

PENNINGTON
Aquagarden[™]
beautifully simple water gardening

AWESOME pond
clean hands system

UV filter

450 • 750 • 1200



Please visit www.penningtonaquagarden.com
for helpful hints, tips, how-to videos and spares



PenningtonAquagarden



AWESOME pond clean hands system UV filter

450 • 750 • 1200

**Congratulations on buying a Pennington
Aquagarden UV filter Pond Machine filtration system.**

Manufactured with advanced filtration technology to
create a clean and healthy pond.

When used in combination with Pennington Aquagarden
Awesome Pond Pods, this filter has been designed to minimise
maintenance, and make necessary maintenance easier.

IMPORTANT: PLEASE ATTACH PROOF OF PURCHASE
TO THIS MANUAL AND KEEP IN A SAFE PLACE.

CONTENTS

Important safety instructions	4
-------------------------------------	---

GETTING YOU KNOW YOUR FILTER

Parts diagram	4
Parts table	5
Technical specifications and dimensions	6

INSTALLATION

Electrical installation	7
Locating the filter	7
Connecting to your pump	8
Connecting the inlet/outlet hoses	8
UVC Maintenance	9
Replacing the UVC bulb	10

CLEANING AND MAINTENANCE

Normal running	11
Routine maintenance	11
5 easy steps to clean your pond	12
Winter storage	13
Annual maintenance	13
Replacing Filter Media	13
Disassembling/reassembling your Awesome Pond Machine	14

TROUBLESHOOTING

Filter leaks	15
Cloudy/brown water	15
UVC leaks	15
Low/no flow from filter	15
Green water	16
Faults - problems procedure	17
Guarantee	17
Clearwater guarantee	Back Cover
Consumer Advice contact details	Back Cover

FOR INDOOR AND OUTDOOR USE IMPORTANT SAFETY INSTRUCTIONS

WARNING - TO REDUCE THE RISK OF ELECTRIC SHOCK, USE ONLY ON PORTABLE SELF-CONTAINED FOUNTAINS NO LARGER THAN 5 FEET IN ANY DIMENSION.

WARNING - RISK OF ELECTRIC SHOCK - THIS UV FILTER IS SUPPLIED WITH A GROUNDING CONDUCTOR AND GROUNDING TYPE ATTACHMENT PLUG. TO REDUCE THE RISK OF ELECTRIC SHOCK, BE CERTAIN THAT IT IS CONNECTED ONLY TO PROPERLY GROUNDED, GROUNDING-TYPE RECEPTACLE.

WARNING - TO REDUCE THE RISK OF ELECTRIC SHOCK, INSTALL ONLY ON A CIRCUIT PROTECTED BY A GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI).

CAUTION - THIS UV FILTER HAS BEEN EVALUATED FOR USE WITH WATER ONLY.

DANGER – ULTRA VIOLET RADIATION. DO NOT EXPOSE EYES TO LAMP RAYS. DISCONNECT POWER BEFORE SERVICING OR REPLACING THE LAMP. READ THE INSTRUCTIONS.

GROUNDING INSTRUCTION

THIS APPLIANCE MUST BE GROUNDED. IN THE EVENT OF A MALFUNCTION OR BREAKDOWN, GROUNDING WILL REDUCE THE RISK OF ELECTRIC SHOCK BY PROVIDING A PATH OF LEAST RESISTANCE FOR ELECTRIC CURRENT. THIS APPLIANCE IS EQUIPPED WITH A CORD HAVING AN APPLIANCE-GROUNDING CONDUCTOR AND A GROUNDING PLUG. THE PLUG MUST BE PLUGGED INTO AN APPROPRIATE OUTLET THAT IS INSTALLED AND GROUNDED IN ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.

WARNING – IMPROPER CONNECTION OF THE APPLIANCE-GROUNDING CONDUCTOR CAN RESULT IN A RISK OF ELECTRIC SHOCK. CHECK WITH A QUALIFIED ELECTRICIAN OR SERVICE REPRESENTATIVE IF YOU ARE IN DOUBT WHETHER THE APPLIANCE IS PROPERLY GROUNDED. DO NOT MODIFY THE PLUG PROVIDED WITH THE APPLIANCE; IF IT WILL NOT FIT THE OUTLET, HAVE A PROPER OUTLET INSTALLED BY A QUALIFIED TECHNICIAN.

