maytronics



Installation & User Manual

Ecoswim® Chlorinator | Mineral Swim™ Purifier | Mineral Swim™ PRO

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CONGRATULATIONS

Congratulations on choosing a Maytronics purification system for your swimming pool, they have been designed for easy and simplistic operation and maintenance. Please take the time to read these instructions thoroughly before attempting to install and operate your unit. Should you require additional information or further assistance, do not hesitate to contact your Maytronics representative or visit our website ***maytronics.com.au***

Important warnings & safety instructions

Maytronics strongly recommends that installation is performed by a registered pool builder, electrician or other suitable qualified person. If they are installed incorrectly they may not perform as expected.

IMPORTANT - PLEASE READ

This product must be installed in accordance with all applicable local regulations. Please read this manual carefully prior to installation and use of this product and follow all instructions and accompanying warning notices. Improper installation or operation will void the warranty and may create an electrical hazard, leading to serious injury, property damage, or death.

Ensure that you have dry hands when operating these products.
These products are designed and tested to conform to AS/NZS. 3136 - AS/NZS 3100. To comply with this standard the chlorinator must not be installed in the pool zone.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless under supervision or instruction of a responsible person. Children should always be supervised to ensure they do not play with the appliance.

Do not operate the electrolytic cell without the correct water flow or water circulation as this may cause damage to the unit.

This unit is not intended for use with temporary or foldable/storable pools. All pipework associated with this system is intended to be fixed and should remain intact following installation.

Pools with a Spa

If you are using this system for a pool with an integrated spa, you may require a de-gas vessel if the pool return goes to the spa first. Alternatively, your installer may fit a flow switch to idle the system while the spa is in use.

Pump outlet socket

A 240-volt pump output power socket is supplied and located on the rear of the Mineral Swim™ control unit. Your pool pump power supply lead should be plugged into the socket so that when the schedule switches at the designated times both the Mineral Swim control unit and the pump will activate in unison.

The pump socket is designed to operate a single pool pump of maximum 1.5 hp (horsepower) only. On rare occasions, a 2hp pump will be used as an integrated solution for in-floor and pool filtration. Do not attempt to operate any equipment other than your pool pump from this socket as damage might occur to the Mineral Swim control unit that is not covered under warranty.

Repairs

Never unscrew and open the control unit. If required, all serviceable components are accessible via the left side door or lower drawers. Repairs are only to be made by a Maytronics authorised technician. If the power cord is damaged, it must be replaced by Maytronics or an authorised Maytronics service agent or repairer to avoid an electrical hazard.

Typical system installation

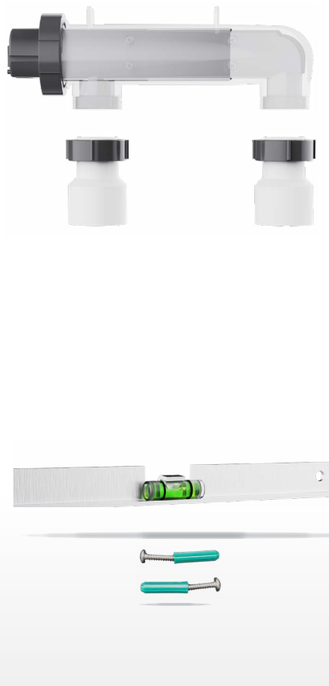


Components

Control Unit



Generator System



Purifier System

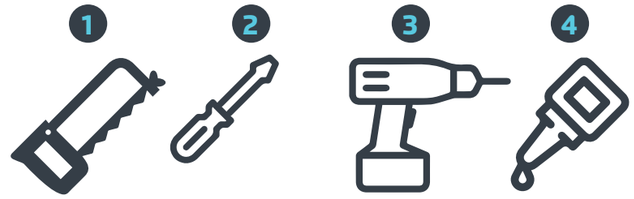


Purifer & Generator System



Tools required for installation

1. Hacksaw
2. Phillips head screwdriver
3. Drill & 6.5mm drill bit
4. PVC primer & glue



Installation of the control unit

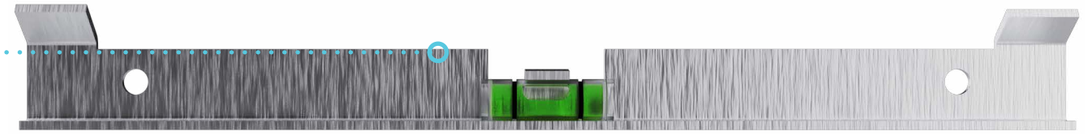
Read Carefully before Installation

- Install the control unit a minimum of 900mm above ground level in an area protected from the elements to avoid potential damage from severe weather conditions.
- Place the control unit a maximum of 1.5 metres away from the filter and chlorine cell.
- **Do not** mount the unit in direct sunlight.
- **Do not** mount the unit in a manner that will restrict air-flow around the heatsink (back plate).
- **Do not** allow the unit to operate lying down. This can cause overheating.
- **Do not** plug in a pump(s) that draws more than 8.5 amps.
- **Do not** use extension leads to supply power to the unit or between the unit and the pump.
- **Do not** mount the unit above heat sources such as gas heaters.
- Ensure that the installation complies with the requirements of the AS/NZS 3000 wiring rules.



Installation

Fit two screws (supplied) into the control unit wall bracket and hang the control unit.



