evoclear®

HIGH PERFORMANCE FILTERS

EVOCLEAR
MEDIA FILTERS

Installation and Operation Manual for
EVOCLEAR MEDIA FILTERS

S SERIES | E SERIES

⚠ WARNING

This equipment must be installed and serviced by a qualified technician. Improper installation can create electrical hazards which could result in property damage, serious injury or death. Improper installation will void the warranty.

NOTICE TO INSTALLER

This manual contains important information about the installation, operation and safe use of this product. Once the product has been installed this manual must be given to the owner/operator of this equipment.

evolution
WATER & LIGHTING SOLUTIONS

evoclear®

HIGH PERFORMANCE FILTERS

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1.0 FOREWORD

1.1 Congratulations on your recent purchase of an Evolution Evoclear Media Filter. Please take a moment to read through the entire manual before using the filter. The filter must be installed and operated as specified.

2.0 SAFETY

2.1 Evoclear Media Filters are designed to work with water at temperatures greater than 0°C and lower than 50°C. The filter should never be operated outside of these temperatures, or damage may occur.

2.2 The installation should be carried out in accordance with local safety standards and bylaws.

2.3 Any modification of the filter requires prior consent from Evolution. Original replacement parts and accessories authorised by the manufacturer ensure a high level of safety. Evolution assumes no liability for the damage and injuries caused by unauthorised replacement parts and accessories.

2.4 The user should make sure that the installation is carried out by qualified authorised persons and that these persons have first carefully read the following instructions.

2.5 The operating safety of the filter is only guaranteed if the installation and operation instructions are correctly followed.

2.6 In the event of defective operation or fault, contact Evolution or its nearest authorised service agent.

2.7 To reduce the risk of injury, do not permit children to use this product.

2.8 Incorrectly installed equipment may fail, causing severe injury or property damage.

2.9 Chemical spills and fumes can weaken swimming pool/spa equipment. Corrosion can cause filters and other equipment to fail, resulting in severe injury or property damage. Do not store pool chemicals near your equipment.

3.0 INSTALLATION

3.1 GENERAL

3.1.1 Position the filter as close to the swimming pool/spa as possible.

3.1.2 Position the filter so it is free from flooding, drainage infrastructure and areas where water may pool, such as ditches, guttering, garden hollows, etc.

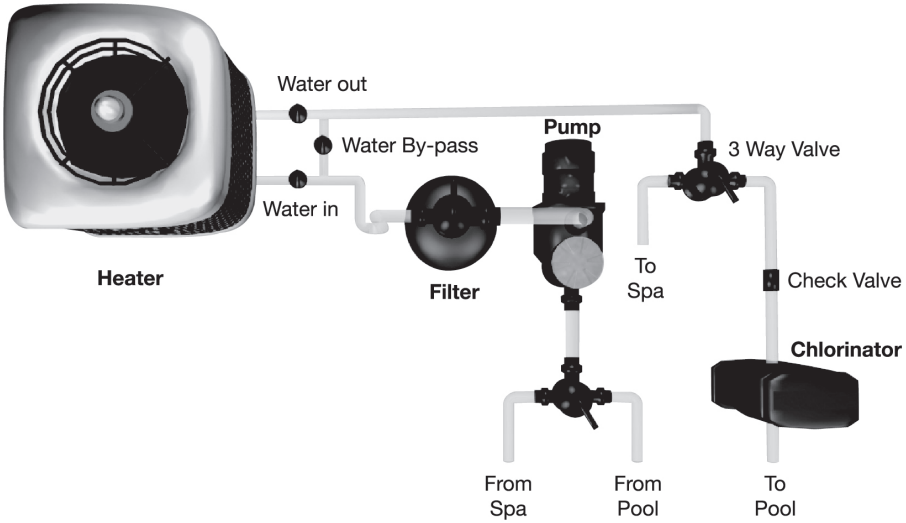
3.1.3 Position the filter so that the piping connections, Multiport Valve and winter drain is convenient and accessible for operation, servicing and winterising.

