



Crystal Pure Salt System



Installation and Operation Manual

Useful Resources

Congratulations on purchasing your new Crystal Pure Salt System. Check out the following Videos and How to Guides, which you might find helpful during your installation of your Crystal Pure Salt Chlorine Generator.

How to Install a Crystal Pure Salt Chlorine Generator:

<http://www.inyopools.com/HowToPage/how-to-install-a-crystal-pure-salt-chlorine-generator.aspx>

How to Operate a Crystal Pure Salt Chlorine Generator:

<http://www.inyopools.com/HowToPage/how-to-operate-a-crystal-pure-salt-chlorine-generator.aspx>

How to Wire a Crystal Pure Salt Chlorine Generator for 115V:

<http://www.inyopools.com/HowToPage/how-to-wire-a-crystal-pure-salt-system-for-115v.aspx>

How to Program a Crystal Pure Salt Chlorine Generator:

<http://www.inyopools.com/HowToPage/how-to-program-a-crystal-pure-salt-system.aspx>

How to Maintain a Salt Pool:

http://www.inyopools.com/HowToPage/how_to_maintain_a_salt_water_pool.aspx

How to Add Salt to a Pool:

http://www.inyopools.com/HowToPage/how_to_add_salt_to_your_pool.aspx

IMPORTANT SAFETY INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions should always be exercised, including the following:

WARNING:Risk of Electric Shock.

- All electrical wiring **MUST** be in conformance with all applicable local codes, regulations, and the National Electric Code ® (NEC®).
- To reduce the risk of injury, do not permit children to use this product.
- Higher temperatures may require higher chlorine output to maintain proper free available chlorine residuals. The actual amount of chlorination required by your pool can change, and varies according factors not limited to bather load, rain, temperature, dirt, debris, and chemical balance.

Always turn unit off when operating any plumbing control valves such as for backwashing, water exhaust, or during operation of spa or water features if operation restricts water flow to the cell. A build-up of flammable gases will result in hazardous conditions.

- When install the unit, ensure that materials and parts used in the pool are compatible with the use of chlorinated water and salt. Avoid high salt levels (above the recommended range).
- Ensure that the chlorine generator operates only when the circulation pump is operating. When installed with a pool equipment timer, the Control Module must be to the load side of the timer clock.
- If additional chlorine is required (due to hot weather), use Sodium Hypochlorite to maintain an appropriate chlorine residual in the water.
- Proper pool chemistry must be maintained at all times.
- Please use the green ground screw inside of the control box and connect it to the ground wire in order to minimize the risk of electric shock. Use the correct copper wire size and make sure the wire is connected to an electrical service ground.
- The control box is also equipped with one bonding connector located at the bottom of the control panel. Use a solid copper bonding conductor not smaller than 8 AWG and connect to the central bonding structure in the pool area.

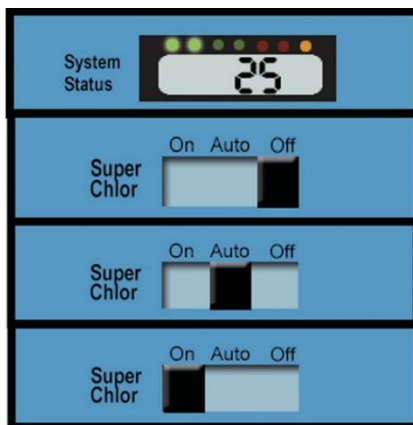
INTRODUCTION

Crystal Pure Salt water chlorination is a process that uses dissolved salt for the chlorination of swimming pools. The chlorine generator uses electrolysis in the presence of dissolved salt to produce chlorine gas or its dissolved forms, hypochlorous acid and sodium hypochlorite, which are already commonly used as sanitizing in pools.

The Crystal Pure is designed for residential swimming pool up to 60,000 gallons (230,000 liters).

The actual amount of chlorination required to properly disinfect the pool depends on the bather's load, rainfall, air temperature, water temperature, exposure of the pool to the sun, pool surface and cleanliness.

Switches of Control



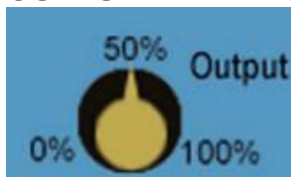
AUTO: Generally, if the Crystal Pure is in "Auto", it will automatically work according to the chlorine output settings.

SUPER CHLOR: The "Super Chlor" function is the process of temporarily increasing the free chlorine levels in the pool for the purpose of increased sanitation power. It's often necessary when the pool water is cloudy, free chlorine levels to fall below optimum levels. Switch to "ON". It will work 100%, remember to back to "Auto" when you have desired chlorine.

OFF: In "OFF", the Crystal Pure stops outputting chlorine.

NOTE: During the maintenance, please turn the power off the circuit breaker. The OFF switch is not to be used.

OUTPUT LEVEL CONTROL



Adjust this setting to increase or decrease the chlorine output level percentage.

WATER CHEMISTRY

For any pools it is mandatory to maintain proper water chemistry of the pool water, including pH, calcium levels, and alkaline content, especially to maintain proper levels of salt and stabilizer. It helps to prevent corrosion or scaling and to bring better experience for pool users. It is recommended that pool water be professionally tested a minimum of twice per 3 months and adjust the water chemistry in time. Remember to tell the pool store service staff that you are using a salt chlorine generator.

