

POND FILTER USER'S MANUAL

Item No.: PF-35 (without UVC lamp)

Item No.: PF-35L (with UVC lamp)

1. OVERVIEW

- 1) The filter is designed for garden pond water filtration to keep a pond clean and healthy. It can work with or without UVC lamp.

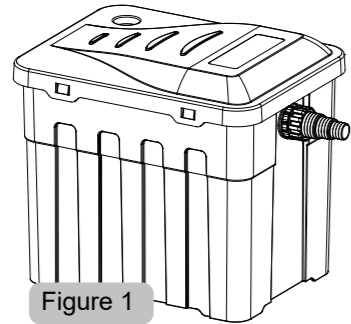


Figure 1

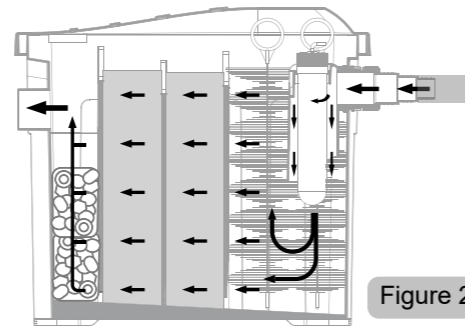


Figure 2

- 2) There are 4 layers of filter media with different functions (Referring to **Figure 2**) .
 - a) Brush bar filters keep floating waste away, better direct water flow and oxygenate water to promote microbial growth. Some beneficial bacteria attached on the fibers help maintain a healthy pond biologically.
 - b) Mesopore foam filter removes dirt and solid waste debris and some beneficial bacteria attached help maintain a healthy pond biologically.
 - c) Minipore foam filter removes fine waste particles and some beneficial bacteria attached help maintain a healthy pond biologically.
 - d) Ceramic biomaterials are the home where most beneficial bacteria inhabit, a large amount of beneficial bacteria attached improve the water eco-system biologically.
- 3) UVC lamp clears green water algae and keeps a pond microbiologically-safe by sterilizing the harmful bacteria and viruses in the pond, the lamp is automatically turned off whenever the built-in sensor detects the lamp is not completely locked in the lampstand.

Note: PF-35 pond filter is not equipped with UVC lamp. Please ignore the UVC lamp related instructions if they are not applicable.

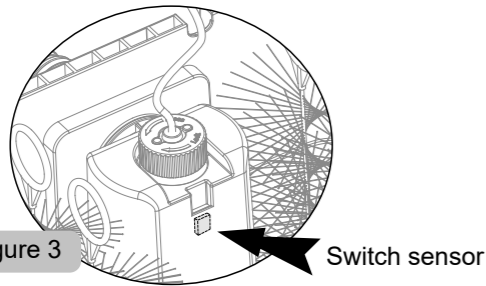


Figure 3

Switch sensor

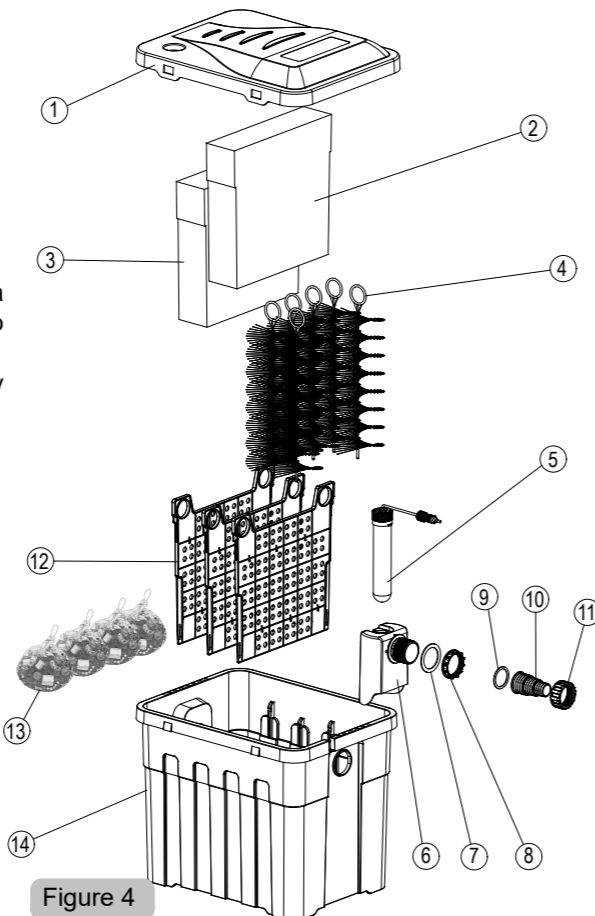


Figure 4

- 4) The filter box is designed to work with a stream pump with a recommended maximum flow rate ranging from 1500LPH to 3500LPH.
- 5) It is ideal to work with a solar water pump kit which is inherently safe due to its low working voltage.
- 6) The ideal water temperature for the filter box is 0°C to 35°C.