3.1.4 Ensure that the compliance label is facing the front to allow easy identification.

3.1.5 The filter should be placed on a level concrete slab, very firm ground, or equivalent. Ensure that the ground will not subside, preventing any strain from the attached plumbing.

3.1.6 Ensure that there is no movement of the filter during operation of the Multiport Valve.

3.1.7 Allow sufficient clearance around the filter to permit visual inspection of the entire system.



Installation diagram. Fig. 1

3.2 ***FILLING THE FILTER MEDIA***

3.2.1 Before filling the filter media into the filter vessel, carry out a visual check of the laterals. Look for broken or loose laterals. Replace if necessary.

3.2.2 To eliminate stress on the laterals, fill the filter vessel half full of water to provide a cushioning effect when the filter media is poured in.

3.2.3 **(a) Top Mount Fibreglass Filters** - Top Mount Fibreglass Filters are supplied with a perforated plastic locator, which centres the stem and prevents media from entering the stem pipe. Place the perforated plastic locator on the centre stem of the filter and carefully pour in the filter media via the perforated holes of the plastic locator. Remove the plastic locator once completed.

3.2.4 Note: If a template is not provided or is lost, you must centre the stem and cover the stem opening to prevent non-alignment and media from entering the stem pipe.

3.2.5 **(b) Side Mount Fibreglass Filters** - Remove the top diffuser from the internal diffuser pipe and place the flexible air relief tube inside the filter vessel and to the side, out of the way. Cap the internal diffuser pipe with the filter media shield provided to prevent filter media from entering it. Do not move the diffuser pipe, as this can affect the integrity of the bulkhead seal.

3.2.6 Note: The above instructions do not apply to Side Mount Fibreglass Filters larger than SM600 filters. Any filter media entering the diffusers will be removed during normal operation.

3.2.7 Wash all the filter media and debris away from the threads and sealing surfaces of the filter vessel.

3.2.8 Lubricate the o-ring or gasket on the Multiport Valve. The lubricant used should be silicon-based and not petrochemical-based.

3.2.9 Thread the Multiport Valve or Top Cap onto the filter tank and hand tighten.

3.3 ***PLUMBING***

3.3.1 Check that the incoming water pressure is within the filter's recommended working pressure. Ensure that a pressure limiting valve is installed if using mains water or a high-pressure pump.

3.3.2 Ensure that a foot valve/non-return valve is installed if the pump is installed at 500mm (20") above the water level.

3.3.3 If the filter is installed below the water level or connected to mains water, isolation valves should be installed at the inlet and outlet of the filter. This will prevent water flow during any routine maintenance.

3.3.4 Minimise the length of pipe and the number of fittings to minimise restrictions to water flow.

3.3.5 Connect all plumbing to the Multiport Valve, ensuring all plumbing connections are glued and tightened securely to prevent leaking.

3.3.6 Ensure solvents/glues are not excessively applied to fittings as this could flow into o-rings and create sealing problems.

3.3.7 Do not overtighten fittings or adapters.

*3.4 **MULTIPORT VALVE INSTALLATION***

3.4.1 Top Mount Media Filters are supplied with either a top mounted screw down Multiport Valve or a clamp down Multiport Valve.

3.4.2 Side Mount Media Filters are supplied with a side mounted Multiport Valve with a plumbing kit designed to be connected to the side ports of the filter.

3.4.3 Each Multiport Valve is supplied with three threaded barrel unions.

3.4.4 Check that the top of the filter is free from any filter media or debris, and if there is a valve o-ring, check that the valve o-ring is in place.

3.4.5 Check the label of each valve port and position the valve accordingly. The PUMP port must be plumbed to the pump discharge, the WASTE port must be plumbed to the waste line, and the RETURN port must be plumbed to the return line.

3.4.6 **(a) Top Mount Screw Down Multiport Valve** - Rotate the Multiport Valve into the filter vessel's threaded connection.

3.4.7 **(b) Top Mount Clamp Down Multiport Valve** – Align the valve with the top of the tank flange. Place the coupling clamp half over the valve flange and the tank flange. Insert the screws and nuts in the coupling clamp jaws, ensuring that the nuts are located in the retainer slots on the clamp jaws. Tighten the clamp screws firmly and check that the valve, tank flange and coupling clamp are correctly assembled.

