



# ReefSys 434



Read and follow all safety instructions and important notices in these instructions, as well as on the product itself.



Before you work on your aquarium, wash your hands and arms. It is very important to remove dirt, moisturiser and other impurities.



All aquatic species have specific requirements for their care. Please seek advice from your Aqua One retailer for correct care requirements and species compatibility.



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## CUSTOMER CARE

Thank you for choosing this Aqua One product.

Your Aqua One product is covered for parts and labour for 1 year from the date of purchase as detailed in the terms of the Guarantee in this instruction manual. For any inquiries or concerns regarding this product or any of our products, please do not hesitate to contact your local Aqua One Retailer or visit Aqua One Customer Care online in your country of purchase via the websites listed.

**Australia:**  
[www.aquaone.com.au](http://www.aquaone.com.au)  
**New Zealand:**  
[www.aquaone.co.nz](http://www.aquaone.co.nz)  
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# IMPORTANT SAFEGUARDS



**If you are in any doubt about the electrical installation or safety of this product you must consult a qualified electrician.**



Water and electricity can be dangerous. Do not attempt repairs yourself. Return the appliance to an authorised service facility for repairs.



Make sure any component mounted on a tank is securely installed before operation.



Children should be supervised when using this item.



If the appliance or any electrical component of the appliance (non-immersible equipment only) falls into the water or gets wet, do not reach for it. Unplug it and then retrieve it.



Arrange a drip loop for each cable to stop water entering the power socket. If the plug or the socket does get wet, disconnect the fuse or circuit breaker before unplugging the power plug.



If the appliance shows any sign of water leakage, unplug it from the power source. Examine the appliance after installation. It should not be plugged in if there is water on parts which are not intended to be wet.



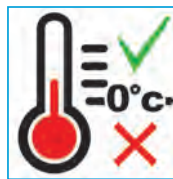
Do not operate the appliance if it has a damaged cord or plug, or if it is malfunctioning, or damaged in any other manner.



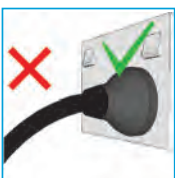
Do not use the appliance for reasons other than the intended use.



Ensure your hands are dry when turning the power switch on or off and when inserting or removing the power cable from the socket.



Do not install or store the appliance where it will be exposed to weather or temperatures below freezing.



Never yank the cable to pull it from the socket. Pull the plug carefully to disconnect.



Ensure input voltage is the same voltage as your local power supply.



Unplug the appliance from the electrical outlet when not in use or before any type of maintenance or cleaning.





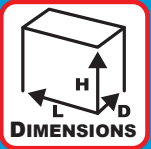



A G.F.C.I (Ground fault circuit interrupter) and surge protector is recommended for all electrical appliances.





All products are supplied with fitted plugs. This plug should not be tampered with in any way or removed. Removal or tampering with the plug invalidates our guarantee offered with this product.

# SPECIFICATIONS

 <b>MODEL</b>	 <b>AQUARIUM VOLUME</b>	 <b>SUMP VOLUME*</b>	 <b>SYSTEM VOLUME*</b>	 <b>DIMENSIONS</b>	 <b>TOP UP RESERVOIR VOLUME</b>
<b>REEFSYS 434</b>	<b>367L</b>	<b>67L</b>	<b>434L</b>	<b>150L X 55D X 53/80H</b>	<b>29L</b>

## REPLACEMENT PARTS & FILTER MEDIA

 <b>MODEL</b>	 <b>Filter Sock</b>
<b>REEFSYS 434</b>	<b>53443-FS</b>



\*Sump volume was calculated with all baffles set to maximum height at a flow rate of approximately 5000L/h.

Actual sump and total system volume will vary according to flow rates, baffle settings and equipment used.

To calculate actual system volume, we recommend that the system is set up with all equipment in place and running. After the water levels have stabilised, turn off power to all equipment.

Once all water levels have settled (allow at least ten minutes), measure all water levels and calculate volume from these measurements.

Alternatively, if the system is filled using containers, it is relatively simple to calculate by counting the containers used.

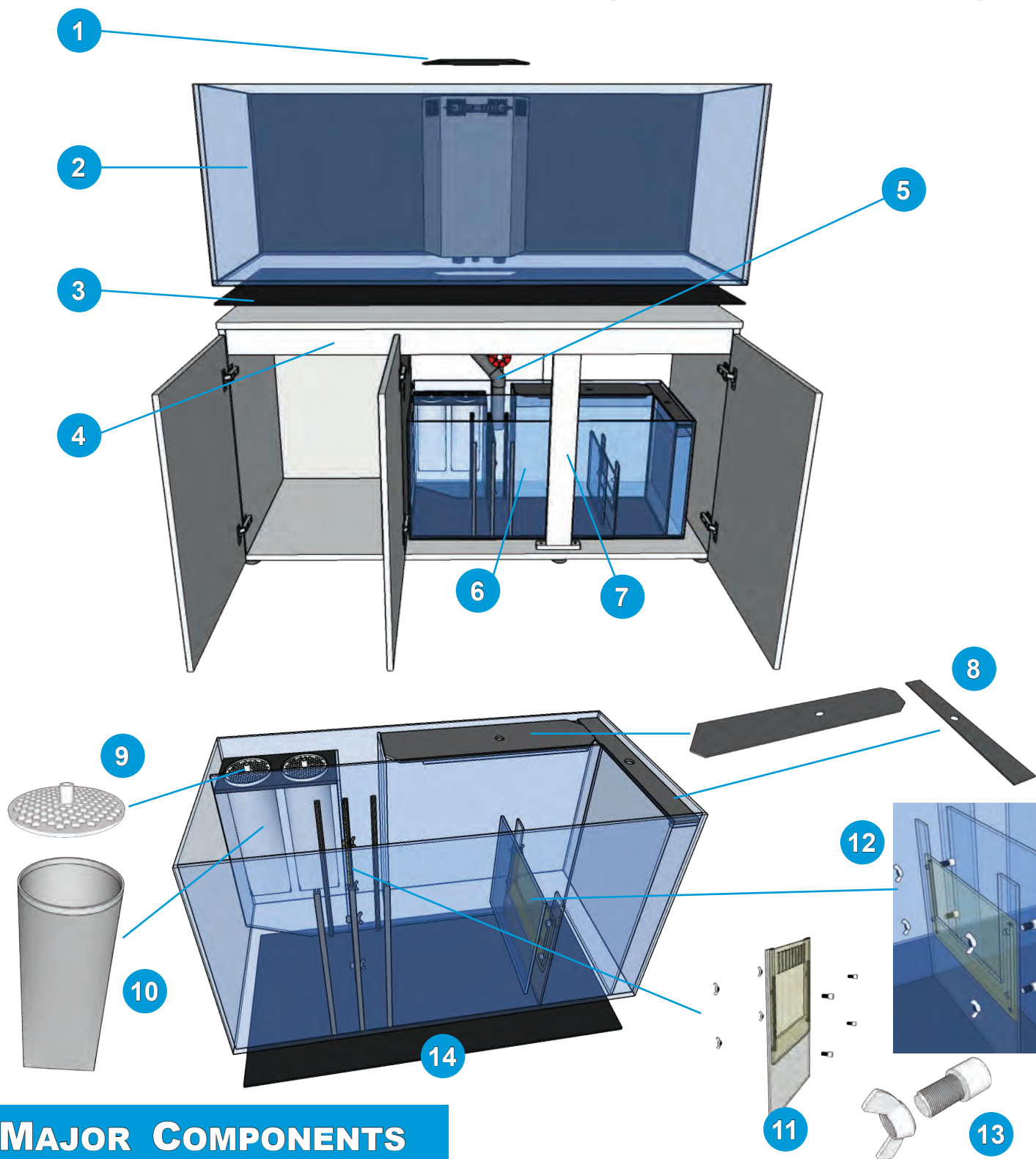


Carefully unpack the aquarium making sure you keep all the packing material until all the parts of the product have been found and the product has been assembled.