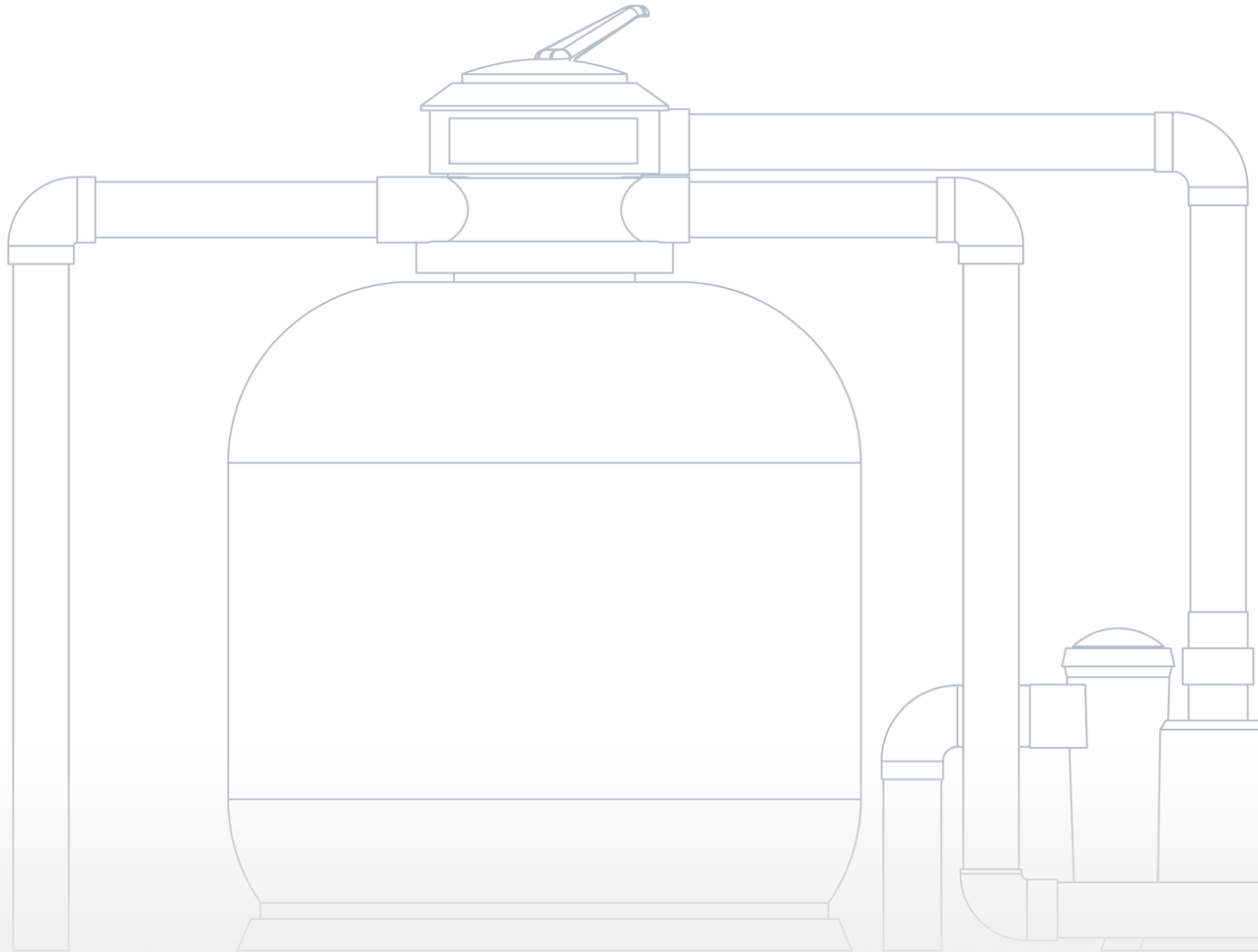
- Ensure the power pack is mounted against a wall or flat surface of at least 350 x 350 mm.
- Using the bracket as a template, position the bracket, ensuring it's level and mark the screw hole positions.
- For a timber wall, drill two 3mm diameter holes where the line was marked from step 2.
- Screw the mounting bracket to the wall using the screws provided.
- For a masonry wall, drill two 5mm diameter holes where the line was marked from step 2.
- Fit the Rohr plugs then screw the mounting bracket to the wall using the screws provided.
- Use a level to ensure accurate positioning.
- After securely attaching the wall bracket to the wall with the tabs pointing up, hang the control unit on it by aligning the niches in the back of the unit with the protrusions on the bracket.

Remove the unit from the hanging bracket.



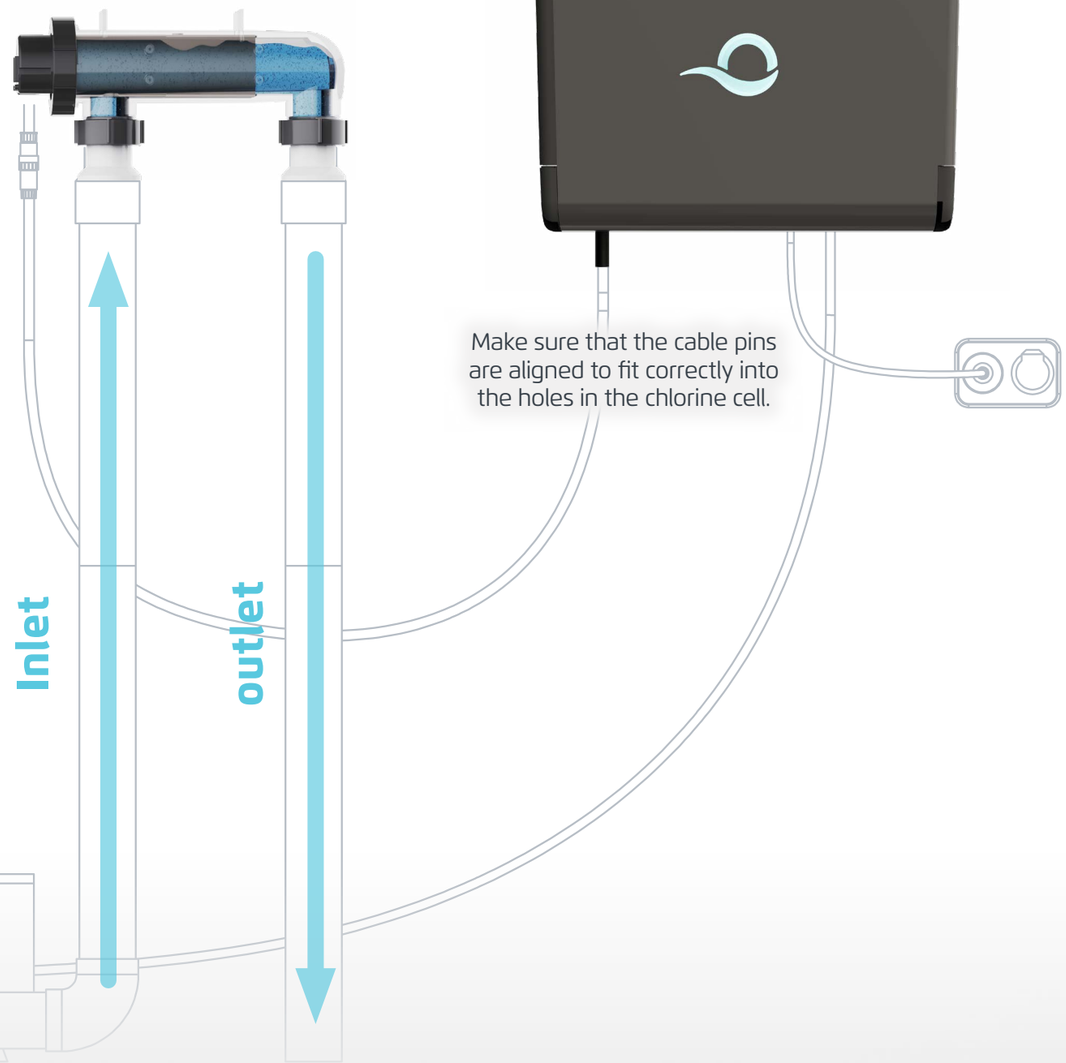
- Connect the Chlorinator Cell cable. Make sure that the cable pins are aligned to fit into the holes in the chlorine cell.
- Plug the pool pump power cable into the rear of the control unit.
- Reattach the control unit onto the wall bracket.

