

Manual

DFC-039

DFC-049



FLOW Cartridge Filter



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1. FILTER SPECIFICATIONS

MODEL NO.	EFFECTIVE FILTRATION RATE		DESIGN FLOWRATE		NET. WEIGHT
	M ²	FT ²	M ³ /H	GMP	KG
DFI - 039	39,5	425	24	150	13
DFI - 049	48,8	525	32	150	15

MAXIMUM WORKING PRESSURE FOR ALL MODELS = 3,45 BAR (50 PSI)

ATTENTION INSTALLER: THIS MANUAL CONTAINS IMPORTANT INFORMATION
OF THE OPERATION AND SAFE USE OF THE EQUIPMENT.
THIS MANUAL IS INTENDED FOR THE END USER OF THIS PRODUCT.

APPROVED FOR FRESH OR SALT WATER

SUGGESTED POOL CHEMISTRY LEVELS

pH	7,2 to 7,8
Total Alkalinity	80 to 120 ppm
Calcium Hardness	200 to 400 ppm
Combined Chlorine	0,2 ppm Maximum
Chlorine (Stabilized)	1,0 to 3,0 ppm
Chlorine Stabilizer (Cyanuric Acid)	60 to 80 ppm

2. PACKAGING CONTENTS

Item No.	Part Description	Qty.
1	Pressure Gauge	1
2	Manual Air Relief Valve	1
3a	Upper Filter Body for DFC-039	1
3b	Upper Filter Body for DFC-049	1
4	Clamp System including: Clamp, Clamp Nut and Bolt, Hang Tag, Metal Reinforced Seal and Labels	1
5	O-Ring	1
6	Air Relief Filter	1
7	Top Manifold	1
8a	Cartridge Element for DFC-039	4
8b	Cartridge Element for DFC-049	4
9	O-Ring	1
10	Adaptor	1
11a	Outlet Pipe for DFC-039	1
11b	Outlet Pipe for DFC-049	1
12	Inlet Elbow	1
13	Outlet Elbow	1
14	Bottom Seal Plate	1
15	Lower Filter Body	1
16	1 ½" Drain Plug with O-Ring	1
17	O-Ring	2
18	Bulkhead Fitting	2
19	Union Connection Kit (63mm)	2