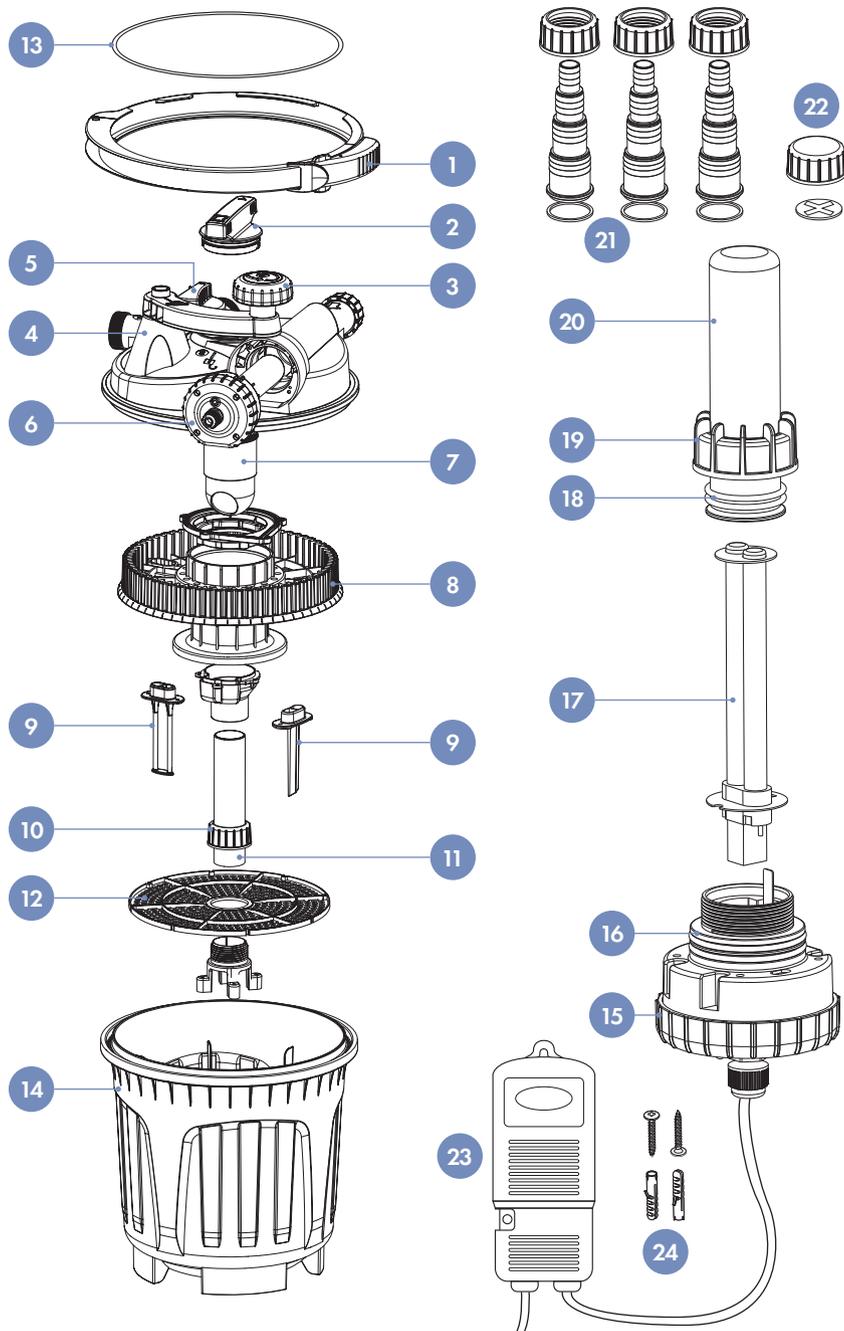
WARNING – RISK OF ELECTRIC SHOCK – THIS PUMP IS SUPPLIED WITH A GROUNDING CONDUCTOR AND GROUNDING-TYPE ATTACHMENT PLUG. TO REDUCE THE RISK OF ELECTRIC SHOCK, BE CERTAIN THAT IT IS CONNECTED ONLY TO A PROPERLY GROUNDED, GROUNDING-TYPE RECEPTACLE.

