Automatic Chemical Dosing System

Oasis SmartChem

INSTALLATION AND OPERATION MANUAL

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FOREWORD

These instructions may not address every detail, equipment variation, or possible scenario related to installation, operation, or maintenance. If you encounter an issue not adequately covered in this guide, we recommend contacting your equipment installer, pool service technician, or Oasis Aquatics for further assistance.

Important Maintenance Requirements

This system is designed to maintain pool chemistry within specified parameters.
Its purpose is to reduce the need for frequent handling of pool acid and minimise the requirement to regularly adjust sanitiser output in response to changes in water temperature, pool blanket usage, bather load, and environmental conditions.

The installation of this system does not eliminate the need for your pool shop or service technician to routinely test water samples, nor does it remove the necessity of adding other chemicals - such as buffer - as required.

The system and its associated dosing hardware are designed to dispense diluted hydrochloric acid at a water-to-acid ratio between 2:1 and 3:1.

Always add concentrated acid to water when diluting - never add water to acid. When handling pool acid, follow the recommended use of Personal Protective Equipment (PPE) as outlined in the manufacturer's Safety Data Sheets (SDS).

The simplest way to achieve the correct dilution ratio is to use a 15 or 20 litre pool acid drum, refilling it when empty with water and 5 litres of store-bought pool acid. Ensure the drum is clearly labelled in accordance with all relevant hazardous material requirements.

Failure to use diluted acid will result in rapid degradation of the feed hose, squeeze tube, and other components — damage which is not covered under warranty.

The Oasis SmartChem requires routine maintenance, including the replacement of the squeeze tube on an annual basis, along with the inspection of other components for signs of wear.
Service parts are available from your local pool shop or Oasis Aquatics dealer.

Tip: The Oasis SmartChem system shares the same dosing hardware as the Dontek AquaChem system. All maintenance parts are cross-compatible.

Maintenance Schedule

(See detailed information on Page 15)

Fortnightly
Test pool water and adjust chemistry as required.
Check the acid drum level to prevent it running dry *(remember to use a 2:1 or 3:1 water-to-acid mix ratio).*

Every three months
Run the manual prime function. Ensure the check valve holds liquid in the feed tube when dosing stops.
Inspect the acid feed tube at the injection point. Clean or trim if blocked.
Check the condition and placement of the acid drum vent tube. Ensure fumes are safely venting to an open area.
Apply insect surface spray to the wall and surrounding area near the controller.

Every six months
Clean and re-calibrate the pH and ORP probes. Use offsets to adjust settings.
Inspect all tubes, fittings, and connections. Replace worn components.
Remove the peristaltic pump cover and inspect the squeeze tube for splits or leaks.
Lubricate the squeeze tube and rotor assembly with silicone grease.

Every 12 months
Replace the squeeze tube.
Inspect the rotor wheel for wear and replace as required.

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1. IMPORTANT SAFETY INFORMATION

WARNING

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

This product must be installed by a suitably qualified professional, in accordance with any applicable local regulations.

When installing and using this electrical equipment, basic safety precautions should always be followed. Failure to follow safety warnings and instructions in this manual can result in serious injury and/or damage to your equipment.

This appliance is not intended for use by young children or infirm persons without supervision. As with all pool equipment and chemicals, the appliance and its associated connections and chemicals are to be installed out of reach of children. Children must be supervised by an adult at all times when in close proximity to pool equipment.

Always add concentrated acid to water when diluting — never add water to acid. When handling pool acid, follow the recommended use of Personal Protective Equipment (PPE) as outlined in the manufacturer's Safety Data Sheets (SDS).

Never mix different pool chemicals. Mixing chemicals can produce poisonous gases and pose serious health risks. Store chemicals in clearly distinguishable containers - by colour, size, or labelling - to avoid accidental mixing. Always store pool chemicals in accordance with relevant Dangerous Goods Codes and Standards to ensure safe handling and compliance.

Do not plug in the controller if the carton has been wet.

CAUTION

Ideally, as with all pool equipment, the controller should be installed out of direct weather. The degree of protection against moisture is IP33, however the service life of the Oasis SmartChem will be longer if it is not exposed to direct sunlight and rain.

Failure to use diluted acid will result in rapid degradation of the feed hose, squeeze tube, and other components — damage which is not covered under warranty.

When installing the SmartChem system, it is recommended to mount the expansion unit in a location that provides clear access for maintenance of the squeeze tube and rotor assembly. Positioning the controller to the right of any adjacent equipment helps facilitate this access, and also minimises the risk of acid leakage affecting nearby components during hose servicing or in the event of a squeeze tube failure.

Always store pool chemical in a well-ventilated area, positioned at least 1.8 metres away from pool equipment. This helps prevent fume build-up and reduces the risk of corrosion to your equipment.

If your pool equipment includes a heat pump, ensure the acid drum and/or vent hose is positioned well away from the unit. Acid fumes can reach the evaporator fin coil and rapidly corrode the aluminium fins, leading to costly damage. Proper placement helps protect the heat pump and maintain system longevity.

2. INTRODUCTION

Congratulations on your recent purchase of your Oasis Aquatics SmartChem system.

Please take a moment to read through the entire manual before installing the system. Your Oasis SmartChem must be installed and operated as specified.

While every effort has been made to ensure that the information contained in this guide is accurate and complete, no liability can be accepted for any errors or omissions. Oasis Aquatics reserves the right to change the specification of the hardware and software described herein at any time without prior notice.

Thank you again for choosing an Oasis Aquatics. We wish you many happy years of swimming in your crystal clear pool.

What does the SmartChem do?
The Oasis SmartChem is designed to monitor and automatically adjust the Potential of Hydrogen (**pH**) and Oxygen Reduction Potential (**ORP**) levels in your pool water while the filtration pump is running.

Once the desired pH and ORP levels have been set in the Oasis Smart app, the SmartChem will automatically dose a diluted pool acid solution (when it is required) to maintain the set pH level. The SmartChem will also maintain ORP levels by automatically switching on the pool sanitiser (usually a salt chlorinator) when required.

What is pH?
pH is a measure of how acidic or alkaline your pool water is, on a scale from 0 to 14. For swimming pools, maintaining a balanced pH - typically between 7.2 and 7.6 - is crucial for swimmer comfort, effective sanitiser performance, and protecting pool equipment from corrosion or scaling.

What is ORP?
ORP is a measure of the pool water's ability to oxidise contaminants, which directly relates to how effectively sanitising agents like chlorine are working. Measured in millivolts (mV), a higher ORP value generally indicates stronger sanitising power. For pools, an ideal ORP range is typically between 650 and 750 mV, ensuring that bacteria and organic matter are being effectively neutralised.

Why doesn't the system measure Free Chlorine?
At this point in time, Free Chlorine (FC) sensors are not commonly used in domestic pool equipment due to several practical limitations. These sensors are relatively expensive, making them cost-prohibitive for most residential systems. They also require frequent recalibration to maintain accuracy and are prone to interference from other pool chemicals and contaminants. As a result, most domestic systems rely on indirect measures such as ORP to monitor sanitiser effectiveness in a reliable and cost-efficient way.

2.1 Getting Started

Before installing and powering on the SmartChem system, take a sample of your pool or spa water to a pool shop for professional testing and balance the pool as directed. This ensures the water is properly set at a good chemistry baseline before the system begins operation.

Refer to the recommended chemical ranges below for guidance:

Free Chlorine:	1-3 ppm	pH:	7.2-7.8
Total Alkalinity:	80 – 150 mg/L	Calcium Hardness:	150 – 300ppm
Phosphate:	0ppm	Cyanuric Acid: (Stabiliser)	0 – 15ppm MAX

Tip: For the most accurate test results, always collect your water sample from arm's depth and away from any return jets. This helps avoid interference from freshly circulated or chemically treated water. Once collected, take the sample to the pool shop immediately, as water chemistry can change rapidly when exposed to air, light, and temperature fluctuations.

Before installing the system, it is highly recommended to submerge the sensor probe tips in a sample your pool water for 24 hours. This pre-conditioning step helps stabilise the sensors, allowing them to deliver more accurate readings from the moment of installation. It also contributes to the long-term performance and durability of the probes.

IMPORTANT
THE OASIS SMARTCHEM IS NOT DESIGNED TO BRING THE POOL/SPA SYSTEM INTO BALANCE. IT IS DESIGNED TO HELP MAINTAIN A BALANCED SYSTEM.

