



# Jacuzzi® Pro Grade Salt Chlorinating System Installation & Operation



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# A. SAFETY INSTRUCTIONS & PRECAUTIONS

## IMPORTANT SAFETY INSTRUCTIONS. READ AND FOLLOW ALL INSTRUCTIONS



### **WARNING**

To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.



### **WARNING**

Risk of Electric Shock. Connect only to a grounding type receptacle protected by a ground-fault circuit-interrupter (GFCI). Contact a qualified electrician if you cannot verify the receptacle is protected by a GFCI.

### **NOTICE**

Do not bury cord. Locate cord to minimize abuse from lawn mowers, hedge trimmers, and other equipment.



### **WARNING**

To reduce the risk of electric shock, do not use extension cord to connect unit to electric supply; provide a properly located outlet.



### **CAUTION**

[For swimming pool pumps with or without a maximum 3-foot (0.91-m) cord] This chlorinator is for use with permanently installed pools and may also be used with hot tubs and spas if so marked. Do not use with portable pools. A permanently-installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage and reassembled to its original integrity.



### **CAUTION**

This product can form hazardous gas if not installed or operated correctly.



### **WARNING**

Always follow all local building and electrical codes.

## SAVE THESE INSTRUCTIONS

### ELECTRICAL HAZARD

- All Salt systems are shipped from the factory wired for 220 Volts.
- To reduce risk of electrical shock make sure all power to pool equipment area is off prior to any installation or removal of Salt System components.
- Immediately replace damaged Control Center cord.
- Do not bury cord. Locate cord to minimize abuse from lawn mowers, hedge trimmers and other equipment.
- Severe shock or injury will likely occur as a result of drill or drill cord coming in contact with water. Never allow electric drill or cord to come in contact with water. Only plug drill into a Class A (5 Milliampere Trip) protected Ground Fault Circuit Interrupter (GFCI) in accordance with the National Electrical Code Section 680 (USA ONLY). Please see your drill owner's manual for further safety precautions.
- Install the Control Center at least 10 feet from the inside walls of a pool to prevent any possibility of the unit coming in contact with water.
- The Salt Chlorinator has been designed with an internal electronic flow sensing tab. This device automatically switches the power to the electrolytic cell "OFF" when the water through the cell stops. To prevent cell damage and/or personal injury, do not in any way interfere with this system which has been designed for your protection.

# A. SAFETY INSTRUCTIONS

## CHEMICAL USE HAZARD

To avoid personal injury when working with pool chemicals, always wear rubber gloves and eye protection, and work in a well-ventilated area. Use caution when choosing a location to open and use chemicals as they may damage any surface to which they come in contact.

- The addition of certain chemicals can reduce the effectiveness of chlorine. Always make sure that proper residual chlorine levels are maintained to avoid personal injury.
- This product produces chlorine. Individuals with any type of chlorine sensitivity should take the appropriate precautions to avoid injury or illness.



### WARNING

IMPORTANT SAFETY INSTRUCTIONS PERTAINING TO RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS. READ AND FOLLOW ALL INSTRUCTIONS. Failure to follow safety warnings and instructions can result in severe injury, death, or property damage.

### NOTICE

Attention Installer: This manual contains important information about the installation, operation and safe use of this product. Before installing this product, read and follow all warning notices and instructions which are included. This information should be given to the owner and/or operator of this equipment.



### WARNING

To reduce the risk of injury, installation and service should be done by a qualified Pool Service Professional, certified electrician or authorized CMP representative.



### WARNING

In order to comply with UL1081 Section 53.5 and UL1795 (Hydro-massage bathtubs) Sections 21.1, 59.5 and 63.1 and some local electrical codes; "connect only to a circuit that is protected by a ground fault circuit-interrupter (GFCI)." Such a GFCI should be provided by the installer and should be tested on a routine basis. To test the GFCI, push the test button. The GFCI should interrupt power. Push the reset button. Power should be restored. If the GFCI fails to operate in this manner; there is a ground current flowing, indicating the possibility of an electric shock. Do not use the system. Disconnect the unit and contact a qualified service representative before using.

## PREVENT CHILD INJURY AND DROWNING

To reduce the risk of injury; do not permit children to operate this product. Do not let anyone, especially small children, sit, step, lean, or climb on any equipment installed as part of your pool's operational system. Unless otherwise stated, ALL components of your pool's operational system should be located at least 3 feet from the pool so children cannot use the equipment to gain access and be injured or drown.

## EQUIPMENT WATER PRESSURE HAZARD

Always turn pump off prior to installing or removing the Electrolytic cell. Your pump/filter is operated under pressure and the pressure must be released before you begin work. Please see your pump/filter owner's manual for further instructions. To avoid cell damage, water pressure in the cell must not exceed 75 PSI. Do not operate electrolytic cell without proper flow or water circulation. A build-up of flammable gases will result in hazardous conditions.

## CAUTION – FAILURE TO HEED THE FOLLOWING COULD CAUSE DAMAGE TO POOL EQUIPMENT OR PERSONAL INJURY

# A. SAFETY INSTRUCTIONS & PRECAUTIONS

- Must be installed and operated as specified in the owner's manual.
- Power to the system should be turned off before unplugging the Electrolytic cell from the cell housing, or power supply, to prevent cell damage and low voltage sparks. Scratching or bending plates in the cell housing will reduce cell life.
- DO NOT use any type of lubricant on the O-ring. It is, however, imperative that the O-ring (and the channel it seats into) be kept clean, in order to make a strong seal.
- High water temperatures above 104 degrees (40 degrees C) or direct sunlight can cause the cell housing exterior plastic to discolor. This is not a warranty claim.
- Follow installation instructions on page 7 for location and mounting of the Control Center.
- Visibly inspect the cell frequently to check and prevent the accumulation of pool debris that (for any reason) may have bypassed the pool filter.
- Direct sunlight can cause the control center cover to discolor. This is not a warranty claim.

