



**SM20
SM30**

**SALT WATER CHLORINATOR
WARRANTY AND
OPERATING INSTRUCTIONS**



**INSTALLATION - page 2
ADDING SALT - page 3
OPERATION - page 5**

**SOFTWATER POOLS, INC. 236 WEST PORTAL AVE #837,
SAN FRANCISCO, CA 94127**

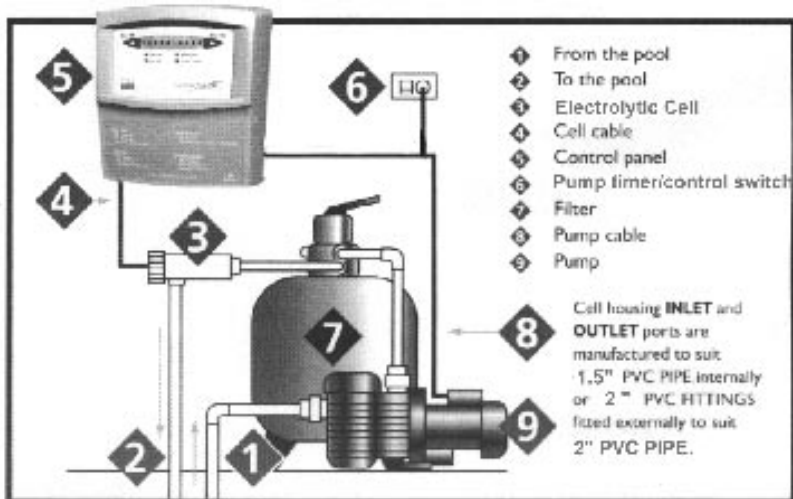
(415) 566-9012

www.softchlor.com

TABLE OF CONTENTS

INSTALLATION	PAGE 3
ADDING SALT	PAGE 4
MAINTAINING CORRECT SALT LEVEL ...	PAGE 5
OPERATION	PAGE 6
AND WHAT THE BUTTONS AND LIGHTS DO	
TIPS AND TRICKS	PAGE 7
MAINTENANCE	PAGE 8
WATER CHEMISTRY	PAGE 9
WARRANTY	PAGE 10
TROUBLESHOOTING	PAGE 11
PRODUCT REGISTRATION	PAGE 12

INSTALLATION AND ELECTRICAL CONNECTION



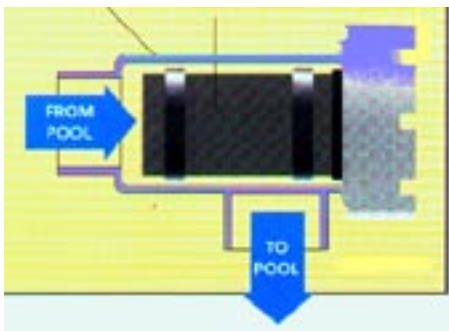
MOUNTING AND CONNECTING THE CONTROL PANEL

1. Using the fastener provided and mounting hole on the reverse side of the unit, hang the control panel flush with a wall in a well-ventilated area and within 5 feet of the cell housing. This is to allow enough slack for connection to the cell using the three-position plug on the end of the cell cable. This cable cannot be lengthened.

2. Turn OFF the filter pump control circuit breaker. Connect the brown and blue wires out of the chlorinator control panel AC lead to the same two (2) load side contact points on the timer/pump control that power-up the filter pump. The AC voltage across these contacts must be 200 - 240 VOLTS. Connect the green/yellow wire to ground. SEE WIRING PICTURE ABOVE.

Do not allow the chlorinator to power-up without the filter pumping running!

PLUMBING THE ELECTROLYTIC CELL HOUSING



1. On the return-to-pool line after the filter, heater, solar etc., select a suitable site within 5 feet of the control panel and with enough space to extract the cell for service.

2. While different piping configurations are possible, it is essential the water flow direction is going to enter and exit the cell housing as in the diagram above. Using PVC adhesive, glue the cell housing into position. The housing ports accept 1.5" PVC pipe internally and 2" PVC fittings externally.

3. The cell is 'indexed' to the correct position when inserted into the housing. Lock the cell into position with the large blue threaded nut.

4. Connect the cell to the control panel using the three-position plug on the cell cable.

ADDING SALT TO THE POOL

!! SALT IN THE POOL ALREADY s PLEASE GO TO PAGE 4
(MAINTAINING CORRECT SALT LEVEL)

INITIAL START-UP SALT LEVEL

1. Determine the approximate gallonage content of the pool using the following equations as a guide:

Rectangular Pool - length x width x average depth x 7.5 = gallons in pool.

Round Pool - diameter x diameter x average depth x 5.9 = gallons in pool.

Oval Pool - length x width x average depth x 6.7 = gallons in pool.