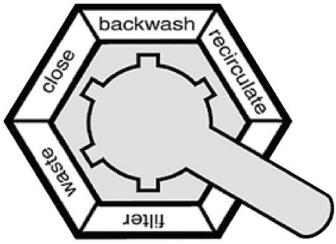
3.4.8 **(c) Side Mount Multiport Valve** – Align the Multiport Valve's plumbing kit with the filter's threaded connection ports. Screw the plumbing kit's barrel unions onto the filter connection ports, and hand tighten. Do not overtighten the barrel unions, as this can lead to damage and void the product warranty.

3.4.9 Screw the Multiport Valve barrel unions onto the threaded connection ports of the Multiport Valve and hand tighten. The barrel unions should be firmly threaded into the Multiport Valve, and there should be no play between the thread. Do not overtighten the barrel unions, as this can lead to damage and void the product warranty.

3.4.10 Glue the PVC pipe to the barrel unions and allow the glue to set as per the manufacturer's instructions before starting the filter.

3.4.11 Test the filter and check for leaks around the threads.

4.0 MULTIPORT VALVE OPERATION



Multiport Valve Handle diagram. Fig.2

4.1 ***FILTER - POSITION FOR FILTRATION.***

Incoming water from the piping system is automatically directed by the Multiport Valve to the top of the filter bed. As the water is pumped through the filter bed, dirt and debris are trapped by the filter bed. The filtered water is returned from the bottom of the filter vessel through the Multiport Valve and back through the piping system.

4.2 ***BACKWASH - POSITION FOR CLEANING THE FILTER MEDIA.***

Water flow is reversed by the Multiport Valve through the filter bed so that water flow is directed to the bottom of the filter vessel and up through the filter bed, flushing the previously trapped dirt and debris out of the waste line.

4.3 ***RINSE - POSITION FOR FLUSHING THE FILTER SYSTEM.***

The water flow is directed by the Multiport Valve through the filter bed and out. This process settles the filter media bed into place and ensures any dirt or debris is rinsed out of the filter, preventing dirt or debris from returning to the swimming pool/spa.

Note: The RINSE position is not available on 4-Way Multiport Valves.

4.4 ***WASTE - POSITION FOR BYPASSING THE FILTER BED TO WASTE.***

The water flow is directed by the Multiport Valve straight to the backwash outlet, bypassing the entire filter bed. This Multiport Valve position is used to lower the water level or to vacuum water with high dirt loads.

4.5 ***RE-CIRCULATE - POSITION FOR BYPASSING THE FILTER BED TO THE POOL/SPA.***

The Multiport valve recirculates water flow directly back to the swimming pool/spa, bypassing the filter.

4.6 ***CLOSED – POSITION FOR CLOSING ALL FLOW TO THE FILTER.***

The Multiport Valve can be closed to enable pump servicing without draining the water from the filter. This position is not to be used with the pump operating.

Note: The CLOSED position is not available on 4-Way Multiport Valves.

4.7 ⚠**CAUTION**: Operation of the Multiport Valve or mode selection is always to be done with the pump switched off.

5.0 INITIAL STARTUP OF FILTER

5.1 Be sure the correct amount of filter media is in the filter vessel and that all connections are hand tightened.

5.2 Depress Multiport Valve handle, rotate to the BACKWASH position, and open the air release valve on the filter or Multiport Valve.

5.3 Note: To prevent damage to control valve seal, always depress handle before turning.

5.4 Switch on the pump and open the Inlet Valve allowing the filter vessel to fill with water.

5.5 Note: If a pump is installed, switch the pump on and off, instead of closing and opening the Inlet Valve.

5.6 Once a steady flow of water runs through the waste line, close the air release valve and let the pump run until the wastewater is clear. The initial backwashing of the filter is recommended to remove any impurities or fine particles from the filter media until the sight glass is clear. This process may take up to 3 minutes.