The system must be installed by a qualified pool professional or certified electrician. If you have any questions or need assistance in finding a qualified installer, please contact support.

## B. SYSTEM SIZING REFERENCE

When modifying any plumbing system, it is important to evaluate the total head loss, and any impact that head loss may have on the design of an existing plumbing system. The following chart will give specific head loss for the Salt Cell. If you have any questions, please contact our tech support department.

DESIGNED FLOW RATE	GPM	ACTUAL HEAD LOSS
20%	20	.20 Ft Water
40%	40	.41 Ft Water
60%	60	1.54 Ft Water
80%	80	2.28 Ft Water
100%	100	3.71 Ft Water

TABLE 1 - FLOW RATE VS HEAD LOSS

# C. INSTALLATION PROCEDURE

## 1. REQUIRED FOR INSTALLATION

### **Your Salt Chlorinator includes the following:**

- I Control Center
- I Style Cell Housing
- I O-Ring
- I Jumper Wire
- I Electrolytic Cell with Cord and Cap
- I Mounting Bracket
- I Cleaning Tool
- I Owner's Manual
- 2 Union Nut Tail-pieces

### **The following items will also be required to install the system:**

- Screwdriver
- Level
- Hacksaw or PVC Cutter
- Wire Stripping Tool
- Electric Drill
- 8AWG Copper Bonding Wire
- Mounting Screws

INSTALLING THE CONTROL CENTER WARNING! When using electrical products, basic precautions should always be followed: be sure to read and follow safety instructions on pages 3 through 5.



### **DANGER**

Risk of electric shock, which can result in serious injury or death. Before attempting installation or service, make sure that all power to the circuit supplying power to the system is disconnected/ turned off at the circuit breaker. Connect only to a circuit protected by a ground fault circuit-interrupter (GFCI).

## 2. INSTALLATION LOCATION

- a. It is recommended to install the salt cell installed as the last piece of pool equipment in line, on the return to the pool, after the heater. (See illustration 1 on next page)
- b. Installing horizontally will ensure the flow sensor remains submerged.
- c. If installed vertically, the cell cap must be on top.
- d. Always use a check valve before the cell to prevent chlorine backflow.
- e. All fittings are 2 inch Socket.
- f. NOTE: Do not install on pools using a stainless steel liner or stainless steel plumbing.

### **BELOW GRADE INSTALLATION:**

- g. This exists when the water level of the pool is above the height of the pool equipment.
- h. The system should be wired to the load side of the time clock to power on ONLY when the primary pump is operating.
- i. If valves are not present to isolate the equipment, one ball valve should be installed on the **inlet** side of the cell. This allows the cell to be removed for cleaning when necessary.
- j. A one-way check valve should be installed on the **outlet** side of the cell. This will eliminate the possibility of having a gas build-up (which could cause possible cell damage.)
- k. CAUTION: Failure to follow proper below grade installation procedures may lead to damage to pool equipment.