This product is shipped to you in a factory sealed carton. Should the product malfunction in any way or if the unit is damaged and requires replacement, contact the retailer where the product was purchased for inspection.

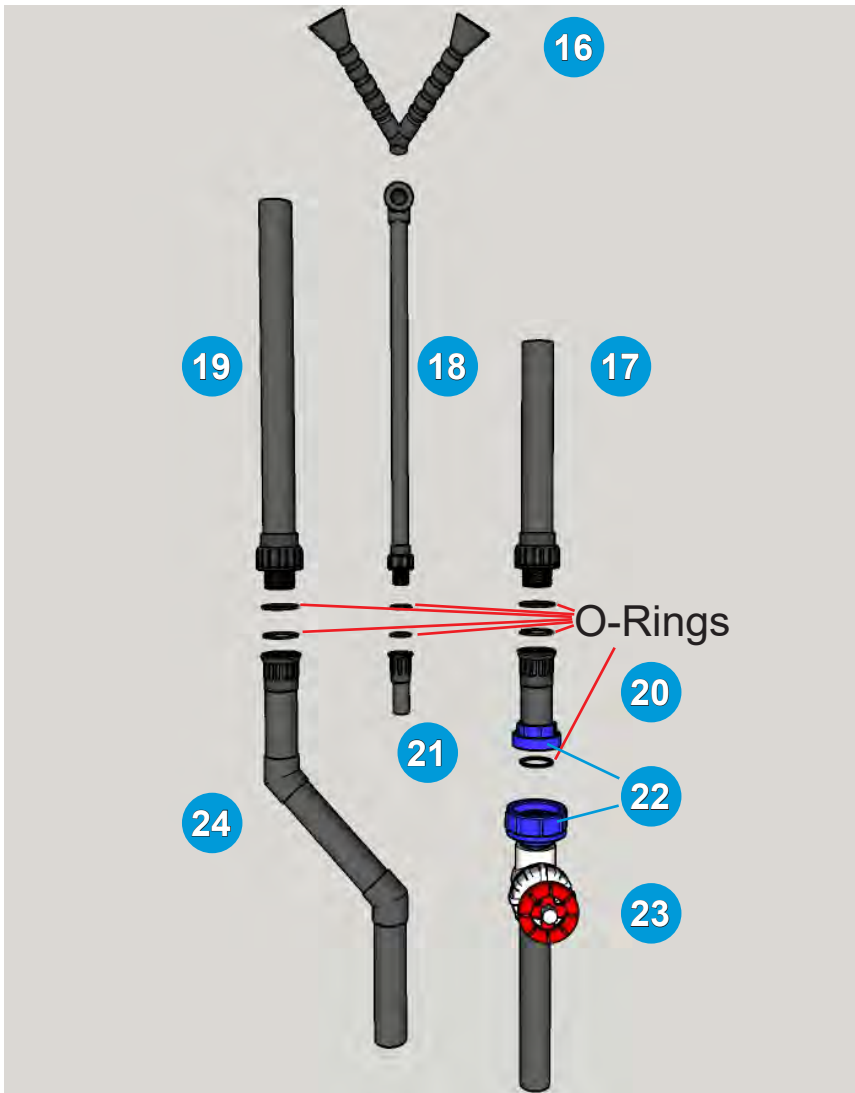


# WHAT'S IN THE BOX



## MAJOR COMPONENTS

1	Overflow Cover	5	Plumbing Assembly
2	Glass Aquarium	6	Sump
3	Foam Base	7	Removable Support
4	Cabinet		



## PLUMBING

16	Adjustable Outlet
17	Main Drain
18	Upper Return Pipe
19	Emergency Drain
20	Lower Main Drain
21	Lower Return Pipe
22	Barrel Union
23	Gate Valve
24	Lower Emergency Drain
25	Return Hose
26	Quick Coupling
27	Hose Clamp (x4)



## SUMP COMPONENTS

8	Top-Up Reservoir Lid (x2)
9	Sock Silencer (x2)
10	Filter Sock (x2)
11	Sump Baffle
12	Movable Baffle
13	Baffle Screw & Nut (x8 ea)
14	Sump Foam Base

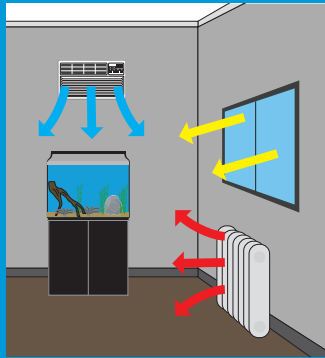




# SETTING UP



Consider where you are going to place the aquarium. Avoid direct sunlight and areas that experience large temperature fluctuations such as near heaters or air conditioners.



Place the aquarium stand on a level surface strong enough to support the weight of the aquarium, all equipment, substrate, ornaments and water in the aquarium. Note that water is heavy (1kg per litre).

1L = 1kg



## PLACE AQUARIUM



Assemble cabinet according to the instructions included with the cabinet. Ensure that the sump and the centre support are in place.



Place the aquarium on the cabinet. Ensure that the Foam Base is in place.

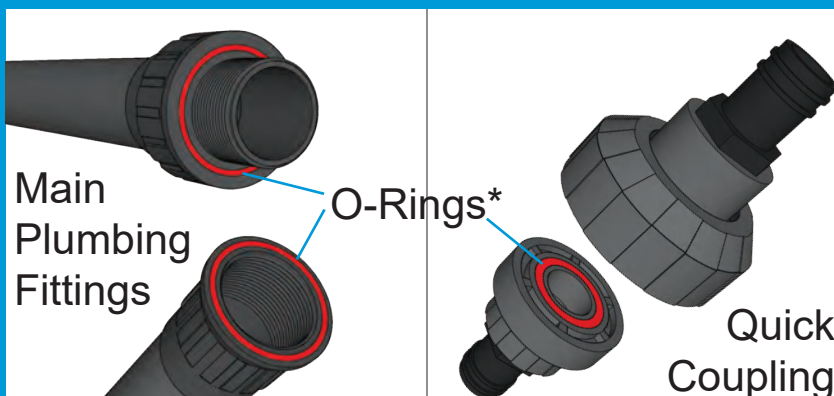


**The Removable Support is required to support the aquarium when full. NEVER remove the support unless the aquarium is no more than half filled.**

## INSTALLING PLUMBING



Before installation, check that all o-rings are present and properly seated. Missing or damaged o-rings will mean that the connections will leak.



**Take care not to overtighten the plumbing fittings. Firm hand tightening is all that is required. Overtightening may lead to damage to the fittings or the aquarium.**

\* O-rings are illustrated in red for clarity. Actual o-rings are black/grey.



