

BERMUDA



Variable Control **Filter Force**

Submersible, solids handling pump

Instruction Manual

IMPORTANT: Please read this instruction manual carefully before using this product. Keep the manual safe for future reference.

Thank you for purchasing a Bermuda Variable Control Filter Force Pump. These are powerful, submersible, solids handling pumps that can be easily controlled via the wired control box. Simply push the buttons on the control panel to adjust the flow rates to meet your specific needs. These solids handling pumps are ideal for passing dirty pond water to filters, or supplying large volumes of water to water courses. To ensure that this product is safely and correctly used and at its optimal performance, please read this instruction booklet carefully before use.

Attention

1. Keep out of the reach of children.
2. A drip loop should be installed in the cable, to ensure that water cannot travel down it and into an electrical socket.
3. An RCD (of which the rated working current is not over 30mA) must be installed when using the pump, and the power socket must be connected to an earth.
4. Bermuda Filter Force pond pumps are designed for under water use only. Running the pump dry, without water inside the pump, is strictly prohibited. Dry running may also cause irreparable damage, and invalidate any warranty.
5. The device must not be used to pump any flammable liquids or water with a temperature higher than 35°C.
6. Always disconnect the power supply when handling, servicing or maintaining the pump.
7. Do not attempt to unplug the pump or disconnect from the power supply with wet hands.
8. Do not carry or retrieve the pump from the pond by pulling the electrical cable.
9. The power cable cannot be replaced. If the power cable becomes damaged near to the pump body it cannot be replaced, and electricals are sealed inside the unit to make them waterproof.

Features

- Wired control box to easily adjust flow rates (0% to 100%)
- Elegant appearance and practical design.
- Permanent magnet brushless motor drives, for DC adaptive variable frequency, high efficiency and long life.
- Energy saving motor for large water volumes and high pressure.
- Ceramic impeller shaft with high rub resistance and long life.
- Fully epoxy sealed motor for waterproofing, safety and reliability.
- Steady and quiet performance.

Usage

Suitable for outdoor ornamental garden ponds only. Can be run continuously, 24 hours per day.

1. The device can be placed at the bottom of the pond. One end of the hose should be connected to the pump outlet, and the other end will feed water either to a filter or water course. Hose clips (not supplied) should be used to fasten the hose to the hosetails.
2. The direction of the outlet is adjustable. If necessary, loosen the locking nut and adjust the outlet to the direction you need. Then tighten the locking nut by hand.
3. Connect the pump cable to the control box using the connector pins on the plug. Push the pins into the connector, then tighten the screw sleeve to secure this into position.
4. Wire the pump cable into an appropriate RCD. We recommended consulting a qualified electrician for advice.
5. When first connected to the power, spend 30 minutes to check that the pump is running as it should, without any abnormal flow, or fault.
6. There are three buttons on the controller, one to turn the pump on and off, one to increase flow and one to decrease flow.
7. When not in use, we advise turning the pump off rather than running at zero per cent.

Maintenance

Regularly inspect and clean the pump housing to make sure it has not accumulated too much dirt and leaves. Visibly reduced pump flow is a strong indicator that either the pump cage is nearly completely blocked, or the filter it is attached to is blocked, and needs cleaning, or new mechanical filter media.

Cleaning

Step 1: Unclip the four locking clips and hinge back the upper casing

Step 2: Remove the stepped hosetail and ball joint by undoing the locking nut by hand.

Step 3: Using a Phillips screwdriver remove the screws and clamp which secure the pump body.

Step 4: Unscrew the impeller housing.

Step 5: Pull the impeller up, out of its chamber.

Step 6: Clean and inspect the impeller. The magnet should be crack-free, the impeller blades all present and intact, and free of debris and mulm build-up. If the impeller is damaged a new impeller should be purchased from your Bermuda stockist.

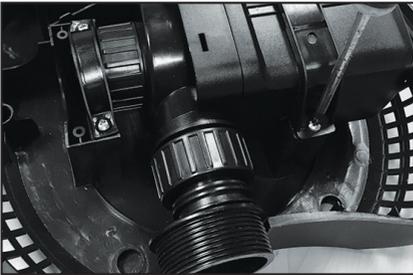
Step 7: Replace the impeller, then the pump, then the fastening bracket, then hinge the upper casing from the back, and fasten the locking clips.