## C. INSTALLATION PROCEDURE

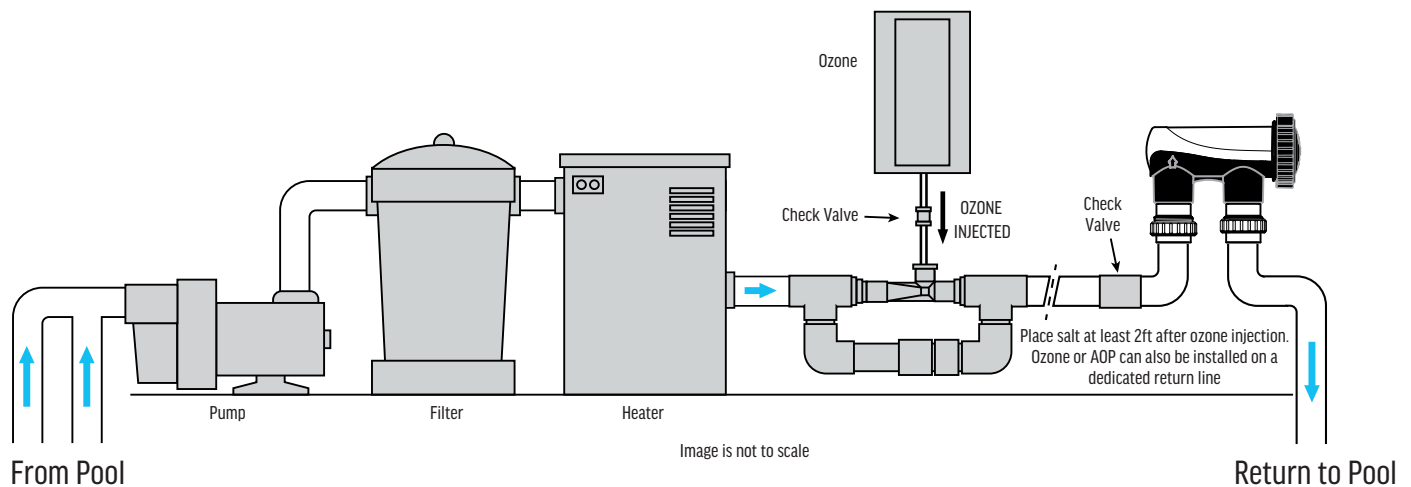


IMAGE 1 - INSTALLATION LOCATION

### 3. CONTROL CENTER INSTALLATION

- Using the end of the cell cord as a guide, locate a suitable location for the mounting of the Control Center. The Control Center must be mounted on a noncombustible surface.
- The wall mounting bracket should be fastened to the wall at a height comfortable for operation. Screws or anchors are not included. Make sure that the bracket is fastened directly onto concrete with the proper anchoring device or into a stud in a noncombustible wall surface. Mount the bracket by installing the one screw, and then leveling the bracket, and installing the other screw, making sure that the mounting bracket is level and horizontal.
- IMPORTANT:** Do not enclose the Control Center in any box.
- The Control Center has two mounting bolts installed at the top back of the unit: simply place the head of the pins in the keyhole slots on the wall bracket, and allow the unit to hang freely.

### 4. ELECTRICAL INSTALLATION

- The Control Center is shipped wired for 220V. The control center can be converted to 120V in the field by a pool professional or certified electrician; a wiring diagram for making the conversion is included with each system printed on the box.
- The system is designed to power on **ONLY** when the primary pump is operating and should be wired to the load side of the time clock.
- Ground with an 8AWG bonding wire from the lug (Image 2) on the bottom of the Control Center to a grounding rod (this is necessary to protect the integrity of the electronic systems).
- A complete wiring diagram is included on the next page (Image 3)
- NOTE:** If installed with VS Pump, run chlorinator on secondary timer and sync the second timer with run time on VS Pump. This ensures the system powers on in sync with the pump in low flow situations.

## C. INSTALLATION PROCEDURE



IMAGE 2 - BOTTOM OF CONTROL CENTER

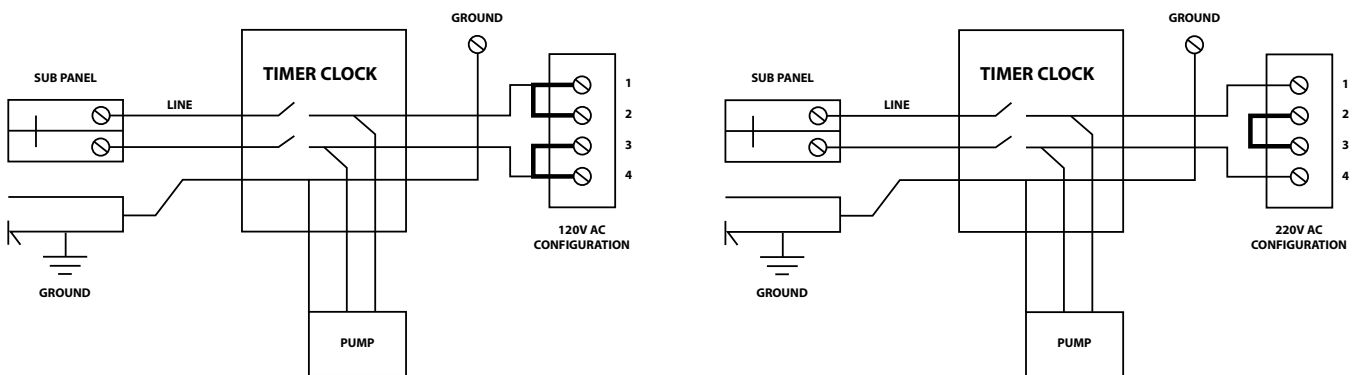


IMAGE 3 - WIRING BLOCK DIAGRAM

# C. INSTALLATION PROCEDURE

## 5. GENERATOR CELL INSTALLATION

- Locate pool return line after the heater or filter as shown in Image 1. This is the preferred location for the cell housing.
- Cut and glue the vertical plumbing risers from the main plumbing into place. Install union nut and tailpiece onto pipe. Use included template to set pipe spacing. Install the cell housing to the top of the risers, making sure the cell housing is level.
- Install the O-ring into the receiving channel inside the cell housing, and then slide the cell into the cell housing making sure the key way on the black plastic base aligns with the matching key in the cell housing.
- Put the main cap into place and hand tighten only; be sure not to strip the threads.
- Connect the cell cord to the Control Center. Align the three pins of the cell cord plug with the socket on the Control Center bottom (Image 2) and insert the connector until it clicks in place.

