



Viron Water Balance

ASTRALPOOL 

INSTALLATION AND OPERATING INSTRUCTIONS



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Dear Customer,

Congratulations, you have made a great choice in purchasing a Hurlcon Viron Water Balance controller by Astralpool.

Your Viron Water Balance machine will monitor and control the pH or ORP level or both. These instructions cover the combined pH/ORP unit. Please ignore reference to pH or ORP if it is not fitted to your unit.

Swimming pool chemistry is quite interesting and dynamic. There is no one setting that is right for every swimming pool or spa. Let the Viron Water Balance machine settle down over a couple of days and then if necessary alter the setting to suit your pool or spa. In the automatic models, the chlorine level is controlled using the ORP principle, which is a better measure of the sanitising ability of chlorine.

- ORP (Redox) measures **ACTIVITY** in millivolts (mV) of all oxidising chemicals. Test Kits and strips measure **QUANTITY** of Chlorine/Bromine only.
- ORP of 650mV or above means water is clean and safe, regardless of qty. of chlorine/bromine, provided ORP sensor is clean, calibrated and functioning OK.
- ORP readings can vary depending upon water chemistry like pH, TDS. T.A. and stabiliser levels, ensure that these levels are correct. Consult your shop/technician.
If large quantities of chemicals are dumped in the pool water, this excess quantity should be circulated well and then, allowed to settle down before this machine starts to give true readings.
If you have any questions please contact your Hurlcon Supplier or us directly.

Note: The Viron Water Balance dosing unit is not intended for use by young children or infirm persons without supervision. Please ensure that young children are supervised to ensure that they do not play with the Chlorinator.

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STARTING UP

Before starting up your Viron Water Balance controller, pool and spa water must be balanced correctly. The correct rates can be seen below.

Allow 24-48 hours after switching on unit for sensing and dosing to be 100% accurate, the inbuilt fuzzy logic controller bases if precision dosing of chemicals by looking at historical dosing rates. After 24-48 hours, unit should be work at its optimum performance.

Recommended chemical ranges (depending on pool location and pool surface) are:

CHLORINE: 1 - 3ppm pH 7.2 - 7.8
TOTAL ALKALINITY: 80 - 150 mg/L
PHOSPHATES FREE

STABILISER: 30 - 50 mg/L
CALCIUM HARDNESS: 90 - 300 mg/L

INSTALLATION

PLEASE READ ALL THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLING & OPERATING THE UNIT AND LEAVE THE MANUAL ON SITE FOR OWNER/OPERATOR'S USE

VIRON WATER BALANCE SYSTEMS SHOULD OPERATE ONLY WHEN THE POOL FILTER IS OPERATING. THE UNIT MUST NOT BE CONNECTED WITHOUT ADEQUATE EARTH CONNECTIONS AND A VOLTAGE OTHER THAN 230-250V

(Unless other voltage specified)

IF THE MAINS ELECTRICITY SUPPLY CABLE IS DAMAGED IN ANY WAY PLEASE RETURN THE MACHINE TO THE SUPPLIER FOR REPLACEMENT.

Before installing the unit in position on the wall or post, the length of the PVC tubing provided should be measured and taken into consideration. To avoid loss of water from the system, close all stop valves before cutting any lines.

Connection of lines (see illustration page 5)

Install the Inline Mixing Chamber into the "return" line. Cut an appropriate piece out of this line and glue the mixing chamber in position, using a PVC adhesive. Thread the PVC tube through the hole in the cap or shoulder of the chemical container and fit the non-return or check valve and the weight. Ensure that the non-return valve is fitted correctly (arrow indicates the direction of flow) Drop the weight, with the non-return valve into the bottom of the container.

TIP: Soaking the ends of the PVC tubing in hot water or gentle heating with a lighter makes it easier to push onto the barb. When installing chemical containers (especially acid), in filter enclosures, which have no ventilation, it is recommended that the hole in the cap of the container is cut to fit tightly around the tubing, so that fumes from the acid or chlorine will not corrode the equipment. It will be necessary to drill a second hole in the cap fitted tightly with a length of tubing which should then be vented outside the filter enclosure. This procedure is recommended only where the filter enclosure has no ventilation and is to protect the equipment.

