CHLORINE GENERATOR

INSTALLATION & OPERATION

READ THIS MANUAL CAREFULLY BEFORE USING YOUR CHLORINE GENERATOR

READ AND FOLLOW ALL INSTRUCTIONS

NOTE **All electrical connections must be done by a qualified electrician according to local electrical standard.**

WARNING

1. Disconnect this product from the main power supply completely before servicing the swimming pool equipment.
2. Be certain the product is only plugged into a protected 115V outlet that is protected from short-circuits.
3. Children should be supervised to ensure that they do not play with the appliance. Keep fingers and foreign objects away from openings and moving parts.
4. Make sure that the power supply voltage required by the product corresponds to that of the distribution network and that the power supply cables matches the power and current of the product.
5. Do not bury cord. Locate cord to minimize abuse from lawn mowers, hedge trimmers, and other equipment.
6. To reduce the risk of electric shock, do not use extension cord to connect unit to electric supply; provide a properly located outlet.
7. Read and follow all instructions in this owner's manual and on the equipment. Failure to follow instructions can cause serious injury or death. This document should be given to the owner of the swimming pool and must be kept by the owner in a safe place.
8. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
9. Use Only Genuine Blue Torrent Replacement Parts.
10. Electrical Hazard. Failure to follow instructions can result in serious injury or death. FOR USE WITH SWIMMING POOLS
11. If the supply cord is damaged it must be replaced by the manufacturer, service agent, or similarly qualified persons in order to avoid a hazard.
12. Do not operate the product if the power cord is damaged. This can cause an electric shock. A damaged power cord must be replaced by a service agent or a similarly qualified person immediately in order to avoid a hazard.

GENERAL INSTRUCTIONS

- Blue Torrent Chlorine Generator is an automatic chlorine generation system for pool sanitation. The operation requires a low concentration of salt (sodium chloride) in the pool water.
- Blue Torrent Chlorine Generator automatically sanitizes your pool by converting the salt into free chlorine which kills bacteria and algae in the water.
- Chlorine will revert back to sodium chloride after killing bacteria. These reactions will continuously recycle virtually eliminating the need to add sanitizing chemicals to your pool.
- Blue Torrent Chlorine Generator can handle the purification needs of most residential swimming pools up to 37,000 gallons or 18000 gallons. This unique low cost chlorine generator uses a replaceable electrolytic Cell that is designed up to 10000 hours of service life **(replacement sold separately)**.

NOTE The actual amount of chlorination required to properly sanitize a pool varies due to bather load, rainfall, temperature, and the pool's cleanliness.

NOTE Before installing this product as part of a saline water purification system in a pool or spa using natural stone for coping or for immediately adjacent patios/decking, a qualified stone installation specialist should be consulted regarding the appropriate type, installation, sealant (if any) and maintenance of stone used around a saline pool with electronic chlorine generator in your particular location and circumstances.

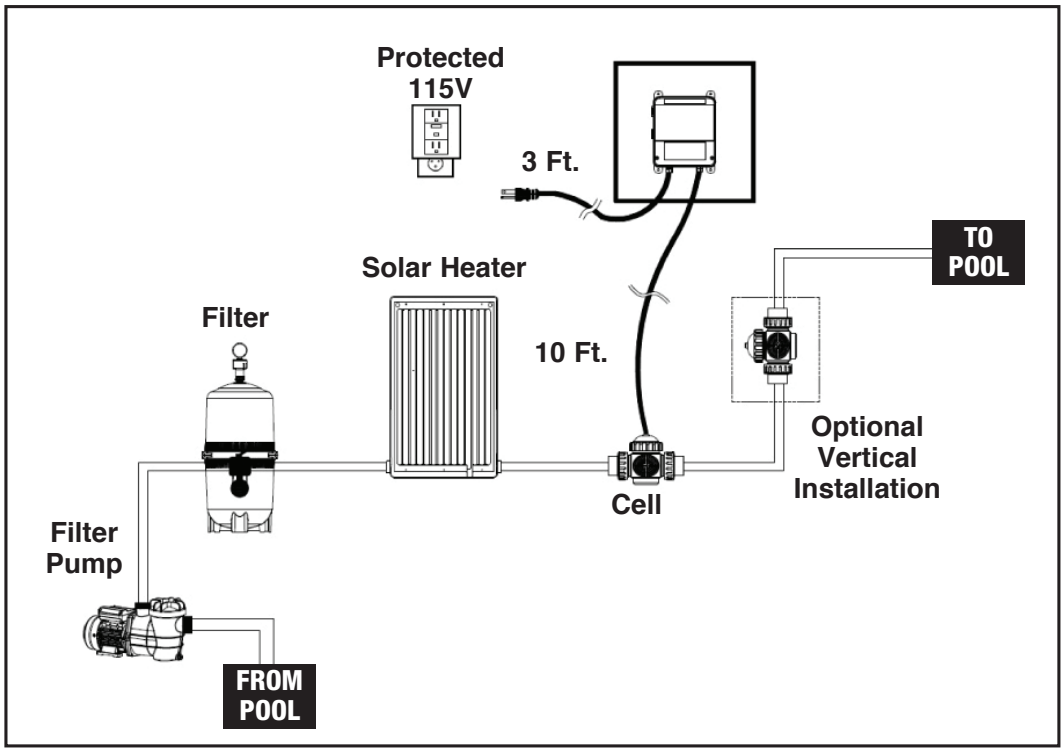
NOTE The use of dry acid (sodium bisulfate) to adjust pool pH is discouraged especially in arid regions where pool water is subject to excessive evaporation and is not commonly diluted with fresh water. Dry acid can cause a buildup of by-products that can damage your chlorinator Cell.

