

Viron eQ Salt Chlorinator with Bluetooth

WARNING

FOR YOUR SAFETY - This product must be installed in accordance with the latest edition of AS/NZS 3000 and any other local applicable regulations. Before installing this product, read and follow all warning notices and instructions that accompany this product. Failure to follow warning notices and instructions may result in property damage, personal injury, or death. Improper installation and/or operation will void the warranty.

Improper installation and/or operation can create unwanted electrical hazard which can cause serious injury, property damage, or death.



ATTENTION INSTALLER – This manual contains important information about the installation, operation and safe use of this product. This information should be given to the owner/operator of this equipment.

WARRANTY REGISTRATION	Record your equipment details here for quick reference: Model No. : _____ Serial No. : _____
	AUSTRALIA WARRANTY: For full warranty terms and conditions and to register your warranty, visit www.astralpool.com.au/warranty and complete your details. ◀ Or scan the QR code to go directly to the registration page.
	NEW ZEALAND WARRANTY: For full warranty terms and conditions and to register your warranty, visit www.astralpool.co.nz/warranty and complete your details. ◀ Or scan the QR code to go directly to the registration page.

EQUIPMENT INFORMATION RECORD	
DATE OF INSTALLATION	_____
INSTALLER INFORMATION	_____
INITIAL PRESSURE GAUGE READING (WITH CLEAR FILTER)	_____
PUMP MODEL	_____ HORSEPOWER _____
NOTES	_____

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Section 1. Important Safety Instructions

READ AND FOLLOW ALL INSTRUCTIONS

All electrical work must be performed by a qualified installer and conform to all national, state, and local codes. When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

DANGER

To reduce the risk of severe injury or death, do not remove the suction fittings of your spa or hot tub. Never operate a spa or hot tub if the suction fittings are broken or missing. Never replace a suction fitting with one rated less than the flow rate marked on the equipment assembly.

WARNING

Prolonged immersion in hot water may induce hyperthermia. Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 37°C. The symptoms of hyperthermia include dizziness, fainting, drowsiness, lethargy, and an increase in the internal temperature of the body. The effects of hyperthermia include: 1) unawareness of impending danger; 2) failure to perceive heat; 3) failure to recognize the need to exit spa; 4) physical inability to exit spa; 5) fetal damage in pregnant women; 6) unconsciousness resulting in a danger of drowning.

WARNING

To Reduce the Risk of Injury -

The water in a spa should never exceed 40°C. Water temperatures should remain between 38°C and 40°C. Water temperatures between 38°C and 40°C are considered safe for a healthy adult. Lower water temperatures are recommended for young children and when spa use exceeds 10 minutes.

Since excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit spa water temperatures to 38°C. Before entering a spa or hot tub, the user should measure the water temperature with an accurate thermometer since the tolerance of water temperature-regulating devices varies.

The use of alcohol, drugs, or medication before or during spa or hot tub use may lead to unconsciousness with the possibility of drowning.

Obese persons and persons with a history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using a spa.

Persons using medication should consult a physician before using a spa or hot tub since some medication may induce drowsiness while other medication may affect heart rate, blood pressure, and circulation.

WARNING

Risk of electric shock - Install the controller at least 3.5 metres from the inside wall of the pool and/or hot tub using non-metallic plumbing.

Children should not use spas or hot tubs without adult supervision.

Do not use spas or hot tubs unless all suction guards are installed to prevent body and hair entrapment.

People using medications and/or having an adverse medical history should consult a physician before using a spa or hot tub.

This product is NOT suitable for use on Spa Pools UNLESS the OPTIONAL pH sensor has been purchased and installed.

When used on Spa Pool applications, AstralPool strongly recommend the purchase and installation of a chlorine sensor in addition to the pH sensor.

This product is NOT suitable for use on Indoor swimming pools UNLESS the pH and Chlorine sensors have been purchased and installed.

Take extreme care when handling the pH adjuster which is either sulphuric acid or hydrochloric acid. Wear gloves, eye protection and breathing protection.

⚠ WARNING

People with infectious diseases should not use a spa or hot tub.
 To avoid injury, exercise care when entering or exiting the spa or hot tub.
 Do not use drugs or alcohol before or during the use of a spa or hot tub to avoid unconsciousness and possible drowning.
 Before entering a spa or hot tub, measure the water temperature with an accurate thermometer.
 Do not use a spa or hot tub immediately following strenuous exercise.
 Prolonged immersion in a spa or hot tub may be injurious to your health.
 Do not permit any electric appliance (such as a light, telephone, radio, or television) within 3.5 metres of a spa or hot tub.
 The use of alcohol, drugs or medication can greatly increase the risk of fatal hyperthermia in hot tubs and spas.
 Water temperature in excess of 38°C may be hazardous to your health.

⚠ WARNING

A terminal bar marked "GROUND" is provided within the controller. To reduce the risk of electrical shock which can cause serious injury or death, connect this terminal bar to the grounding terminal of your electric service or supply panel with a continuous copper conductor having green insulation and one that is equivalent in size to the circuit conductors supplying this equipment in accordance with AS/NZS 3000. In addition, where required, bonding should be extended in accordance with AS/NZS 3000 to any metal ladders, water pipes, or other metal within 3.5 m of the pool/spa.

⚠ CAUTION

Dose pool with a small amount of chlorine before starting the eQ. If no chlorine is sensed the eQ may go to fail safe mode and not start up. Some Chlorine should be present before starting the unit.
 Before installing probes, balance pool water. Total Alkalinity (TA) must be 80 to 140 ppm, Calcium Hardness should be 180 to 250 ppm, and pH must be between 7.2 and 7.8.
 Cyanuric Acid, sometimes referred to as stabiliser or sunscreen will suppress the Chlorine (ORP) reading when the Chlorine sensor is connected. Refer to section on setting chlorine levels if Cyanuric Acid is present in your pool.
 Product is designed to run with ACID diluted in water. A ratio of 2 parts water to 1 part acid (2:1) should always be followed as the machine's dosing rate is formulated around the diluted solution.



Attention Installer: Install to provide drainage of compartment for electrical components.

⚠ WARNING

The Viron eQ Salt Chlorinator power supply has an IP43 rating, meaning it is suitable for installation outdoors. For safe operation the power supply must be installed in the correct orientation, with the cables leaving from the bottom of the device. If installing the power supply near the pool or spa water, you must ensure that the rules of AS/NZS 3000 are followed at all times. AstralPool® strongly recommends that installation be performed by a registered pool builder, electrician or other suitably qualified person.

⚠ WARNING

Risk of electric shock - Install the controller at least 3.5 metres from the inside wall of the pool and/or hot tub using non-metallic plumbing.

⚠ WARNING

If the supply cord is damaged, it must only be replaced by AstralPool, its service agent or a similarly qualified person, in order to avoid a hazard.
 The transformer is not intended for series/parallel connection.
 Never connect more than one light to a single power supply outlet. Each outlet on the power supply must go to one – and one only – underwater light (must use AstralPool-only light).

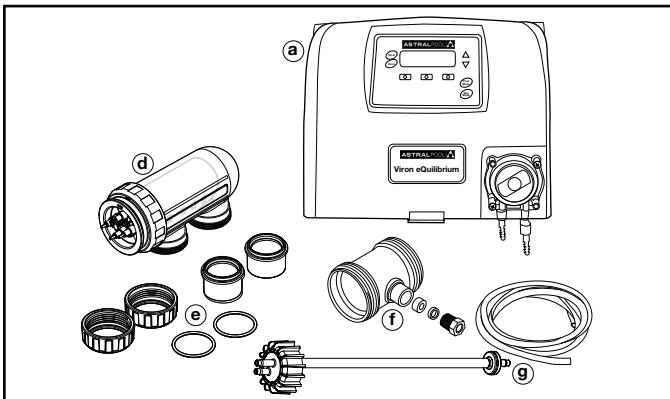
SAVE THESE INSTRUCTIONS

Section 2. System Overview

2.1 Contents

Before starting, check that you have the correct parts as indicated in Table 1. If any parts are missing or incorrect, please call your local distributor or technical support at 1300 186 875 for assistance.

2.2 Viron eQ Salt Chlorinator System



EQ18/EQ25/EQ35/EQ45 Salt Chlorinator

- a. eQ Controller
- b. Wall Mount Bracket (not shown)
- c. Wall Mount Screws (x2) (not shown)
- d. Electrolytic Cell and Electrodes
- e. Unions, 50mm Glue on Adapters, O-rings (x2)
- f. 50mm Injection Mixing Cell
- g. PVC Tube Acid Drum Connection/Venting Kit

Table 1. Viron eQ Salt Chlorinator System Contents

2.3 Specifications

2.3.1 Viron eQ Salt Chlorinator System

	EQ18	EQ25	EQ35	EQ45
Nominal chlorine production	18 g/h	25 g/h	35 g/h	45 g/h
Required salt level	4000 ppm			
Power supply voltage	240 VAC - 50 Hz			
Protection index	IP43			
Flow through the cell	80 - 300 Lpm*			
Operating water temperature	10°C - 40°C			

*If over 300LPM a bypass manifold will need to be installed).

Table 2. eQ Salt Chlorinator System Specifications

2.4 Dimensions

2.4.1 Controller

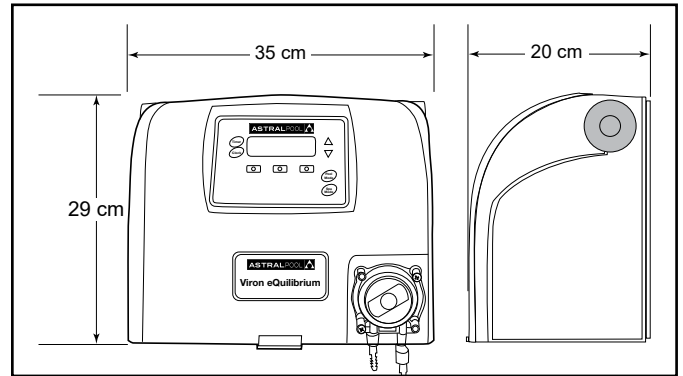


Figure 1. Controller Dimensions

2.4.2 Cell

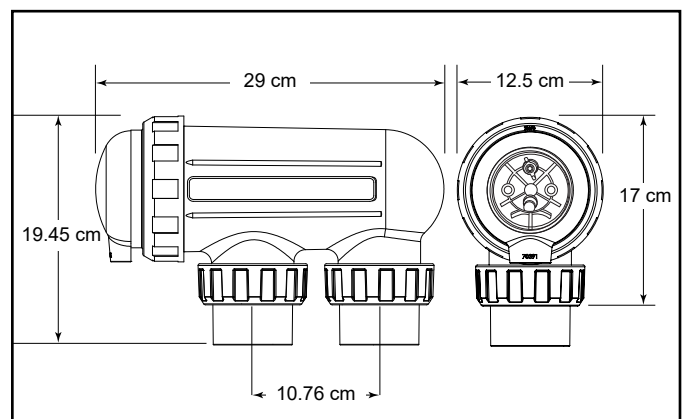


Figure 2. Electrolytic Cell Dimensions

2.5 Materials and Tools

2.5.1 Controller

Tools Needed for Installation
<ul style="list-style-type: none"> • Power Drill • 7 mm Drill Bit - Hammer Drill Bit (only necessary to drill into brick or concrete) • Pencil or Marking Pen • Pozidriv Screwdriver

2.5.2 Cell

Tools Needed for Installation
<ul style="list-style-type: none"> • PVC Cutter • PVC Cement • Pencil or Marking Pen • Check Valve • 50 mm PVC Pipe (40mm optional needs reducers)