IMPORTANT: Viron Water Balance pumps dose against a maximum pressure of 150-175 kPA (20-25 psi), avoid excessive pressure situations such as:

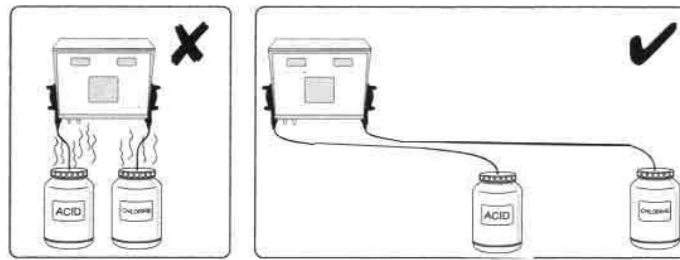
In-floor cleaners (when using for pool applications): The recommended position of the injection point and probe is on the suction line.

- ACID SHOULD BE DILUTED MINIMUM 1:2, MORE DILUTION IS OK
- ALWAYS ADD ACID TO WATER (NOT WATER TO ACID)
- NEVER MIX CHEMICALS
- CHEMICALS MUST BE STORED IN ACCORDANCE WITH RELEVANT STANDARDS AND DANGEROUS GOODS CODES. CONSULT YOUR AUTHORISED BUILDER OR POOL SHOP TECHNICIAN FOR ADVICE.

**NOTE: POOL AND SPA VOLUMES MUST BE SET PRIOR TO OPERATING UNIT
(SEE MAINTENANCE INSTALL MODE PAGE 8)**

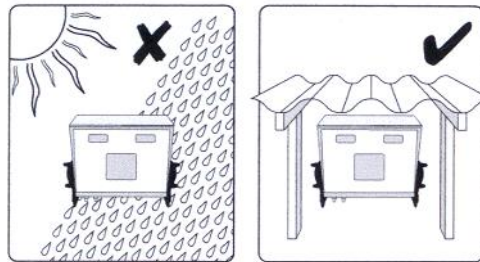
PLACEMENT OF CHEMICALS, VIRON WATER BALANCE AND CONNECTIONS

Placement of Chemicals

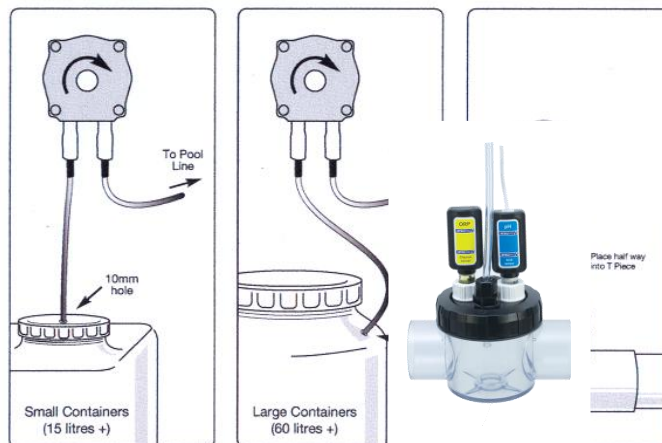


*****Chemicals MUST be stored apart in accordance with Relevant Standards and Dangerous Goods Codes. Consult your authorized builder or pool shop technician for advice. Chemicals must be at least 1 metre horizontally from control unit in a well ventilated area to avoid corrosive damage.**