2. Allow **37 LBS per 1,000 gallons** of pool water - 5,000 PPM or 0.5%. (See the Salt Chart on page 4)

TYPE OF SALT TO USE

Use a food-grade, at least 99% pure, sodium chloride (salt). **DO NOT USE ROCK SALT OR CALCIUM CHLORIDE!** The preferred type of salt is most commonly available as a **coarse grain water softener salt** in 40 - 50 LB bags from building supply store chains like Home Depot or Orchard Supply Hardware. This type of salt is easier to dissolve and has a minimum impurity content thus avoiding a stain-out potential on the pool surface.

HOW TO ADD SALT

1. For new or newly resurfaced **plaster pools**, wait at least 2 weeks before adding salt to allow the plaster to cure. **DO NOT LEAVE SALT ON POOL SURFACE WITHOUT BRUSHING/DISSOLVING!**
2. Remove the bag from any pool sweep.
3. Configure pools with a functioning main-drain to draw water through the bottom of the pool.
4. Turn the filter pump and any pool sweep **ON**.
5. Turn the chlorinator **OFF**.
6. Pour salt directly into the pool around its outer perimeter and slowly into the skimmer basket (if available).
7. Brush salt around the floor of the pool and down to the main drain (if functioning) to assist the dissolving process.
8. Leave filter pump and any pool sweep running for at least 12 hours to completely mix salt through entire volume of the pool.

MAINTAINING CORRECT SALT LEVEL

STEP 1



STEP 2

1. Fill a small vial with about one inch (2.5 cm) of pool/spa water.
2. Remove one strip from bottle and replace cap immediately.
3. Insert lower end of strip into water. **Do NOT submerge strip beyond yellow completion string at top of strip.**
4. Leave strip in water until test is complete (when yellow band turns dark, typically in 3 to 4 minutes).
5. Obtain your salt concentration: note where top of white peak falls on the number scale. Read top of peak to the nearest 0.2 division. Locate the sodium chloride concentration next to that reading in the table below.

Sodium Chloride (salt) ppm (mg/L)		Sodium Chloride (salt) ppm (mg/L)	
Reading		Reading	
1.2	350	4.2	2110
1.4	430	4.4	2300
1.6	510	4.6	2490
1.8	590	4.8	2710
2.0	670	5.0	2940
2.2	750	5.2	3190
2.4	830	5.4	3450
2.6	910	5.6	3750
2.8	1000	5.8	4060
3.0	1220	6.0	4410
3.2	1340	6.2	4790
3.4	1480	6.4	5200
3.6	1620	6.6	5650
3.8	1770	6.8	6160
4.0	1940	7.0	6720
		7.2	7340

IMPORTANT: KEEP CAP ON TIGHT BETWEEN USES. STORE AT ROOM TEMPERATURE.
 Environmental Test Systems, Inc. P.O. Box 4000, Elmer, NJ 08524 U.S.A.
 1-888-AquaChek (1-888-276-2242) or 1-674-222-2888
 www.AquaChek.com Made in the U.S.A.

STEP 1: Use AQUACHEK Salt Test Strips available from:

- Your local pool shop
- Any Leslie's pool store
- www.aquacheck.com (click "retailers & distributors")
- on-line from various suppliers

STEP 2: Note the reading shown by the Salt Test Strip

STEP 3: Use the chart below to add enough salt to bring salt concentration within the yellow shaded range in Step 2 (4,500 - 5,500) parts per million (PPM)



STEP 3

Current salt level PPM	POUNDS OF SALT NEEDED TO MAINTAIN 5,000 PARTS PER MILLION (PPM)							
	GALLONS IN POOL							
	1,000	5,000	10,000	15,000	20,000	25,000	30,000	35,000
zero	37	185	370	555	740	925	1,110	1,295
500	33	165	330	495	660	825	990	1,155
1,000	29	145	290	435	580	725	870	1,015
1,500	25	125	250	375	500	625	750	875
2,000	21	105	210	315	420	525	630	735
2,500	17	85	170	255	340	425	510	595
3,000	12	60	120	180	240	300	360	420
3,500	8	40	80	120	160	200	240	280
4,000	4	20	40	60	80	100	120	140
4,500	2	10	20	30	40	50	60	70
5,000	1	5	10	15	20	25	30	35
5,500 +	DILUTE	DILUTE	DILUTE	DILUTE	DILUTE	DILUTE	DILUTE	DILUTE

PLEASE NOTE - TIPS AND TRICKS:

I SOFT CHLOR only eliminates the routine addition of regular, maintenance-level chlorine in the pool. Other maintenance required by your pool and pool equipment will still need to be performed.

I The filter and chlorinator should operate during periods of heavy bather loads in the pool.