IDEAL CHEMICAL LEVELS

| Salt Level | Free Chlorine | pH | Calcium Hardness | Stabilizer | Metals | Total Alkalinity | Saturation Index |
|-----------------|---------------|-----------|------------------|-------------|--------------|------------------|------------------|
| 3000 - 4000 ppm | 1.5 - 3.0 ppm | 7.2 - 7.7 | 200 - 400 ppm | 50 - 80 ppm | 0 ppm (none) | 80 - 120 ppm | -.2 - +.2 |

Saturation Index

The “saturation index,” or the “stability index,” is a numerical value indicating whether or not water is balanced.

$$\text{Saturation Index} = \text{pH} + \text{TF} + \text{CF} + \text{AF} - 12.1$$

Ideal Salt Levels & Pool Size

Use the table below to help determine the amount of salt and pool size. The ideal salt level is between 3200-3400 ppm.

How to calculate your pool size in Gallons:

Rectangular Pools:

$$\text{Length(foot)} \times \text{width(foot)} \times \text{average depth(foot)} \times 7.5$$

Circular Pools:

$$\text{Diameter} \times \text{diameter} \times \text{average depth} \times 5.9$$

Oval Pools:

$$\text{Length} \times \text{width} \times \text{average depth} \times 5.9$$

Type of Salt to Use

Use evaporated, granular non-iodized salt (sodium chloride). The purer the salt (at least 99%).

Improve the life and performance of the electrolytic cell. Water softening salt (also called water conditioner)

Granules are an economical way to buy large amounts of salt. However, only NaCl salt with a purity of at least 99% can be used. The pill is a compressed form of evaporated salt and may take longer to dissolve. Avoid using salt with an anti-caking agent, which may cause discoloration.

When adding salt to the pool, it's best to pour the required salt into the shallow end of the pool and run filter and pump at the same time to circulate the water and dissolve the salt. Do not pour the salt bag into the water because the chemicals and ink on the bag will Disturb water balance. In summer, salt may take 24-48 hours to dissolve, while in winter it takes longer. Fine grain the salt will dissolve faster than compressed tablets.

In any swimming pool, do not add salt directly to the skimmer or directly to the main drain. Due to the high concentration of salt and reduced pump flow, this will shut down or shorten the life of the cells.

If the addition is incorrect, please turn off Crystal Pure immediately for 24 hours while the pump and filter are still running. This will help distribute the salt evenly. The salt display may take up to 24 hours to respond to changes in salt concentration.