CHLORINE GENERATOR INSTALLATION

1. Remove power to the pool filter pump before starting this installation. Installation must be performed in accordance with Local and NEC codes.

2. The Control Box must be mounted a minimum of 10 Ft. horizontal distance (or more, if local codes require) from the pool, within 3 Ft. from a protected outlet, and within 15 Ft. from where the Cell will be installed.

3. Take care to protect the Cell cap while handling the Blue Torrent Chlorine Generator unit during installation.



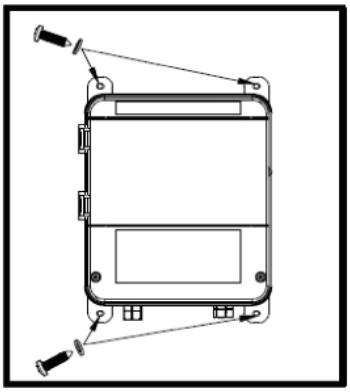
4. Before attempting to operate Blue Torrent Chlorine Generator, pool water must be checked, the pool's chemistry must be balanced and salt must be added. This must be done BEFORE activating the Chlorine Generator. Some adjustments to your pool chemistry may take several hours, so start the procedure well before you intend to operate the Blue Torrent Chlorine Generator.

Adding Salt: Add salt several hours or, if possible, 1 day prior to operating the Chlorine Generator. Take care not to exceed the recommended salt level. Measure salt 6 - 8 hours after adding to the pool.

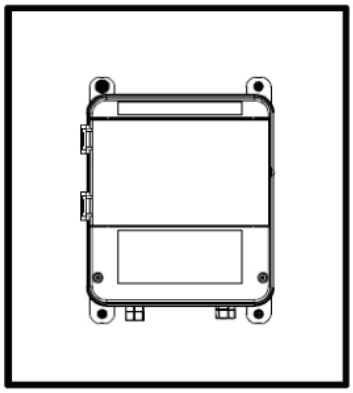
NOTE **If the pool does not have new water, add 1 Qt. of Liquid Magnet metal remover and 1 Qt. of non-copper based algaecide to the pool, per manufacturer's instructions. This ensures a quick, trouble free transfer to the Chlorine Generator System.**

INSTALLATION OF CONTROL BOX

- Chlorine Generator is contained in a rain tight enclosure that is suitable for outdoor mounting. The Control Box must be mounted a minimum of 12 Ft. horizontal distance (or more, if local codes require) from the pool, within 2 meters from a protected outlet, and within 15 Ft. from where the Cell is installed.
- The Control Box is designed to mount vertically on a flat surface with the cables facing downward. Because the enclosure also acts as a heat sink (disperses heat from inside the box), it is important not to block the four sides of the Control Box. Do not mount chlorine generator inside a panel or tightly enclosed area.
- Before securing the Control Box to the intended location, make sure that the power cord will reach the protected outlet and that the Cell cable will reach the location where the Cell will be installed.



