

HYDROCHLOR®

Owners Manual



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WARNING

This equipment must be installed and serviced by a qualified technician. Improper installation can create electrical hazards which could result in property damage, serious injury or death. Improper installation will void the warranty.



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Table of Contents

What's in the Box? ----- 01

FEATURES ----- 01

EQUIPMENT ----- 01

 Hydrochlor® Power Pack ----- 01

 Ezy Timer ----- 02

 Electrolytic Salt Cell ----- 03

 Battery Back up ----- 03

INSTALLATION ----- 04

 Installing the Power Pack ----- 04

 Installing connecting the Hydrochlor®'s ----- 04

 Self cleaning Cell

EZY TIMER SETTING ----- 05

 Setting a New Time ----- 05

 Setting the Timer ----- 05

 Timer Default Settings ----- 05

 Overnight Operation ----- 06

CHLORINE PRODUCTION LEVEL ----- 06

CHLORINATOR OVERRIDE SWITCH ----- 06

PUMP PROTECTION ----- 06

WATER CHEMISTRY ----- 06

 Salt Level ----- 06

 Water Chemistry ----- 07

SALT CELL CLEANING PROCEDURE ----- 07

TROUBLESHOOTING ----- 08

TECHNICAL SPECIFICATIONS ----- 08

GENERAL SAFETY RULES ----- 09

WARRANTY ----- 09

What's In the Box?

- Hydrochlor® Power Pack
- Hydrochlor® Self Cleaning Cell and Housing
- 40/50 Bushes
- Cables to connect the Self Cleaning Cell
- Manual
- Waterco's Warranty Terms and Conditions.

FEATURES

The **Hydrochlor®** will automatically maintain the chlorine level of your pool and eliminate problems associated with periods of very high or low chlorine levels. Fewer fluctuations in chlorine levels mean fewer fluctuations in pH levels. This adds up to more stable, balanced water.

Consistently maintained sanitizer levels in the pool water will prevent the growth of all common algae. A salt-water chlorinated pool requires much less attention than a chlorine pool.

Chlorine Generation

Through the process of electrolysis, a saline solution pass over an electrolytic cell, then the saline solution is separated into its basic components: chlorine and sodium. The chlorine is instantaneously transformed into Hypochlorous acid; this the chlorine form that kills algae and other harmful organism in the water.

A chlorine generator's main function is to produce chlorine for the pool. This keeps a residual of chlorine in the pool that prevents algae from growing. The chlorine then turns back into salt and the system continues as long as the generator is functioning properly.

HYDROCHLOR®

Hydrochlor® consists of a Power Pack with a built in timer (to supply power to the cell) and Salt Cell (where the chlorine is produced).



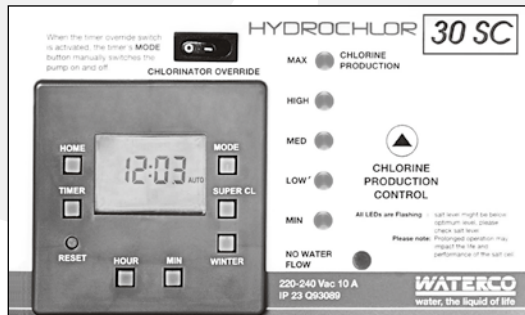
Hydrochlor® Power Pack

The Power Pack monitors and controls chlorine production by regulating the amount of electrical energy supplied to the salt cell.

Ezy Timer

Programme the chlorinator timer to turn on or off at any time that suits your lifestyle.

The Timer controls power to the Chlorinator controller. The timer has a liquid crystal display (LCD) to indicate the time of day and current operating mode.



There are 8 keys which are used for setting the Time, Timers and operating Modes. The function of these keys is described below:

HOME Display current Time of Day or to exit Timers setting.

TIMER Toggle between **START** and **FINISH** of **Timer 1** and **Timer 2** for summer and then for winter. Set times can be altered while displayed.

Timer 1 START
Timer 1 FINISH
Timer 2 START
Timer 2 FINISH
Timer 1 START (winter mode)
Timer 1 FINISH (winter mode)
Timer 2 START (winter mode)
Timer 2 FINISH (winter mode)



RESET Reset time to 0:00 and timers to the default programming.

HOUR Enable changing the hours for the current time of the day or **Timer Settings**. Subsequent presses will change the hours immediately.

MIN When first pressed this key will enable changing the minutes for the current time of the day or **Timer Settings**. Subsequent presses will change the minutes immediately.

WINTER By selecting WINTER, hours of operation will be reduced to save energy during the winter months. Deselecting WINTER will instantly return to increased hours of operation for the non-winter months (AUTO operation).