Placing and tightening the plumbing fittings is best done with two people. While one person places and holds the upper fittings in place, the other can attach and tighten the lower assemblies.

## INSTALLING PLUMBING

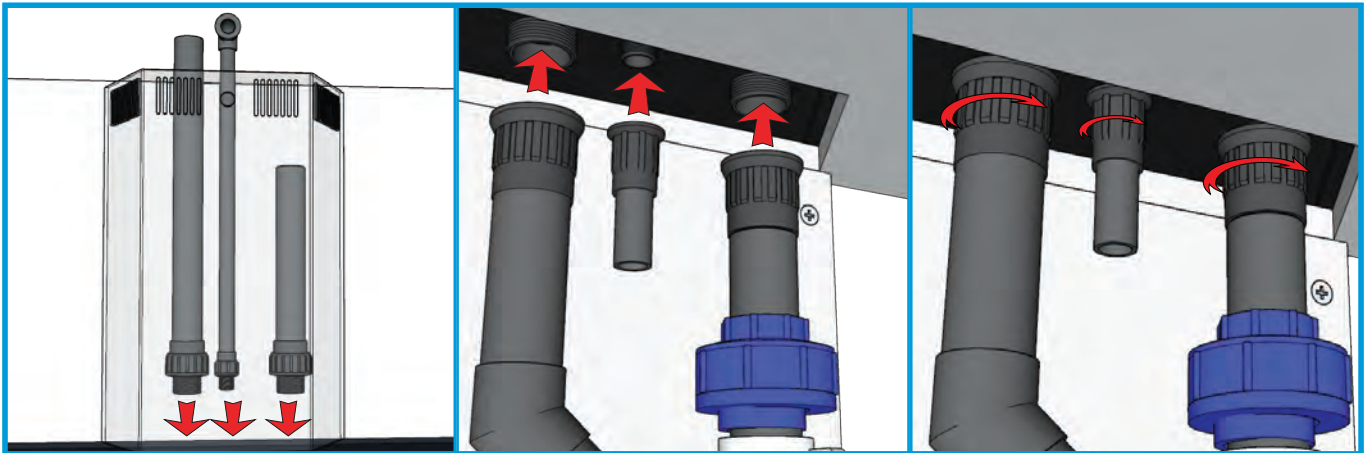
Place upper plumbing assemblies as below. Insert the threads into the holes in the bottom of the overflow.

Ensure that the pipes are in the order shown according to which ReefSys aquarium you have

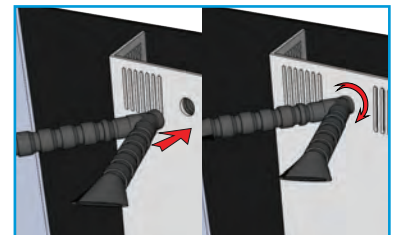
It is easiest to place the complete fittings one at a time.

Position lower plumbing assemblies as shown and secure them by hand tightening the bulkheads as shown.

Be sure to check that they are positioned correctly in relation to the sump.



Attach the flexible outlet as shown to the right.



## Preparing and Attaching Hoses

### Straightening Hose

The hose included may have been coiled for months in the box. Because of this, it will tend to remain "curly".

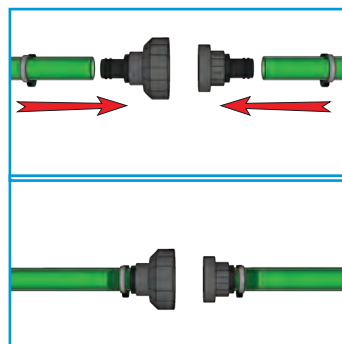
To reduce this, soak the hose in hot (not boiling) water for ten minutes. Then position it straight until it cools down.

### Fitting hose to pipes

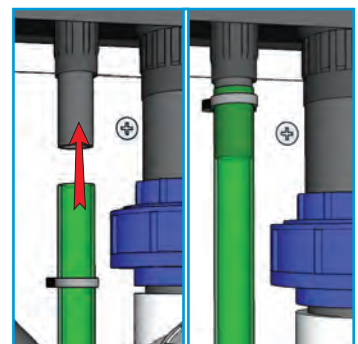
Fill a cup with hot (not boiling) water and soak the end of the hose for a few minutes. While the hose end is hot, push it at least 2cm onto the fitting and allow to cool.



## CONNECTING RETURN HOSE



Connect the return hose to the quick connect coupling. Use hose clamps to secure the connection.

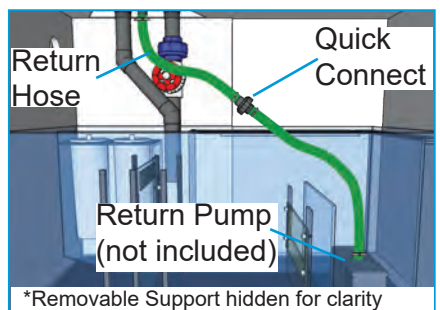


Connect the return hose to the lower return pipe. Secure with a hose clamp.



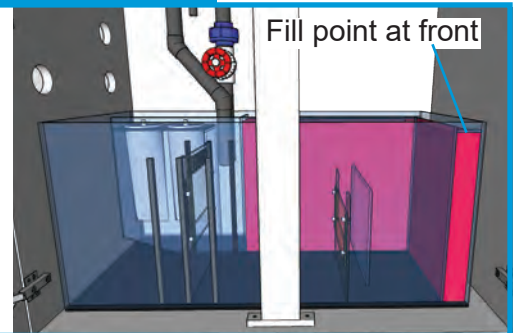
# SETTING UP cont.

## COMPLETED PLUMBING



## AUTOMATIC TOP-UP RESERVOIR

If you are using an Automatic top-up system, set it up in the ATO reservoir (shown in red). The easiest way to fill the reservoir is to siphon or pump water into it from a bucket.



The ReefSys is designed to be a flexible base for you to customise to suit your needs.

Because of this, exactly how the sump is arranged and what equipment is installed will vary from system to system.