5.7 Turn the pump off, rotate to the RINSE position, switch on the pump and open the Inlet Valve until the water in the sight glass is clear — approximately 10 to 15 seconds.

5.8 Switch off the pump and close the Inlet Valve, set the Multiport Valve to the FILTER position, switch on the pump, and open the Inlet Valve. The filter is now operating in its normal filter mode.

5.9 Adjust pool suction and return valves to achieve the desired flow. Check the plumbing and filter for water leaks and tighten connections, bolts, and nuts, as required.

5.10 Record the pressure gauge reading (start up pressure) during the initial operation. After a period of use, the accumulated dirt and debris in the filter causes a resistance to flow. The pressure will start to rise, and the water flow will decrease. When the pressure gauge reading is 50kPa (7.2psi) higher than the initial start up pressure, it is time to backwash and clean the filter, see *6.0 Backwashing*.

5.11 Note: If the filter is connected to mains water, it is not necessary to record the start up pressure, as mains pressure tends to fluctuate.

6.0 BACKWASHING

6.1 GENERAL

6.1.1 The function of backwashing is to separate the deposited particles from the filter media and flush them from the filter bed. Backwashing is achieved by reversing the flow of water through the filter bed at a fairly high flow rate. This high flow rate expands the filter bed and the water flow carries the debris out to waste.

6.2 IMPORTANCE OF BACKWASHING

6.2.1 The importance of backwashing cannot be overstated. Without proper and frequent backwashing, filter media can become 'packed' — creating channelling in the filter bed, loss of efficiency and early exhaustion of the filter bed. Moreover, if debris is not flushed from the media, the filter bed will saturate until the filter fails to operate.

6.3 ***CONDITIONS FOR BACKWASHING***

6.3.1 The requirements for backwashing are determined by the following conditions:

1. The flow rate through the filter bed decreases until it is insufficient to meet the demand.

2. The debris removal efficiency of the filter bed decreases to the point where filtered water quality deteriorates or results in dirt or debris returning to the pool.

3. The pressure gauge reading is 50kPa (7.2 psi) higher than the start up pressure.

Note: If the filter is connected to mains water, pressure rise is not an accurate indicator as mains pressure tends to fluctuate. It is best to rely on the actual flow rate.

6.4 ***BACKWASHING INSTRUCTIONS***

6.4.1 Switch off the pump and close the Inlet Valve.

6.4.2 Release the filter's pressure by loosening the Pressure Release Valve until the pressure gauge needle drops to zero.

6.4.3 Retighten Pressure Release Valve.

6.4.4 Depress and turn the handle 180° to the BACKWASH position. In the BACKWASH position, water flow is automatically reversed through the filter so that it is directed to the bottom of the filter vessel and up through the filter bed, flushing the previously trapped dirt and debris out the waste line, see Fig. 3.

6.4.5 Switch on the pump and open the Inlet Valve. Backwash water will flow out through the filter bed drain pipe.

6.4.6 When the backwash water in the sight glass appears clear, switch off the pump and close the Inlet Valve.

6.4.7 Depress and turn the handle to the RINSE position. In the RINSE position, water flow is directed through the filter bed as normal filter mode but out through the waste outlet. This process settles the filter media bed into place and ensures any dirt or debris is rinsed out of the filter, preventing possible return to the pool.

6.4.8 Switch on the pump and open the Inlet Valve. Rinse water will flow out through the drain pipe.

6.4.9 When the rinse water in the sight glass appears clear, switch off the pump and close the Inlet Valve.

6.4.10 Depress and turn the handle to the FILTER position and switch on the pump and open the Inlet Valve for normal operation.

7.0 MAINTENANCE

7.1 The filter media will only require replacement once it has reached the limits of its designated life. Refer to the product information of the particular filter media used.

