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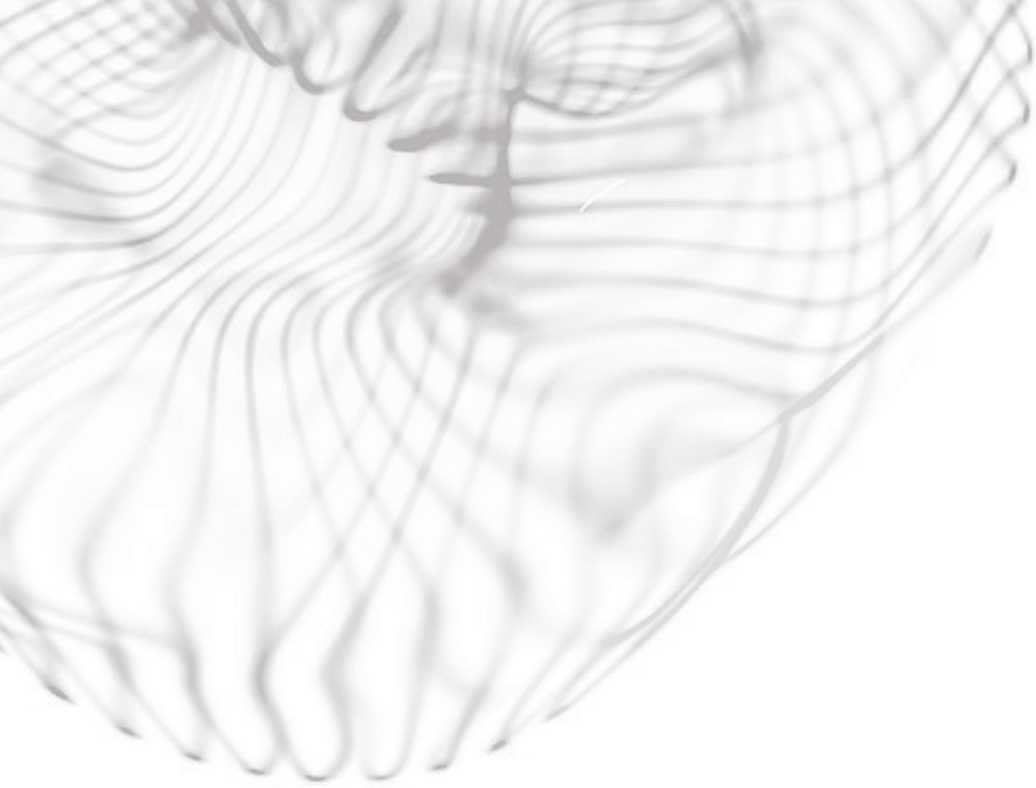
MineralChlor®

GOLD

STIMULATE LIFE ENRICHMENT WITH
THE IDEAL CHLORINE GENERATOR FOR
MINERAL WATER POOLS

Model:
MCG25QT

INSTRUCTION MANUAL



DISCLAIMER

- 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.
- Australian Innovative Systems Pty Ltd reserves the right to change the specifications of the hardware and software described herein at any time without prior notice.
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- Australian Innovative Systems makes no warranties for damages resulting from lack of supply of chlorine due to a mistaken operation or malfunction of the chlorine generator or use of non-genuine replacement parts.

TRADEMARK ACKNOWLEDGEMENTS

MineralChlor® Gold is a trademark of Australian Innovative Systems Pty Ltd

USE OF GENUINE AUSTRALIAN INNOVATIVE SYSTEMS REPLACEMENT PARTS IS RECOMMENDED.

This product is designed to perform optimally when used with genuine Australian Innovative Systems replacement parts. Australian Innovative Systems Pty Ltd shall not be liable for any damages to this product caused by the use of non-genuine replacement parts (e.g. electrode.). Please note that this warranty does not apply to repairs arising out of the malfunction of non-genuine replacement parts, although you may request such repairs on a chargeable basis.