SUPER CL Superchlorination – If the SUPER CL key is pressed once the **Hydrochlor®** will be set to produce chlorine at maximum level for 24 hours non stop overriding previous programming and the letter SC will be displayed on the LCD screen. Pressing the SUPER CL key again when the SC is displayed on the LCD screen will disable the super chlorination and revert to the original programming.

MODE Sequences through the modes below:

OFF ← All timers off
 ON ↑ Timer switch is on all the time
 AUTO → Timer are operational according to setting.

Note: MODE does not override SUPER CL.

CHLORINE PRODUCTION CONTROL Set chlorine production level.

CHLORINATOR OVERRIDE SWITCH Overrides the timer setting, stops chlorine production and disables pump protection for pool maintenance

Electrolytic Salt Cell

The **Hydrochlor®**'s salt cell consists of a series of titanium electrodes with opposite charges. **Hydrochlor®**'s clear salt cell housing allows visual inspection of the salt cell plates and enables monitoring of chlorine production.

The cell housing is constructed using clear U.V. stabilized acrylic. Both anode and cathode of the self-clean chlorinator are made from uniquely coated titanium plates for extra durability.

Self-Cleaning

Hydrochlor® Self Clean Salt Cell has the added ability to reverse the polarity of the voltage to clean calcium build up off its electrodes.

The **Hydrochlor®**'s electrodes, the anode and cathode and hold an electrical potential difference between them for a designated period of time. This difference is reversed after that period of time has expired and then the anode becomes the cathode and the cathode becomes the anode.

The reversing of polarity or electrical potential difference will then start to remove any calcium build-up, which may have been deposited onto the cathode.

This continuous reversing of polarity will keep the cell clean from calcium deposits during its operation, providing the chemical balance and flow of the pool water thru the cell is maintained within normal parameters.

It is recommended that you obtain regular water chemistry tests from your local pool professional to ensure your water balance is within range.

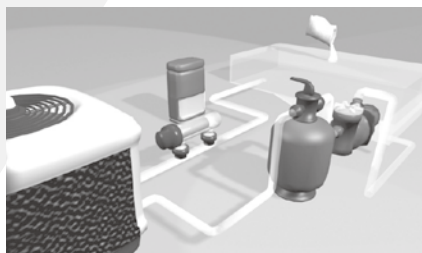
Battery Backup

The **Hydrochlor®** comes with a Lithium battery incorporated to save your settings in the event of a power failure. The battery is rated to last 5 years.

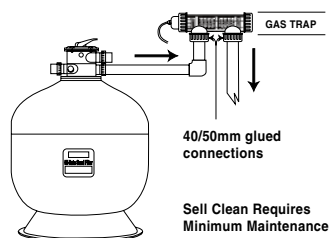
INSTALLATION

These guidelines should be followed to install the Hydrochlor®:

- Ensure that the chlorinator cell is the last piece of equipment installed on the filtration system – this is so the chlorine produced will not damage other equipments such as heaters.
- The cell may be installed above or below water level. If it is below water level, please ensure that an isolation valve is installed so the unit can be serviced without losing water from the pool.
- The cell may be mounted on different angles so long as a gas trap is provided.



GAS TRAP: The cell must be positioned in such a way as to provide a gas trap. The bottom of the cell must be above the top surface of the pipe from the previous piece of equipment, as per the below diagram.



Installing the Power Pack

Choose a location for the Hydrochlor® Power Pack close enough to the Cell/Housing and filtration pump so that both may be connected/disconnected easily. The Hydrochlor® Power Pack should not be mounted in areas where chemicals are stored (e.g. acid and chlorine). Also ensure that the

Hydrochlor® Power Pack can be connected to the mains power outlet of the pool area. Note that this outlet must meet the current applicable local standards at the time of installation.

The PUMP socket outlet in the base of the Hydrochlor®'s Power Pack is dedicated to the filtration pump only. Do not use a double adaptor to connect another pump as this will overload the system and void warranty.

Installing/Connecting the Hydrochlor® Self Cleaning Cell

The Cell/Housing assembly should be plumbed into the pool return line after all other accessories (and prior to any heating take-offs). Note any water flow direction on the Cell/Housing. The Cell will need to be removed from the Housing periodically for cleaning – do not place it where its removal can be difficult/obstructed.

The Cell Cable is connected to the Cell Connector under the Hydrochlor® Power Pack cover.

Ensure that the 3 connections (2 for Cell Power and 1 for Gas Sensing) are not loose. A loose connection is likely to cause arcing which may damage the entire system.

NOTE: Connect all plumbing to the Hydrochlor taking care that all joints are glued or tightened securely to prevent leaking.

Allow 24 hours for glue (solvent) to set before starting the Hydrochlor.



EZY TIMER SETTING



Setting a New Time

- Press **HOME** key to ensure current time is displayed.
- Press **HOURS** key, to change hours.
- Press **MIN** key, to change the minutes.
- Current time is now set.