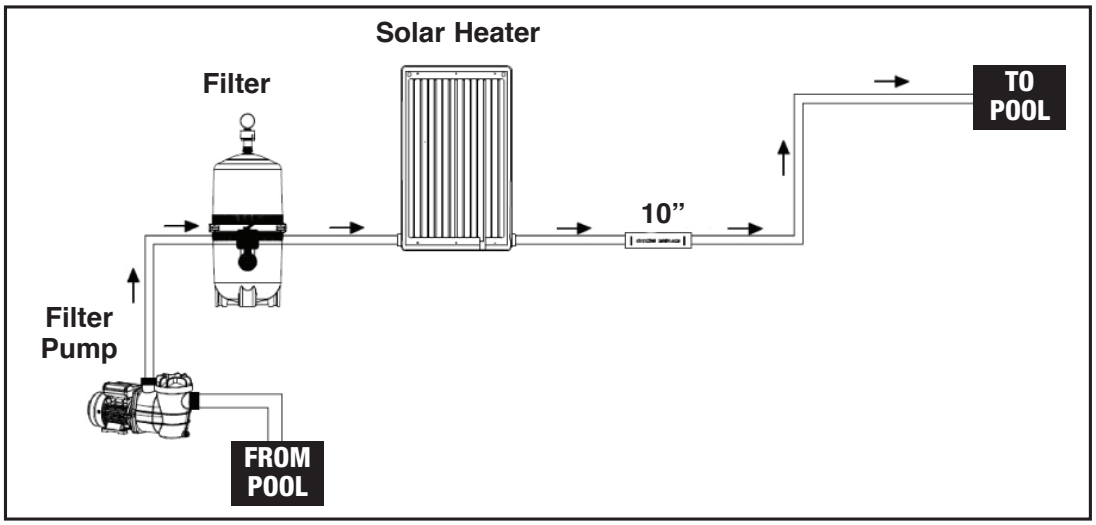
Fix the controller box on the wall, put the gaskets on the screws, and fasten the screws into the holes.



Screw in bottom fasteners securely.

PLUMBING

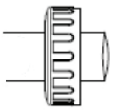
- The Cell is designed to install in either 1½" or 2" PVC pool plumbing. The Cell must be installed on a 10" run of straight pipe at the end of the return piping just before the water returns to the pool. All pool equipment should be installed before the Cell.
- With power removed to the pump, stat installation. See diagram.



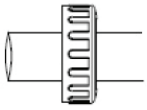
1

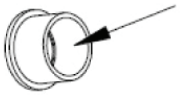
Cut Pipe and
Clean shavings

2



Slide Nuts on Pipe





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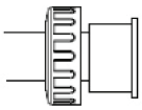
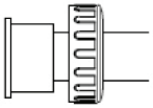


Fix two connectors on
the ends of two pipes
(press to the end)



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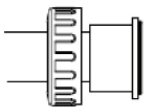
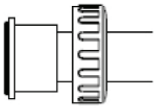
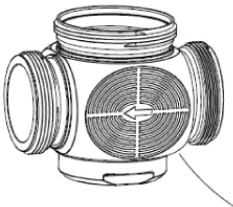
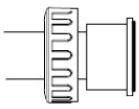


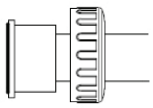


Insert O-ring to each
connector

5

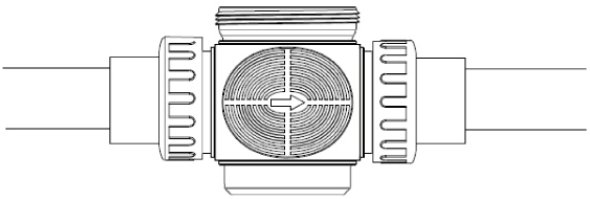




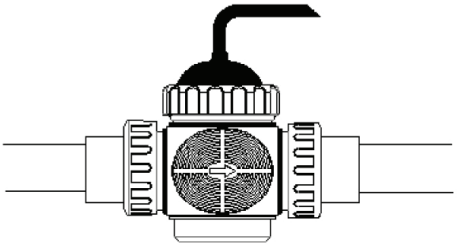


Insert Cell and hand tighten nuts
(make sure the water direction is
consistent with the arrow)