Placement of Viron Water Balance Unit

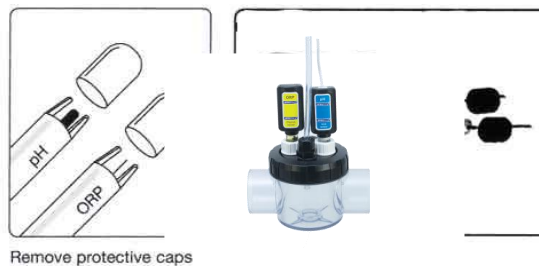


Connection of Lines

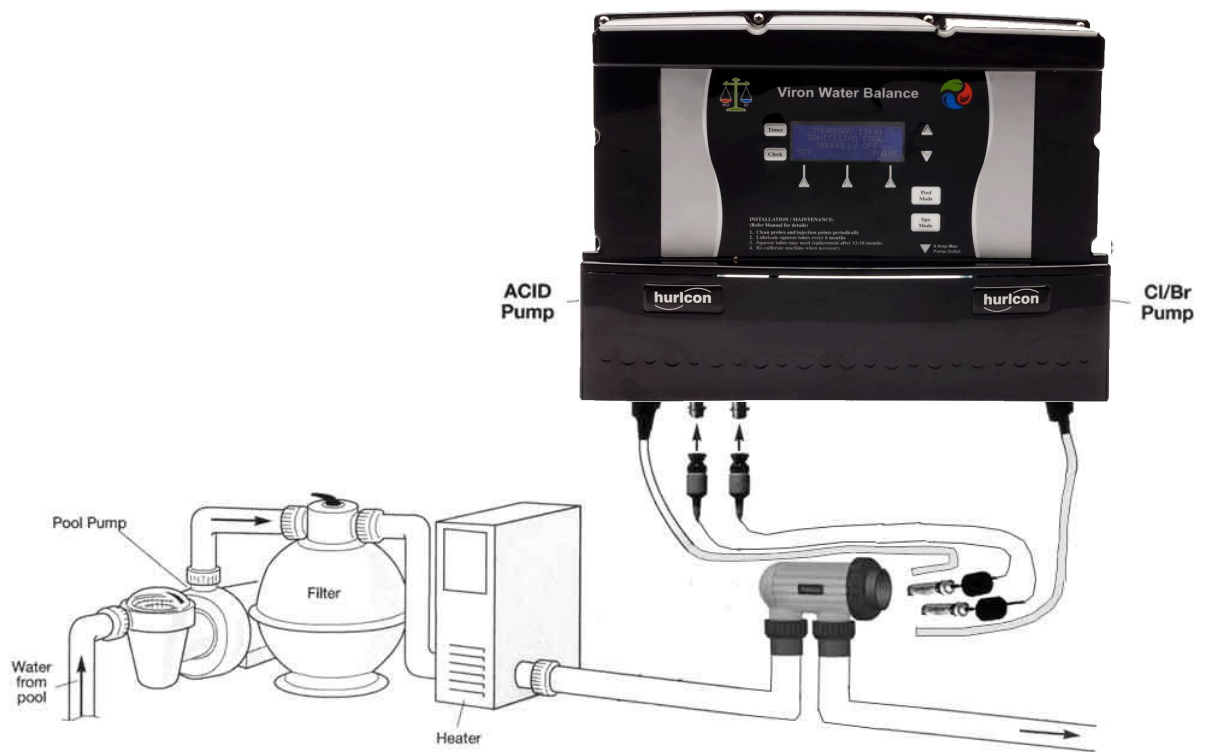


When inserting chlorine and acid tubes into dosing cell, tubes should penetrate approximately 50mm or half way into the depth of the cell. If the tube has a radius formed which is caused by the memory of the material, it is important the tube point in the direction of the waterflow.

Connecting Probes



VIRON WATER BALANCE – AUTOMATIC PH AND/OR ORP/REDOX CONTROLLER – TYPICAL INSTALLATION



PLEASE NOTE:

1. Each time Viron Water Balance starts up in Automatic, it will be on pre-purge for 5 minutes. The display shows: PRE_PURGE
This allows time for accurate sensing and proper mixing before dosing commences. For service needs, press Pool Mode to get to Manual On and there will be no Pre-purge
2. PROBES (sensors) are to be installed HORIZONTALLY to the flow of the water .

OPERATION

A Liquid Crystal Display (LCD) displays the current pH and ORP level as well as set points, manual dosing times, calibration values and the current time / timer

The user panel can be broken down into 4 separate areas:

- **User Mode buttons** for manual control of the pump/Chlorinator or to select Spa mode.
- **Timer and Clock buttons** for setting the clock and on periods
- **Setpoint Adjustment** for setting the desired chemical levels in your pool or Spa
- **Maintenance mode** for performing manual dosing, calibration and installation

USER MODES

The user mode buttons enable you to select Pool or Spa mode and to manually control the Filter Pump/acid and chlorine dosing. Functions are as follows:

POOL MODE: Tells the control to use the pool volume in dosing calculations and sends a message to other Hurlcon equipment (if fitted) to go to Pool mode. There are 3 Pool Modes:

Auto The Filter Pump will run according to how you have set the timers and if in an on period, the Acid and Chlorine pumps will dose as required.

The LCD display will show either POOL SANITISING OFF UNTIL XX:XX or AUTO SANITISING POOL UNTIL XX:XX depending whether the time is within a timer period or not.

