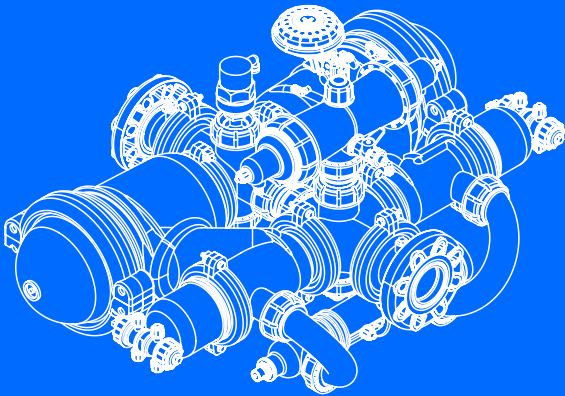




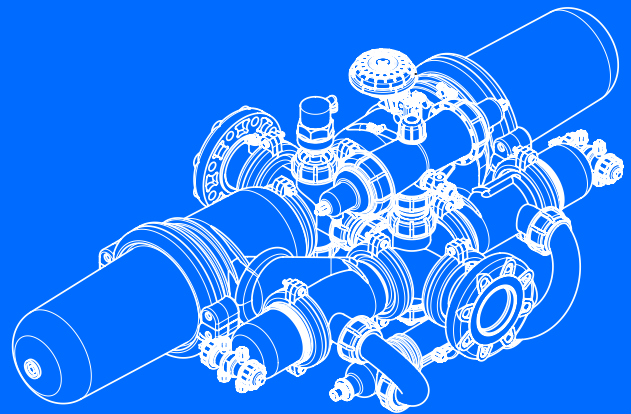
ALPHADISC™

Installation, Operation and Maintenance
Instructions

AlphaDisc™



AlphaDisc™ XL



2021
v1.1

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The AlphaDisc™ Series

AlphaDisc™ 3"

Inline



Online



Angle

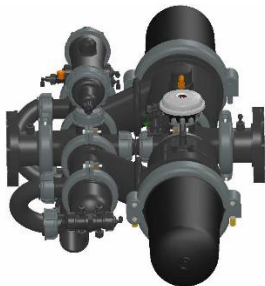


Reverse angle



AlphaDisc™ XL 3" /4"

Inline



Online



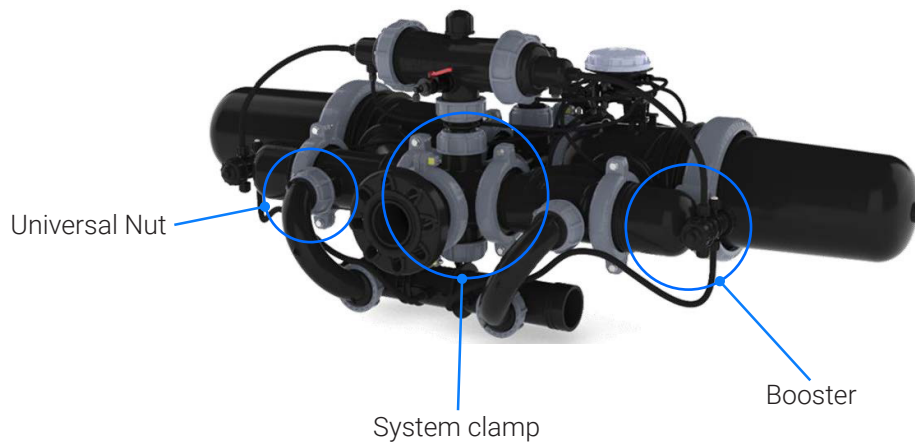
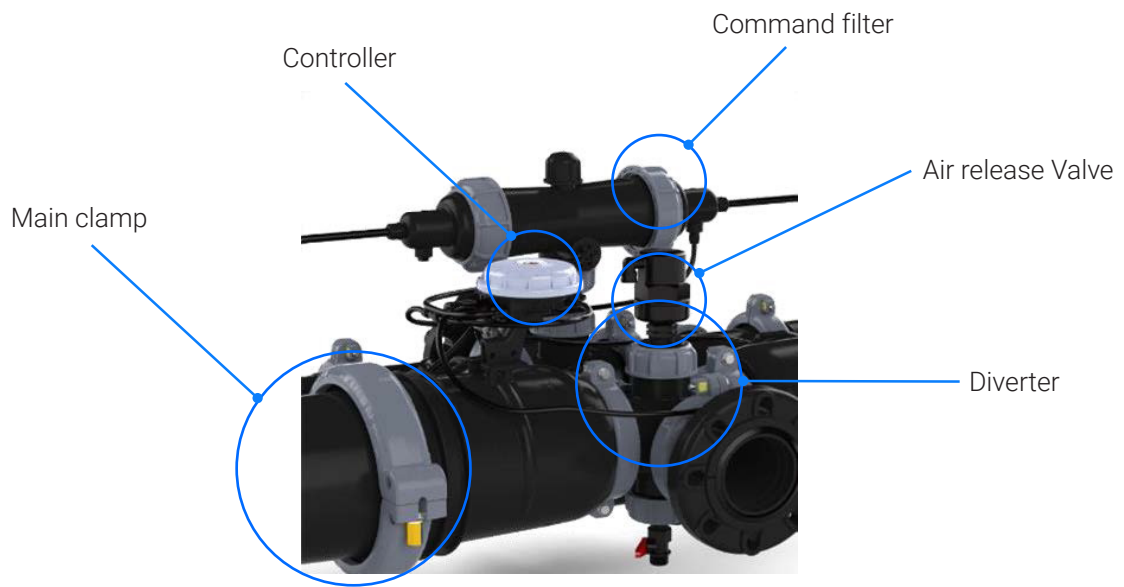
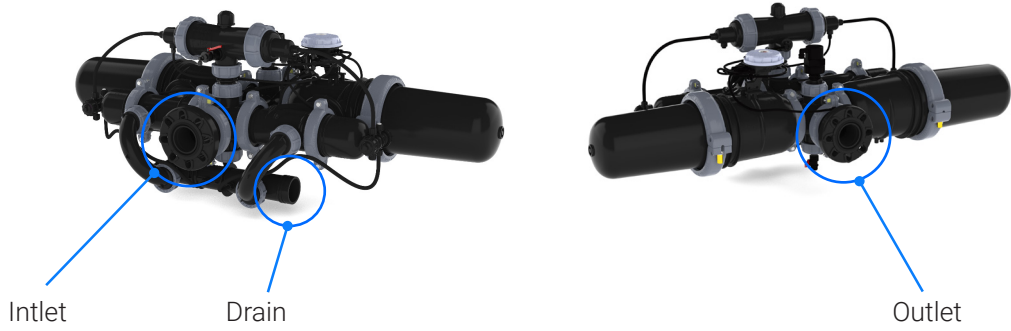
Angle



Reverse angle

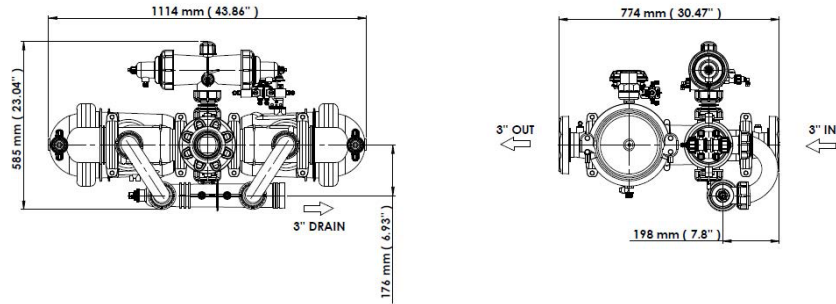


Product overview

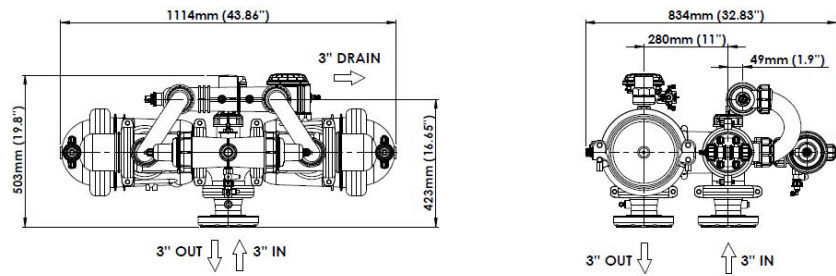


Dimensional Drawings

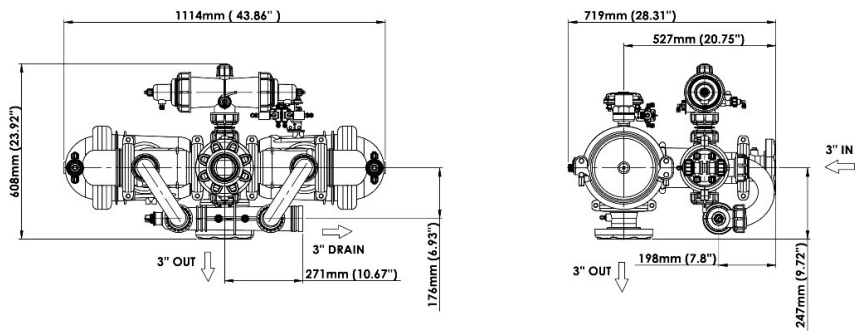
AlphaDisc™ Single 3" In-line



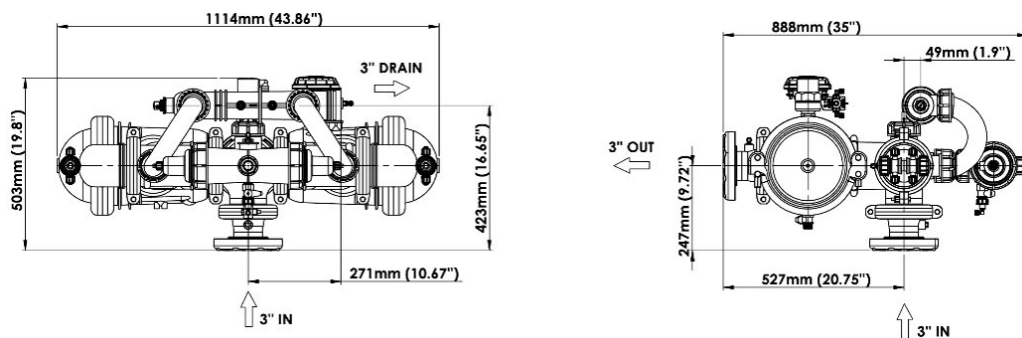
AlphaDisc™ Single 3" On-line



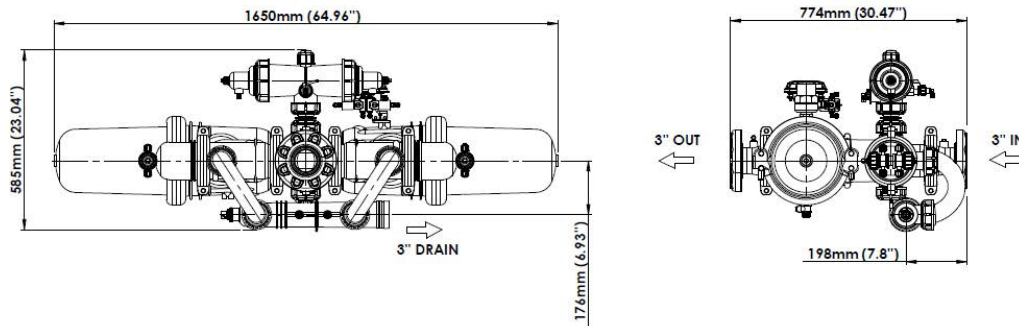
AlphaDisc™ Single 3" Angle



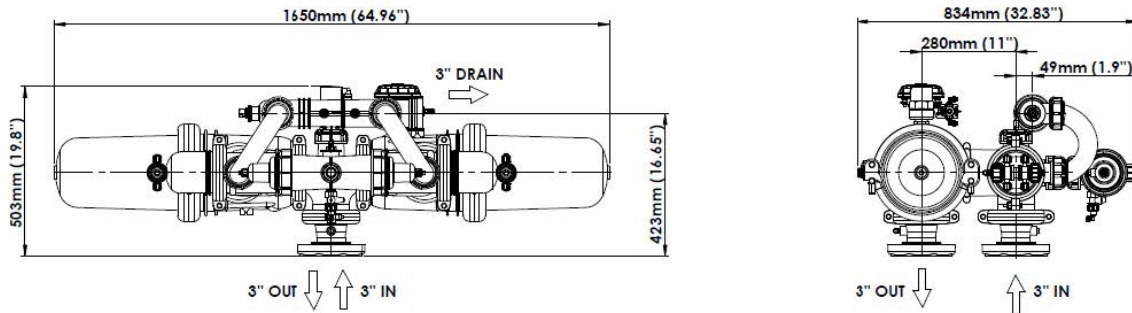
AlphaDisc™ Single 3" Reverse Angle



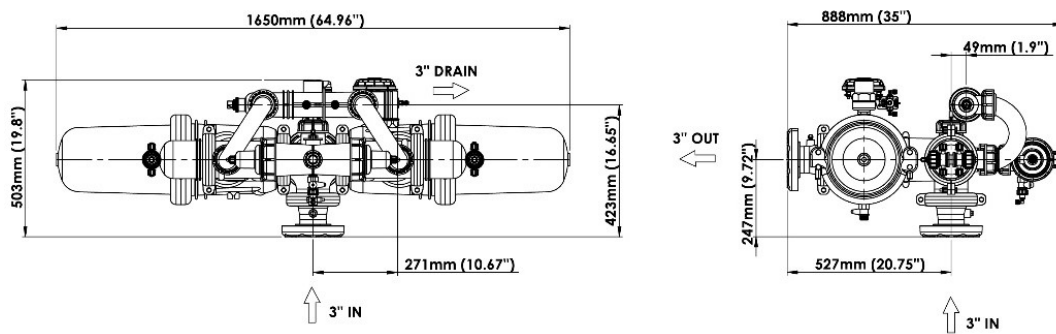
AlphaDisc™ Single XL 3" In-line



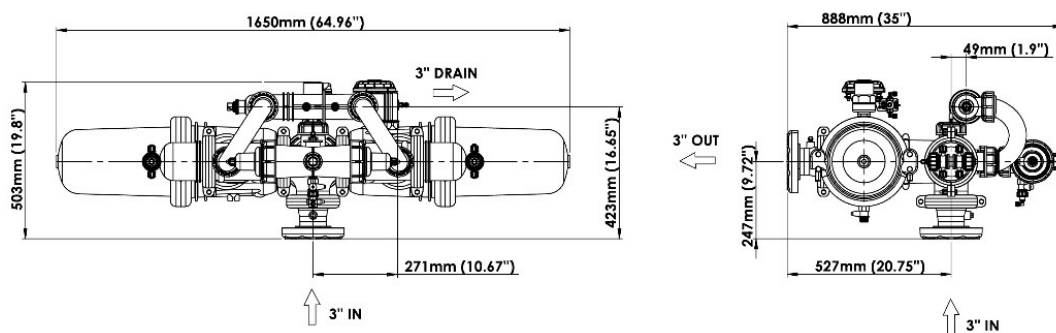
AlphaDisc™ Single XL 3" On-line



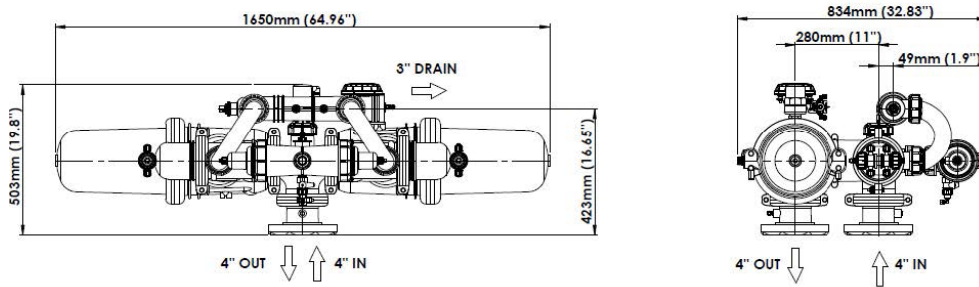
AlphaDisc™ Single XL 3" Angle



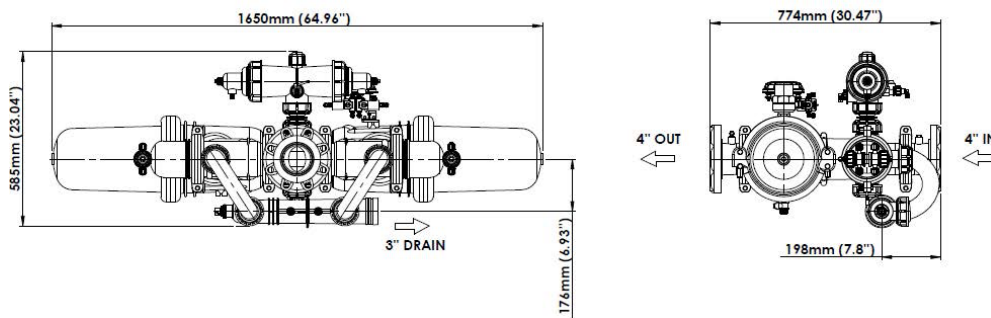
AlphaDisc™ Single XL 3" Reverse Angle



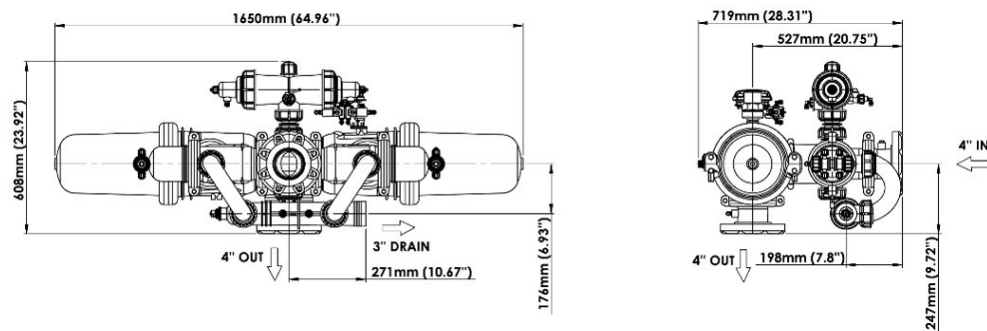
AlphaDisc™ Single XL 4" In-line



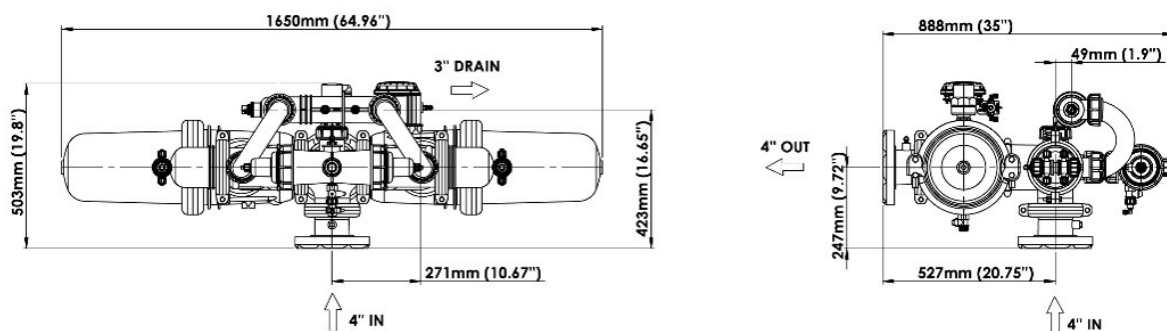
AlphaDisc™ Single XL 4" On-line



AlphaDisc™ Single XL 4" Angle



AlphaDisc™ Single XL 4" Reverse Angle



Technical Specifications – AlphaDisc™

GENERAL DATA	ALPHADISC™ SINGLE 3"	ALPHADISC™ DUAL 4"	ALPHADISC™ TRIO 6"
MAX. FLOW RATE (130M) IN AVERAGE WATER QUALITY	40 M3/H (176 GPM)	80 M3/H (352 GPM)	120 M3/H (528 GPM)
MIN. OPERATING PRESSURE WHEN CLEANING	1.5 BAR (22 PSI)		
MAX. OPERATING PRESSURE	10 BAR (145 PSI)		
OPERATING TEMPERATURE	5-60°C (40-140°F)		
FILTRATION AREA	1,760 CM2 (272 IN2)	3,520 CM2 (544 IN2)	5,280 CM2 (816 IN2)
INLET/OUTLET DIAMETER	3" (80 MM) GROOVED COUPLING / UNIVERSAL FLANGE	4" (100 MM) GROOVED COUPLING / UNIVERSAL FLANGE	6" (150 MM) UNIVERSAL FLANGE
WEIGHT (EMPTY)	54 KG (118 LB)	115 KG (253 LB)	156 KG (344 LB)

Electronic control (AlphaDisc™ BLE)*

CONTROL POWER SUPPLY	4 X AA TYPE 1.5V BATTERIES / EXTERNAL 7-14V DC
SOLENOID OPERATION DATA	9-12V DC LATCHING SOLENOID
DP SWITCH	INTEGRAL SENSORS

Electronic control (AlphaDisc™ CLD)

CONTROL POWER SUPPLY	4 X D TYPE 1.5V BATTERIES/EXTERNAL 7-14 VDC
SOLENOID OPERATION DATA	9-12 V DC LATCHING SOLENOID
DP SWITCH	INTEGRAL SENSORS

* Single units only.