Section 3. Plumbing

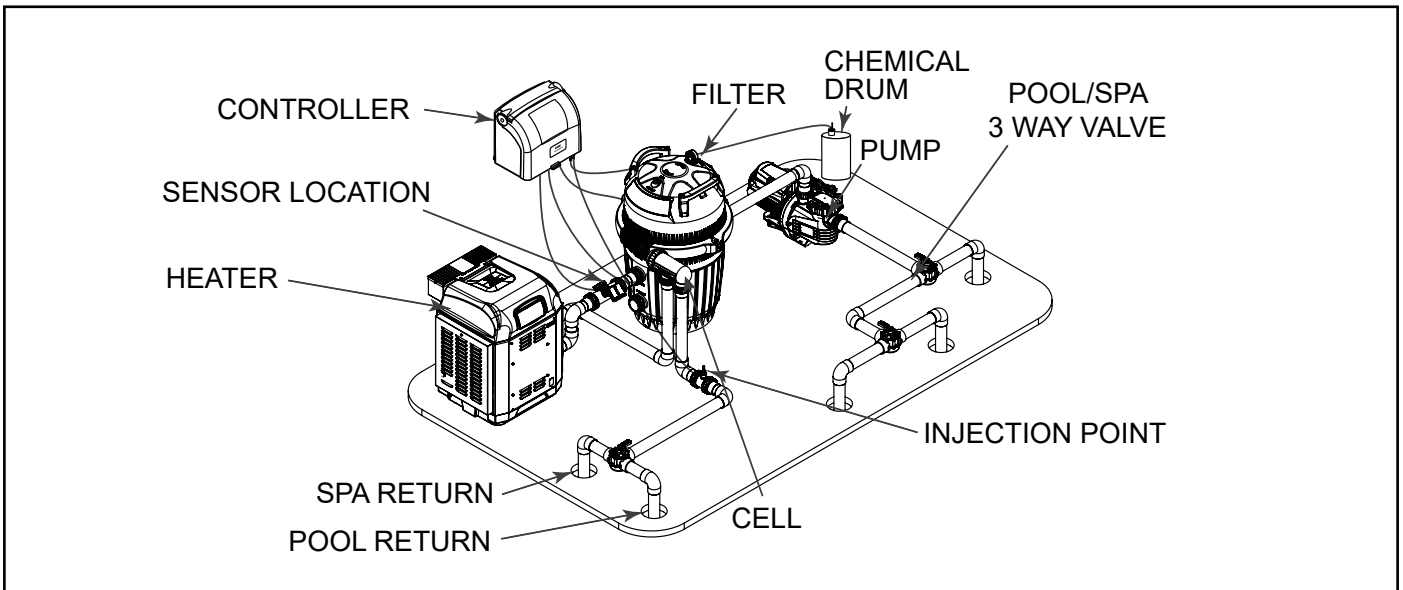


Figure 3. Viron eQ Installation and Plumbing

The cell must be plumbed in a position that is accessible for maintenance and within 1.5 m of the controller. The cell should be the last piece of equipment in the circulation system. The cell must be installed horizontally, level and with correct flow orientation, see Figure 3.

1. If you intend to plumb the cell on a bypass, the bypass must be equipped with Isolation valves.
2. Plumb the cell inlet and outlet on vertical lengths of 50 mm PVC pipe (if using 40 mm pipe, use 40 mm reducers). The cell inlet and outlet ports are 11.5 cm apart, see Figure 2. The inlet of the cell is on the side closest to the electrical lead.
3. Put the lock nuts onto the inlet and outlet pipes in the correct orientation, see Figure 4.
4. Glue the unions directly onto the pipes.
5. Ensure the o-rings are seated properly on the unions.
6. Secure the cell to the plumbing by tightening the unions hand tight. **DO NOT OVERTIGHTEN.**
7. Double check cell orientation. The cell inlet is closest to the cell electrical lead.

⚠ WARNING

- a. The cell must be installed horizontally and level. Improper installation can lead to gas build up which could result in equipment damage or serious injury.
- b. The cell must be the last piece of equipment on the return line.
- c. It is recommended in all installations that the cell is installed on a bypass equipped with isolation valves.
- d. In order to avoid load loss, installing the cell on a bypass is **MANDATORY** if system flow rated exceeds 300 Lpm.
- e. If installing on a bypass, use a downstream check valve instead of a manual valve to prevent improper back flow into the cell.

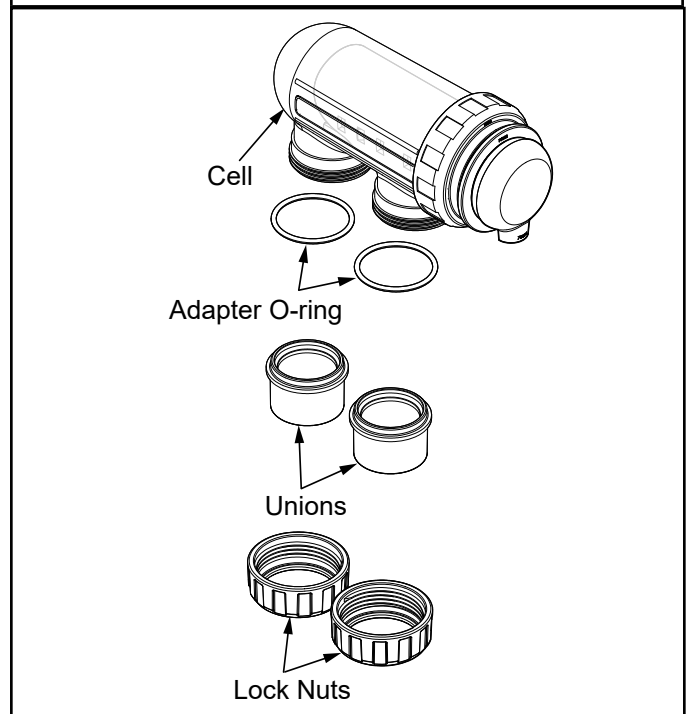


Figure 4. Cell Plumbing Assembly

Section 4. Install Controller

The controller should be located at or near the equipment pad, at least 3.5 m or more away from the inside wall of the pool/spa, 1.5 m off the ground, and within 1.5 m of the cell. All national, state, and local codes are applicable.

4.1 Mount the Bracket

1. Determine the controller location.
2. Use the enclosed bracket to mark the mounting surface through the screw holes.
3. Drill surface with 7 mm bit.
4. Install the included wall anchors.
5. Hang bracket using the included screws.
6. Hang the controller on the wall bracket and slide down to secure in place.

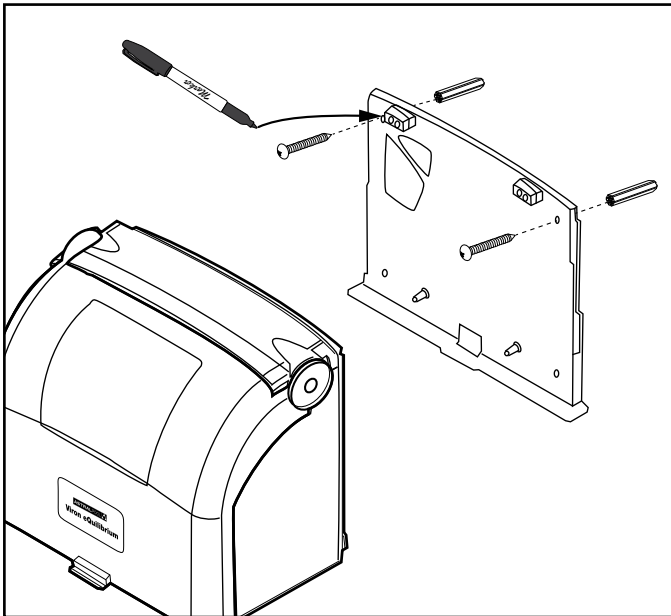


Figure 5. Viron eQ Salt Chlorinator Mount

4.2 Electrical Connections

⚠ WARNING

FOR YOUR SAFETY: This product must be serviced by a professional pool/spa service technician as described on the front cover of this manual. The procedures in this manual must be followed exactly. Failure to follow warning notices and instructions may result in property damage, serious injury, or death. Improper installation and/or operation will void the warranty.

The Viron eQ Salt Chlorinator must be permanently powered by connection to a 30 mA residential circuit breaker.

A non-replaceable backup power source is incorporated to maintain time-setting memory in the event of a short, infrequent power interruption.

4.2.1 Controller and Chlorinator Cell Wiring

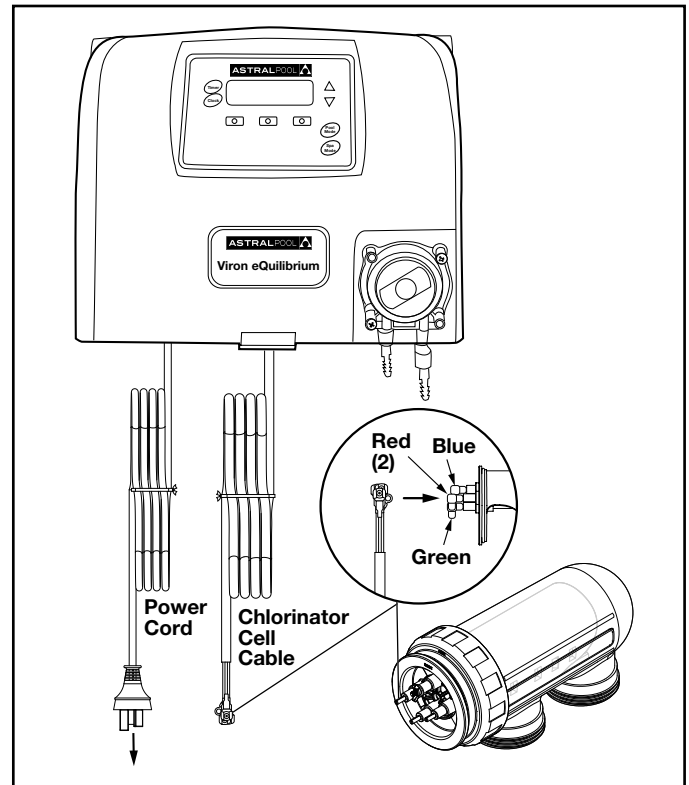


Figure 6. Chlorinator Cell Cable Connections

1. Connect the Chlorinator Cell Cable to the appropriate ports on the cell.
2. Connect the Viron eQ Salt Chlorinator to the power source.
3. Connect the pH sensor into "pH" location at the underside of the Viron eQ Salt Chlorinator. Then remove the cap from pH sensor and screw firmly into the plumbed sensor chamber. **DO NOT OVERTIGHTEN.**
4. Connect the filter pump 3-pin connector to the Viron EQ Salt Chlorinator.

Section 5. Chemical Connections

⚠ WARNING

- Never mix chemicals
- Chemicals must be stored in accordance with Relevant Standards and Dangerous Goods Codes. Consult your authorized builder or pool shop technician for advice.
- When handling acid, safety gloves and goggles should always be used.
- Chemicals must be at least 1 m horizontally from control unit in a well ventilated area to avoid corrosive damage.
- For best results a ratio of 2:1 is recommended.

The unit is designed to run with 2 PARTS WATER, 1 PART ACID (2.1 RATIO). Proper ratio should always be followed as the machine's dosing rate is formulated around the diluted solution. Using neat acid can lead to overdosing the pH level.

5.1 Chemical Placement

To avoid potential corrosion issues, the liquid acid drum shouldn't be placed underneath any equipment.

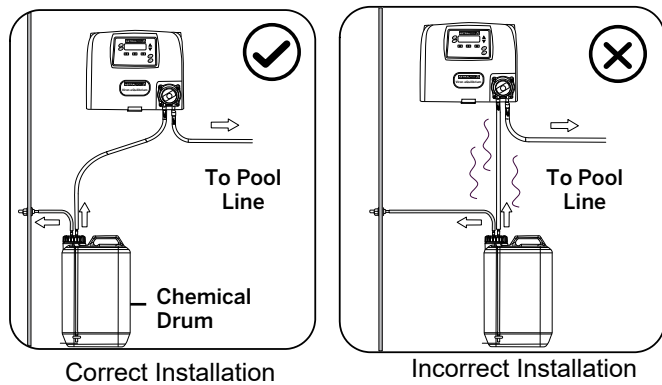


Figure 7. Chemical Placement

5.2 Placement of Control Unit

If the Viron eQ Salt Chlorinator is installed in an enclosure or shed, the liquid acid drum should ideally be stored outside of the enclosure or shed.

The Viron eQ Salt Chlorinator needs to be kept away from the elements to protect the longevity and function of the components.