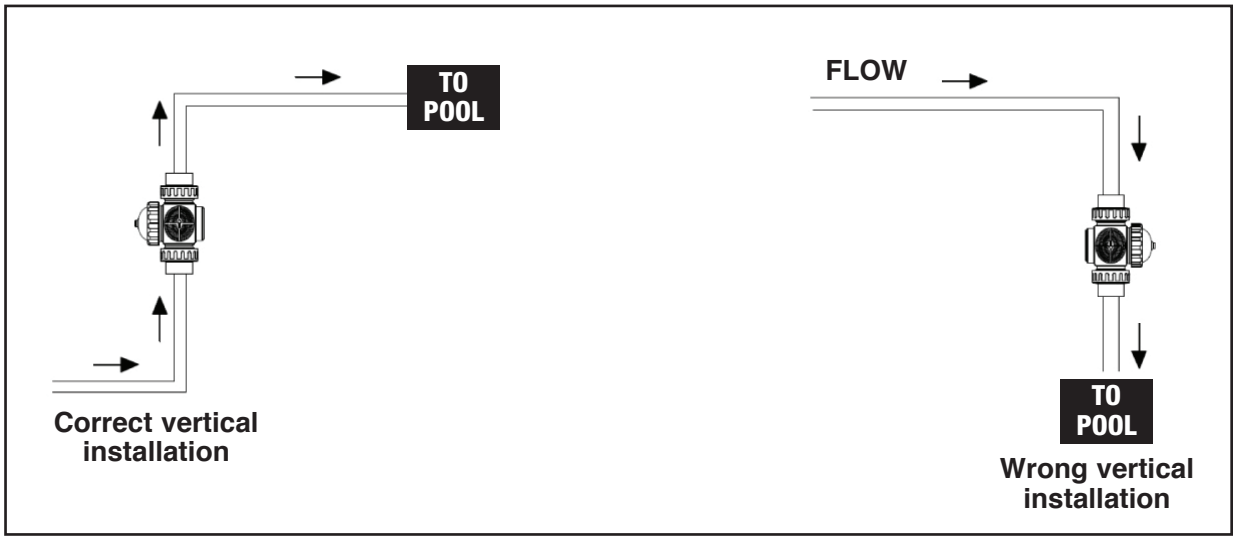
6



7 **UNIT INSTALLED**



- It's necessary to install the chlorine generator vertically, please install according to the indicated arrow (outlet position must be higher than inlet), never install in wrong direction, otherwise the flow switch assembly may disable. Refer to the diagram below.



NOTE **Before going any further, the pool water must be balanced and salt must be added to your pool. If this has not already been done, refer to the "Water Chemistry" section of this manual for information on how to prepare your pool water for Chlorine Generator operation.**

POOL WATER and CHEMISTRY

- The table below summarizes the levels that are recommended by APSP. The only special requirements for the chlorine generator are the salt level and stabilizer.
- It is important to maintain these levels in order to prevent corrosion or scaling and to ensure maximum enjoyment of the pool. Test your water periodically.
- Your authorized chlorine generator dealer or most pool stores can provide you with the chemicals and procedures to adjust the water chemistry.
- Be sure to tell the pool store that you are using a Chlorine Generator.

CHEMICAL	IDEAL LEVELS
Salt	3000 — 3400ppm
Free Chlorine	1.0 to 3.0 ppm
pH	7.2 to 7.8
Cyanuric Acid (Stabilizer)	30 to 80 ppm Add stabilizer only if necessary
Total Alkalinity	80 to 120 ppm
Calcium Hardness	200 to 300 ppm
Metals	0 ppm
Saturation Index	-.2 to .2 (0 best)

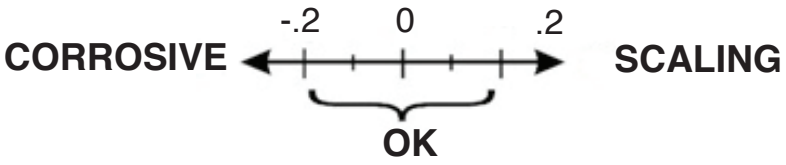
SATURATION INDEX

- The saturation index (Si) relates to the calcium and alkalinity in the water and is an indicator of the pool water “balance”.
- Your water is properly balanced if the Si is 0 ±.2. If the Si is below -0.2, the water is corrosive and plaster pool walls will be dissolved into the water. If the Si is above +0.2, scaling and staining will occur. Use the chart below to determine the saturation index.)

Si = pH + Ti + Ci + Ai - 12.1

°C	°F	Ti	Calcium Hardness	Ci	Total Alkalinity	Ai
12	53	**0.3**	75	**1.5**	75	**1.9**
16	60	**0.4**	100	**1.6**	100	**2.0**
			125	**1.7**	125	**2.1**
19	66	**0.5**	150	**1.8**	150	**2.2**
24	76	**0.6**	200	**1.9**	200	**2.3**
			250	**2.0**	250	**2.4**
29	84	**0.7**	300	**2.1**	300	**2.5**
34	94	**0.8**	400	**2.2**	400	**2.6**
			600	**2.4**	600	**2.8**
39	100	**0.9**	800	**2.5**	800	**2.9**

- How to use: Measure pool pH, temperature, calcium hardness, and total alkalinity. Use the chart above to determine Ti, Ci and Ai into the above equation. If Si equals 0.2 or more, scaling and staining may occur. If Si equals -0.2 or less corrosion or irritation may occur.