Flushing data*

EXHAUST VALVE	3" (80 MM) GROOVED COUPLING
FLUSHING TIME	18 SEC
REJECT WATER VOLUME PER FLUSH CYCLE	36 LITERS (9.5 GALLONS)
FLUSHING FLOW RATE	7.2 M3/H (44 GPM)

* At 1.5 bar (22 psi).

When the pressure on downstream is over 6 bar during backwash, installing an orifice valve in the drain manifold is recommend to prevent damage to the AlphaDisc™ spines.

Construction materials

FILTER HOUSING AND LID	RPA (REINFORCED POLYAMIDE)									
DISCS	PP (POLYPROPYLENE) OR PA (POLYAMIDE)									
CLEANING MECHANISM	ALL POLYMERIC									
EXHAUST VALVE	ALL POLYMERIC									
SEALS	EPDM									

AVAILABILITY OF DISC MICRON SIZE AND DISC TYPE	COLOR CODE	LIGHT BLUE	GRAY	PURPLE	GREEN	BROWN	BLACK	RED	YELLOW	BLUE
	MICRON		10	20	40	55	70	100	130	200
PP / PA (NYLON)	2" DISCS	PP	PP, PA	PP, PA	PP, PA	PP, PA	PP, PA	PP, PA	PP, PA	PP

Technical Specifications - AlphaDisc™ XL

GENERAL DATA	ALPHADISC™ SINGLE XL 3"	ALPHADISC™ SINGLE XL 4"	ALPHADISC™ DUAL XL 6"	ALPHADISC™ TRIO XL 8"
MAX. FLOW RATE (130M) IN AVERAGE WATER QUALITY	60 M3/H (264 GPM)	90 M3/H (396 GPM)	180 M3/H (792GPM)	270 M3/H (1,188 GPM)
MIN. OPERATING PRESSURE WHEN CLEANING	1.5 BAR (22 PSI)			
MAX. OPERATING PRESSURE	10 BAR (145 PSI)			
OPERATING TEMPERATURE	5-60°C (40-140°F)			
FILTRATION AREA	5,240 CM2 (383 IN2)	5,240 CM2 (383 IN2)	10,480 CM2 (1,624 IN2)	15,720 CM2 (2,437 IN2)
INLET/OUTLET DIAMETER	3" (90 MM) GROOVED COUPLING / UNIVERSAL FLANGE	4" (100 MM) GROOVED COUPLING / UNIVERSAL FLANGE	6" (150 MM) UNIVERSAL FLANGE	8" (200 MM) UNIVERSAL FLANGE
WEIGHT (EMPTY)	57 KG (126 LB)	58 KG (129 LB)	127 KG (279 LB)	182 KG (401 LB)

Electronic control (AlphaDisc™ BLE)*

CONTROL POWER SUPPLY	4 X AA TYPE 1.5V BATTERIES / EXTERNAL 7-14V DC
SOLENOID OPERATION DATA	9-12 V DC LATCHING SOLENOID
DP SWITCH	INTEGRAL SENSORS

* Single units only.

Electronic control (AlphaDisc™ CLD)

CONTROL POWER SUPPLY	4 X D TYPE 1.5V BATTERIES / EXTERNAL 7-14 VDC
SOLENOID OPERATION DATA	9-12 V DC LATCHING SOLENOID
DP SWITCH	INTEGRAL SENSORS

Flushing data*

EXHAUST VALVE	3" (80 MM) GROOVED COUPLING
FLUSHING TIME	18 SEC
REJECT WATER VOLUME PER FLUSH CYCLE	65 LITERS (17.2 GALLONS)
FLUSHING FLOW RATE	13 M3/H (57.2 GPM)

* At 1.5 bar (22 psi).

When the pressure on downstream is over 6 bar during backwash, installing an orifice valve in the drain manifold is recommend to prevent damage to the AlphaDisc™ spines

Construction materials

FILTER HOUSING AND LID	RPA (REINFORCED POLYAMIDE)									
DISCS	PP (POLYPROPYLENE) OR PA (POLYAMIDE)									
CLEANING MECHANISM	ALL POLYMERIC									
EXHAUST VALVE	ALL POLYMERIC									
SEALS	EPDM									

AVAILABILITY OF DISC MICRON SIZE AND DISC TYPE	COLOR CODE	LIGHT BLUE	GRAY	PURPLE	GREEN	BROWN	BLACK	RED	YELLOW	BLUE
	MICRON	10	20	40	55	70	100	130	200	400
PP / PA (NYLON)	4" DISCS	-	PP	PP, PA	PP, PA	-	PP	PP	PP	PP

1. Introduction

Thank you for purchasing a AlphaDisc™ filter.

For filter operation and maintenance, please follow the instructions in this manual.

For additional information about the AlphaDisc™ filter, please scan the QR code or visit our [website](#).

The AlphaDisc™ series of automatic self-cleaning filters, was designed for water filtration only, and must be operated within the pressure limitation specifications.



2. General Safety Instructions

Note:

In addition to below instructions, please refer to and comply with any applicable local safety regulations for accident prevention in all work procedures.

2.1. GENERAL SAFETY INSTRUCTIONS

- ✔ Netafim (the manufacturer) filtration systems are operated as a core component in water systems. System designers, installers and operators must comply with all relevant safety standards and regulations.
- ✔ Prior to installation, operation, maintenance and/or any other type of action carried out on the filter, carefully read the safety, installation and operation instructions.
- ✔ During installation, operation and/or maintenance of the filter, all conventional safety instructions must be observed in order to avoid danger to workers, the public and/or property in the vicinity.
- ✔ No change or modification to the equipment is permitted without prior written notification given by the manufacturer or by its representative(s) on the manufacturer's behalf.
- ✔ Always observe standard safety instructions and good engineering practices whilst working in the vicinity of the filter.
- ✔ Use the filter only for its intended purpose as designed by the manufacturer. Any misuse of the filter may lead to damage and may affect your warranty coverage. Consult with the manufacturer prior to any non-regular use of this equipment.
- ✔ Observe the safety stickers on the filter and do not perform any operation other than those given in this manual.

2.2. SHIPMENT AND TRANSPORTATION

- ✔ Shipping and transporting the filter must be done in a safe and stable manner and in accordance with relevant standards and regulations.
- ✔ For shipping, lifting and positioning the filter, use only approved lifting equipment and authorized employees and contractors.

2.3. SAFE INSTALLATION

- ✔ Install the filter according to the detailed Installation Instructions provided with the filter by the manufacturer and according to the description given in this manual.
- ✔ Make sure to leave enough clearance to enable easy access for safe maintenance operations.
- ✔ Make sure to have suitable lighting at the location of the filter to enable good visibility and safe maintenance.
- ✔ Arrange suitable platforms and safety barriers to enable easy and safe access to the filter without the need to climb on pipes and other equipment. Verify that any platform, barrier, ladder or other such equipment is built, installed and used in accordance with the relevant local authorized standards.
- ✔ Check and re-tighten all bolts during commissioning and after the first week of operation.

- ✔ Use only appropriate standard tools and equipment operated by qualified operators when installing, operating and maintaining the filter.
- ✔ When installation is required in hazardous environment sites, underground or high above ground, ensure that the site design and the auxiliary equipment are appropriate and that installation procedures are carried out in accordance with the relevant standards and regulations.
- ✔ Ensure walking areas around the installation are slip resistant when wet.

2.4. HYDRAULICS

- ✔ Installation of manual isolation valves before and after the filter is recommended.
- ✔ In order to prevent unexpected water hammer, it is highly recommended to install a quick pressure release valve.
- ✔ Do not exceed the maximum working pressure indicated in the specifications table of the filter.
- ✔ In cases where the water supply system is higher than the filters, it is recommended to install a non-return valve downstream to the filter.
- ✔ In cases where the water supply system is lower than the filters, it is recommended to install a pressure sustaining valve downstream to the filter.
- ✔ In cases of low working pressure conditions and/or very poor water quality, it is recommended to install a pressure sustaining valve to maintain efficient minimal flushing pressure.
- ✔ When the downstream pressure is over 6 bar (87 psi) during backwash, it is recommended to install an orifice valve on the drain manifold to prevent internal damage.

2.5. ELECTRICITY

- ✔ Electric wiring must be performed by an authorized electrician only, using standardized and approved components.
- ✔ Install a lockable main power cut-off switch close to the control panel.
- ✔ If due to site constraints, the control panel is installed without a clear line of sight to the filter, an additional lockable power disconnect cut-off switch should be installed near each filter unit.

2.6. PNEUMATICS

- ✔ Install a lockable main cut-off switch, equipped with a pressure release mechanism, on the compressed air supply line close to the control panel.
- ✔ If the control panel is installed without a clear line of sight to the filter, a lockable compressed air cut-off switch, equipped with a pressure release mechanism, should be installed near each filter unit.
- ✔ Ensure that the compressed air supplied to the filter never exceeds the maximum designated pressure for the filter. An air-pressure reduction valve should be installed on the compressed air supply line upstream of the filter's pneumatic inlet port.

2.7. CIVIL ENGINEERING

- ✔ Ensure that any civil engineering work at the installation site such as construction, lifting, welding, etc. is performed by qualified workers / technicians / contractors and in accordance with relevant local standards and regulations.
- ✔ While using lifting equipment, ensure that the filter or the lifted part is attached securely and in a safe manner.
- ✔ Do not leave lifted equipment unsupervised. Avoid working below lifted equipment.
- ✔ Wear a safety helmet while using lifting equipment.
- ✔ Ensure that the flooring is sloped for drainage and to avoid accumulation of liquids.

2.8. MAINTENANCE

- ✔ Servicing the filter should be performed according to the manufacturer's instructions.
- ✔ Pause or shut-off the flushing controller.
- ✔ In case of using external pneumatic pressure, close the pressurized air supply.
- ✔ Isolate the filter from the water system by closing the inlet and outlet isolation valves.
- ✔ Release pressure and empty the filter by opening the drainage valve.
- ✔ Place warning signs around the work area as required by local standards and procedures.
- ✔ Inspect the filter's safety stickers and replace any that are damaged or faded.

2.9. MECHANICAL

- ✔ Use only appropriate standard tools when working on the filter.
- ✔ Always open and close valves slowly and gradually.
- ✔ Remove grease and oily material residues to avoid slipping.
- ✔ Before disconnecting the filter from the water supply, electricity and pneumatics and before releasing the filter's residual pressure DO NOT:
 - Loosen or unscrew bolts.
 - Remove any protective covers.
 - Open any service port flanges.
- ✔ Avoid splashing and water leakage to minimize slippage, electrification or moisture damage to the equipment.
- ✔ While using lifting equipment, ensure that the filter or the lifted part is attached securely and in a safe manner.
- ✔ Do not leave lifted equipment unsupervised. Avoid working below lifted equipment.
- ✔ Wear a safety helmet, goggles, gloves, and any other personal safety equipment required by local standards and regulations.
- ✔ Entering a filter must be done in accordance with relevant local safety instructions, standards and regulations for working in hazardous environments.
- ✔ Manual cleaning of filter media using high water pressure or steam should be performed in accordance with cleaning system instructions, local standards and regulations and without endangering the operator or the vicinity.
- ✔ Manual cleaning of filter element using acid or other chemical agents should be performed in accordance with relevant material safety instructions, local standards and regulations and without endangering the operator or the vicinity.

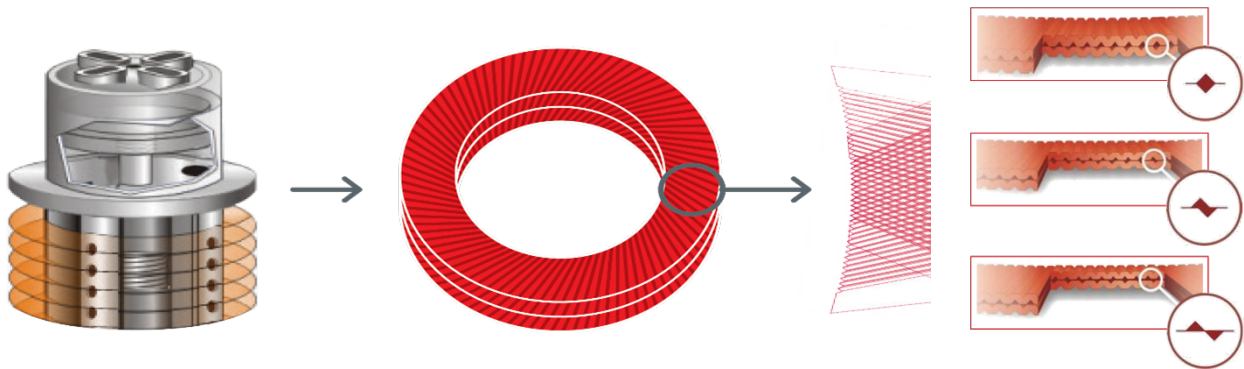
2.10. BEFORE RETURNING TO REGULAR OPERATION

- ✔ Re-assemble any protective covers or protection mechanisms removed during service or maintenance operations.
- ✔ Ensure that all tools, ladders, lifting devices, etc. used during maintenance procedures are removed from the filter area and stored.
- ✔ In order to return the filter to regular operation, follow the First Start-up Operation instructions as detailed in your user manual.
- ✔ Filters used in potable water systems must be disinfected according to local water authority standards and regulations before putting it back into service.

3. AlphaDisc™ Disc Technology

Netafim uses a specially designed disc filtration technology. Thin, color-coded polypropylene/nylon discs are diagonally grooved on both sides to a specific micron size. A series of these discs are then stacked and compressed on a specially designed spine. When stacked, the groove on top runs opposite to the groove below, creating a filtration element with a statistically significant series of valleys and traps for solids. The stack is enclosed in corrosion and pressure resistant housing.

During the filtration process, the filtration discs are tightly compressed together by the power of a spring and differential pressure, thus providing high filtration efficiency. Filtration occurs while water is percolation from the outer diameter to the inner diameter of the element. Depending on the micron rating, there are from 18 (in 400-micron discs) to 32 (in 20-micron discs) stopping points in each track, thus creating the unique in-depth filtration.



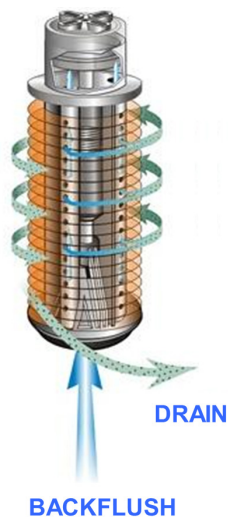
3.1. ALPHADISC™ SPINE – THE CORE OF THE ALPHADISC™ FILTRATION SYSTEM

The AlphaDisc™ discs are stacked on the AlphaDisc™ spine. The discs are color-coded according to micron size and are assembled to suit the water filtration requirements. The spine assembly has a spring compression unit and an internal piston, which operate during alternate filtration or back-flush modes. Inside the housing the spring and the pressure difference compress the discs tightly during the filtration process, forcing the water to flow between the grooves and trap the solids.

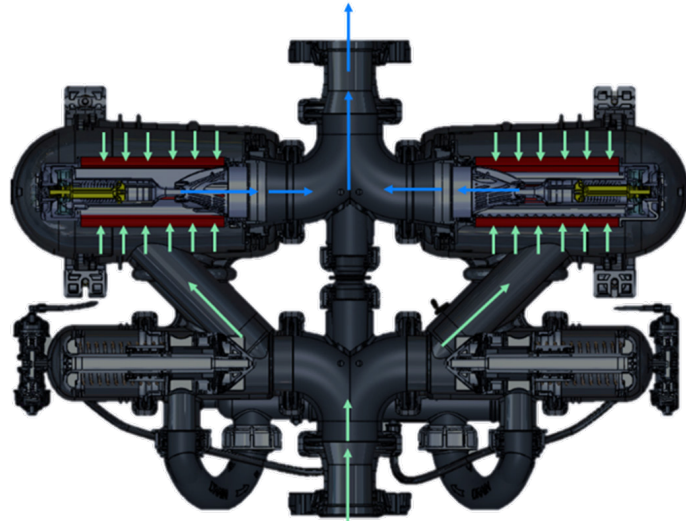


3.2. ALPHADISC™ AUTOMATIC BACK-FLUSH OPERATION

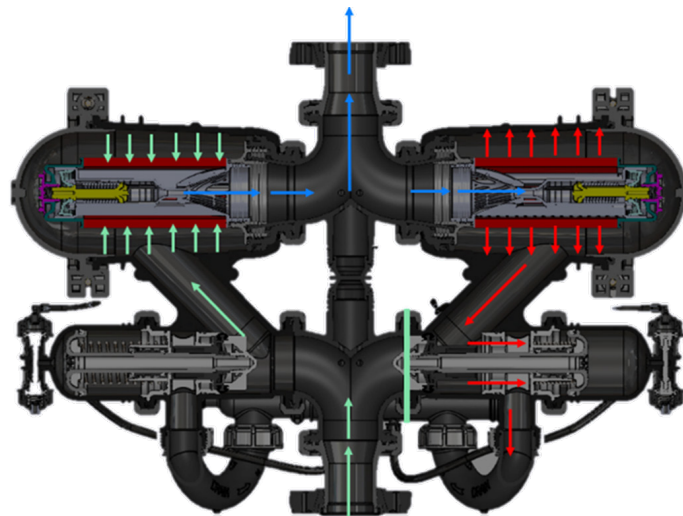
Differential pressure or backup time triggers the flushing controller to activate the flushing cycle. Solenoid number one sends a hydraulic command that closes the inlet 3-way valve and opens the drain. The compression cylinder on the disc element is released. Tangential jets of filtered water flow through special nozzles in opposite directions causing the discs to spin, flushing out the trapped solids.






3.3. ALPHADISC™ FILTRATION PROCESS



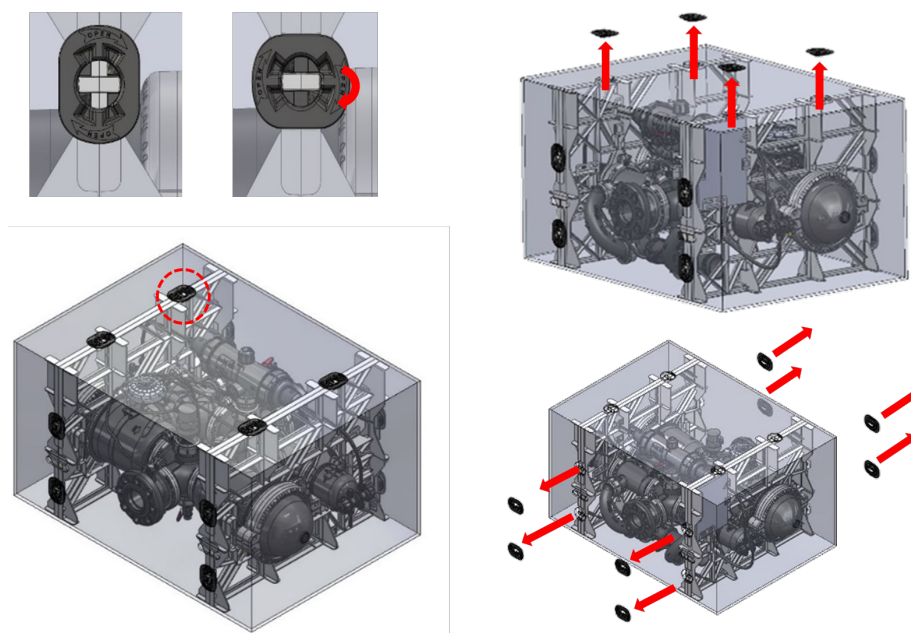
3.4. ALPHADISC™ BACKWASH PROCESS



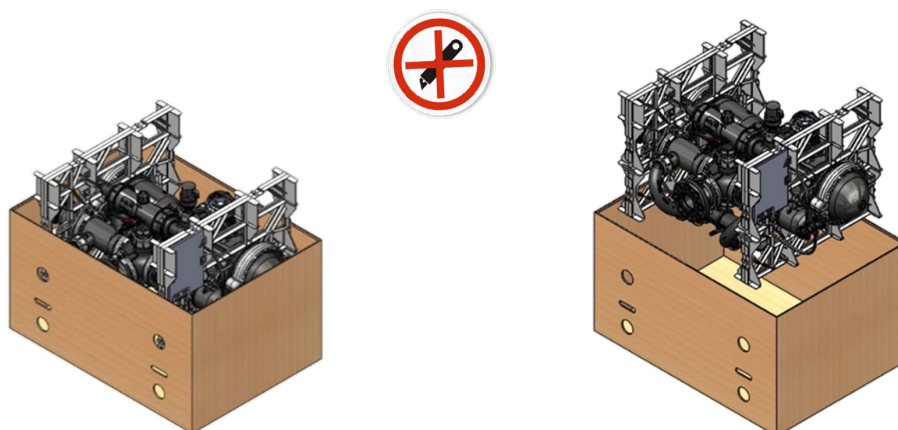
-  Upstream water
-  Downstream water
-  Backwash water

4. Unpacking

1. Remove the 12 lockers by hand-rotating each one clockwise using the designated grooves.



2. Open the top of the carton box and remove the filter.

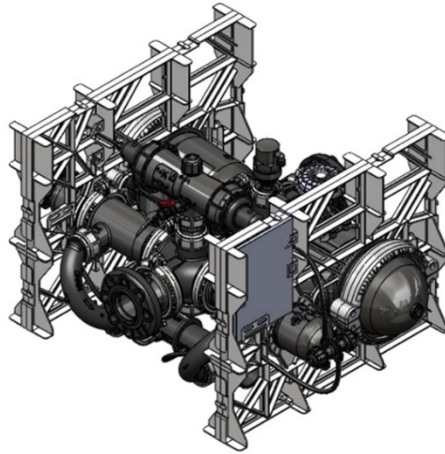


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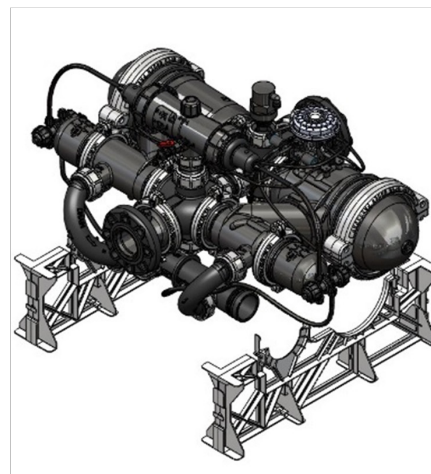
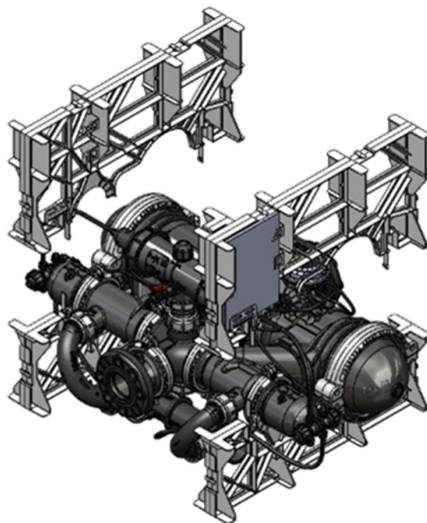
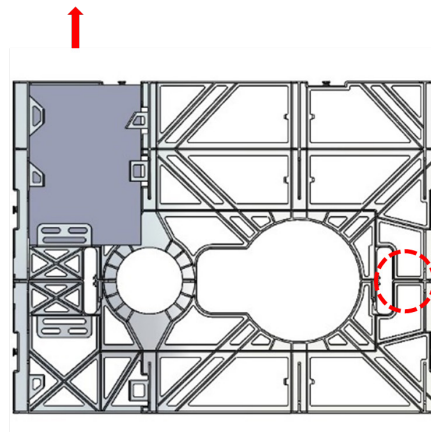
The following additional items are available inside the box:

- A multifunction tool
- Operation manual
- 2 support legs

3. In order to extract the AlphaDisc™ from its supporting bridges, place it on a flat surface.



4. Prior to installation, cut the plastic bands and lift the supporting bridge to release the product. Repeat this procedure on both sides of the filter to release it completely.