On The Filter Pump will run continuously and the acid and chlorine pumps will dose as required. The LCD display will show SANITISING POOL MANUALLY ON

Off The Filter Pump/Acid and Chlorine pumps will stay off continuously.
The LCD display will show SANITISING POOL MANUALLY OFF.

SPA MODE: Sends a message to other Hurlcon equipment (if fitted) to go to Spa mode Spa mode also has the same 3 modes (AUTO, ON and OFF like in pool mode.

Dosing will be at a reduced rate proportional to the volume of water in the Spa as specified in installer mode

NOTE: Auto mode is only available if enabled in the installer menu.

CLOCK AND TIMER

If the timer is enabled, you Viron Water Balance unit will allow you to control the timing of the filter pump. All adjustments must be made in Manual Off Mode.

SETTING CURRENT TIME AND DAY

- a) Press POOL MODE to get to Manual off
- b) Press the CLOCK button
- c) Press DAY to change the current day.
- d) Press HOUR to move the Display cursor to the hour digits and then use the Up and Down arrows to the right of the display to change the current hour
- e) Press MIN to move the Display cursor to the min digits and then use the up and down arrows to the right of the display to change the current minutes
- f) Press the CLOCK button to exit the clock setting mode.

SETTING TIMERS

Your Viron Water Balance has 2 timers enabling you to set two different periods in which your filtration pump, acid and chlorine dosers will operate. Different periods can be set for the weekend compared to weekdays. Timers are set by entering a start time, and a **RUN** time for how long you want to operate (i.e. **Mon – Fri T1 Start 14:00 and Mon – Fri T1 Run 6:00 will run the chlorinator/pump during weekdays from 14:00 for 6.00 hours**). To set timers, do the following:

- a) Press **POOL MODE** to get to Manually off
- b) Press the **TIMER** button.
- c) Press **HOUR** button to set the hour for the timer selected and use the Up/Down arrows to change the time.
- d) Press **MIN** button to select the minutes for the timer selected and use the Up/Down arrows to change the time. Press the **NEXT** button to select the **RUN** time or another time and set as required.
- e) When finished, press the **NEXT** button a number of times to scroll through the other times until you return to normal display. This saves your new settings.
- f) Select Auto Sanitising by pressing the **POOL** mode button

Timer Recommendations

Hurlcon recommend that you use two timers, one for the morning and one for the evening and typically for periods of 2-5 hours for each. Your Viron Water Balance 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 and 16:00 both for periods of 4 hours.

SET POINT ADJUSTMENT

The factory **Set Points** are: pH 7.60, ORP 700. As pool construction and water conditions vary, adjust the **Set Points** if necessary. It is good practice to run the machine for a few days and test the chlorine and pH levels. If either levels are not exactly where you want them, fine-tune the settings as required.

NOTE: Change the **Set Points** only from the **SET Menu** and **NOT** from the **CAL** function.

The ORP and pH set points can be changed by pressing the **SET** softkey

- a) Press the **SET** softkey. "CHANGE pH SET POINT?" will be displayed.
- b) To change the pH setpoint, press **YES** (if you don't want to change the pH setpoint press **NO** and it will go to the next menu item). Use the **UP** and **DOWN** arrows to change the pH level and then **ACCEPT** to store the change and go on the next menu item. .
- c) "CHANGE ORP SET POINT?" will now be displayed.
- d) To change the ORP setpoint, press **YES** (if you don't want to change the ORP setpoint press **NO** and it will go to the main menu). Use the **UP** and **DOWN** arrows to change the ORP setpoint and then **ACCEPT** to store the change and return to the main menu.

MAINTENANCE MODE

Maintenance mode enables the user to perform the following tasks.

DOSE - Manual Dosing for a period of time or turn Dosing off indefinitely or for a time

INSTALL - Change installation parameters

CAL - Calibrate the sensors

MANUAL DOSING

Manually dose acid or chlorine for a time/volume while in Auto Sanitising or Manually On.

- a) Press **MAINT** button three times to get "DOSE" displayed
- b) Press **DOSE** button. "SELECT DOSING ON" will be displayed
- c) Press **YES** button if you want to manually dose.
- d) "MANUALLY DOSE ACID?" will be displayed. To manually dose Acid press **YES** and (Manually dose Chlorine press **NO** and then **YES**) enter the volume or time of Acid/Chlorine dose using the **UP** and **DOWN** arrows. Then press **ACCEPT**.
- e) Next choose, which mode you want your system to start in when manual dose is complete by pressing **AUTO** or **ON** (manually On) or **OFF** (manually Off).