WARNING

Do not use salt with any Phosphates

| Current salt level (ppm) | Adding Salt | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|---|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------|------|------|------|------|------|------|----|--------|--------|
| | Approximate Pounds (kg) of Salt Needed to Obtain Ideal Salinity (3,400 PPM) | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 200 | 400 | 600 | 800 | 1000 | 1200 | 1400 | 1600 | 1800 | 2000 | 2200 | 2400 | 2600 | 2800 | 3000 | 3200 | 3400 | 3600 | 3800 | 4000 | 4200 | 4400 | | | |
| 14,000G 52,500L | 419 lbs 190 kg | 396 lbs 180 kg | 373 lbs 170 kg | 350 lbs 159 kg | 327 lbs 148 kg | 303 lbs 138 kg | 280 lbs 127 kg | 257 lbs 117 kg | 233 lbs 106 kg | 210 lbs 95 kg | 187 lbs 85 kg | 163 lbs 74 kg | 140 lbs 64 kg | 117 lbs 53 kg | 93 lbs 42 kg | OK | OK | OK | OK | OK | OK | OK | OK | Dilute | |
| 16,000G 60,000L | 481 lbs 218 kg | 454 lbs 206 kg | 427 lbs 194 kg | 400 lbs 182 kg | 373 lbs 170 kg | 347 lbs 158 kg | 320 lbs 145 kg | 293 lbs 133 kg | 267 lbs 121 kg | 240 lbs 109 kg | 213 lbs 97 kg | 187 lbs 85 kg | 160 lbs 73 kg | 133 lbs 61 kg | 107 lbs 48 kg | OK | OK | OK | OK | OK | OK | OK | OK | OK | Dilute |
| 18,000G 67,500L | 540 lbs 245 kg | 510 lbs 232 kg | 480 lbs 218 kg | 450 lbs 205 kg | 420 lbs 191 kg | 390 lbs 177 kg | 360 lbs 164 kg | 330 lbs 150 kg | 300 lbs 136 kg | 270 lbs 123 kg | 240 lbs 109 kg | 210 lbs 95 kg | 180 lbs 82 kg | 150 lbs 68 kg | 120 lbs 55 kg | OK | OK | OK | OK | OK | OK | OK | OK | OK | Dilute |
| 20,000G 75,000L | 599 lbs 272 kg | 566 lbs 257 kg | 533 lbs 242 kg | 500 lbs 227 kg | 467 lbs 212 kg | 433 lbs 197 kg | 400 lbs 182 kg | 367 lbs 167 kg | 333 lbs 152 kg | 300 lbs 136 kg | 267 lbs 121 kg | 233 lbs 106 kg | 200 lbs 91 kg | 167 lbs 76 kg | 133 lbs 61 kg | OK | OK | OK | OK | OK | OK | OK | OK | OK | Dilute |
| 22,000G 82,500L | 661 lbs 300 kg | 624 lbs 284 kg | 587 lbs 267 kg | 550 lbs 250 kg | 513 lbs 233 kg | 477 lbs 217 kg | 440 lbs 200 kg | 403 lbs 183 kg | 367 lbs 167 kg | 330 lbs 150 kg | 293 lbs 133 kg | 257 lbs 117 kg | 220 lbs 100 kg | 183 lbs 83 kg | 147 lbs 67 kg | OK | OK | OK | OK | OK | OK | OK | OK | OK | Dilute |
| 24,000G 90,000L | 720 lbs 327 kg | 680 lbs 309 kg | 640 lbs 291 kg | 600 lbs 273 kg | 560 lbs 255 kg | 520 lbs 236 kg | 480 lbs 218 kg | 440 lbs 200 kg | 400 lbs 182 kg | 360 lbs 164 kg | 320 lbs 145 kg | 280 lbs 127 kg | 240 lbs 109 kg | 200 lbs 91 kg | 160 lbs 73 kg | OK | OK | OK | OK | OK | OK | OK | OK | OK | Dilute |
| 26,000G 97,500L | 779 lbs 354 kg | 736 lbs 335 kg | 693 lbs 315 kg | 650 lbs 295 kg | 607 lbs 276 kg | 563 lbs 256 kg | 520 lbs 236 kg | 477 lbs 217 kg | 433 lbs 197 kg | 390 lbs 177 kg | 347 lbs 158 kg | 303 lbs 138 kg | 260 lbs 118 kg | 217 lbs 98 kg | 173 lbs 79 kg | OK | OK | OK | OK | OK | OK | OK | OK | OK | Dilute |
| 28,000G 105,000L | 841 lbs 381 kg | 794 lbs 360 kg | 747 lbs 339 kg | 700 lbs 318 kg | 653 lbs 297 kg | 607 lbs 276 kg | 560 lbs 255 kg | 513 lbs 233 kg | 467 lbs 212 kg | 420 lbs 191 kg | 373 lbs 170 kg | 327 lbs 148 kg | 280 lbs 127 kg | 233 lbs 106 kg | 187 lbs 85 kg | OK | OK | OK | OK | OK | OK | OK | OK | OK | Dilute |
| 30,000G 112,500L | 900 lbs 409 kg | 850 lbs 387 kg | 800 lbs 364 kg | 750 lbs 341 kg | 700 lbs 318 kg | 650 lbs 297 kg | 600 lbs 273 kg | 550 lbs 250 kg | 500 lbs 227 kg | 450 lbs 205 kg | 400 lbs 182 kg | 350 lbs 159 kg | 300 lbs 136 kg | 250 lbs 114 kg | 200 lbs 91 kg | OK | OK | OK | OK | OK | OK | OK | OK | OK | Dilute |
| 32,000G 120,000L | 962 lbs 436 kg | 908 lbs 413 kg | 854 lbs 388 kg | 800 lbs 363 kg | 747 lbs 339 kg | 693 lbs 317 kg | 640 lbs 291 kg | 587 lbs 267 kg | 533 lbs 243 kg | 480 lbs 218 kg | 427 lbs 195 kg | 373 lbs 169 kg | 320 lbs 145 kg | 267 lbs 121 kg | 213 lbs 96 kg | OK | OK | OK | OK | OK | OK | OK | OK | OK | Dilute |
| 34,000G 127,500L | 1021 lbs 463 kg | 964 lbs 439 kg | 907 lbs 412 kg | 850 lbs 385 kg | 793 lbs 360 kg | 737 lbs 337 kg | 680 lbs 310 kg | 623 lbs 283 kg | 567 lbs 258 kg | 510 lbs 232 kg | 453 lbs 207 kg | 397 lbs 180 kg | 340 lbs 154 kg | 283 lbs 129 kg | 227 lbs 104 kg | OK | OK | OK | OK | OK | OK | OK | OK | OK | Dilute |
| 36,000G 135,000L | 1080 lbs 490 kg | 1020 lbs 464 kg | 960 lbs 436 kg | 900 lbs 408 kg | 840 lbs 382 kg | 780 lbs 358 kg | 720 lbs 328 kg | 660 lbs 300 kg | 600 lbs 274 kg | 540 lbs 246 kg | 480 lbs 219 kg | 420 lbs 190 kg | 360 lbs 163 kg | 300 lbs 137 kg | 240 lbs 110 kg | OK | OK | OK | OK | OK | OK | OK | OK | OK | Dilute |
| 38,000G 142,500L | 1139 lbs 517 kg | 1076 lbs 490 kg | 1013 lbs 460 kg | 960 lbs 430 kg | 897 lbs 403 kg | 833 lbs 378 kg | 760 lbs 346 kg | 697 lbs 317 kg | 633 lbs 289 kg | 570 lbs 259 kg | 507 lbs 231 kg | 443 lbs 201 kg | 380 lbs 172 kg | 317 lbs 144 kg | 253 lbs 117 kg | OK | OK | OK | OK | OK | OK | OK | OK | OK | Dilute |
| 40,000G 150,000L | 1201 lbs 545 kg | 1134 lbs 515 kg | 1067 lbs 484 kg | 1000 lbs 453 kg | 933 lbs 424 kg | 867 lbs 398 kg | 800 lbs 364 kg | 733 lbs 333 kg | 667 lbs 304 kg | 600 lbs 283 kg | 533 lbs 243 kg | 467 lbs 211 kg | 400 lbs 181 kg | 333 lbs 152 kg | 267 lbs 123 kg | OK | OK | OK | OK | OK | OK | OK | OK | OK | Dilute |