3. INSTALLATION

3.1 Package Contents

- SmartChem expansion unit with a peristaltic pump and squeeze tube attached.
- pH and ORP sensor *(or pH sensor only - depending on which model is being installed).*
- Sensor and Dosing Manifolds to suit 50mm pipe (reducing bushes required for 40mm pipe).
- A two-core power cable, which connects between the SmartChem and one of the master controller valve actuator ports.
- A communication cable, which connects between the Oasis SmartChem and the expansion unit (or directly to master controller if no expansion units are fitted).
- Five metre length of acid dosing tube
- Acid tube check valve
- Acid drum connecting kit (including lids, pickup tube and through-wall breather connector)
- A 5M length of acid tubing
- Manifold blanking cap/s *(pH-only units include an additional cap to cover the ORP sensor point)*
- A small white plastic tool which is used for cleaning tool the pH probe

3.2 Mounting the Controller

Ideally, as with all pool equipment, the controller should be installed out of direct weather to maximise its expected lifetime.

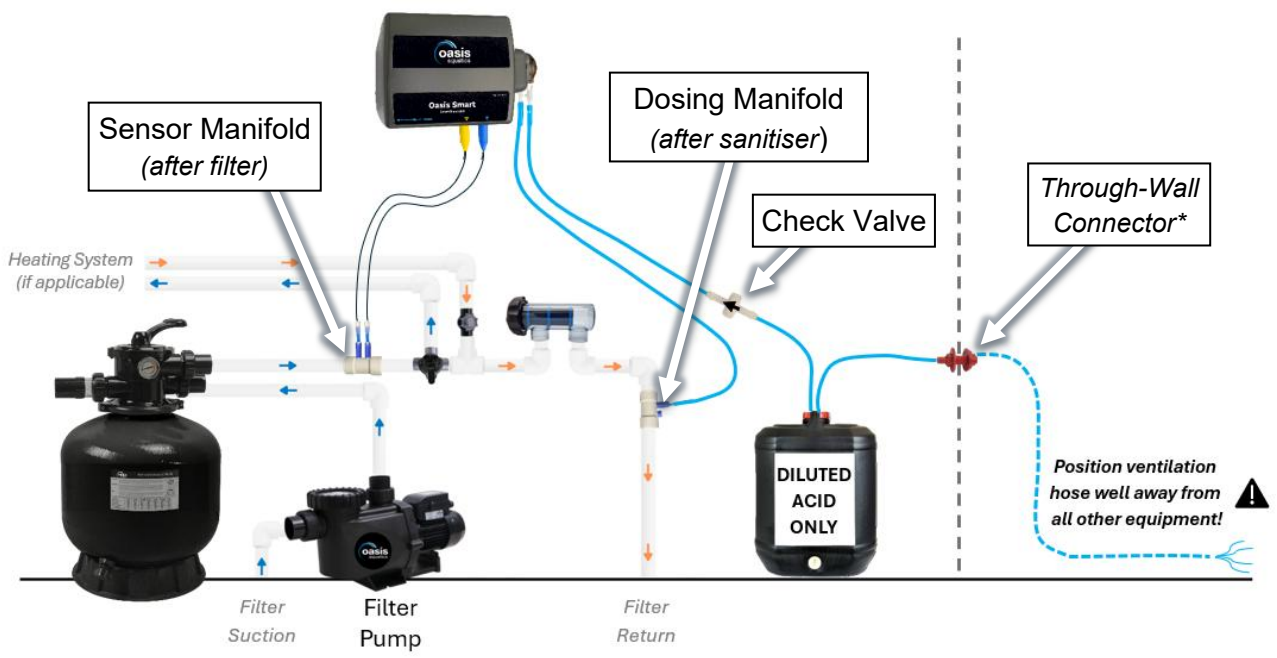
Find a suitable location to mount the expansion unit. It is recommended to select a location that provides clear access for maintenance of the squeeze tube and rotor assembly. Positioning the controller to the right of any adjacent equipment helps facilitate this access and also minimises the risk of acid leakage affecting nearby components during hose servicing or in the event of a squeeze tube failure.

The controller should be mounted no closer than three metres from the water's edge, at a minimum of 600mm above the ground.

Fix the mounting bracket to a solid structure with the screw and wall plug kit provided. Slide the controller on, locking it into place. Adjust the screws on the back of unit to ensure a snug fit.

To remove unit, lift and gently pull away from structure.

3.3 Plumbing Diagram



**Optional fitment when acid drum is located inside a shed or other equipment enclosure*

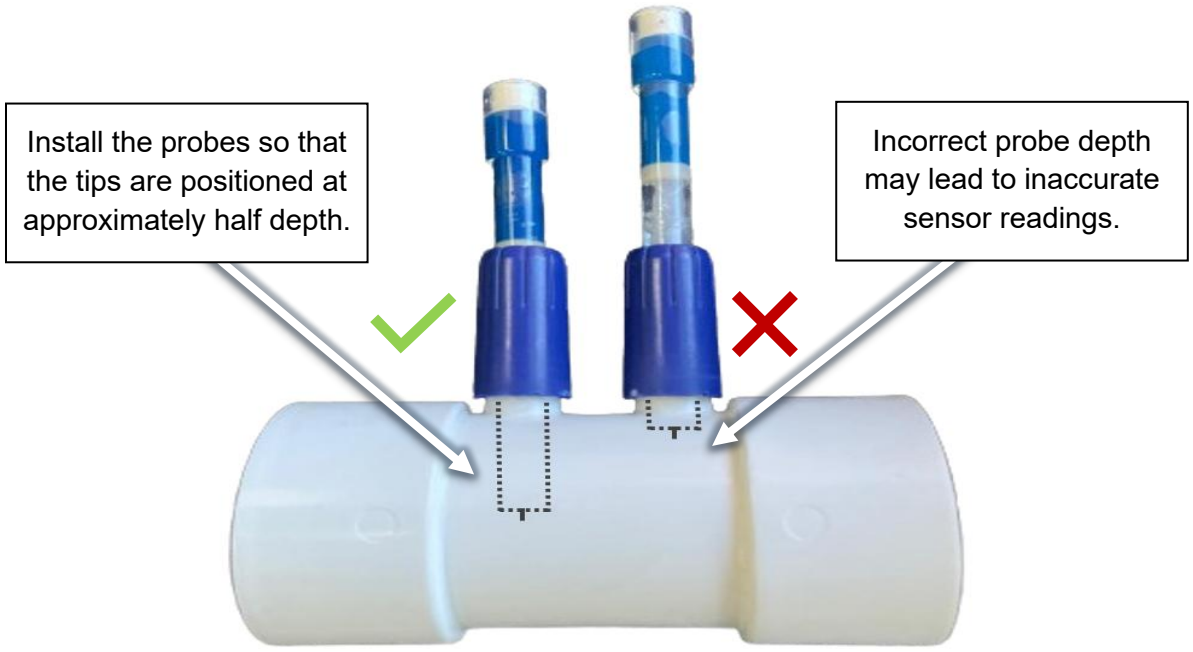
3.4 Plumbing Connections

Do not cut any pipework before switching off all pumps and pool equipment, including filtration, circulation, and heating systems. After installation, the system must remain off for a sufficient period to allow the adhesive to fully cure and bond. This ensures the pipework achieves its correct pressure rating and prevents leaks or failures under operating conditions.

Installing the sensor manifold:
The sensor manifold must be installed horizontally and after the filter to ensure clean water flow. It is to be positioned before any heating take-off points and before the sanitiser cell. This placement ensures accurate sensor readings and protects the sensors from debris, chemical interference, and temperature fluctuations that could affect performance.

Install the probe(s) into the designated probe holders so that the tips are positioned approximately halfway into the pipework (as shown below). Hand-tighten the probe locking nuts firmly to secure the probes. **Do not lubricate the O-rings –** excessive lubricant can cause the probes to shift or even pop out under high pressure, potentially causing leaks and compromising system integrity. It is recommended that the sensor storage bottles are rinsed and retained for future calibration use.

For pH-only systems, install a blanking cap over the unused insertion point and tighten firmly by hand.



Installing the dosing manifold:
The dosing manifold must be installed in the return line – after the chlorinator cell and/or any other sanitising equipment, but before any selectable valves such as a pool/spa return. This placement ensures that acid is always dosed into flowing water, preventing stagnant dosing.

Install a blanking cap over one of the injection ports as only one fitting will be used.

3.5 Dosing Hardware

Installing the squeeze tube:
To install the squeeze tube, begin by removing the peristaltic pump cover – place your thumb under the lip at the bottom and pull outwards.

Remove the dosing rotor wheel from the motor shaft and wrap the squeeze tube around it. While holding the squeeze tube in place around the rotor wheel, slide the assembly back onto the motor shaft.