PURCHASED FROM: _____

PURCHASED DATE: _____

NOTE: Proof of purchase / installation is required for warranty claims. Please keep your records in a safe place.

MineralChlor® GOLD

CHLORINE GENERATOR FUNCTIONS

Fig. 1

1. **Min/Off**
   Press to reduce the chlorine output. When no lights are lit, the chlorine generator is off.

2. **Max/On**
   Press to turn on and increase the chlorine output.

3. **Chlorine Production**
   Each light represents 10% of output i.e. 5 lights = 50% output.

4. **High TDS (Total Dissolved Solids)**
   If light on or flashing see Troubleshooting Guide, pages 14–15.

5. **Low TDS (Total Dissolved Solids)**
   If light on or flashing see Troubleshooting Guide, pages 14–15.

6. **Water Flow**
   If light flashes and chlorine generator beeps then no water is flowing through the electrode housing. See Troubleshooting Guide, pages 14–15.

7. **Power Status**
   When light is on the chlorine generator power supply is operating.

8. **To Access Time Clock**
   Pull forward at these points and door will fold down.

9. **Pump Outlet Socket**
   The three pin plug supplying power to the pump is connected here.

THE MINERALCHLOR® GOLD MINERAL WATER CHLORINATION SYSTEM

Congratulations on your choice of a Mineralchlor® Gold mineral water chlorinator system for your swimming pool. The Mineralchlor® Gold mineral water chlorinator you have purchased is designed for easy and simplistic operation and maintenance. By following these instructions, you are assured years of trouble-free operation.

These instructions have been compiled and produced to help you get the maximum results from your unit and to assist you to fully understand and correctly operate your Mineralchlor® Gold mineral water chlorinator.

Please take the time to read these instructions thoroughly before attempting to operate your unit. Should you require additional information or further assistance, please do not hesitate to contact your local Mineralchlor® Gold representative or visit our website www.aiswater.com.au.

WATER BALANCE

For best performance and operation of your Mineralchlor® Gold mineral water chlorination system, certain water balances must be maintained within your swimming pool. Please check your pool water and ensure that your chemical balances are within the following guidelines.

Chlorine	2.0 – 4.0 ppm
pH	7.2 – 7.8
TA (Total Alkalinity)	80 – 200 ppm
Hardness	150 – 350 ppm
Cyanuric acid	30 – 50 ppm
Phosphates	0 – 500 ppb
Salinity	2,500 – 3,500 ppm

Adjust your pool water balance to achieve the above levels. Your local pool shop can assist here to give you accurate readings and aid in correct dosages as necessary.

CHLORINE GENERATOR INSTALLATION

FITTING THE CHLORINATOR CELL HOUSING

The Mineralchlor® Gold cell housing must be plumbed into the return line of the pool filter system after the filter and any diversion valves. Please refer to the installation diagram for the correct method of installation (Fig. 3) and note installation of a gas trap below (Fig. 2).

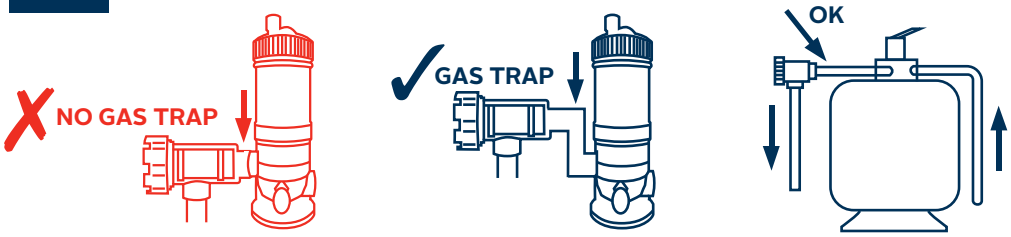
In situations where a heater is incorporated, the Mineralchlor® Gold housing must be installed after or in parallel to the heater. Should a solar heating system be installed, the housing must be plumbed after the solar diverters and before the heated water rejoins the main pool return line.