DOSING OFF

Turn acid or chlorine dosing off for a time or Indefinitely.

- Press **MAINT** button three times to get DOSE displayed
- Press **DOSE** button. "SELECT DOSING ON" will be displayed
- Press **NO** button if you want to prevent dosing.
- "SELECT ACID DOSING OFF?" will be displayed. To disable acid dosing indefinitely, press **YES** or press **TIME** and enter the time required off and press **ACCEPT** if you want acid dosing off for a period of time.
- "SELECT CHLORINE DOSING OFF?" will be displayed. To disable chlorine dosing indefinitely, press **YES** or press **TIME** and enter the time required off and press **ACCEPT** if you want chlorine dosing off for a period of time. (Note : Maximum time off for either pump is 12hrs)

INSTALL

INSTALL enables the installer/user to adjust the Viron Water Balance unit so that it works at an optimum for the specific installation. Settings include Pool and Spa water volume, adjust acid and chlorine dosing alarms, adjust dose parameters, enable or disable the timer, configure the unit for part of a Hurlcon G4 network and reset the microprocessor. NOTE: It is important that the approximate Pool and Spa water volumes are set for the installation to ensure that the unit will dose accurately when in Pool or Spa modes.

- Press **MAINT** button twice to get "INSTALL" displayed
- Press **INSTALL** button. "SET POOL WATER VOLUME?" will be displayed. Adjust the Pool water Volume to suit the pool size by pressing **YES**. "POOL WATER VOLUME IS 60,000 LITRES" will be displayed as a default. Use the **UP** and **DOWN** buttons to adjust to suit the installation and then **ACCEPT** to use the new value.
- "SET SPA WATER VOLUME?" will now be displayed. Set Spa volume and then press **ACCEPT**
- "ENABLE ALARM? Will now be displayed. Press **YES** to enable the chemical limit alarms.

Safety options available on pH and/or ORP channels:
(Safety can be re-programmed or cancelled if necessary)

	*Lower Limit	*Upper Limit
pH (Channel 1)	4.0	8.5
ORP (Channel 2)	500	850

*Limits can be altered if necessary

Adjust as required and then press **ACCEPT**

- "DOSE CYCLE 240 SECS" will now be displayed. The dose cycle comprises of a mixing period, a measurement period and a dosing period. The process is then repeated. Generally this period will not need adjustment but if the unit is having difficulty providing enough chemical, increasing the does period will increase the amount of chemical dosed in each cycle. Press **ACCEPT** to move to the next menu.
- "DOSE RATIO 100% ACID" will now be displayed. This menu allows the user/service technician to fine tune the amount of Acid dosed. (as the demand for Acid can differ from one body of water to another, even if they are of the same volume). (Note: 100% is the default setting) e.g. : setting your Acid ratio to 110% will deliver 10% more acid in the cycle (and subsequently less Chlorine). Press **ACCEPT**
- "DOSE RATIO 100% CHLORINE" will now be displayed. This menu allows the user/service technician to fine tune the amount of Chlorine dosed (as the demand for Chlorine can differ from one body of water to another, even if they are of the same volume). (Note: 100% is the default setting) e.g. setting your Chlorine ratio to 110% will deliver 10% more acid in the cycle (and subsequently less ACID). Press **ACCEPT**
- NOTE:** If you require more acid, increase DOSE RATIO ACID and decrease DOSE RATIO CHLORINE.
- "TIMER ENABLED" will now be displayed. Press the **UP** and **DOWN** buttons to enable or disable the timer. Press **ACCEPT** to use the new setting
- If you disabled the **TIMER**, the option to configure the unit to work with a Hurlcon G4 system will be presented. Change to "INSTALLED" if the unit is connected to a G4 system.
- If you have the **TIMER** enabled, you will be given the option to "FLUSH AFTER TIMER? With this option enabled, the unit will bring the filter pump on 15 minutes after the end of the period to flush chemicals away from the sensor probes. This feature improves probe cleaning and sensor accuracy.
- "RESET SYSTEM" allows the user to perform a full micro reset. This is generally not required so press **NO**.