Installation of the chlorine cell



Plumb the chlorine cell onto the return pipe after the filter. The chlorinator assembly should always be last in the plumbing line, after other auxiliary pool equipment such as heaters and sensors.

Connect the control unit and chlorine cell by connecting the thicker power/communication cable from the left side of the control unit to the short cable connected to the chlorine cell.



Make sure that the cable pins are aligned to fit correctly into the holes in the chlorine cell.

Installation of the Mineral Swim™ purifier (Ozone Only)

The chlorinator and ozone assembly should always be last in the plumbing line, after other auxillary pool equipment such as heaters and sensors.

- To install the ozone assembly use the pipe connection unions to plumb the ozone injector and manifolds into the wet side assembly, last on the return line to the pool.
- Ensure the direction of the ozone injector is correct (small end inlet side / large end outlet side).
- Use the supplied connectors (A and B below) to connect the ozone assembly to the pool pipes to connect the chlorinator.



If your system has a separate chlorinator with an external controller connect the Mineral Swim™ Purifier as follows using the supplied **A** and **B** connectors to join the assembly to the pool pipes.



Once the plumbing is complete, connect the Ozone Line Tubing from the nozzle at the bottom right of the control unit (dry side) to the nozzle on the cone in the ozone injector inlet (wet side). The quick-connect fittings only require a push to secure. See illustration (Fig.1).

Turn on the pump and use a finger to feel for suction on the venturi. If no suction can be felt, then fit the small orifice plate to the cell outlet. This will increase vacuum (Fig.2). If gas bubbles from the eyeball returns are excessive, then fit the large orifice plate to the Ozone outlet. This will decrease vacuum (Fig.3).