Setting the Timer

Setting Timer 1.

- Press **TIMER** key to change Timer 1 Start hours.
- Press **HOURS** key, to change hours.
- Press **MIN** key, to change the minutes.
- Press **TIMER** key again to toggle Timer 1 Finish.
- Press **HOURS** key, to change hours.
- Press **MIN** key, to change the minutes.

Timer Default Settings

A new Hydrochlor® initially has been set with the following defaults timers:

SUMMER	Timer 1 START	8:00
	Timer 1 FINISH	12:00
	Timer 2 START	16:00
	Timer 2 FINISH	20:00
WINTER	Timer 1 START	9:00
	Timer 1 FINISH	11:00
	Timer 2 START	17:00
	Timer 2 FINISH	19:00

All time settings can be individually programmed; however altering the [SUMMER] times will automatically change the matching WINTER time to:

START Times	[SUMMER] Time + 1 hr
END Times	[SUMMER] Time - 1 hr

(Unless the START time is 23:xx hours or the FINISH time is 0:xx hours, in which case the WINTER time will be set to the same as the [summer] time).

Therefore unless a particular set of WINTER times are required, there is no need to separately enter them.

Overnight Operation

To program the **Hydrochlor®** to run the pump from a period of time that involves starting before midnight and ending after midnight, it has to be divided in two periods.

For example: If it required the pump to start at 23:00 and finish at 07:00. Then the Electrochlor LCD setting should be break into 2 program periods like this:

- Program Timer 1 set to Start at 23:00 and Finish at 23:59
- Program Timer 2 set to start at 0:00 and Finish at 7:00

Note: To Reset the Timer, and Timers setting to factory defaults, press Reset Key until the time displayed is 0:00.

CHLORINE PRODUCTION LEVELS

The output of the chlorinator can be adjusted to reflect the different seasonal requirements in order to maintain satisfactory chlorine sanitizer levels.

The amount of chlorine produced can be adjusted by pressing the **CHLORINE PRODUCTION CONTROL** key. Press button to raise production. If production already set at maximum it will turn to zero and each press will raise production by one LED till MAX.

If the pool water is over chlorinated, simply reduce the chlorine production set level.

CHLORINATOR OVERRIDE SWITCH

Normal operation is (O). To start override switch to (-) to initiate override function of stopping pump for backwashing, vacuuming the pool to waste and lowering the pool water level. Press Mode button to toggle between ON & OFF to control the operation of the pump. When Switch is set to (O) the timer will return to normal operation. Once the Hydrochlor®'s override is initiated, the Timers simply turn the pump on and off.

Caution: When the chlorinator override switch is activated the pump protection is disabled. Do not leave the pump unattended during. Pump may run dry and may void the warranty.

PUMP PROTECTION

When **NO WATER FLOW** is detected, the Chlorinator is prevented from turning ON. If no water flow is detected in the salt cell, **Hydrochlor®** automatically switches off the pump to prevent any damage to the pump and pool equipment. The **NO WATER FLOW LED** Indicator will start blinking on the panel to alert the pool owner, until the fault is rectified.

WATER CHEMISTRY

Salt Level

The Hydrochlor® chlorinators must operate between the salt level ranges listed below.

- MINIMUM = 4000 ppm
- OPTIMUM = 5500 ppm
- MAXIMUM = 6000 ppm

Testing kits are available from the local pool professional and should be used to accurately check the salt levels in the pool water.

Note: When the LED lights flash it is an indication of:

- **Low salt level**
- **Low temperature or**
- **Cell plates wearing**

If you don't know what your salt level is or how to test it, consult your local pool care specialist.

Water Chemistry

It is important to maintain the correct water chemical balance in the swimming pool; this will help protect the Electrochlor chlorinator unit and its cell.

Consult the local pool professional for the correct water balance according to the swimming pool type.

The Electrochlor chlorinator will run correctly at the following chemistry levels

	Range	Suggested
pH.	7.2 – 7.8	7.2 – 7.6
Total alkalinity	60 – 200ppm	80 – 150ppm
Calcium hardness	100 – 500ppm	60 – 250ppm
Stabilizer (Sun screen)	30 – 60ppm	

SALT CELL CLEANING PROCEDURE

- Press the MODE key until OFF on the power pack to turn the pump and Hydrochlor to standby mode.
- Unscrew the barrel unions from the salt cell and disconnect the cables from the salt cell's brass connectors.
- Turn the salt cell housing upside down with both ports facing upwards.
- Pour the Cell Wash cleaning solution into the housing to dissolve the calcium build-up from the salt cell plates. There should be just enough solution to cover the salt cell plates.
- Allow enough time for the solution to dissolve the calcium build-up from the salt cell plates. Approximately 5 to 10 minutes.
- Once the calcium build-up has been removed, pour out the Cell Wash solution into a bucket and lightly rinse-off excess calcium and Cell Wash solution from the salt cell assembly, with fresh water.
- Reconnect the salt cell onto the filter system
- Press the **MODE** button to AUTO or ON on the power pack to reactivate the pump and Hydrochlor



Never use products that are not specifically manufactured to clean the Hydrochlor®'s salt cell. Do not use raw acids such as Hydrochloric acid. This will damage the salt cell and severely shortens its life and will void warranty. Please consult your local pool professional for advice on salt cell cleaning products.