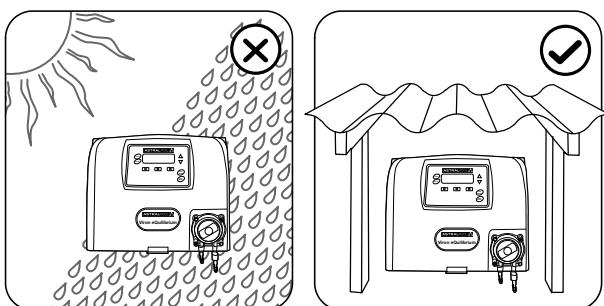


Figure 8. Viron eQ Salt Chlorinator Shelter Requirements

5.3 Chemical Line Connections

5.3.1 Install the PVC Tube

To avoid loss of water from the system, close all stop valves before cutting any lines.

- Clear Tube - 4m to be cut to required length (installation dependant)
- White Tube - to be inserted in the Container lid (2 lids are supplied with the kit to suit either a 25/15 ltr or a 5 ltr container) The tube is supplied to suit to a length to suit a 25ltr container. For use on 15 ltr containers, the white tube needs to be cut to approx. 265mm long. For use on 5 ltr containers the white tube needs to be cut to approx. 250mm long.

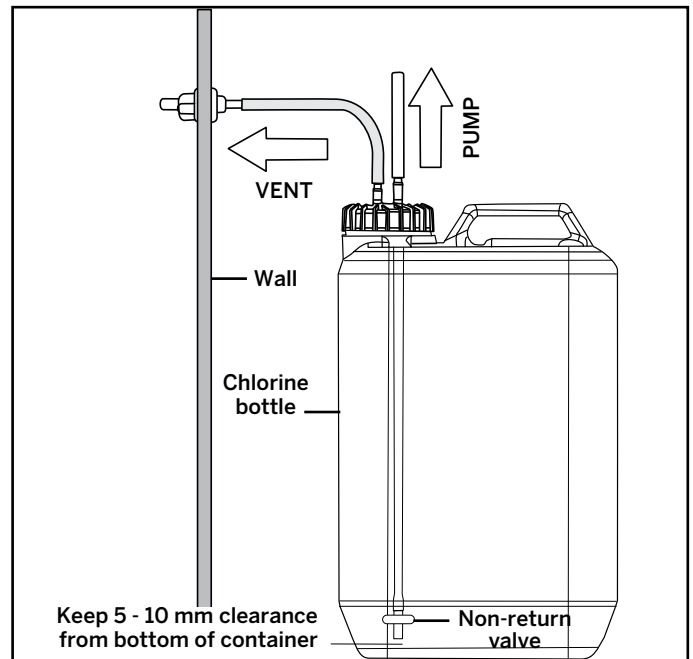


Figure 9. Acid Container Line Connections

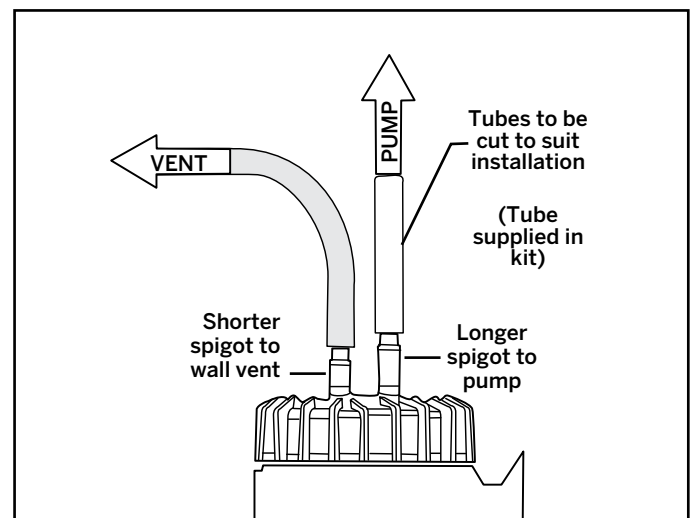


Figure 10. Acid Cap Tube Fitting and Venting

For both applications, ensure the non return valve is inserted into the tube. Ensure it is fitted in correctly, when fitted correctly you should be able to blow through the valve into the tube.

1. Connect the clear PVC tube to the longer spigot of the vent kit lid on the chemical container.
2. Ensure that the non-return valve is fitted correctly.
3. Connect the other end of the PVC tube to the inlet of the acid pump on the front of the controller.
4. Connect the remaining hose to the outlet of the acid pump on the underside of the controller.
5. Thread the remaining end of the PVC hose through the cable gland in the 50mm PVC mixing cell fitting so that it passes through the cable gland by 25mm to 30mm.
6. Position the injection chamber in a horizontal position after the Chlorinator cell on the return to pool side.

NOTE: Position of the injection point can be placed before the cell, however care should be made to ensure that acid cannot siphon back over probes if in use.

Do not use the sensor housing cell as the injection point on an eQ Chlorinator.

Acid Injection points should always be AFTER the probes positioning. Ideally in a location that would prevent back siphoning.

TIP: Soaking the ends of the PVC tubing in hot water or gently heating with a lighter will make it easier to push onto the barb.

5.3.2 pH Sensor (optional)

An optional pH sensor eliminates the need to regularly test your pH balance of your pool and spa. The sensor must be checked and recalibrated every 6 months.

When installed and connected, the Viron e-Quilibrium will automatically detect the pH sensor and the factory pH setpoint is 7.6. You can adjust your ideal pH setting in the Settings menu.

Connecting the pH Sensor

The pH sensor kit is supplied with a sensor chamber that is connected into 50mm PVC pipe work using 50mm union tails and lock nuts.

1. Install the sensor chamber horizontally, where possible after the filter and before the chlorinator cell (see Figure 11).
2. Glue in 50mm PVC pipe into union tails.

3. Remove rubber boot from pH sensor and screw into the sensor chamber port.
4. Blank off the remaining ports in the sensor chamber using the caps and gaskets supplied.

5.3.3 Chlorine Sensor (optional)

An optional chlorine sensor allows the Viron eQ Chlorinator to automatically control the chlorine and pH levels of your pool and spa water. A chlorine sensor is highly recommended for pool and spa combinations, spa pools and indoor pools and spas.

The Chlorine Sensor uses Oxidation Reduction Potential (ORP) readings to determine the chlorine level in your pool or spa water. ORP is the most reliable and safest way to determine the level of the sanitiser in your water but is affected by other factors influencing the efficiency of the chlorine. Water pH, the use of sunscreens (cyanuric acid), Hardness and other items can all influence the reading of the ORP

The Viron eQ Chlorinator will adjust the production of chlorine to meet the ORP which may mean the chlorine level, when measured in simple PPM (parts per million) levels may change from time to time. This is normal. An example of higher chlorine readings when measured in ppm is if the acid runs out and is not replaced. In this case, the pH will start to increase and the effectiveness of the chlorine will reduce. As the chlorine effectiveness reduces the ORP measurement declines and the Viron eQ Chlorinator will increase the power to the electrode cell to produce more chlorine. Once the pH level is corrected the Viron eQ Chlorinator will reduce or turn off the power to the electrode cell as the ORP reading will rise.

Once connected, the eQ Chlorinator will automatically detect the sensor and a factory pre-set chlorine level of 600 mv will be maintained.

Connecting the Chlorine Sensor

The chlorine sensor is provided with a 3 metre RJ12 cable for connection to a Viron variable speed energy efficient pump.

Remove rubber boot from the chlorine sensor and screw into the sensor chamber port (glued into pipework either before filter or between filter and Chlorinator cell).

The sensors should be mounted on horizontal pipe only and care should be taken to ensure the sensors are always covered by water by installing them in pipework that remains flooded.

The Ideal location for a pH or ORP probe is on a horizontal pipe run, with the probes facing DOWN or on a 45° Angle (see figure 11).

DO NOT install probes upside down as probes contain a reference gell that can separate and flow away from the probe tip due to prolonged positioning and gravity.

Ideally the Acid Injection points should always be AFTER the cell.

A pH and/or ORP sensor should be installed at least 30 cm away from any pipe elbow to prevent turbulent flow.

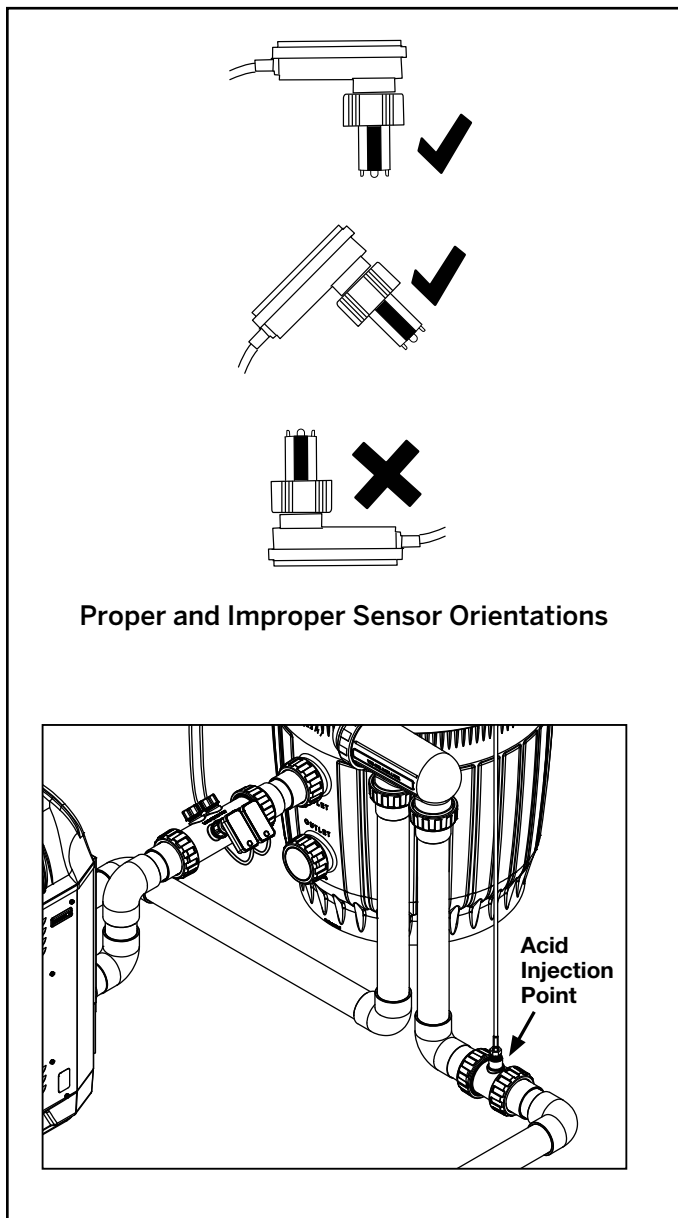


Figure 11. pH and ORP Sensor Installation

Section 6. Pool Chemistry and Balance the Pool

6.1 Water Chemistry Table

Test and maintain correct water balance throughout the season, according to the table.

	Free Chlorine	pH	Total Alkalinity (ppm)	Calcium Hardness (ppm)	Cyanuric Acid (ppm)	Salt Level (ppm)	Metal
Australian Standard	1 - 3	7.2 - 7.8	60 - 200	100 - 400 ^{***}	up to 50	4000 - 7000	x
Ideal range	1 - 3	7.4	80 - 140	90 - 300	Below 30 [^]	4000 at 27°C	0
To Increase	Add chlorine or increase equipment output	Add buffer or soda ash (sodium carbonate)	Add sodium bicarbonate	Add calcium chloride	Add cyanuric acid	Add salt or minerals ^{**}	x
To Decrease		Add Hydrochloric acid	Add Hydrochloric acid	Partially drain and refill pool [*]	Partially drain and refill pool [*]	Partially drain and refill pool [*]	Use 'Metal Remover'
In Season Testing Frequency	Weekly	Weekly	Weekly	Weekly	Weekly	Monthly	Monthly

NOTE: TEST ALL EQUIPMENT SENSORS QUARTERLY.

* Fill pool with water from the mains water supply. Do not use rain water or well water.

** Do not add salt directly into the skimmer. Do not initiate electrolysis until salt has fully dissolved.

*** Reading is True Calcium Hardness, not Total Hardness.

[^] If using ORP sensors keep Cyanuric acid levels below 20ppm.

Table 3. Water Chemistry

6.2 pH Regulation Principle

The amount of chlorine needing to be produced is dictated by the pH level in the pool. As the pH level rises, the amount of chlorine must be increased to compensate, see Figure 11.