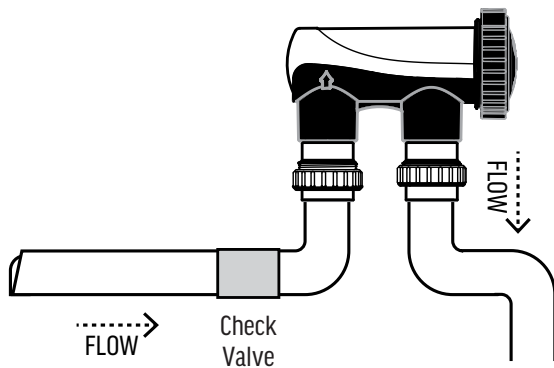


IMAGE 4A - HORIZONTAL CELL

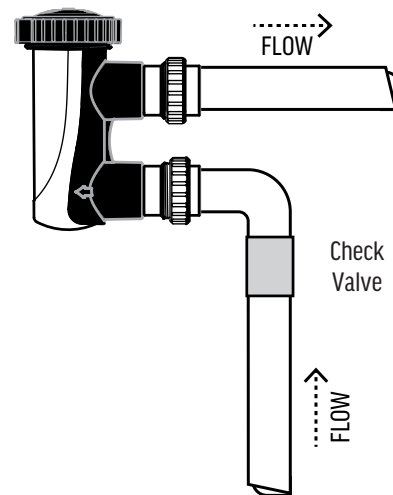


IMAGE 4B - VERTICAL CELL

## 6. SYSTEM START UP & BALANCING

- Balance your water chemistry according to the Water Chemistry Parameters (Table 3). Add the proper amount of salt and circulate 24 hours before starting the Salt.
- Start system at the 75% Chlorine Output level and operate normally. For the first two weeks, test the water every 2-3 days for proper chlorine residual levels. Raise or lower the Chlorine Output by pressing the output control arrows as needed (see operation instructions on page 12), according to your test results. ( See section D-3 for details)
- If Chlorine Output percentage setting is 100%, and chlorine residuals are still below the 1-3 PPM range, increase the output to BOOST, see Troubleshooting on page 15.
- The rule of thumb for daily run time of the Salt system is 1 hour of operation for every 10 degrees of ambient temperature (i.e. 90 degrees would equal 9 hours of run time).
- Once chlorine output percentage setting is set, output should only be adjusted for increased chlorine demand situations.

# C. INSTALLATION PROCEDURE

MEASUREMENT	RECOMMENDED LEVEL	DETAILS
FREE CHLORINE	1.0 - 3.0 PPM	Recommended level for residential pools to keep chlorine at a proper range for sanitization
pH	7.2 - 7.6	High pH reduces sanitizer efficiency. Low pH damages pool surfaces and irritates skin and eyes
TOTAL ALKALINITY (TA)	80 - 100 PPM	Protects pH and prevents rapid pH "bounce"
CYANURIC ACID / STABILIZER	30 - 50 PPM	Protects chlorine from destruction by sunlight. Must be added manually with salt chlorine systems
CALCIUM HARDNESS	200 - 400 PPM	Excess calcium can increase scaling problems. Low calcium (soft water) can damage surfaces
PHOSPHATES	ZERO	Can deplete free available chlorine
SALT RESIDUAL	4,000 - 4,500 PPM	Ideal level for chlorine production. Salt systems will operate at 3,000 - 35,000 PPM

TABLE 2 - WATER BALANCE

POUNDS OF SALT PER GALLON  REQUIRED TO REACH 4,000 - 4,500 PPM																		
CURRENT POOL SALT CONCENTRATION (PPM)	POOL SIZE (GALLONS)																	
	8000	10000	12000	14000	16000	18000	20000	22000	24000	26000	28000	30000	32000	34000	36000	38000	40000	
	0	266	334	400	466	533	600	637	733	800	867	933	1000	1067	1113	1200	1267	1335
	200	253	315	380	443	507	570	633	697	760	823	887	950	1013	1076	1140	1203	1267
	400	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200
	600	227	283	340	397	453	510	567	623	680	737	793	850	907	964	1020	1077	1135
	800	213	266	320	374	427	480	533	587	640	693	747	800	853	907	960	1013	1067
	1000	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
	1200	185	232	280	328	373	420	467	513	560	607	653	700	747	793	840	887	933
	1400	171	215	260	305	347	390	433	477	520	563	607	650	693	737	780	823	867
	1600	160	198	240	282	320	360	400	440	480	520	560	600	640	680	720	760	800
	1800	147	182	220	258	293	330	367	403	440	477	513	550	587	623	660	697	733
	2000	133	166	200	234	267	300	333	367	400	433	467	500	533	567	600	633	667
	2200	120	150	180	210	240	270	300	330	360	390	420	450	480	510	540	570	600
	2400	107	132	160	188	213	240	267	293	320	347	373	400	427	453	480	507	533
	2600	93	116	140	164	187	210	233	257	280	303	327	350	373	397	420	443	466
	2800	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400
	3000	67	84	100	116	133	150	167	183	200	217	233	250	267	283	300	317	333
	3200	53	68	80	93	107	120	133	147	160	173	187	200	213	227	240	253	266
	3400	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
	3600	27	33	40	46	53	60	66	73	80	86	93	100	106	113	120	127	133
	3800	13	16	20	23	26	30	33	36	40	43	47	50	53	57	60	63	67
	4000	ok	ok	ok	ok	ok	ok	ok	ok	ok	ok	ok	ok	ok	ok	ok	ok	ok

TABLE 3 - SALT ADDITION CHART

# D. SYSTEM OPERATION

## 1. HOW THE CHLORINATOR WORKS

At System Start Up the pool water should have a 4000-4500 ppm salt residual. Common salt (sodium chloride) is made up of two elements, sodium and chloride. As part of the daily filtration cycle, the pool water is passed through the Salt electrolytic cell to produce chlorine, which is instantly dissolved into the water:

The chlorine destroy bacteria, viruses and algae. When the chlorine is spent it reverts back into dissolved salt, restarting the cycle.

### WATER PREPARATION AND TIPS ON WATER CHEMISTRY

Pool water that is not maintained properly will cause damage to the electrolytic cell and possibly void the warranty of the cell. Properly balancing pool water chemistry is the most important aspect of maintaining a swimming pool. Pool water must be tested regularly in order to properly maintain its chemical balance. In accordance with The Association of Pool and Spas Professionals (APSP) standards, we recommend the following water balance conditions be maintained on an ongoing basis to protect the pool finish and equipment, and ensure a pleasing appearance of the water. The Salt systems are warranted to operate properly only if these conditions are met.