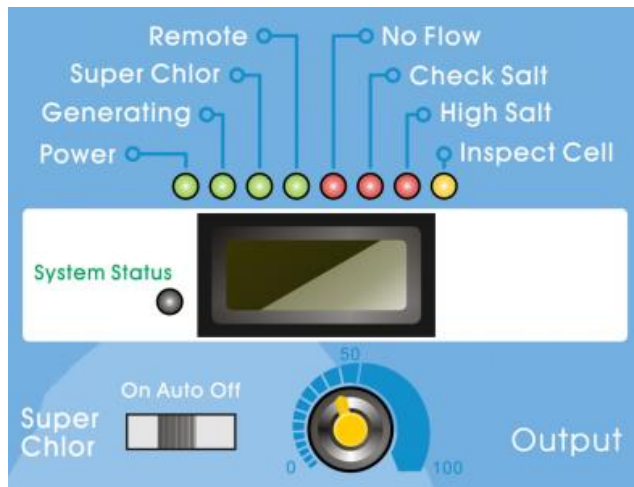
To ensure that your system is working properly, please add the appropriate amount of swimming pool stabilizer (conditioner) to help protect and extend the life of the salt cell. Use the chart to calculate how much stabilizer you will need in order to reach an ideal range of 80 ppm.

| POUNDS and (kg) of STABILIZER CYANURIC ACID NEEDED FOR 80 PPM | | | | | | | | | |
|---|----------|----------|----------|----------|----------|----------|---------|---------|--------|
| Current Stabilizer Level (ppm) | 0 ppm | 10 ppm | 20 ppm | 30 ppm | 40 ppm | 50 ppm | 60 ppm | 70 ppm | 80 ppm |
| 14,000G | 9.4 lbs | 8.2 lbs | 7.0 lbs | 5.9 lbs | 4.7 lbs | 3.5 lbs | 2.4 lbs | 1.2 lbs | 0.0 |
| 52,500L | 4.3 kg | 3.7 kg | 3.2 kg | 2.7 kg | 2.1 kg | 1.6 kg | 1.1 kg | 0.54 kg | 0.0 |
| 16,000G | 10.7 lbs | 9.4 lbs | 8.0 lbs | 6.7 lbs | 5.4 lbs | 4.0 lbs | 2.7 lbs | 1.4 lbs | 0.0 |
| 60,000L | 4.9 kg | 4.3 kg | 3.6 kg | 3.0 kg | 2.4 kg | 1.8 kg | 1.2 kg | 0.64 kg | 0.0 |
| 18,000G | 12.0 lbs | 10.5 lbs | 9.0 lbs | 7.5 lbs | 6.0 lbs | 4.5 lbs | 3.0 lbs | 1.5 lbs | 0.0 |
| 67,500L | 5.4 kg | 4.8 kg | 2.2 kg | 3.4 kg | 2.7 kg | 2.0 kg | 1.4 kg | 0.68 kg | 0.0 |
| 20,000G | 13.4 lbs | 11.7 lbs | 10.0 lbs | 8.4 lbs | 6.7 lbs | 5.0 lbs | 3.3 lbs | 1.7 lbs | 0.0 |
| 75,000L | 6.1 kg | 5.3 kg | 4.5 kg | 3.8 kg | 3.0 kg | 2.3 kg | 1.5 kg | 0.77 kg | 0.0 |
| 22,000G | 14.7 lbs | 12.9 lbs | 11.0 lbs | 9.2 lbs | 7.4 lbs | 5.5 lbs | 3.7 lbs | 1.8 lbs | 0.0 |
| 82,500L | 6.7 kg | 5.9 kg | 5.0 kg | 4.2 kg | 3.3 kg | 2.5 kg | 1.7 kg | 0.82 kg | 0.0 |
| 24,000G | 16.0 lbs | 14.0 lbs | 12.0 lbs | 10.0 lbs | 8.0 lbs | 6.0 lbs | 4.0 lbs | 2.0 lbs | 0.0 |
| 90,000L | 7.3 kg | 6.4 kg | 5.4 kg | 4.5 kg | 3.6 kg | 2.7 kg | 1.8 kg | 0.91 kg | 0.0 |
| 26,000G | 17.3 lbs | 15.2 lbs | 13.0 lbs | 10.8 lbs | 8.7 lbs | 6.5 lbs | 4.3 lbs | 2.2 lbs | 0.0 |
| 97,500L | 7.9 kg | 6.9 kg | 5.9 kg | 4.9 kg | 3.9 kg | 2.9 kg | 2.0 kg | 1.0 kg | 0.0 |
| 28,000G | 18.7 lbs | 16.4 lbs | 14.0 lbs | 11.7 lbs | 9.3 lbs | 7.0 lbs | 4.7 lbs | 2.3 lbs | 0.0 |
| 105,000L | 8.5 kg | 7.4 kg | 6.4 kg | 5.2 kg | 4.2 kg | 3.2 kg | 2.1 kg | 1.1 kg | 0.0 |
| 30,000G | 20.0 lbs | 17.2 lbs | 15.0 lbs | 12.5 lbs | 10.0 lbs | 7.5 lbs | 5.0 lbs | 2.5 lbs | 0.0 |
| 112,500L | 9.1 kg | 8.0 kg | 6.8 kg | 5.6 kg | 4.5 kg | 3.4 kg | 2.3 kg | 1.2 kg | 0.0 |
| 32,000G | 21.3 lbs | 18.7 lbs | 16.0 lbs | 13.3 lbs | 10.7 lbs | 8.0 lbs | 5.3 lbs | 2.7 lbs | 0.0 |
| 120,000L | 9.7 kg | 8.5 kg | 7.2 kg | 6.0 kg | 4.8 kg | 3.6 kg | 2.4 kg | 1.2 kg | 0.0 |
| 34,000G | 22.7 lbs | 19.8 lbs | 17.0 lbs | 14.2 lbs | 11.3 lbs | 8.5 lbs | 5.7 lbs | 2.8 lbs | 0.0 |
| 127,500L | 10.3 kg | 9.0 kg | 7.7 kg | 6.3 kg | 5.1 kg | 3.9 kg | 2.6 kg | 1.3 kg | 0.0 |
| 36,000G | 24.0 lbs | 21.0 lbs | 18.0 lbs | 15.0 lbs | 12.0 lbs | 9.0 lbs | 6.0 lbs | 3.0 lbs | 0.0 |
| 135,000L | 10.9 kg | 9.5 kg | 8.1 kg | 6.7 kg | 5.4 kg | 4.1 kg | 2.7 kg | 1.3 kg | 0.0 |
| 38,000G | 25.3 lbs | 22.2 lbs | 19.0 lbs | 15.8 lbs | 12.7 lbs | 9.5 lbs | 6.3 lbs | 3.2 lbs | 0.0 |
| 142,500L | 11.5 kg | 10.0 kg | 8.6 kg | 7.1 kg | 5.7 kg | 4.3 kg | 2.8 kg | 1.4 kg | 0.0 |
| 40,000G | 26.7 lbs | 23.3 lbs | 20.0 lbs | 16.7 lbs | 13.3 lbs | 10.0 lbs | 6.7 lbs | 3.3 lbs | 0.0 |
| 150,000L | 12.0 kg | 10.5 kg | 9.0 kg | 7.5 kg | 6.0 kg | 4.5 kg | 3.0 kg | 1.5 kg | 0.0 |