6.3 Chlorine Output and Filtration Time

Your eQ Chlorinator must be run every day to ensure that your pool is correctly sanitised. As the sun dissipates chlorine, running times are higher in the summer compared to the winter. AstralPool recommend that you initially run your chlorinator at maximum output on level 8.

6.3.1 Summer

Set the eQ Chlorinator to operate for 8 to 10 hours per day. Ideally, run it for 4-5 hours in the morning (between 8-12pm) and 4-5 hours in the evening (between 6.00-11pm).

In extremely hot weather it may be necessary to extend the running time if you find that the free chlorine level is too low.

6.3.2 Winter

You should set your eQ Chlorinator to operate for 6 to 8 hours per day. Again, running it in the morning and evening is preferable. A lower chlorine output level may be selected.

6.4 Water Chemistry

6.4.1 Chlorine Level

Ideally, check the Chlorine level after the morning operating period. The free chlorine residual level should be somewhere between 1 and 3 parts per million. Increase or decrease the output of the Chlorinator to get the right residual chlorine level. It may also be necessary to adjust the operating period if you are running at minimum or maximum output.

6.4.2 Stabilizer (Cyanuric Acid)

Stabiliser (also referred to as sunscreen or cyanuric acid) is not recommended to be used by Astralpool with an eQ chlorinator and Chlorine probe fitted. If Dichlor or Trichlor is used to supplement the chlorine production of the eQ chlorinator or Cyanuric Acid is added to the pool, the set point of the chlorine (ORP) should be turned down.

Cyanuric Acid (CyA) is often recommended by or added to swimming pools to make the available chlorine last longer. It is often called stabiliser or sunscreen. CyA bonds with chlorine ions which prevents the chlorine from oxidizing bacteria and other contaminants. This effectively reduces the oxidization reduction potential (ORP) of the

chlorine in your pool.

CyA is used to extend the life of chlorine when the chlorine is manually added in the form of a tablet, granules or liquid and it is not monitored by a measuring device. This reduces the quantity and cost of chlorine used and maintains a residual chlorine in the pool even though manual dosing may take place every 2 or 3 days.

At most, CyA should be managed and kept within a range of 10 to 20 ppm when used in conjunction with the eQ chlorinator installed with the Chlorine Sensor. Ongoing use of Trichlor or Dichlor will continue to raise the level of CyA causing a reduction in the activity of the chlorine and may cause your eQ Chlorinator to continue to raise the chlorine levels to excessive levels in order to reach the chlorine set point (ORP).

If supplementing chlorine is required, it is advisable to use small amounts calcium hypochlorite or liquid chlorine which does not use any CyA.

As a guide, the following set point ORP levels can be used as a starting point to achieve a consistent and reasonable chlorine level.

Chlorine efficiency or activity is reduced even when low levels of CyA is present.

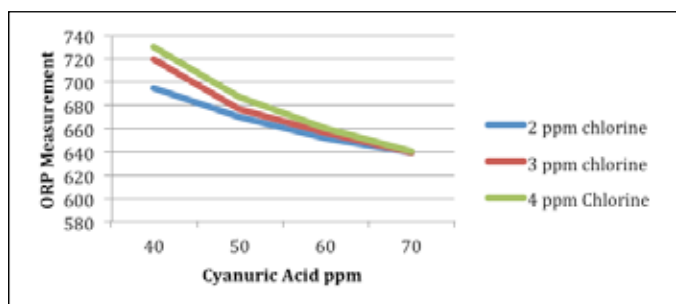


Figure 12. Effects of CyA on ORP Measurements

Total Alkalinity (TA) buffers pH or keeps the pH relatively stable. The pH of your pool water is crucial to making your chlorine highly effective, even when the chlorine is present in low levels. Measuring and adjusting your TA on a regular basis will help reduce acid consumption and help keep your pH level in check. Variable pH will also create variable ORP readings with high pH meaning your eQ Chlorinator will produce more chlorine to reach the set point ORP level than it would otherwise need.

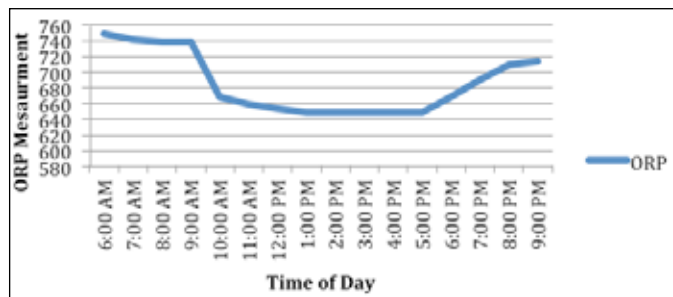


Figure 13. Effects of Sunlight Assisting CyA Bond

CyA (STABILISER) adds to the TA reading. If CyA levels of in excess of 50 ppm are present, it is good practice to divide the CyA by 3 and subtract the result from the TA reading. Therefore if CyA is 60, and TA is 200, subtract 20 (CyA 60/3) from 200 for a TA reading of 180.

CyA bonds to chlorine more effectively in sunlight hours. Therefore ORP readings will be lower in sunlight hours than at night. As the chlorine bonds with CyA during sunlight hours, the ORP may drop more than 100 mV. This means the e-Q chlorinator will drive higher levels of chlorine during sunlight hours as the chlorine is temporarily bonded with CyA. After sunset, the CyA bond with chlorine will reduce, freeing up the chlorine to oxidize with bacteria and exhibiting an increased oxidization potential reading on the e-Q chlorinator.

Cyanuric Acid Level	Chlorine Level		
	2ppm	3ppm	4ppm
0	700 mV	725 mV	750 mV
10	550 mV	600 mV	625 mV
20	500 mV	525 mV	550 mV
>50	350 mV	400 mV	450 mV

This graph serves as an approximation only.

NOTE: Constants - pH at 7.6 and TA at 180 ppm

Table 4. Guide to Adjusting ORP Set Point

6.4.3 pH Level

Keep the pH level between 7.0 and 7.4 for fibreglass pools and 7.2 to 7.8 for other pools.

6.4.4 Total Alkalinity

The ideal range is between 80 and 120 ppm.

6.4.5 Salt Level

The correct salt level is important to cell life and the effective operation of your chlorinator. Salt level should be maintained around 4,000ppm but should never be allowed to fall below 3,000ppm. Although salt is not consumed by the Chlorinator, salt is lost

during backwashing and when your pool overflows due to rain or splashing.

A typical pool of around 50,000 litres requires 200kg of salt to initially set-up the pool to 4,000ppm.

A low salt level warning is indicated on your eQ Chlorinator if the salt level drops. If Low Salt is indicated, check again in 24 hours and then if it is still indicated, add two 20kg bags of salt to the shallow end of your pool. Run the filtration system for approx. 6 hours to help mix the salt in the pool. It can take up to a day for the salt to fully dissolve.

If the low salt light is still on, then you should get your pool water tested. If the Salinity is above 4,000ppm then you may need to have your Chlorinator checked.

NOTE: The Low Salt light may appear as the water temperature decreases. Below 15 degrees celcius

WARNING

Do not put salt directly in the skimmer box. High concentrations of salt may cause damage to the controller or other equipment.

6.5 Chlorine Dosing and ORP

The Viron eQ Chlorinator uses an ORP sensor to measure and control the chlorine levels in your swimming pool or spa.

Before installing probes, balance pool water. Total Alkalinity (TA) must be 80 to 120 ppm, Calcium Hardness should be 180 to 250 ppm, and pH must be between 7.2 and 7.6.

Dose pool with a small amount of chlorine before starting the eQ. If no chlorine is sensed the eQ Chlorinator may go to fail safe mode and not start up. Some Chlorine should be present before starting the unit.

The Chlorine sensor will take 45 minutes or more to accurately sense the chlorine level in the pool. Allow Pool pump to run for 45 minutes before attempting to calibrate the sensor to the pool water.

Confusion often exists about the difference and relationship between oxidization reduction potential (ORP) and chlorine levels measured in parts per million (ppm).

Section 7. System Introduction and Setup

7.1 User Interface Overview

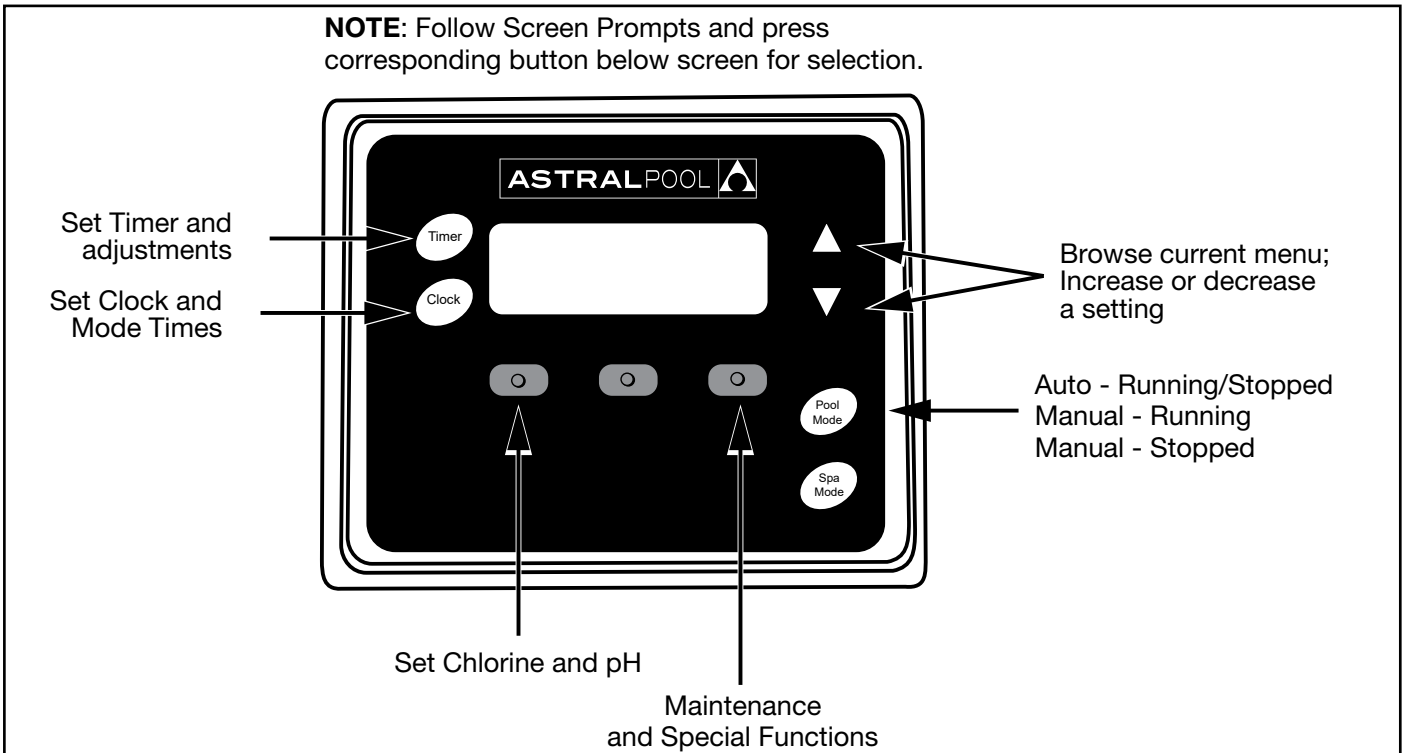


Figure 14. Controller User Interface

7.2 Initial Start-up

⚠ WARNING

To avoid risk of serious damage to the equipment, ensure that all salt added to the pool has completely dissolved before activating the chlorination function of your system.

The eQ Chlorinator can be controlled using the screen and buttons or via an App on a compatible smartphone or tablet using Bluetooth.

Initial set up for equipment such as variable speed pumps etc, needs to be performed using the Chlorinators screen and buttons. After initial setup, most other functions can be performed using either the Chlorinator or the App.

The eQ Chlorinator basic functions are:

1. Maintenance – special functions and initial set up to suit your pool and spa.
2. Setting – adjust chlorine production and pH of pool and spa water.
3. Clock and Timer – set current time and timers for filtration, chlorine production and pH monitoring.
4. Pool and Spa Mode – select mode specific to producing chlorine and acid dosing either the pool or the spa.