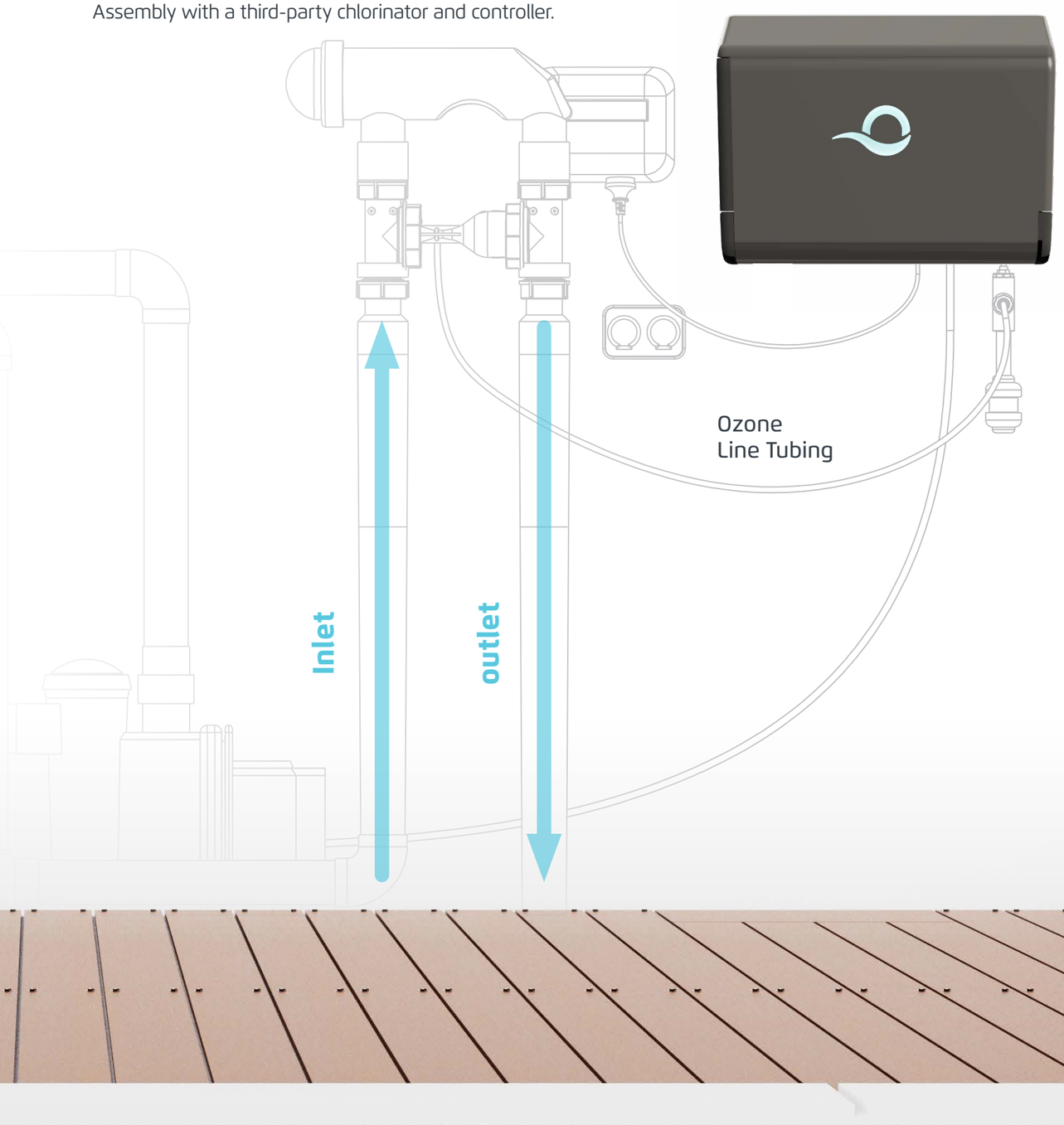


Connect the flood valve under the ozone generator. Connect the Ozone Line Tubing from the nozzle at the bottom right of the Flood Valve to the nozzle on the cone in the ozone injector inlet (wet side). The quick-connect fittings only require a push to secure. See illustration (Fig.1).

The Ozone Line Tubing includes two check valves to prevent water from travelling back into the head unit and a small label identifying the control unit end and wet end. Ensure the tube line is connected on its designated side to maintain the correct ozone flow direction.



Typical installation set-up of the Mineral Swim™ Ozone Assembly with a third-party chlorinator and controller.



Installation of Mineral Swim™ Generator & Purifier Pro (Chlorinator & Ozone Purifier)

The chlorinator and ozone assembly should always be last in the plumbing line, after other auxiliary pool equipment such as heaters and sensors.

Connect the chlorine cell onto the ozone assembly. Using the supplied connector A join the system assembly onto the pool pipes. Hand tighten the compression union fitting nuts.

Turn on the pump and use a finger to feel for suction on the venturi.
If no suction can be felt, then fit the small orifice plate to the cell outlet.
This will increase vacuum (Fig.2). If gas bubbles from the eyeball returns are excessive, then fit the large orifice plate to the venturi outlet.
This will decrease vacuum (Fig.3). Connect the Ozone Line Tubing from the nozzle at the bottom right of the control unit (dry side) to the nozzle on the cone in the ozone injector inlet (wet side). The quick-connect fittings only require a push to secure. See illustration (Page 10 Fig.1).

Ensure the Ozone Line Tubing is connected on its designated side to maintain the correct ozone flow direction.