OPERATION

By familiarizing yourself with the operation of the Crystal Pure generator, you can achieve maximum performance for your pool. When chemical levels are in the recommended range, there are FOUR factors that you can control. Filter time each day, amount of salt in the pool, the output of chlorine you set, and stabilizer level in the water will directly impact the amount of chlorine the Crystal Pure will generate. When you just begin to set the model, it will take you days to find ideal chlorine output, you can start at a high setting and then turn down.

Indicators and Diagnostic Displays.



POWER: Power illuminate, model is in power.

GENERATION: Model in normal operation, the LED will be steady. If it is flashing, check the pool water chemicals.

SUPER CHLOR: The generator runs at 100% capacity which can produce enough chlorine to clear up moderate cloudiness, but the generator is forced to overwork. It will be automatically switched to the original output after 24- hour SUPER CHLOR operation.

REMOTE: Controlled by remote models (not available)

CHECK CELL: If “Check Cell” LED is flashing and salt level is above 2700ppm, 500hrs cell count down timer is active. Once cleaned, hold down “System Status” button (3-5 seconds) to reset timer for 500hrs.

HIGH SALT: When it is on or flashing, Crystal Pure is warning that the water salinity is too high to work

CHECK SALT: When it is on or flashing, Crystal Pure salinity is too low to work.

NO FLOW: When it is on, flow switch will be detected that there is no flow through the cell. If it is flashing, the flow is restored.

DIAGNOSTIC DISPLAY

Average Salt Level (default as 2800ppm)

1. Water Temperature (xx degrees Fahrenheit)
2. Cell Voltage (20-30VDC)
3. Cell Amperage (How is the cell working, fine or not)
4. Desired Output % (% of cell time ON)
5. Instant salinity
6. Product name sent to the pool automation Control display (AL0-5=product branding)
7. Software revision level
8. Cell type
9. Salt Calibration (E000)
10. End of the loop (-EE)

Corresponding Cell Sizes

| Model | Cell Size | Gallon Size |
|---------------------------|-----------|----------------|
| PL7701, PL7708, PL7702 | F3 | 20,000 gallons |
| PL7700, PL7707, PL7709 | F15 | 40,000 gallons |
| PL7703, PL7714, PL7704 | H15 | 60,000 gallons |

RECALIBRATING YOUR SALT

If your water test reading differs from what the system is showing, then you may need to recalibrate the system. The very first time you calibrate your system, the display will read "E000."

Once calibrated, the display will show "E***."

If you've recalibrated your system before, the display will show your last reading. For example, if it shows E800, then the last time we calibrated the system, you added 800PPM into the pool.

1. Move the Super Chlorinate switch to OFF.

2. Hit the "System Status" button nine times until you find "E***" on the display board.
3. Move the "Chlorine Output" dial to 100% then down to 50%. The "E" should begin to flash. When you see the "E" flashing, you can set the dial to 0%-50% or 50%-100%.
4. Press the "System Status" button once to set.
5. You are finished when you see "-AA".

Spring Start-up

When reopening the pool after long term, check all water chemistry before power on the Crystal Pure.

Maintenance

When checking other water chemistry levels, always monitor the salinity level of the swimming pool.

After the system runs for a period of time, it will eventually need to clean the cells due to the scaling of natural minerals.

You will be notified by opening "CHECK CELL" Light. When lit, cleaning the cell with a cleaning stand is better.

Important information: The frequency of cleaning depends on your water chemistry and water saturation index.

For most people, only need to clean a few times per season. Faster mineral accumulation must be long-term high saturation index, chemical imbalance may lead to rapid fouling. Consult Swimming pool professionals.

How to clean the cell?

Important information: If there is severe mineral accumulation, more than one cleaning may be required to dissolve the remaining solids.