ADJUST SALT LEVEL

- Use the Chart on the next page to determine how much salt in Lbs is need to be added to reach the recommended levels. Use the Chart on page 11 if pool size is unknown.

POUNDS OF SALT NEEDED FOR 3300 PPM

CURRENT SALT LEVEL PPM	GALLONS OF POOL WATER											
	14,000	16,000	18,000	20,000	22,000	24,000	26,000	28,000	30,000	32,000	34,000	36,000
0	373	427	480	533	587	640	693	747	800	854	907	960
200	350	400	450	500	550	600	650	700	750	800	850	900
400	327	373	420	467	513	560	607	653	700	747	793	840
600	303	347	390	433	477	520	563	607	650	693	737	780
800	280	320	360	400	440	480	520	560	600	640	680	720
1000	257	293	330	367	403	440	477	513	550	587	623	660
1200	233	267	300	333	367	400	433	467	500	533	567	600
1400	210	240	270	300	330	360	390	420	450	480	510	540
1600	187	213	240	267	293	320	347	373	400	427	453	480
1800	163	187	210	233	257	280	303	327	350	373	397	420
2000	140	160	180	200	220	240	260	280	300	320	340	360
2200	117	133	150	167	183	200	217	233	250	267	283	300
2400	93	107	120	133	147	160	173	187	200	213	227	240
2600	70	80	90	100	110	120	130	140	150	160	170	180
2800	47	53	60	67	73	80	87	93	100	107	113	120
3000	23	27	30	33	37	40	43	47	50	53	57	60
3200	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal
3400	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
3600+	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute

If you do not know your pool size, please use the below.

SHAPE	GALLONS Pool Size in Feet
Rectangular	Length x Width x Average Depth x 7.5
Round	Diameter x Diameter x Average Depth x 5.9
Oval	Length x Width x Average Depth x 6.7

- The ideal salt level is between (2700 ppm) - (3400 ppm) with (3200 ppm) being ideal. If the level is low, determine the level of salt in the pool and add salt according to the chart.
- A low salt level will reduce the efficiency of the Chlorine Generator and result in low chlorine production. A high salt level can cause the Chlorine Generator to shutdown and may begin to give a salty taste to your pool (generally, the salt will begin to be tasted at a level of about (3500 ppm) - (4000 ppm).
- The salt in your pool is constantly recycled and the loss of salt throughout the swimming season should be small. This loss is due primarily to the addition of water because of splashing, backwashing, or draining (because of rain). Salt is not lost due to evaporation.

WHAT TYPE OF SALT TO USE

- It is important to use only sodium chloride (NaCl) salt that is greater than 99% pure. This is common food quality and is usually available in 40 lbs bags.