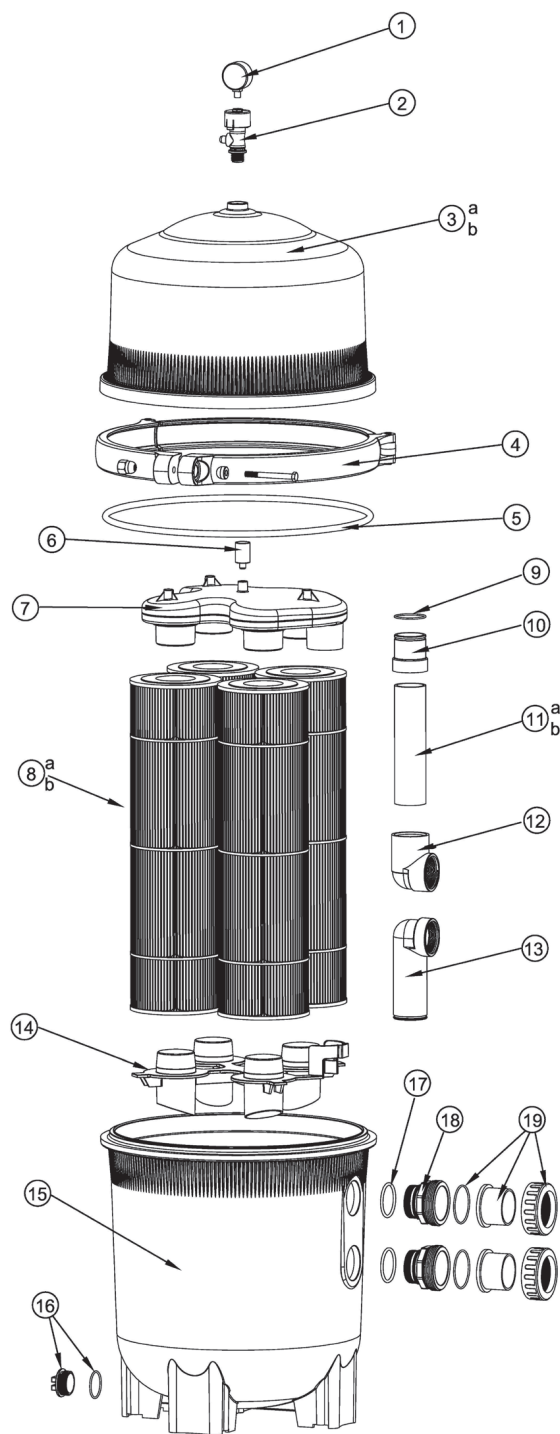


Figure 1

3. SPARE PARTS LIST

Item No.	Part No.	Part Description
1	SP_DFC-003	Pressure Gauge
2	SP_DFC-004	Manual Air Relief Valve
4	SP_DFC-005	Clamp Nut and Bolt
5	SP_DFC-006	O-Ring
8a	SP_DFC-001	Cartridge Element for DFC-039
8b	SP_DFC-002	Cartridge Element for DFC-049
16	SP_DFC-007	1 ½” Drain Plug with O-Ring
17	SP_DFC-008	O-Ring
18		Bulkhead Fitting
19		Union Connection Kit (63mm)

4. SAFETY INSTRUCTIONS



READ, UNDERSTAND AND FOLLOW ALL SAFETY AND OPERATION INSTRUCTIONS!

FAILURE TO FOLLOW SAFETY AND OPERATION INSTRUCTIONS CAN RESULT IN SEVERE PERSONAL INJURY OR DEATH.



This is the safety-alert symbol. When you see this symbol on your equipment or in this manual, look for one of the following signal words and be alert to the potential for personal injury or death.



WARNING Warns about hazards that could cause serious personal injury or, death, and or major property damage and if ignored presents a potential hazard.



CAUTION Warns about hazards that will or can cause minor or moderate personal injury and/or property damage and if ignored presents a potential hazard. It can also make consumers aware of actions that are unpredictable and unsafe.

The **NOTICE** label indicates special instructions that are important but not related to hazards.



CAUTION To reduce risk of injury, do not permit children to use or climb on this product. Closely supervise children at all times. The ANSI/NSPI-4 and EN16582 Standard (above-ground and on-ground pools) advises that components such as the filtration system, pumps, and heaters be positioned to prevent their being used as a means of access to the pool by young children.



WARNING COMPONENT SEPARATION HAZARD

Pool and spa water circulation systems operate under hazardous pressure during start up, normal operation, and possibly after pump shut off. Pressure in system can cause explosive component separation of the upper filter body if safety and operation instructions are not followed. Severe personal injury or death can result.



This product should be installed and serviced only by a qualified pool professional.

TO AVOID COMPONENT SEPARATION

- Follow all safety and operation instructions.
- Do not operate the water circulation system if a system component is assembled improperly, damaged, missing, or not a genuine component.
- Before performing maintenance on the water circulation system, verify all system and pump controls are in OFF position and the filter manual air relief valve is in the OPEN position.
- Use ONLY genuine components: Please use original components, otherwise may fail in use and cause explosive separation.
- Never rely on hand tightening the clamp nut to the clamp bolt. Using a 3/4" socket on a torque wrench, torque clamp nut and clamp bolt to 17Nm (150 inch-lbs).
- Before starting the circulation pump, insure the Manual Air Relief Valve Body is properly installed onto the Upper Filter Body.
- Before starting the system pump, verify that all system valves are set in a position to allow water from the filter to return back to the pool.
- Before starting the system pump, the manual air relief valve must be in the OPEN position. Do this to remove air from the system.
- When starting the circulation pump, do not stand over or near the filter.
- If water leakage appears in the area of the filter tank clamp, immediately turn off all system circulation pumps and electrical power. Do not return to the filter until all water flow has stopped. Reassemble the clamp system per the instructions in this manual to stop the leak.
See chapter: 9.4 LEAKING OF THE CLAMP
- Return to filter to close manual air relief valve only when a steady stream of water (Not air or air and water mix) is discharged from the manual air relief valve.
- Do not change the filter control valve position while system pump is running.



WARNING EXCESS PRESSURE HAZARD

Pressure testing of the pump and filter system in excess of the 3,45 Bar (50 PSI) can cause explosive separation of the components. Component separation can result in severe personal injury or death.