CAL

Both the pH and ORP probes/sensors have been factory calibrated. However it is a good practice to check the adjustment for these probes periodically (say 3- 6 months or earlier if required). The probes should be cleaned first (refer under Maintenance page 14 for cleaning) and allowed to settle down for about 4-5 minutes before adjusting/calibrating. Solutions are available via AstralPool as a spare part.

pH When the controller is in Manual Off mode, remove the pH probe from the pipe line (shut off the filter pump, to avoid water spill), clean the probe (see under Maintenance) and place it in a 7.5 pH Easy cal Solution (available from AstralPool). Press **MAINT** and then next until **CAL** is displayed. Press **CAL** and then **NO** to turn the filter pump.

The display will indicate that the system is measuring pH. When the pH is displayed, press the **UP** or **DOWN** buttons to get the display to indicate the same value as the buffer (7.5) and then press **ACCEPT**

Repeat for ORP but the setting should be 700 if using a 700 ORP Easy cal Solution (available from AstralPool). Note read instructions on the label of the 700 ORP Easy cal Solution as temperature affects the ORP reading.

WARNINGS DISPLAY

Alarm messages are displayed on the LCD display and more information can be obtained by pressing the **INFO** softkey which appears when an error occurs. The info button also mutes the audible alarm. When alarms occur, a beeper will sound for 30 seconds and then go silent as sometimes the continuous sound can be a nuisance. The Error message will continue to flash on the screen until the fault(s) are rectified. Typical faults are:

- a) High or low chemical levels: This indicates that the pH or ORP are outside set limits
- b) **SENSOR FAULT**: This indicates that there is a problem with the pH or ORP sensing system. Potential issues could be that the sensor is not connected or that the sensor requires cleaning.

Possible causes for faults

<p>Low Chlorine</p> <ul style="list-style-type: none"> • Chlorine drum is empty • Filter: run timing is not sufficient or requires back washing • Stabiliser level is low (outdoor pools) • pH is too high • Poor water circulation • Injection point at delivery end is blocked • Dosing pump is undersized • Probe malfunction 	<p>High Chlorine</p> <ul style="list-style-type: none"> • pH is too high • High total dissolved solids (TDS) • Excess stabiliser level (outdoor pools) • Oversized dosing pump • Probe malfunction
<p>Low pH</p> <ul style="list-style-type: none"> • Poor water circulation • Excessive rainfall (neutralising TA) • Faulty dosing pump • Probe malfunction 	<p>High pH</p> <ul style="list-style-type: none"> • Acid drum is empty • Acid is over-diluted • Filter: run timing is not sufficient or requires back washing • Probe malfunction

MAINTENANCE

1. Lubricate the squeeze (pump) tube every 6 months. More often in commercial applications. Use only the recommended lubricant Viron Water Balance tube lube available from Hurlcon or any other compatible silicone lubricant, otherwise damage to the tube is possible.
2. 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 tubes – black coloured for acid – remove the retaining screws or wing nuts and 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.)
PLEASE DO NOT OVERTIGHTEN THE RETAINING SCREWS OR WING NUTS.
3. The Injection Point (black screw nut) through which the chemical discharges into the pipeline should be checked periodically for any build up of solid matter in the end of the PVC tubing and kept clean. This is caused by stale or poor quality chlorine or improper water chemistry. This may otherwise cause blockage and not allow the chemical to pass through the line, will also alter the pH or ORP levels and may cause the squeeze tube to come off the barbs.
4. The probes/sensors, which are sensitive instruments. To maintain their accuracy they should be cleaned periodically by household detergent abrasive like Jiff. Jiff is the preferred option. The ORP probe tip can be contaminated (generally observed by a copper or brownish coating – this should always look shiny silver) which will give a false reading to the Controller causing no dosing/over dosing of chemical. As the pH sensor tip is made of glass, please take care, for even a hair line crack can cause the sensor to read incorrectly causing malfunction.

After cleaning the sensors/probes, wash with water, allow 5-10min. to settle and check calibration or re-calibrate if necessary. **Copper based algacides should be avoided, but if used the cleaning procedure for the ORP sensor can be more frequent, as copper will coat the sensor tip (made of platinum) more rapidly.**
SWIMMING POOL APPLICATIONS:

USE OF A SUN SCREEN CHEMICAL (CYANURIC ACID) FOR OUTDOOR POOLS IS RECOMMENDED. CHECK WITH YOUR LOCAL POOL SHOP AND USE THE CORRECT DOSAGE. MAKE SURE YOUR POOL WATER IS WELL BALANCED WITH THE CORRECT pH, TDS TA AND STABILISER LEVELS AND FREE FROM PHOSPHATES.