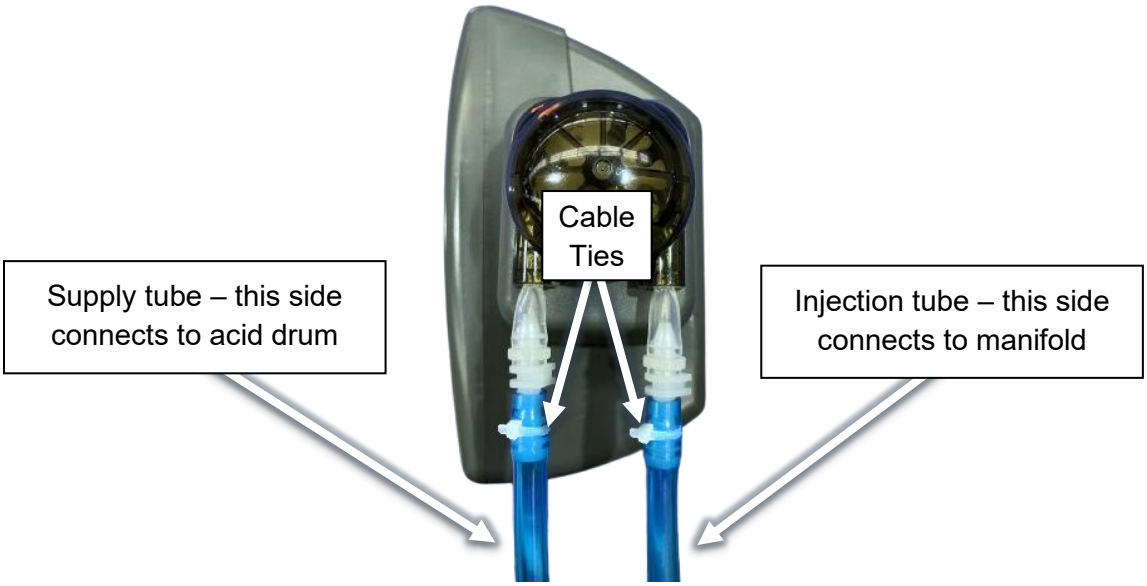
Thoroughly lubricate both the squeeze tube and the rotor. Be sure to use all of the supplied silicone grease. Ensure the two ends of the tube are level and that the barbs sit below the pump casing – then reinstall the pump cover.

Note: The dosing rotor wheel turns in a clockwise direction – acid enters towards the front of the controller and exits towards the rear.

See Page 16 for detailed squeeze tube replacement instructions.

Connecting the dosing line:
Cut a suitable length of blue injection tube to run between the peristaltic pump and the dosing manifold. Allow a little extra length as the tubing may require periodic trimming during scheduled maintenance.

Connect the hose to the outlet end of the squeeze tube (closest to the wall), then connect the other end to the injection point on the dosing manifold. To make the connection, remove the tube nut and collar, and slide them over the end of the hose. Firmly push the hose onto the nipple, then slide the collar and nut into place – tighten securely by hand. Secure each squeeze tube connection with cable ties.



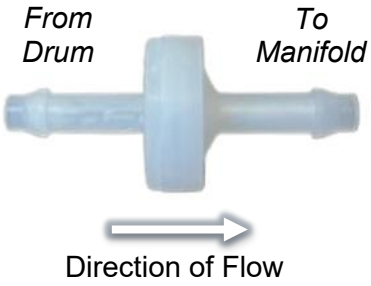
Tip: Soak the ends of the tubing in hot water for 30 seconds to soften them – this will make it easier to fit over the barbs.

Installing the suction line:
Select the appropriate lid for the type of acid drum being used and install the pickup tube. Check the depth of the pickup tube against the side of the drum – trim it if necessary to ensure it does not touch the bottom when the cap is screwed on.

Find a safe and suitable location for the acid drum, which should be positioned at least 1.8m away from the Smartchem unit and any other pool equipment.

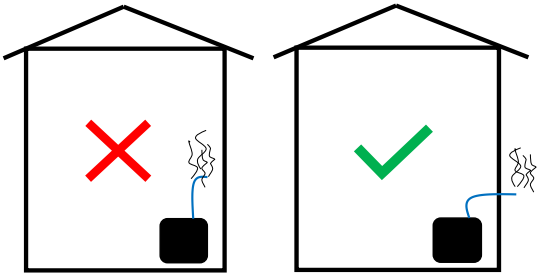
Cut a length of blue injection tubing to run between the acid drum and the peristaltic pump – allow a little extra length for future trimming during maintenance. Connect one end of the tubing to the suction port on the acid drum cap and the other to the front of the peristaltic pump.

The acid check valve must be installed somewhere in this line. Identify a convenient position, cut the tubing, and firmly push the ends onto the check valve. Ensure the valve is installed in the correct direction – it must prevent backflow into the acid container.



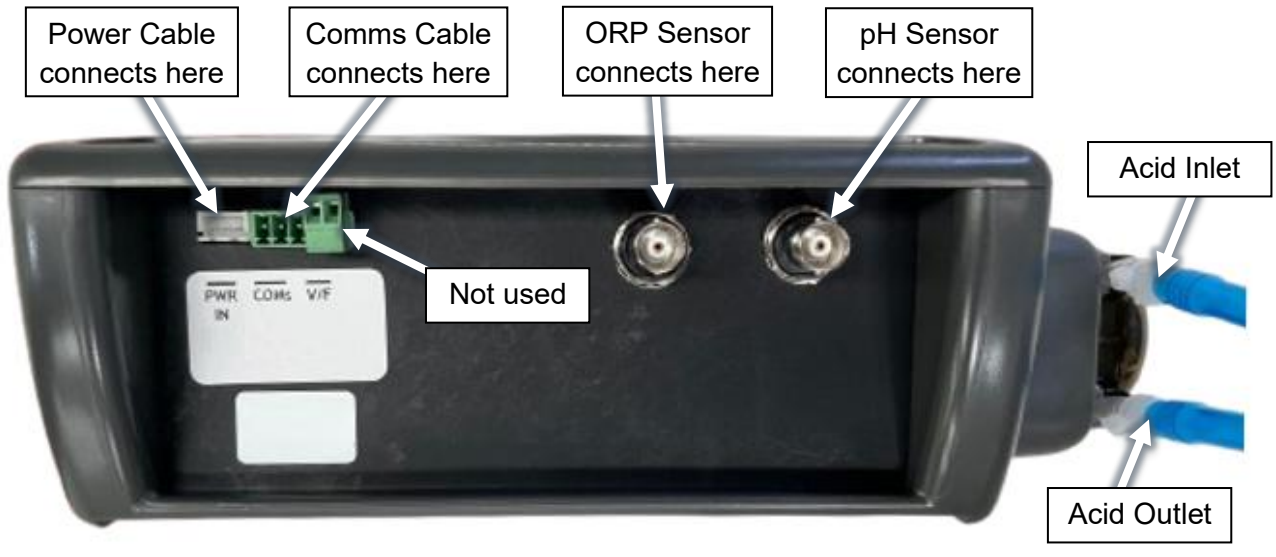
Finally, connect some leftover tube to the breather port on the acid drum cap and run this away from the pool equipment to vent the drum to a safe open area.

Through-wall breather connector (if required):
A through-wall connection for the breather tube is supplied for use to prevent the buildup of fumes when the acid drum is located inside an equipment shed or other enclosure. This fitting is compatible with material thicknesses up to 25 mm and allows the acid drum to vent through the wall. Drill a suitable hole, mount the connector and attach the tube.

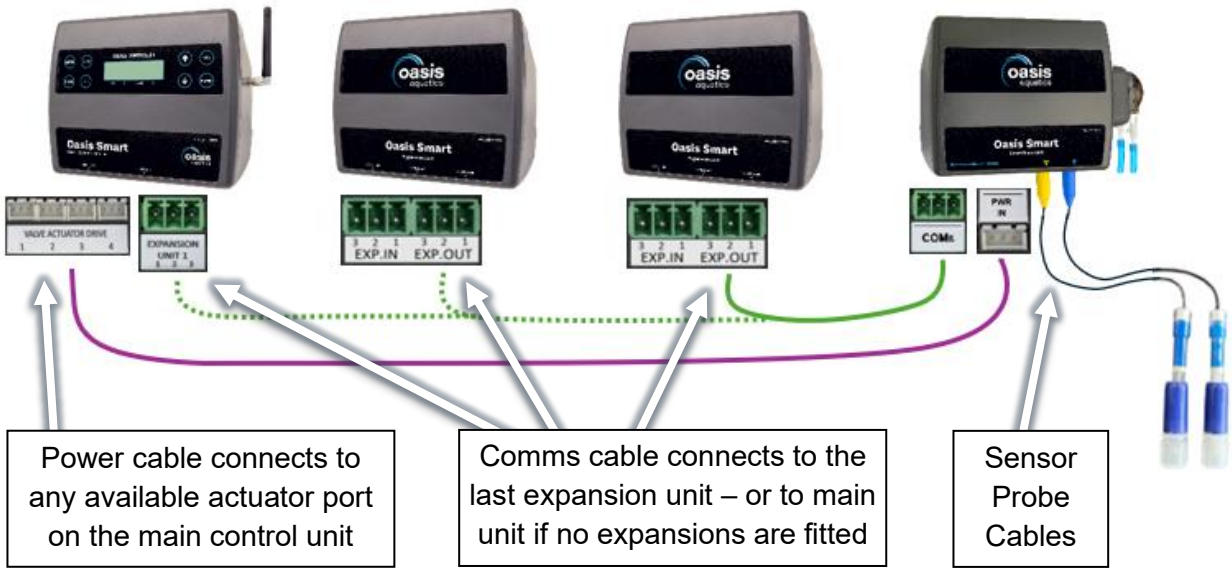


If your pool equipment includes a heat pump, ensure the acid drum and/or vent hose is positioned well away from the unit as acid fumes can reach the evaporator fin coil and rapidly corrode the aluminium fins.