! WARNING ELECTROCUTION HAZARD

- High Voltage electricity is present in the pool and spa equipment. High voltage electricity can cause shock and electrocution. Shock and electrocution can result in severe personal injury or death.
- All electrical wiring **MUST** be in conformance with applicable local codes and regulations.
- Before performing any service or maintenance on electrical equipment turn off all electrical power.
- Verify water discharge from the filter manual air relief valve is directed away from electrical devices. Do not locate any electrical controls over or near filter.

SAVE THESE INSTRUCTIONS

5. GENERAL INFORMATION

The 'Cartridge Filter' combines superior water filtration with ease of operation and totally corrosion-resistant construction. With filtration ratings to 34,000 liters (9000 gallons) per hour, they are designed for continuous or intermittent operation, for installation above or below the pool water line, for fresh or salt water swimming pools or spa's.

The filters utilize multiple reusable, reinforced polyester and anti-bacterial filter cartridge elements to provide a high degree of water clarity and long filter cycles with minimum care.

MODEL NO.	DISTANCE: A		REQUIRED CLEARANCE			
			DISTANCE: B (SIDE)		DISTANCE: C (ABOVE)	
	CM	INCH	CM	INCH	CM	INCH
DFI - 039	94	37	46	18	48	16
DFI - 049	112,5	44,3	46	18	56	22

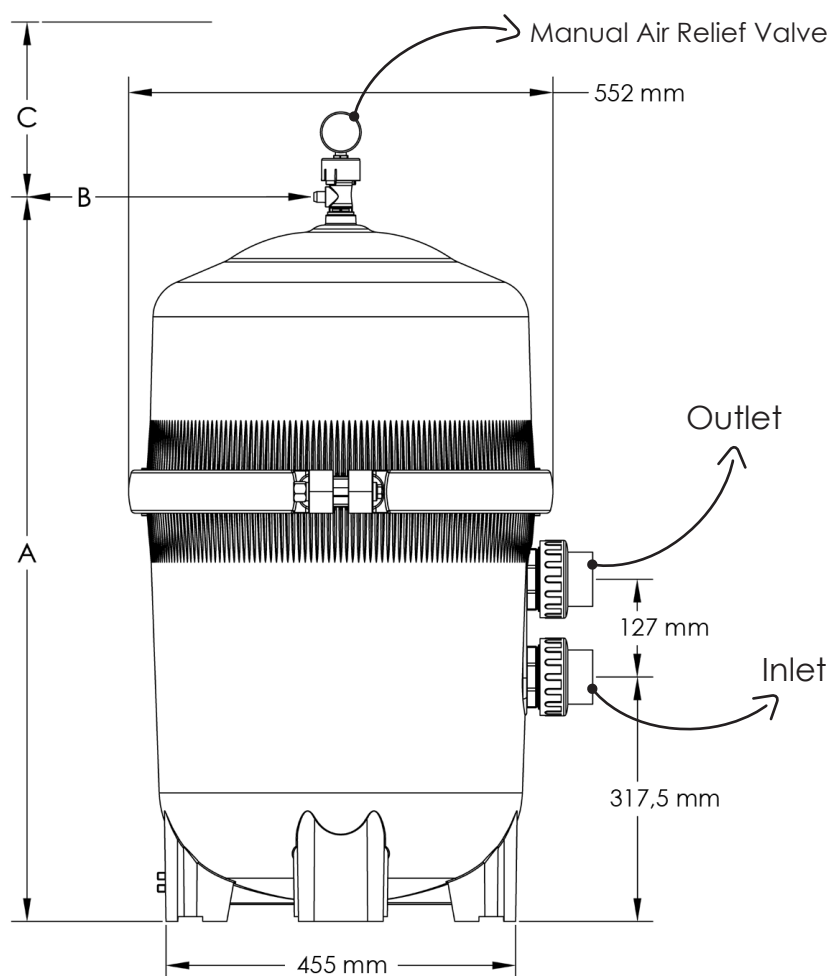


Figure 2

5.1 INSTALLATION

 This product should be installed and serviced only by a qualified pool professional.