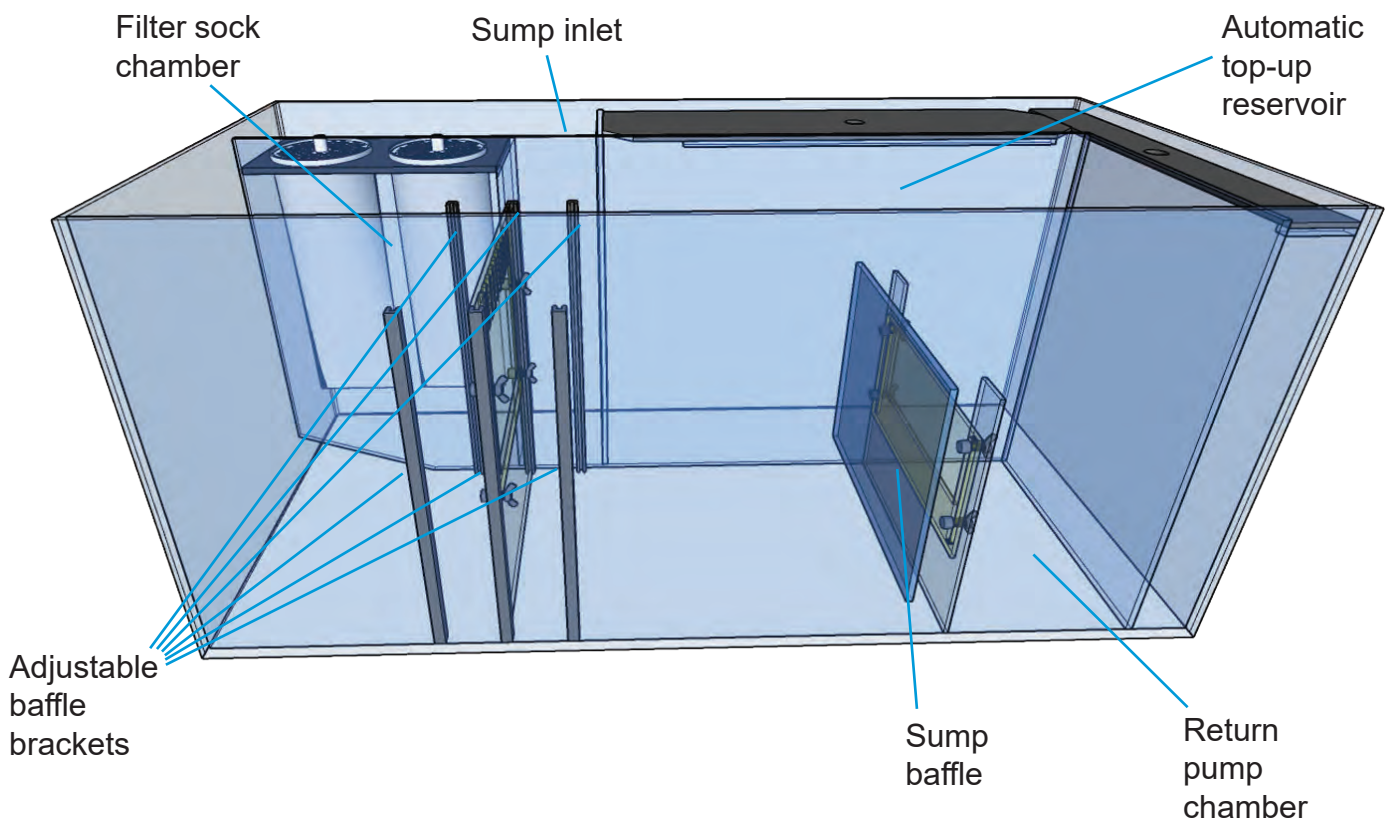
Please seek advice from your Aqua One aquarium specialist when choosing the equipment used and the layout of the sump.



The ReefSys has been tested with flows of up to approximately 8000L/h. It is not recommended to exceed this flow rate through the sump.

If more circulation is desired, wavemakers and similar circulation pumps inside the aquarium itself are recommended.

## SUMP SECTIONS





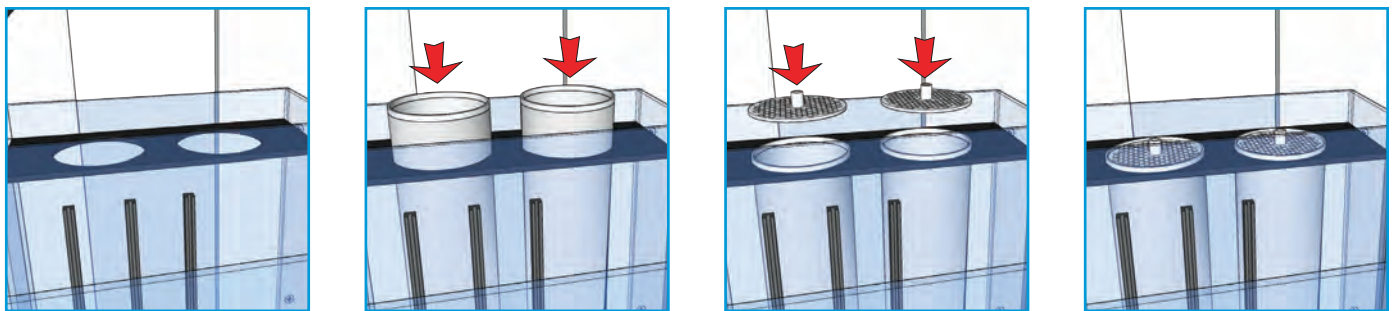
# SETTING UP YOUR SUMP

## FILTER SOCKS

The filter sock holder will hold two filter socks to ensure efficient pre-filtering at higher flow rates.

When placing the socks, ensure that the plastic frame edge is flush against the holder so that the water cannot bypass the sock.

To minimise any noise from the water flowing through the socks, place the sock silencers onto the socks as shown.



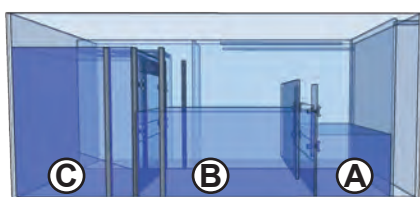
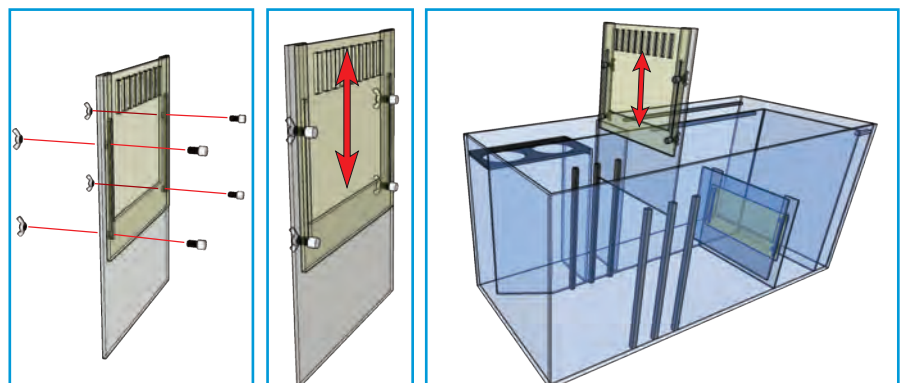
## USING THE BAFFLES

The two baffles in the sump are designed to allow for maximum flexibility in equipment selection and placement.

To adjust the height of the baffles, simply loosen the screws and raise or lower the movable panel as shown.

The movable baffle may be placed in any of the three baffle brackets.

The sump baffle is fixed in place.



### Sump Sections

**A**- Return pump chamber. There should be enough water to comfortably submerge the return pump.

**B**- Skimmer chamber provides a constant lower water level to suit protein skimmers and similar equipment.

**C**- Refugium section. Highest water level suitable for a refugium or equipment needing deeper water to function.



To minimise any trickling sound from the sump, avoid excessive height differences between the sections of the sump.



If adjusting the heights of the baffles in the sump, be aware that this will affect the total system volume.

It also affects the maximum safe running water level.