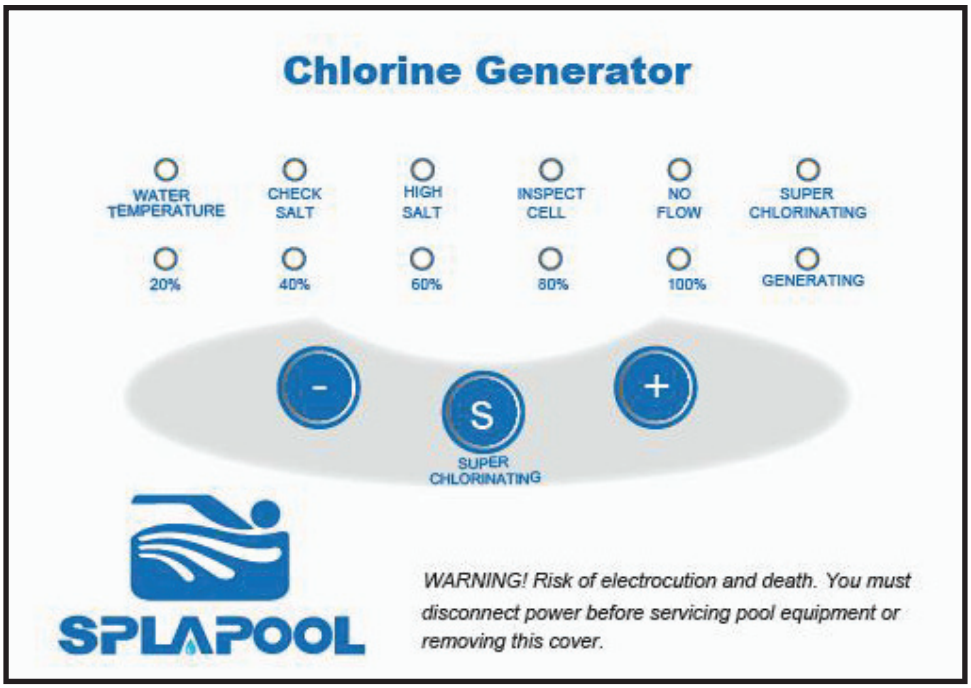
HOW TO ADD OR DILUTE SALT

- For new plaster pools, wait 10-30 days (check with you local pool professional) before adding salt to allow the plaster to cure. Turn the circulating pump on and add salt directly into the pool. Brush the salt around to speed up the dissolving process — do not allow salt to pile up on the bottom of the pool. Run the filter pump for 24 hours with the suction coming from the main drain (use pool vac if there is no main drain) to allow the salt to evenly disperse throughout the pool.
- The only way to lower the salt concentration is to partially drain the pool and refill with fresh water.
- Always check stabilizer (cyanuric acid), when checking salt. These levels will most likely decline together. Use the chart on page 12 to determine how much stabilizer must be added to raise the level to 80 ppm maximum (Use stabilizer only if necessary).

POUNDS OF STABILIZER (CYANURIC ACID)
NEEDED FOR 80 ppm

CURRENT STABILIZER LEVEL ppm	GALLONS OF POOL WATER											
	14,000	16,000	18,000	20,000	22,000	24,000	26,000	28,000	30,000	32,000	34,000	36,000
0 ppm	9.4	10.7	12.0	13.4	14.7	16.0	17.3	18.7	20.0	21.3	22.7	24.0
10 ppm	8.2	9.4	10.5	11.7	12.9	14.0	15.2	16.4	17.2	18.7	19.8	21.0
20 ppm	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0
30 ppm	5.9	6.7	7.5	8.4	9.2	10.0	10.8	11.7	12.5	13.3	14.2	15.0
40 ppm	4.7	5.4	6.0	6.7	7.4	8.0	8.7	9.3	10.0	10.7	11.3	12.0
50 ppm	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0
60 ppm	2.3	2.7	3.0	3.3	3.7	4.0	4.3	4.7	5.0	5.3	5.7	6.0
70 ppm	1.2	1.4	1.5	1.7	1.8	2.0	2.2	2.3	2.5	2.7	2.8	3.0
80 ppm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

CONTROL PANEL



STATUS LEDs

WATER TEMPERATURE

Turns on when water temperature is lower than 52° F or higher than 110° F, chlorine generator shuts down to protect cell from damage.

CHECK SALT

Flashing when salt level is lower than 2800 ppm; Turing solid when the salt level is under 2400 ppm at this time the chlorine generator shuts down to protect cell from damage.

HIGH SALT

Flashing when salt level is higher than 4200 ppm; Turing solid when the salt level is higher than 4600 ppm at this time the chlorine generator shuts down to protect cell from damage.

INSPECT CELL

Turns on when there is a problem with unit check troubleshooting. Please check the cell and salt level.

NO FLOW

Turning on means no flow rate or low flow rate. Filter pump may be shutdown. If not, please check **"Troubleshooting"** in this manual.

SUPER CHLORINATING

Turns on when chlorine generator is on super chlorinating mode.

GENERATING

Three modes for this LED light:

1. **SOLID:** machine is on chlorinating mode
2. **FLASHING:** machine is on standby mode
3. **NO LIGHT:** machine is not in chlorinating mode

CHLORINE OUTPUT LED INDICATORS

The five (5) LED indicators display as a bar graph to show in 20% increments, the percentage of time the chlorine is produced during pump run time.

- **0% — No LEDs lit** - No chlorine produced – Chlorine Generator is off.
- **20% — 1 LED lit** - Produces chlorine 20% of each hour of pump run time, 12 minutes on, 48 minutes off.
- **40% — 2 LEDs lit** - Produces chlorine 40% of each hour of pump run time, 24 minutes on, 36 minutes off.
- **60% — 3 LEDs lit** - Produces chlorine 60% of each hour of pump run time, 36 minutes on, 24 minutes off.
- **80% — 4 LEDs lit** - Produces chlorine 80% of each hour of pump run time, 48 minutes on, 12 minutes off.
- **100% — 5 LEDs lit** - Produces chlorine almost 100% of each the hour of pump run time, 59 minutes on, 1 minute off.