WARNING



Filter installation:

1. The filter system should be installed on a level concrete slab or other rigid base. Select a well drained and vented area, one that does not flood when it rains. Position the filter so that the piping connections, and winter drain are convenient and accessible for operation, service, maintenance and winterizing.
2. Position the Filter Body in such way that all operation and safety labels are visible.
3. Position the Filter so that the filter will drain by gravity.
4. If practical, place the pump and filter in the shade to shield it from continuous, direct heat from the sun.
5. Connect the pool suction plumbing between the skimmer, pool suction outlet (from the pool) and the pump.
6. Connect the pump discharge (pump OUTLET) to the filter INLET.
7. Connect the filter OUTLET to the pool return plumbing lines.
8. Do not locate pump controls over or near the filter.
9. Verify water discharge from the Manual Air Relief Valve (MAR) is directed away from electrical devices.

5.2 STARTING THE PUMP AND FILTER SYSTEM

5.2.1 Before Starting The Pump

WARNING



1. Use ONLY Original components; Non-Original Clamp components may fail in use and cause explosive component separation. Verify that Upper and Lower Filter Bodies are properly secured with the Filter Body Clamp. Never rely on hand tightening the Clamp Nut to the Clamp Bolt. Using a $\frac{3}{4}$ " socket on a torque wrench, torque Clamp Nut to Clamp Bolt to 17Nm (150 inch-lbs). (See Fig 5)
Verify that the Filter Manual Air Relief Body is in the LOCK position, and no filter components are missing, damaged or not genuine DuraTech components. (See Fig 4)
2. Close filter drain. NOTE: Filter Plug requires an O-Ring seal. (See Fig 3)
3. Open all system valves to allow water from the pool to the filtration system and from the filter to return to the pool.
4. Place the Manual Air Relief Valve in OPEN position. (See Fig 4)

5.2.2 Starting The Pump

1. When starting system pump, do not stand over or near filter. If water leakage appears at filter tank clamp, immediately turn off all system circulation pumps and all electrical power. Do not return to the filter until all water leakage has stopped. Reassemble the Clamp System per the instructions on page 17 in this manual to stop leak.

See chapter: 6.3.3 Body and Clamp Re-Assembly

2. When a steady stream of water (Not air or air and water mix) is discharged from the Manual Air Relief Valve, then close the Manual Air Relief Valve.