WARNING – TO GUARD AGAINST INJURY, BASIC SAFETY PRECAUTIONS SHOULD BE OBSERVED, INCLUDING THE FOLLOWING:

- A) **READ AND FOLLOW ALL SAFETY INSTRUCTIONS.**
- B) **DANGER** – TO AVOID POSSIBLE ELECTRIC SHOCK, SPECIAL CARE SHOULD BE TAKEN SINCE WATER IS EMPLOYED AND INTENDED FOR FOUNTAINS, WATERFALLS, AND PONDS AND ARE SUITABLE FOR OUTDOOR USE. FOR EACH OF THE FOLLOWING SITUATIONS, DO NOT ATTEMPT REPAIRS BY YOURSELF; RETURN THE APPLIANCE TO AN AUTHORIZED SERVICE FACILITY FOR SERVICE OR DISCARD THE APPLIANCE. IF THE APPLIANCE SHOWS ANY SIGN OF ABNORMAL WATER LEAKAGE, IMMEDIATELY UNPLUG IT FROM THE POWER SOURCE. DO NOT OPERATE ANY APPLIANCE IF IT HAS DAMAGED CORD OR PLUG, OR IF IT IS MALFUNCTIONING OR HAS BEEN DROPPED OR DAMAGED IN ANY MANNER.
- C) CLOSE SUPERVISION IS NECESSARY WHEN ANY APPLIANCE IS USED BY OR NEAR CHILDREN.
- D) TO AVOID INJURY, DO NOT CONTACT MOVING PARTS DIRECTLY.
- E) ALWAYS UNPLUG AN APPLIANCE FROM AN OUTLET WHEN NOT IN USE, BEFORE PUTTING ON OR TAKING OFF PARTS, AND BEFORE CLEANING. NEVER YANK CORD TO PULL PLUG FROM OUTLET. GRASP THE PLUG AND PULL TO DISCONNECT.
- F) DO NOT USE AN APPLIANCE FOR OTHER THAN INTENDED USE.
- G) READ AND OBSERVE ALL THE IMPORTANT NOTICES ON THE APPLIANCE.
- H) DO NOT PUMP FLAMMABILITY OR HEATED LIQUIDS.
- I) **DO NOT RUN DRY.**
- J) DO NOT CONNECT TO ANY VOLTAGE OTHER THAN SHOWN ON THE UV FILTER.
- K) ENSURE THAT THE POWER SUPPLY CORD LOOPS BELOW THE ELECTRICAL OUTLET TO FORM A "DRIP LOOP". THIS WILL PREVENT WATER FROM RUNNING DOWN THE CORD INTO THE ELECTRIC OUTLET.
- L) GROUNDING INSTRUCTIONS - THIS APPLIANCE MUST BE GROUNDED. IN THE EVENT OF A MALFUNCTION OR BREAKDOWN, GROUNDING WILL REDUCE THE RISK OF ELECTRIC SHOCK BY PROVIDING A PATH OF LEAST RESISTANCE FOR ELECTRIC CURRENT. THIS APPLIANCE IS EQUIPPED WITH A CORD HAVING AN APPLIANCE-GROUNDING CONDUCTOR AND A GROUNDING PLUG. THE PLUG MUST BE PLUGGED INTO AN APPROPRIATE OUTLET THAT IS INSTALLED AND GROUNDED IN ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.
- M) THIS PRODUCT COMPLIES WITH CODE OF FEDERAL REGULATIONS (CFR) REQUIREMENTS INCLUDING, TITLE 21, CHAPTER 1 SUBCHAPTER J, RADIOLOGICAL HEALTH.

SAVE THESE INSTRUCTIONS

GETTING TO KNOW YOUR FILTER



GETTING TO KNOW YOUR FILTER

	Part Description	Spares code
1	Filter Lid Clasp	1058575
2	Dosing Chamber Cap	-
3	Cleaning Handle	1058582
4	Filter Head Unit	-
5	Flow Diverter Valve	-
6	UVC Unit	See below
7	Dosing Chamber	-
8	Head Unit Filter Grill	-
9	Filter Cleaning Blades	1058599
10	Downpipe Locking Nut	-
11	Downpipe	-
12	Cannister Filter Grill	-
13	Filter Head Unit Gasket	1058605
14	Filter Cannister	-
15	UVC End Cap and Ballast	450: 1058612 750: 1058629 1200: 1058636
16	UVC End Cap O-rings (2)	Included in Part 16
17	Lamp	450: (5w): 1053027 750: (9w): 1053028 1200: (13w): 1058643
18	UVC Quartz Sleeve O-rings (2)	Included in Part 20
19	UVC Quartz Sleeve Locking Nut	Included in Part 20
20	UVC Quartz Sleeve Kit	450: 1058650 750: 1058667 1200: 1058674
21	Hose tails lock nuts O-ring	1058681
22	Waste outlet blanking cap and X-ring	Included in Part 21
23	UV Ballast	Included in Part15
24	UV Ballast locating screws and wall plugs	-