Please note that your cell housing has been manufactured so that 40 mm PVC pipe will fit both inlet and outlet ports internally, and 50 mm couplings will fit externally. This allows the use of either 40 mm or 50 mm PVC pipes in the pool return line.

Gas trap - the electrode housing must be installed to form a gas trap as shown below.

If water was to stop flowing and the chlorine generator continue running, chlorine gas pressure will build up in the housing and pipe work and cause damages. This can happen if water continues to run back into the electrode housing (e.g. from a outgoing pipe after the pump is turned off), allowing water to come in contact with the electrodes producing a build-up of gas. A gas trap allows the gas to displace water away from the sensor terminal, thus turning off the Chlorine generator power supply and the “water flow” alarm will sound.

Fig. 2



INSTALLING THE POWER SUPPLY

The Mineralchlor® Gold power supply is mounted on a wall using the mounting bracket and fittings supplied. After securing the bracket in the appropriate position relative to your needs, the power supply is hung on the bracket and locked into position by ensuring that the unit slips into the slots provided on the mounting bracket.

It is preferable that the power supply is mounted in a location where it is protected from accidental water spray and inclement weather. It is strongly recommended that the unit is also protected and screened from the harsh sun, but in such a way that air flows freely through the structure and does not impede the natural airflow through the power supply.

You should also ensure that the power supply is not used as a shelf to store or pack objects, as this can also impede the air flow, causing overheating and/or damage to the unit that is not covered by warranty. Mount the power supply so that you can see and reach the various controls and so that the cell lead has a comfortable margin to reach the cell terminal posts. Our recommendation is that the power supply is mounted slightly higher and to one side of the filter plant to allow easy access (refer to Fig. 3)

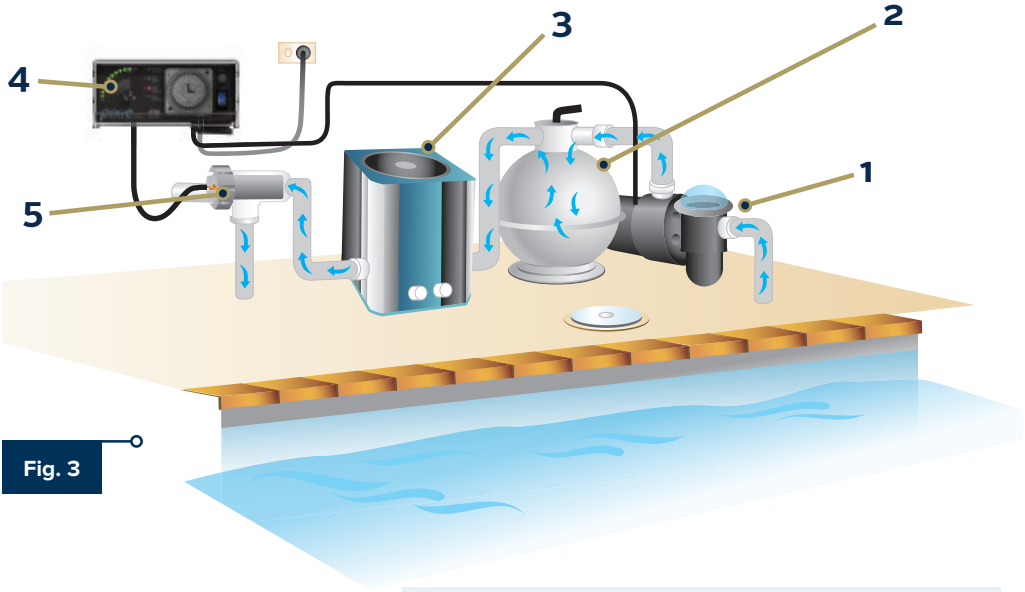


Fig. 3

1. Pump
2. Filter
3. Water heater
4. Power supply for chlorine generator
5. Chlorine generator electrodes

MineralChlor® GOLD

RAISING THE SALINITY OF A NEW POOL

Calculate the water volume of your pool as follows: average length x average width x average depth in metres. Multiply this answer by 2.5. The answer is the amount of minerals in kilograms you need to add to increase the salinity of your pool from fresh water to 2,500 ppm (the recommended minimum salinity level for this chlorine generator).