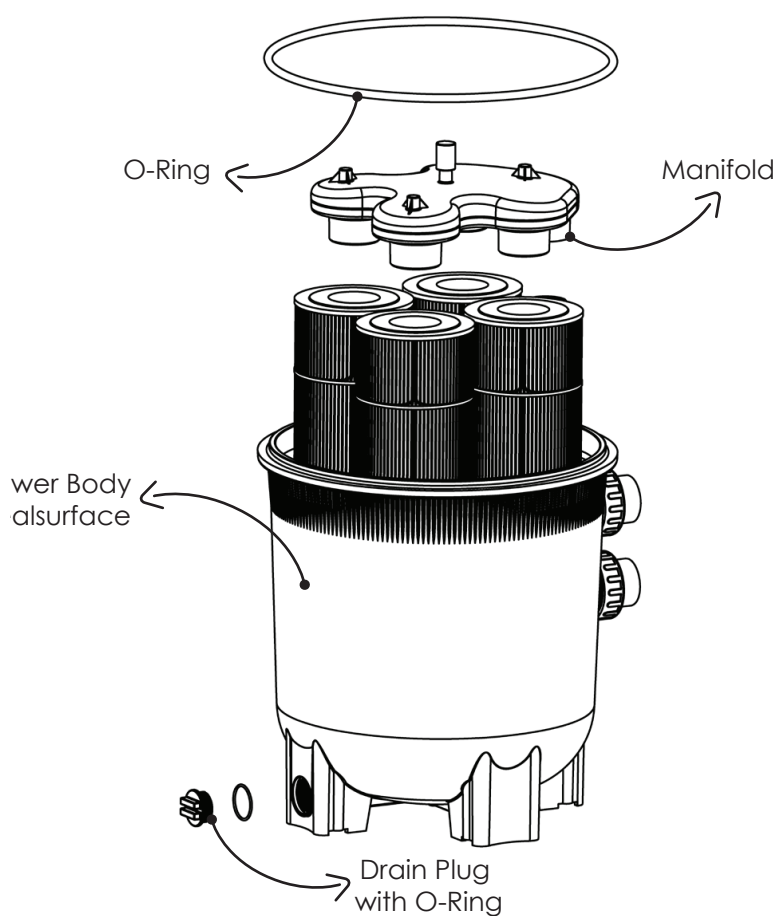


Figure 3

To Open

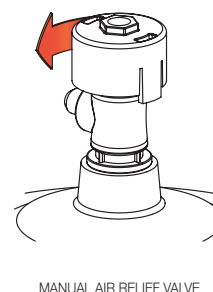


Figure 4

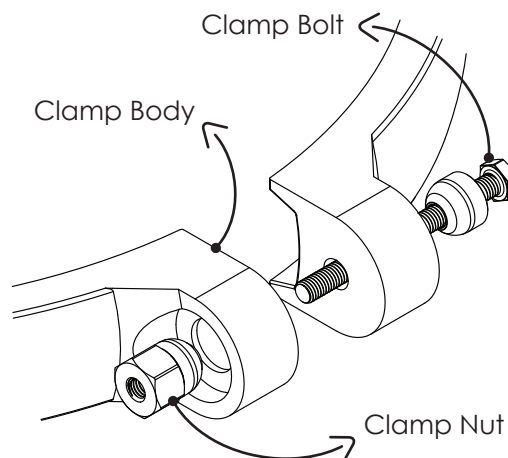


Figure 5

6. OPERATION

6.1 FILTERING

WARNING



Filtration starts as soon as flow is steady through the filter. As the filter removes dirt from the pool water, the accumulated dirt causes a resistance to flow. As a result, the gauge pressure will rise and the flow will decrease.

When the pressure rises between 0,49 - 0,69 bar (7 and 10 psi) above the starting pressure, or when the flow decreases below the desired rate, clean or replace the filter cartridge elements. Once your filter is running and there is a pressure reading, line up the green arrow with the current reading. (See Fig 6)

When the pressure rises to or above the red or second arrow, it is time to clean or replace your filter cartridge elements.

By recording the initial starting pressure (with clean filter elements) a determination can be made when the Filter Cartridge Elements should be replaced rather than cleaned. After the Filter Elements have been cleaned and reinstalled if the starting pressure is higher than 0,41 bar (6 PSI) above the starting pressure with the new Filter Cartridge Elements, the Filter Cartridge Elements should be replaced the next time the gauge arrow reaches the red arrow.

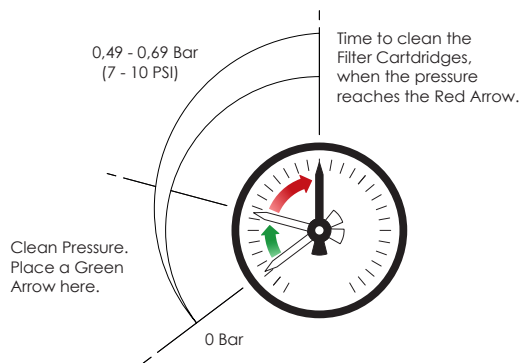


Figure 6

6.2 MAINTAINING YOUR FILTER

! This product should be installed and serviced only by a qualified pool professional.

! **WARNING**



6.2.1 Filter Disassembly Instructions

1. Turn off all system circulation pumps and all electric power on the equipment pad.
2. Set all system valves in a position to prevent water flow to the filter.
3. The Manual Air Relief Valve must be placed in the OPEN position. (See Fig 8)
4. Remove Filter Drain Plug and drain water from the cartridge filter to a level below the height of the Lower Filter Body. (See Fig 3)
5. Using 3/4" wrenches or hex sockets, loosen and remove the Clamp Nut and the Clamp Bolt. (See Fig 7)
6. Holding both ends of the Filter Clamp carefully spread the clamp ends. Remove the clamp by lifting over the Upper Filter Body. Do not drop the clamp during removal, because the clamp could be damaged. Do not strike the clamp with metal tools as they can damage the clamp.
7. Lift off the Upper Filter Body. Do not use the Pressure Gauge to lift the Upper Filter Body.