7.2.1 Viron eQ Chlorinator Installation Steps

MAINT > NEXT > NEXT > INSTALL >

1. Language

Select **INSTALL** from the Maintenance menu and you **ACCEPT** the appropriate Language for your Chlorinator (English is the default language). **INSTALL CHLORINATOR** is displayed.

2. Select Installation Options

After setting the Language option, you will be asked if you want to **INSTALL CHLORINATOR**.

Set the following install options:


- **TIMER ENABLED** – Turn your timer on or off. Press **ACCEPT**. If the chlorinator is connected to an external timer clock or Genus Remote Control system choose **Disable**.
- **FAST COMMS** – Do not change this function unless you are using an older version Hurlcon/ AstralPool controller (no touchscreen).
- **VARIABLE SPEED PUMP** – Program the speed of the pump as part of the timer setting in the chlorinator. Choose **YES** if you have an AstralPool 3 speed pump.
- **FLUSH AFTER TIMER** – Turn on pump will momentarily after timed cycle to flush residual chemicals from the injection chamber.

- **PUMP FLOW CHECK** – Monitor the flow sensor inside the chlorinator cell. If water flow is not detected for over 5 minutes, power to the pump outlet will be shut down to prevent damage to the pump.
- **ENABLE LIGHT** – Set your Chlorinator to control a Halo Lite (SLX setting)

NOTE: If an SLX light is connected via the ARC setting, there is no way to control colour other than with On/Off to cycle through the colours. Colour is not saved for next use and reverts to white.

- **CELL REVERSAL PERIOD** – Do not change this setting without consulting with your local AstralPool dealer or service department. Standard setting is 4 hours.
- **REVERSE CELL?** – Perform a manual reverse of your chlorinator cell – designed for use by your pool technician only.
- **SET POOL WATER VOLUME** – Change the volume of your pool. Select YES and use up/down arrows to change. Press ACCEPT.
NOTE: Setting is only available if probes are installed.
- **SET SPA WATER VOLUME** – Change the volume if you have a spa attached to your pool. Select YES and use up/down arrows to change. Press ACCEPT.
NOTE: Setting is only available if probes are installed
- **RESET SYSTEM?** – Revert the Chlorinator back to factory settings. Select NO. Use only in the case of a system error that can't be cleared.

7.2.2 System Power

- Press **POOL MODE** to cycle between:
Auto
Manual - On
Manual - Off
- Press  to turn the Viron eQ Chlorinator On and Off.

AUTO operates the filter pump and chlorine production on the selected timer periods. If the factory defaults are not changed, the timer turns the filter pump and unit on at 08:00 hours for a period of 4 hours and then again at 16:00 hours for a further period of 4 hours.

- Auto – Running indicates that the chlorinator is running within a timer period.
- Auto – Stopped indicates that the chlorinator is outside of a timer period.

7.3 Backwash the Filter

MAINT > BACKWASH > Up or Down for time > ACCEPT > BACKWASH to rinse > Up or Down for time

Before running the eQ Chlorinator for the first time, ensure your sand filter is backwashed for 2 to 3 minutes and then rinsed for 1 minute.

- Turn pump off when changing the position of the backwash valve on your filter.
- Minimum time is 1 and maximum is 5.

NOTE: You can press ABORT at any time to stop the backwash cycle.

7.4 Set Dosing

WARNING

- Hydrochloric Acid should be handled with extreme care.
- Refer to Material Safety Data Sheets on Hydrochloric Acid.
- Do not inhale Acid fumes.
- Do not spill.
- Handle with extreme care during transport.
- Use protective gloves and goggles
- In the case of spillage wash down with fresh water immediately.
- Keep out of reach of children.

Set the Acid dosing time and amount via the DOSE function or override the time clock to set the Chlorinator to allow for additional circulation of the swimming pool water after treatment or cleaning.



Figure 15. Viron EQ Chlorinator Dose Menu Screen

MAINT > NEXT > DOSE > Up or Down for time > SET

Press DOSE and up/down arrows to:

- Shock Chlorinate the Pool: Provide a shock dose of chlorine production or sanitise until the first timer tomorrow morning.
- Manually prime Acid Pump: Select this function to fill the clear PVC tube with Acid on initial start-up or after changing or refilling the Acid Container. The priming period is for 5 minutes but can be stopped at any time. If the tube is not completely filled with Acid after 5 minutes repeat the process.

- Manually Dose Acid: Select this function to manually dose acid for a predetermined time.

7.5 Acid Dosing

Your pool professional may recommend the addition of Acid to your pool.

To manually dose the pool:

MAINT > NEXT > DOSE > NO > NO > YES > Up or Down for quantity of acid (litres) > ACCEPT > press POOL MODE once to select AUTO for normal time clock operation

7.5.1 Acid Dosing without Sensors

The base model Viron eQ Chlorinator is supplied without any pH or Chlorine sensors (sensors can be ordered separately). In this model, you can determine the dosing rate of the acid by selecting 1 to 10 in the pH set screen.

The eQ Chlorinator will adjust the dosing level according to the chlorine production (the higher the chlorine production, the faster the pH change and the more acid required).

1. Install the acid dosing tube after the chlorinator cell on the return to the pool pipe.
2. Once the pH value is set, the information screen will alternate between the current status of the chlorinator and the chlorine output setting (between 0 and 8).

IMPORTANT: Check the pH balance each day for the first week of operation. Adjust the pH setting until it settles at the desired pH level. Once the desired pH level is achieved, continue to manually test your pH every week and adjust the pH setting as required.

7.5.2 Acid Dosing with Sensors

When pH and chlorine sensors are connected, the screen displays the following messages:

- Chlorine Level (chlorine low, chlorine OK, chlorine high)
- Cell operating at (percentage of maximum output, or "off")
- pH set point (factory preset at 7.6)
- pH actual (will read close to set point providing acid container has acid available to be dosed)

7.6 Electrical Connection Details

The Viron eQ Salt Chlorinator controller's electrical connections are found on the underside. See Figure 16.

- Two (2) RJ12 ports;
- Two (2) sensor probe ports (although labelled, they can be used for either orp or ph);
- One (1) light connector for use with an AstralPool light only. This port operates off 22VDC.

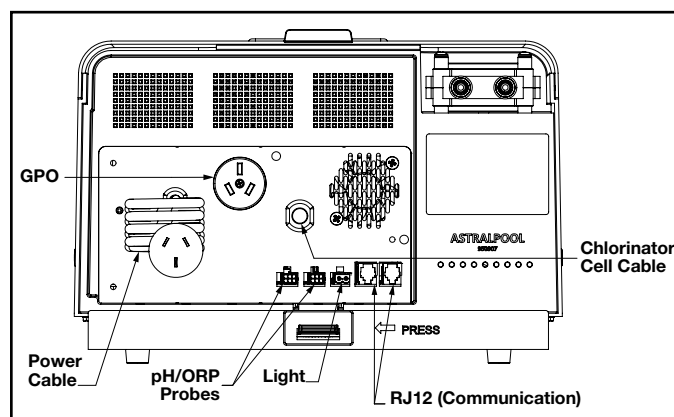


Figure 16. Viron eQ Controller (bottom view)

NOTE: The SLX/FLX lights can handle 12VAC input voltage or up to 24VDC voltage. As the Viron eQ Chlorinator's output is 22VDC, the SLX/FLX light can be paired with this system.

There are indeed some differences between operating SLX/FLX lights with AC voltage and DC voltage.

Our SLX/FLX lights have special functionalities like colour changing sequences (scrolling from one colour to another). These functionalities depend on the AC voltage frequency for timing, so that multiple lights can be synchronized together.

With DC voltage, multiple lights will go out of sync when operated in the colour changing sequences. When operated in solid colour modes, DC voltage operates similarly to AC voltage.

Section 8. Bluetooth Setup

8.1 ChlorinatorGo App

The ChlorinatorGo App can be downloaded from the Apple App store or from The Google Play store. It allows wireless Bluetooth control for the Viron Chlorinator and other compatible AstralPool lights and pumps.

- Simple digital push button controls
- On/Off, Auto or Manual, Pool or Spa Modes
- Compatible pump speed controls (low, medium, and high), compatible light controls, and individual timer setup.

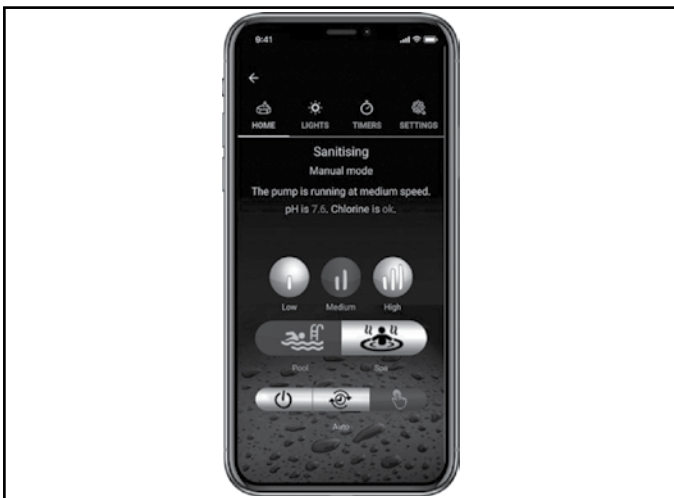


Figure 17. ChlorinatorGo App Screen

8.1.1 Installing and Using Bluetooth

MAINT > NEXT > INSTALL > NEXT > INSTALL > ACCEPT > INSTALL CHLORINATOR > NEXT > INSTALL BLUETOOTH > ACCEPT > (shows Bluetooth Access Code)

NOTE: Use this Bluetooth access code to connect with the ChlorinatorGo App.

1. Once the App is installed and opened, press + symbol, enter the Bluetooth Access Code from above and press Save. Enter a name for your Chlorinator at the prompt.
2. From the ChlorinatorGo HOME page, select the Chlorinator name to connect wirelessly and display the HOME page.
3. From the HOME page, turn the Viron Chlorinator On, Off or to Auto, select Pool or Spa Mode and set the pump speed (if a compatible AstralPool pump is installed)
4. Select the LIGHTS page (if a compatible Connect LITE+ is installed) or select the TIMERS page (if Timers Enabled” was selected during Installation)

5. The Chlorine set point and other Maintenance tasks can be selected from the SETTINGS page.

8.1.2 Updating Your Chlorinator Firmware Using the ChlorinatorGo App

NOTE: The device will remain in the bootloader for three (3) minutes before timing out and resuming normal operation.

There are two (2) options to update the firmware:

1. Powering on the system:

- Ensure the Viron Chlorinator is completed power OFF.
- Hold down the Timer button (located at the left of the screen) and middle orange button (located under the screen). See Figure 9.
- Power up the Viron Chlorinator while holding down the buttons.

