



Specifications: Overall Height. 1225mm, External Dia. 450mm

Installation and Operating Instructions

Please ensure you read these instructions thoroughly before installation and use.

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**Congratulations on choosing your new “Crystal Bio Shower Filter” we are sure you will be delighted with the ease of use, efficiency and performance of this filter.
If you are unsure about any information in this booklet please contact your Roto Innovations authorised retailer or contact us direct by email.**

HEALTH AND SAFETY INFORMATION



This product is heavy please take care when unpacking and handling this product

Take care when working near deep water

Contents of instructions

Page 3.....Box Contents and Unpacking

Page 4-5.....Installing the Crystal Bio Filter

Page 6-7.....Operating and Maintenance

Page 8.....Troubleshooting Guide

Contents of box:

Code	Description	Quantity
1020	Filter module	1
1025	100 Litres of Crystal Bio	2 x 50 Litre boxes supplied separately
1030	Media support grid	1
1035	Fine mesh (overlay on grid)	1
1040	Spray head and pipe (inlet)	1
1045	1.5" 90° bend (inlet)	1
1050 +1055	Hosetail & sleeve (inlet)	1 of each
1060	3" to 2" Rubber reducer (inlet)	1
1065	3" Rubber 90° bend (outlet)	1
1070	300mm x 3" imperial pipe (outlet)	1
1075	Instructions	1

Other items that may be needed when installing this product:

Spirit level, screwdriver, tape measure, pressure pipe and flexi hose.

Unpacking the Crystal Bio Filter

1. Open the box carefully; do not use a knife as this may cause damage to the filter.
2. Remove the lid of the filter module and place to one side, then lift out the two 50 Litre bags of Crystal Bio, Filter Grid and Mesh and place these to one side.
3. Remove the remaining pipe-work and fittings from the box and place these to one side also.
4. Check all product contents for damage and the correct quantity amounts.
5. **Keep** all product items safe as they will be needed during the installation process.
6. **Keep** all packaging in the unlikely event this product needs to be returned to the retailer or manufacturer.

Installing the Crystal Bio Filter

1. **The Crystal Bio Filter is suitable for pump fed – gravity return systems.**
2. Chose a suitable location where a level base can be created to position the “Crystal Bio Shower Filter” on. The “Crystal Bio Shower Filter” needs to be positioned so water can return from the outlet back to the pond or tank without increasing in height from the outlet fitting.
3. **The base should be of a solid construction**, concrete, levelled sand with paving slabs or decking wood with good support are all suitable construction methods.
4. **The base must be level** to avoid uneven pressure being applied to the Crystal Bio Shower Filter which could result in the Filter falling over with possible risk of injury to persons. Contact the retailer or manufacturer if you require further help at this stage.
5. Stand the empty Filter Module (code 1020) upside down on a clean soft surface to avoid damage to its top surface, connect the 3” 90° bend (code 1065) to the outlet of the Filter ensuring it is pointing in the correct direction to allow the 300mm of 3” pipe (code 1070) to be inserted through the hole on the filter base and in to the rubber bend. With the rubber bend and pipe in place tighten the two stainless steel bands on the rubber with a screwdriver.
6. With the outlet 90° rubber and 300mm of 3” pipe in place and the stainless steel bands tightened, turn the “Crystal Bio Shower Filter” over and stand it on its base.
7. Position the Filter on the suitably prepared concrete, slab or wooden base and check the now fitted 3” outlet is long enough to reach the pond to return the water. If the 3” pipe is not long enough or other fittings are required such as 45° or 90° bends then please speak with your retailer where you purchased this product or contact the manufacturer direct.
8. Now the Filter support grid (code 1030) and mesh (code 1035) can be added to the inside of the filter, make sure the support grid and mesh sit level and no obvious gaps are present around the outside of the mesh where it meets the inside edge of the Filter. The mesh maintains the Crystal Bio Media in the correct place and prevents it from entering the return pipe-work.
9. Thoroughly wash the Crystal Bio Media (code 1025) with tap water to remove any dust or small broken pieces that can occur during handling. When using the Filter for the first time a small quantity of very fine Crystal Bio particles could wash through the filter and settle on the base of the pond, do not worry if this happens as these particles are harmless to Fish and the Aquatic environment. On the initial start up the pond keeper could use a fine aquarium net placed over the outlet to catch these fine particles