2. COMPONENTS

Part No.	Description	Specs.	Quantity	Schematic
1	Lid	430x330x68mm	1	
2	Mesopore foam filter	285x280x70mm PPI 25	1	
3	Minipore foam filter	285x280x70mm PPI 35	1	
4	Brush bar filter	Φ100x300mm	6	
5	LED UVC quartz lamp	UVC 265~315nm DC12V, 5W, cable 5m	1	
6	Lampstand (Water intake connector)	Thread M45x2	1	
7	Gasket A	Φ56xΦ42x3mm	1	
8	Lock nut	Thread M45x2	1	
9	Gasket B	Φ42xΦ34x3mm	1	
10	Inlet hose tail	Φ25mm/Φ32mm/Φ38mm	1	
11	Gland nut	Thread M45x2	1	
12	Clapboard	295x293mm	3	
13	Ceramic biomaterial	10 different materials in one bag, 500g/bag	4	
14	Filter body	422x328x350mm	1	

3. INSTALLATION

- 1) Unlock the plastic lid from the four buckles on the two sides of the filter body and remove the lid. Check if the UVC lamp, 6 brush filters, the coarse and fine foam filters and the 4 bags of biomaterial are available and in place as shown in the **Figure 5**. Noted that the UVC lamp should be turned clockwise to the end to have it locked in place.

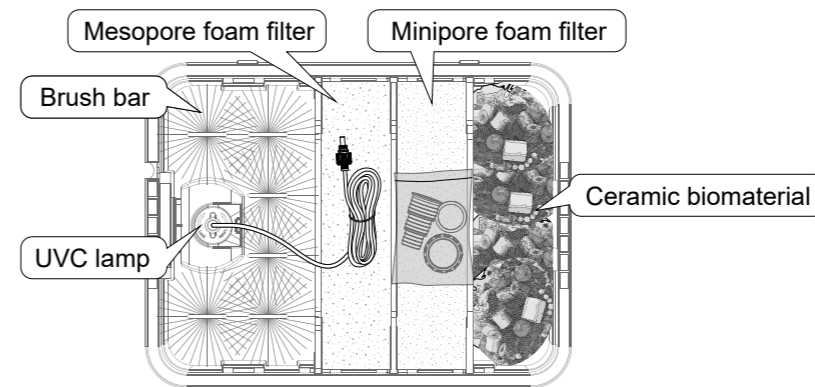


Figure 5

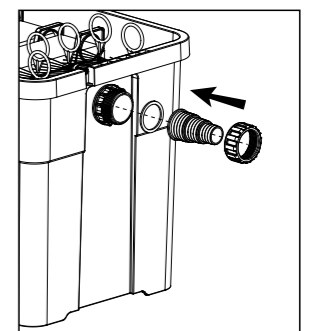


Figure 6

- 2) Attach the hose tail to the water intake on the filter body by the gland nut. Please make sure to fit the gasket B into the gland nut before screwing the gland nut on (Referring to **Figure 6**).
- 3) Place the filter right beside a pond with its discharge outlet pointing to the pond so that the filtered water flows back to the pond (Referring to **Figure 7**). Or, if applicable, connect the discharge outlet to the inlet of a waterfall or fountain, etc. with a hose of 2 inch diameter (Referring to **Figure 8**).