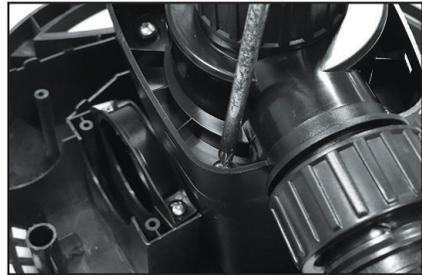
Step 1



Step 2



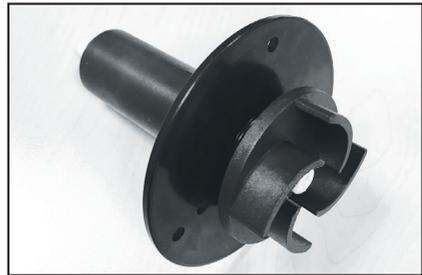
Step 3



Step 4



Step 5



Step 6



Step 7

Trouble shooting

1. If the pump is not working after being connected, please check if the plug is loose, if it has been properly wired into the plug, RCD plug or outdoor switchbox, and that the plug and cable are not damaged. Never dismantle the pump by yourself if malfunction occurs. Check that the RCD has been reset and power to outdoor electricals is switched on, and not tripped or fused.
2. If the motor of the pump is running but with less water flow or water pressure, check that the pump housing is not already blocked by too much dirt and leaves, and that the Head Max (height of water it is pumping to) has not been exceeded.

Trouble shooting - Control Box Fault Codes

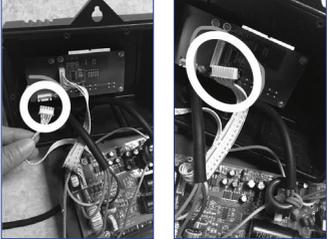
In the unlikely event of an issue developing with the varipump, a 3 digit fault code may be displayed on the control box screen.

Use the table on page 7 to understand what these codes mean.

If the controller displays digits but the pump is not working - pull out the power cord and re-start.



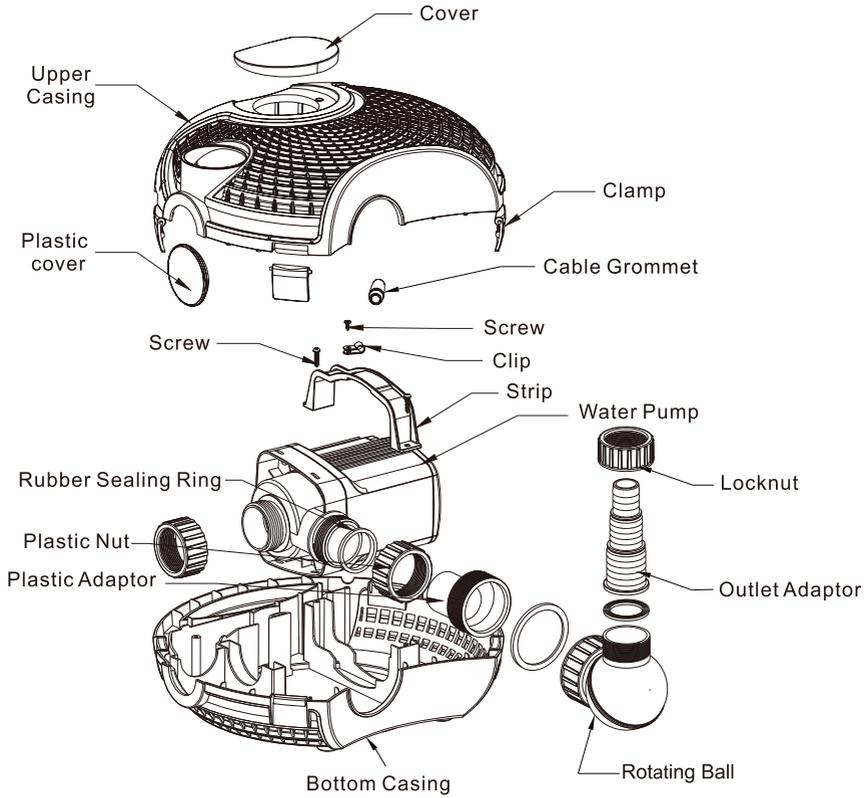
Trouble shooting - Control Box Fault Codes