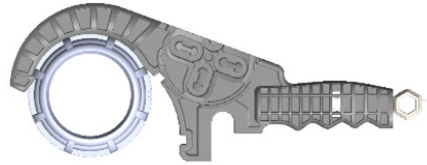
5. AlphaDisc™ Multi-Tool

The multifunction tool is provided with each AlphaDisc™ unit.
Below, is a summary of its various usage options:

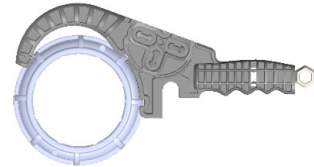
FINGER FILTER SERVICING



UNIVERSAL CONNECTION NUT



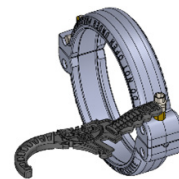
COMMAND FILTER COVER NUT



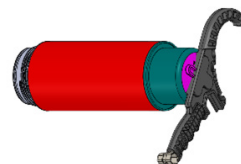
SYSTEM CLAMP JOINING BOLTS
(M8 BOLTS – EQ.13MM (1/2") SPANNER)



MAIN CLAMP JOINING BOLTS
(M10 BOLTS – EQ.17MM (11/16") SPANNER)



2" SPINE - COVER TIGHTENING NUT



4" SPINE - COVER TIGHTENING NUT

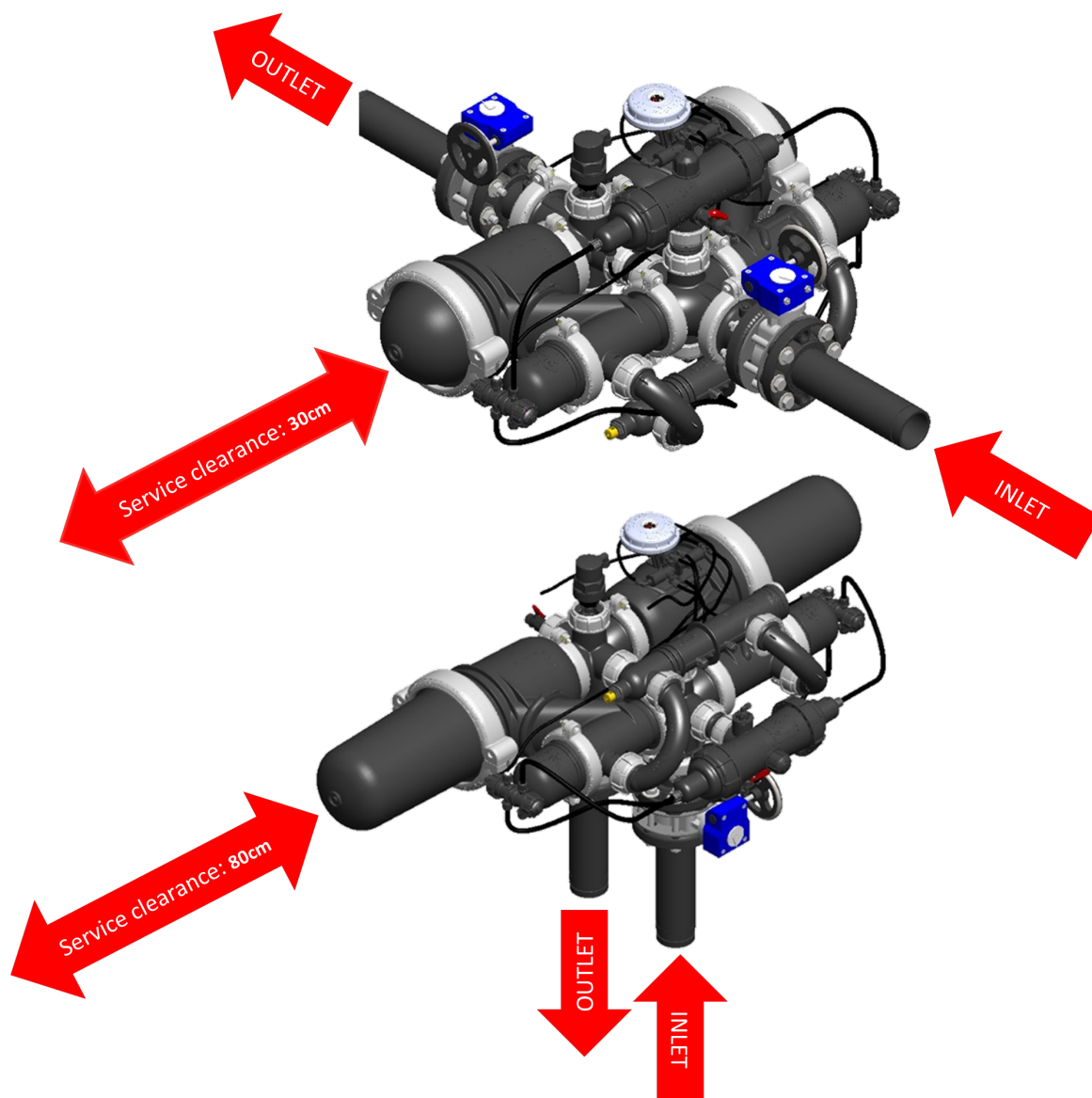


6. Installation & Initial Operation

Note:

Prior to installation, flush the main line thoroughly to remove large objects that may damage the filter's internal mechanism.

Connect the inlet and outlet ports according to the installation configurations described below, making sure to maintain a service clearance on both sides, as shown below:

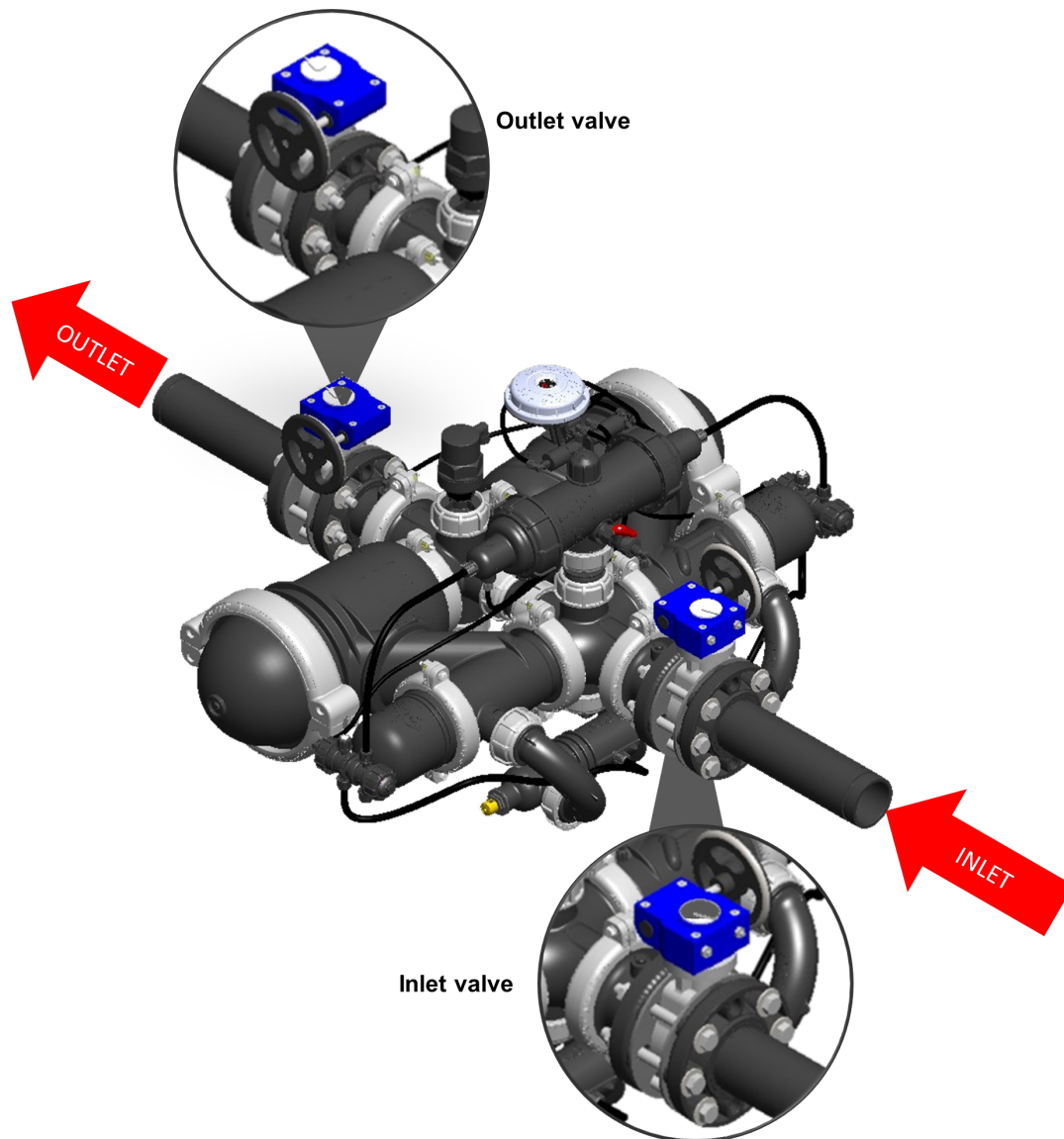


Note:

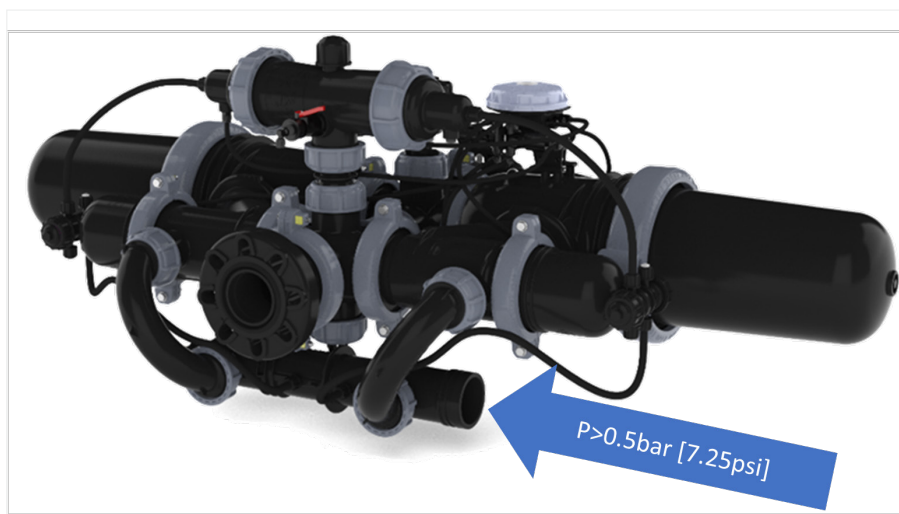
Ensure that the direction of the flow is aligned with the arrows marked on the filter housing. It is recommended to install an inlet and outlet isolation valves.

For initial operation or operation after maintenance, follow these steps:

1. Retighten the system universal nuts.
2. Open the outlet valve.
3. Open the inlet valve slowly.
4. Inspect the filter for any leaks.
5. Initiate a single manual flushing cycle from the controller.
6. Inspect the filter again for any leaks.



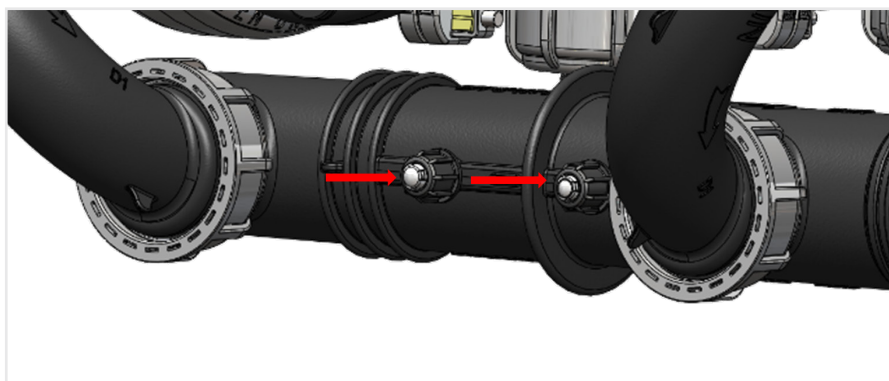
7. After installation, or in any case of back pressure inside the drain pipe that is greater than 0.5bar (7.25psi) that may have effect on the flush valve proper operation, release the booster drain 12 mm tubes to the atmosphere, according to the following procedure:



- a. Disconnect the booster drain tubes and keep the tube ends open to the atmosphere.



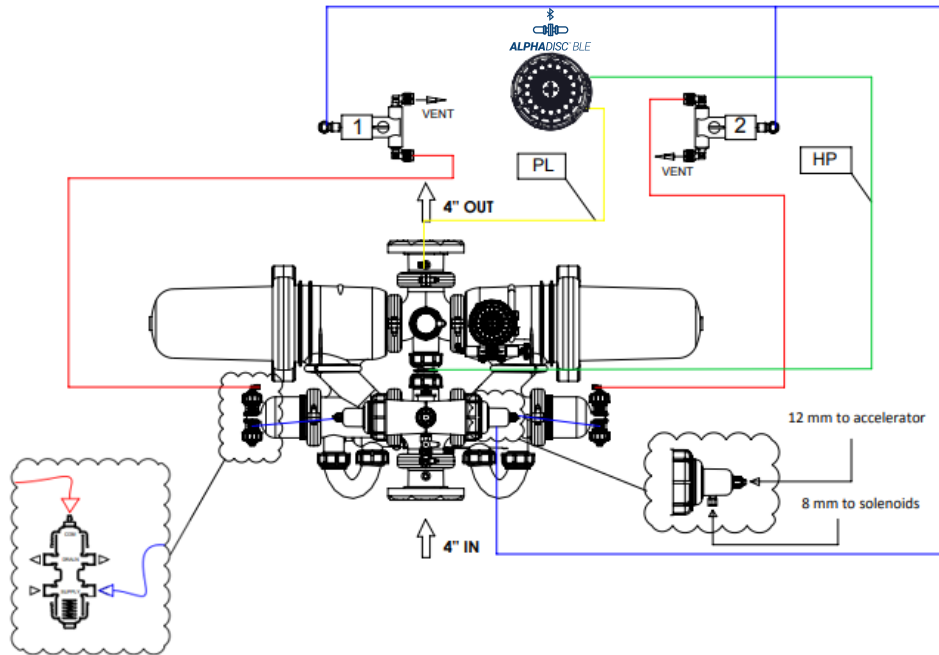
- b. Close the two open connection ports by using the supplied caps.



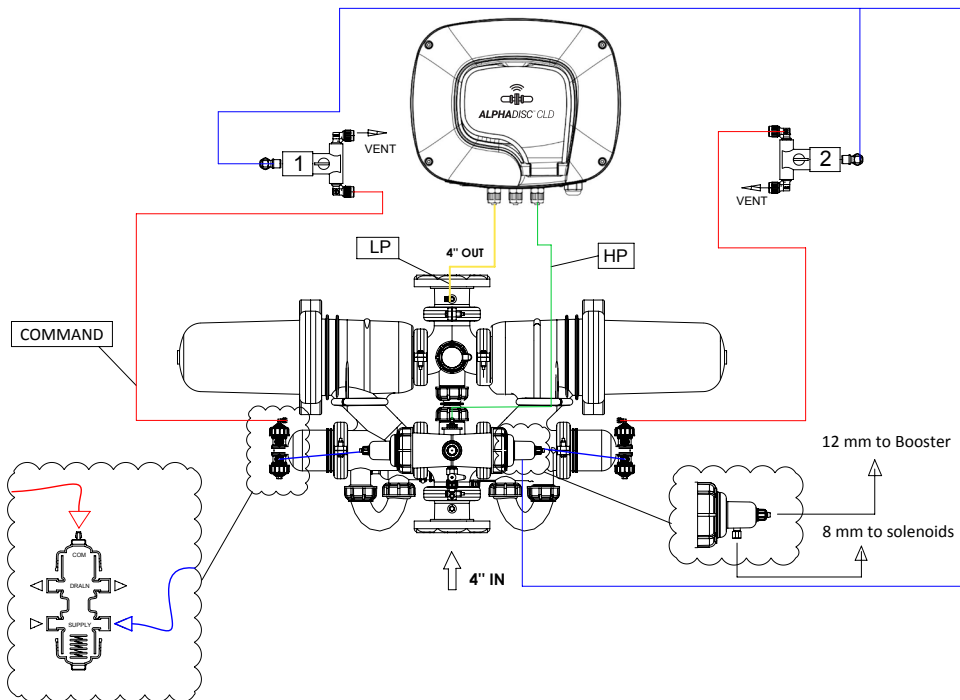
- c. Initiate a manual flush and listen for a proper operation.

7. Control Schematic

7.1. ALPHADISC™ BLE



7.2. ALPHADISC™ CLD



8. Maintenance Procedures

8.1. PERIODICAL INSPECTION

A general inspection of the filter operation should be performed regularly and prior to any scheduled maintenance. This includes pre-season, post-season, and seasonal check-ups.

8.2. RECOMMENDED PROCEDURES

- ✓ Inspect the filter visually for any leaks, and repair as needed
- ✓ Make sure the filter's area is clean and dry. Remove any obstacles or debris.
- ✓ Check the inlet and outlet pressure, make sure that the filter is working under its designed flowrate.
- ✓ Use your smartphone to export data from your controller.
- ✓ Manually clean the command mini filter.
- ✓ Inspect the flushing valve seals. Apply silicon grease periodically, and replace the seals as needed.
- ✓ Visually inspect the discs. In case of any visible sediments, clean the discs according to Netafim's recommendations (see pages 33-34).
- ✓ Initiate a single manual flushing cycle from the controller.

9. Filter Disassembly / Assembly

A multifunction tool is provided with each AlphaDisc™ unit (see page 18).