# FILLING AND ADJUSTING FLOW

## FILLING THE AQUARIUM

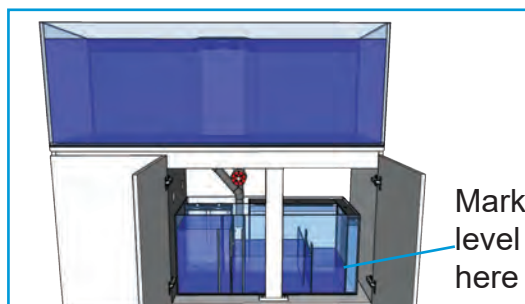
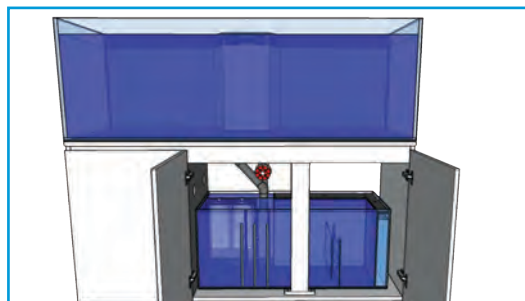
The first time you fill the aquarium, it is important to be sure that the system is not overfilled.

To do this, first install all plumbing, equipment, and place baffles as desired.

Fill the aquarium so that the water is just beginning to spill into the sump. Then fill the sump to a few centimetres from the top.

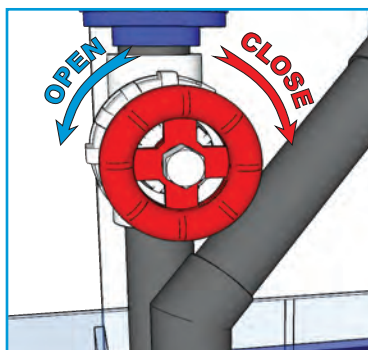
Turn all equipment on and wait for the water level in the sump to stabilise - this is the maximum running water level in the current configuration.

Mark the water level with a marker pen and use this as a reference for the future.

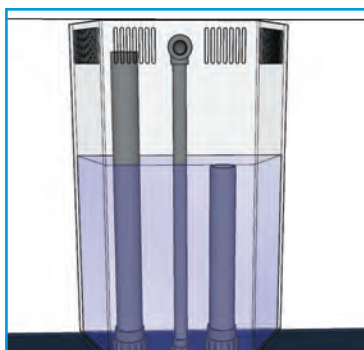


## ADJUSTING THE DRAIN

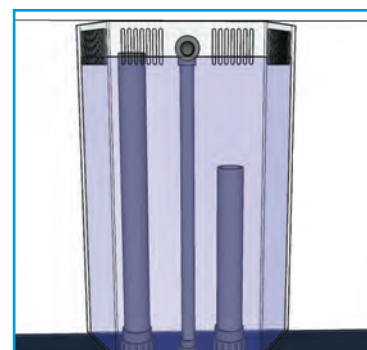
The drain of the ReefSys is designed to run silently by minimising turbulence in the drain pipes. When running correctly, the main drain will work as a full siphon and no air will be drawn through. For it to run correctly, the plumbing will need to be tuned using the gate valve to control the flow.



Set the gate valve to around the middle position (around three turns from fully closed) and start the return pump.



Wait a few minutes for the water levels to stabilise, then close the gate valve a little (about a quarter turn) and wait for at least ten minutes.



Repeat this procedure until the water level in the weir is just below the emergency drain. Once the correct setting is found, it should require little attention but may need adjustment from time to time.



The emergency drain should be able to handle the flow of water in case the main drain becomes clogged. It is a good idea to test that the emergency drain can handle the flow in your configuration if you are running a high flow rate through the sump. To do this, simply turn the gate valve to the fully closed position and monitor the drains for ten minutes.

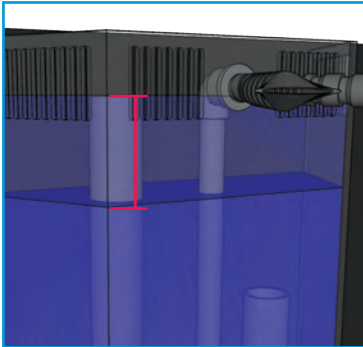
If the flow is too high for the emergency drain, it is strongly recommended to reduce the flow rate through the sump.

# MAINTENANCE

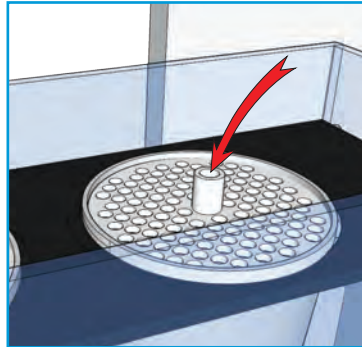


Check on livestock and important parameters regularly. For specific advice different species, seek advice from your aquarium specialist.

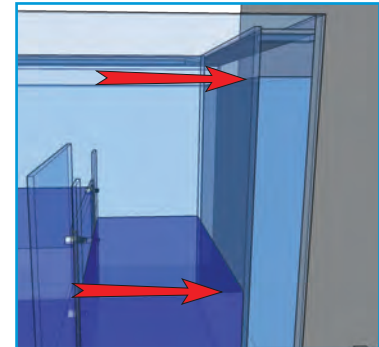
## DAILY CHECKS



Check that the drain system is functioning correctly (it should be silent) and that water is flowing through the aquarium properly.



Check that water is flowing through the filter socks correctly. If they are clogged, the water will spill over the silencer overflow shown.

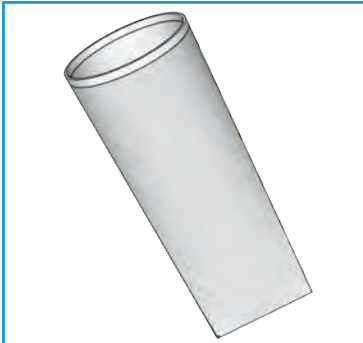


Check the water level in the sump. If you are using an automatic top-up system, ensure that the ATO reservoir has enough water.

## REGULAR CLEANING

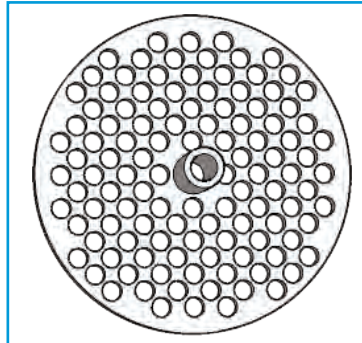


**Unplug all equipment before beginning work on any part of the aquarium.**

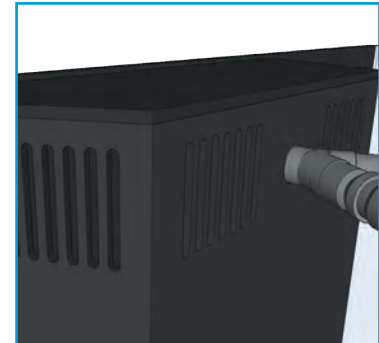


Remove and rinse filter socks in clean tap water. Turn them inside out to flush detritus out.

Socks should be replaced every few months.

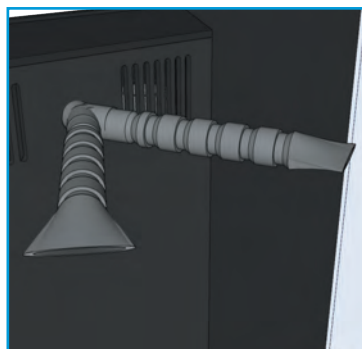


Rinse the silencers to remove any detritus. Use a sponge or soft brush if required.