10. Ensuring the grid and mesh are in place gently fill the Filter with all the washed Crystal Bio. Caution, do not attempt to move the Filter when filled with Crystal Bio, excess strain can twist or buckle the Filter Module, although slight adjustments can be made.
11. Attach the 3" to 2" rubber reducer (code 1060) to the inlet of the Filter Module and then insert the spray head pipe (code 1040) from the inside through the body of the Filter and reducer ensuring it is pushed all the way until it stops. The 1.5" 90° bend (code 1045) is now pushed on (do not Glue) to the end of this pipe and then positioned ready for connecting the users inlet pipe too (not supplied). With the spray head correctly located and the 1.5" 90° bend in place tighten the stainless steel bands on the rubber.
12. When the user is connecting pipe to the Filter, 1.5" imperial pressure pipe can be used or to enable a connection with "Soil Solvent Pipe" or with "Flexi Pond Hose" the sleeve (code 1055) and hosetail (code 1050) (both supplied) can be used. These fittings will require gluing with a "Plastic Cement" available in all good plumbing shops.

13. Before running the Crystal Bio Filter complete the following checks:

1. The Filter is standing level on a strong base.
2. The outlet and inlet pipes including the spray head are connected and are correctly positioned.
3. All rubber fittings are fitted correctly and tightened.
4. The grid, mesh and washed Crystal Bio are correctly placed in the Filter Module.
5. All fittings and pipe-work required to connect to the Filter Module are either glued or when using flexi hose ensure all joints have a wire clip attached and are tightened.

14. Now complete the first set up checks:

1. Connect the pump (not supplied) to the inlet pipe or hose and switch on.
2. Ensure water is being pumped in to the Filter Module and is exiting the spray head. Arrange a few pieces of Crystal Bio around the spray head to break up the water flow. By breaking up the water flow, water passes all over and across the Crystal Bio which will improve the biological performance of the Filter.
3. Check water is returning from the outlet pipe back to the pond.

This is the end of the Filter set up process, read on to learn about operating and maintaining the Crystal Bio Filter

Operating and Maintenance of the Crystal Bio Filter

1. The shower Filter including 100 litres of Crystal Bio media is suitable as main filtration for Koi and Garden Ponds and quarantine tanks. The Shower Filter is also an ideal add on filter to existing filtration systems on Koi and Garden Ponds.

Pond Type	Main Filtration	Extra Filtration	Pond Size (ideal size of pond for a single filter unit)	Max Filter Flow Rate	Daily Feed Guide (grams)
Koi	Yes	-	13,500 Litres 3000 Gallons	9000 Litres 2000 Gallons	300-400 grams of a high quality diet
Koi	-	Yes	Unlimited pond size will suits all ponds as an add on Filter	9000 Litres 2000 Gallons	300-400 grams of a high quality diet
Goldfish	Yes	-	27,000 Litres 6000 Gallons	9000 Litres 2000 Gallons	300-400 grams of a high quality diet
Goldfish	-	Yes	Unlimited pond size will suits all ponds as an add on Filter	9000 Litres 2000 Gallons	300-400 grams of a high quality diet

Please note fish loading will affect the performance of all biological Filters. If you have larger fish stocks then more Filtration may be required.

Operation:

1. The Crystal Bio Shower Filter you have purchased is very simple to operate, the name "Shower Filter" refers to the way the pond water flows through the Filter Module and over the Crystal Bio, like a shower. This Filter is designed to allow the Crystal Bio to be exposed to the air and water at the same time. The Crystal Bio media in this Filter is **not submerged** under water at any time.
2. The biological performance of the Crystal Bio Shower Filter will be affected if pond water stops being pumped into the Filter Module for a period of time (24hrs or more). It is recommended that the user operates the pond pump that runs the Crystal Bio Shower Filter on a 24/7 basis including the winter months of the year.