Fault Code	Fault	Resolution
E01	Pump is out of water	The pump is working without water.
E02	Over current	Abnormal load over current protection. Please pull out the power plug and re-plug again.
E03	Default phase	Bad contact or loose connection in the motor.
E04	Issue with power cable connecting pump to the control box	<p>Check the cable for signs of visible damage. Or there maybe a loose connection inside the control box. Disconnect the pump from the mains, unscrew the control box and check the connections (see photos). If connections are fitted and the pump still does not, the control box may be faulty and needs changing.</p> 
E05	Impeller stuck	Rotation clogging protection, if the pump still not working after restart for three times, please re-plug the power. Or clean the impeller (refer to manual)
E06	Over voltage	Over voltage protection when the working voltage is higher than the rated voltage.
E07	Under voltage	Low voltage protection when the working voltage is lower than the rated voltage.

Trouble shooting

Symptom	Problem	Resolution
No Flow	Insufficient Prime	Prime system with water and purge all air from suction piping.
	No Power	Wired incorrectly or an RCD has tripped.
		Pump has been switched off at the controller.
	Flow Restriction	Ensure valves are open.
		Ensure plumbing is clear, including suction strainers, check valves, etc.
		Verify non return valve orientation and direction of permitted flow.
	Air leak	Clean out leaves or other debris from basket strainer (if applicable).
Fix air leaks at fittings, connections, strainer basket etc. This typically occurs on the intake side.		
System Incompatibility	Verify hydraulic compatibility: i.e. pump & pipe are sized for the system.	
Excessive Noise	Cavitation	Verify airtight plumbing on the suction plumbing especially fittings!
		Clean out leaves or other debris from basket strainer (if applicable).
		Increase pipe size where possible.
		Decrease suction pipe length, reduce the number of elbows, etc.
		Verify hydraulic compatibility: i.e. pump and pipe are sized for the system.
	No Power	Wired incorrectly or an RCD has tripped.
		Pump has been switched off at the controller.
	Flow Restriction	Ensure valves are open.
		Ensure plumbing is clear, including suction strainers, check valves, etc.
		Verify non return valve orientation and direction of permitted flow.

Exploded view



Specifications

MODEL	BER CODE	OUTPUT	POWER	HMAX	HOSETAILS	DIMENSIONS
5000	BER0650	5,000lph / 1,100gph	48W	3.85m	1", 1¼", 1½"	339 x 379 x 239mm
10000	BER0651	10,000lph / 2,200gph	90W	4.55m	1", 1¼", 1½"	339 x 379 x 239mm
20000	BER0652	20,000lph / 4,400gph	190W	7.15m	1", 1¼", 1½"	339 x 379 x 239mm

Guarantee

This product is guaranteed against defects in material and workmanship for **two 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 the pump. If the pump fails due to a manufacturing fault within this period it will be either repaired or replaced free of charge. Moving parts or wearable parts including the impeller and any washers or O rings are not covered by the guarantee and are available to order from your Bermuda retailer.

Should your Bermuda product stop working refer first to trouble shooting and if this does not help, return the product to the place of purchase.

Liability is limited to replacement of the faulty product only. No other costs will be reimbursed. This guarantee is not transferable and does not affect your statutory rights.

Do not attempt to tamper with or access electrical components inside the pump body. Doing so will invalidate the warranty.

The manufacturer or supplier shall not be responsible, or held liable for any damages caused by defective components or materials of this product, or for loss incurred by interruption of service, or any consequential/incidental damages and expenses arising from the production, sale use or misuse of this product or any other consequential loss.

Any warranty claim must be accompanied by a valid, dated proof of purchase. Evolution Aqua, Bermuda, its distributors and dealers shall not be held liable for any loss of fish, plants or any other livestock as a result of any failure or defect of this product.

The installation and use of your product outside of our recommendations as printed in this manual may also void the warranty.



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