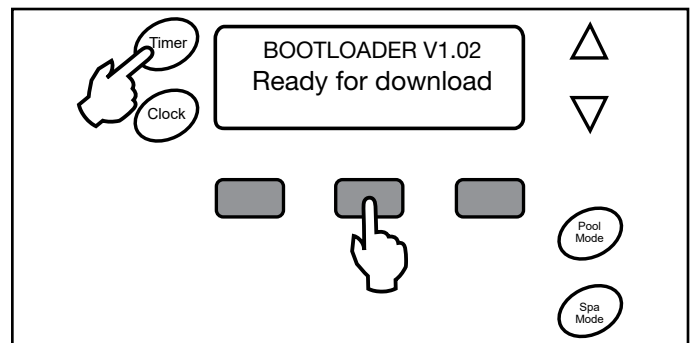


Figure 18. Updating Firmware Bootloader Screen

2. Bluetooth is already enabled:

MAINT > NEXT > NEXT > INSTALL > ACCEPT > NEXT > NEXT > ACCEPT > NEXT > YES > (hold down both indicated buttons on screen until bootloader is entered)

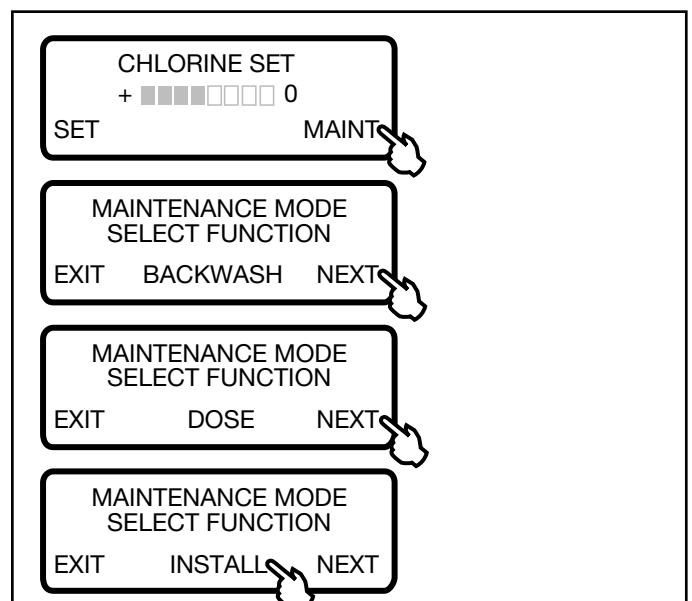


Figure 19. Bootloader Process Screens

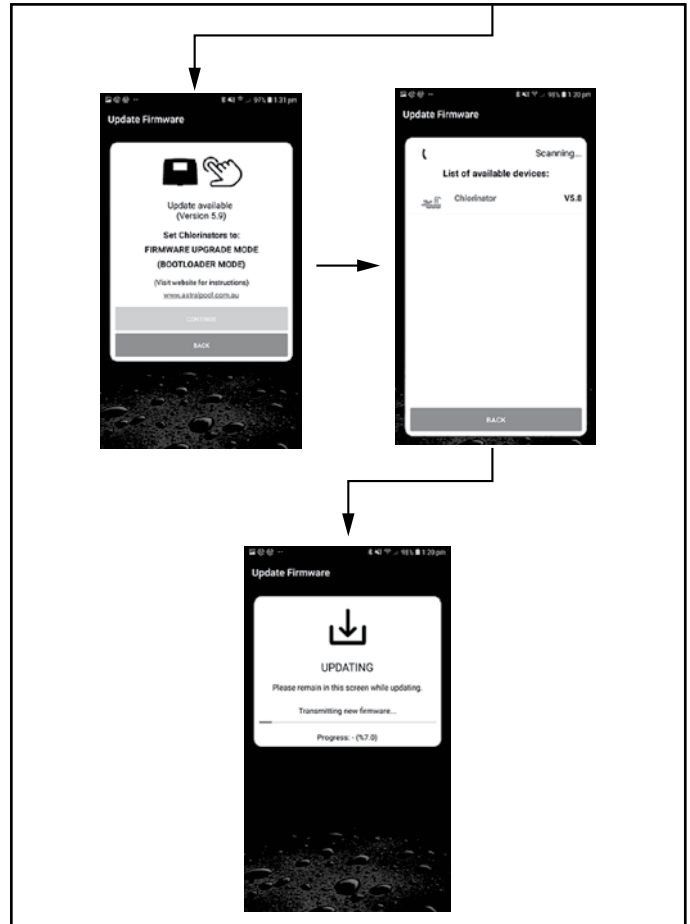
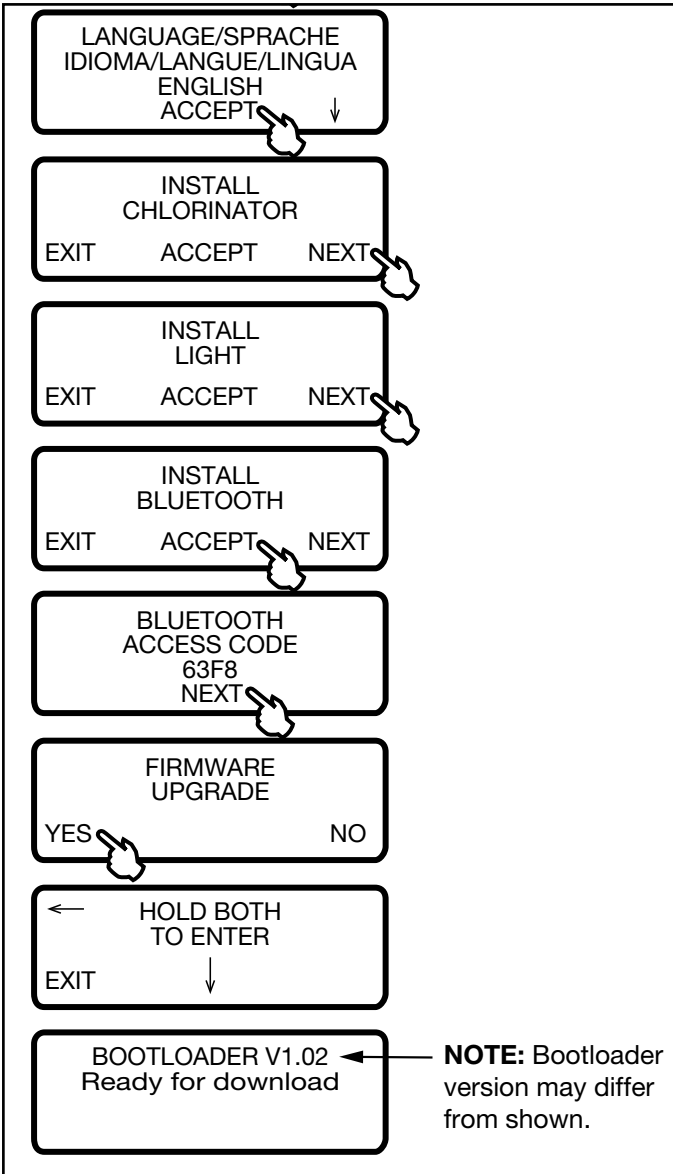
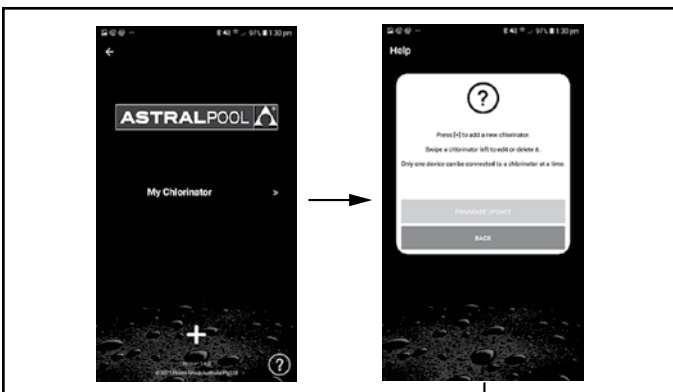


Figure 20. ChlorinatorGo App Successful Firmware Update Screen

Once the Viron Chlorinator is in bootloader mode (from either firmware update option), open the ChlorinatorGo App and begin the firmware update process.

FIRMWARE UPDATE > CONTINUE > (wait for devices to populate) > Click on CHLORINATOR > (updating progress will show on ChlorinatorGo App and User Interface Screen

If the update is successful, it will show on the screen.



Section 9. Daily Operations

For regular operation, make adjustments via the SET button on the eQ Chlorinator.

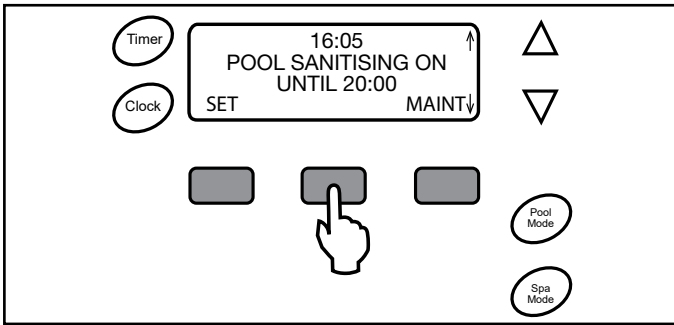


Figure 21. eQ Chlorinator Set Screen

9.1 Setting Clock

POOL MODE > OFF > CLOCK > DAY > Up or Down > HOUR > Up or Down > MIN > Up or Down > CLOCK to Save

NOTE: The clock is a 24-hour clock.

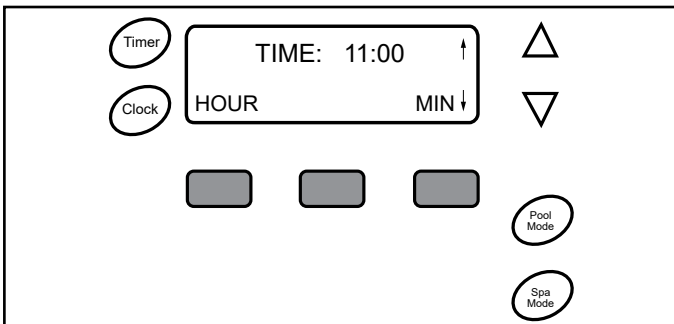


Figure 22. eQ Chlorinator Clock Set Screen

9.2 Setting Timers

AstralPool recommends the use of two separate timers for the morning and evening operations, with chlorinating periods of 2-5 hours each. The Viron eQ Chlorinator is most effective if running in the early morning or evening when it is cooler (strong sunlight consumes more chlorine). As a default, the control is set to come on at 08:00 hours and 16:00 hours both for periods of 4 hours.

The Viron eQ Chlorinator has four (4) timers per day for the filtration pump, chlorine production, as well as two (2) timers for compatible light operations. Timers are set by entering a Start time and a Run time. To set timers, do the following:

TIMER > HOUR > Up or Down > MIN > Up or Down > NEXT > RUN > HOUR > Up or Down > MIN > Up or Down > Press NEXT until normal displays returns to save

NOTE: The RUN time represents the number of hours you want the unit to operate for.

NOTE: For light timers to work, the chlorinator and lights must both be set to Auto mode. Light timers will not work if the chlorinator is set to Off or Manual. Even if the light is set to Auto, this function is ignored and the lights will not come on automatically.

Recommendations for timers:

- Two timers: one for morning, one for the evening sanitizing cycle
- Timers should typically run for periods of 2-5 hours each.
- A third timer can be used for lighting with the pump off.
- Chlorinator is most effective if run in the early morning or evening when it is cooler (strong sunlight consumes more chlorine)

9.2.1 Auto Sanitising

AUTO mode sets the controller on timer clock mode. In AUTO mode the LCD screen will display the date and pool sanitiser or light message.

Press POOL MODE repeatedly to toggle between AUTO, Manual - ON, Manual - Off

9.2.2 Lighting Timers

You can set additional lighting timers to control lights automatically. Use either use the Connect LITE remote control, or the LIGHT button on the chlorinator to set a timer for the Lights to AUTO.

9.3 Adjust Chlorine Output

In summer (or other heavy bathing times), chlorine output should be set between 6 and 8. Check chlorine level in your swimming pool regularly to determine if the output should be increased or decreased. Rely on a pool professional for additional advice on the recommended chlorine level in your pool.

Free chlorine level should be between 1.0 ppm and 3.0 ppm.

NOTE: 0 chlorine output should only be used when there is no salt in the water.

POOL MODE > Manual - ON > SET > Change Chlorine Set Point > YES > Up or Down > ACCEPT

9.4 Adjust pH Setpoint

pH in your pool should be set between 7.4 and 7.8. Variations are determined by the type of pool you have (concrete, fibreglass, vinyl liner). Rely on a pool professional for additional advice on the correct pH Set Point for your pool.

POOL MODE > Manual - ON > SET > Change PH Set Point > YES > Up or Down > ACCEPT

Section 10. Ai Mode

Ai Mode is complete automatic control of your Pool & Spa. Ai Mode is a unique system that controls the filtration and chlorine levels in your pool with three primary objectives:

- Completely turnover your pool water every day so that the organic material which looks unsightly and which feeds algae and bacteria is removed from your pool.
- Ensure the correct sanitizer level is achieved to destroy any pathogens, algae and bacteria in the water.
- Minimize the cost of operating your pool and spa.

Ai Mode will automatically adjust operating times, pump speed (when Viron variable speed pumps are installed) and chlorinator output to suit the weather conditions and bather load.

Priority one is to produce sufficient chlorine to make the pool clean, healthy and ideal to swim in.