GETTING TO KNOW YOUR FILTER

Awesome Pond UV & Filter Model		 * TYPICAL POND SIZE			W		
	Over 2'6" deep	Under 2'6" deep	Over 2'6" deep with Koi	Under 2'6" deep with Koi	Green water clarifier lamp wattage	Max flow rate through UVC from pump	Recommended hose size
450	450 gals	337 gals	225 gals	168 gals	5 watts	594 gals	1"
750	750 gals	562 gals	375 gals	281 gals	9 watts	793 gals	1"
1200	1200 gals	900 gals	600 gals	450 gals	13 watts	1700 gals	1"

Model		W					
	UV Lamp	Wattage & Power supply	Max flow rate through UVC from pump	Recommended hose size	Dimensions w x d x h	Safety rating	Cable length
450	G23 UVC 5w	8w 120v 60Hz	594 gals	1"	1'4" x 1'4" x 1'4"	Outdoor weatherproof Approved	10 feet
750	G23 UVC 9w	12w 120v 60Hz	793 gals	1"	1'4" x 1'4" x 1'4"	Outdoor weatherproof Approved	10 feet
1200	G23 UVC 13w	16w 120v 60Hz	1,700 gals	1"	1'4" x 1'4" x 1'7"	Outdoor weatherproof Approved	10 feet

Filter Dimensions (approximate)

450 & 750 models



1200 model

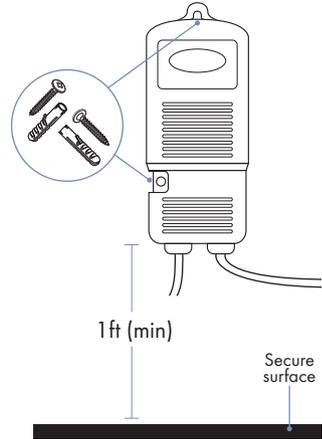


INSTALLATION

UVC Ballast installation



WARNING: Ballast must be affixed vertically to a secure surface, 1 ft minimum above the ground. Install in a well ventilated area. Affix with the two screws and wall plugs provided. Do not restrict ventilation to the heat sink. IP56 weatherproof enclosure, do not submerge. Caution hot surface, turn off power and allow to cool before removal. Do not run the UV filter for prolonged periods without water flow from a pump to cool the UVC assembly and quartz sleeve.

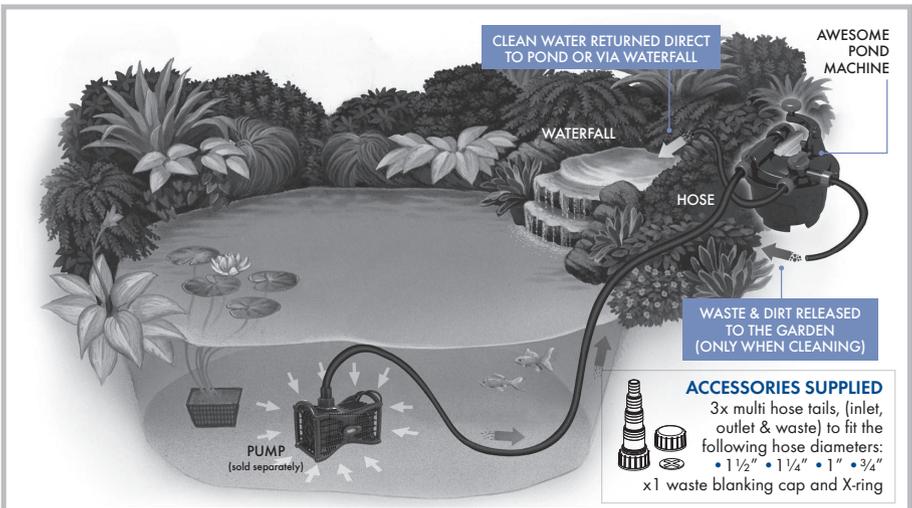


Electrical installation

Important: This appliance can be used by children aged 8 and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning the use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

Location of the filter

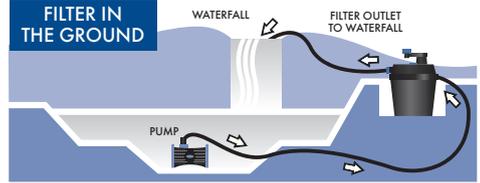
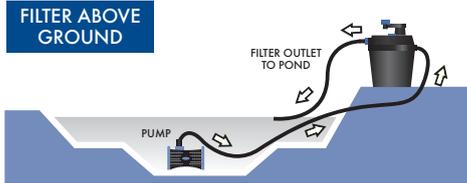
Pennington Aquagarden UV Filter should be located on a firm and level base on the ground, at least 4' from the pond. The filter can be buried up to the bottom rim of the head unit, leaving just the UVC access, inlets & outlets, and cleaning handle exposed about the ground level. Ensure the filter outlet is at no more than a maximum of 13ft head height above the lid of the filter.