After cleaning, carefully inspect the cell plate with bright light. If you see any remaining scale, debris or physical blocked in the salt cell, please repeat the cleaning process as needed. If it is "check cell" come back soon after cleaning,

- 1) Confirm that the salinity is within the range
- 2) Ensure that the cell is fully filled with water
- 3) Verify the cell type setting of the system

Before removing the cell for cleaning or replacement:

- 1) Turn off all power sources of all swimming pool equipment and close the water supply line valve (if applicable).
- 2) Unplug the cell cable connecting to the control box.
- 3) Loosen the threaded ring around the joint at the junction of the pool and the pipes.

To clean the cell with mineral deposits:

- 1) Cleaning stand and adjust the direction of the cell vertically. Place on the ground and stabilize to keep it upright.

- 2) In a separate bucket, mix one part of muriatic acid with four parts of water. Pour this acid solution directly to cell. Make sure that the cleaning water completely covers the components inside the cell.
- 3) Wait for the foaming to stop. Let the solution soak for no more than fifteen minutes.
- 4) Properly dispose of the acid solution, and use a hose to wash away the remaining debris from the pool.
- 5) Look inside the unit and check if there is no debris or scale residue. If necessary, repeat steps 2-4.
- 6) Re install the cell into the PVC return pipe.

Note: If you do not currently have a cleaning cap or cleaning rack, you can fully immerse the cell in a five-gallon bucket.

Cell Cleaning Stand: Part no. PL7110

**ALWAYS POUR ACID INTO WATER-NEVER POUR WATER INTO ACID.
BE SURE TO WEAR PROTECTIVE GLASSES, CLOTHING, AND CHEMICAL
RESISTANT GLOVES.**

INSTALLATION

Before installation, make sure all the water chemistry is in normal range. Using 2-inch pipes and should be performed by qualified personnel in case there is a 1.5-inch pipe, a reducer can be used to fit the system; be sure to pay attention to any changes. Check each measurement carefully before cutting.

Mounting the Crystal Pure Control

Install the control box as close as possible to the pump and filter system. For safety reasons, please do not install the control box within 10 feet of the edge of the pool and comply with all applicable regulations. Verify cell and flow switch cable can reach the control box.

As with most electronic devices, avoid using the controller above the heater or in a tightly enclosed or insulated space can avoid excessive heat accumulation and also avoid being close to acid chemicals, it may damage the control.

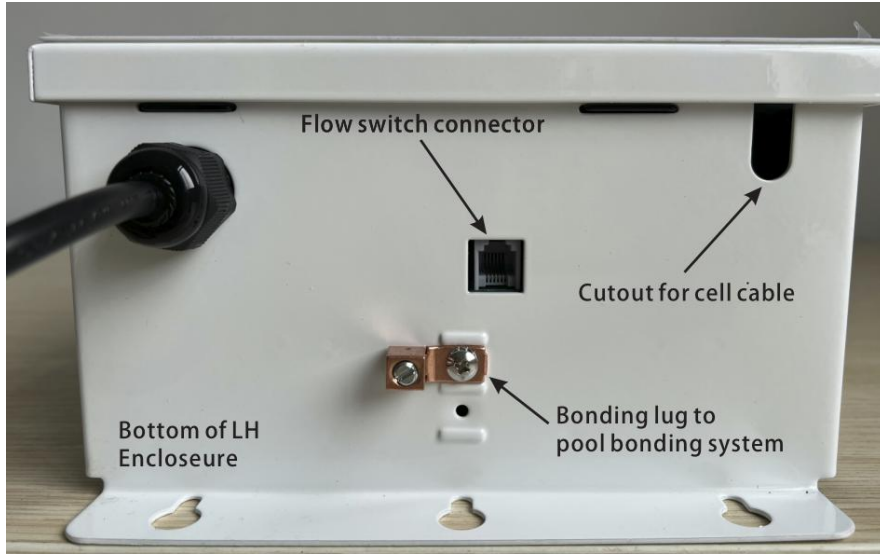
Use screws to fix the mounting bracket of the control box on the wall or vertical bracket comfortably horizontally.

At least 3 feet above the ground. Hang the control on the bracket.

Mounting the Flow Switch, and Cell.

Flow switch, confirm that the arrows on the flow switch (located on the side) point in the same direction of water flow.

The Cell and Flow Switch cables have easy plug-in connectors in the control, the diagram below for the location of these connections.



Plumbing

These instructions apply to 2-inch pipe (typical). Make sure to choose with existing pool pipe size (1.5 inches or 2 inches), and discard other unnecessary joints. For articulated connections, you will also use the included 2" to 1.5" reducer bushing to accommodate the flow switch. For 1½" installations, be sure to pay attention to any new or other measurements before cutting the tube.

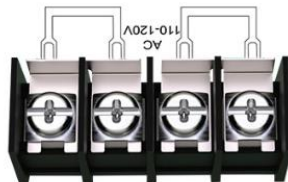
All service should only be attempted by a person with appropriate electrical skills needs to be licensed electrician only, with all equipment disconnected from power. The factory setting is 220-240V, if you need 100-120V, please move the internal jumper as below.

