optimizer system.**

3. Remove the two screws securing the HIGH VOLTAGE PANEL. Set the panel aside.
4. When finished, replace the HIGH VOLTAGE PANEL. Secure it in place with the two retaining screws. Close the front door and latch.



① High voltage cover panel enclosure slots (3)

② High voltage cover panel enclosure tabs (3)

Intermatic Optimizer Load Center (High Voltage Cover Panel removed)

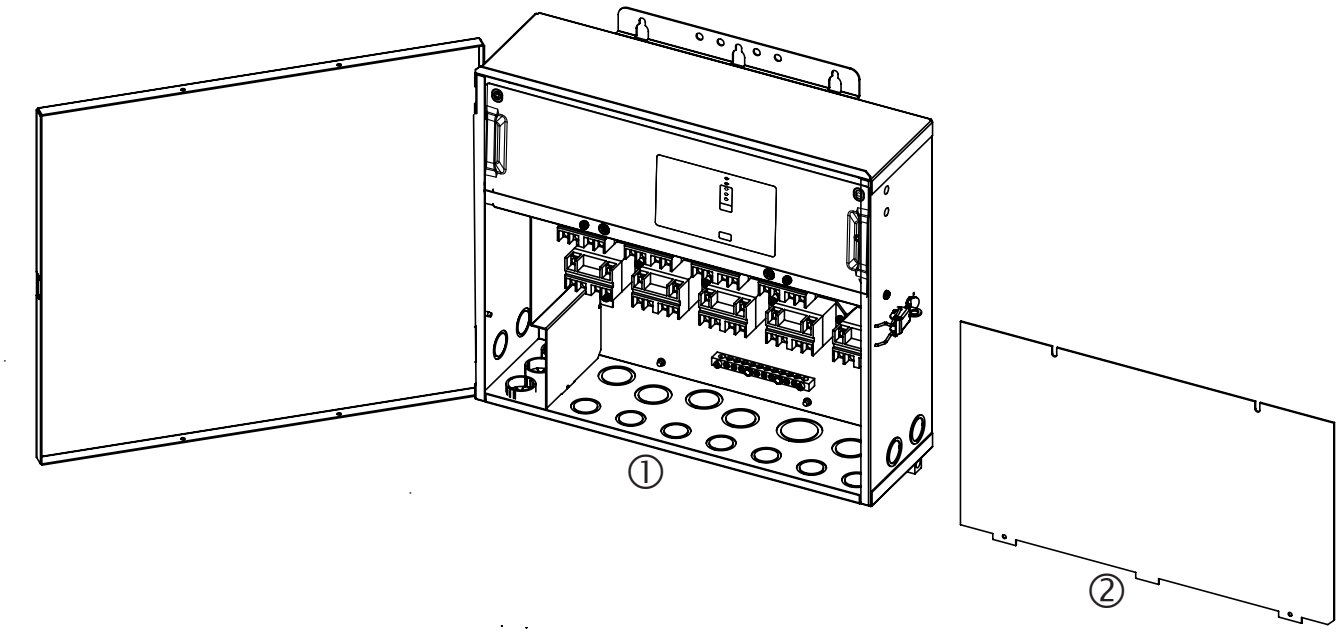
Power Center: Accessing the High Voltage Compartment

To access the Intermatic Optimizer Power Center and power relays in the high voltage compartment:

1. Turn OFF the main AC power to the Power Center.
2. Unlatch the front door. Open the front door.

> ⚠ **WARNING ELECTROCUTION HAZARD. To avoid personal injury and/or equipment damage to the Optimizer system and the I-Pure Salt Chlorinator, be sure to disconnect AC POWER to the Optimizer system enclosure before connecting the I-Pure Salt Chlorinator to the Optimizer system.**

3. Remove the two screws securing the HIGH VOLTAGE PANEL. Set the panel aside.
4. When finished, replace the HIGH VOLTAGE PANEL. Secure it in place with the two retaining screws. Close the front door and latch.