INSTALLATION

Installation guide:

The filter can be installed above or in the ground with water returning directly to the pond, or via a waterfall, e.g:

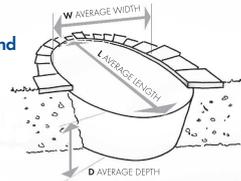


Connecting to your pump

The ideal flow rate for your pond is to pump the volume of the pond water through the filter every 2 hours. To calculate your pond volume: average length (ft) x average width (ft) x average depth (ft) x 7.48 pond volume in USA gallons.

How to calculate the size of your pond

Volume of pond (Gallons)
 $L \times W \times D \times 7.48$
= Volume (gallons)



To calculate your pump's flow rate, fill a container from the filter outlet hose at the pond side. Time how long this takes in seconds, e.g. a 2 gallon bucket takes 12 seconds to fill. Divide 3600 (the number of seconds in an hour) by the time taken to fill the bucket, e.g. 12 seconds. Then multiply by the volume of the container, e.g. 2 gallons. Therefore: $3600/12 = 300$, $300 \times 2 = 600\text{gal/hr}$ flow rate.

To increase flow, you may require a larger pump. If the flow rate is too high, use a valve to reduce the flow.

The purpose of the pump is to transfer dirty water from the pond to the filter cannister. Placing the pump at the opposite end to the filter outlet will provide the best results. Pumps without foam pre-filters will allow for optimum filter performance.

IMPORTANT: Do not exceed the maximum stated flow rate through the UVC filter – see technical specifications table on page 4 for reference.

Connecting the inlet/outlet hoses

- Always secure the hose with a jubilee clip.
- Warming the hose in a bucket of warm water can aid fitting.
- Always ensure the smaller diameter hose tails are cut off and removed to prevent poor UVC performance and flow rate from the outlet.
- Use the shortest possible lengths of hose, in order to minimise flow restrictions.
- Avoid folds and kinks in the hose, which will reduce flow and UVC performance.

INSTALLATION

Testing/replacing the UVC lamp

IMPORTANT:

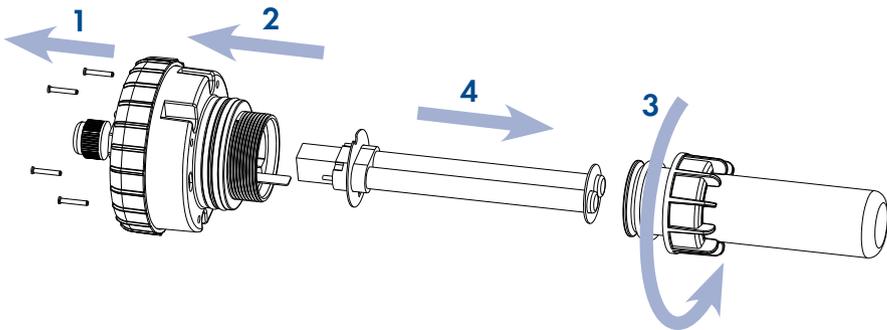
Ensure the mains power supply is switched off and the power isolated before removing the UVC cover.



WARNING:

Dangerous Ultra Violet radiation. The rays from the UVC lamp are harmful to eyes and skin. ALWAYS turn off the UVC electrical supply before any maintenance.

1. Undo the four screws on the UVC electronics cover cap
2. Pull out the UVC electronics cover cap.
3. Unscrew the Quartz sleeve lock nut.
4. Remove the old bulb, and replace for new.
5. Complete steps 1-4 in the reverse order to reconstruct the unit – ensuring all O-rings are correctly positioned.



IMPORTANT:

If there has been any damage to the unit, please return to the point of purchase for inspection. This check should be performed whenever the UVC bulb or quartz sleeve is changed.

MAINTENANCE & CLEANING

Your Pennington Aquagarden UV Filter has been designed to need a minimum of maintenance. It will work at it's best with some simple, monthly routine maintenance.

If the filter is installed on an established pond, the regularity of cleaning may be increased for a period until any back log of accumulated pond waste has been removed.

Normal Running

For excellent filtration, the filter should be operated 24 hours a day, all year round.