3.6 Baseplate Diagram



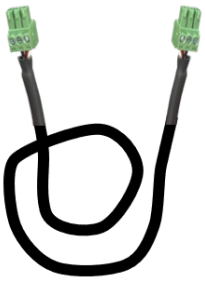
3.7 Cable Diagram



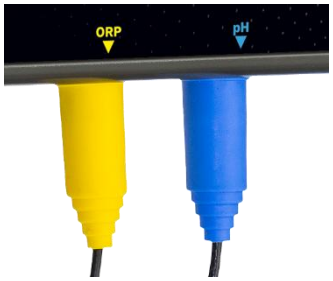
3.8 Cable Connections

The SmartChem expansion unit connects to the Oasis Smart system using two cables.

Installing the power cable:
Connect this cable between the SmartChem unit and any unused valve actuator port on the Oasis Smart controller – this provides a 24 VAC power supply to the SmartChem unit.



Installing the communication cable:
This cable is the final link in the communication daisy chain that loops between the main unit and any connected expansion units. If you have one or two expansion units, connect this cable to the last unit in the chain. If no expansion units are present, connect the cable directly to the 'Expansion Unit' socket on the master controller.



Connecting the sensor probes:
Connect the sensor probe(s) to the corresponding colour-coded socket on the SmartChem unit. *Note that pH-Only models do not come with an ORP sensor, however the socket is available for future addition of the sensor - if desired.*

3.9 Installation Checklist

Ensure the following is completed at a minimum before commissioning the Smartchem unit:

- ☐ The controller has been securely mounted to the wall bracket, at least three metres from the water's edge, at a minimum of 600mm above the ground.
- ☐ All plumbing and cable connections have been completed in accordance with the diagrams.
- ☐ All glued fittings have had sufficient time to cure and bond.
- ☐ The sensor probes have been installed without any lubricant and tightened firmly by hand.
- ☐ The acid tube has been installed with the check valve located between the acid drum and peristaltic pump.
- ☐ The squeeze tube has been thoroughly lubricated using all of the supplied silicone grease.
- ☐ The acid drum has been filled with diluted hydrochloric acid solution at an acid-to-water ratio of **no less than 1:2** (i.e. 1/3 acid and 2/3 water).
- ☐ The acid drum and breather hose are positioned well away from any other equipment, especially heat pumps and air conditioner units.
- ☐ A pool water sample has been professionally tested and the pool has been balanced in accordance with the Smartchem chemistry requirements below:

Free Chlorine:	1-3 ppm	pH:	7.2-7.8
Total Alkalinity:	80 – 150 mg/L	Calcium Hardness:	150 – 300ppm
Phosphate:	0ppm	Cyanuric Acid: (Stabiliser)	0 – 15ppm MAX

4. SETUP

4.1 Pairing to Master Controller

The Smartchem is paired using the buttons on the Oasis Smart master controller.

1. Press the "**Menu**" button until the controller displays "1. Filter Times" (or another Menu option).
2. Use the ↑ or ↓ arrows to locate "6. Installer Menu". Press "**Enter**". The controller will display "6-1 Appliances" (or another Sub-Menu option).
3. Use the ↑ or ↓ arrows to locate "6-10 Expansion Unit". Press "**Enter**". The controller will display the screen shown to the right:

EXP: 1 V1.##### / None
EXP: 2 V1.##### / None

Note: If you are setting up a brand-new Oasis Smart system, stop here and refer to the Oasis Smart installation and operation manual or quick setup guide to pair any expansion units.

4. Press "**Enter**" to continue. The controller will display the screen shown to the right:

   *The '#' will correspond to the number of regular expansion units that are paired (**0** / **1** / **2**).*

NUMBER EXP
UNITS: (#)

5. Press "**Enter**" to continue. The controller will display the screen shown to the right:
6. Ensure that "NO" is displayed - Use the ↑ or ↓ arrows to adjust if required.

RESET ALL
ADDRESSES **NO**

7. Press "**Enter**" to continue. The controller will display the screen shown to the right:
8. Ensure that "NO" is displayed - Use the ↑ or ↓ arrows to adjust if required.

SCAN FOR EXP
UNITS NOW? **NO**

9. Press "**Enter**" to continue. The controller will display the screen shown to the right:

SMARTCHEM
NONE

10. Press "**Enter**" to continue. The controller will display the screen shown to the right:
11. Ensure that "YES" is displayed - Use the ↑ or ↓ arrows to adjust if required.

RESET
SMARTCHEM **YES**

12. Press "**Enter**" to continue. The controller will display the screen shown to the right:
13. Ensure that "YES" is displayed - Use the ↑ or ↓ arrows to adjust if required.

SCAN SMARTCHEM
NOW **YES**

14. Press "**Enter**" to continue and scan for the unit.
15. After several seconds the controller will detect the SmartChem and the version number will appear, as shown to the right:

SMARTCHEM
V#.#####

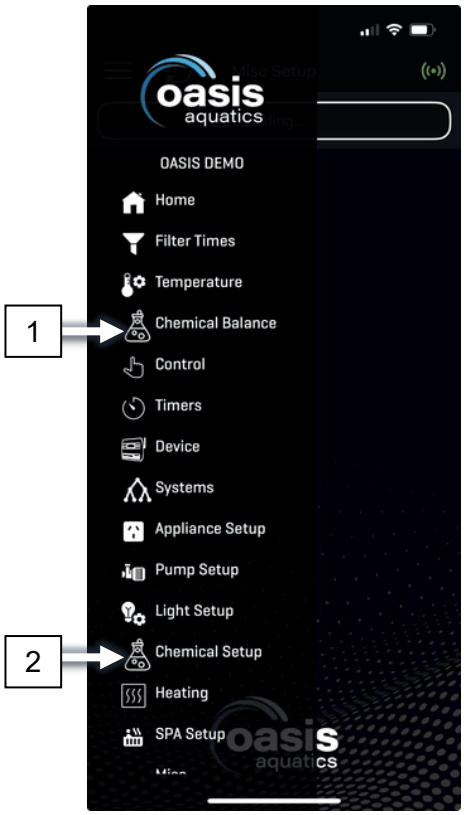
Note: If the version number doesn't appear, ensure that both the communication and power cables are connected to the SmartChem unit in accordance with the instructions on Page 8 and repeat the the pairing process.

16. The pairing is now complete. Press "**Menu**" to exit and return to the home screen.

4.2 App Setup

App Menu:
Once the SmartChem is added to the system, two new menu items will appear: ***Chemical Balance*** **(1)** and ***Chemical Setup*** **(2)**.

Tip: If ***Chemical Setup*** *is missing, the installer menu is locked. Go to the Device menu, unhide the installer menu, and enter the installer code.*



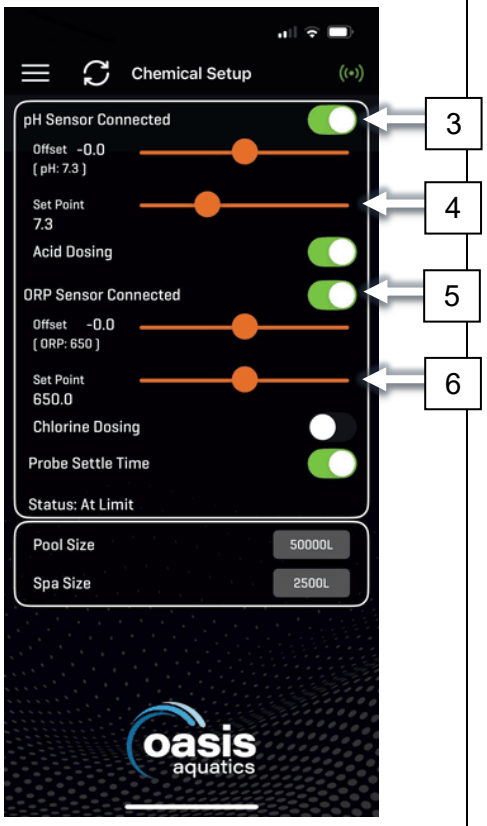
Chemical Setup:
Access the Chemical Setup page and configure the following:

pH Sensor (3)
Slide the toggle to the right to enable the pH sensor.

pH Set Point (4)
Set a baseline pH value. The end user can later adjust this setpoint by ±0.2 to suit their preferences via the Chemical Balance page.