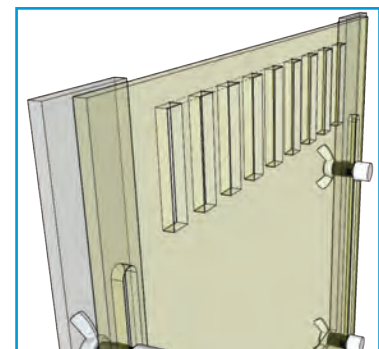


Clean the grilles on the weir to remove any build up of materials. Use a soft brush as required.

**NEVER** clean any components with abrasive materials, detergents or other cleaning products. **ONLY** use products intended for aquarium use.



Clean the outlet to remove any build up of algae or other detritus. Use a soft brush as required.



Clean the grilles on the baffles to remove any build up of materials. Use a soft brush as required.



# MAINTENANCE - PLUMBING

The plumbing of the ReefSys should require almost no maintenance.

The gate valve is able to be fully disassembled as required.

Generally the only instance that would require disassembly of the rest of the plumbing would be in case of a blockage.

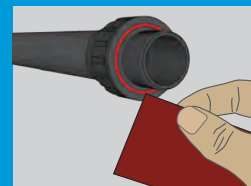


## Cleaning and lubrication of o-rings

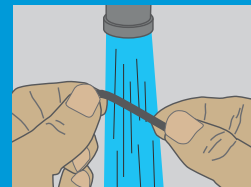
For extended life and ease of assembly and disassembly, it is recommended that o-rings are lubricated with an aquarium safe o-ring lubricant such as AquaLube\*. Lubricating the o-rings will also minimise the chance of parts seizing leading to accidental breakages.



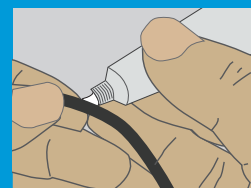
To remove the o-ring, use a plastic card, such as a credit card to gently lever the o-ring up and over the lip of its seat. Then roll it off the part.



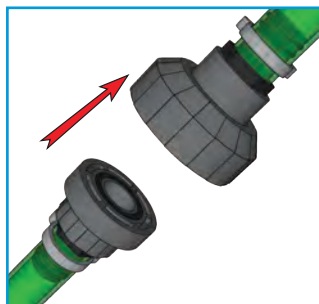
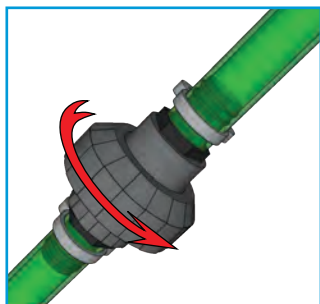
Rinse in fresh water to remove any particles attached. Dry the o-ring.



Put a small amount of lubricant\* on and smear it over the o-ring so that it is covered by a thin film.



## DISCONNECTING THE RETURN PUMP



To remove the return pump for maintenance, first disconnect the quick coupling as shown.

## REMOVING THE HARD PLUMBING



Before removing the hard plumbing, it is recommended

that the water in the weir is siphoned out. Otherwise, water will be splashed around the cabinet as the weir drains.

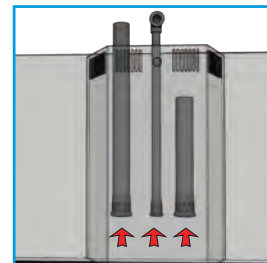
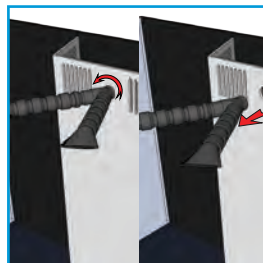
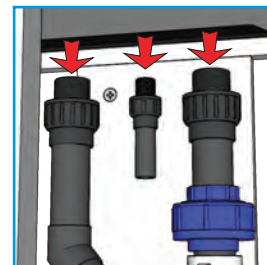
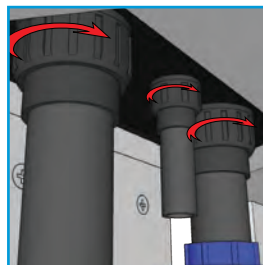
It is helpful to have a second person to assist with unscrewing and replacing the bulkheads.

Unscrew the bulkheads and remove the bottom plumbing.

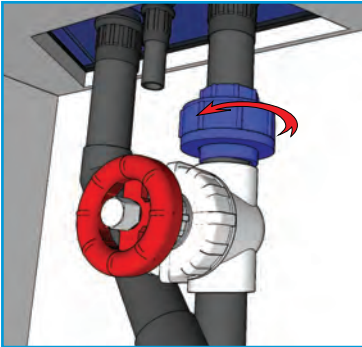
Disconnect the flexible outlet.

Remove the top plumbing.

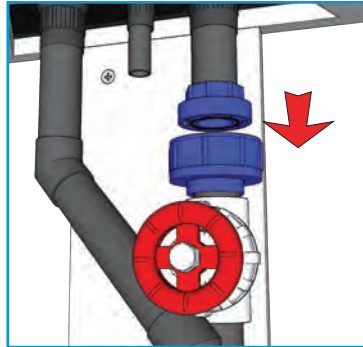
Before reassembly, wipe the glass and clean the fittings to remove any salt or other materials.



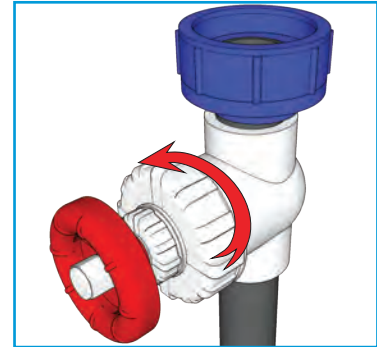
## SERVICING THE GATE VALVE



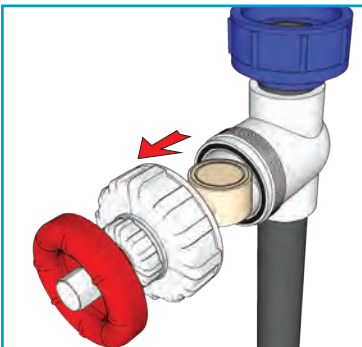
Unscrew the locking ring on the barrel union.



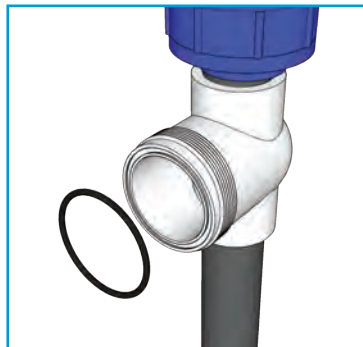
Remove the gate valve assembly



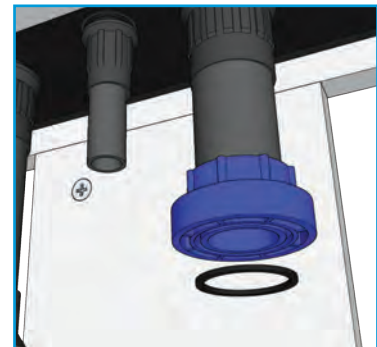
Unscrew the cap as shown.



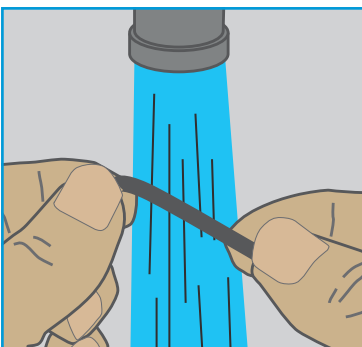
Remove the valve assembly from the valve body.