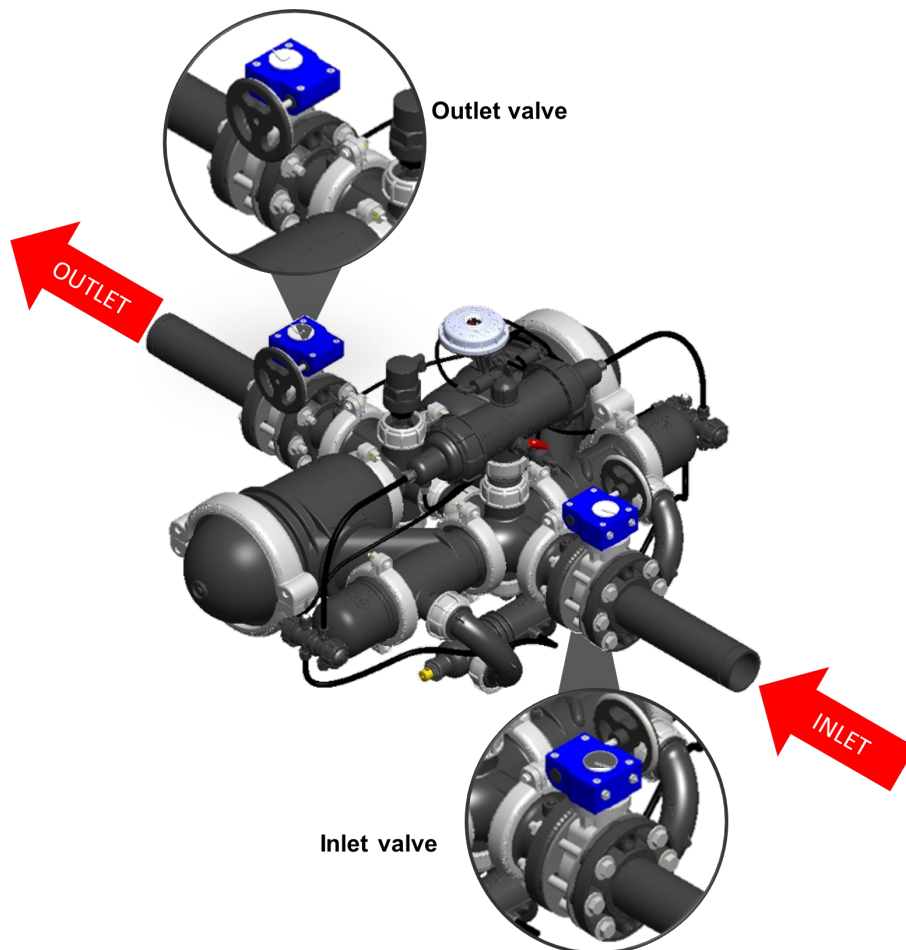
9.1. FLUSHING VALVE

9.1.1. Disassembly

Note:

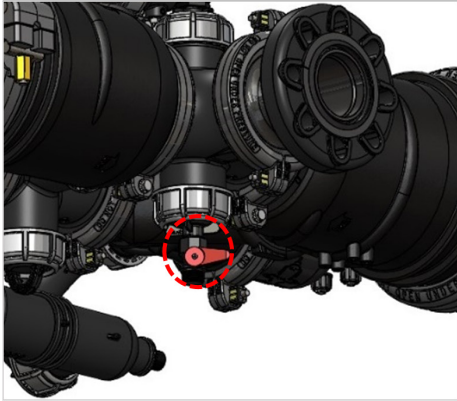
Before any maintenance procedure, please depressurize and empty the filter.

1. Close the inlet and outlet valves.
2. Open the drain valve located at the bottom of the filter.
3. Open the command filter drain valve.

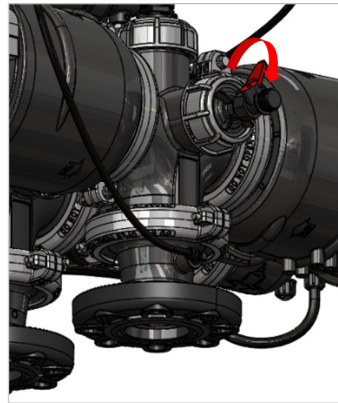
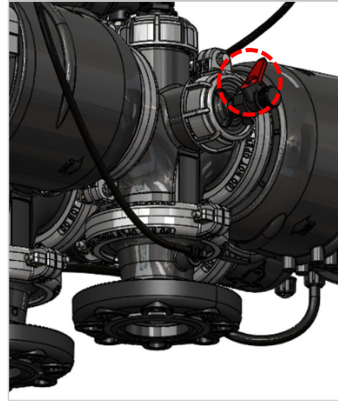


5. Open the drain valve located at the bottom of the filter.

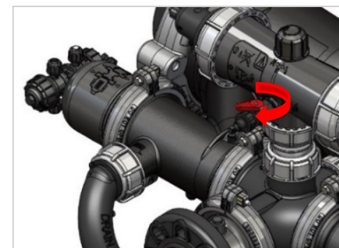
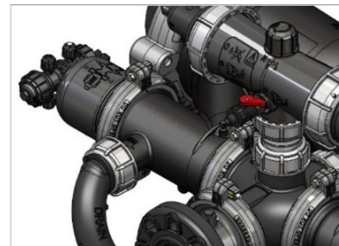
In – line / Angle



On – line / Reverse Angle

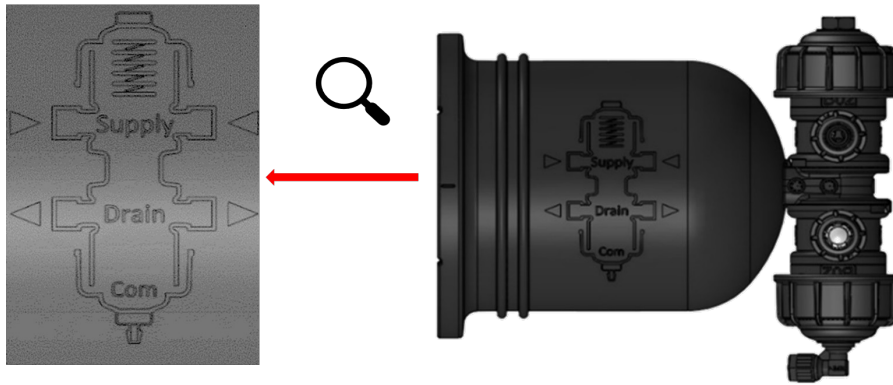


6. Open the command filter drain valve. In the On-line filter configuration, the drain is located at the bottom.

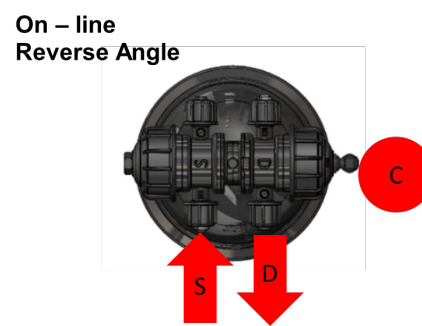
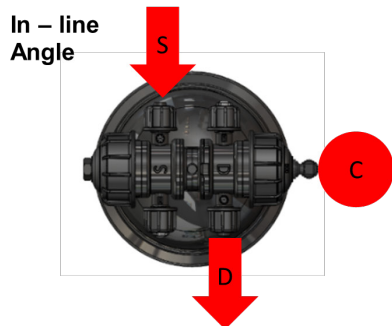
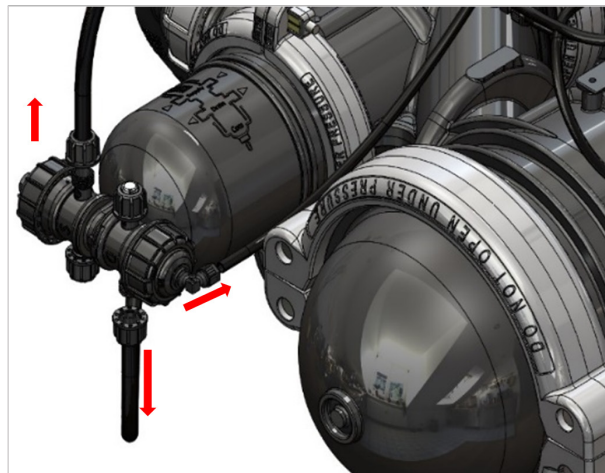


Note:

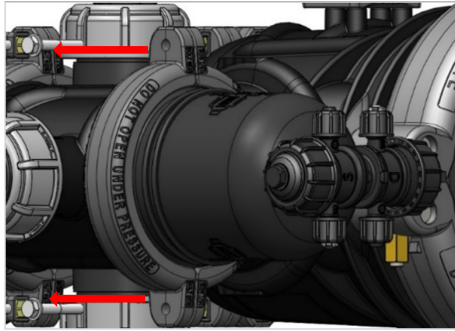
For an overview of the location of the Supply, Drain and Command tubes, please refer to the diagram located on top of the booster cylinder cover.



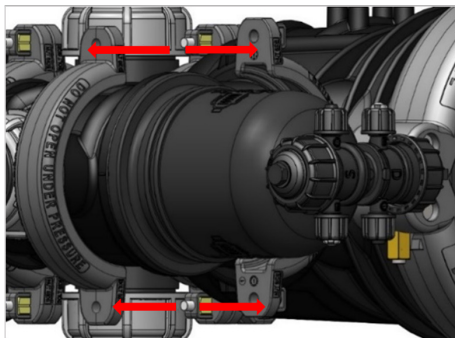
7. Disconnect the tubes of the water supply (S), water drainage (D) and command tube (C) from the booster cylinder (the location of the connection may be different for various configurations).



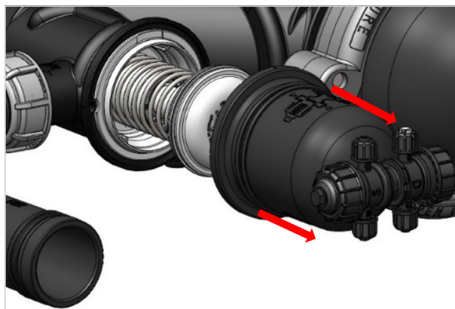
8. Unscrew and remove the two bolts that hold the system clamps together, using a 13mm (1/2") spanner.



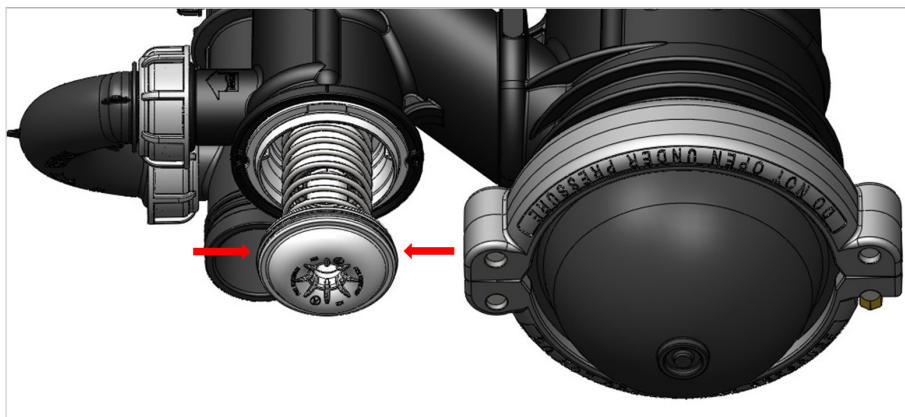
9. Remove the clamps (if needed, use a flat screwdriver to separate it).



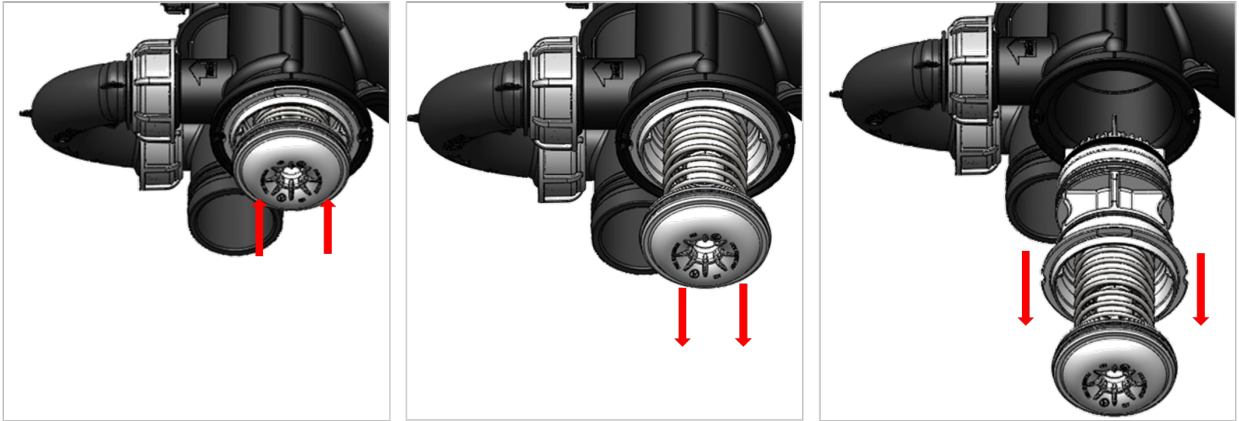
10. Remove the booster cylinder by pulling it backwards.



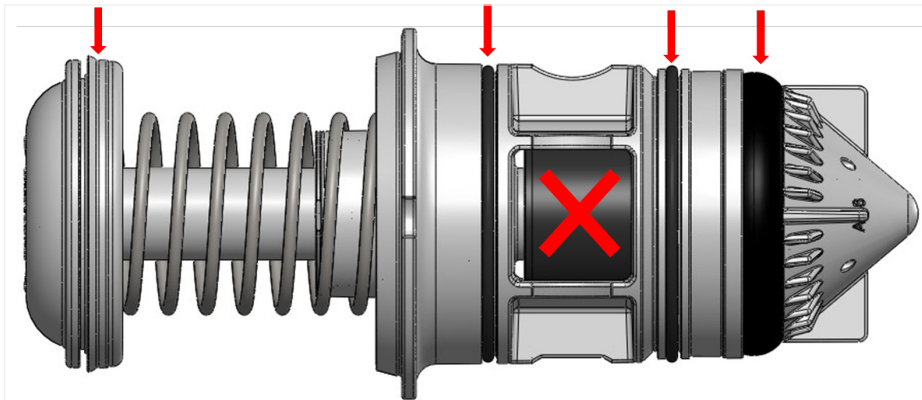
11. In order to remove the valve assembly, use both hands.



12. Push the piston valve forward and pull it back rapidly, until released



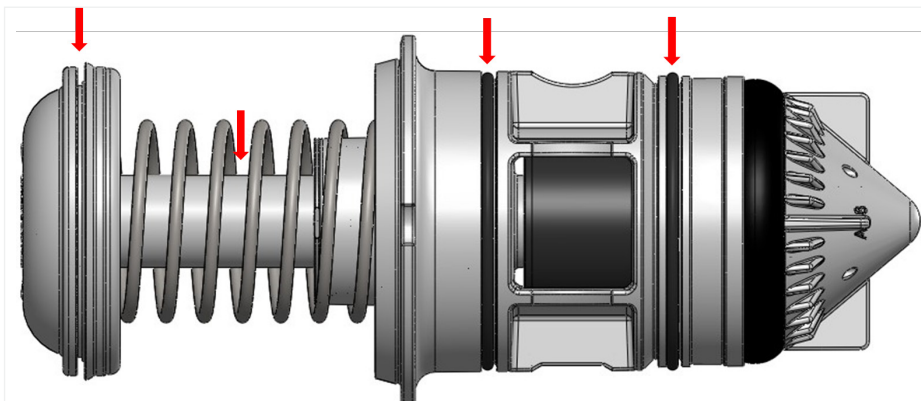
Visually inspect the valve for any signs of damage. Pay close attention to the seals.



Caution:

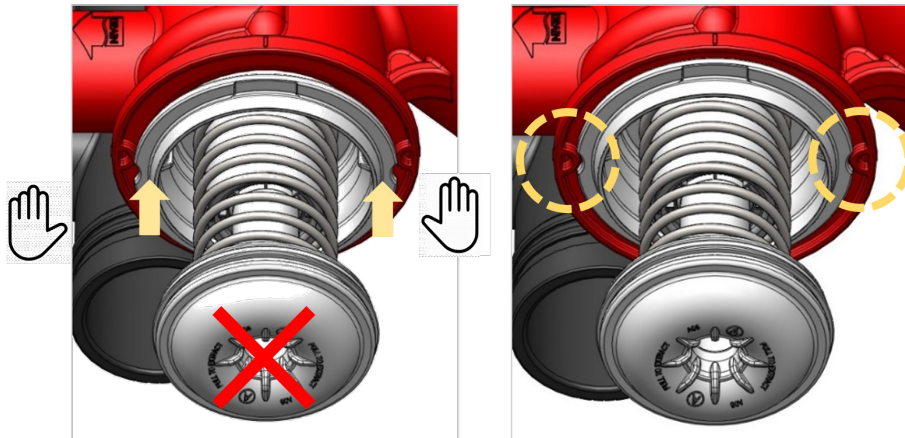
Do not insert your fingers into the area marked with the X, the valve is loaded by a spring.

13. Apply silicon grease (catalog number: 760190-000127) at the marked areas as shown below:

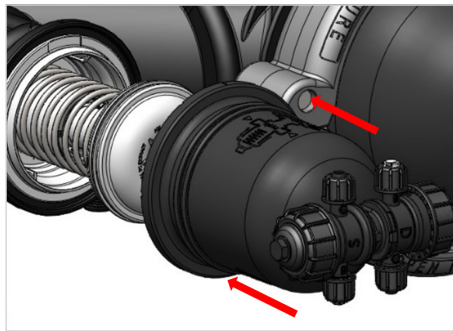


9.1.2. Assembly

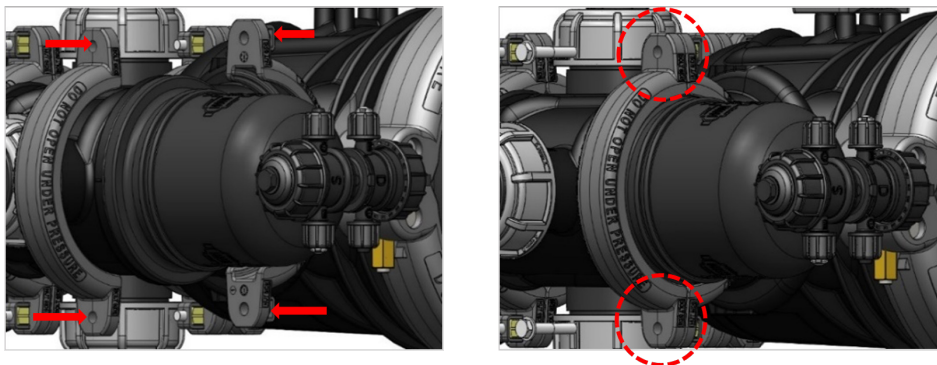
1. Insert the piston valve by pushing in the marked area. Verify that the orientation grooves are aligned, and the valve seats properly in its place.



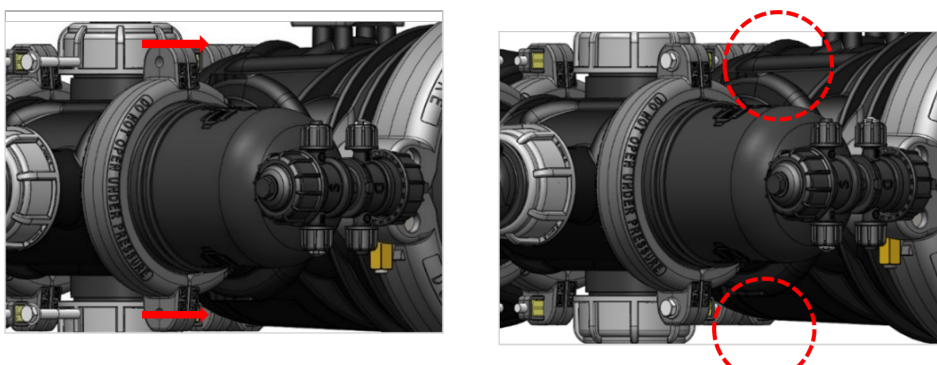
2. Place the booster cylinder on top the flush valve.



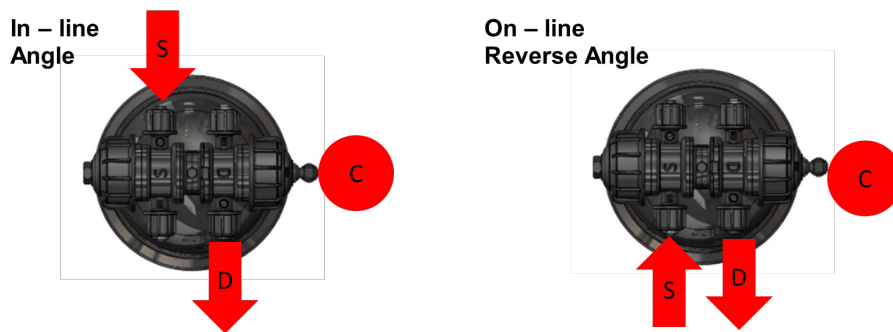
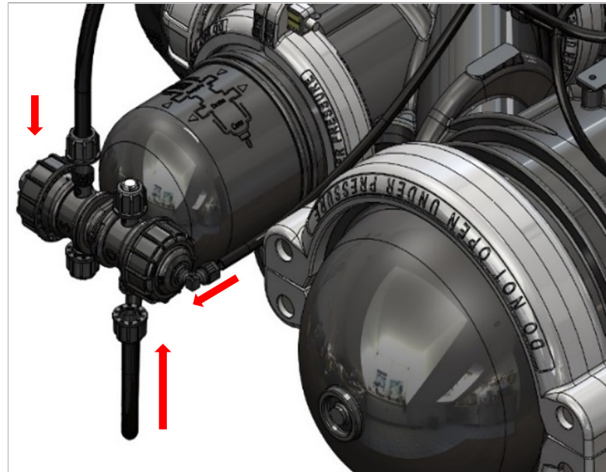
3. Place the system clamps around the booster cylinder.



4. Tighten the two system clamps bolts by using a 13mm (1/2") spanner.



5. Connect the tubes of the water supply (S), water drainage (D) and command tube (C) to the booster cylinder.



- 6. Close the drain valve and command filter drain valve.
- 7. Initiate a manual flush cycle and inspect for any leaks.