TROUBLESHOOTING

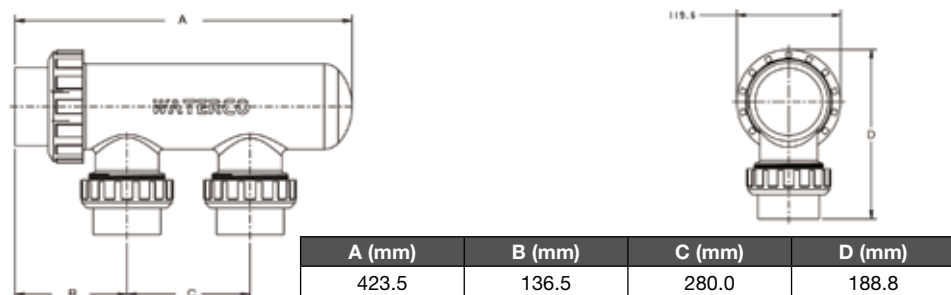
SYMPTOM	POSSIBLE CAUSE	REMEDY
Low chlorine level in pool	Operating time too short	Increase operating time
	Production control set too low	Set production higher
	Low salt	Add required amount of salt
	Pool chemistry not correct	Have water tested
Unit does not operate	No electrical power Hydrochlor® switch off	Connect power, check fuse, switch on Hydrochlor®
	Pump not connected	Connect pump
Not keeping time	Time clock setting, power outage and battery not connected	Reset clock, connect battery link, If battery is flat this will require reset after blackout
	Electrical fault	Return to distributor for repair

TECHNICAL SPECIFICATIONS

Model	Input Watt (kW) max	Output current DC (A) max	Chlorine Production (g/hr)	Max Pool Capacity (L) Climate	
				Temperate	Tropical
20 SC	290	20	20	80,000	48,000
25 SC	330	25	25	100,000	60,000
30 SC	380	30	30	120,000	72,000

Model	20 SC	25 SC	30 SC
Primary Input (Volts)/ Frequency (Hz)	220-240/50-60	220-240/50-60	220-240/50-60
Input Power (W)	290	330	380
Maximum Total Current (A)	10	10	10
Pump Outlet Maximum (A)	8	8	8
Cell Voltage (V)	6 - 8	6 - 8	6 - 8
Degree of Protection	IP23	IP23	IP23

Cell Housing dimensions



GENERAL SAFETY RULES

- 1) The equipment mentioned in this manual is specially designed for the sanitizing of water in swimming pools.
- 2) It is designed to work with clean water at a temperature not exceeding 35°C (95°F).
- 3) The installation should be carried out in accordance to the safety instructions of swimming pools especially Standard HD 384.7.702 and the specific instructions for each facility.
- 4) The rules enforced on accident prevention should be carefully followed.
- 5) Any modification of the chlorinator requires the prior consent of the manufacturer. Original replacement parts and accessories authorized by the manufacturer ensure a high level of safety. The manufacturer accepts no liability for the damage and injuries caused by unauthorized replacement parts and accessories.
- 6) During operation, some parts of the chlorinator are subject to dangerous electric voltage. Work may only be performed on the chlorinator or on the equipment connected to it after disconnecting them and the starting device from the mains power.
- 7) The user should make sure that assembly and maintenance tasks are carried out by qualified authorized persons and that these persons have first carefully read the Service and Installation Instructions.
- 8) The operating safety of the chlorinator is only guaranteed if the Installation and Service instructions are correctly followed.
- 9) The limit values stated in the Technical Specifications should not be exceeded under any circumstance.
- 10) In the event of defective operation or fault, contact the manufacturer's Technical Support Department or its nearest Authorized Agent.
- 11) If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person.
- 12) 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.

These chlorinators are approved and conformed to AS3136 Swimming Pool Equipment, as a prescribed article under Australian Registration.

These chlorinators conform to the Australian Electromagnetic Compatibility Standard marked by the C-tick.

WARRANTY

Two Years Warranty:

Hydrochlor® Chlorinator	1 year + 1 year pro rata*
Titanium cell	1 year + 1 year pro rata
Power pack	2 years
Commercial Installations	1 year

*Please refer to Waterco's Warranty terms and conditions