Mineral water pool owners typically prefer blended Magnesium Chloride (MgCl) as the primary mineral added to raise the salinity in their pools. This chlorine generator is also compatible with traditional Sodium Chloride (refined NaCl). Consult your local pool professional to select the right minerals for your pool.

Add the calculated quantity of minerals to the shallow end of the pool. Brush the minerals into the pool to assist them in dissolving. Undissolved minerals may stain your pool's finish.

Turn on the power to the chlorine generator and press "Min/Off" button to erase all the green production lights. This will turn the chlorine generator production off and leave the pump running.

Your chlorine generator is designed to maintain a sanitizing chlorine level in your pool. It will take several days of continuous running to reach this level. It is recommended to manually add chlorine for the initial dose to quickly acheive the 2-4ppm recommendation. At this point you can adjust the running time and production level to suit your requirements.

The most effective method of chlorinating your pool is to run the pump long enough to pass all the pool water through the filter/chlorine generator's cell at least once a day.

For example, Pool size = 60,000 ltrs; Pump flow = 200 ltrs/min.

Pool size / (pump flow x 60 mins) = 5 hours to filter the water once.

If your chlorine generator does not produce enough chlorine, increase the running time. Chlorine demand and running time will vary and depends on several factors such as: bather load, chemical balance, water temperature, sunlight exposure, type of filtration media, etc.

Check the water chemical balance (page 2). A correct chemical balance and chlorine level will ensure optimum pool water quality.

INTRODUCTION TO THE TIME CLOCK

The time clock is accessed by pulling down the bottom flap of the front cover. There are four buttons: **“AUTO”, “MAN”, “TIMER, “CLOCK”**

“Clock” and “Timer”: Used to enter and exit the timer settings. Once the timing program is set they are not used again unless you wish to alter the program times.

“Man”: Used to change settings during programming. Used also to manually turn the chlorinator and pump on and off.

“Auto”: Used to advance to the next setting during programming. Used also to enter the automatic time clock operation.

The time clock has a 24-hour clock face which is divided into 48 segments, each of 30 minutes duration (Fig. 1). Each of these segments can be turned ON (darkened) or OFF (not showing) as required, allowing for very flexible operation of your chlorinator and water filtering.

Fig. 1

INTRODUCTION TO THE TIME CLOCK (cont)

For your convenience the time clock has two factory programmed ON periods.

This program is recommended for the average pool. These are 8.00am to 12.00midday and 4.00pm to 8.00pm. (Fig. 2)

Fig. 2

To have the time clock operate correctly, you will first need to input the correct time of day into the clock.

The time clock will then, after about an hour with the power applied, maintain the correct time and settings for about 2 weeks with no power connected. This back up function allows the clock to operate during any power outage (e.g. cheaper tariff) and not lose the programmed settings

ENTERING CORRECT TIME

1. Turn on the power to the chlorine generator. If the unit starts running, press the “Man” button to turn it off.

2. Press the “Clock” button and the word CLOCK will appear on the screen. (Remember this is a 24-hour clock).

3. Press and hold down the “Auto >>” button until the correct time of day is showing on the screen. Release the button. A short press of the button will advance the time 5 minutes. If you go too far you will have to go forward until you come back to the correct time again.

4. Press the “Clock” button to save and exit this program.

Fig. 3

At this point you will have the following option:

1. To use the factory preset times and do nothing further with the time clock.

OR

2. Program custom operating times – nominate how long and at what times you want your chlorinator to run (see page 13 for recommended operating limits). See below for programming instruction.

PROGRAMMING THE TIMER

All segments between the start and stop times need to be turned ON (darkened) as shown in the picture below.