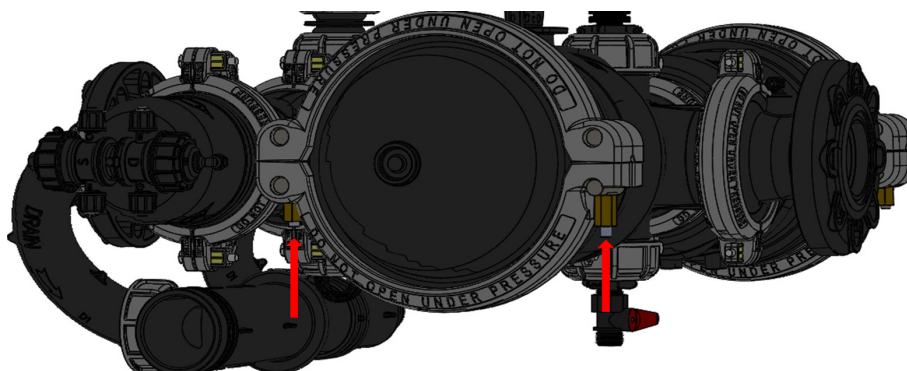
9.2. MAIN COVER AND FILTER ELEMENT

9.2.1. Disassembly

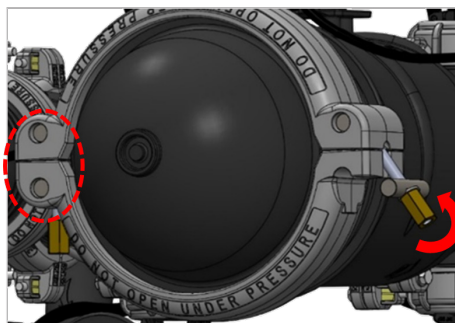
Note:

Before any maintenance procedure, please depressurize and empty the filter (see page 24).

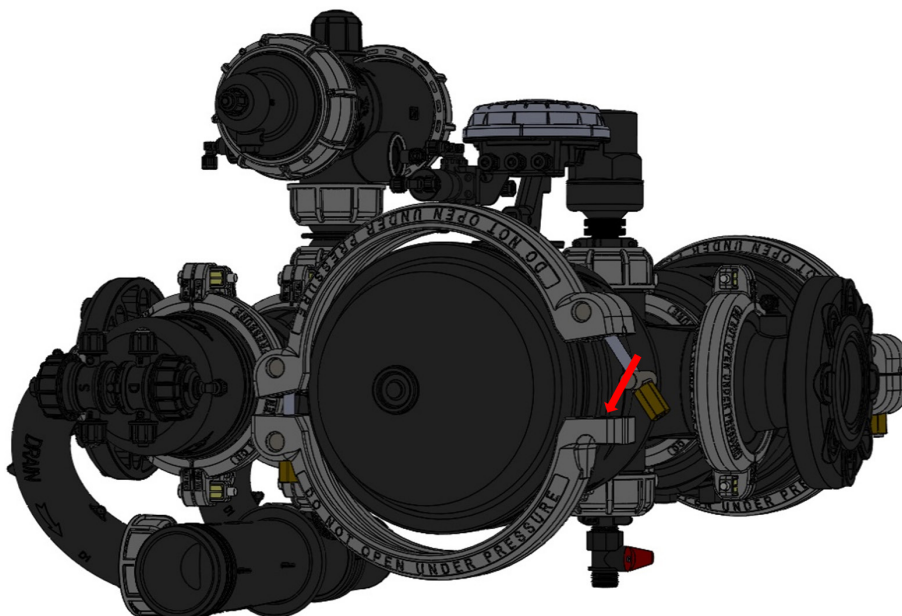
- 1. Release the two hex nuts (by using a 17mm (11/16") spanner) that hold the main clamps together. Do not release them all the way, and use one side as a hinge as shown below:



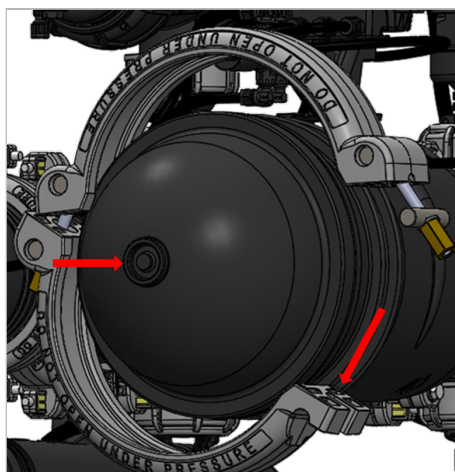
2. Remove the tie bar from the slot. Use it as a lever to release the clamps by pulling it upwards. Use one side as a hinge as shown below:



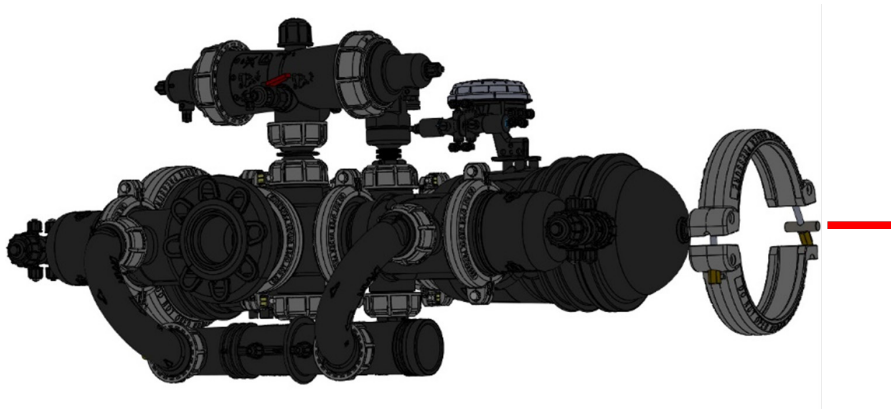
3. Push the bottom part of the main clamp downwards, making sure to support the cover during the procedure.



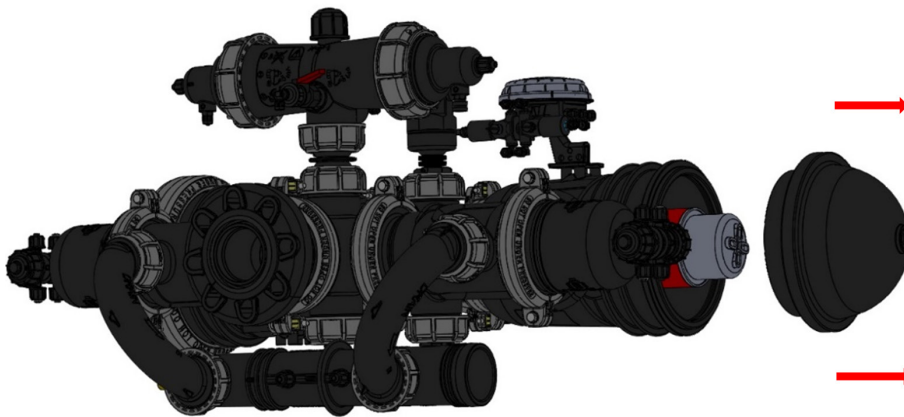
4. Keep pushing until the bottom clamp is fully released.



5. Remove the main clamps.



6. Remove the main cover.



Note:

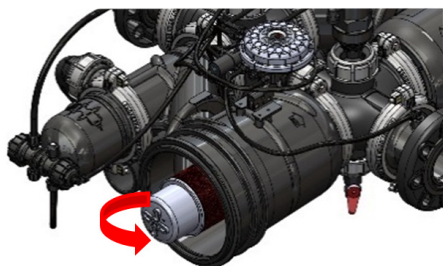
Cover disassembly procedure is identical for AlphaDisc™ & AlphaDisc™ XL

7. Perform the following steps in order to extract the discs for the cleaning procedure (for the full cleaning procedure, see pages 42-44):

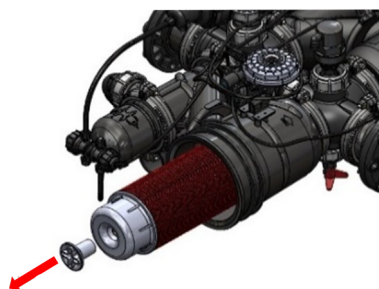
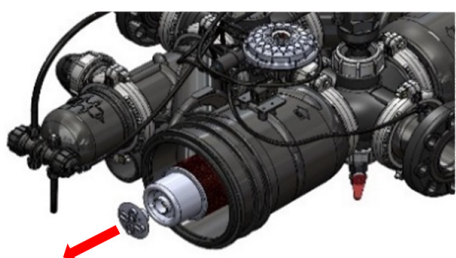
ALPHADISC™ (2" SPINE)

ALPHADISC™ XL (4" SPINE)

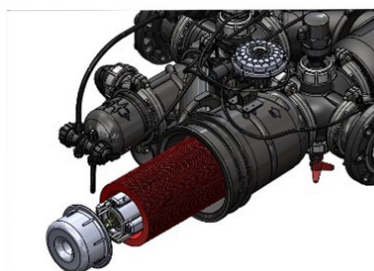
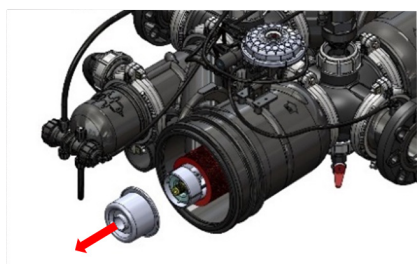
OPEN THE BUTTERFLY NUT BY ROTATING IT COUNTERCLOCKWISE.



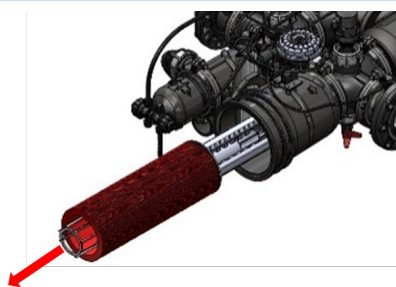
REMOVE THE BUTTERFLY NUT.



REMOVE THE SPINE CYLINDER LOCATED ON TOP OF THE SPINE.



REMOVE THE DISCS.



ALPHADISC™ (2" SPINE)

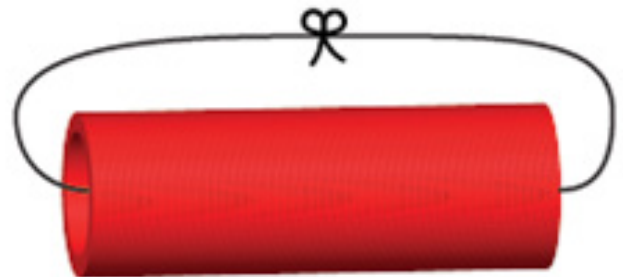
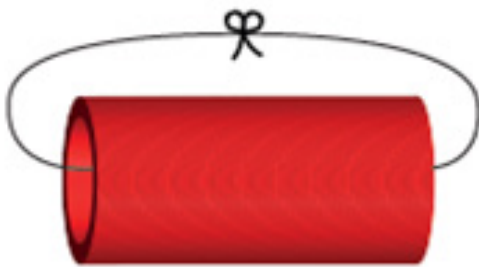
ALPHADISC™ XL (4" SPINE)

IT IS RECOMMENDED TO USE A PLASTIC BAG.

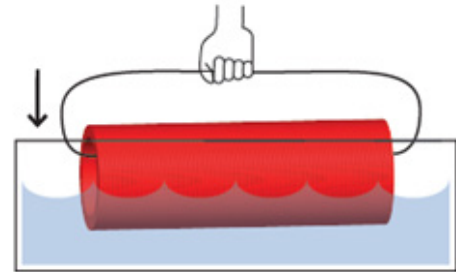
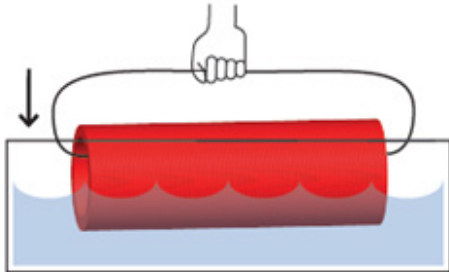
USE THE DISC CARRIER.



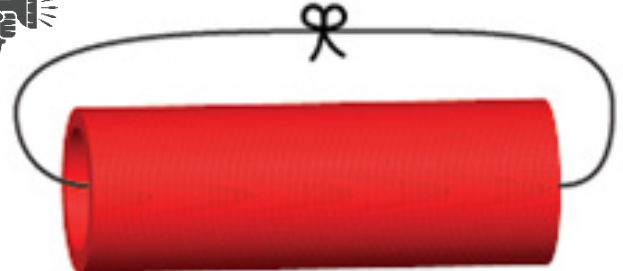
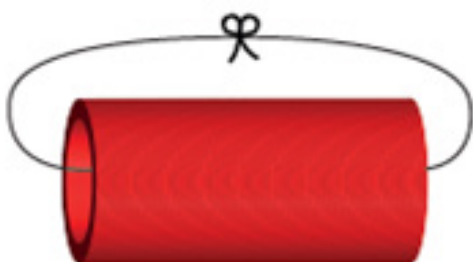
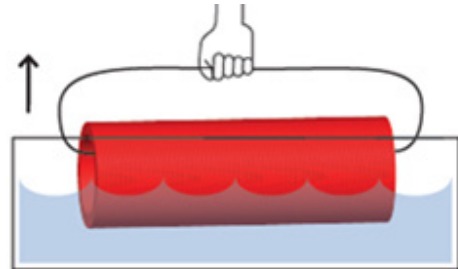
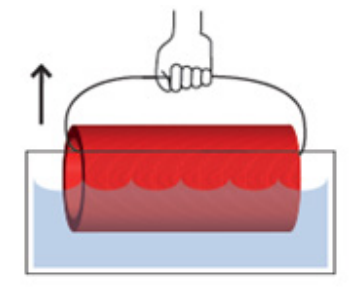
TIE EACH SET ON A STRING.



USE PROTECTIVE GLOVES TO PLACE THE DISCS IN A CLEANING SOLUTION (SEE PAGES 42-44 FOR SUITABLE OPTIONS).



REMOVE THE DISCS FROM THE CLEANING SOLUTION AND WASH THOROUGHLY UNDER CLEAN WATER.



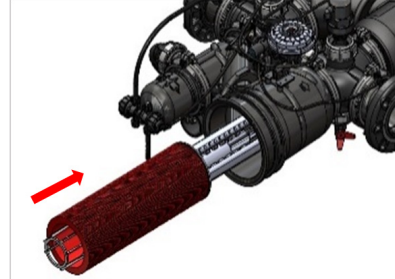
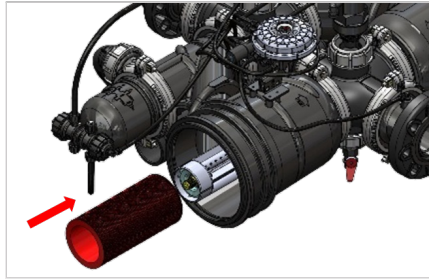
9.2.2. Assembly

1. Perform the following steps in order to reassemble the discs:

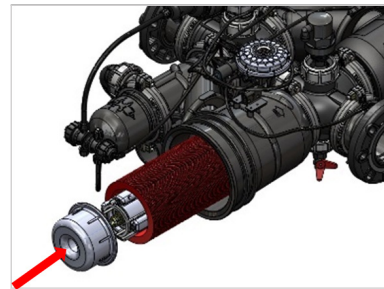
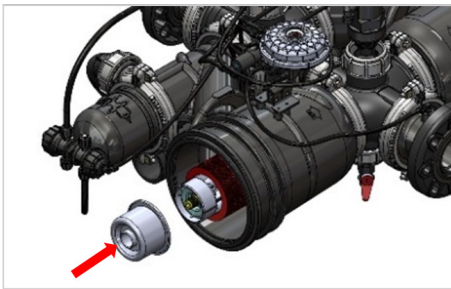
ALPHADISC™ (2" SPINE)

ALPHADISC™ XL (4" SPINE)

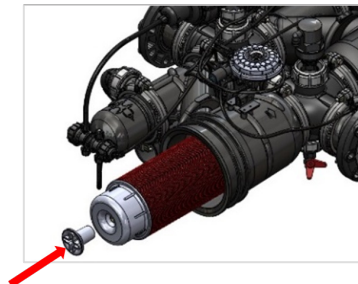
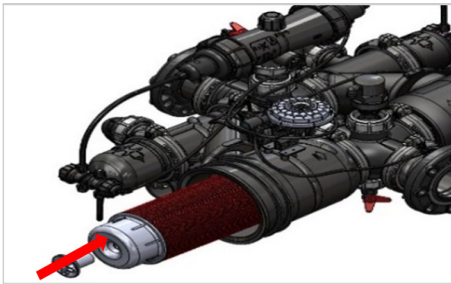
INSERT THE DISCS ONTO THE SPINE.



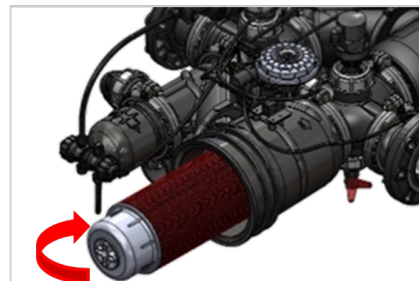
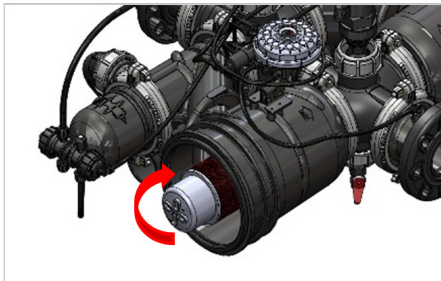
PLACE THE SPINE CYLINDER ON TOP OF THE SPINE.



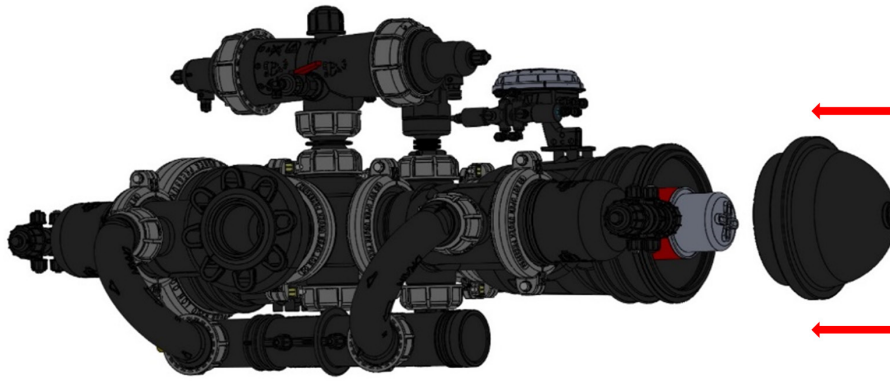
PLACE THE BUTTERFLY NUT ON TOP OF THE CYLINDER.



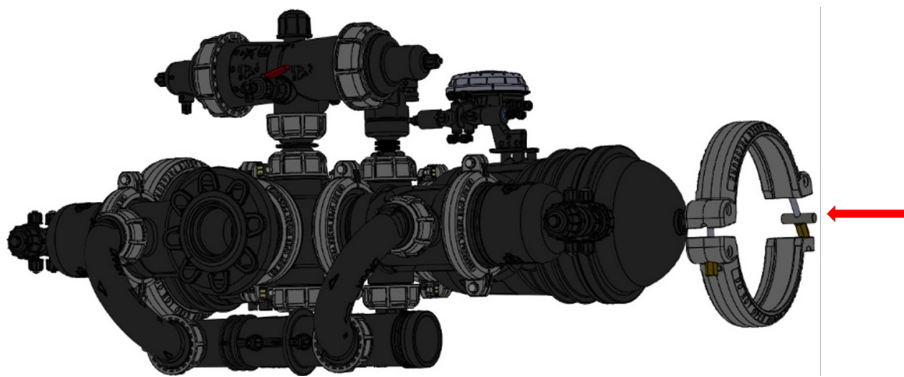
TIGHTEN THE BUTTERFLY NUT CLOCKWISE, USING THE PROVIDED TOOL.



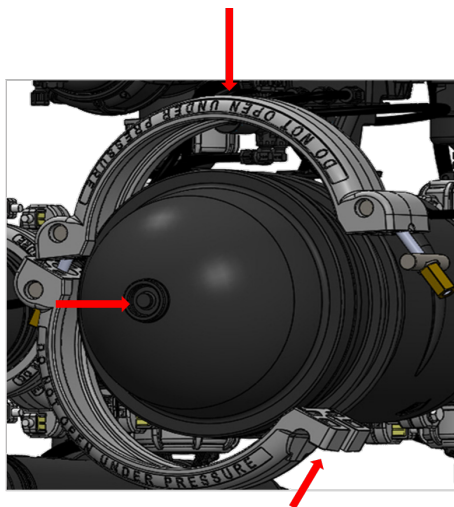
2. Reassemble the filter cover.



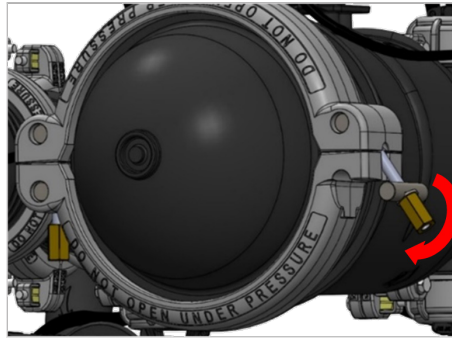
3. Reassemble the main clamps.