7.2 To ensure the maximum life of the selected filter media, please follow the procedures below:

1. Backwash the filter regularly as per *6.0 Backwashing*.

2. Refer to the specifications of the filter media used and implement regeneration procedures accordingly.

3. Maintain a correct chemical balance of your pool/spa water. The chemical balance of water is a relationship between its pH, total alkalinity, calcium hardness and water temperature. The water must be maintained at all times to the following:

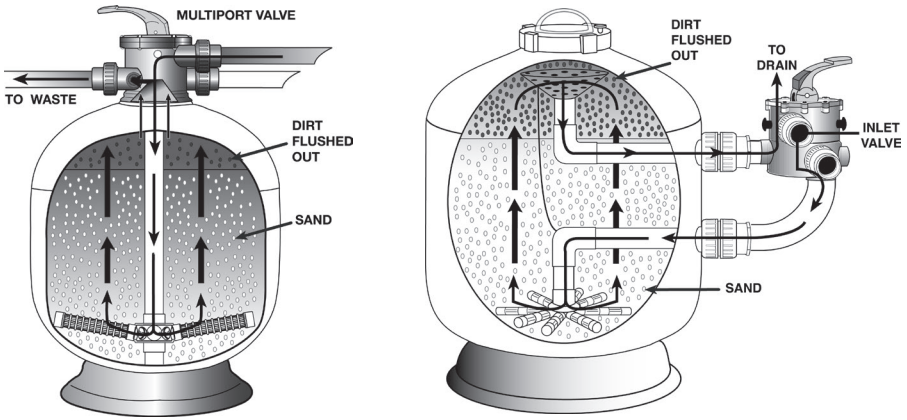
pH:	**7.2 - 7.8.**
Total Alkalinity:	**80 - 150ppm.**
Calcium Hardness:	**150 - 300ppm.**

And within these tolerances be balanced to the Langelier Saturation Index within a range of -0.2 to +0.2.

Note: Testing kits are available to test the water yourself or alternately bring a sample of the water to a professional pool and spa shop.

7.2.1 To prevent damage to the pump and filter and for proper operation of the system, clean the pump strainer and skimmer baskets regularly.

7.2.2 Replace the pressure gauge if faulty readings are observed.



Backwashing flow diagrams of top mounted and side mounted valve filters. Fig.3

8.0 TROUBLESHOOTING

Fault/Problem	*Possible Causes and Remedies*
Above normal or excessive force to operate the Multiport Valve	Scoring or jamming with foreign matter or debris. If this condition persists after rinsing, disassemble the valve to clear dirt and debris. Continued operation of the valve may result in a non-sealing condition (damage to spider gasket). This will lead to water loss to the backwash line or to inefficient filtration. Note: A filter sock is recommended during pool vacuuming, to prevent dirt and debris lodging between the spider gasket and Multiport Valve body.
Water is not clear	Insufficient filtration time.
	Heavy bathing or dirt load. Pool must be flocculated and vacuumed directly to waste..
	Filter is dirty, requiring a thorough backwash.
	Air leaking on suction (influent line).
	Incorrect water chemistry.
	Insufficient water supply (water level low, blockage).
	Pump not primed.
	Pump impeller vanes blocked.
	Excessive flow of water for filter size. Foreign matter or debris forced through filter bed and through the under drain.
	Other restrictions including pool suction cleaners resistance from other inline equipment such as strainers. Operating the filter on recirculate will determine if the restriction is in the filter.
	Clogged or channelled filter media. Perform thorough backwash or regeneration.
Filter media flushed out to Waste during backwash	Filter is on recirculate
	Verify it is the filter media and not from another source.
	Damage to the under-drain laterals.
	Damaged or incorrect connections to the Multiport Valve.
	Incorrect sized or grade of filter media.
Filter media returning to swimming pool/spa	Filter is on recirculate.
	Verify it is the filter media and not from another source.
	Damage to the under-drain laterals.
	Damaged or incorrect connections to the Multiport Valve.
	Incorrect sized or grade of filter media.
Short filtration cycles	Presence of algae or a scale build up.
	Check water chemistry.
	Excessive water flow, check pump size/mains water flow.
	Filter blocked through calcium etc. clean filter media.
	Ineffective backwash, perform thorough backwash.
High pressure on start-up	Small eyeball fitting in pool/spa.
	Partially closed valve on return line.
	Pump size is too large for the filter.

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