Remove o-ring from the valve body.



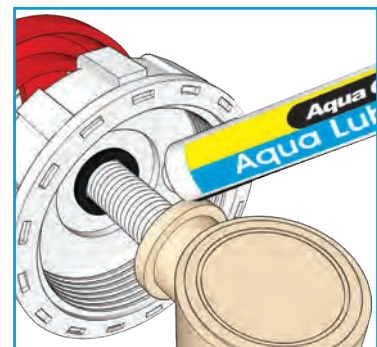
Remove o-ring from the barrel union body.



Rinse the o-ring with clean tap water.



Wipe out the o-ring channels (highlighted in red) of all fittings to remove any particles.



Lubricate the internal thread and o-ring of the gate valve.

Once you are satisfied with the movement and cleanliness of the gate valve, reassemble it by following the first six steps in reverse order. Reconnect the valve to the rest of the plumbing assembly.

The drain will need to be adjusted again as described on page 10.



# TROUBLESHOOTING



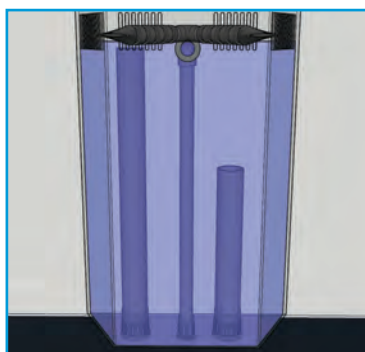
If you are having a problem that you can't solve by following these steps, contact your Aqua One retailer for advice as many issues may be resolved with a replacement part or an adjustment.

## GURGLING SOUND FROM DRAIN



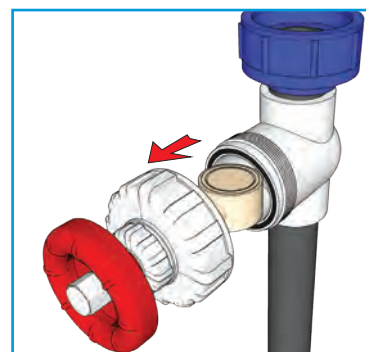
Check the water level in the weir. If the level is too low, air will be drawn into the main drain creating the sound.

Adjust the drain.



If the level is too high, water will spill into the emergency drain, drawing air into it creating the sound.

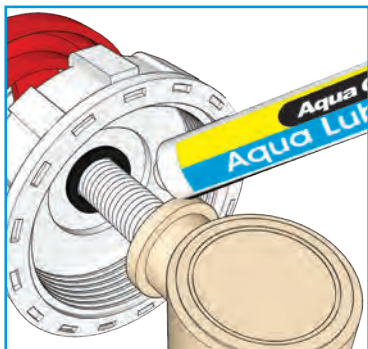
Adjust the drain.



If adjusting the gate valve doesn't affect the water level, there may be a blockage in the main drain.

Remove the gate valve and check the plumbing for a blockage. (See Page 13)

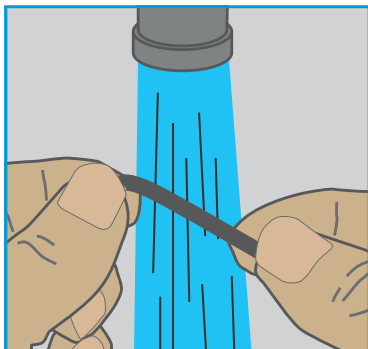
## GATE VALVE IS HARD TO ADJUST



Remove and service the gate valve as described on page 13.

Be sure to lubricate the internal thread and o-rings.

## QUICK COUPLING, BARREL UNION OR GATE VALVE IS LEAKING

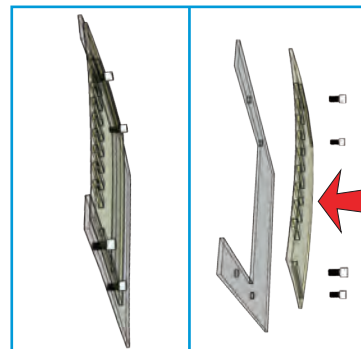


Remove and clean the leaking fitting.

Check for damage to the fitting, paying attention to the o-ring.

Be sure to lubricate the o-ring or replace it if it shows signs of damage.

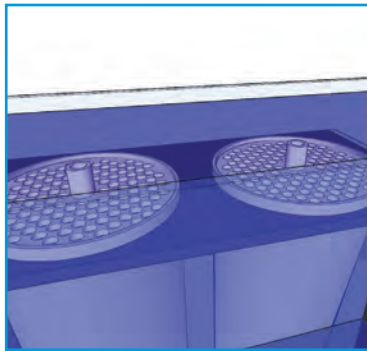
## BAFFLES ARE BENDING



Because of the constant pressure of the water, acrylic can bend over time in some circumstances.

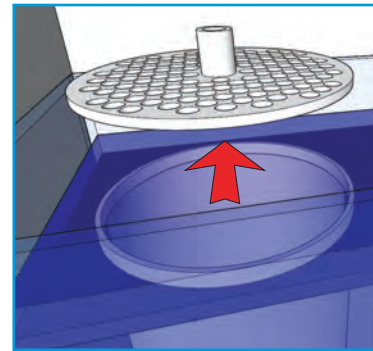
Reverse the orientation of the baffles to correct this.

## FILTER SOCK CHAMBER OVERFLOWING



Filter socks or the sock silencers may be clogged.

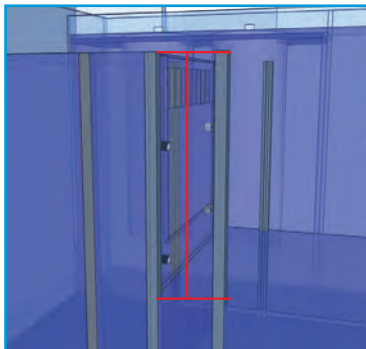
Clean the filter socks and sock silencers.  
The socks may be due to be replaced.



If the flow rate is very high, it may be too high to allow the water to pass through the silencers fast enough.

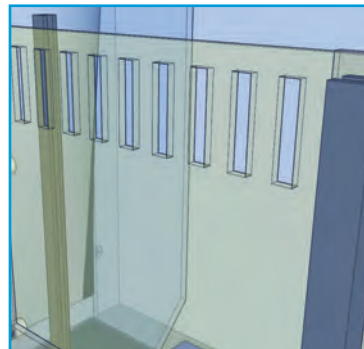
Remove the silencers or reduce the flow rate.

## TRICKLING SOUND IN THE SUMP



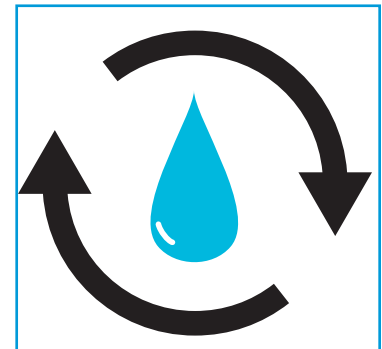
Check the relative heights of the baffles. If there is a large drop, the water falling can be noisy.

Adjust the heights of the baffles.