① High voltage cover panel enclosure slots (3)

② High voltage cover panel enclosure tabs (3)

Intermatic Optimizer Power Center (High Voltage Cover Panel removed)

Troubleshooting

If the chlorinator is not performing or operating as normal, the following describes possible errors, causes and remedy tips.

Fault Indication	Potential Cause	Remedy
No operation at all – no lights.	AC power wires not connected to power source. automation AUX relay not turned on.	Check if AC power wires are connected into the power source. Check that the automation AUX relay is turned on.
Cell power switch light on, cell direction LED (+/-) is solid GREEN or flashing GREEN, Warning LED is GREEN but there is no output on LED 10% to 100%.	The cell is not connected.	Check that cell connector plugs are firmly connected.
	Output set too low.	Adjust output with the Output (+) button and the lights should increase.
	Excessive build-up in the Cell.	See the cleaning of the cell electrode (see pages 15 and 16).
	Low salt level.	Check salt level (see page 13 and 23).
	The cell could be damaged or at the end of its life.	Damaged coating will reduce cell life and reduce output. If all conditions are correct, then cell could be at the end of its life.
	Faulty control PCB or main PCB in the controller.	Contact Intermatic Technical Support (see the last page of the manual).
Warning LED is blinking RED - Water Flow Fault.	Low or no water flow.	Ensure sufficient water flows through the chlorinator cell. Check that the pump is on and running. Look for an air pocket – perform a backwash if needed. Check skimmer and pump baskets are clean and securely tightened. Check for suction leaks. Seek advice from a pool professional for any of the above.
	The flow switch is not connected.	Check that the flow switch 5-pin connector plug is connected to the bottom of the controller.
Low output reading.	Output set too low.	Adjust output with the (+) button and output lights should increase.
	Low salt level.	Check salt level (see pages 13 and 23).
	A build-up of calcium on the cell.	Calcium acts as an insulator and needs to be removed. See Cleaning of Cell Electrode (see pages 15 and 16).
	The water temperature is low.	Winter water temperatures can be very low. For every 2°F (1°C) below 82.4°F (28°C) the output can drop by approximately 2%.
	Insufficient water flow through the cell.	Check the cell and ensure a full chamber of water is passing over the cell. You may need to backwash your filter.
	The cell could be damaged or at the end of its life.	Damaged coating will reduce cell life and reduce output. If all conditions are correct, then the cell could be at the end of its life.
	Level low in one direction but good in the other direction.	The cell may need cleaning (see pages 15 and 16) or could have reached the end of its life in one direction.

Troubleshooting (Continued)

If the chlorinator is not performing or operating as normal, the following describes possible errors, causes and remedy tips.

Fault Indication	Potential Cause	Remedy
Warning LED is solid RED – Internal Temperature Trip.	The salt level may be too high.	Check salt guide (see pages 13 and 23), the fault will reset once the transformer cools down.
Warning LED is blinking ORANGE – High Salt Warning.	The salt level is too high.	Check the salt guide (see pages 13 and 23).
Warning LED is solid ORANGE – Low Salt Warning.	The salt level is too low.	Check the salt guide (see pages 13 and 23).
Direction LED (+/-) stays on solid GREEN or flashing GREEN, even when turning cell switch on and off (i.e. The Controller only works in one direction).	Faulty Main Controller PCB or PCB Relay.	See changing polarity (see page 12). If the unit still only operates in one direction, contact Intermatic Technical Support (see the last page of the manual).
The pool filter pump is not functioning or remains on.	This is not a chlorinator issue. Check the automation AUX Relay connection.	Check the automation AUX Relay connection.
Cell not cleaning, excessively high calcium build-up on cell or cell controller direction LED (+/-) not changing direction.	Excessively high calcium, reversing or change of direction time too high or faulty main controller PCB.	1. See the calcium hardness test (see page 14) and adjust the water accordingly. 2. Manually try reverse direction (see page 12) – temporary change of polarity). If this does not work then it could indicate a faulty main controller PCB or PCB relay. Contact Intermatic Technical Support (see the last page of the manual). 3. Decrease the cell cleaning time (see page 16).
Low or no chlorine output.	Unit not working correctly.	Go through troubleshooting from no output led on (see page 34).
	Unit not set correctly.	Check the output settings (see page 11).
	Excessive calcium build-up on the cell plates.	Calcium acts as an insulator and needs to be removed. See cleaning of cell electrode.
	Salt level is too low.	Check salt guide (see pages 13 and 23).
	pH is too high.	Check ph guide (see page 14).
	Stabilizer is too low.	Check stabilizer (see page 14).
	Cell at the end of its life.	If full output is not reached, then it could be a failing cell.