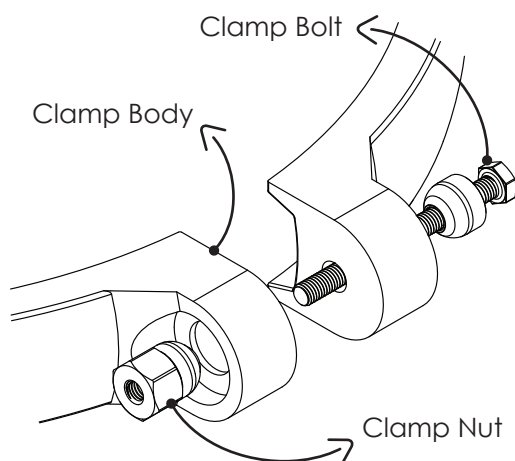


Figure 7

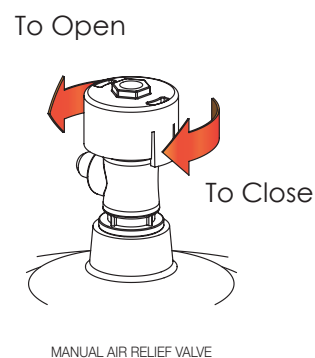


Figure 8

6.2.2 Removing The Cartridges

1. Remove the top Manifold, which is exposed when the upper Filter Body is removed. (See Fig 3)
2. Remove the Filter Cartridge Elements by using slight rocking motion and lifting up.
3. Clean Filter Cartridge Elements.

6.2.3 Cleaning The Cartridges

The Cartridge Filter Element can be cleaned by washing inside and outside with a garden hose. After hosing cartridge, for best results, carefully brush the pleated surface to remove fine particles. Do not pressure wash as it can damage the filter element.

You may find some debris on the cartridge pleats, which may not have been removed with hosing.

6.3 FILTER RE-ASSEMBLY INSTRUCTIONS



This product should be installed and serviced only by a qualified pool professional.



WARNING



6.3.1 Re-Installing Cartridges

1. Flush and drain any dirt or debris from the bottom of the Lower Filter Body. (See Fig 9)
2. Flush any dirt or debris from the Upper Filter Body and from around the Manual Air Relief Area.
3. Carefully replace the cartridges over the hubs on the bottom seal plate.
4. Place top manifold securely on top of cartridges, aligning the return pipe with the port in the manifold.

6.3.2 Clean Sealing Ring and Seal Surface

1. Remove filter tank O-Ring.
2. With a clean cloth, wipe the Lower Filter Body seal surface and clean seal of all dirt and debris. (See Fig 3) Do not use a solvent.
3. With a clean cloth wipe the Upper Filter Body seal surface.
4. Reposition the O-Ring in the Lower Filter Body.