SWITCH

1. **ON:** Press once to start up the machine.
2. **MORE:** Under daily service mode, increasing the time the cell produces chlorine, in 20% increments.
3. **SELF-CLEANING:** Pressing for 3 seconds to start or close self-cleaning mode.
4. **INCREASE SELF-CLEANING CYCLE:** Under self-cleaning mode, press once will add 1 hour to the cleaning cycle, 2-5 hours are adjustable, pre-programmed every 3 hours.

1. **OFF:** Push and hold for 3 seconds to shutdown the machine.
2. **LESS:** Under daily service mode, decreases the time the cell produces chlorine, in 20% increments, leaving no lights on, no chlorine is produced.
3. **Decrease of self-cleaning cycle:** Under self-cleaning mode, press once will decrease 1 hour to the cleaning cycle, 2-5 hours are adjustable, pre-programmed every 3 hours.

Super chlorination: Press “S” to start super chlorinating mode, 24 hours chlorinating. Even if the pump is shutdown during this period, Blue Torrent Chlorine Generator will start the program again after pump re-started until 24 hours are finished. Press “S” again to close super chlorination mode.

SELF-CLEANING

The self-cleaning feature reduces scale buildup on the blades of the Blue Torrent chlorine generator.

The self-cleaning cycle can be adjusted to run every 2, 3, 4, or 5 hours, whichever is the optimal for your particular pool conditions in order to minimize scale buildup but maximize the life of the Blue Torrent chlorine generator. The Blue Torrent chlorine generator is pre-programmed to run self-cleaning every 3 hours.

DAILY SERVICE

Blue Torrent chlorine generator is very simple for operation, all you need is to press “+” to enter chlorination mode and adjust chlorine output. If the pool water chemistry levels are in the recommended ranges, there are three factors that you can control which directly affect the amount of chlorine the unit will generate:

1. Filtering Time per day

2. The percentage setting

3. Salt level in pool

The filter pump timer should be set so that all of the water in the pool passes through the filter at least once each day. For pools with high chlorine demand, the timer may have to be set longer to generate enough chlorine.

DAILY CHLORINE OUTPUT SETTINGS

Use “+”“-” to adjust chlorine output. 20% indicates that it produces chlorine 20% of each hour of pump run time, 12 minutes on, 48 minutes off. In order to find the most suitable chlorine output, suggest starting with 40%, testing every couple days. Adjusting 2-3 times, achieve the most ideal setting.

NOTE **After the ideal DAILY CHLORINE OUTPUT setting has been found, you may need to raise the setting when the pool water temperature**

Increases significantly, when there is higher than normal bather load You may need to lower the setting when the pool water temperature decreases significantly or there are long periods of inactivity.

PREVENT OVER-CHLORINATION DURING COLD WEATHER

Check chlorine levels periodically. Most pools require less chlorine during cold weather and the Daily chlorine output should be lowered accordingly.

SERVICING AND CLEANING THE CELL

Unplug the chlorine generator before cleaning. Inspect the Cell for scale formation on the plates and for any debris which has passed through the filter and caught on the plates. If deposits are seen, use a garden hose and try to flush the scale off.

WINTERIZING

To avoid winterizing damage by freezing water just as your pool plumbing would, please remove and store your cell for winter. In areas of the country which experience severe or extended periods of freezing temperatures, be sure to drain all water from the pump, filter, and supply and return lines before any freezing conditions occur. The Control Box is capable of withstanding any winter weather and should not be removed.

STARTING UP IN SPRING

DO NOT turn the Chlorine Generator on until the pool water chemistry has been brought to the proper levels. Please refer to the “Water Chemistry” section of this manual for information or visit your local pool dealer.

TROUBLE SHOOTING

Use the following troubleshooting information to resolve possible problems with the Blue Torrent Chlorine Generator.