ORP Sensor (5)
Slide the toggle to the right to enable the ORP sensor *(if equipped)*.

ORP Set Point (6)
Set a baseline ORP value. The end user can later adjust this setpoint by ±20mV to suit their preferences via the Chemical Balance page.



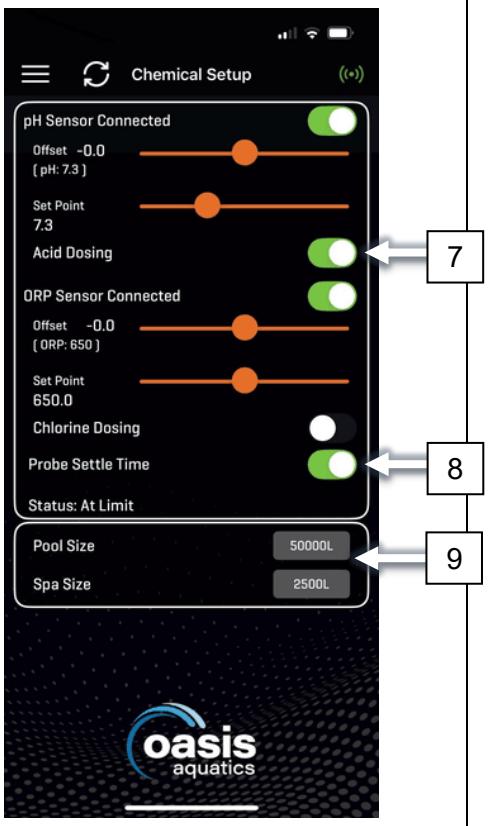
Tip: For most pools, an ideal ORP range is 650–750 mV. Start with a lower setting (e.g. 650 mV) and test water chemistry every few days to determine the optimal ORP target for your system.

Acid Dosing (7)
Slide the toggle to the right to enable the acid dosing pump.

Probe Settle Time (8)
When active, dosing pauses for 30 minutes after the filter pump starts, allowing sensor readings to stabilise. If disabled, dosing begins immediately when the pump starts.

Pool & Spa Size (9)
Tap the figure beside Pool Size to enter the pool volume in litres. Set the Spa Size if your system includes a spa.

<u>This value is used in the acid dosing algorithm, so accuracy is important.</u>



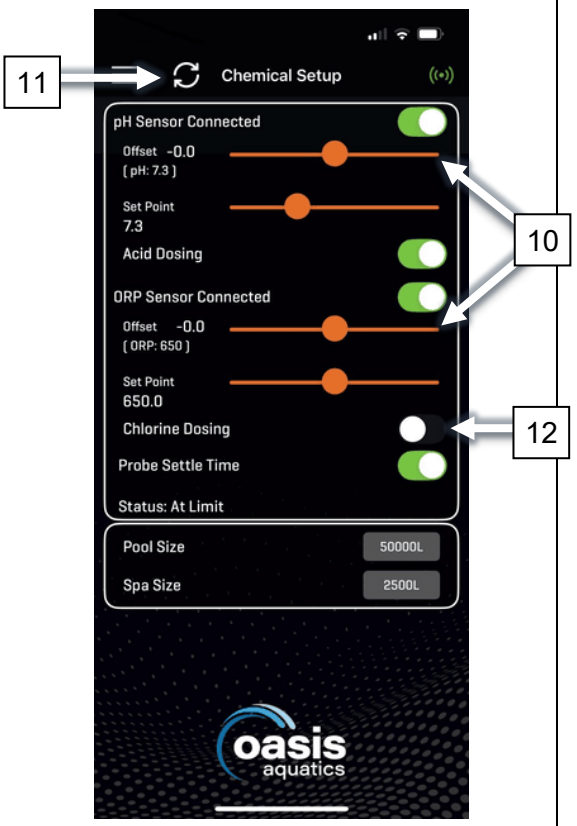
Sensor Offset (10)
Sensor offsets allow probe calibration over time.

- pH sensor: Adjustable ±1.5 in 0.1 increments

- ORP sensor: Adjustable ±150 mV in 10 mV increments

The values in backets are live readings which can be updated using the refresh icon **(11).**

Chlorine Dosing (12)
This feature is not applicable to the Oasis Smartchem and must remain disabled.



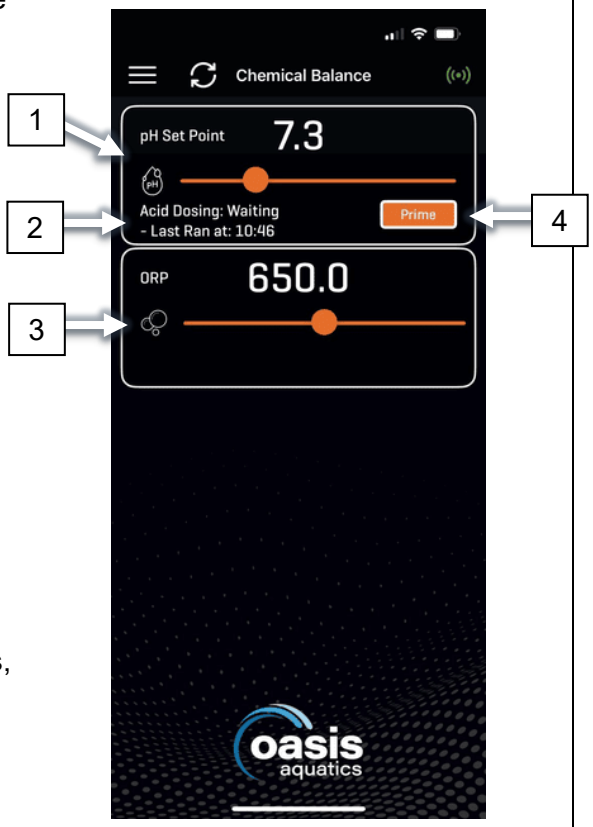
4.3 Hiding the Installer Menu

Before handing over the system to the customer, ensure that the installer menu is hidden to prevent accidental changes to configuration settings. Open the ***Device*** menu and tap ***Hidden*** next to ***Installer Menu.*** Select a four-digit installer PIN code and record this in the relevant handover documentation for future reference.

5. OPERATION

5.1 Chemical Balance

The **Chemical Balance** page allows the user to fine tune the desired pH and ORP *(if equipped)* settings, and to prime the peristaltic pump when required.



pH Set Point (1)
Adjust the setpoint by dragging the marker or tapping along the setpoint line.

Acid Dosing (2)
This shows the acid dosing status. For example, it may be in a waiting cycle after dosing, preparing for the next reading. *The display also shows the time of the last acid dose, helping track recent activity.*

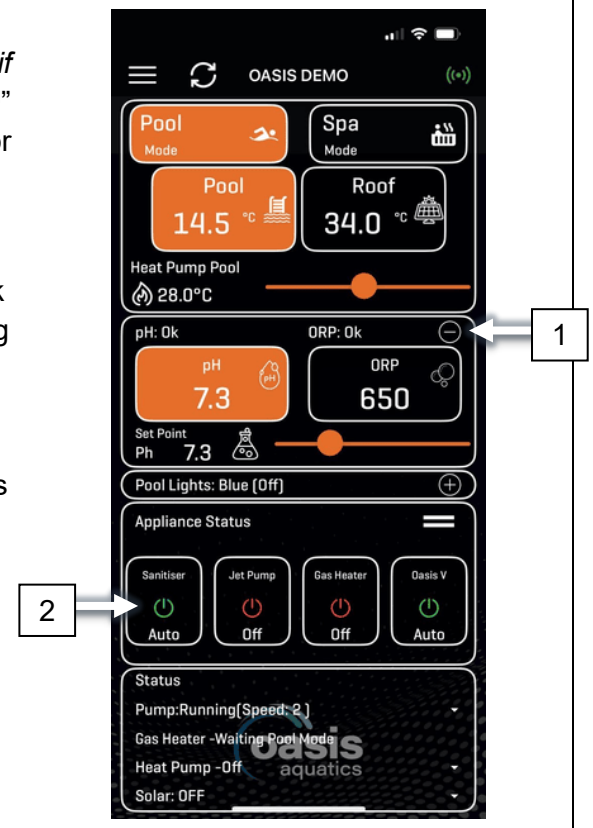
ORP Set Point (3)
Adjust the setpoint by dragging the marker or tapping along the setpoint line.