1. Press the “Timer” button, the word TIMER will appear on the screen. There will be one dark segment flashing.
2. Change this segment to ON or OFF with the “Man” button as required.
3. Advance to the next segment by pressing the “Auto >>” button.
4. Continue setting each segment ON or OFF until you have completed the full 24 hours.
5. Press the “Timer” button to save and exit this program.

Fig. 4

You have now completed the timer set up.

TIMER OPERATION

AUTOMATIC OPERATION:

Press the “Auto” button to put the chlorine generator into automatic timed operation. The word AUTO, the time of day and your set times will appear on the screen. The chlorine generator and the filter pump will turn on and off at the times you entered during programming.

Fig. 5

MANUAL OPERATION:

Press the “Man” button to either turn the generator off (e.g. for maintenance) if it is running, or turn it on if the generator is not running. To return to auto timer function the “Auto” button must be selected.

Fig. 6

Fig. 7

CHLORINATOR RUNNING TIMES

Chlorinator running times will vary from pool to pool and are dependent upon the situation they are installed into, pool size and the overall usage of the pool in general. We recommend 2 hours break for every 4 hours of operation to prolong the life of the power supply. The chlorinator should not be run for more than 10 hours continuously.

Several factors will determine the operational time of the chlorinator to be able to produce sufficient chlorine for your pool's requirements:

TIME: The longer you run your filter plant and chlorinator, the more chlorine you will produce.
RATE: The higher the chlorine output indicator lights up; the more chlorine is being produced.
CELL CLEANLINESS: The cleaner the cell, the better the chlorine production rate.
BASIC POOL CHEMISTRY: The more correctly maintained, the less chlorine waste.

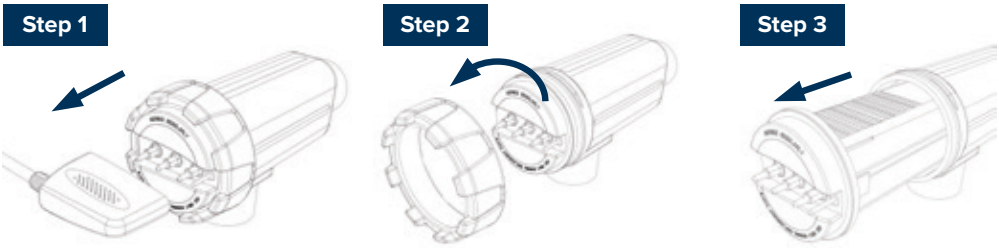
MAINTENANCE

ELECTRODE INSPECTION:

MineralChlor Gold chlorine generator has a reverse polarity feature which reduces electrode cleaning to the minimum. Regular inspection of the electrode is recommended.

ELECTRODE REMOVAL:

Ensure the power to the chlorine generator is switched off.



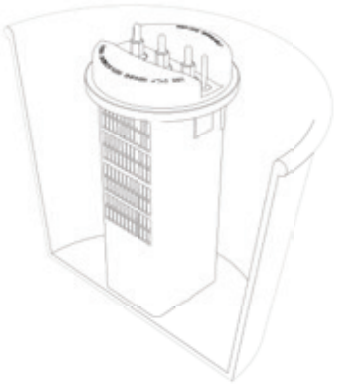
Step 1. Unplug the electrode lead from the electrode.
Step 2. Unscrew (anticlockwise) the large threaded locking nut.
Step 3. Remove the electrode from the housing. Look inside the electrode for signs of calcium build up (a white chalk like substance). If there is calcium build up the electrode will require cleaning. If cleaning is not required reassemble the electrode. Cleaning and reassembly are described on page 15.

ELECTRODE CLEANING:

Mix up a solution of 1 part hydrochloric acid to 8 parts water. Submerse the electrode in this solution. Do not submerse brass terminals.