NOTE **Switch power off to unit before attempting Service or Repair. Always remove AC power to Power Center when plugging or unplugging the Cell into the Power Center**

POSSIBLE CAUSES OF LOW OR NO CHLORINE IN THE POOL WATER

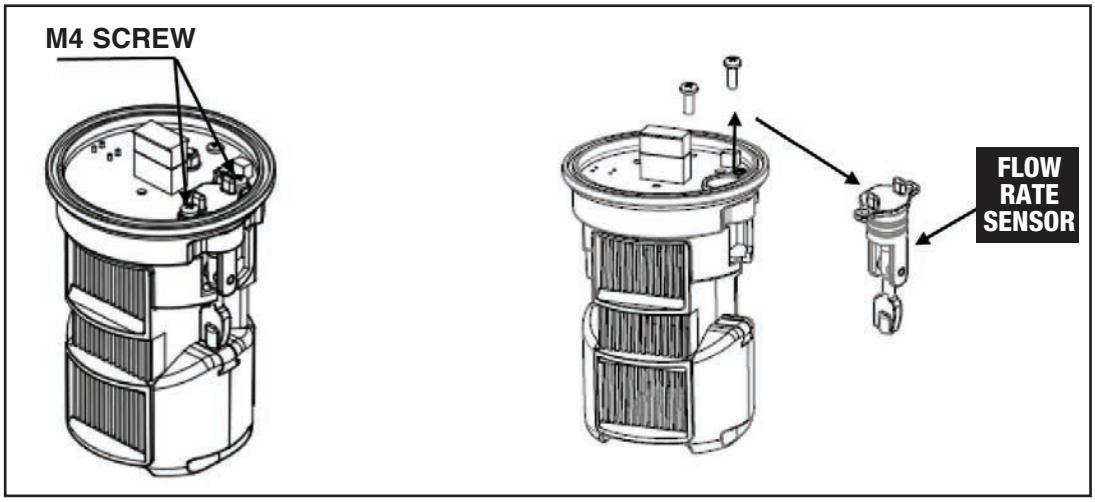
- Chlorine output is set too low.
- Stabilizer too low in pool. Test water.
- Low salt level. Check salt level.
- High salt level. Check salt level.
- Chlorine output not adjusted with the temperature. Very warm pools increase chlorine demand — increase Output %, or filter run time.
- Clogged or dirty cell. Clean out cell.
- High level of Nitrogen in pool water. Test water for phosphates.
- Increase Filter run time.

LEDs NOT LIGHTING UP

- At least one LED should light-on after power up. If no light please check if the power line of control box is connected to outlet.

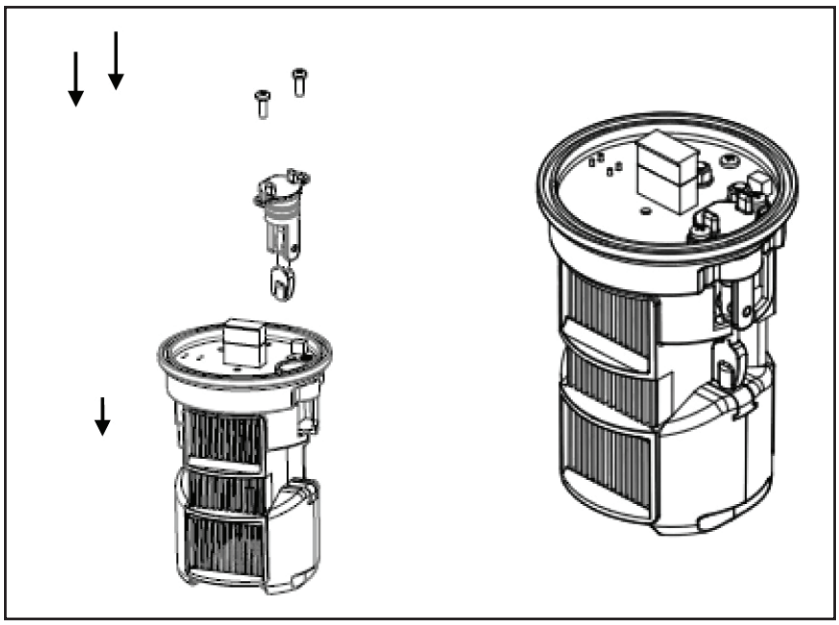
NO FLOW LED

- Check for correct operation of the pump. Check for clogged strainer baskets.
- Check to see if Filter needs cleaning or backwashing.
- Check if the flow rate sensor is damaged. Refer to the below drawing to replace it.



1. Use screw-driver to unscrew

2. Take out the flow rate sensor



3. Replace with new flow rate sensor

4. Fix two screws

NO CHLORINE PRODUCING OR CHLORINE GENERATOR SHUTDOWN AUTOMATICALLY

- Check if the power line of control box is connected to outlet.
- Check the salt level in pool water.
- Check the pool water temperature.

NOTE **Re-start the Chlorine Generator after chemistry must be properly balanced.**