FIG.2

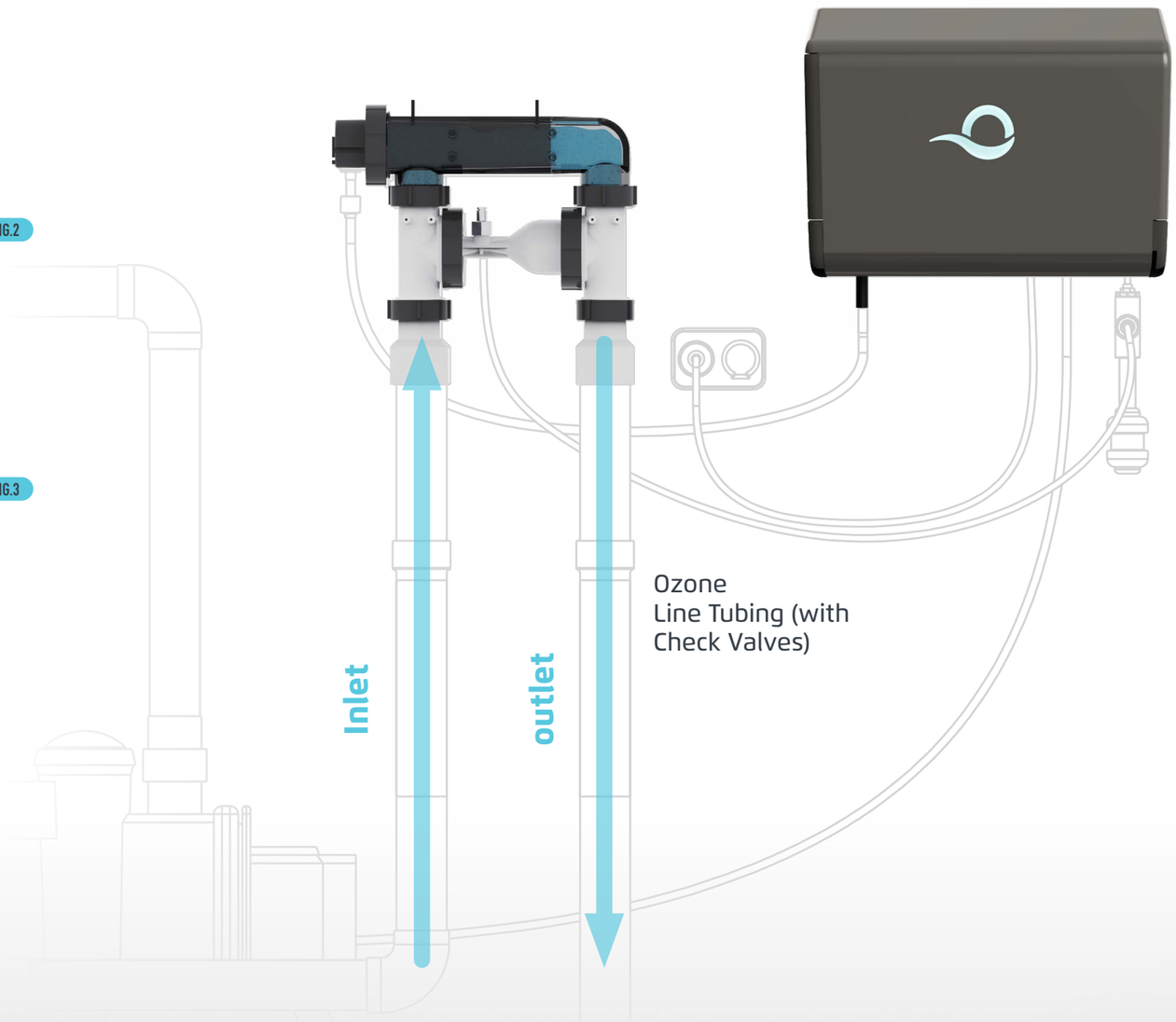


FIG.3



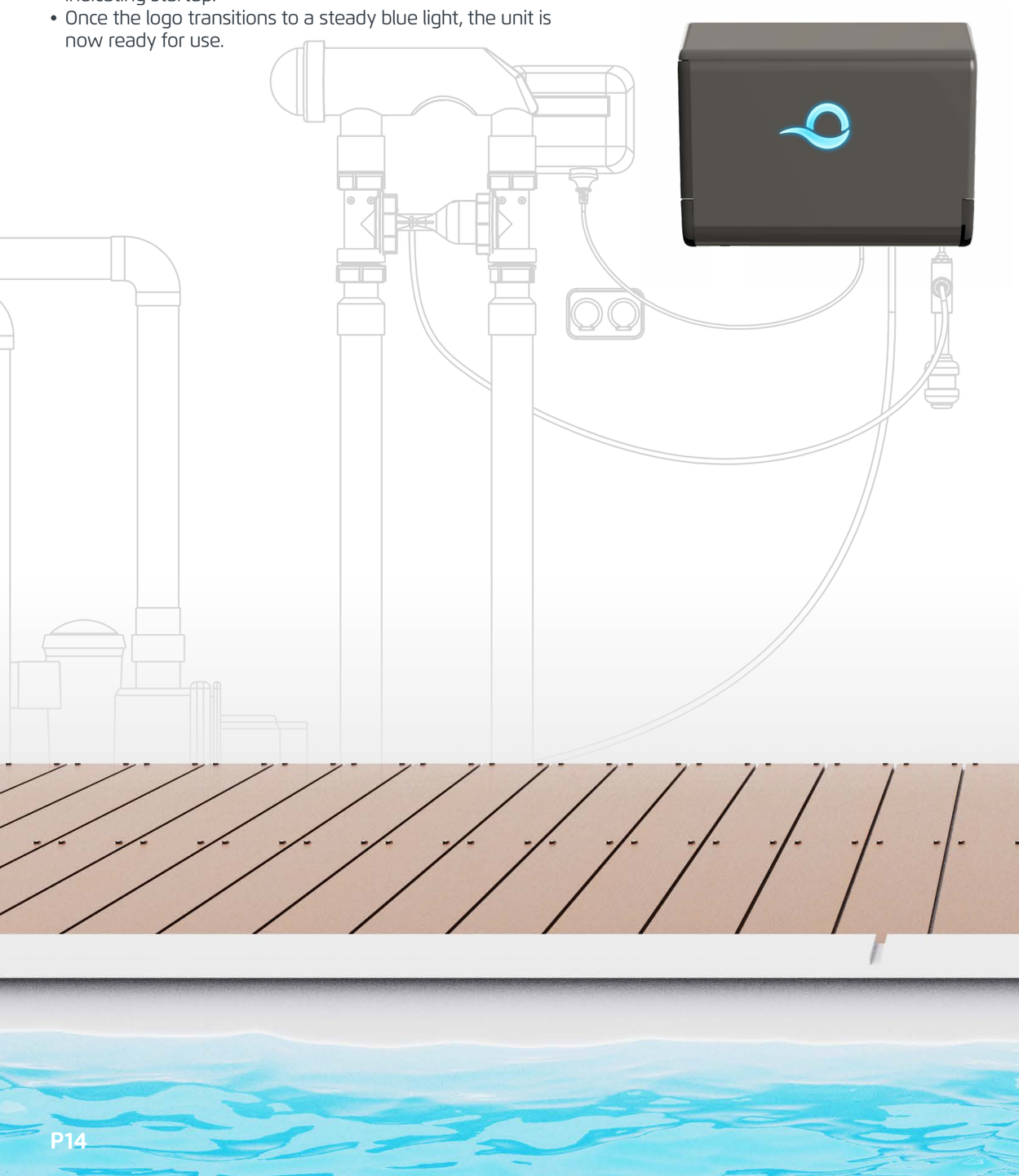






Installation finish

- For best results leave the plumbing to cure for 24 hours.
- If you are using a third party chlorinator plug the control unit in to the chlorinator pump socket and turn on the power.
- Ensure both right and left drawers are inserted fully as they may have moved during transport.
- Watch for the control unit's front logo to gradually illuminate blue, indicating startup.
- Once the logo transitions to a steady blue light, the unit is now ready for use.



System startup

Balance the pool water

- Before starting the system, ensure the pool water is correctly balanced within the recommended ranges shown in the table below. Ensure the recommended salt/mineral levels are reached after being fully dissolved.
- A system that includes the Generator Module is designed to maintain appropriate levels of chlorine in your pool. Therefore, the pool water needs to be properly balanced before operating the system.
- Any adjustments to the chemical balance of the pool may take several hours.
- If you have a new pool confirm with the builder that chemicals can be safely added to the pool.