## 2. SALT REQUIREMENTS

- a. The system operates best with a salt range of 4,000 - 4,500 ppm. The cell will continue to operate with a minimum of 3,000 PPM and up to 35,000 PPM without any adverse effects to the unit.
- b. NOTE: HIGH salt level above 8,000 PPM may cause corrosion problems with metallic fixtures, light rings, ladders and handrails.
- c. Only pool grade salt should be used. This can be purchased at pool supply stores and most hardware outlets. NEVER use salt that contains iodine or anti-caking agents like YPS, which can cause some discoloration of fittings and pool surface finishes.
- d. NOTE: Do not use rock salt due to its high levels of impurities.

### WHEN TO ADD SALT

- e. Salt level should be checked monthly. The salt level should never be allowed to fall below 3,000 PPM.
- f. Salt level is lowered through dilution (adding fresh water or rainfall), water splashed out of the pool and/or backwashing the filter. **Salt is not lost through evaporation.** If the salinity level drops below the recommended salinity range, use Table 4 on Page 11 to determine the amount of salt that has to be added to obtain the proper salinity level.
- g. NOTE: The Salt will stop generating and the Power light will flash when one of the following conditions exist: cold water (under 60°), low salt (under 3,000 PPM) or a dirty cell (see Image 4 or Troubleshooting section for instructions on what to do when the system goes into service mode).



Do not operate the with newly poured pool plaster. Check with the pool builder or remodeler for specifics on their products before you operate the Salt chlorinator.

### HOW TO ADD SALT TO THE POOL

- h. Determine salt level as discussed above. Use Table 4 to calculate the amount of salt needed.
- i. Power on the pump to circulate the pool water.
- j. Slowly pour in the salt around the outer perimeter of the pool for quick and even distribution. To avoid clogging the filter or damaging the Control Center and pump, do not add salt through the skimmer or surge tank.
- k. Brush the pool bottom to distribute the salt evenly and allow water to circulate for 24 hours to dissolve completely. After 24 hours, confirm salt level reading.
- l. Power on the Salt system and set output percentage to desired Chlorine Output level (see Basic Operation Section)

## 3. CONTROL CENTER OPERATION

### CONTROL CENTER GUIDE

- a. Chlorine Output Lights (A) show level of chlorine output as a percentage of system capacity
- b. Solid Power light (B) indicates the system is operating correctly
- c. Service Light (C) indicates a system warning. See Troubleshooting section page 15

## D. SYSTEM OPERATION

- d. Polarity (D) indicates direction of current; reverses every 6 hours of operation automatically
- e. Press Output Controls Up or Down (E) to increase or decrease system output
- f. On / Off Switch (F) controls main power to system

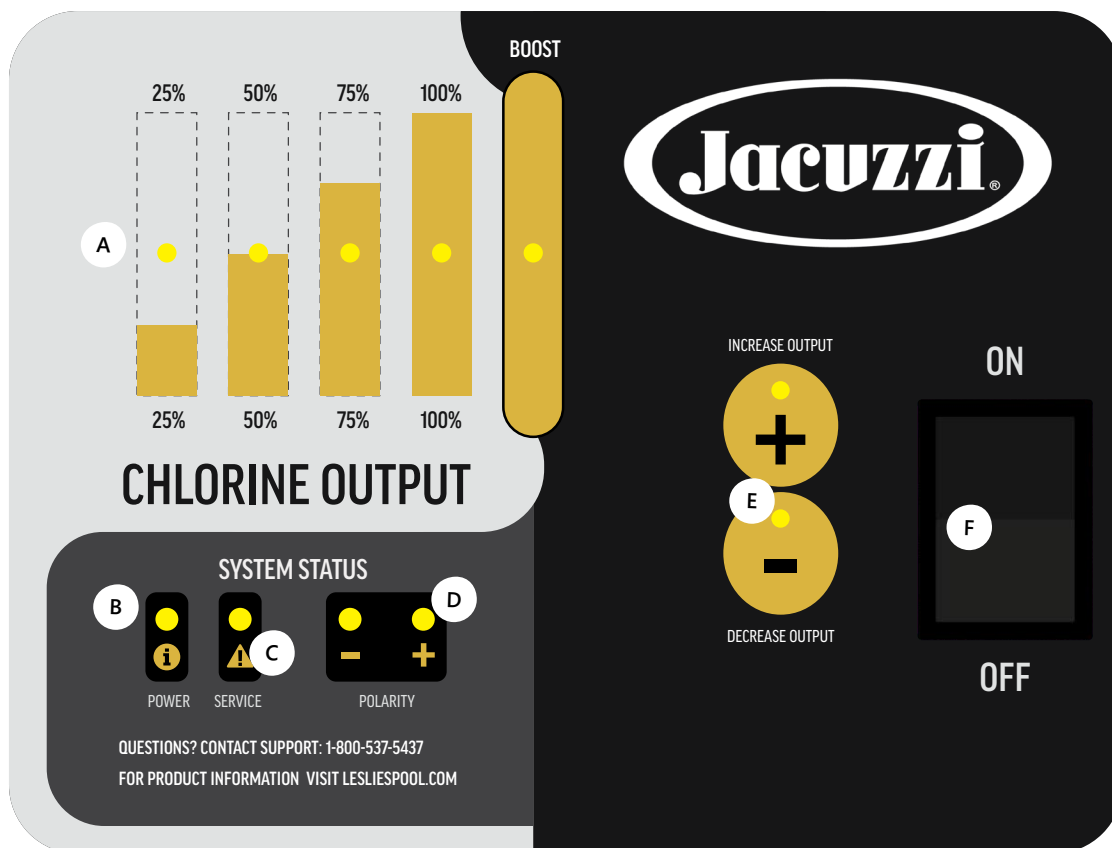


IMAGE 5 - OPERATION PANEL

### SYSTEM POWER UP

- g. Engage Power switch by pressing to “On” position. As the system boots up, the lights will flash for about ten seconds. The Power light will then remain solid; the Chlorine Output lights will display the selected chlorine output level. One of the Polarity lights will also illuminate, indicating the direction of current.
- h. Every six hours of system operation the polarity will change automatically, which prolongs the life of the cell and minimizes build up between the cell blades.
- i. If the power is interrupted (either by the pump turning off or by putting the Power switch into the off position), the system will automatically reset to the setting when last powered on.