CAUTION:

- **When working with acid the use of eye protection and rubber gloves is strongly recommended.**
- **Always refer to MSDS when dealing with hazardous chemicals.**
- **When mixing, add acid to water, but NEVER water to acid.**



There will be a reaction as the calcium is dissolved. When the reaction ceases (about 10 minutes) rinse the electrode in clean water, wipe the brass terminals dry and check that all calcium has been dissolved. If not, repeat the process with a new solution.

ELECTRODE REASSEMBLY:

Ensure the silicon seal is still in place on the inside circumference of the electrode cap. Insert the electrode back into the housing and screw on (clockwise) the locking nut. Plug the electrode lead back on to the electrode terminals and turn on the power to the chlorine generator.

WATER CHEMISTRY:

Have your water tested regularly. Transport the test water in a suitable container and have the test done as soon as possible for the most accurate results. The following is a list of recommended water chemistry levels.

Salinity 2,500 – 3,500 ppm
TA (Total Alkalinity) 80 – 200 ppm
Chlorine 2.0 – 4.0 ppm
Cyanuric acid 30 – 50 ppm
pH 7.2 – 7.8

TROUBLESHOOTING GUIDE

PROBLEM	REASON	SOLUTION
There are no lights on the chlorine generator and the pump is not running	**1.** There is no mains power **2.** The time clock is on Auto and in an OFF period	**1.** Unplug the chlorine generator from the power and test power outlet with another known working appliance **2.** Press the time clock manual button to start the chlorine generator
The power status light is on and the pump is running, but no other lights are on	The chlorine generator production is turned off	Press the **"Max/on"** button
The chlorine generator is not generating enough chlorine	**1.** Chlorine production is reduced on the chlorine generator. **2.** Chlorine generator is not operating long enough **3.** Calcified electrode **4.** Water chemistry is incorrect	**1.** Press the **"Max/on"** to increase the chlorine production **2.** Increase the operation running time **3.** Clean the electrode (see maintenance) **4.** Correct water chemistry
The Water Flow light is flashing and the generator is beeping	**1.** The pump is not running, filtration blocked, or air locked **2.** Electrode lead not properly plugged in	**1.** A large air bubble in the electrode housing will cause this alarm. Clean out the skimmer box. Check & clear any blockage. Re-prime the pump. **2.** Check the electrode lead plug is properly plugged onto the electrode

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TROUBLESHOOTING GUIDE

PROBLEM	REASON	SOLUTION
The high salinity light is on or flashing	Water salinity is to high or chlorine generator is faulty	Have salinity level tested by pool professional and decrease to 2500 ppm if necessary
The low salinity light is on or flashing	**1.** Water salinity is too low **2.** Electrode is calcified **3.** Faulty electrode	**1.** Have the salinity level tested by pool professional and increase it to 2500 ppm if necessary **2.** Clean electrode (see maintenance) **3.** Have the electrode tested and replace if necessary
There is a white powdery material on the pool bottom?	Excessive water hardness	Test the water chemistry and adjust

TECHNICAL SPECIFICATIONS

Chlorine output	25 gms/hr (grams of chlorine gas equivalent per hour)
Input voltage	190 – 250 volts. 50 – 60 Hz
Input current	1.0 amps (excluding pump)
Output voltage	15 – 26 volts DC
Output current	6 amps
Unit cooling	Fan forced air flow
Reverse time	6 – 12 hours programmable
No flow protection	Automatic water flow sensing
Water flow	150 – 450 lt/minute. 480 kpa max. pressure
IP rating	24
Warranty	**3 years (36 months) for residential applications** **1 year (12 months) for commercial applications**

Note: 1 gram of chlorine gas equivalent is equal to 10 grams of 10% liquid sodium hypochlorite (liquid pool chlorine).

WARRANTY

Your MineralChlor® Gold chlorine generator is covered by a thirty six (36) month in-factory repair warranty, on all parts and labour, from the date of purchase. This warranty applies to the original purchaser and is not transferable.