Replacement Parts List and Accessories

SCG15K Intermatic SCG15K 0.75 lbs/24 hr (14.2 g/hr) RP Chlorinator LED + Flow Switch

SCG25K Intermatic SCG25K 1.15 lbs/24 hr (21.8 g/hr) RP Chlorinator LED + Flow Switch

SCG40K Intermatic SCG40K 1.65 lbs/24 hr (31.2 g/hr) RP Chlorinator LED + Flow Switch

SCG60K Intermatic SCG60K 2.07 lbs/24 hr (39.2 g/hr) RP Chlorinator LED + Flow Switch

Replacement Parts

SCGCELL15K Replacement Cell SCG15K RP CELL - 13 Plates, 2.1 " (46 mm) - 0.75 lbs/24 hr (14.2 g/hr)

SCGCELL25K Replacement Cell SCG25K RP CELL - 13 Plates, 2.1 " (54 mm) - 1.15 lbs/24 hr (21.8 g/hr)

SCGCELL40K Replacement Cell SCG40K RP CELL - 13 Plates, 3.1 " (78 mm) - 1.65 lbs/24 hr (31.2 g/hr)

SCGCELL60K Replacement Cell SCG60K RP CELL - 13 Plates, 2.1 " (102 mm) - 2.07 lbs/24 hr (39.2 g/hr)

SCGP15K-60KPP Intermatic SCG25K-40 K LED Model - I-Pure Salt Controller ONLY

SCG1490 Cell Cleaning Cap Kit - Intermatic SCG

SCGCELLDBH Intermatic SCG Dummy Bypass Cell Housing

SCG1466 Intermatic SCG Cell Housing Nut - WHITE

SCG1467 Intermatic SCG Cell Adaptor Tail - WHITE

SCG1200-1 Complete Set - Flow Switch R1P2 (cable, nut, connector plug) with faucet tee and silicon seal

SCG1200-3M Flow Switch - R1P2 with 5 pin connector plug & 10 ft (3m) cable and nut

Chlorinator Specifications

Model 15K:

INPUT: 110-230 VAC, 1.2A-0.6 A, 50/60 Hz

OUTPUT: 25 VDC, 2.4 A

Model 25K:

INPUT: 110-230 VAC, 1.4A-0.7 A, 50/60 Hz

OUTPUT: 25 VDC, 3.6 A

Model 40K:

INPUT: 110-230 VAC, 1.7A-0.85 A, 50/60 Hz

OUTPUT: 25 VDC, 5.2 A

Model 60K:

INPUT: 110-230 VAC, 2.0A-1.0 A, 50/60 Hz

OUTPUT: 25 VDC, 6.5 A

Chlorinator Start-up and Model Selection

There are four I-Pure Salt Chlorinator models: 15K, 25K, 40K and 60K ("K" = thousand, indicates the pool water capacity in US gallons). The I-Pure Chlorinator controller and cell have been factory set to the correct cell size. However, to replace the cell with a larger capacity cell to produce more chlorine (i.e. Replace your 25,000 gallon cell with a 40,000 gallon cell) the following information describes how to check and change the chlorinator model size.