### SYSTEM OUTPUT OPERATION

- j. Once the system is in normal operation mode, increase or decrease output with the Output Controls.
- k. Each adjustment will be indicated at the Chlorine Output Lights
- l. When in BOOST MODE (with the red BOOST light illuminated) the system will automatically operate for 72 hours of run time, and then reduce to the 100% level. Boost Mode should be used to offset “out of the ordinary” conditions: unusual weather or extremely high bather load.
- m. Recommended Daily Operation: Operate the pool pump at least 1 hour for every 10 degrees of ambient air temperature.

## D. SYSTEM OPERATION

### 4. COLD WEATHER OPERATION/WINTERIZATION

- a. In cold water conditions (below 60°F), sanitizer demand is reduced significantly. The Salt will reduce its rate of production with water temperatures of 59 degrees Fahrenheit and below depending on the condition of the pool water chemistry.
- b. If the water temperature drops too low for the electrolytic cell to produce chlorine, the service light on the control center will light up and the cell will stop producing. This is due to the water not being conductive enough for the electrolytic process to take place.
- c. For colder climate regions with sustained low or freezing temperatures, the Salt Cell should be properly drained and winterized by a qualified pool professional.

### 5. CELL MAINTENANCE: HOW AND WHEN TO CLEAN YOUR CELL

#### INSPECTING THE CELL

- a. Visually check the cell through the clear housing while the system is operating for buildup on the electrodes and the legs attaching the electrodes to the cell base.
- b. If there is no buildup, there is no need to clean the cell.
- c. How often cleaning is required depends on the chemistry of the pool water, including the hardness of the water and pH.

#### HOW TO CLEAN THE CELL

- d. **IMPORTANT:** Always turn off the pump prior to cleaning the cell. The pump and filter system is operated under pressure, and the pressure must be relieved before you will be able to remove the cell from the cell housing.
- e. Remove the cell cap (the large blue cap at the end of the clear cell housing) by turning it counter clock-wise.
- f. Gently pull the cell electrodes out of the housing, being careful not to damage the o-ring.
- g. Once the cell is removed from the housing, slide the cleaning tool between the blades to remove any calcium build-up. Also clean the legs of the electrodes.
- h. It is not necessary to "scrape" all build-up from the electrodes. Simply remove any build-up and clean any bridging between individual electrodes.
- i. Only use the provided tool to clean the cell. Never use a metal tool to clean.
- j. **NOTE: THERE IS NO NEED TO USE ACID FOR THIS PROCESS.**
- k. Take the o-ring out of the cell housing, and remove material or debris from it. Once you have cleaned the o-ring, use a towel or cotton swab to wipe out the channel in the cell housing that the o-ring seats into.
- l. Replace the o-ring to its channel in the cell housing (**DO NOT USE LUBRICANT**).
- m. Install the electrodes into the cell housing, making sure not to disturb the O-ring.
- n. Return the blue cap to the cell housing and hand tighten in the clockwise direction. Be careful not to over tighten.
- o. Re-start the pump.

## E.TROUBLESHOOTING

SITUATION	POSSIBLE CAUSE	CORRECTIVE ACTION
<b>Low or no chlorine residual in pool</b>	Low stabilizer (Cyanuric acid level in pool water).	Add stabilizer to maintain 20-30 PPM per pool professional's recommendations.
	Insufficient run time.	Increase daily run time. Recommend 1 hour of run time per 10 degrees ambient temp.
	Chlorine Output percentage set too low.	Increase the Chlorine Output Level (see page 12 ).
	Recent increases in weather temperature without increasing the Chlorine Output of the system	Increase the Chlorine Output Level (see page 12).
	Temporary loss of chlorine due to heavy rain, leaves, fertilizer or heavy bather load, recent party, or pets using pool.	Set Chlorine Output to BOOST (Super Chlorinate) for 72 hours. Re-check- if still too low, superchlorinate with outside source. (Take pool water sample to pool professional)
	Loss of salt due to rain or added water.	Test salt level. Add salt using the chart on page 11
	Low salt level (less than 3,000 PPM). System Power light is flashing/ service light is yellow/ solid.	Increase salt level by adding salt according to chart on page 11.
<b>Unable to increase chlorine production</b>	Cold water; low salt level, or cell is over-calcified	Check cell and clean, check salt level, check water temperature.
<b>The cell housing is leaking from the cap (bottom of cell cap or through the cord hole)</b>	O-ring may be improperly seated.	Confirm that o-ring has not been lubricated. Clean the o-ring slot of any dirt or debris. Fully seat the o-ring in into the slot before inserting the cell back into the housing.
	Cell cap may be cross threaded.	Unscrew cap and confirm that the cap screws onto the housing without resistance.
<b>Water is leaking from the cell plug.</b>	Water is traveling through a crack in the cell base and up the cell cord.	Contact Tech Support