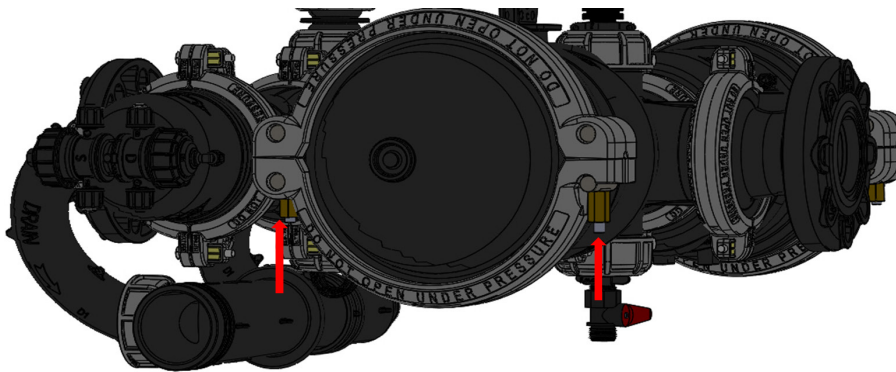
4. Keep pushing the cover while placing the upper clamp onto its location. Place the bottom clamp onto its location.



5. Place the tie bar back to the slot.



6. Tighten the two hex nuts (using a 17mm (11/16") spanner) that hold the main clamps together.

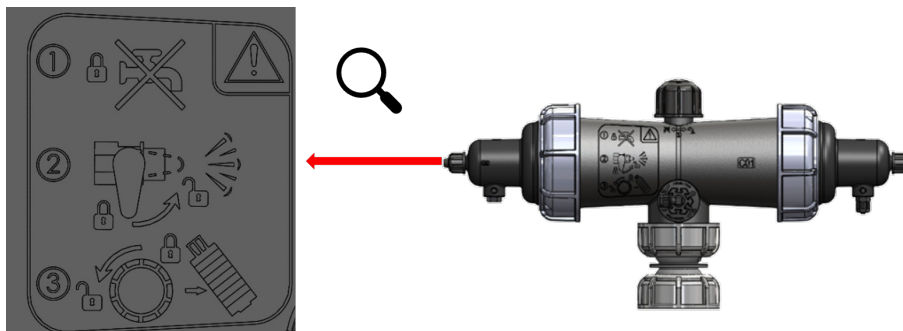


9.3. COMMAND FILTER

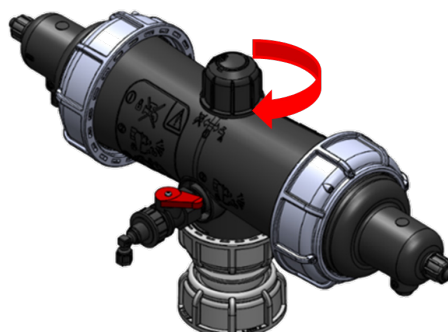
9.3.1. Disassembly (for both sides)

Note:

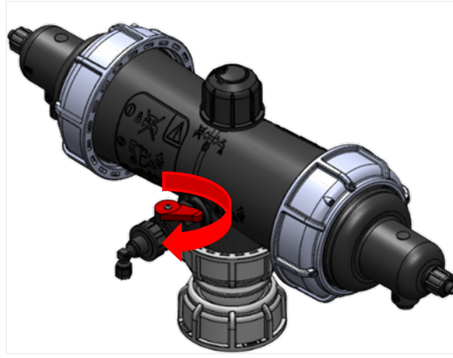
For an overview of the command filter cleaning procedure, please refer to the diagram located on the side of the command filter body. Each step has a designated number on the command filter body.



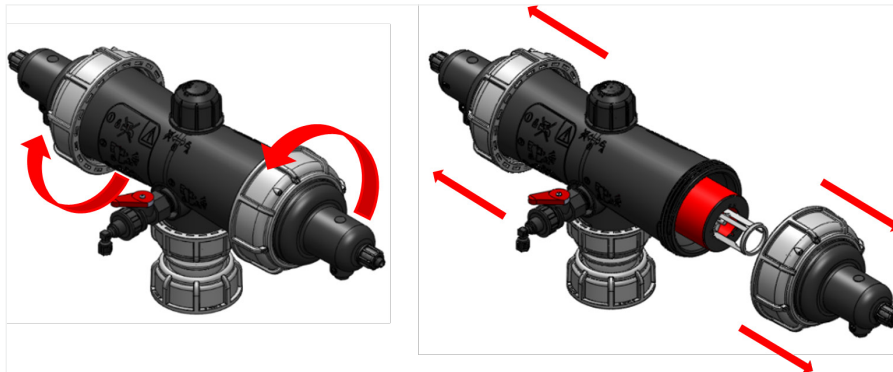
1. Close the supply valve.



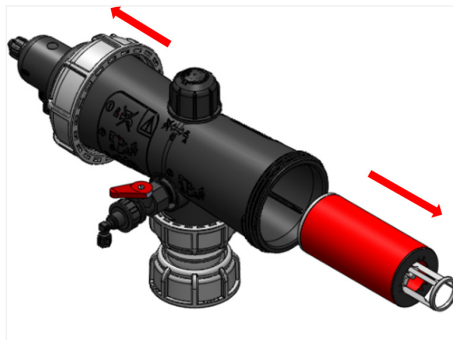
2. Open the drain valve.



3. Open the cover nut.



4. Extract the 1" spine.

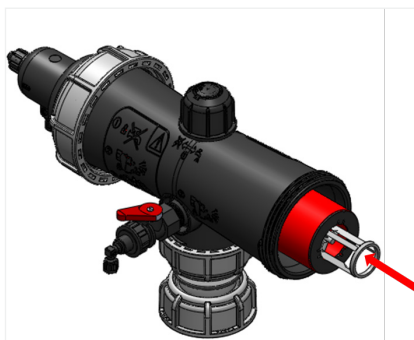


5. Wash the discs thoroughly under running water (make sure the discs are separated and spinning freely during the cleaning process).

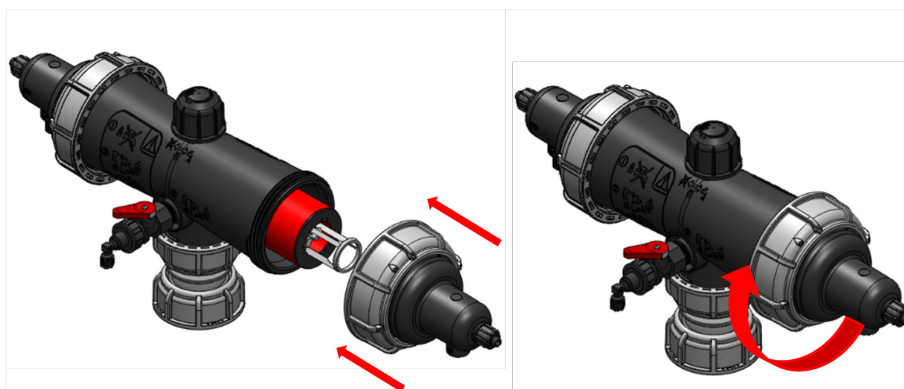


9.3.2. Assembly (for both sides)

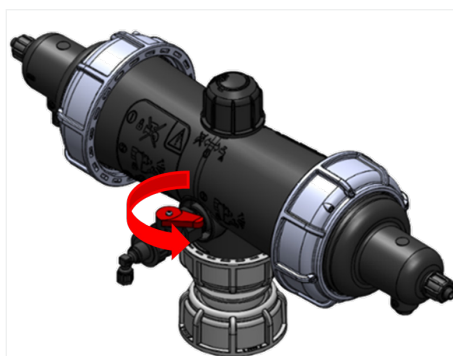
1. Insert the disc spine into the command filter body.



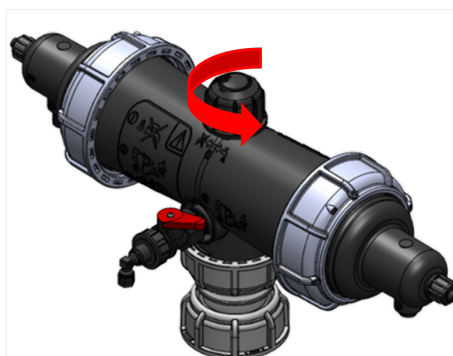
2. Close the command filter cover by tightening the cover nut.



3. Close the drain valve.



4. Open the supply valve.



5. Initiate a manual flush procedure and examine for any

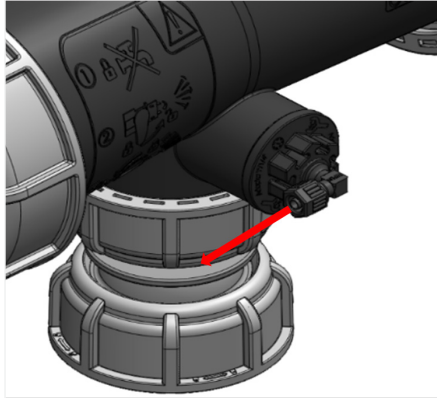
9.4. FINGER FILTER

9.4.1. Disassembly

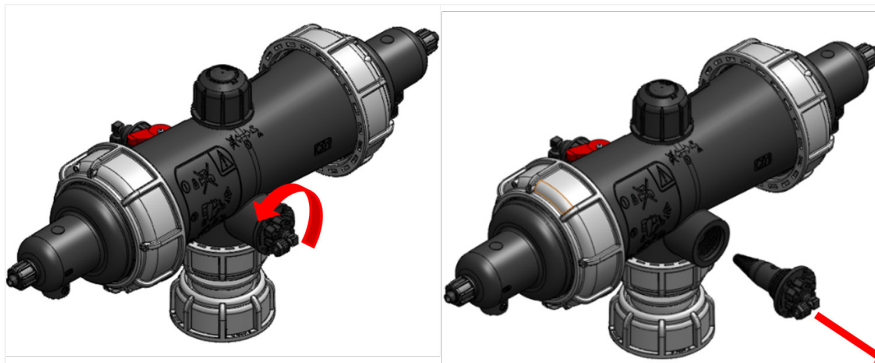
Note:

Before any maintenance procedure, please depressurize and empty the filter (see page 26)

1. Disconnect the 8mm tube from the finger filter connection.



2. Rotate the finger filter counterclockwise (using a 30mm/1.2" spanner).

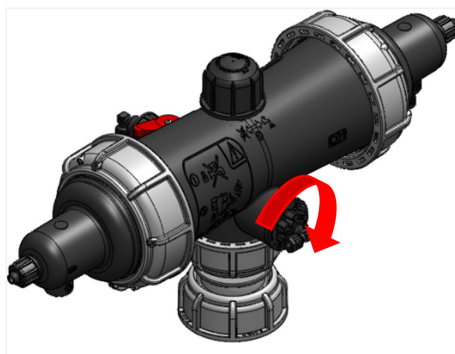


3. Wash the finger filter thoroughly under running water.

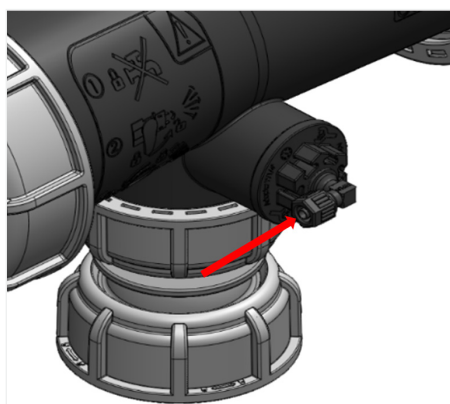


9.4.2. Assembly

1. Rotate the finger filter clockwise (using a 30mm (3/4") spanner).



2. Reconnect the 8mm tube from the finger filter connection.



3. Initiate a manual flush procedure and check for any leaks.

10. Disc Cleaning Procedure

10.1 SEASONAL MAINTENANCE - DISCS

To guarantee thorough cleaning of the disks, the following steps should be taken:

Attention:

When carrying out any seasonal maintenance, service, or cleaning procedures– make sure there is no pressure in the system after backwashing the system and closing the water inlet.

10.2 CLEANING RECOMMENDATIONS FOR CLOGGED FILTRATION DISCS

Water-formed deposits may cause clogging of the filter discs. The formation of these deposits depends on the quality of the filtered water and environmental conditions like temperature, pH, light, duration of filtration and more.

Common water-formed deposits are:

- ✓ Biological or organic deposits (mostly mucous or oily to the touch, beige, brown or green in color)
- ✓ Iron oxide (rust) or other metal oxides (brown or orange deposits)
- ✓ Manganese oxides (black deposits)
- ✓ Carbonates (white or gray deposit)
- ✓ Combinations of the above

If these deposits cannot be eliminated by pretreatment of the water, we recommend the following cleaning procedure:

10.3 MATERIALS AND EQUIPMENT

- ✓ A well-ventilated working environment.
- ✓ 1 small container (1 liter), 2 large containers (50 liter) and a stirring stick. All items should be chemicals resistant, preferably made out of polypropylene.
- ✓ Plastic rope to tie up the discs.
- ✓ Sodium Hypochlorite, NaOCl, CAS No. 7681-52-9
 - Strong oxidizing liquid, commercial concentration: 10%.
 - Oxidizes and removes organic and biological deposits.
- ✓ Hydrogen Peroxide, H₂O₂, CAS No. 7722-84-1
 - Strong oxidizing liquid, commercial concentration: 16% (35%).
 - Oxidizes and removes organic and biological deposits.
- ✓ Hydrochloric Acid, HCl, – CAS No. 7647-01-0
 - Very corrosive liquid, commercial concentration: 30%.
 - Dissolves and removes carbonates, iron oxide, and other deposits.
- ✓ Citric Acid, C₆H₈O₇, CAS No. 77-92-9 Organic acid, commercially available as solid white crystal salt.
 - Dissolves and removes manganese compounds.
- ✓ Safety equipment: safety glasses, gloves, long pants, long sleeve shirt, and shoes.

Attention!

While working with chemicals, protect yourself with the necessary safety equipment:

- ✓ Safety glasses, gloves, protective clothing
- ✓ A well-ventilated area
- ✓ Follow the manufacturer's instructions
- ✓ Store and discard chemicals according to local law

10.4 CLEANING ORGANIC AND BIOLOGICAL DEPOSITS – WITH SODIUM HYPOCHLORITE (NACLO)

1. Open the filter and remove the discs.



Attention:

Never open the filter before the pressure has been released.

2. Arrange the discs loosely on the plastic rope.
3. Prepare a 5% Sodium Hypochlorite solution (amount per disc set):
 - a. Pour 15 liters (for a 4" element) / 5 liters (for a 2" element) of water into one of the large containers.
 - b. Add 15 liters (for a 4" element) / 5 liters (for a 2" element) of Sodium Hypochlorite (10%) into the water.
4. Soak the discs in the solution so that both sides are covered. To achieve maximum cleaning, agitate the discs from time to time with a stirring stick.
5. Contact time with cleaning solution: up to 8 hours.
6. Remove the discs carefully from the solution, place them in the second large container and rinse them thoroughly under clean water before placing them back in the filter.
7. We recommend flushing the clean discs again inside the filter to ensure that all deposit and chemical residues are removed.

The cleaning solution can be used for several sets of discs. As the cleaning activity of the solution deteriorates, it may be necessary to soak the discs for a longer period of time.

10.5 CLEANING ORGANIC AND BIOLOGICAL DEPOSITS – WITH HYDROGEN PEROXIDE (H2O2)

1. Open the filter and remove the discs.



Attention:

Never open the filter before the pressure has been released.

2. Arrange the discs loosely on the plastic rope.
3. Prepare a 5% Peroxide solution (amount per disc set):
 - a. Pour 21 liters of water into one of the large containers.
 - b. Add 10 liters of Hydrogen Peroxide (16%) into the water.
4. Soak the discs in the solution so that both sides are covered. To achieve maximum cleaning, agitate the discs from time to time with a stirring stick.
5. Contact time with cleaning solution: up to 8 hours.
6. Remove the discs carefully from the solution. Place them in the second large container and rinse them thoroughly under clean water before placing them back in the filter.
7. We recommend flushing the clean discs again inside the filter to ensure that all deposit and chemical residues are removed.

The cleaning solution can be used for several sets of discs. As the cleaning activity of the solution deteriorates, it may be necessary to soak the discs for a longer period of time.

10.6 CLEANING CARBONATES AND IRON DEPOSITS

1. Open the filter and remove the discs.
2. Arrange the discs loosely on the plastic rope.
3. Prepare a 5% Solution of Hydrochloric Acid (amount per disc set):
 - a. Pour 25 liters (for a 4" element) / 10 liters (for a 2" element) of water into one of the large containers.
 - b. Carefully add 5 liters (for a 4" element) / 2 liters (for a 2" element) of Hydrochloric Acid (30%) into the water. Soak the discs in the solution so that both sides will be covered.
PLEASE NOTE: Carbonates react violently with hydrochloric acid (foaming, gas evolution). To achieve maximum cleaning, agitate the discs from time to time with a stirring stick.
4. Contact time with cleaning solution: 1 - 8 hours.

5. Remove the discs carefully from the solution. Place them in the second large container and rinse them thoroughly under clean water before placing them back in the filter.
6. We recommend flushing the clean discs again inside the filter to ensure that all deposit and chemical residues are removed.

The cleaning solution can be used for several sets of discs. As the cleaning activity of the solution deteriorates, it may be necessary to soak the discs for a longer period of time.

10.7 CLEANING MANGANESE DEPOSITS

1. Open the filter and remove the discs.
2. Arrange the discs loosely on the plastic rope.
3. Prepare a 10% Solution of Citric Acid:
 - a. Pour 30 liters of water into one of the large containers.
 - b. Carefully add 3 kg of solid Citric Acid into the water. Stir well until full dissolution of the acid.
Soak the discs in the solution so that both sides will be covered. To achieve maximum cleaning, agitate the discs from time to time with a stirring stick.
4. Contact time with cleaning solution: 2 - 8 hours.
5. Remove the discs carefully from the solution. Place them in the second large container and rinse them thoroughly under clean water before placing them back in the filter.
6. We recommend flushing the clean discs again inside the filter to ensure that all deposit and chemical residues are removed.

The cleaning solution can be used for several sets of discs. As the cleaning activity of the solution deteriorates, it may be necessary to soak the discs for a longer period of time.

10.8 CLEANING COMPLEX DEPOSITS

If the composition of the deposit is not known, perform the following test:

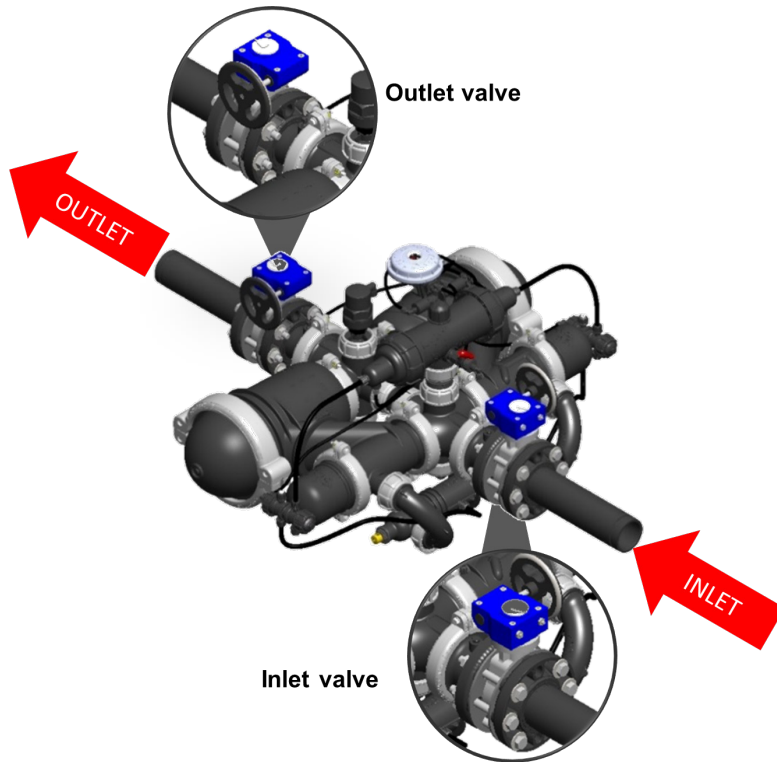
1. Take 5 discs for a test.
2. Soak 2 discs in a 5% Sodium Hypochlorite Solution.
Preparation of the solution:
Pour 1 cup of water into a small container, then add 1 cup of Sodium Hypochlorite (10% NaOCl).
3. Soak 2 discs in a 5% Hydrochloric Acid Solution.
Preparation of the solution:
Pour 1 1/4 cups (= 250ml) of water into a small container, then carefully add 1/4 cup (= 50ml) of Hydrochloric Acid (30% HCl).
4. Keep one disc as a control.
5. Observe the cleaning process:
If one of the solutions removes all of the deposit, clean the discs in that solution according to the instructions above.
If neither solution removes the deposit completely, continue with the test procedure.
6. Remove the discs from both solutions, rinse them well with water and soak them in the second solution: put the two discs, which have been in the Sodium Hypochlorite Solution, in the Hydrochloric Acid Solution, and vice versa.
7. Check the cleaning process:
If one of the treatments removes all of the deposit, clean all of the discs following the same two-step procedure in the exact same order. Rinse the discs well in between the two cleaning processes. If the deposit hasn't been completely removed, send a set of untreated discs to the laboratory for further examination.

11. Winterization

In order to prevent any damage to the filter battery due to water freeze – drain all the water from the filter and the command filter and leave the drain valve open.

To avoid damage or breakage, the filter, solenoid and command tubes must be drained prior to frost periods.