JUMPER CONFIGURATION

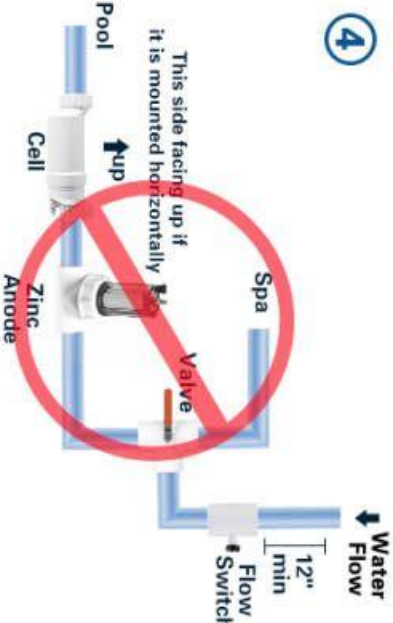
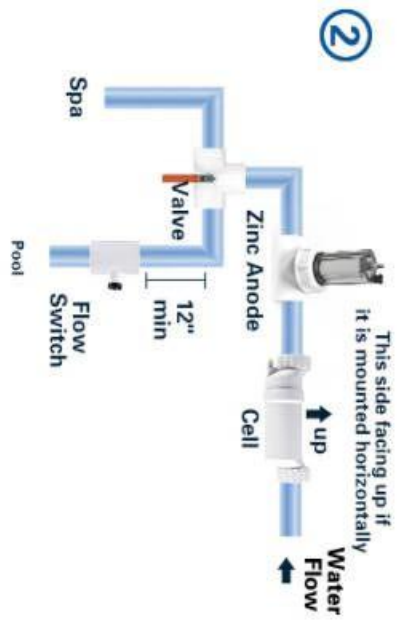
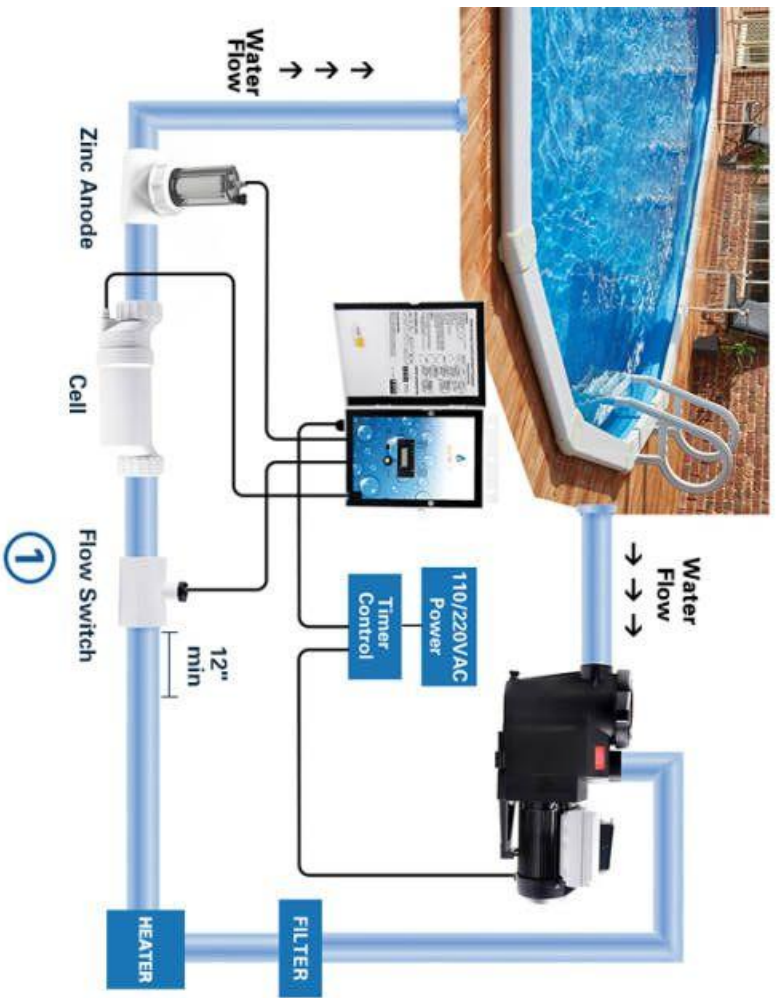


Factory Set
For 220-240V

For 110-120V



Installation mode



TROUBLESHOOTING

| Situation | Possible Cause | Suggestion |
|--|--|--|
| Start the Crystal Pure Salt System without reaction, no display | Check the power connection | Use test pencil to check if there is electricity |
| | | Change the socket |
| | | Check the wire connection |
| | | Check the overload protection device |
| | Check the fuse | If fuse blow out, replace it |
| | If the PCB board just be replaced | Check the connection of the PCB is right or wrong |
| Check the transformer to see it is good or not | | |
| "NO FLOW" light on | No flow or too little low | Check if pump is connected, if use variable speed pump, speed up the water flow. Keep flow rate at least 25-30 GPM |
| | Wrong flow direction | Remain the flow direction same as the arrow outside the flow switch |
| | Flow switch or crystal plug is broken | Change the flow switch |
| "NO FLOW" light is blinking | Start the machine, it is normal that the light blink because it need time to detect the water flow | Normal |
| | Variable speed pump, water flow too slow | Change the flow switch |
| "Inspect Cell" light is flashing | The machine worked around 500 hours | Press the "System Status" button for 3 seconds to stop |