Priority two once the pool is clean is to reduce operating costs by automatically reducing the pump speed.

10.1 Ai Equipment Requirements

For your Viron eQ Chlorinator to operate in Ai Mode you will need the following equipment:

- A Viron eQ Chlorinator
- pH sensor
- Chlorine sensor
- RJ12 communications cable
- Viron XT series variable speed pump

10.2 Ai Mode Connection

Connect your Viron XT series pump to the Viron eQ Chlorinator with the RJ12 communications cable and plug the 3 pin plug into the bottom.

10.3 Ai Mode Set Up

In the Viron eQ Chlorinator “Set Up” screen:

1. Enter “INSTALL” menu and enable the following:
 - 3 speed pump enabled the volume of your pool and spa in litres (if no spa is installed, leave this at factory pre-set level)
 - Select Ai Mode
 - Select the size Viron Pump you have installed (1.0 hp for P320/XT320 and 2.0 hp for P600/XT520)

- Select the speed of the pump when you have the system manually on – we recommend speed 1 or high speed.
 - Select “Continue” set up when asked.
 - the number of complete water turnovers required each day, (suggest factory preset of 1.5 times is adequate)
 - When asked “Reset to Factory Defaults?” select no.
2. Exit the “Install Menu”
 3. Change the timer period to operate for as long as possible (suggestion of 16 hours – from 8 am to 10 pm)

10.3.1 Viron XT series Pump speed selection:

1. Enable System mode in the Viron Pump menu – refer to your Viron Pump Instructions
2. Set Pump speeds as follows:
 - With the RJ12 Cable connected to the pump and eQ Chlorinator, change chlorinator mode to “Manual On” to enable adjustment of the Pump Speeds.
Note: Once pump is turned Manual On, it will go into Priming Mode for 5 minutes before the speeds can be changed.
 - Set High Speed at near maximum speed of the pump.
 - Set Medium Speed at a speed so the chlorinator electrode cell fills with water during operation and the skimmer box weir door creates some surface tension on nearby water to skim properly. Usually, this speed will be between 1200 and 1600 RPM.
 - Set Low Speed at 600 RPM (also referred to as sampling speed). Ensure water is flowing through the chlorinator cell at this speed.

10.4 Operation in Ai Mode

In Ai Mode, the pump and electrode cell will start at the first time setting. After an initial 5 minute priming period, the pump will revert to filter speed (Medium Speed), the eQ Chlorinator will test pH and chlorine levels and both adjust the chlorine production and dose acid to achieve the desired levels.

The Viron eQ chlorinator will ensure the pump operates until its primary two objectives are achieved:

- Water is turned over 1.5 times (on a 50,000 litre pool, the pump will move 75,000 litres of water to ensure all of the water is filtered)

- Chlorine level is achieved. In the winter, this may be only 4 to 6 hours of operation. In the summer, when the pool is subject to high UV and heavy bather load it may be 12 hours as the chlorine level is constantly under demand.

When both objectives are achieved, the Viron eQ Chlorinator will turn the pump down to Sampling Speed (approx.600 RPM) which is almost inaudible and reduces costs substantially. During sampling speed the Viron e-Quilibrium simply tests for chlorine levels. If the family all jump in the pool later at night and the chlorine is dissipated, the Viron eQ Chlorinator will turn the pump back to filter speed (medium) and turn the electrode on to produce more chlorine. Your family is protected even when swimming later at night as the system is filtering and sanitising the pool or spa water automatically.

If the correct chlorine level is NOT achieved when the system shuts down at the end of the day on time clock, it will start on maximum output and maximum pump speed the following morning until the chlorine level is achieved. Once the chlorine level is achieved, the pump will revert back to the gentle filtration speed until the required number of water turns and chlorine levels are maintained.

10.5 Ai Mode Timers

In Ai Mode you can select four timer periods. Each timer period can have a specific pump speed selected (high or medium) or allow the Chlorinator to select the appropriate pump speed. Normally you will only select a specific pump speed when you wish to operate a cleaner or water feature at a specific time every day. Low speed cannot be selected in Ai Mode as low speed becomes the default “sampling speed” to allow the unit to continue to monitor chemical levels while the Viron Pump is operating at a very low output.

10.6 Effects of Ai Mode

It is important, during set up, that the pool/spa volume is entered correctly. The average pool size in Australia is between 50,000 and 60,000 litres but if in doubt, it is better to select more volume than less.

When chlorine is low, Ai mode will change the Viron Pump (if installed and connected) to High Speed. The high speed can be adjusted up or down in the set up and commissioning stage.

High speed operation and high chlorine output will continue until the chlorine reading is near the set point. Once the chlorine level nears set point, Ai mode will turn the pump speed back to medium and reduce the output on the chlorinator to prevent

“overshooting” of chlorine levels.

When the chlorine level is satisfied and the pump has operated long enough to complete the pool water turnover inputted into the eQ Chlorinator set up menu (factory pre-set at 1.5 turns), the chlorinator will turn the pump down to low speed, stop producing chlorine and dosing acid, but continue to sample the chlorine level. Low speed should be adjusted to approximately 600 to 800 RPM during set up.

If the chlorine level drops significantly while in Ai mode, the eQ Chlorinator will turn the pump back to medium speed (from low speed) or to high speed (from medium speed). At the same time, the chlorine output will automatically be adjusted. The goal is to produce chlorine as quickly as possible and vigorously circulate chlorinated water to all parts of the swimming pool.

You will notice a difference in the operating hours, pump speed and chlorinator output between winter and summer as the unit adjusts to weather and environmental conditions.

10.6.1 Extended Hours and High Speed Pump Operation

Should Ai mode keep your pump in high speed for most of the day perform the following checks:

1. Manually test the water (from in front of skimmer or inlet to the circulating pump) for the chlorine level. If the chlorine level is high (above 3ppm) turn the chlorine setting on the chlorinator down. (Refer to section 10.1)
2. If the chlorine level is low and stays low throughout the day, try extending the operating hours of the Chlorinator into the morning or late at night. Chlorine produced at night will stay in the water for longer and build up a residual which may be enough to counter the effects of strong sunlight and bather load on hot days.
3. Check the salt or mineral level in your pool water. Higher levels (do not exceed 6,000 ppm) of salt/minerals will enable higher chlorine production.

After these checks, if the pump stills runs on high speed for most of the day, you can sacrifice circulation by reducing the high speed setting on the pump

Visit our online support page which has a range of videos on Setup, Maintenance, and Troubleshooting. Go to: www.astralpool.com.au/eq-support

Section 11. Inspecting and Cleaning the Electrode

In areas that experience calcium hardness the cell electrode will benefit from cleaning.

1. Switch off the filter pump and chlorine generator, close necessary valves and unplug the cell terminal cap.
2. Unscrew the retaining ring and remove the electrode. If calcium buildup is present, immerse the electrode in cell cleaning solution without immersing the terminals.
3. We recommend using Salt Cell Cleaner to clean the electrode. However, you can mix your own by carefully adding one (1) part of Hydrochloric (Muriatic) acid to ten (10) parts water. Stronger solutions will shorten terminal life.

NOTE: Always add acid to water, and never water to acid.

4. Allow the cleaning solution to dissolve the calcium deposits for about 10 minutes.

NOTE: Dispose of the cleaning solution at an approved Council Depot and never into storm water or sewage drains.

5. Rinse the electrode in clean water and re-fit the electrode in the cell housing.
6. Replace the cell head and plug assembly.
7. Reset valves and switches.
8. Turn pump and controller on.
9. Confirm chlorine output and settings on the power pack. Timer programs will be automatically retained.

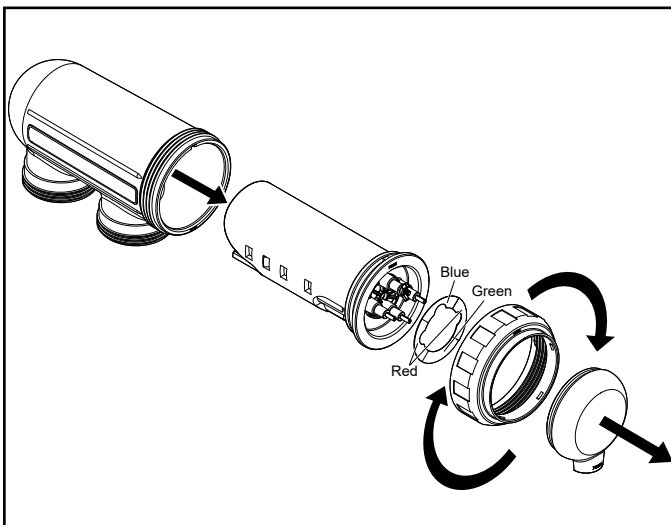


Figure 23. Opening the Cell

Section 12. Winterizing

The Viron eQ Chlorinator has a protective system which will limit sanitizer production during unfavorable operating conditions, such as cold water or lack of salt.

Active winterizing leaves the filter pump and chlorinator running during the winter. This is safe for temperatures above 10°C. If temperatures drop below 10°C, the chlorination cell needs to be deactivated.

Passive winterization calls for the pool to be shut down. Water levels will need to be lowered and the piping will need to be drained. The cell electrode can be left in place with isolation valves open.

12.1 Reopening the Pool

Required actions:

1. Adjust the water level (too much or too little)
2. Check the water parameters.
3. TAC/TH/pH/Salinity/Chlorine/Stabilizing Agent/Copper/Metals.
4. Adjust the parameters to obtain a balanced, healthy pool, see Section 6.
5. Check the condition of the equipment (pump, filter, chlorinator, electrolytic cell).
6. Once the salt level has reached the required level of 4000 ppm and has dissolved in the water, restart the salt chlorinator.

Section 13. General Maintenance

If the supply cord is damaged, it must be replaced by AstralPool, its service agent or a similarly qualified person in order to avoid a hazard.

WARNING

Operating the chlorinator with less than 3,000 ppm of dissolved salt in the water may cause damage to the cell and will void the warranty.

Never start the chlorinator, until the correct quantity of salt has been added and dissolved in your pool water.

13.1 Cell Maintenance

Your Viron eQ Chlorinator has an automatic cleaning feature, that under normal conditions, will keep the cell plates clear of deposits of salt and calcium.

The cell has a negative charge sensor that monitors the flow and salt levels of the water. This sensor is designed to be fail safe. As it is negative charge deposits of calcium or other debris that may be deposited on it, causing an indication of low salt or no flow condition.

Should a low salt condition be indicated, have your salt level checked at your local pool shop. If the low salt condition persists, or a no flow condition is indicated when the supply pump is operating, you may need to manually clean your Viron Chlorinator Cell. See Section 11 for cleaning instructions.

13.2 Maintenance Schedule

The Viron eQ Chlorinator has high velocity water with chemicals in it. Some of these parts will wear in the normal course of use and require regular checks and maintenance. Performing these checks and maintenance will identify parts that have worn and require repair/replacement before further serious damage is sustained. A small amount of regular care and attention to your pool equipment will help ensure long life and trouble free performance.

To protect against extremes of temperature, your unit is vented to allow the electronics to cool. Ants and some insects are often attracted to the warmer, dry environment inside the enclosure. We recommend that, with power turned off, you spray a surface insecticide on the surfaces surrounding the control to prevent ant and insect ingress. Repeat every three months or as necessary.

NOTE: Regular maintenance is important to ensure long life and trouble free performance of your pool equipment. If unable to perform the maintenance yourself, contact your local pool professional to request assistance with the maintenance.

Timing	Maintenance Check	Service Action If Required
Weekly or sooner	Check Cell for calcium buildup	Soak electrode in mixture of 10 parts water to 1 part acid. Use a soft brush only if required.
	Check water chemistry	Balance pH in pool and adjust output of unit to ensure satisfactory production of chlorine.
	Check cable connections to Cell	Ensure no water contact is occurring with pins.
Every Three Months	Check Cell connections for leaks	Isolate Pump, turn power off, clean and grease O rings or replace if necessary
	Check for insects/ants	Spray a surface insecticide on the surfaces around the unit to prevent ant and insect ingress
Every Six Months	Check chlorine levels and pump operating hours	Adjust timer and output depending on demand for current season.
	Prevent insect ingress to controller	Turn controller off, use an insect spray and spray onto walls around controller. Do not spray directly into unit.