TROUBLE SHOOTING GUIDE

TROUBLE	POSSIBLE CAUSE/SOLUTION
pH reading incorrect	* Clean the sensor. * Check calibration of sensor in the pH cal. sol. * Check water balance & correct if reqd.
ORP reading incorrect	* Clean sensor. * Check calibration of sensor in ORP Cal. sol. * Check water balance, especially pH.
Dosing pump does not operate as it should	* Is Setpoint level altered?
The Roller (H) Block on the inside of the unit does not dispense chemicals	* No chemicals in the tank. * Injection point blocked. * Air leak at the connection where the tube from the drum connects onto the pump tube. * Chemical container airtight. * Roller or H block broken. * Pump head cracked. * Squeeze tube needs replacement.
Water returns to the chemical drum	* Check last 3 points above. Replace non-return Valve if fitted. If not please fit.
Numbers not appearing on display panel, no lights or power	* Turn off for 15 minutes, and then restart. If still no response, contact Hurlcon Service.

IMPORTANT: ELECTRICAL SPIKES/SURGES OR SIMILAR SITUATIONS CAN EFFECT THE ELECTRONICS & SENSORS AND CAUSE THE MACHINE TO MALFUNCTION. IT IS NECESSARY TO CHECK THE WATER CHEMISTRY, ESPECIALLY PH AND CHLORINE LEVELS REGULARLY WITH A GOOD QUALITY TEST KIT AND LOOK OUT FOR ANY MALFUNCTIONS. IF THE PH AND/OR ORP READING ON THE VIRON WATER BALANCE MACHINE ARE OUT OF NORMAL RANGE PLEASE TURN THE MACHINE OFF AND CALL A POOL TECHNICIAN OR HURLCON

ALWAYS USE GENUINE VIRON WATER BALANCE PARTS. RETURN TO HURLCON EVERY FIVE YEARS FOR GREASE AND OIL SERVICE

AstralPool reserves to change product specifications without notice.
Please check AstralPool web site at www.astralpool.com.au for updates before installing or servicing Viron Water Balance units.

3 YEAR PRO RATA WARRANTY WARRANTY

AstralPool cover your viron water balance Controller with a limited 3 year Pro Rata warranty against defective materials and workmanship from the date of purchase (plus 30 days to allow for installation).

1. The controller, case and PCB is covered for a period of 3 years (plus 30 days to allow for installation).
2. The Pump Motors are covered for a period of 2 years (plus 30 days to allow for installation)
3. The tube, leads and sensors are covered for a period of 1 year (plus 30 days to allow for installation)

The warranty includes 12 months in field labour costs where the Controller is installed in a capital city metropolitan area or within a 20 km radius of an Authorised AstralPool Service Agent. Controllers installed outside of these areas may incur a travelling charge.

Like your motor vehicle, your new Viron Water Balance Controller requires periodic service and maintenance to keep it operating in top condition and at maximum efficiency. Regular cleaning of the pH and ORP probes in accordance with the instructions is essential, greasing of squeeze tubes with approved lubricant and calibration of the sensors should be undertaken on a bi annual basis, or sooner in heavy work load conditions.

Limitations: All warranties only apply if the Controller is installed and operated in complete compliance with the installation and operating instructions. The warranty shall not apply to any controllers or parts which have been subject to accident, negligence, alteration, abuse or misuse.

AstralPool accepts no responsibility under this Warranty for damage, including consequential damage resulting from misuse, incorrect usage and use of other than Hurlcon parts. Hurlcon is also unable to accept responsibility under this Warranty if the Unit is not installed correctly in accordance with the "Installation Instructions" provided or from work carried out by unauthorised persons.

The liability under this Warranty does not include any costs, contingent or otherwise or liability for damage sustained by the customers or others, whether or not these costs or damages are due to the malfunction, wrong operation or actions by our Agents or Distributors, but shall be limited solely to the repairs or replacement of the product. No person is authorised to make any representations on behalf of AstralPool.



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Information and specifications subject to change without notice.

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