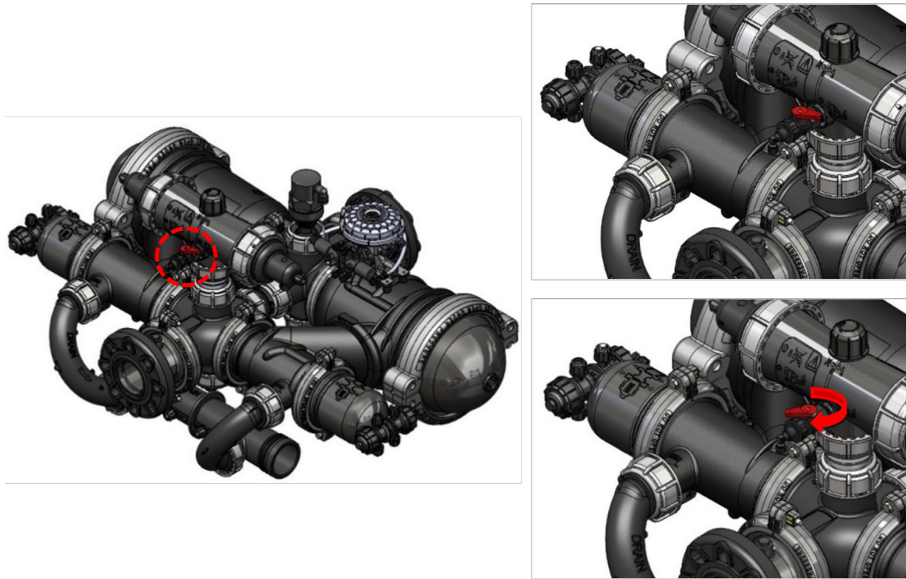
1. Initiate a manual flush to make sure that the disc element will be clean for the shutdown period.
2. Close the isolation valves (inlet and outlet if exist).



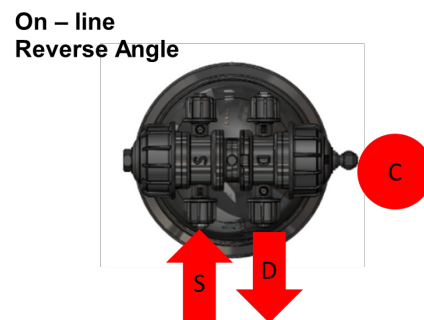
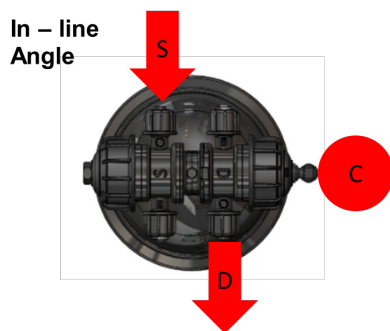
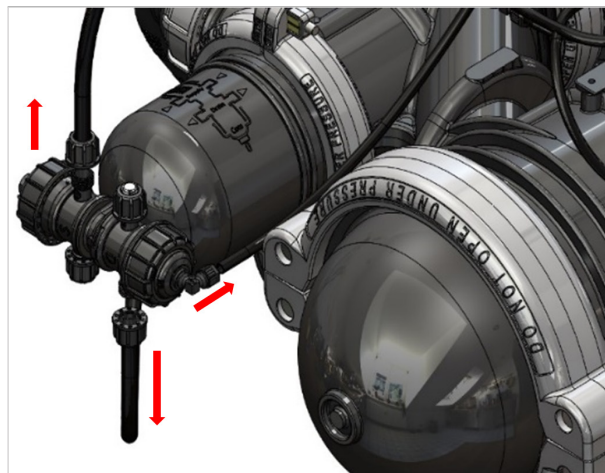
3. Initiate an additional manual flush to release the pressure inside the filter.
4. Open the drain valve located at the bottom of the filter.



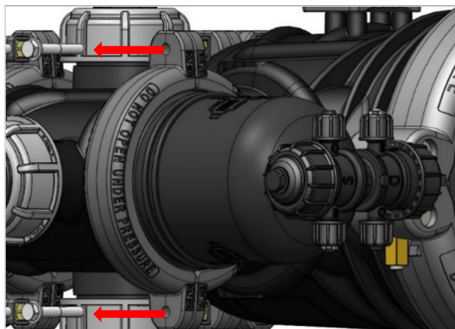
5. Open the command filter drain valve.



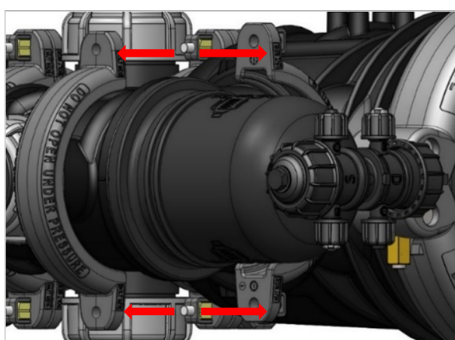
6. Disconnect the tubes of the water supply (S), water drainage (D) and command tube (C) from the booster cylinder.



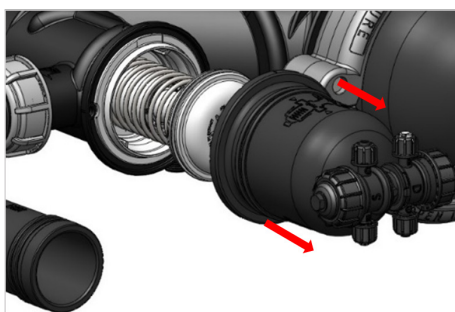
7. Unscrew the two bolts that hold the system clamps together and remove them.



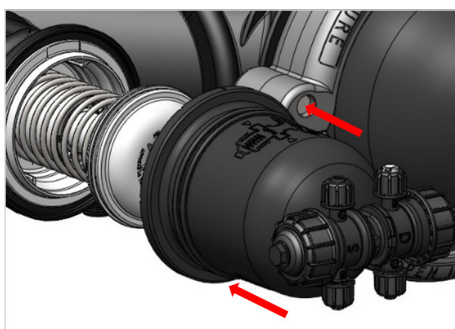
8. Remove the clamps (use a flat screwdriver to separate them if necessary).



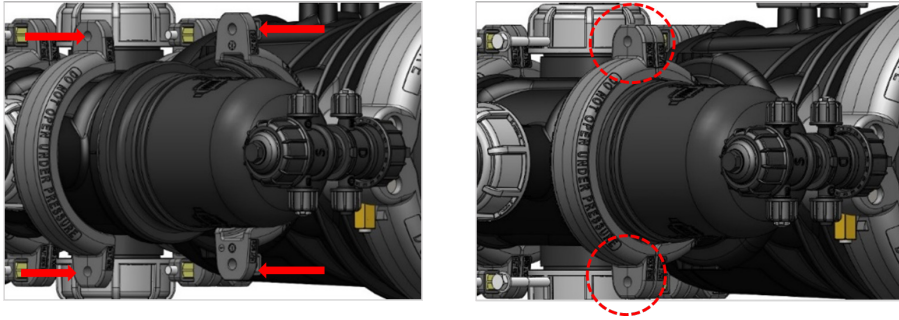
9. Remove the booster cylinder by pulling it backwards. Drain the booster cylinder from any water residue.



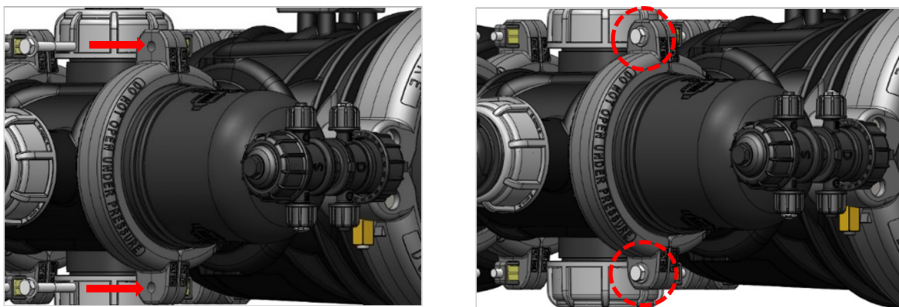
10. Reassemble the booster cylinder onto the flush valve.



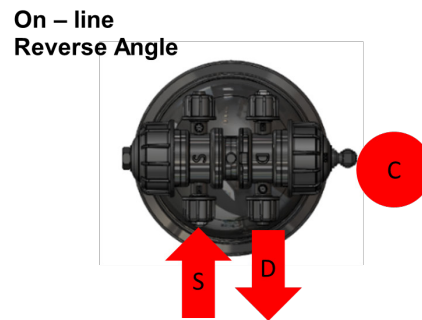
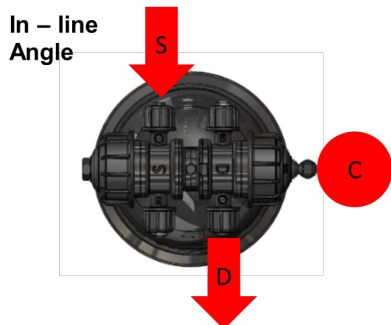
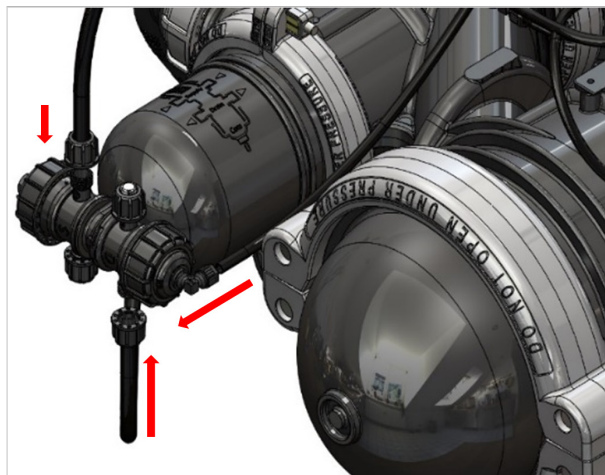
11. Reassemble the system clamps.



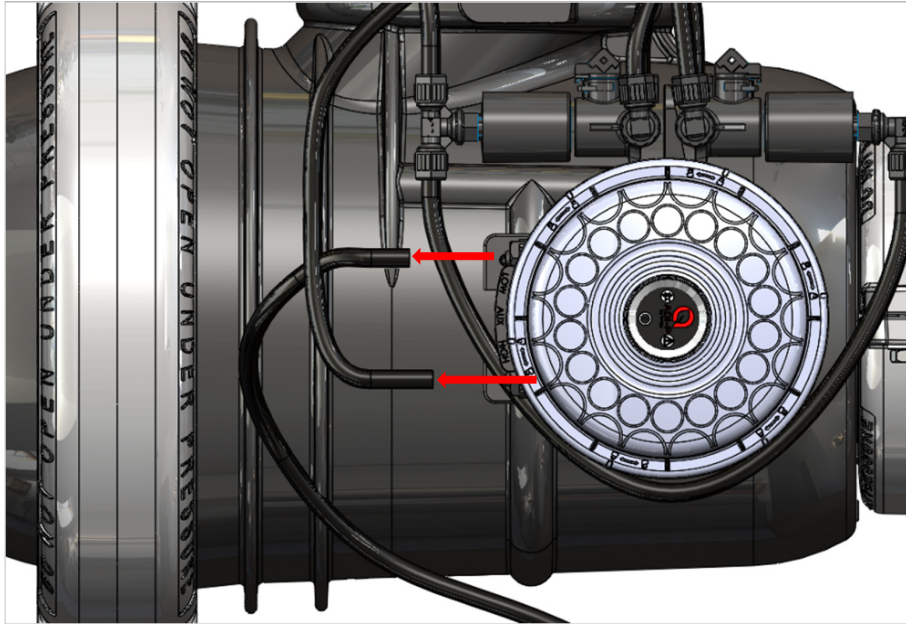
12. Close the system clamps by tightening the 2 bolts, using a 13mm (1/2") spanner.



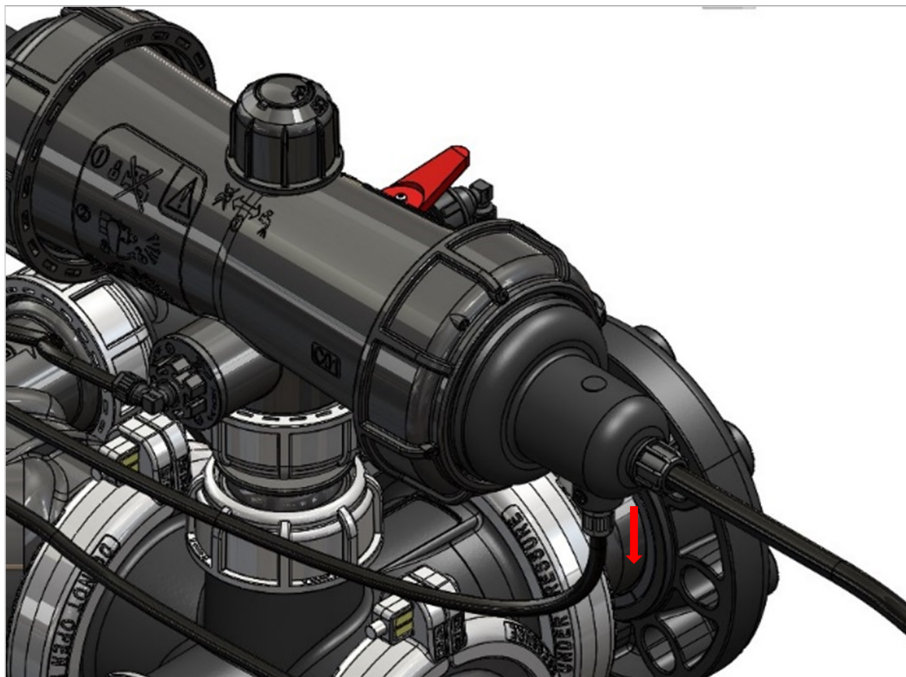
13. Connect the tubes of the water supply (S), water drainage (D) & command tube (C) to the booster cylinder.



14. Disconnect the low & high sensor pressure 8mm connection from the AlphaDisc™ BLE as shown, and leave unassembled, until next season.



15. Disconnect the tubes that supply water to the solenoid, and leave unassembled, until next season.

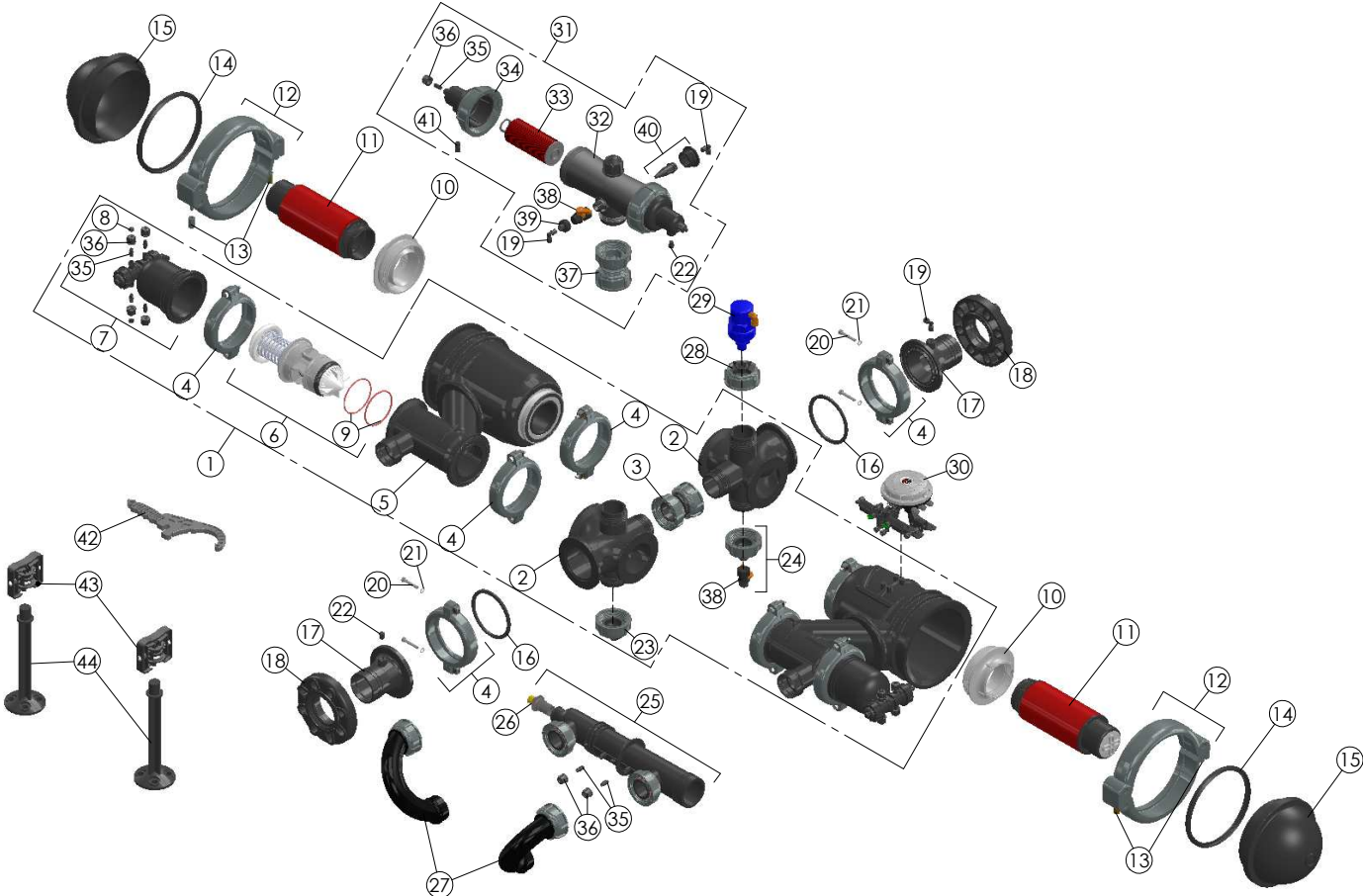


Prior to a new irrigation season, follow the following steps:

1. Connect the tubes that supply water to the solenoid and the booster.
2. Connect the low & high 8mm control tubes to the AlphaDisc™ BLE controller sensor ports.
3. Close the command filter drain valve.
4. Close the drain valve located at the bottom part of the filter.
5. Open the isolation valves (inlet & outlet).
6. Initiate a single manual flushing cycle from the controller.

12. Bill of Materials

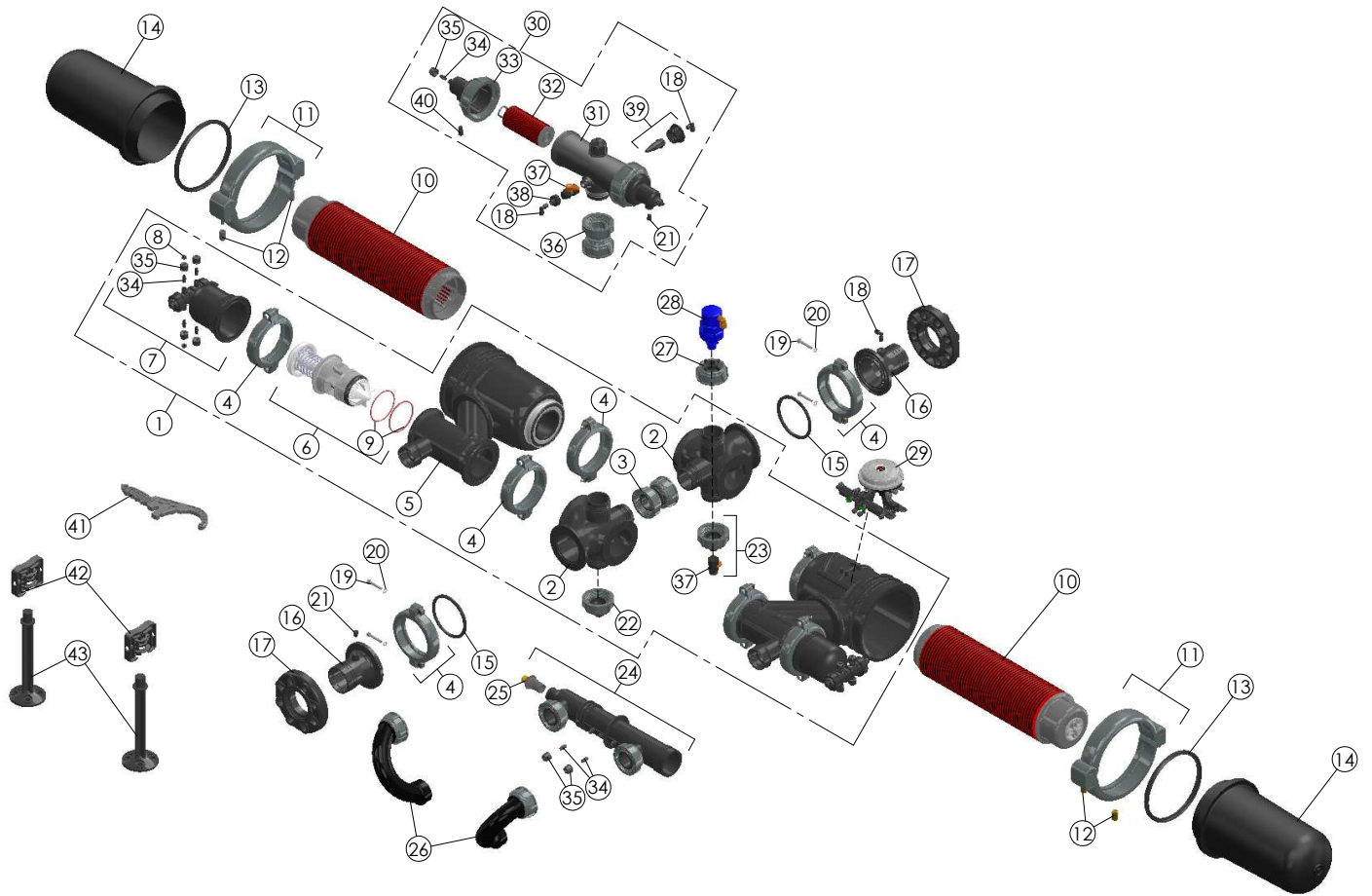
12.1 ALPHADISC™ SINGLE 3" – PARTS SCHEDULE