Table 5. Viron Salt Chlorinator Maintenance Schedule

13.3 Lubricate the Acid Pump Squeeze Tube

Acid pump squeeze tube must be lubricated every 6 months or more often in commercial applications. Use only the recommended lubricant such as Hydraslip (part number 600118) available from AstralPool or any other compatible silicone lubricant, otherwise damage to the tube is possible.

Depending upon usage, the squeeze tube may need replacement after 12 months on a domestic installation, and earlier on a commercial installation. Before replacing the tube make sure that any stop valves in the filter system are closed. Otherwise water loss may occur.

To replace the tube, remove controller drawer, remove retaining screws from the pump head and pull the tube free. Disconnect the squeeze tube from the barbs and reconnect the new squeeze tube after lubricating the same, making sure that the new tube is correctly connected to the PVC tubing as per instructions. Reposition the squeeze tube in the unit as before, replace the pump head and retaining screws.) **DO NOT OVERTIGHTEN THE RETAINING SCREWS.**

13.4 Clean and Calibrate Sensors

The sensors are sensitive instruments. To maintain their accuracy they should be cleaned and calibrated regularly.

13.4.1 Sensor Cleaning

To maintain accuracy, clean sensors periodically with a household detergent abrasive (Jif is the preferred option).

The Chlorine Sensor tip can be contaminated (generally observed by a copper or brownish coating – this should always look shiny gold) which will give a false reading to the Controller causing no dosing/over dosing of chlorine. As the pH sensor tip is made of glass, please take care, for even a hairline crack can cause the sensor to read incorrectly causing malfunction.

After cleaning the sensors, wash with water, allow 5-10min. to settle and check calibration or re-calibrate if necessary.

NOTE: The chlorine sensor may take 30 to 45 minutes to settle and provide the correct reading.

13.4.2 Sensor Calibration

Calibrate the pH sensor every 6 to 12 months.


1. To Calibrate, Press MAINT and next until CAL appears on the LCD.
2. Select CAL to commence the process.

The pH probes/sensor has been factory calibrated. However it is a good practice to check the adjustment for the probe periodically (every 6 months or earlier if required). The probe should be cleaned first (refer under Maintenance page for cleaning) and allowed to settle down for about 4-5 minutes before adjusting/calibrating. The most accurate way to calibrate is to put the probe in a calibration solution. Calibration solution is available via AstralPool as a spare part.

Press MAINT and then next until CAL is displayed. The unit will ask CHANGE PH CALIBRATION, select YES. Select NO to Filter Pump on?

Section 14. Troubleshooting

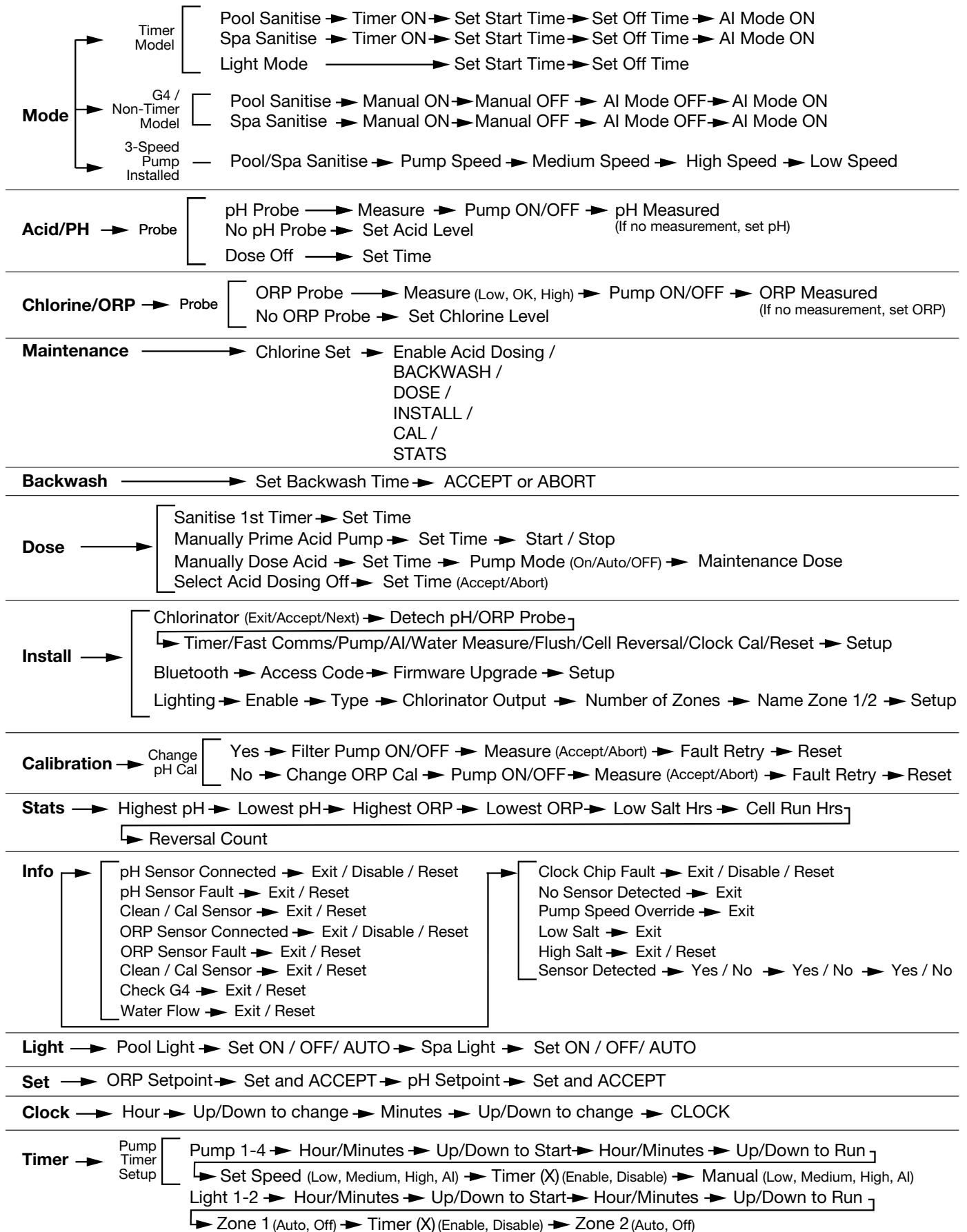
When there is an error condition, a message is displayed on the screen and the “INFO” LED flashes.

Fault Indication	Possible Cause	Solution
NO FLOW (NO F)	<ul style="list-style-type: none"> Pump turned off/disconnected or valves closed Blue wire disconnected from cell 	<ul style="list-style-type: none"> Ensure valves/pump ON Connect BLUE sense wire to cell
LOW SALT (LO S)	<ul style="list-style-type: none"> Salt level in pool has dropped too low Pool water temperature is low Cell has failed 	<ul style="list-style-type: none"> See Section 6.4.5 Add salt and turn chlorinator output down until the water is warmer. Call for service
Sense wire disconnected from cell	<ul style="list-style-type: none"> For models with a temp sensor this error can be caused by low conductivity. Lack of salt < 4,000 ppm due to water loss or dilution (filter backwash, water renewal, rain, leaks, etc.). Can vary depending on the temperature and age of the cell. The voltage across the cell terminals varies in time. Cell calcified, worn, or out of order. 	<ul style="list-style-type: none"> Check water temperature. Check the condition of the cell plates. Measure the salt concentration in the pool water using a salt tester or a test strip, then add salt to the pool to keep the level at 4,000 ppm. If you do not know the salt level or how to test it, contact your retailer. Is the salt level is correct?
Check light mode	<ul style="list-style-type: none"> A Light Timer is set, but the light is set to ON or OFF instead of AUTO 	<ul style="list-style-type: none"> Use the “LIGHT” button or RF remote control to set the Light to AUTO mode
Timer is set to OFF in the TMR menu	<ul style="list-style-type: none"> The timer has been turned off 	<ul style="list-style-type: none"> Use AUTO  to turn the timer back on. Adjust timer start and stop times to suit.
Display Blank	<ul style="list-style-type: none"> No power to controller Fuse blown 	<ul style="list-style-type: none"> Plug in controller and ensure main power available Have a service technician replace fuse (2A slow blow)
Low/No Chlorine in pool	<ul style="list-style-type: none"> Cables not connected to cell Timer period too short Chlorine output level too low Filter needs backwashing Pool stabiliser (cyanuric acid) too low Salt level too low Water temperature below 15 degrees Excessive salt level (above 10,000 ppm) 	<ul style="list-style-type: none"> Connect cables Increase timer period (particularly during summer) Increase chlorine output Backwash filter Increase stabiliser between 30 - 60 ppm. Increase salt to above 4,000 ppm Increase water temperature or salt level Chlorinator cutouts on overload, reduce salt level to 4,000 ppm
Pool water cloudy	<ul style="list-style-type: none"> Chemical balance in incorrect Acid container empty ORP level set too low Pool water volume set too low in install menu Insufficient Water flow Insufficient water turnovers each day 	<ul style="list-style-type: none"> Test Water and adjust as needed pH 7.2 to 7.6, TA to 120 ppm and CH to 180ppm Replace Acid Container Set ORP to 700 mV Increase pool water volume Increase variable speed of pump Increase water turns in Install menu

Fault Indication	Possible Cause	Solution
pH too high	<ul style="list-style-type: none">Probe/sensor malfunction	<ul style="list-style-type: none">Clean and calibrate probe/sensor
Chlorine too high	<ul style="list-style-type: none">ORP level is set too highTotal Alkalinity too lowORP sensor is not immersed in pool waterCyanuric Acid (Chlorine Stabiliser) is present in pool	<ul style="list-style-type: none">Reduce to between 600 and 650 mV ORPTest TA and adjust to 80 to 120 ppmInstall sensor chamber so that it is always in pool waterLower ORP set point
Clock loses time when main power is removed	<ul style="list-style-type: none">Clock power backup failed	<ul style="list-style-type: none">Call a technician

Table 6. Troubleshooting

14.1 Menu Flow Chart



14.2 Fault X Error Codes

<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> PH FAULT X RETRYING SET LIGHT MAINT </div>	
1	No comms, Not connected
3	Can't read comms
17	Too much variation in the PH/ORP measurements
18	PH/ORP Measurement is too high
19	PH/ORP Measurement is too low

14.3 System Default Settings

<p>Pump Timer 1 - 4 → ENABLED: True START HR: 8/16/10/10 START MN: 0 HRS ON: 4/4/2/2 MINS ON: 0 SPEED: High ZONES ENABLED: 1</p> <p>Light Timer 1 - 2 → ENABLED: True START HR: 18/20 START MN: 0 HRS ON: 2 MINS ON: 0 PARAMETERS: 0 ZONES ENABLED: None</p> <p>Manual on Pump Speed → HIGH</p> <p>Chlorinator Mode → OFF</p> <p>Pool/Spa Selection → POOL</p> <p>Timer Model → HIGH</p> <p>Set PH → TRUE</p> <p>Pool Volume → 60,000</p> <p>Spa Volume → 3,000</p> <p>Water Measurement Type → LITRES</p> <p>G4 System → FALSE</p> <p>Lighting Setup Zone 1 - 2 → MODE: Manual STATE: Off COLOUR: Blue NAME: Pool/Spa</p>	<p>Lighting Initial Settings → INSTALLED: False TYPE: SLX ZONES: One</p> <p>Rince Acid Enable → TRUE</p> <p>Pump Protect → TRUE</p> <p>Fast Comms → TRUE</p> <p>Pool/Spa Control Enabled → FALSE</p> <p>Reversal Parameters → POLARITY TIME HRS: 0 PERIOD: 4 POLARITY: Forward</p> <p>Three Speed Pump → FALSE</p> <p>Probe Status → PH DETECTED: True ORP DETECTED: True PH DISABLED: False ORP DISABLED: False</p> <p>Chlorine Probe Fitted → FALSE</p> <p>Eco Mode → FALSE</p> <p>Water Volume Times → 1.5</p> <p>Filter Pump Size → 1HP</p> <p>Manual Pool Chlorine Level → 4</p> <p>Set ORP → 600</p>
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NOTE: These setting can be reset through the Install Menu.



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