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|---|---|---|
| "Generating" light is flashing | Check the temperature in the swimming pool is whether too high or too low | Check the temperature, water temp should be above 55°F, less than 122°F |
| "Check Salt" and "Inspect Cell" light on | Check cell type | Match the right cell type with the program |
| | If use variable speed pump, water flow too slow | Speed up the water flow |
| | Actual Salinity is less than 2300PPM | Add salt, ideal salt level 3500-3600ppm |
| | Cell is blocked | Clean the cell |
| | Temperature sensor is broken | If not, replace flow switch with a temperature sensor |
| | PCB or cell may is broken | Contact distributor |
| "Check Salt" light is flashing | Check cell type | Match the right cell type with the program |
| | Actual Salinity is between 2300-2500PPM | Add salt, ideal salt level 3500-3600ppm |
| | Cell is blocked | Clean the cell |
| "High Salt" light blinking | Check cell type | Match the right cell type with the program |
| | Actual Salinity is between 4500-6400PPM | Add water, ideal salt level 3500-3600ppm |
| | Temperature sensor is broken | If not, replace flow switch with a temperature sensor |
| | The cell plates are short-circuit because they are not fixed in the housing | Change the cell |
| | PCB is broken | Change the PCB |
| "High Salt" and "Inspect cell" light is on | Check cell type | Match the right cell type with the program |
| | Actual Salinity is more than 6500PPM | Add water, ideal salt level 3500-3600ppm |
| | Temperature sensor is broken | If not, replace flow switch with a temperature sensor |

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|-----------------------------------|---|---|
| | The cell plates are short-circuit because they are not fixed in the housing | Change the cell |
| | PCB is broken | Change the PCB |
| Low or no Chlorine in pool | The water temp too high or too cold | Check the temperature, water temp should be above 55°F, less than 122°F |
| | PH not normal, the water in alkalinity will influence the chlorine | Keep PH 7.2-7.7 |
| | Bad water quality has large quantity of microorganism or germ will consume the chlorine | Change good quality water |
| | With chemistry, like Chemical Fertilizers and Pesticides | Ensure all chemicals on page.6 are within range |

WARRANTY

The warranty period for the Crystal Pure Salt System varies by model number.

| Crystal Pure Model | Warranty Period |
|--|-----------------|
| LT Models (PL7708, PL7709, PL7714) | One Year |
| Standard Models (PL7700, PL7701, PL7703) | One Year |
| Heavy Duty- HD (PL7702, PL7707, PL7704) | Two Years |

PureLine Offers a Full Warranty

Crystal Pure Salt System is warranted to be free from defects in materials and workmanship, under normal use and non-commercial application, for a period of one, two, or three years, depending on your model. To obtain service, contact the authorized dealer from which the unit was purchased. Proof of purchase may be required. This limited warranty is extended exclusively to the original purchaser of the Crystal Pure system and is non-transferable. Crystal Pure is intended for residential pool use and any commercial application voids all warranties.

TERMS OF SALE: If, after receiving this item you discover that it was not the one you wanted, simply return it for a full refund within 30 days. You will have to pay for the return shipping charges. Refund is void if you have installed, used or damaged the item in any way. Item must be returned with its original box, packing materials and instructions (if applicable) in the same perfect new condition. Cleared Payment via PayPal must be received within 3 days of transaction and prior to shipping.

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

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

3. This warranty extends to the original retail purchaser and original installation site only, beginning at the original date of purchase, and is non-transferrable.
4. The warranty contains the following exclusions. O-Rings, rubber gaskets, electrical fuses, and circuit-breaker components are normal replacement items subject to wear and are excluded from the warranty.

Product discoloration, or any other cosmetic or superficial damage or deterioration, regardless of its cause, is not covered by this warranty. The warranty is not applicable to problems arising from circumstances outside the control of Products, including, but not limited to the following:

- Damage or premature wear due to improper pool chemistry, and failure to maintain pool water chemistry in accordance with the recommendations contained in the owner's manual.
- Damage due to improper installation or connection to improper voltages, including materials and workmanship supplied by others.
- Damage due to negligence or failure to properly maintain equipment, including the maintenance of clean and tight electrical connections.
- Damage due to improper service, as well as unauthorized equipment modifications and use of non-genuine replacement parts.
- Damage due to misapplication, misuse, abuse, overuse the cell lifetime (over 10 hours per day) or failure to operate equipment as specified in the owner's manual.
- Problems resulting from tampering, accident, fire, flood, freezing, lightning, insects, or other natural elements, or other circumstances beyond the control of Products.
- Damage due to over-tightening of threaded components or excessive pressure or stress.
- Material supplied or workmanship performed by others in the process of installation.

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

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

Disclaimer: This limited warranty is the entire warranty. No other warranties apply, expressed or implied. This limited warranty gives you specific legal rights, which varies accordingly from state to state. Under no circumstances shall the manufacturer or authorized agents/installers be responsible for consequential, special, or incidental damage(s) of any kind, including but not limited to personal injury. Property damage or

damage to or loss of equipment. The manufacturer or agents/installers are not liable for any other expenses that may be encountered during installation or servicing. Authorized agents/installers may charge a trip fee for warrant-able service work.

Some states do not allow the exclusion of limitations of incidental or consequential damages.

Listed exclusions and limitations may not apply to you.

During the full coverage warranty process, we cover all replacements, repairs and labor cost. The customer is responsible for shipping to and from our warranty center.

Crystal Pure Salt System or agent/installer is not liable for any other expenses that may be incurred during installation or servicing. Authorized agents/installers may charge a trip fee for warranty service work.

Some states do not allow the exclusion of limitations of incidental or consequential damages. Listed exclusions and limitations may not apply to you.

Please visit www.purelinepool.com for more information, useful tips, and troubleshooting assistance, or call us at 407-834-2200.