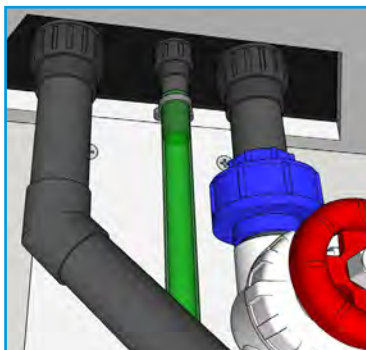
Check the grille on the movable baffle for blockages. If only part of the grille allows water through, it can become noisy.

Clean the grille if required.



Flow rate in the sump may be too high to allow a silent flow. While the system will work correctly, the solution may be to reduce the water flow through the sump.

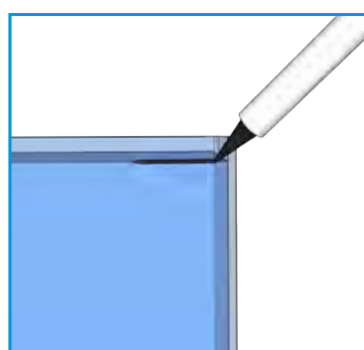
## TANK MAY BE LEAKING



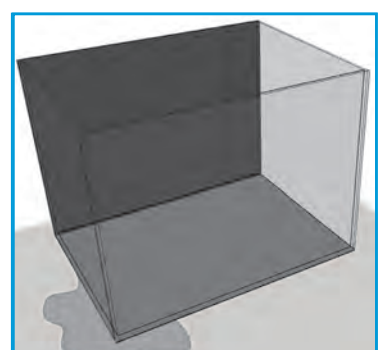
Check all plumbing fittings and all equipment.

Watch for any splashing of water.

Clean any salt buildup from all surfaces.



Turn off all pumps and mark the water level with a marker. Leave the tank for at least a few hours and see if the water level has dropped.



If the water level has dropped, there may be a leak in the tank body itself. To find a leak, it may be necessary to remove the tank, dry it and place it on newspaper to find the leak.



# AQUA ONE 1 YEAR GUARANTEE



## CUSTOMER CARE

Thank you for choosing this Aqua One product.

Your Aqua One product is covered for parts and labour for 1 year from the date of purchase as detailed in the terms of the Guarantee below. For any inquiries or concerns regarding this product or any of our products, please do not hesitate to contact your local Aqua One Retailer or visit Aqua One Customer Care online in your country of purchase via the websites listed.

**Australia:**  
[www.aquaone.com.au](http://www.aquaone.com.au)  
**New Zealand:**  
[www.aquaone.co.nz](http://www.aquaone.co.nz)  
**United Kingdom:**  
[www.aquaone.co.uk](http://www.aquaone.co.uk)  
**All other countries:**  
[www.aquaone.com.au](http://www.aquaone.com.au)

### Australian Consumer Law.

**In Australia the Aqua One guarantee applies in addition to the guarantees that can not 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.**

### About this Guarantee

The Manufacturer or Distributor, of Aqua One goods, is collectively known herein as "Aqua One". Please refer to contact details for Aqua One below or on the applicable Aqua One website. Any product that is covered by its own guarantee (as enclosed with the product) is subject to the conditions of that guarantee.

The benefits given to the purchaser, under guarantee, are in addition to all other statutory rights and remedies which the purchaser has in respect of products under legislation in the applicable country of purchase. This guarantee shall not affect any such rights and should be read subject to such legislation.

### Terms and conditions of your Aqua One Guarantee

1. The Aqua One guarantee becomes effective from the date of purchase.
2. You must provide the proof of purchase before any repair or replacement of your Aqua one product are considered when requesting a guarantee service.
3. All products subject to guarantee service should be prepared for transportation in the original packaging or other comparable packaging which offers the same degree of protection.
4. Where products are repaired or replaced under guarantee, these products are guaranteed for the remainder of the original guarantee period, where permitted by local law.
5. Where claims on inspection reveal goods are in normal working order, Aqua One will request reimbursement of all reasonable costs incurred.
6. Where Aqua One determines the products are being used in a manner contrary to the intended purpose/use, instructions, specifications or this Guarantee, Aqua One reserves the right to terminate the guarantee and will provide written notice to the purchaser.

### What is covered:

1. Aqua One warrants to the purchaser, for 1 Year from date of original purchase, to repair or replace products where fault is found due to defective materials or faulty workmanship and where goods do not operate in accordance with the instructions.
2. The guarantee covers any other products as enclosed with the product unless those products are provided with their own guarantee.
3. The guarantee covers the Aquarium against gluing breakdown resulting in leakage.

### What is not covered

Where permitted by local law, the following exclusions and limitations apply in regard to the guarantee:

1. Glass or Acrylic scratching, for whatever reason caused after purchase.
2. Glass breakage for whatever reason after purchase unless it is established that the breakage was caused prior to purchase.
3. Product guarantee service where fault is due to, but not limited by a) misuse b) neglect c) abuse d) fire or flood e) normal wear and tear f) accidental breakage g) Acts of God h) mains voltage fluctuation or supply problems i) connection to any voltage other than what is stated on the rating plate j) modification or tampering to electrical cord or plug, k) vermin, insects or foreign objects l) liquid spillage or submersion of goods not designed to sustain such use or duress.
4. Where inspections reveal the products are in normal working order including where noise or vibration is consistent with normal product operation.
5. Attempted repairs or modifications by unauthorised persons, including but not limited to the drilling of holes in the aquarium glass by unauthorised persons.
6. Where the product's factory rating plate has been removed, altered, damaged or is rendered illegible.
7. Where products are not installed, operated or maintained in accordance with Aqua One's product instructions, specifications or this guarantee.
8. Replacement or repair of worn consumables such as: filter socks.
9. Replacement of lost products, parts or components.
10. Costs associated with products transportation, removal, installation, postage or cost of insurance.
11. Any damage incurred whilst installing, transporting or moving the goods.
12. Subject to certain local statutory rights and obligations to the contrary, and this guarantee shall not affect those rights or obligations, where, to the full extent permitted by law: 1. all express and implied warranties and conditions under statute or general law, are expressly excluded and Aqua One, where permitted, will limit liability as follows and at Aqua One's option to: in regard to products either a) the replacement of goods or supply of equivalent goods b) the repair of products or the cost of replacing the products OR of acquiring equivalent products OR in regard to services either c) the re-supply of services d) the cost to re-supply services. 2. Aqua One will not be liable for any loss or damage, including consequential loss or damage either directly or indirectly, or for any incidental expenses, of any kind, and in any way whatsoever.

### Aqua One may be contacted in:

Australia  
Kong's (Aust.) Pty. Limited  
PO Box 863, Ingleburn  
1890 NSW Australia  
[www.aquaone.com.au](http://www.aquaone.com.au)

Hong Kong  
Kong's Aquarium Supplies Co., Ltd  
No 31, 3/F Thriving Industrial Centre  
26-38 Sha Tsui Road, Tsuen Wan,  
Hong Kong  
[www.aquaone.co.hk](http://www.aquaone.co.hk)

New Zealand  
Kong's (NZ) Limited  
PO Box 15 - 183, Tauranga  
3015 New Zealand  
[www.aquaone.co.nz](http://www.aquaone.co.nz)

United Kingdom  
Kong's (UK) Limited,  
C/O Aqua Pacific UK Ltd.  
PO Box 268  
Romsey Hampshire, SO51 0WW  
United Kingdom  
[www.aquaone.co.uk](http://www.aquaone.co.uk)