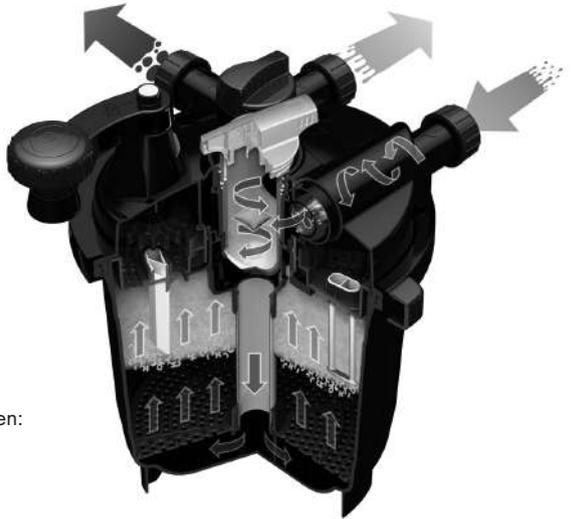
1. Check that all seals and connections are not leaking.
2. Ensure the valve is turned to the outlet returning to your pond or waterfall.

Routine Maintenance

Once established, it is recommended that your filter should be backwashed and cleaned once a month.

It may require more frequent cleaning when:

- The flow has visibly reduced.
- The water in the pond appears dirty.



NOTE: The cleaning procedure uses water pumped from the pond, meaning during cleaning the water level in your pond will drop. After cleaning you should refill the pond using water which has been dechlorinated with a product such as 'Awesome Pond Pods'.

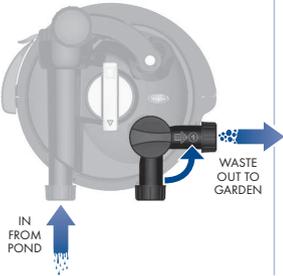
IMPORTANT: If the filter has not been cleaned for more than a month, or if the flow rate from the outlet has dropped by 50% or more - after turning the flow diverter valve to waste, turn the pump off before attempting to turn the cleaning handle.

After one full rotation the pump can be turned back on to flush out the waste released, and the filter can be cleaned as per the usual instructions.

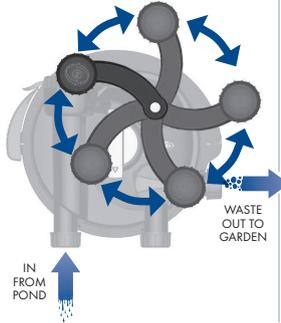
MAINTENANCE & CLEANING

5 easy steps to clean your pond

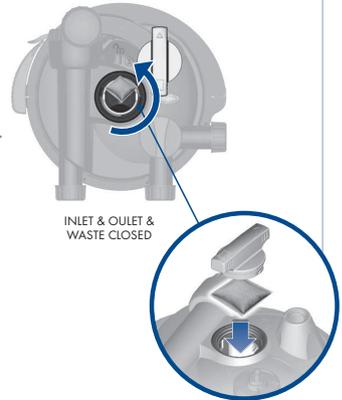
1 Turn outlet valve to waste.



2 Rotate handle to clean.



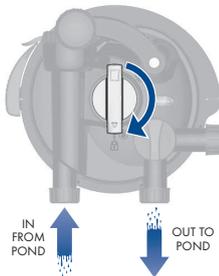
3 Rotate Pod dosing chamber cap & remove. Insert Awesome Pond Pod.



4 Turn outlet valve to pond.



5 Replace and rotate dosing chamber cap.



NOTE: A maximum of 10 Awesome Pond Pods can be fitted into the dosing chamber at any one time, this is sufficient for a pond with a volume of 1500 gals. If a higher amount is needed, the dose should be split in half and dosed over subsequent days to allow the pods time to dissolve.

If Awesome Pond Pods are being dosed at the same time as a filter clean, return the flow back to the pond before closing the dosing chamber lid – else the action of cleaning will wash the contents of the pod away as waste.

NOTE: If you are not dosing Awesome Pond Pods or you are cleaning the filter as part of a water change you do not need to remove the dosing chamber cap, simply return the flow diverter valve back to the filter outlet once the water runs clear or you have drained the desired amount of water from the pond.

MAINTENANCE & CLEANING

Winter Storage

The filter can be run year round as long as the pump flow is maintained, this is the best option. Alternatively, in winter, the filter can be switched off. If the filter is to be switched off during the winter it should be fully drained of water prior to being stored in a frost-free location, such as a shed or garage, until spring.

Annual Maintenance

Check for wear

Once a year it is recommended to dismantle your UV Filter and examine the parts for wear or damage – replacing parts showing any signs of wear or damage.