12.2 ALPHADISC™ SINGLE 3" – PARTS LIST

NO.	MATERIAL	DESCRIPTION	Q'TY
1	NO SAP CODE	ALPHA SINGLE IN-LINE FILTER ASSEMBLY	1
	NO SAP CODE	ALPHA SINGLE ON-LINE FILTER ASSEMBLY	1
	NO SAP CODE	ALPHA SINGLE ANGLE FILTER ASSEMBLY	1
	NO SAP CODE	ALPHA SINGLE REVERSE ANGLE FILTER ASSEMBLY	1
2	70607-000144	ALPHA DIVERTER RPA BLACK	2
3	70607-000126	ALPHA DIVERTER CONNECTOR ASSEMBLY	1
4	70607-000131	ALPHA SYSTEM CLAMP ASSEMBLY	8
5	70607-000137	ALPHA SINGLE BODY ASSEMBLY	2
6	70607-000125	ALPHA BF VALVE PISTON KIT	2
7	70607-000124	ALPHA BF VALVE COVER ASSEMBLY	2
8	70607-000148	ALPHA PLUG 12MM PP BLACK	2
9	70607-000154	ALPHA O-RING FOR BF PISTON	2
10	70607-000141	ALPHA 2" SPINE ADAPTOR RPP GREY	2
11	70607-000158	COMP. DISC ELEM. 2" PP 130MIC F/ALPHA	2
12	70607-000135	ALPHA MAIN COVER CLAMP ASSEMBLY	2
13	70620-008350	COVER CLAMP FOR ALPHA/GLX	2
14	70607-000155	ALPHA MAIN COVER HYD. SEAL EPDM	2
15	70607-000143	FILTER COVER BLACK F/ALPHA	2
16	70607-000156	ALPHA GROOVED ADAPTOR SEAL EPDM	2
17	70607-000146	GROOVED ADAPTOR 3" RPA BLACK F/ALPHA	2
18	70620-004810	ARKAL 3" AK FLANGE+RING+SEAL	2
19	76400-003505	TEFEN MALE ELBOW 8*1/4-BLACK PP	3
20	70607-000151	ALPHA BOLT F/SYSTEM CLAMP	2
21	70607-000153	ALPHA WASHER F/ SYSTEM CLAMP	2
22	76400-005405	TEFEN HEX PIPE PLUG - 1/4" M. BLACK	2
23	70607-000133	ALPHA PLUG ASSEMBLY	1
24	70607-000132	ALPHA PLUG AND 3/4" BALL VALVE ASSEMBLY	1
25	70607-000128	ALPHA SINGLE DRAIN COLLECTOR ASSEMBLY	1
26	70607-000140	ALPHA VACUUM BREAKER ASSEMBLY	1
27	70607-000129	ALPHA SINGLE DRAIN MANIFOLD ASSEMBLY	2
28	70607-000134	ALPHA PLUG INTERNAL 3/4" BSPT ASSEMBLY	1
29	70500-000520	BARAK PLAS.TIC AIR VALVE 3/4" (DG-010)	1
30	NO SAP CODE	ADI-P DC KIT PACKAGE TWO SOLENOIDS NC	1
	NO SAP CODE	ADI-P DC KIT PACKAGE	1
31	70607-000130	ALPHA COMMAND FILTER SHORT ASSEMBLY	1
32	70607-000138	ALPHA COMMAND FILTER BODY	1
33	70620-002530	ARKAL 1-1.5"SHORT FILT.ELMNT 120MESH RED	2
34	70607-000139	ALPHA COMMAND FILTER COVER	2
35	70607-000149	ALPHA NIPPLE 3/8"X12MM PBT BLACK	8
36	70607-000147	ALPHA TUBE NUT 12MM RPA BLACK	8
37	70607-000127	ALPHA COMMAND FILTER CONNECTOR ASSEMBLY	1
38	70607-000121	ALPHA BALL VALVE AC 3/4" 10 BAR F/2" T	2
39	70607-000123	ALPHA RACCORD CONNECTOR ASSEM. 3/4"X1/4"	1
40	70607-000122	ALPHA 1"*1/4"BUSHING+SEAL ASSY	1
41	76400-002302	TEFEN MALE CONNECTOR 8*1/4 BLACK	1
42	70607-000136	ALPHA MULTI-TOOL	1
43	70607-000150	ALPHA BATTERY SPACER RPA BLACK	2
44	70040-008010	LONG SUPPORT LEG PP FOR 2" SK	2

12.3 ALPHADISC™ XL SINGLE 3" / 4" – PARTS SCHEDULE

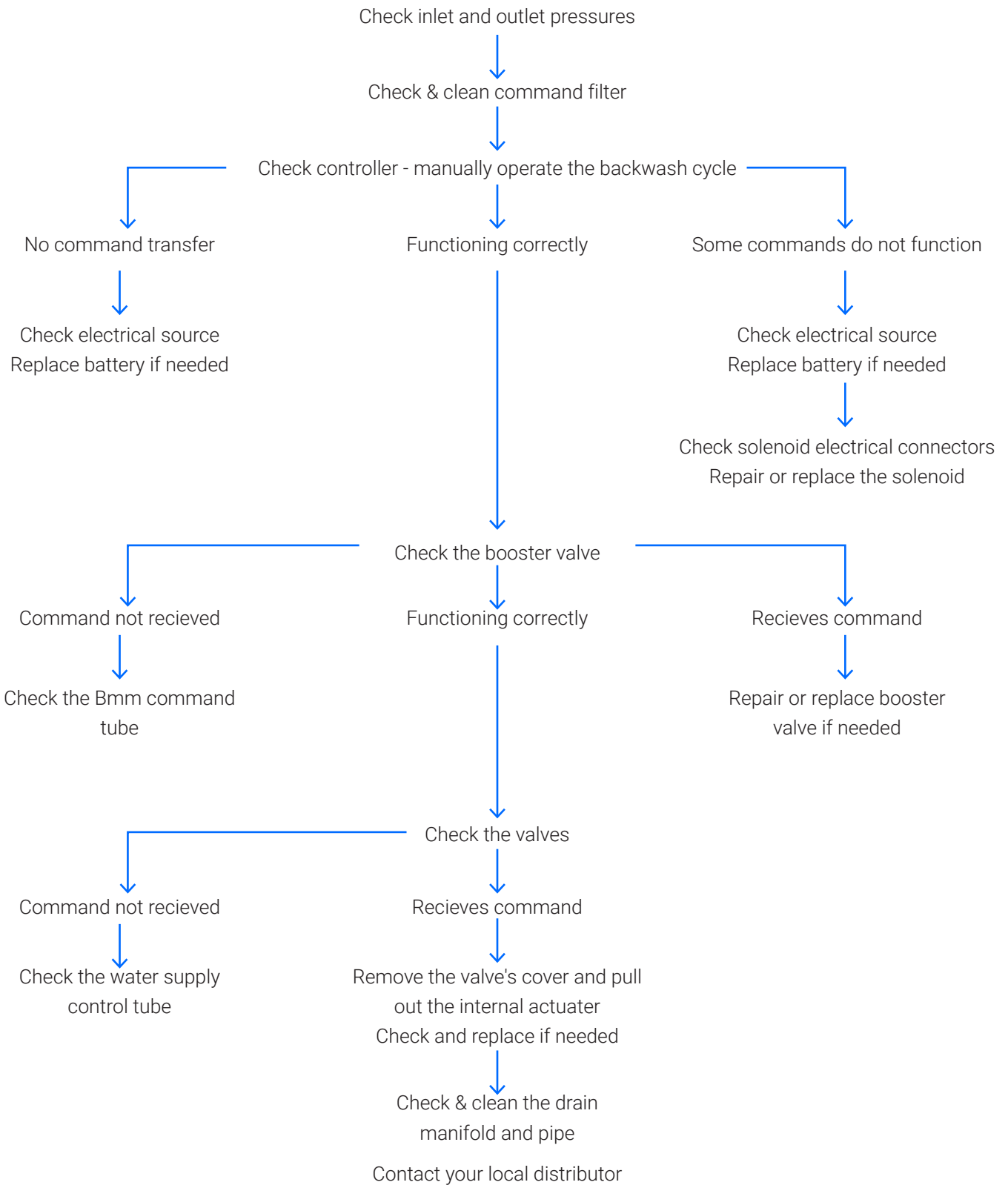


12.4 ALPHADISC™ XL SINGLE 3"/4" – PARTS LIST

NO.	MATERIAL	DESCRIPTION	Q'TY
1	NO SAP CODE	ALPHA SINGLE IN-LINE FILTER ASSEMBLY	1
	NO SAP CODE	ALPHA SINGLE ON-LINE FILTER ASSEMBLY	1
	NO SAP CODE	ALPHA SINGLE ANGLE FILTER ASSEMBLY	1
	NO SAP CODE	ALPHA SINGLE REVERSE ANGLE FILTER ASSEMBLY	1
2	70607-000144	ALPHA DIVERTER RPA BLACK	2
3	70607-000126	ALPHA DIVERTER CONNECTOR ASSEMBLY	1
4	70607-000131	ALPHA SYSTEM CLAMP ASSEMBLY	8
5	70607-000137	ALPHA SINGLE BODY ASSEMBLY	2
6	70607-000125	ALPHA BF VALVE PISTON KIT	2
7	70607-000124	ALPHA BF VALVE COVER ASSEMBLY	2
8	70607-000148	ALPHA PLUG 12MM PP BLACK	2
9	70607-000154	ALPHA O-RING FOR BF PISTON	2
10	70607-000159	DISC ELEMENT PP 130MIC SK APOLLO/ALPHA PLUS	2
11	70607-000135	ALPHA MAIN COVER CLAMP ASSEMBLY	2
12	70620-008350	COVER CLAMP FOR ALPHA/GLX	2
13	70607-000155	ALPHA MAIN COVER HYD. SEAL EPDM	2
14	70607-000142	FILTER COVER BLACK F/ALPHA XL	2
15	70607-000156	ALPHA GROOVED ADAPTOR SEAL EPDM	2
16	70607-000145	GROOVED ADAPTOR 4" RPA BLACK F/ALPHA XL	2
	70607-000146	GROOVED ADAPTOR 3" RPA BLACK F/ALPHA	
17	70620-004860	ARKAL 4" AK FLANGE+RING+SEAL	2
	70620-004810	ARKAL 3" AK FLANGE+RING+SEAL	
18	76400-003505	TEFEN MALE ELBOW 8*1/4-BLACK PP	3
19	70607-000151	ALPHA BOLT F/SYSTEM CLAMP	2
20	70607-000153	ALPHA WASHER F/ SYSTEM CLAMP	2
21	76400-005405	TEFEN HEX PIPE PLUG - 1/4" M. BLACK	2
22	70607-000133	ALPHA PLUG ASSEMBLY	1
23	70607-000132	ALPHA PLUG AND 3/4" BALL VALVE ASSEMBLY	1
24	70607-000128	ALPHA SINGLE DRAIN COLLECTOR ASSEMBLY	1
25	70607-000140	ALPHA VACUUM BREAKER ASSEMBLY	1
26	70607-000129	ALPHA SINGLE DRAIN MANIFOLD ASSEMBLY	2
27	70607-000134	ALPHA PLUG INTERNAL 3/4" BSPT ASSEMBLY	1
28	70500-000520	BARAK PLAS.TIC AIR VALVE 3/4" (DG-010)	1
29	NO SAP CODE	ADI-P DC KIT PACKAGE TWO SOLENOIDS NC	
30	70607-000130	ALPHA COMMAND FILTER SHORT ASSEMBLY	1
31	70607-000138	ALPHA COMMAND FILTER BODY	1
32	70620-002530	ARKAL 1-1.5"SHORT FILT.ELMNT 120MESH RED	2
33	70607-000139	ALPHA COMMAND FILTER COVER	2
34	70607-000149	ALPHA NIPPLE 3/8"X12MM PBT BLACK	8
35	70607-000147	ALPHA TUBE NUT 12MM RPA BLACK	8
36	70607-000127	ALPHA COMMAND FILTER CONNECTOR ASSEMBLY	1
37	70607-000121	ALPHA BALL VALVE AC 3/4" 10 BAR F/2" T	2
38	70607-000123	ALPHA RACCORD CONNECTOR ASSEM. 3/4"X1/4"	1
39	70607-000122	ALPHA 1"*1/4"BUSHING+SEAL ASSY	1
40	76400-002302	TEFEN MALE CONNECTOR 8*1/4 BLACK	1
41	70607-000136	ALPHA MULTI-TOOL	1
42	70607-000150	ALPHA BATTERY SPACER RPA BLACK	2
43	70040-008010	LONG SUPPORT LEG PP FOR 2" SK	2

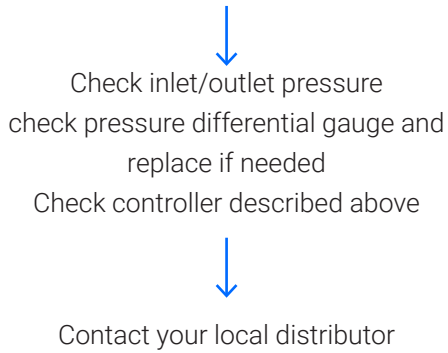
13. Troubleshooting

NO BACKWASH OPERATION

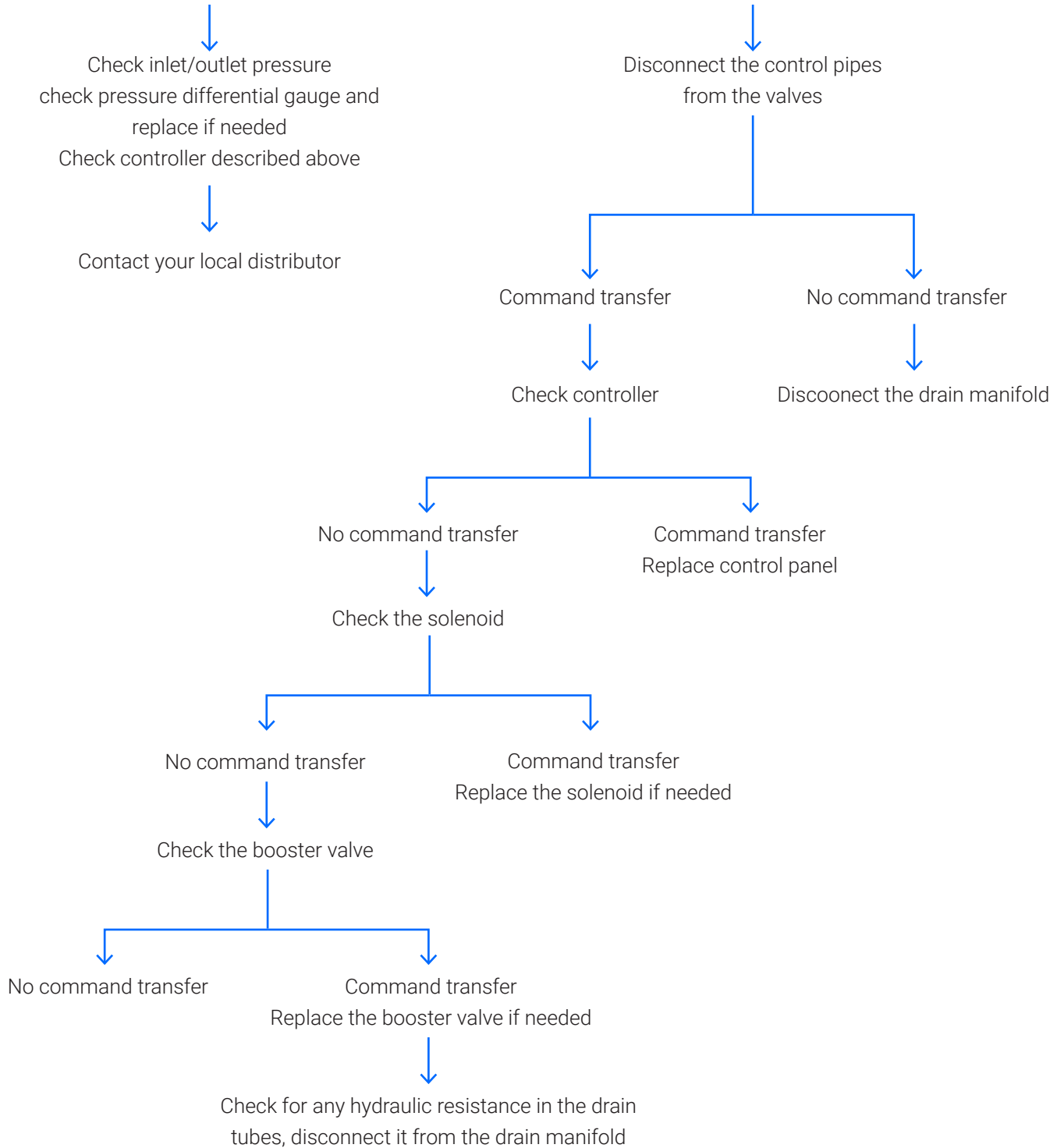


CONTINUOUS OR NO-STOP BACKWASHING

Non-stop backwash cycle



Continuous backwash



14. Netafim Limited Warranty

This certificate applies to Netafim Ltd. ("Netafim") products purchased by you (the "Buyer") from Netafim unless specifically agreed otherwise in writing by Netafim. This Warranty extends only to the original purchaser, and is not transferable to anyone who subsequently purchases, leases, or otherwise obtains the product from the original purchaser.

Netafim hereby warrants that the products are and will be free from defects in material and workmanship under normal use and service. Netafim warrants that it will correct manufacturing defects in the products, in accordance with the conditions set out in this Warranty.

This Warranty is enforceable for a period of 12 months after the date upon which the products were delivered (the "Warranty Period").

In the event that during the Warranty Period the Buyer discovers a defect in material and/or workmanship in any product or part (the "Defective Product"), it shall submit a written complaint to Netafim using Netafim's standard Buyer Complaint Form. For the receipt of the Buyer Complaint Form, the submission of the complaint or any questions please contact your service representative.

Upon written demand by Netafim the Buyer shall return the Defective Product - or a sample thereof - to Netafim, at Netafim's cost. If the Buyer ships any such Defective Product, Netafim suggests the Buyer package it securely and insure it for value, as Netafim assumes no liability for any loss or damage occurring during shipment. Provided however that in the event Netafim determines that this Warranty does not apply to such product, Buyer shall promptly reimburse Netafim for such cost (including freight and customs). Any returned product or part must be accompanied by the Warranty certificate and the purchase invoice. It is clarified that the Buyer may not return the Defective Product unless such return was coordinated and approved by Netafim in advance.

Netafim's obligation under this Warranty shall be limited to, at Netafim's option, the repair or exchange, free of charge, of the product or any part which may prove defective under normal use and service during the Warranty Period. The provision of a repair or replacement of a product during the Warranty Period will result in an extension of the Warranty Period by an additional period of 12 months, provided that the total accumulated Warranty Period shall in any event be no more than 18 months from the date upon which the products were delivered.

This Warranty is valid on the condition that the products are installed according to Netafim's instructions as expressed in Netafim's instruction manuals and according to the technical limitations as stipulated in Netafim's literature or as stated by a representative of Netafim.

This Warranty will not apply to damaged or defective products resulting from or related to:

Fire, flood, power surges or failures or any other catastrophe and/or unforeseen occurrence, such as but not limited to those for which the Buyer is customarily insured for, or any force majeure events;

Fault, abuse or negligence of the Buyer;

Intake water not meeting the agreed standards, as set forth in a written document, approved by Netafim, or improper storage;

Improper or unauthorized use of the product or related parts by the Buyer, including Buyer's failure to operate the product in conformity with the recommendations and instructions of Netafim, as set forth in Netafim's manuals and other written materials, the operation of the product other than by a trained and qualified operator, or improper installation of the product by a third party not authorized by Netafim;

Performance by the Buyer of maintenance or operation other than in conformity with the recommendations and instructions of Netafim, or other than in accordance with procedures defined in the literature supplied for products (including the timely replacement of requisite parts), and for services provided other than by a trained and qualified advanced operator; or

Any alteration, modification, foreign attachment to or repair of the products, other than by Netafim or its authorized technical representatives.

In no event shall Netafim be liable to the Buyer or any third party for any damages to property, or for any intangible or economic loss, including loss of profits, loss of customers or damage to reputation, for any damages, including indirect, special, consequential damages, or punitive damage arising out of or in connection with this Warranty, or arising out of or in connection with the product's performance or failure to perform, even if it has been advised of the possibility of such damages.

Netafim will be excused for failure to perform or for delay in performance hereunder if such failure or delay is due to causes beyond its reasonable control or force majeure preventing or hindering performance.

This Warranty set forth herein is the only contractual warranty given by Netafim and is provided in lieu of any other warranties created by any documentation, packaging or otherwise.

Netafim makes no warranty whatsoever in respect to accessories or parts not supplied by Netafim. In the event that Netafim is required to correct a Defective Product or product not covered by this Warranty, it will do so solely in consideration for additional fees.

The parties will actively endeavor to amicably settle any dispute arising between them. In the event that the parties are unable to reach an equitable settlement of such dispute, any claim or lawsuit related to the Warranty, its validity execution, its performance be brought before only the courts of Tel-Aviv, Israel. Israeli law will govern the Warranty, to the exclusion of any conflict of law rules.



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