I **SOFT CHLOR does not test for purifier levels nor automatically adjust output to the desired chlorine level. This is done using a chlorine test kit/strip and adjusting SOFT CHLOR's output level as required using buttons 1 and 2 in the diagram on the previous page.**

I **Chlorine demand drops off dramatically in cold water!** If the 'Low Salt' light is on continuously or flashing and salt concentration is at the recommended 5,000 PPM level (see page 4), the water temperature is probably getting too cold for comfortable bathing (below 65°F). Consider 'winterizing' the pool by **turning Soft Chlor OFF** and reducing filter pump times. This will not only conserve energy but also extend the life of Soft Chlor's electrolytic cell.

SEE 'TROUBLESHOOTING' - PAGE 10 - FOR MORE TIPS AND TRICKS.

SOFT CHLOR MAINTENANCE

SALT LEVELS

!! It is **important** to have the correct amount of salt dissolved in the pool water. See **PAGE 4 MAINTAINING CORRECT SALT LEVEL.**

!! **LOW SALT CONCENTRATIONS REDUCE THE AMOUNT OF CHLORINE PRODUCED, INCREASE SCALE BUILD-UP ON THE CELL, CAUSE PREMATURE CELL FAILURE AND WILL VOID THE WARRANTY!!**

CLEANING THE CELL

The **SELF-CLEANING function of Soft Chlor** should keep scale build-up and cell cleaning down to a minimum. However, in exceptional cases where calcium hardness in the pool water is abnormally high (above 400 PPM), a cleaning assist may be necessary.

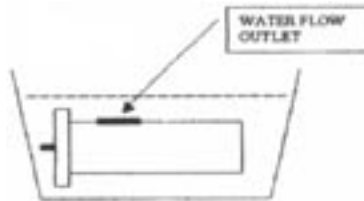
When to clean the cell: It is recommended that the cell be visually inspected through the cell housing every 3 months. (Remove cell if necessary to inspect - see below). If the self-cleaning function is not removing the scale build-up and **the individual plates of the cell remain joined together with material**, the cell needs cleaning. Foreign objects and debris may have also become trapped between the plates and these will require cleaning off or removing.

Removing the cell:

1. Shut down all pool equipment.
2. Unplug the cell cable from the end of the cell.
3. Unscrew the large blue nut and remove the cell from the cell housing.

How to clean the cell:

1. Remove any foreign objects/debris. **DO NOT USE METAL TOOLS TO CLEAN THE CELL!**
2. Using appropriate eye and hand protection, place the cell with the water flow outlet facing **UP** in a container of 50% water and 50% Muriatic Acid. **ADD ACID TO WATER NOT WATER TO ACID!**



3. **DO NOT LEAVE THE CELL TO SOAK!** Immerse for as long as necessary to clean off the scale build-up, usually indicated by a slowing of bubble activity.

4. Remove cell and **IMMEDIATELY RINSE WITH CLEAN WATER.**

5. Replace cell in the cell housing, lock into place with large blue nut and reconnect the plug.

6. Run the chlorinator to check for normal operation.

WATER CHEMISTRY MAINTENANCE

Whether using a salt chlorinator or not, **every swimming pool** needs essential chemicals to keep it 'in balance.' In addition to providing for bather comfort, a properly chemically-balanced pool prevents the water from turning cloudy, corroding pool equipment and fittings and/or depositing scale.

While recommendations for a balanced pool may differ, 35 years experience with Soft Chlor salt chlorinators has shown the following parameters to be ideal for all types of pool surfaces using the system. A local pool shop can check these levels if needed:

Calcium Hardness = 175 - 225 Parts Per Million (PPM)

Total Alkalinity = 80 - 140 PPM

pH = 7.2 - 7.6

Cyanuric Acid (chlorine stabilizer/conditioner) = 50 - 80 PPM (important! - see below)*

Salt = 4,000 - 5,000 PPM (see page 4)

Chlorine = 1 - 3 PPM

Combined Chlorine = zero

Metals = zero

Nitrates = zero

Phosphates = zero

TDS = <500 PPM (important! - see below)**

Notes:

* This chemical is **essential** for all outdoor pools using chlorine. The chlorine made by Soft Chlor is no exception. Chlorine conditioner/stabilizer acts as a 'sunscreen' to minimize chlorine from being burnt off by the sun.

** Any Total Dissolved Solids (TDS) measurement will include salt content of the pool water. **To arrive at the correct TDS level, first subtract the Salt level** (see page 4 for how to measure salt).

LIMITED WARRANTY

1. **Materials and Workmanship.** SOFTWATER POOLS, INC. warrants that the SOFT CHLOR will be free from defects in material and workmanship, under normal use and service **on private, residential swimming pools** in North America for two (2) years from the date of installation.

COMMERCIAL-USE UNITS ARE COVERED FOR ONE (1) YEAR FROM INSTALLATION DATE.