Replacing filter media

Due to the material and method used in cleaning the filter media contained in the UV Filter, it should never need replacing, as even if it is clogged solid, and unable to be cleaned using the handle, it is possible to clean it by removing it from the filter into a bucket of water taken from the pond.

IMPORTANT:

If the head unit is removed, keep it upright. This will prevent any of the filtration media stuck on the cleaning blades and plate from falling and getting stuck in the cleaning mechanism.

When returning the head unit to the filter be sure to carefully remove some water from the cannister to lower the level of the media below that of the central downpipe – retrieve any media which has entered this pipe and return it to the main filter body.

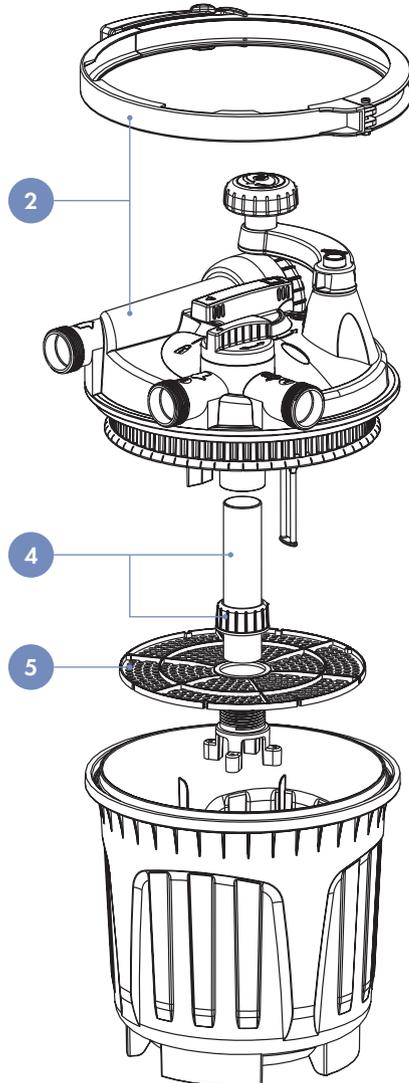
MAINTENANCE & CLEANING

Annual Maintenance

Disassembling/reassembling your UV Filter

We would recommend to clean the bottom grill annually to maintain the performance of the filter, to clean this the following instructions should be followed:

1. Turn off the pump.
2. Undo and remove the lid clasp, lift off the filter head unit.
3. Carefully remove all of the CHI media to a clean bucket and drain the filter cannister of water.
4. Unscrew the central locking nut and remove the downpipe.
5. Lift the bottom grill out from the bottom of the filter and rinse in clean, fresh water.
6. Return the grill to its position in the bottom of the cannister (note the locating notches and fins), reinstall the downpipe and locking nut to lock it in position.
7. Cover the hole of the downpipe and carefully return the CHI media to the filter cannister, once it's all in uncover the downpipe.
8. Reinstall the filter head unit and lid clasp – reattach any hosetails and turn the pump back on. (ensure the flow diverter valve is initially positioned to waste to flush out any waste which has been dislodged from the media in the process.)



TROUBLESHOOTING

Filter Leaks

- Check that the inlet and outlet nuts and O-rings have been correctly assembled and that they are hand tight.
 - PTFE tape may be needed to give a water tight seal, and should be applied to the thread of the inlet and outlet hose tails.
 - Ensure the filter head gasket is in the correct position, and is free from any detritus.
 - Ensure that the hoses are secured to the inlet and outlet hose tails with a Jubilee Clip.
 - Ensure that the filter is installed on a flat level base.
-

Cloudy/Brown Water

- Check that you have correctly calculated the pond volume, pond depth and the ponds level of direct sunlight. Check this information against the pond sizing table on page 4. You may require a larger UV Filter model.
 - Adding shade to the pond by introducing lilies or floating plants to the water surface will help to reduce pond sludge. Planting the pond with marginal plants will also help create a balance. New ponds may require some time to establish and create a healthy balance.
 - The filter is not being supplied with water 24 hours a day. Do not turn off the pump feeding the filter with water – continuous running is required for the beneficial bacteria within the filter to break down waste.
 - The filter media is insufficiently blocked – allow the UV Filter media time to clog, as the media clogs it will trap finer and finer waste.
 - The water is extremely dirty – physically remove pond waste and leaves, carry out a partial water change.
-

UVC Leaks

- Check that the UVC O-rings are all in the correct position.
 - Check for damage to the Quartz sleeve.
 - Ensure the UVC electronics cap is tightened sufficiently to make the watertight seal.
-

Low/No flow from filter

- Check that the pump is running. Check the mains power supply.
- Ensure all pipework is fully connected to the pump and filter.
- Check for blockages in the pipework.
- Clean the filter – the UV Filter media may have become too blocked by pond waste.
- Turn off the pump and rotate the handle one full turn before restarting the pump.