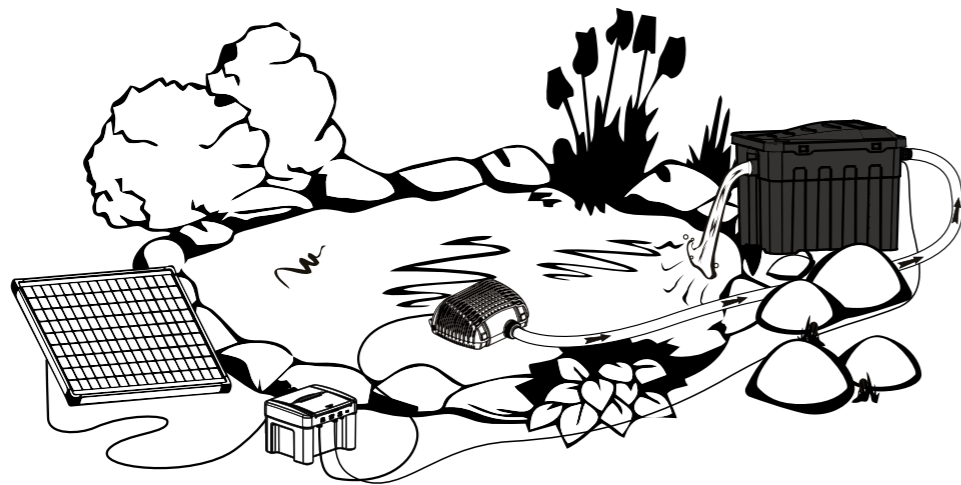


Figure 7

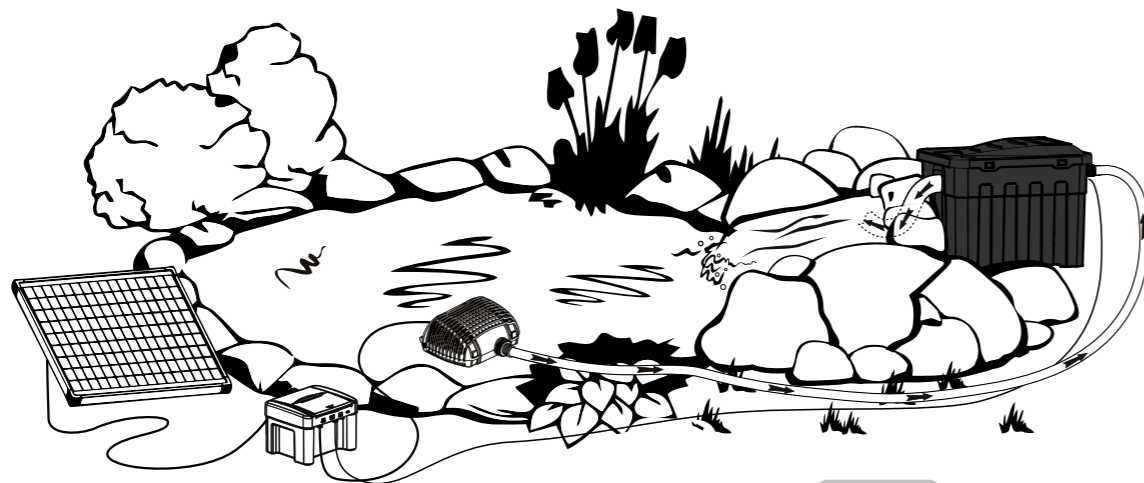


Figure 8

- 4) Properly install a pump and connect its outlet to the filter hose tail with a proper hose. The hose diameters supported are $\Phi 25\text{mm}$, $\Phi 32\text{mm}$ or $\Phi 38\text{mm}$ (1", 1.25" or 1.5"). Make sure the invalid portion of the hose tail is removed to enlarge the minimum diameter of the hose tail (Referring to **Figure 9**), the hose should be installed with no sharp bends and in a way to shorten its length as much as possible. If possible, place the pump at the opposite side of the pond to optimize the efficiency.

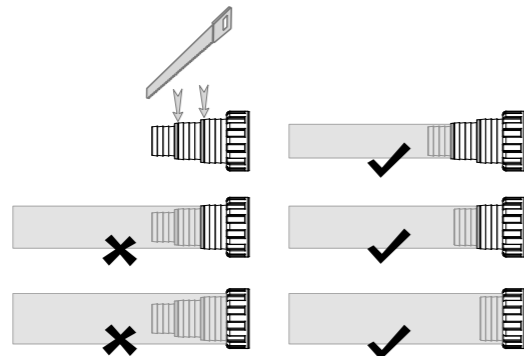


Figure 9

- 5) Connect the lead from the UVC lamp to a DC power supply of 12V to 18V and the UVC lamp illuminates as long as it has been locked in place (Referring to **Figure 10**). Note that the voltage of the power supply will not alter the effectiveness and the power consumption of the UVC lamp. When necessary, double check if the lamp is in operation by observing diffused UV light in darkness.