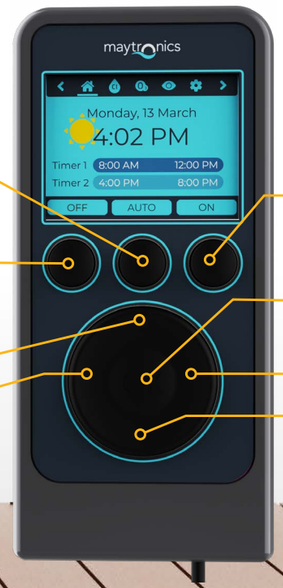
Optimal water balance guide

Chlorine	1–3 ppm
pH	Fibreglass 7.0–7.2 / Concrete 7.2-7.6
Total Alkalinity	Concrete 80 - 125 ppm / Fibreglass 125 - 150 ppm
Minerals	3,500–4,500 ppm

NOTE: Regular water testing must be performed to ensure the water is within the recommended ranges.

Programming the system

Program the system by using the buttons located on the remote control inside the control unit.



AUTO
Runs according to set programmed times

OFF
Does not run

Navigate UP

Navigate LEFT/BACK

ON
Runs system at full output for 24 hours

OK
Press to confirm selection

Navigate RIGHT/NEXT

Navigate DOWN

System startup

Set initial runtime configurations
- Press any button on the remote to activate the screen
- Press ***Right/Next*** to navigate to the ***'Settings'*** tab (Fig.4)

In the ***'Settings'*** menu select your run mode, there are two options:

(a) If you are using another separate chlorinator/controller select ***'Slave Mode'*** and press ***'Enable'*** to allow that chlorinator/controller to control your system run times.

(b) If your not using another chlorinator/controller select ***'Smart Setup'*** and press ***'OK'*** (Fig.5).

Smart Setup - Run Mode
Select your ***'Run Mode'*** preference, there are two options (Fig.6):

(a) ***'Eco Mode'*** will provide an adjusted schedule based on the time of year to ensure your pool stays clean year-round using an energy efficient schedule for lower energy costs.

(b) ***'Standard Mode'*** sets the system to run for 8-hours per day all-year round.

Press ***Next/Back*** to select either option.

Press ***'OK'*** to select your preference.

Smart Setup - Pool Size
Press ***Up/Down*** to alternate between the pool size options. Press ***'OK'*** to select the size closest to your pool (Fig.7).

Smart Setup - Bather Load
Press ***Up/Down*** to select the option which closest describes how many people use your pool (Fig.8).

Smart Setup - Country
Scroll ***Up/Down*** through the ***'Country'*** options. Press ***'OK'*** to select your country of residence (Fig.9).

Smart Setup - Post Code
To enter your post code press ***Up/Down*** to scroll through each digit in the post code. Press ***Next/Back*** to select each corresponding number position.
When all numbers are correct for your postcode, press ***'OK'*** (Fig.10).

Finish Smart Setup
Once all the smart setup steps are complete a Setup Successful message will appear as confirmation.
Press ***'OK'*** to clear the screen.

FIG.4

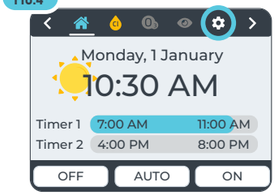


FIG.5

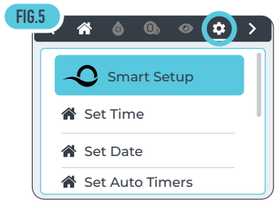


FIG.6

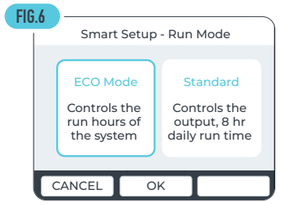


FIG.7

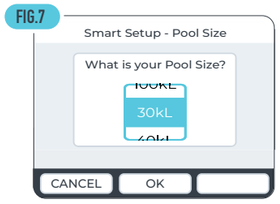


FIG.8

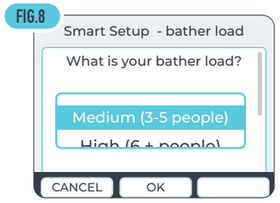
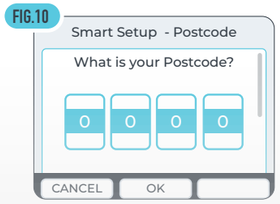


FIG.9



FIG.10



Set the time
In the ***Settings*** menu navigate down to ***'Set Time'*** (Fig.11).
Press ***Next*** to scroll to the hour box.
Press ***Down*** to select the current hour of the day
Press ***Next*** to scroll to the minute box.
Press ***Down*** to select the minute of the hour.
Press ***Next*** to scroll to the ***'AM/PM'*** box.
Press ***Down*** to select either ***'AM'*** or ***'PM'***.
When complete, press ***'OK'*** (Fig.12).

FIG.11

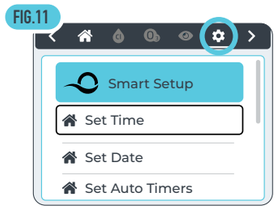


FIG.12



Set the power cost (optional)
In the ***Settings*** menu, navigate down to ***'Set Power Cost'*** (Fig.13). To select your electricity cost ***$ per kWh*** press ***Up/Down*** press ***'OK'*** to select the unit cost (Fig.14).

FIG.13

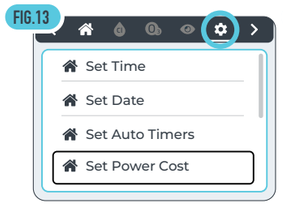
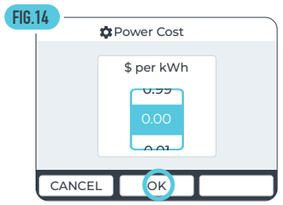


FIG.14

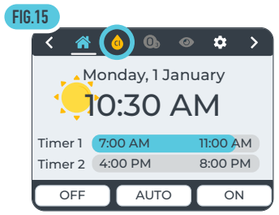


Set the Chlorine Output

Navigate across to the ***'CL'*** tab (Fig.15).
There are 3 options for adjusting the chlorine output on your system.
'DISABLE': Turns off the chlorine output
'SETPOINT': Allows you to manually set your preferred output between 0-100%
'MAX': Sets the output to 100%

Press ***Up/Down*** to manually adjust the chlorine output between 0 and 100% until you have the desired output level then press ***'SETPOINT'***.
Alternatively for 0% press ***'DISABLE'***, for 100% press ***'MAX'***.