Prime (4)
Tap this icon to run the acid dosing pump for 10 seconds, which is typically required after refilling the acid drum or performing other maintenance activities.

Tip: The centre point of the set point lines is the base setting that was chosen in the Chemical Setup page

5.2 Home Screen

App Display:
The app's home screen shows the current pH and ORP *(if equipped)* status as 'Low', 'OK', or 'High'. Tapping the "+" icon (1) expands the view to reveal the actual sensor readings, which are updated every 30 minutes.



Theory of Operation:
The pH and ORP sensors continuously provide feedback to the controller, which determines when chemical dosing is required.

During filtration periods, if the pH level rises above the setpoint, the peristaltic pump activates every five minutes until the target pH is reached. The volume of acid dispensed per cycle is calculated based on the programmed pool or spa volume.

Similarly, if the ORP level falls below the setpoint, the sanitiser system is activated until the desired level is achieved. The sanitiser icon (2) displays green when active and red when inactive.

Fault Detection:
If water balance falls significantly outside target levels, the SmartChem will stop dosing and display 'CHECK' in the pH and/or ORP boxes (2).

If '**CHECK**' is displayed, have your water professionally tested and balanced. Also check the acid drum level and calibrate the sensor probes.

pH Range:
The pH reading range is 5.5 to 8.5. If the value falls outside this range, CHECK will be displayed in the pH box, and dosing will be paused until the issue is resolved.

ORP Range:
The ORP reading range is 300mv to 800mv. If the value falls outside this range, CHECK will be displayed in the pH box, and sanitiser operation will be paused until the issue is resolved.

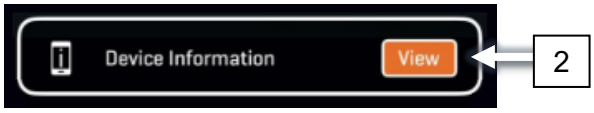
Note: If the system is displaying '---', it indicates that there may be a fault with the probe, or the reading is invalid.

Tip: If your system displays a CHECK status, manual chemical intervention is required. (see Page 20 – Troubleshooting)

5.3 Firmware Update

Firmware updates are released periodically. When a new update is available, a notification (1) will appear the next time you open the Oasis Smart app. Tap ***Upgrade*** and follow the prompts to install the update.

To manually check update status, open the **Device** menu and tap ***View*** next to ***Device Information*** (2). Update details are shown at the bottom of the page (3).



6. Maintenance

6.1 Maintenance Schedule

The Oasis SmartChem requires routine maintenance, including the replacement of the squeeze tube on an annual basis, along with the inspection of other components for signs of wear. Service parts are available from your local pool shop or Oasis Aquatics dealer.

*Tip: The Oasis SmartChem system shares the same dosing hardware as the **Dontek AquaChem** system. All maintenance parts are cross-compatible.*

Fortnightly

- ☐ Test pool water and adjust chemistry as required.
- ☐ Check the acid drum level to prevent it running dry.
  (remember to use a 2:1 or 3:1 water-to-acid mix ratio).

Every Three Months

- ☐ Run the manual prime function and confirm that liquid is flowing through the acid feed tube.
- ☐ Ensure the check valve holds liquid in the feed tube when dosing stops.
- ☐ Inspect the acid feed tube at the injection point. Clean or trim if blocked.
- ☐ Check the condition and placement of the acid drum vent tube. Ensure fumes are safely venting to an open area, away from other equipment and enclosed spaces.
- ☐ Apply insect surface spray to the wall and surrounding area near the controller
  (Do not spray directly into the controller).

Every Six Months

- ☐ Clean and re-calibrate the pH and ORP probes. Adjust using sensor offsets.
  (see Page 18 – Cleaning and Calibrating Probes)
- ☐ Inspect all tubes, fittings, and connections. Replace worn components.
- ☐ Remove the peristaltic pump cover and inspect the squeeze tube for splits or leaks
- ☐ Thoroughly lubricate the squeeze tube and rotor assembly with silicone grease.

Every 12 Months

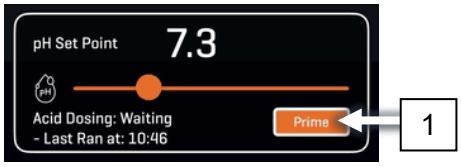
- ☐ Replace the squeeze tube.
- ☐ Inspect the rotor wheel for wear and replace as required.

6.2 Squeeze Tube Replacement

Switch off the master controller and all other pool equipment prior to servicing the squeeze tube. When handling pool acid, follow the recommended use of Personal Protective Equipment (PPE) as outlined in the manufacturer's Safety Data Sheets (SDS).

Follow these steps when replacing the squeeze tube:

1. **Purge the Dosing Tube**
   Unscrew the cap from the acid drum and carefully lift the pickup tube above the acid level. Open the App Menu and go to ***Chemical Balance***. Tap ***Prime*** (1), which will run the peristaltic pump for 10 seconds – air will be drawn up through the tube. Repeat as needed until air passes through the squeeze tube. This will help minimise leakage when disconnecting the tubes.

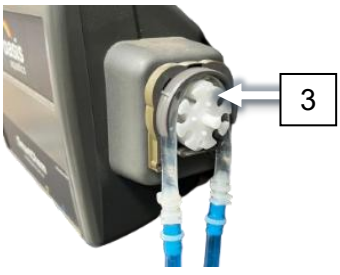


2. **Switch Off Equipment**
   Switch off the Oasis Smart master controller along with all pool pumps. This will prevent the peristaltic pump from operating during service, along with minimising leakage when the squeeze tube is disconnected.

   Note: If your equipment is installed below water level, close any relevant shut-off valves before beginning service to isolate the system and prevent water leakage.

3. **Remove Peristaltic Pump Cover**
   Place your thumb under the lip at the bottom of the peristaltic pump cover (2). Gently lift to remove it and expose the squeeze tube and rotor wheel (3).

4. **Remove Rotor Wheel and Squeeze Tube**
   Slide the rotor wheel out from the motor shaft (4). The squeeze tube will come out with it.



5. **Disconnect Tubing**
   Set aside the rotor wheel and disconnect the inlet and outlet tubing from the squeeze tube. Discard the old squeeze tube.

   Tip: Cut the tubes if there is sufficient length available.

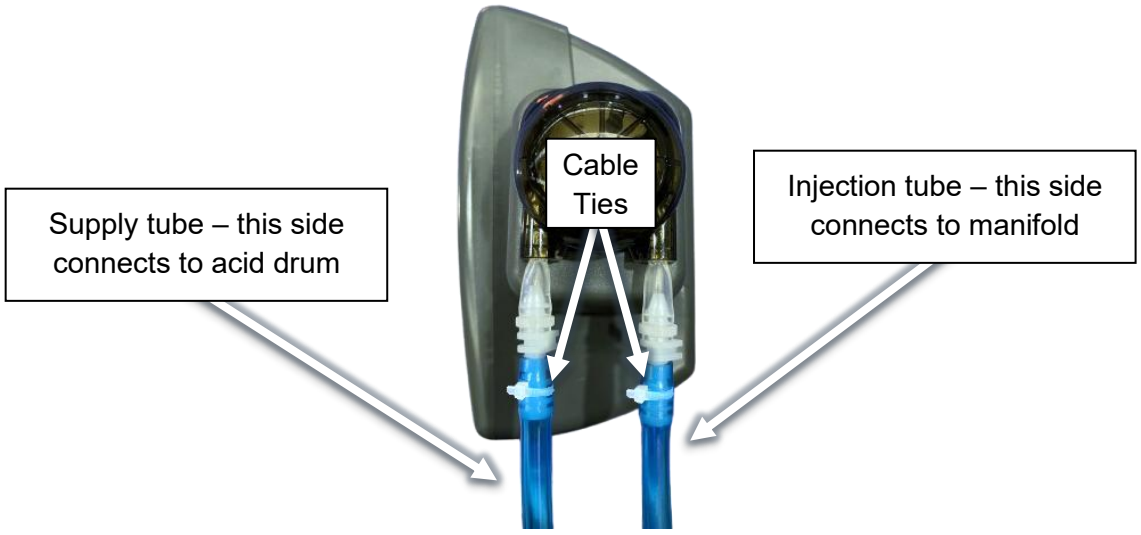
6. **Inspect Rotor Wheel**
   Visually inspect the rotor wheel for signs of wear. The rollers (5) should turn freely and feel smooth, with no burring, flat spots, or visible damage.