Note: UVC lamp may not have to run all the time, put it into operation as per the instructions from pond specialists.

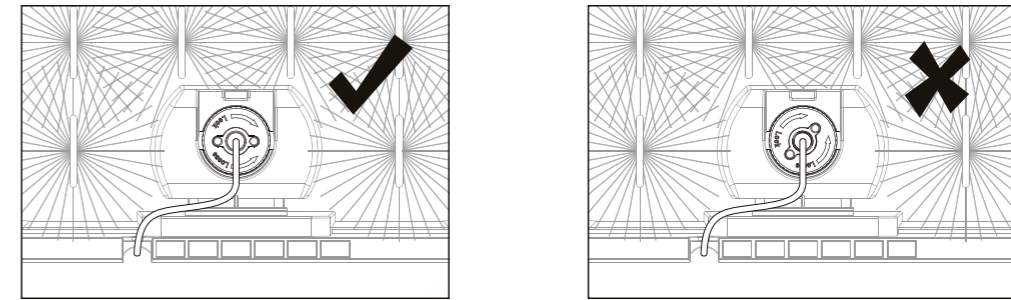


Figure 10

- 6) The filter is ready for operation whenever the pump is turned on.

4. CLEANING AND MAINTENANCE

- 1) When the brush filters are dirty or any of the two foam filters are blocked, please clean them following the instructions below:
 - a. Turn the pump off and remove the lid by unlocking it from the four buckles on the two sides of the filter body.
 - b. Take out the 6 brush filters and gently wash it with tap or pond water and also clean the debris.
 - c. Take out the coarse foam filter and gently wash it with tap or pond water and also clean the debris in its chamber.
 - d. Take out the fine foam filter and rinse it gently in pond water to avoid damaging the beneficial bacteria attached. Also clean the debris in its chamber.
 - e. Assemble the filter box in reverse sequence.
- 2) To avoid hurting the beneficial bacteria attached, only clean the ceramic biomaterials occasionally, such as once a year. Following the instructions below to clean the ceramic biomaterials:
 - a. Turn the pump off and remove the lid by unlocking it from the four buckles on the two sides of the filter body.
 - b. Take out the ceramic biomaterials and rinse them gently in pond water to avoid damaging the beneficial bacteria attached. Also clean the debris in their chamber.
 - c. Assemble the filter box in reverse sequence.
- 3) Replace the UVC lamp around a year of use. The service life of our UVC lamp is 6000 hours. An out-of-date UVC lamp fails to deliver the same efficiency in terms of sterilization due to light wane. Following the instructions below to replace the UVC lamp:
 - a. Unplug the UVC lamp from the power supply first to avoid any chance of exposure to the UVC radiation.
 - b. Turn the pump off and remove the lid by unlocking it from the four buckles on the two sides of the filter body.
 - c. Unlock the old UVC lamp by turning it counter clockwise to the end then pull it out of the lampstand. There are marks on the top of the the lamp showing the directions to loose and lock the lamp.
 - d. Install and replug the new UVC lamp in reverse sequence.
 - e. Assemble the filter box in reverse sequence.
- 4) Replace any damaged brush or foam filters with new ones in time. Damaged filters will compromise the filter performance.
- 5) If pump flow is accessible, it is better to keep the filter in operation all year round so that the beneficial bacteria thrive all the time. However, when pump stops working due to frozen water, disconnect the filter and store it in a frost-free place until next spring.

5. CAUTION

- 1) Any altering of the product itself or changing of the components voids warranty.
- 2) In the case that a third part pump powered by mains power is used to circulate the filter, be sure to have a qualified electrician to do the wiring.
- 3) UVC lamp may not have to run all the time, put it into operation as per the instructions from pond specialists.
- 4) Do not operate or leave the filter in freezing conditions.
- 5) Always ensure that the filter outlet is at least 100mm above the level of the water in your pond.
- 6) If possible, keep the filter working 24 hours a day. Ideally it should run all year round but at least throughout the feeding season.
- 7) UVC radiation may harm your eyes and skin. Avoid exposing to the UVC radiation in any circumstance for a long time.