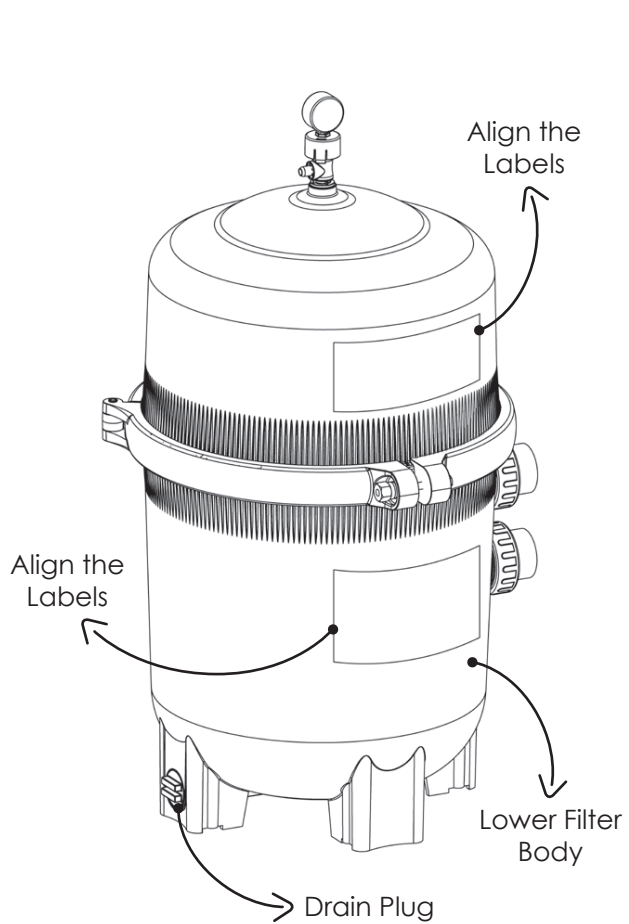


Figure 9

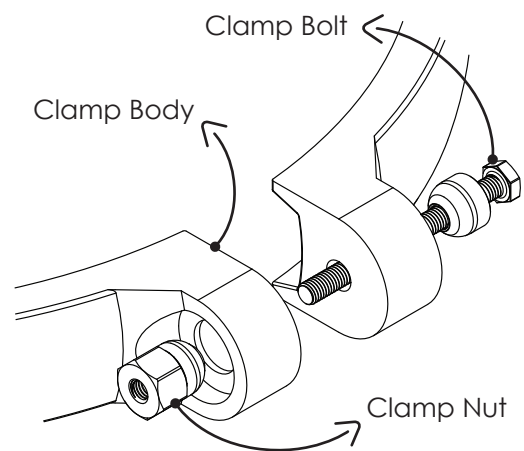


Figure 10

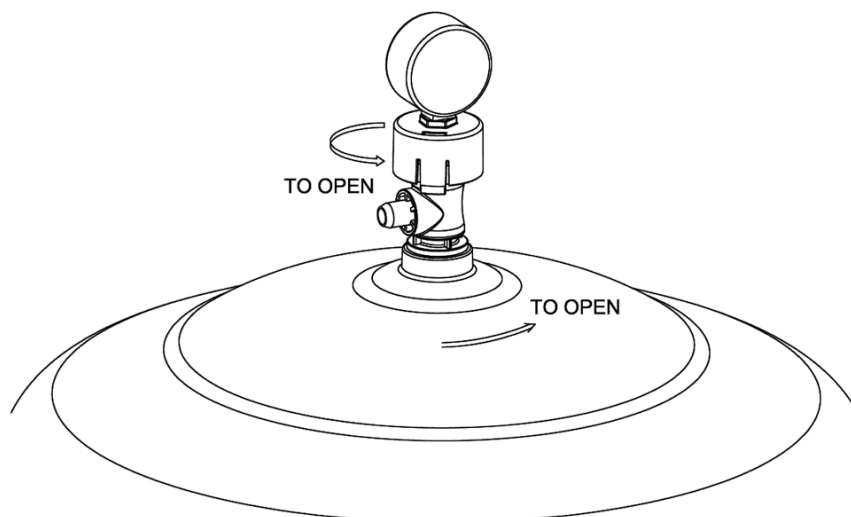


Figure 11

6.3.3 Body and Clamp Re-Assembly

1. Reposition the Upper Filter Body on the Lower Filter Body and press down the Upper Filter Body against the sealing. Verify that there is an even gap between the Lower and Upper Filter Body. If the gap is not even, then reposition the Upper Filter Body again.
Make sure all Operation and Safety Labels are clearly visible.
2. Assembly the Clamp Body around the Filter Body. (See Fig 10)
 1. Insert the Clamp Bolt through the Clamp ends.
 2. Thread the Clamp Nut onto the Clamp Bolt.
 3. Tighten the Clamp Bolt and Nut up to 17Nm (150 inch-lbs).
 - Thread the Clamp Bolt 10 times and gently tap the Clamp Body with a RUBBER hammer, around the circumference of the Filter Body.
 - Thread the Clamp Nut about 10 times and gently tap the Clamp Body with a RUBBER hammer, around the circumference of the Filter Body.
 - Use a torque wrench to apply the final torque on the Clamp Nut and Bolt. (17Nm /150 inch-lbs)



Never hit or strike the Clamp Body with a metal hammer or any other metal tool!

Follow again the instructions for “Starting the Pump and Filter System”.

7. THE MANUAL AIR RELIEF VALVE

7.1 REMOVING THE MANUAL AIR RELIEF VALVE

 This product should be installed and serviced only by a qualified pool professional.

 **WARNING**



Your Filter comes with a Manual Air Relief Valve (MAR) preinstalled from the factory. For Qualified pool professionals only: If MAR valve needs to be serviced, follow these instructions carefully.

1. Turn off all system circulation pumps and all electric power on the equipment pad.
2. Set all system valves in a position to prevent water from flowing to the filter.
3. The Manual Air Relief Valve must be placed in the OPEN position. (See Fig 11)
4. Wait until all water leakage has stopped.
5. The Manual Air Relief Valve can be removed by screwing the whole parts counter clockwise.

7.2 RE-INSTALLATION OF THE MANUAL AIR RELIEF VALVE

1. Check the O-Ring seals, replace as needed.
2. With a clean cloth, wipe the Upper Filter Body and O-Ring groove.
Remove all dirt and debris.
3. Align the notch in the MAR Flange with notch on top of the Upper Filter Body.
4. Press the MAR straight down into the Upper Filter Body.
5. Turn the MAR clockwise until the indicator is aligned with the "LOCK" position on the Upper Filter Body.
6. Verify the MAR discharge points away from all electrical connections.