7. **Install New Squeeze Tube**
   While holding the squeeze tube in place around the rotor wheel, slide the assembly back onto the motor shaft. Ensure the two ends of the tube are level and that the barbs sit below the pump casing – then reinstall the pump cover.

8. **Thoroughly Lubricate**
   Lubricate the squeeze tube and rotor using all of the supplied silicone grease. This will help reduce wear and ensure smooth operation.

9. **Reinstall Cover**
   Reinstall the peristaltic pump cover.

10. **Reattach Tubing**
    Reconnect the inlet and outlet tubing and secure with cable ties.



Tip: Soak the ends of the tubing in hot water for 30 seconds to soften them – this will make it easier to fit over the barbs.

11. **Switch On Equipment**
    After completing service, open any previously closed valves, then switch on the Oasis Smart master controller and restart all pool pumps.
12. **Restore System Flow**
    If your equipment is installed above water level, the filter pump may have lost prime due to air entering the system while the dosing tube was disconnected. If this occurs, reprime the pump according to the relevant manufacturer's instructions.
13. **Prime Peristaltic Pump**
    Run the ***Prime*** function via the app as needed until liquid flows steadily through the squeeze tube and reaches the dosing manifold.
14. **Check For Leaks**
    After the filtration system has been running for several minutes, run the prime function again and thoroughly inspect all tubes and connections carefully to ensure there are no water or acid leaks.

6.3 Cleaning and Calibrating Probes

Maintaining clean sensor probes is essential for accurate chemical measurements. Issues such as drift or slow response times are often caused by dirty sensors. **Do not use abrasive materials to clean the probes.**

Cleaning the pH Sensor Probe

To remove solids and organics:

- Use *Jif* or a similar fine cream cleaner.
- Apply a small amount to the supplied cleaning tool or a cotton bud and gently rub the **glass bulb** and **junction** to remove contaminants.
- Rinse thoroughly with fresh water and condition the sensor.

To remove inorganic deposits and scale:

- Soak the sensor tip in a **5–10% diluted hydrochloric acid (HCl)** solution for up to one hour.
- Rinse thoroughly with fresh water and condition the sensor.

For protein contamination:

- Prepare a solution of **5% Pepsin** in **0.1M HCl**.
- Soak the contaminated probe for up to one hour.
- Rinse thoroughly with fresh water and condition the sensor.

Sensor conditioning:

- After cleaning the probe, submerge the sensor tip in **electrode storage solution (KCl)** for one hour before calibrating.

Calibrating the pH Sensor Probe

- Clean and condition the **electrode storage solution (KCl)** prior to calibrating.
- Submerge the sensor tip in 7.01 pH buffer solution.
- Connect the probe to the SmartChem unit.
- Wait 15 minutes for the reading to stabilise.
- Adjust the sensor offset via the ***Chemical Setup*** menu to achieve a pH reading of 7.0.

Cleaning the ORP Sensor Probe

To remove solids and organics:

- Use *Jif* or a similar fine cream cleaner.
- Apply a small amount to a cotton bud or tissue and clean the gold-plated tip to remove contaminants.
- Rinse thoroughly with fresh water and condition the sensor.

To remove inorganic deposits and scale:

- Soak the sensor tip in a **5–10% diluted hydrochloric acid (HCl)** solution for up to one hour.
- Rinse thoroughly with fresh water and condition the sensor.

To remove plated metals from the ORP tip:

- Soak the tip in approximately 0.1M nitric acid for 15-20 minutes.
- Rinse thoroughly with fresh water and condition the sensor.

Sensor conditioning:

- After cleaning the probe, submerge the sensor tip in **electrode storage solution (KCl)** for one hour before calibrating.

Calibrating the ORP Sensor Probe

- Clean and condition the **electrode storage solution (KCl)** prior to calibrating.
- Submerge the sensor tip in 470mV ORP buffer solution.
- Connect the probe to the SmartChem unit.
- Wait 15 minutes for the reading to stabilise.
- Adjust the sensor offset via the ***Chemical Setup*** menu to achieve an ORP reading of 470mV.

Tip: The accuracy of calibration buffer solutions depends on several factors, including ambient temperature and shelf life. Refer to the manufacturer's usage instructions for specific guidance. For best results, use single-use sachets, as larger containers tend to deteriorate once opened.

6.4 Protecting pH and ORP Probes

If the pool system will be shut down for an extended period (e.g. for surface repairs, or if the pool is completely shut down for winter), it is recommended to remove the pH and ORP probes from the injection manifold and store them correctly.

To do this, fill the original probe storage bottles with **electrode storage solution (KCl)**, insert the probes into the fluid, and securely screw the cap onto each bottle.

Tip: Failure to store probes correctly may result in sensor failure.

7. TROUBLESHOOTING

7.1 System Limitations

This system is designed to maintain pool chemistry within specified parameters. Its primary purpose is to reduce the need for frequent handling of pool acid and to minimise the need for regular adjustment of sanitiser output in response to changes in water temperature, pool blanket usage, bather load, and environmental conditions.

The installation of this system does not eliminate the need for routine water testing. It also does not remove the requirement to add other chemicals – such as buffer – as needed to maintain balanced water chemistry.

Regular testing ensures that any imbalances are detected early, helping to prevent issues such as pH instability, ineffective sanitisation, or equipment damage. For best results, water samples should be tested using reliable methods, either by a qualified pool technician or at your local pool shop.

Maintaining balanced water chemistry is essential for effective pool management. Two common contributors to erratic system operation are incorrect Total Alkalinity and Cyanuric Acid levels:

Total Alkalinity
Total Alkalinity is not monitored by the system and will gradually drift over time due to the continued use of hydrochloric acid for pH control. When Total Alkalinity falls outside the acceptable range, pH fluctuations will occur, resulting in the system losing its ability to accurately measure and manage water chemistry. To maintain stability, buffer must be routinely added to keep Total Alkalinity within the recommended range.

Cyanuric Acid (Stabiliser)
Cyanuric Acid is commonly used as a stabiliser to protect chlorine from sunlight degradation. However, ORP-based chemistry management systems require low Cyanuric Acid levels, as this stabiliser binds to chlorine when exposed to sunlight. While this helps retain chlorine in the water, it also reduces ORP readings, which can cause the sanitiser to run more frequently and potentially lead to excessively high chlorine levels. To ensure reliable ORP readings and sanitiser control, Cyanuric Acid levels must not exceed 15 ppm.

Required Chemistry Parameters:

Free Chlorine:	1-3 ppm	pH:	7.2-7.8
Total Alkalinity:	80 – 150 mg/L	Calcium Hardness:	150 – 300ppm
Phosphate:	0ppm	Cyanuric Acid: (Stabiliser)	0 – 15ppm MAX

Tip: For the most accurate test results, always collect your water sample from arm's depth and away from any return jets. This helps avoid interference from freshly circulated or chemically treated water. Once collected, take the sample to the pool shop immediately, as water chemistry can change rapidly when exposed to air, light, and temperature fluctuations.

7.2 pH is too Low

Possible Cause	Remedy
Excessive fresh water added to the pool, through either rainfall or topping up the pool with fresh water which dilutes the total acid level.	Adjust pH level as directed by your local pool shop.
pH Set Point is set too Low.	Adjust pH Set Point to appropriate level via the ***Chemical Balance*** menu.
Dosing system malfunction.	Check to ensure that the acid feed tubing is correctly connected in accordance with the schematic on Page 4. Operate the acid prime function via the app and ensure that the peristaltic pump stops running after 10 seconds.
Acid dosing settings are incorrect.	Check the ***Chemical Setup*** menu to ensure that acid dosing is enabled and chlorine dosing is disabled. Check the programmed pool volume (litres) and adjust if required.
pH probe not reading correctly	Clean and/or recalibrate probe.