## E.TROUBLESHOOTING

SITUATION	POSSIBLE CAUSE	CORRECTIVE ACTION
<b>Power light is flashing and service light is on.</b>	Pool water needs salt.	Test salt level of water. Add salt if necessary. (see chart on page 11)
	Cell is clogged or dirty.	Check and clean cell (see page 14)
	Water temperature is low.	Check water temp, if below 60 degrees, turn system off. See page 14 for details
	Insufficient water flow.	<ul style="list-style-type: none"> <li>• Make sure pump is running.</li> <li>• Check and correct all valve alignments.</li> <li>• Dirty filter: follow filter cleaning procedures</li> </ul>
	Sensor tab (top of cell) issues.	<ul style="list-style-type: none"> <li>• Clean off any calcium on sensor tab.</li> <li>• Make sure there is not an air bubble at point of sensor tab in cell housing – if there is, contact your pool professional or CMP Tech Support.</li> </ul>
<b>System does not have green power light on.</b>	Problem with power to Control Center.	<ul style="list-style-type: none"> <li>• Check to make sure On/OFF Switch is on.</li> <li>• Make sure pump is on.</li> <li>• Check Circuit Breaker on bottom of Control Center; if tripped, press rubber cover to reset.</li> </ul>
	No AC power to Control Center.	Verify time clock is providing 220VAC to Control Center when active (TO BE DONE BY CERTIFIED POOL PROFESSIONAL, OR ELECTRICIAN)
<b>Power light is flashing OR service light is on while operating on low output percentage.</b>	Low salt level, dirty cell, damaged cell blade coatings.	Set the output to “Boost” and then hold down the upward arrow button until the polarity lights begin to flash back and forth. Check to see if power light has stopped flashing or the service light has turned off.

## E.TROUBLESHOOTING

SITUATION	POSSIBLE CAUSE	CORRECTIVE ACTION
<b>The system will not turn on.</b>	Incorrect or no voltage coming from the power source.	Have an experienced pool professional or an electrician confirm that the voltage is existent and correct.
	Circuit breaker may be tripped.	A 6 Amp resettable circuit breaker is located on the bottom right of the control panel. In the event that the circuit breaker trips, push on the rubber cover and you will feel it click as it resets.
	Circuit boards may be damaged.	Contact Tech Support
<b>The titanium legs that hold up the cell blades have broken apart from the blades.</b>	The legs have been eaten away due to corrosive water.	Contact Tech Support
	The weld that held the legs and blades together has failed.	Contact Tech Support

# F. WATER CARE GENERAL GUIDELINES

## **Use Chlorine Stabilizer to Protect Chlorine Residual**

Sunlight naturally destroys chlorine. Half of the chlorine residual is removed by sunlight every 45 minutes. Chlorine stabilizer, also known as conditioner or Cyanuric Acid, protects chlorine from the sun's rays. It helps the chlorine last longer and reduces consumption. Chlorine stabilizer should be added according to the chemical manufacturer's instructions to achieve a level of 20-30 PPM, depending on climate. High stabilizer levels can reduce chlorine effectiveness. If too much stabilizer is added the only way to reduce the concentration of conditioner is to (partially) drain the pool water and then refill the pool to bring the level to the recommended 20-30 PPM.

## **How to adjust pH**

A pH range of 7.2 – 7.6 is ideal for maximum comfort and minimum chlorine demand. Always adjust total alkalinity before adjusting pH. Low pH (acidic water) leads to stinging eyes and corrosion of open metal fittings. If the pH is below 7.0 AND the Total Alkalinity is below 80 ppm, use Soda Ash to adjust. First, test for metals. Consult your pool professional regarding which chemical is best for your situation and the proper amount to use. Check the pH after 4 hours of circulation, adjusting as necessary to achieve the proper range.

High pH (alkaline water) leads to clouding of the water and reduces the effectiveness and amount of active chlorine. This means algae and germs can grow. Lower the pH by adding muriatic acid to the pool water. The acid demand indicated by your 4-in-1 test kit will show the amount of acid to use. If your pH remains inconsistent, check your total alkalinity.

## **Total alkalinity effects pH**

Total Alkalinity (TA) is the measure of bicarbonates, carbonates, hydroxides and other alkaline substances found in pool water. Alkalinity is defined as the ability of the water to resist changes in pH; also known as the buffering capacity of the water, Alkalinity keeps the pH from "bouncing" all over the place. TA is often confused with pH, which it affects. If TA is too low, the pH will be difficult to maintain and may cause staining of pool surfaces. Total alkalinity should be in the range of 80 – 100 PPM.

To raise total alkalinity, it is necessary to add pH buffer (sodium bicarbonate) at the rate shown in the manufacturer's instructions to reach the 80 – 100 PPM range. 1.5 lbs. of sodium bicarbonate raises 10,000 gallons of pool water by 10 PPM.

To lower the total alkalinity, use muriatic acid. The acid demand chart in your 4-in-1 test kit will indicate the necessary amount to add. Adjust as needed until the reading (taken at least 24 hours later) is in the 80 – 100 PPM range. When TA is correct, you may need to adjust pH.