How to check various settings during the I-Pure Salt Chlorinator start up:

1. Turn ON the chlorinator controller. The unit will indicate the following information in three quick cycles (lasting about 1 second each):

   Cycle 1: This indicates the reversing hours and Flow Switch mode, see Figure 1: Reversing hours: the LED 70% is GREEN (7 hours reversing time is set) and the LED 100% is GREEN (Flow Switch mode is activated).

   Cycle 2: This indicates the model size, see Figure 2: the 20% and 50% LED are GREEN indicating that the Controller is set to 25K model.

   For 15K model: LED 10% and LED 50% is GREEN.

   For 25K model: LED 20% and LED 50% is GREEN.

   For 40K model: LED 40% and LED 100% is GREEN.

   For 60K model: LED 60% and LED 100% is GREEN.

   Cycle 3: This indicates the current output set point, see Figure 3: the Warning LED is GREEN (if all conditions are good), the cell direction LED (+/-) will be solid GREEN or blinking GREEN, the LED 10% to 100% will all be GREEN if a set point of 100% was selected, then the chlorinator will go to normal operation mode.

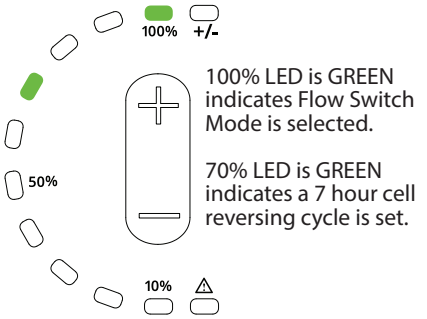


Figure 1. First display indicates the above.

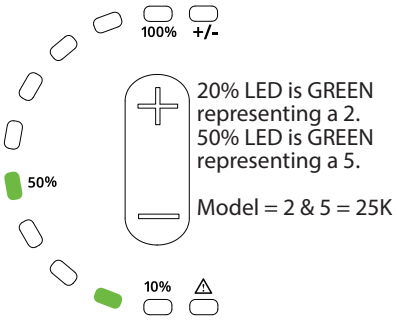


Figure 2. Second display indicates the above.

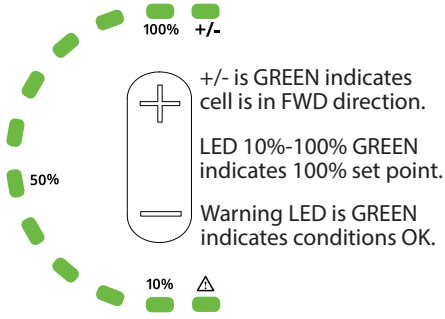


Figure 3. Third display indicates the above.

How to change the chlorinator model size:

1. Press and hold [+] and [-] buttons together then turn power ON to the chlorinator.
2. Press the [+] button to increase the model size and press the [-] button to decrease the model size.

   Following combination represents following model size.

   LED (10% & 50%) = Model 15K

   LED (20% & 50%) = Model 25K (Default Model Size)

   LED (40% & 100%) = Model 40K

   LED (60% & 100%) = Model 60K

3. Turn the unit OFF and back ON to save the model size.

Limited Warranty

LIMITED WARRANTY

This warranty service is available by either (a) returning the product to the point of purchase or (b) by completing a warranty claim online at www.intermatic.com. You are required to provide a receipt, the model number and/or serial number when exercising this limited warranty.

This warranty is made by: Intermatic Incorporated, 1950 Innovation Way, Suite 300, Libertyville, IL 60048.
For warranty details and service go to: http://www.Intermatic.com or call 815-675-7000.

Notes

Technical Support
8:00 AM - 4:30 PM CST [Monday-Friday]
815.675.7000
email: techsupport@intermatic.com
www.intermatic.com

Scan this QR code for more information, or visit www.intermatic.com

Customer Service: **815.675.7000**

email: techsupport@intermatic.com

www.Intermatic.com

Please retain this manual for future use.

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