FIG.15

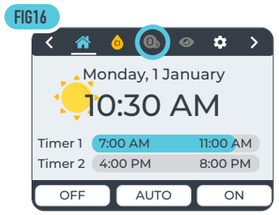


Adjusting Ozone Output

Navigate across to the ***O_3*** tab (Fig.16).
There are 3 options for adjusting the ozone output on your system.
'DISABLE': Turns off the ozone output
'SETPOINT': Allows you to manually set your preferred output between 0-100%
'MAX': Sets the output to 100%

Press ***Up/Down*** to manually adjust the ozone output between 0 and 100% until you have the desired output level then press ***'SETPOINT'***.
Alternatively for 0% press ***'DISABLE'***, for 100% press ***'MAX'***.

FIG16



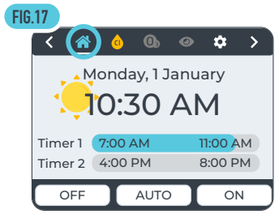
Operating the system

Navigate to the ***HOME*** screen (Fig.17).
To check the system for any leaks select ***'ON'***
The system will turn on.
Ensure there are no leaks.

There are 3 options for operating your system:
'OFF': Turns the pump, chlorine and ozone output off
'AUTO': Sets the system to operate to the programmed schedule.
'ON': Runs the system for 24 hours at maximum output (Purifier and Generator Modules)
After 24 hours the system will revert to ***'AUTO'*** function

To activate these options simply press ***'OFF/AUTO/ON'***

FIG.17



Manual adjustments

Following the initial setup you are able to adjust any settings using the following instructions, to ensure a sparkling pool all year round.

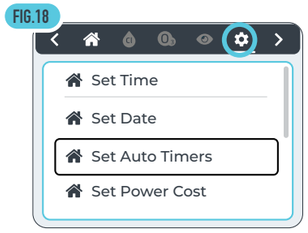
Adjusting Seasonal Schedules

Navigate to the ***'Settings'*** menu and press Down to ***'Set Auto Timers'*** and press ***'OK'***.
Press ***Next/Back*** to navigate between the 4 seasons below.
You can set two-timers (morning/afternoon) for each season (Fig.18).

Season 1	Season 2	Season 3	Season 4
DEC-JAN-FEB	MAR-APR-MAY	JUN-JUL-AUG	SEPT-OCT-NOV

You can set two-timers (morning/afternoon) for each season.

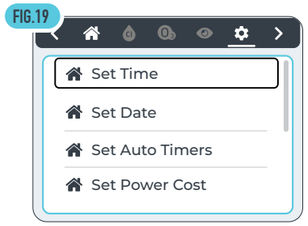
FIG.18



Amending the Timers

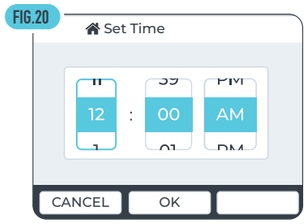
Enter the start time and duration
Press ***Up/Down*** to select ***Timer 1*** or ***Timer 2*** then press ***'OK'*** (Fig.19).

FIG.19



Press ***Next*** to scroll to the hour box (Fig.20).
Press ***Down*** to select the current hour of the day
Press ***Next*** to scroll to the minute box
Press ***Down*** to select the minute of the hour
Press ***Next*** to scroll to the ***'AM/PM'*** box
Press ***Next*** to scroll to duration hours box
Press ***Down*** until you have highlighted the hours that you want the system to run for from the set start time
When complete press ***'SAVE'*** to save for this season only or press ***'SAVE ALL'*** to save the settings for all seasons

FIG.20



Maintenance

Chlorine Cell Maintenance

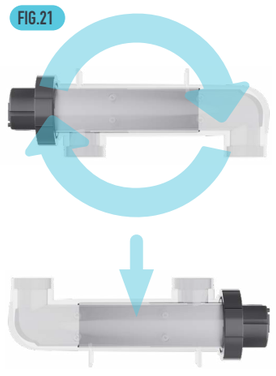
The electrode has been designed for reverse polarity cleaning and velocity cleaning. It is normal for one of the outside plates to build up a white deposit. This should be removed when the unit changes polarity. The deposit will then form on the other side.

The deposit amount will depend mostly on the running time, calcium level in the water and pH level. If the calcium level in the water is above 250ppm or other metallic contaminants are present, then it may be necessary to periodically acid wash the electrode.

To acid wash the electrode, prepare 1 Litre of dilute acid solution as follows:

- Fill a plastic bucket with 900ml of water.
- Add 100ml of swimming pool grade hydrochloric acid. Note: Take safety precautions when handling acids.
- Disconnect power to the chlorinator.
- Uncouple the two pipe connectors under the electrode. (do not disconnect the electrical lead)
- Invert the electrode assembly and rest it on a flat surface (Fig.21).
- Clear any accumulated debris from the plates.
- Pour the diluted acid into one of the ports until the electrodes and white deposits are completely immersed.
- Stand for 10 to 15 minutes.
- Discard the solution in the electrode.
- If deposits remain, then repeat the process.
- When the electrode is sufficiently clean, flush it with fresh water.
- Refit the electrode to the pipe work. Ensure that the O rings are correctly seated, clean and lubricated with silicon grease.

FIG.21



Ozone Assembly Maintenance

Replace the Ozone Line Tubing (with Check Valves) every 12 months or when any water is visibly leaking from the Drain Valve.