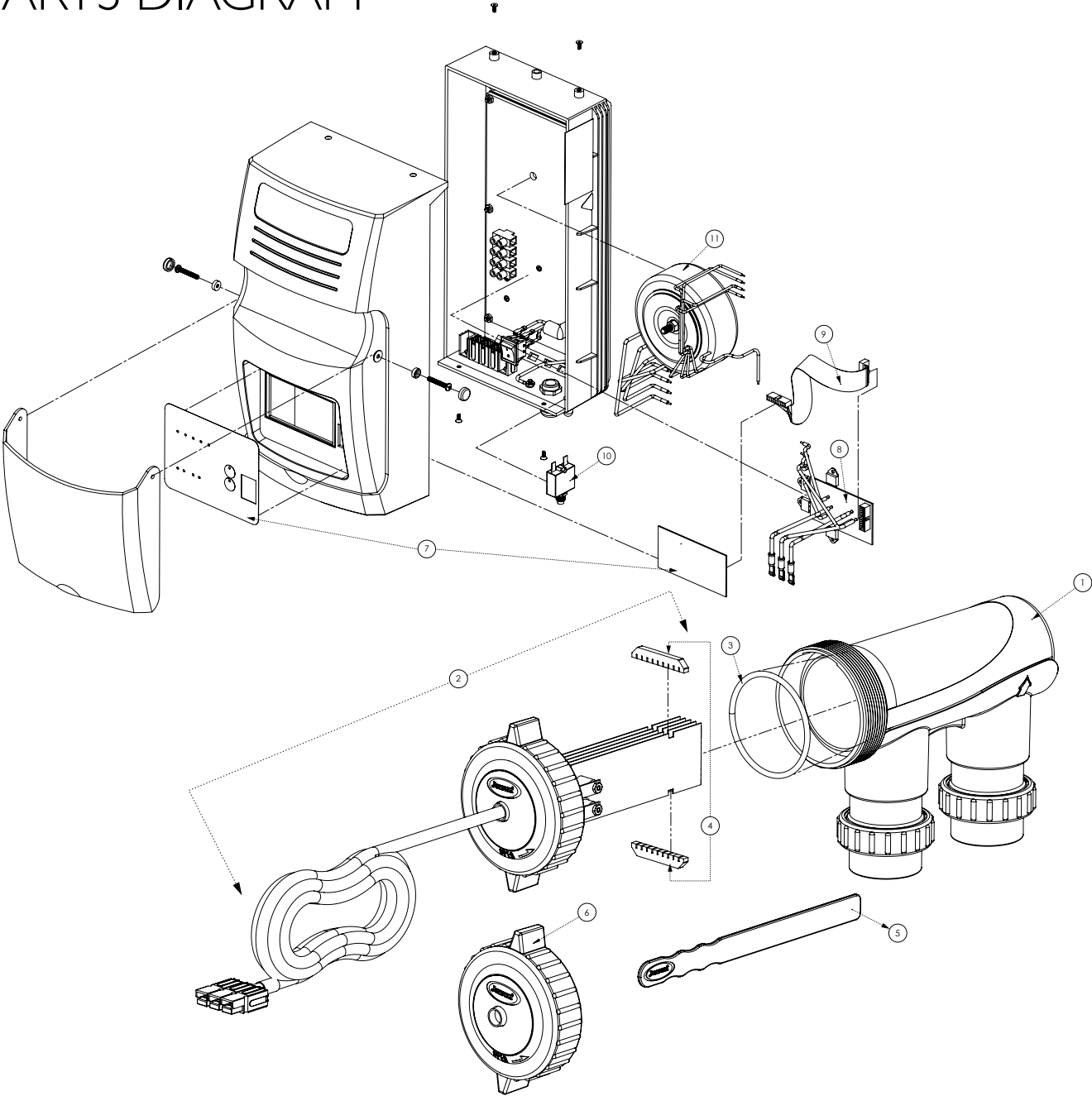
## **Weekly Water Care**

Chlorine Test: Test pool water chlorine level with a reliable test kit. Maintain ideal range by adjusting Chlorine Output level (see Basic Operation on page 13).

Note: Chlorine residual above 5.0 PPM may cause corrosion of pool metals and possible damage to associated pool equipment. It is recommended that chlorine test samples be taken from two places, one at the pool return line, the other well away from the pool return line. Compare the samples. A higher level of chlorine should be found at the pool return line, which confirms that the Salt system is producing chlorine.

pH Level Test: Test the pH level of your pool with a test kit. If necessary, adjust according to your pool professional's recommendations. A pH level of 7.2 - 7.6 is recommended. Note: Never use dry acid to adjust pH in arid geographic areas with excessive evaporation and minimal dilution of pool water with fresh water. A build-up of byproducts can damage the electrolytic cell.

# G. PARTS DIAGRAM



REF	DESCRIPTION	PART NUMBER
1	REPLACEMENT CELL HOUSING WITH UNIONS	52000-304-102
2	REPLACEMENT SALT CELL (40K GALLON, INCLUDES 2 CLIPS)	52000-340-110
3	SALT CELL HOUSING O-RING	52000-200-101
4	SALT CELL BLADE CLIPS (SET OF 2)	52000-200-108
5	CLEANING STICK	52000-220-105
6	WINTERIZING COVER	52000-120-121
7	BLUE CONTROLLER BOARD & REPLACEMENT DECAL	52000-205-301
8	RED DRIVER	52000-205-102
9	20 PIN RIB CABLE	52000-205-103
10	CIRCUIT BREAKER	52000-205-104
11	500 VA TRANSFORMER	52000-205-105

# SAVE THESE INSTRUCTIONS

**Record Information on this System Below & Keep for Your Records**

Installer \_\_\_\_\_

System Purchased From \_\_\_\_\_

Installation Date \_\_\_\_\_

Serial Number \_\_\_\_\_

Model Number \_\_\_\_\_

Pool Size in Gallons \_\_\_\_\_