2. **Extended Cell Pro-Rated Warranty. (APPLIES TO NON-COMMERCIAL USE, PRIVATE RESIDENTIAL UNITS ONLY).** After the expiration of two (2) years from the date of installation, SOFTWATER POOLS, INC. warrants the SOFT CHLOR electrolytic cell for a further one (1) year on a pro-rated basis. This pro-rated schedule is as follows:

Beginning with the first day of the 25th month and ending on the last day of the 36th month the pro-rated charge for a replacement cell will be calculated using the following formula:

Current Retail Price , Length of original warranty (36 months) x Number of months since date of installation = Pro-rated charge for new cell.

3. **Original Owner.** This limited warranty extends only to the original Buyer and is not transferable to subsequent purchasers of the property or pool equipment without the prior consent of SOFTWATER POOLS, INC.

4. **Repair or Replacement.** If a defect in materials or workmanship covered by this warranty occurs and is returned freight prepaid, SOFTWATER POOLS, INC, will, at its option, remedy the defect or replace the Chlorinator system and return it freight prepaid to the Buyer provided Buyer notifies SOFTWATER POOLS, INC. in writing of the defect within thirty days.

5. **Exclusive Remedy.** BUYER'S RIGHT TO REPAIR AND REPLACEMENT OF THE SYSTEM ARE THE EXCLUSIVE REMEDIES PROVIDED BY THIS LIMITED WARRANTY AND SOFTWATER POOLS, INC SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY DEFECTS IN MATERIAL OR WORKMANSHIP OF THE SYSTEM OR ANY DELAY IN REMEDYING A DEFECT IN THE SYSTEM.

6. **Performance.** To obtain warranty performance, notify SOFTWATER POOLS, INC. in writing of any defect or claim at the address listed on the Sales Agreement within thirty days.

7. **Limitations.** SOFTWATER POOLS, INC. is not responsible for the following which are excluded from the coverage of this limited warranty: (i) defects and failures resulting from abuse, lack of reasonable care or maintenance, neglect, failure to follow operating or installation instructions, vandalism, acts of God or normal wear; (ii) replacement of water in the pool or chemicals used in treating such water or energy used to heat such water as the result of performing any repair; or (iii) any cost incurred in removal or reinstallation of the product.

8. **Implied Warranties.** This limited warranty is the only express warranty **Softwater Pools, Inc.** gives. If any other warranties exist, including but not limited to implied warranties of merchantability and fitness for a particular purpose, such warranties will last only as long as the term of this written warranty.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	SOLUTION
No chlorine production.	<ol style="list-style-type: none"> 1. Soft Chlor not showing Power Status light as ON. 2. Insufficient chlorine conditioner/stabilizer in pool. 3. High phosphate/nitrate levels in pool resulting in excessive chlorine consumption. 4. Insufficient filter pump run times for climate/season. 5. Electrolytic Cell 'dying'. 	<ol style="list-style-type: none"> 1. Check power to filter pump and chlorinator. 2. Bring conditioner/stabilizer level to 50 - 80 PPM (page 8). 3. Adjust phosphate/nitrate levels to zero. 4. Make sure pump runs at least 8 hrs/day above 75° F. 5. Contact your local distributor or Soft Chlor direct.
'Water Flow' light flashes 1 - 5 times and then stops.	Self-diagnostic test.	No action necessary.
'Low Salt' light flashes once or twice and then stops.	Water starting to get cold (below 65°F).	Increase salt concentration to 5,000 PPM (page 4). If problem persists, consider 'winterizing' pool by turning Soft Chlor OFF and reducing filter pump times.
Pool water a <u>clear green</u> color.	Usually happens with brand-new fill and/or out-of-balance pool water.	<ol style="list-style-type: none"> 1. Bring pool water into 'balance' (page 8) 2. If problem persists, add sequestering/chelating agent to pool water.
Pool water a <u>cloudy green</u> color	Insufficient sanitizer.	See 'No chlorine production' this page.

SOFT CHLOR

Product Registration

Complete customer satisfaction and service is a top priority at SOFTWATER POOLS, INC. To enable us to provide you with the service you deserve, be sure to register your **Soft Chlor** system promptly. Please detach and send in this registration page to:

Customer Service Department
Softwater Pools, Inc
236 West Portal Ave # 837
San Francisco, CA. 94127

Name: _____

Company: _____

Address: _____

City/State/Zip: _____

Home Phone: _____ Day Time Phone: _____

Soft Chlor serial number (Located underneath power supply) _____

Soft Chlor model number (e.g. SM 20 or SM 30). Located underneath power supply to the left of the CE logo. _____

Date Installed: _____

Purchased From: _____

Do you use a pool service?: Yes _____ No _____