All chlorine generators are fully tested prior to being packed. If within 36 months of purchase a problem occurs due to faulty workmanship or components, AIS will (at their discretion) repair or replace the chlorine generator.

The manufacturer will not be liable for any consequential loss or damage caused by operation outside the prescribed limits as outlined in the instruction manual, incorrect installation, connection to an incorrect mains power supply, changes to internal wiring, misuse, abuse, negligence, accidental damage, normal wear and tear, or damage caused by water entry.

Note: This warranty is strictly in-factory repair. In the case of failure the complete unit must be returned to the manufacturer or their designated agent. All forward and return costs are the responsibility of the owner.

CONTACT DETAILS

In the unlikely event of a problem with your chlorine generator, please contact:

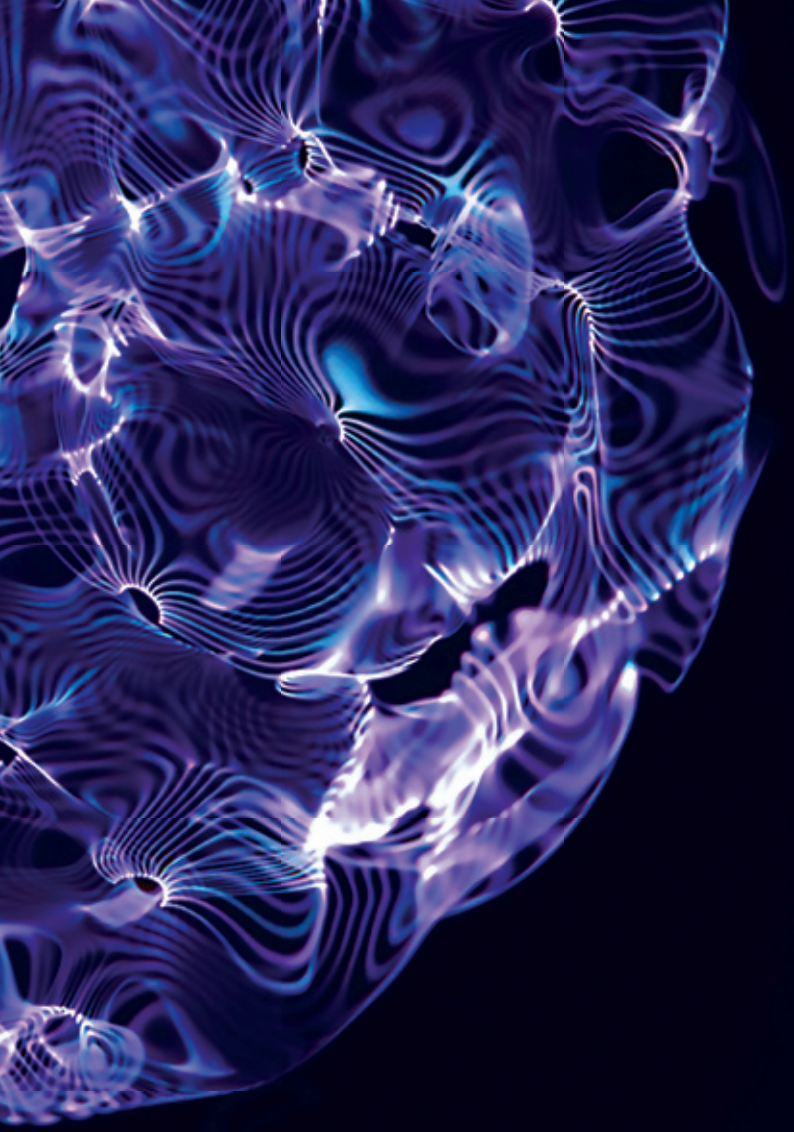
Australian warranty claims: 1800 676 076

Online warranty **www.aiswater.com.au** and go to: Support – Online warranty.

For assistance outside of the warranty period: call +61 7 3396 5222

Your local dealer:

For international warranty claims: Contact your local dealer.



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AIS WATER
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