8. WINTERIZING FILTER

 This product should be installed and serviced only by a qualified pool professional.

 **WARNING**



 In areas where subfreezing temperatures can be expected, the filter should be drained to protect the filter from damage.

1. The filter should be disassembled and the Filter Cartridges Elements cleaned or replaced.
2. Follow directions under FILTER DISASSEMBLY INSTRUCTIONS
3. Then follow REMOVING CARTRIDGES per instructions
4. Reassemble per FILTER RE-ASSEMBLY INSTRUCTIONS.
5. Be sure to leave the Drain Plug unattached during the winter season to avoid cracking the Filter Body.

9. PROBLEM SOLVING LIST

9.1 LOW WATER FLOW

1. Check the skimmer and the Pump Strainer Baskets for debris.
2. Check for restrictions in the intake and discharge lines.
3. Check for air leaks in the intake line. (Indicated by bubbles returning to the pool)

9.2 SHORT FILTER CYCLES

1. Check for algae in the pool and super-chlorinate the pool water as required.
2. Be sure chlorine and pH levels are in the proper range (adjust as required).

9.3 POOL WATER WON'T CLEAR UP

1. Check the Chlorine, pH and Total Alkalinity levels and adjust as required.
2. Be sure the flow rate through the filter is sufficient.
3. Operate the filter for longer periods.

9.4 LEAKING OF THE CLAMP

1. Follow the Filter Disassembly Instructions. (See Chapter: 6.2.1 - Page 15)
2. Clean the Sealing Ring and Seal Surface. (See Chapter: 6.3.2 - Page 16)
3. Verify for any damages to the Sealing Surface of the Upper and Lower Filter Body and the O-Ring.

In case any damages are found, which are causing the leaking, then these parts need to be replaced.

4. Make sure that the Lower Filter Body is standing on a level, flat, stable and rigid underground.
5. Follow the Body and Clamp Re-Assembly Instructions.
(See Chapter: 6.3.3 - Page 17)

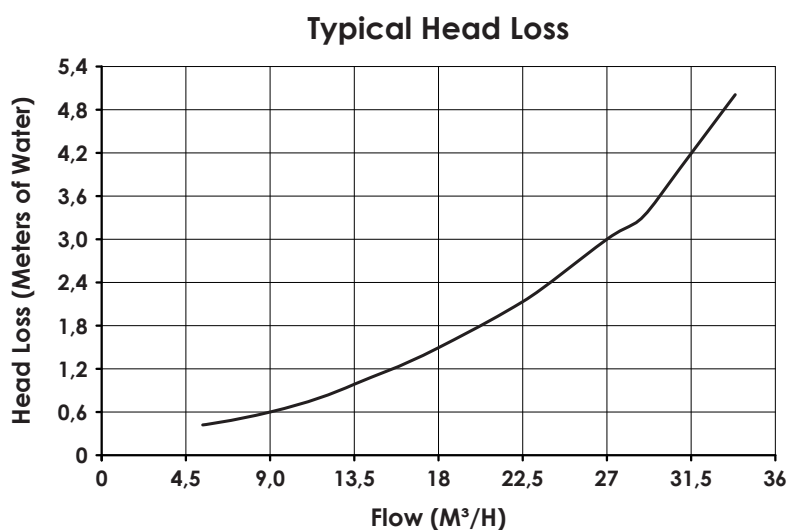


Figure 13

HOUSE OF
DURATECH
innovative pool products

DURAVISION
Pool Light products

- VISION Moonlight
- VISION Spectra
- VISION Adagio Pro
- VISION Pro
- VISION Wall Conduits
- VISION Face Plates
- VISION Specials

DURAHEAT
Heat Pump products

- HEAT Hot Splash
- HEAT Sun Spring
- HEAT Dura V
- HEAT Dura Vi
- HEAT Dura +i
- HEAT Dura Pro
- HEAT Accessories

DURAFLOW
Pool Flow products

- FLOW Inverter
- FLOW Cartridge Filter

DURACOVER
Cover System products

- COVER Tube
- COVER Motor
- COVER Wall Duct
- COVER Cable Duct
- COVER Hanging System

DURALINK
Control products

- LINK Driver
- LINK Touch
- LINK Controller
- LINK Cover
- LINK Master
- LINK Accessoires

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