Warranty

Warranty Terms for Mineral Swim™ and Ecoswim© Systems:

Warranty Period	Coverage
Year 1	All parts & labour
Year 2-3	All parts (excludes labour)
Year 4-5 (pro rata)	Chlorinator Cell (30% discount & excludes labour)

Activate your Mineral Swim™ warranty by registering at: ***maytronics.com.au/support/registration***

Maytronics warrants the Mineral Swim system to be free from defects in material or workmanship, under normal use and service, provided it is installed as per the installation instructions and specifications.

- Maytronics shall not be responsible for any consequential or incidental damages of any nature whatsoever.
- No wholesaler, agent, dealer, contractor, or other person is authorised to give any warranty on behalf of Maytronics. This warranty is void if the product has been altered in any way after leaving the factory.

Warranty Exclusions

- Incorrect mounting of the power pack or electrode, including but not limited to:
- Power pack mounted in direct sunlight.
- Restricted airflow around the heat sink (back plate).
- Mounted below 900mm from the ground or in areas prone to flooding.
- Operated lying down.
- Oversized pumps installed with a current draw of more than 8.5 amps.
- Using an extension lead to power the unit or between the unit and the pump.
- Mounted above a heat source such as a gas heater.
- Incorrect salt level or water balance.
- Poor water flow.
- Excessive acid washing or washing in concentrated acid solutions. The maximum recommended concentration is 10% Hydrochloric acid. Concentrations above this can strip the electrode coatings and damage the polymer seals and end cap.
- Electrode damage due to mechanical cleaning.
- Excessive use of algaecides. Copper-based algaecides coat the electrodes and cause false low salt signals and loss of chlorine production.
- Unfiltered water entering the cell.
- Metallic contaminants from the water.
- Consequential damage caused by the failure of other equipment in the pool installation.
- Blown fuse.
- Vermin/insect infestation in the power pack or cell end cap.
- Water or dust contamination in the power pack.
- Damage due to causes beyond the control of Maytronics.
- Leaks due to incorrect installation.
- Damage caused by pressures of more than 200 kPa. Note that a loss of prime can cause a water hammer effect in the cell that exceeds 200 kPa.
- Materials supplied or workmanship performed by others in the process of installation.
- Problems resulting from:
- Failure to operate the products in accordance with recommended instructions.
- Failure to maintain pool water chemistry in accordance with recommended levels.
- Inadequate chlorine output due to incorrect sizing
- Tampering, accident, abuse, negligence, unauthorised repairs or alterations,
- Fire, flood, lightning, freezing, external water, war, or acts of God.

Troubleshooting guide

EVENT LOG	EVENT CODE	POTENTIAL CAUSES	ACTION REQUIRED
No display		• No mains power. • Mineral Swim™ control unit plug removed from power point. • Mineral Swim™ control unit fuse blown. • Unit is turned off. • Transformer thermostat has cycled	• Ensure there is mains power available. • Ensure Mineral Swim™ control unit is plugged into a general power point and it is turned on. • Check fuse condition and if it's blown replace it. If the problem persists please contact an authorised Maytronics repair technician. • Ensure manual mode and sanitation are switched on. • Ensure unit is not exposed to direct sunlight. • Ensure unit has sufficient convection cooling air and is not affected by a hot air source
Low/no chlorine	201	• Insufficient run times . • Incorrect cell production setting Low salt/mineral levels. • Electrode contamination (alarms with low salt but salt readings are correct).	• Adjust run times to allow more production. • Add acid until pH is between 7.2 and 7.6. • Increase chlorine output. • Add salt/minerals to maintain recommended levels. • Acid wash the cell per "Chlorine Cell Maintenance".
Chlorine too high	202	• High chlorine is related to over production due to output or run time.	• Confirm salt levels with your local pool shop. • Adjust chlorine output, run time or a combination of both. If adjusting run time always ensure the system maintains at least minimum time to turn-over pool water at least once per day. Your local pool expert can advise on this for your pool size and filtration equipment.
Low Flow	451	• Water flow may be reduced by restrictions in the system including clogged pump or skimmer baskets, dirty filters, low pool water level or mechanically via closed valves.	• Check for sufficient water in your pool, check filter pressure, check pump filter. • Ensure pump is on and no flow obstructions. • Ensure correct valves are open. • Backwash your filter, clean your pump filter.
Low Salt Alert	250	Salt loss occurs through filter back washing, wet weather conditions and swimming activity. Salt needs to be replaced periodically to maintain optimal levels for chlorinator operation (3000-6500 ppm).	• Confirm salt levels with your local pool shop and add salt as required.

Troubleshooting guide

EVENT LOG	EVENT CODE	POTENTIAL CAUSES	ACTION REQUIRED
High Salt Alert	251	• High salt levels. • High water temperature.	• Confirm salt levels with your local pool shop. • For very high levels above 10,000ppm, switch off the system, remove water from pool via backwash and top up to dilute the salt to normal range.
Scale build-up on cell		• Scale deposits are caused either by high calcium concentration, or high pH, high alkalinity. Note - unbalanced saturation index (Langelier) can cause excessive calcium leaching from the pool shell.	• Maytronics Chlorinators are reversing cell which minimises cell maintenance. However periodic maintenance is still required. If calcium build up is noted, check and adjust pool chemistry to ensure balanced water and clean the cell per “Chlorine Cell Maintenance” section above.
Cloudy Water		• Incorrect chemical balance. • Infrequent backwashing or inefficient filtration. • Incorrect pH levels. • Algae. • High solids content.	• Inspect filter to ensure it is not clogged and backwash as required. • Ensure your running time is sufficient for seasonal conditions. • Check your pH levels and adjust as necessary. • Check Chlorine to ensure systems maintains consistent 1.0 – 3 ppm chlorine level. Suggest use of a flocculant if the problem persists. Warning: Misuse of copper based algaecide will interfere with the operation of the chlorinator and may void the warranty.

SUPPORT

If you require further assistance, please contact the Maytronics customer service team, available during standard business hours on the contact details below:

P: 1300 693 657 **| E:** infoau@maytronics.com

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