7.3 pH is too High

Possible Cause	Remedy
Filter timer(s) are not sufficiently long enough to ensure appropriate turnover and dosing rates.	Check the ***Filter Times*** menu and adjust the timer(s) if required. Check and adjust the variable filter pump speed (if applicable).
Acid drum is low or empty.	Refill the acid drum with diluted hydrochloric acid at a water-to-acid ratio between 2:1 and 3:1. ***CAUTION***! *Always add concentrated acid to water when diluting - never add water to acid. Follow the recommended use of Personal Protective Equipment (PPE) as outlined in the manufacturer's Safety Data Sheets (SDS).*
Acid is too diluted.	Re-dilute the acid at a water-to-acid ratio of closer to 2:1. Check to ensure that the check valve between the acid drum and squeeze tube is functioning correctly and preventing water from backflowing to the container.
Acid dosing components are blocked or worn.	Inspect the squeeze tube, rotor and all tubing – including the breather – trim or replace as required. Remove the tubing from the dosing manifold and check the injection point for blockage. Operate the acid prime function via the app and visually confirm that that fluid is moving through the tubing.

Acid dosing settings are incorrect.	Check the ***Chemical Setup*** menu to ensure that acid dosing is enabled and chlorine dosing is disabled. Check the programmed pool volume (litres) and adjust if required.
pH Set Point is set too high.	Adjust pH Set Point to appropriate level via the ***Chemical Balance*** menu.
pH probe not reading correctly.	Clean and/or recalibrate probe.
Overdosing of Chlorine (Shock Treatment).	It may take a period of days to weeks or the pH reading to return to normal levels after a shock treatment, depending on how large the dose was. The pool chemistry may require rebalancing once the shock treatment is completed.

7.4 Chlorine is too Low

Possible Cause	**Remedy**
Filter timer(s) are not sufficiently long enough to ensure appropriate turnover and dosing rates.	Check the ***Filter Times*** menu and adjust the timer(s) if required. Check and adjust the variable filter pump speed (if applicable).
Sanitiser is set to 'OFF'.	Check the ***Control*** menu and ensure that the sanitiser or chlorinator is set to 'AUTO'.
pH level is too high or too low.	Adjust pH to correct level [7.2 - 7.8).
Filter requires cleaning.	Clean or backwash the filter as required.
Chlorinator is disconnected or not working correctly.	Ensure that the chlorinator is plugged into the correct Oasis Smart socket that is programmed for the sanitiser. This can be confirmed by switching the sanitiser to 'OFF' via the ***Control*** menu – the chlorinator display panel should be blank. Switch the unit back to 'AUTO' and activate a 'run once' sanitiser timer via the ***Timer*** menu – the chlorinator display panel should now be illuminated. Switch the filter pump to 'ON' and confirm that water is flowing through the system. Check the chlorinator display to confirm that the unit has been set to 'external control' or 'automation' mode in accordance with the relevant manufacturer's instructions. Check to ensure that no faults are displayed.
Cyanuric Acid (Stabiliser) level is too low.	Check and increase the stabiliser to a maximum of 15 ppm.
pH or ORP readings are incorrect.	Check all water chemistry and balance as required. Clean and recalibrate probes. Check to ensure that the sensor probes are located and installed in accordance with the instructions on Pages 4 and 5.

ORP set point is set too low.	Increase target ORP setting.
Water temperature is low.	Oxidisers like chlorine are more effective in cold water, leading to higher ORP readings. Retest once water temperature has increased and/or adjust the ORP setpoint if higher chlorine levels are desired.

7.5 Chlorine is too High

Possible Cause	**Remedy**
pH level is too high or too low.	Adjust pH to correct level (7.2 - 7.8).
ORP set point is set too high.	Decrease target ORP setting.
Cyanuric Acid (Stabiliser) level is too high.	Check and decrease the stabiliser level if it exceeds 15 ppm, which can lead to false ORP readings *(see Page 20 – Cyanuric Acid)*.
Total Dissolved Solid (TDS) levels are too high.	The only way to decrease the Total Dissolved Solids level of your pool is to introduce fresh water to dilute the pool water. Give your filter a really long backwash or vacuum to waste to drop the level of your pool (by the amount recommended by your pool shop) and re-fill with fresh water.
Chlorinator is not connected correctly.	Ensure that the chlorinator is plugged into the correct Oasis Smart socket that is programmed for the sanitiser. This can be confirmed by switching the sanitiser to 'OFF' via the ***Control*** menu – the chlorinator display panel should be blank. Switch the unit back to 'AUTO' and activate a 'run once' sanitiser timer via the ***Filter Times*** menu – the chlorinator display panel should now be illuminated.
pH or ORP readings are incorrect.	Check all water chemistry and balance as required. Clean and recalibrate probes. Check to ensure that the sensor probes are located and installed in accordance with the instructions on Pages 4 and 5.
Chlorine has been manually overdosed (Shock Treatment).	It may take a several days to weeks for the ORP reading to return back to normal levels after a shock treatment. This depends on how large the overdose was. The Smartchem will not switch the chlorinator on again until the ORP level has dropped below the setpoint.

7.6 Chlorinator doesn't switch on

Possible Cause	Remedy
ORP is at or above setpoint.	If the ORP reading on the app's home page shows 'OK' or 'High', the chlorinator will remain off. This is normal operation and the device will automatically reactivate during filter times – once the ORP level drops below the setpoint.
Sanitiser is set to OFF.	Check the ***Control*** menu and ensure that the sanitiser or chlorinator is set to 'AUTO'.
Outside of filter timers.	Check the ***Filter Times*** menu and adjust the timer(s) if required.
Chlorinator is disconnected or not working correctly.	Ensure that the chlorinator is plugged into the correct Oasis Smart socket that is programmed for the sanitiser. This can be confirmed by switching the sanitiser to 'OFF' via the ***Control*** menu – the chlorinator display panel should be blank. Switch the unit back to 'AUTO' and then activate a 'run once' sanitiser timer via the ***Timer*** menu – the chlorinator display panel should now be illuminated.
Chlorinator is not correctly setup for external control.	Temporarily disconnect the chlorinator power lead from the Oasis Smart and plug it into a regular power point. Switch on the filter pump via the app to ensure that water is flowing. Refer to the relevant manufacturer's manual for instructions on how to set up the unit for external control, as the unit must be set to 'always on' so that it produces chlorine whenever its power point is switched on. Some chlorinators have a dedicated feature for external control, while others must have a 24-hour daily timer set (e.g. on at 00:00 and off at 23:59).

7.7 SmartChem Fault displayed on app

Possible Cause	Remedy
Cables disconnected or damaged.	Inspect the condition and connections of both the power and communication cables that connect between the SmartChem and other controllers *(see Page 8 – Cable Diagram)*.
Pairing has been lost.	Follow the instructions on Page 9 and attempt to re-pair the SmartChem with the master controller.
Controller(s) are damaged.	Send controllers for repair.

7.8 pH or ORP level is reading '- - -'

Possible Cause	Remedy
Missing or disconnected probe.	Check all cable connections *(see Page 8 – Cable Diagram)*. If the controller is a pH-Only model, ensure that the ORP sensor is set to OFF via the ***Chemical Setup*** menu.
Controller pairing issue.	Follow the instructions on Page 9 and attempt to re-pair the SmartChem with the master controller.
Worn or damaged probes.	Replace the affected probe(s).
Controller(s) are damaged.	Send controllers for repair.

7.9 Probes are exceeding sensor offset range

Possible Cause	Remedy
Incorrect probe placement.	Check to ensure that the sensor probes are located and installed in accordance with the instructions on Pages 4 and 5.
Worn or damaged probes.	Thoroughly clean and condition the probes in accordance with the instructions on Page 18. Reattempt calibration and replace probes if offset range is exceeded.

8. WARRANTY

AUSTRALIAN CONSUMER LAW

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

The controller is covered by a limited **three-year** warranty against manufacturing defects from the date of installation.

The pH and ORP probes, temperature sensors and valve actuators are covered by a 12-month warranty at the discretion of their manufacturer.

This is a back to base warranty excluding on-site labour or travel costs to or from installation site. Replacement of routine maintenance items are not covered under warranty.

Defective equipment must be returned to the manufacturer or dealer as soon as the purchaser becomes aware of the defect and all transport must be prepaid. Neither the manufacturer nor the dealer shall be responsible for any goods damaged in transit.

Adverse operating conditions beyond the control of the manufacturer such as improper voltage or water equipment will render this warranty null and void.

9. TECHNICAL SUPPORT

For all technical assistance and warranty enquiries, please contact your local distributor or contact Oasis Aquatics directly:

OASIS AQUATICS

Phone: 1800 815 913

Website: oasisaquatics.com.au

Email: info@oasisaquatics.com.au

More troubleshooting resources are available online at Sunlover Heating:

INSTALLATION RECORD

DEALER / INSTALLER NAME

SERIAL NUMBER

DATE INSTALLED

NOTES

NOTES

A part of sunlover

Victoria
6-8 Austral Place
Hallam VIC 3803
Australia
T: 03 9887 2131

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Unit 2, 10 Boden Road
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11 Andy Court
Upper Coomera QLD 4209
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