Maintenance:

1. The Crystal Bio Shower Filter has been designed to be used as final filtration or extra filtration on Koi and Goldfish ponds. This Filter is not designed as first filtration where heavy solids are pumped directly in to the Filter and potentially settle or clog the Crystal Bio Media.
2. Pre Filtration is advised prior to pumping in to the Crystal Bio Shower Filter. The pre Filtration can be by Vortex, Screen Sieve or pump pre filter foam. Roto Innovations produces an optional 300 micron screen sieve that fits inside this filter Module (see your retailer or manufacturer for details).
3. With the pre filtered water Showering over the Crystal Bio Media and through the outlet back to the pond there is no fish and organic waste build up within the Crystal Bio Media or within the Filter Module. **No cleaning of the Crystal Bio Media or Filter Module is required.**
4. The hyper-connecting glass cell structure of Crystal Bio enables water and organic waste to pass through as well as across the media which improves the self cleaning effect of the Crystal Bio media.
5. Periodically lift the lid of the Filter Module and check that Spray inlet is producing a good flow of water across the Crystal Bio Media. If parts of the surface of the media appear to have less flow of water over them then pieces of Crystal Bio can be arranged around the spray head to create more splash and water direction to these areas.
6. Crystal Bio Filter Media is a unique, eco-friendly glass media, heated in excess of 900°C, creating a hyper-connecting glass cell structure. This produces media with a surface-area at least ten times greater than most plastic alternatives making it excellent at supporting bacterial cultures which in turn eliminates Ammonia, Nitrite and Nitrates.
7. The Crystal Bio Media will mature within 6-12 weeks from initial start up depending on temperature. Biological Filters will mature quicker in warmer water and slower in colder water. The maturing process will also be speeded up if a live bacterial culture is added during the first 6-12 weeks these cultures are available in all good Aquatic outlets.

Guarantee:

1. This product is guaranteed for 12months against faulty manufacturing. The guarantee is on a repair or replaces policy only and not money back. The guarantee will be voided if this product has been abused, misused or incorrectly installed. The guarantee covers domestic pond and garden use and will not cover commercial installations.

Trouble Shooting Guide

Questions	Answers
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The Pond water is not entering the filter?	Check the inlet pipe-work and pump for blockages. Also check the pump is working.
The Pond water is not exiting the filter and the filter is full and overflowing with water?	Check the outlet pipe back to the pond for blockages. Or the Outlet pipe increases in height back to the pond causing water to fill the Filter.
Water is leaking from the rubber fittings?	Check the fittings are located correctly and the stainless steel bands are tightened.
The bags of Crystal Bio Media have some fine dust or small broken media in?	When handling Crystal Bio some dust or small broken pieces can occur. Wash the Crystal Bio media thoroughly before use to remove these small pieces.
A fine white/grey dust has settled on the base of my pond 24-48 hours after the filter was started?	The grey/white dust is small particles of Crystal Bio Media. This is harmless to Fish and the Aquatic environment. A fine net or pond vacuum can be used to remove them or if left they will break down and disperse.
Yellow or White foam has occurred on the pond surface since the filter was started?	All pond water which supports a fish stock contains protein molecules. When disturbed with oxygen bubbles protein foam can be created. The Shower Filter creates oxygen as water passes over the Crystal Bio Media and some foaming on the pond surface can occur. Use a propriety "Anti Foam" treatment or fit a protein skimmer to help remove the foam, both available from all good aquatic shops. The removal of protein from within the water is good and will improve biological performance helping to lower Ammonia and Nitrites, in turn improving fish health.
What do I do if there is a power cut and will the biological capacity of the filter be lost?	The Filter Module and Crystal Bio Media will hold moisture for up to 24 hours ensuring the biological capacity is not lost. Do not remove the lid as this will cause moisture to be lost. When the power is returned the filter will carry on working. If the power has been off for more than 24 hours run a small quantity of water through the filter to waste before returning water to the pond.

For further advice, sales or spares please see www.rotinnovations.com or speak to the retailer where you purchased this product.

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