TROUBLESHOOTING

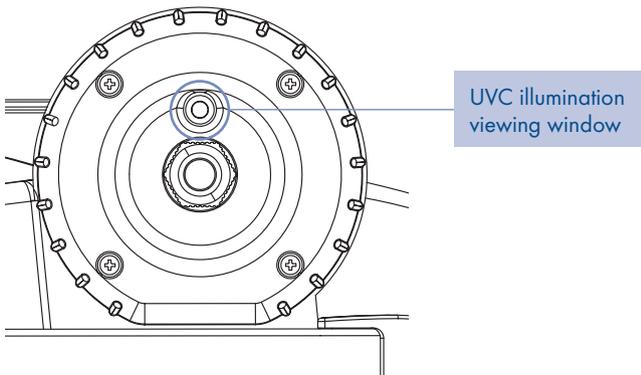
Green Water

- Perform a settlement test to ensure that there is no sediment suspended in the water – if there is follow the brown/cloudy water troubleshooting guide.

PERFORMING A SETTLEMENT TEST:

Take a glass of water from the pond and allow to settle for a few hours. If when the glass is stirred a small layer of settled waste can be seen at the base. This indicates that you have brown/cloudy water and that, if you have a UVC, it is working correctly. If there is no settlement it indicates that you have green water and that the UVC is not working correctly.

- At dusk check the UVC light is illuminated using the viewing window on the UVC electronics cap.



- Check the age of the UVC bulb. As UVC bulbs age the light output deteriorates, if the bulb is over 6 months old, the output may not be strong enough to have an effect on the algae causing green water – change the bulb.
- The UVC may be working effectively, but the filter media is too clean so is unable to remove the fine coagulated waste – treat the pond with a clearing Flocculant/Coagulant, this will clump the particles together to make them larger, and therefore easier to remove from the water passing through the filter.

TROUBLESHOOTING

UVC light not illuminated

- Check all fuses / RCD and electrical connections follow electrical installation

Faults - Problem Procedure

Before returning your Inpond to your dealer or contacting our Consumer Advice Department, please carry out the following steps. This will solve most problems quickly and easily.

1. Ensure electrical procedures have been followed fully. Check fuses and any cable connectors/switch boxes.
2. (a) Follow routine maintenance procedure fully. (b) Check location and connecting your pump details including flow rates. (c) Ensure that your pond volume and pump flow rate meet the maximum pond size recommended for the filter model on the filter performance and specification chart. (d) Follow troubleshooting guide.
3. If there is a mechanical breakdown of the filter or UVC, return to the point of purchase for inspection and advice (You will need proof of purchase).

GUARANTEE

UV & FILTER

This product is guaranteed against defects in material and workmanship for 2 years from the date of purchase, under normal usage. The guarantee DOES NOT APPLY in case of improper use, negligence, lack of maintenance or accidental damage to either the filter or UVC. If the filter or UVC fails due to a manufacturing fault within this period it will be either repaired or replaced free of charge. Liability is limited to replacement of the faulty product only; no other costs will be reimbursed. The guarantee is not transferable and does not affect your statutory rights. This guarantee does not confer any rights other than those expressly set out above. This guarantee does not cover the UVC bulb, which will need replacing when worn or every 6 months. If any parts are needed, spares are available from your retailer.

IMPORTANT

Clearwater Guarantee

The Clearwater guarantee will be honoured for 1 year after proof of purchase. Clearwater is guaranteed to a depth of 3'2", so that a Secchi disk is clearly visible.

Clearwater is guaranteed provided:

- You follow all instructions as above.
- Your filter is within the performance guidelines stated.
- You consult the Pennington customer marketing department and follow any advice to correct the situation. See details below. Refunds can only be authorised by Pennington.

Visit www.penningtonaquagarden.com for helpful advice and how to videos.

Consumer Advice contact details

Pennington, 1280 Atlanta Hwy.
Madison, GA 30650

Tel: 1-800-285-7333

www.penningtonaquagarden.com



PENNINGTON
AquagardenTM
beautifully simple water gardening

Aquagarden products by Pennington have been exclusively designed in partnership with Interpet UK a Leading British water garden company.

Leaflet Code: 1/8/2021