



4" Sigma Pro



6"/8" Sigma Pro

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## Legend



**Push**



**Pull**



**Screw**



**Unscrew**



**Measure**



**Water  
pressure**



**Attention**



**Apply**



**Caution**



**Read**



**Center**



**Sigma  
multi-tool**



**Rotate**

## Technical Specification

General data	4" Sigma Pro	6" Sigma Pro	8" Sigma Pro
Max. flow rate* (130μ) in average water quality	120 m <sup>3</sup> /h (528 GPM)	180 m <sup>3</sup> /h (792 GPM)	280 m <sup>3</sup> /h (1233 GPM)
Min. operating pressure when cleaning	1.5 bar (22 psi) - electronic controller 2.5 bar (36 psi) - hydraulic controller		
Max. operating pressure	10 bar (145 psi)		
Filtration area	6000 cm <sup>2</sup> (930 in <sup>2</sup> )	8000 cm <sup>2</sup> (1240 in <sup>2</sup> )	
Inlet/Outlet diameter	4" (100 mm) Flange & Victaulic	6" (150 mm) Flange	8" (200 mm) Flange
Weight	Empty: 75 kg (165 lb) Full: 145 kg (320 lb)	Empty: 110 kg (243 lb) Full: 225 kg (496 lb)	Empty: 120 kg (264 lb) Full: 235 kg (518 lb)

\* Maximum flow rates depends on water quality and micron size.

Hydraulic controller	
Rinse controller	PP (Polypropylene), PA (Polyamide)
DP switch	Built-in rinse controller set at 0.5 bar (7 psi)
Operation mode	3-way ball valve, indicate: automatic or manual

Electronic controller	
Control power supply	4 X AA type 1.5V batteries / External 7-14V DC
Solenoid operation data	12-9V DC latching solenoid
DP switch	Integral sensors

Flushing data		
Exhaust valve	2" (50mm)	
Flushing time	10 seconds	
Reject water volume per flush cycle	75 liters (20 gallons)	90 liters (23 gallons)
Min. flow for flushing (at 1.5 bar/22 psi)	34 m <sup>3</sup> /h (150 GPM)	36 m <sup>3</sup> /h (158 GPM)

Construction materials	
Filter housing and lid	RPP (reinforced polypropylene) RPA (reinforced polyamide)
Screens	Molded weavewire stainless steel 316L
Cleaning mechanism	PBT (Polybutylene)
Exhaust valve	Polymeric
Seals	EPDM
Control command tubing	PE (Polyethylene)

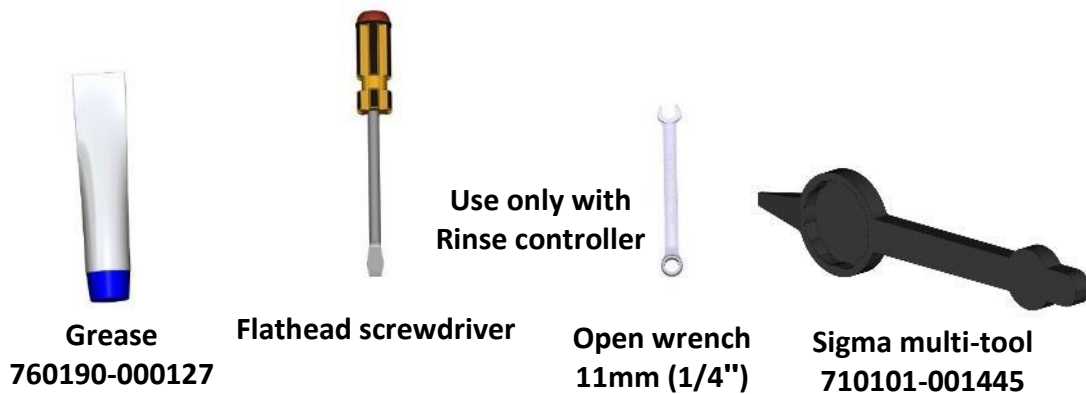
Standard filtration degrees						
Micron	500	300	200	130	100	80
mm	0.5	0.3	0.2	0.13	0.1	0.08

## General Safety Instructions

- Amiad Water Systems Ltd. ("Amiad") filtration products operate as components in a larger system. It is essential for the system designers, installers, and operators to comply with all the relevant safety standards and regulations, including the use and wear of appropriate safety equipment.
- Prior to installation, operation, maintenance, or any other type of action carried out on the filter, carefully read the safety, installation, operation and warranty instructions.
- During installation, operation, commissioning, or maintenance of the filter, all conventional safety instructions should be observed to avoid danger to any person, including the workers performing the said activity, or to property in the vicinity.
- Please note: the filter enters a flushing mode automatically, without warning.
- Manual cleaning of filter element using high water pressure or steam should be performed in accordance with the cleaning system instructions, the local standards, and regulations.
- Manual cleaning of filter element using acid or other chemical agents should be performed in accordance with the relevant material safety instructions, the local standards, and regulations.

**Observe and act according to the requirements detailed in the safety stickers on the filter, if any.**

### Tools needed for installation



Use only appropriate standard tools and equipment operated by qualified operators when installing, operating and maintaining the filter.

\*Amiad supplies the Sigma multi-tool only.

## Installation

### General

- Install the filter according to the detailed Installation Instructions provided with the filter by Amiad.
- Make sure to leave enough space (height 70 cm/ 27") to enable easy access for future treatments and safe maintenance operations.
- The user should arrange suitable lighting at the area of the filter to enable good visibility and safe maintenance.
- Check and retighten all bolts during commissioning and after the first week of operation.
- Use only appropriate tools and equipment or recommended tools and equipment, if any, all operated by qualified operators when installing, operating, and maintaining the filter.

### Civil Engineering

- While using lifting equipment, make sure that the filter is lifted in a safe manner.
- Do not leave equipment lifted if not necessary. Avoid working below lifted equipment.

### Shipping and Transporting

- Shipping and transporting the filter must be done in a safe and stable manner and in accordance with the relevant standards and regulations.
- For shipping, lifting and positioning the filter, use only approved lifting equipment and authorized employees and contractors.
- Whenever lifting the filter is required, connect suitable hoisting equipment to the filter's clamps at both sides of the filter, connect the ropes to a crane hook and carefully lift the filter.



## Hydraulics

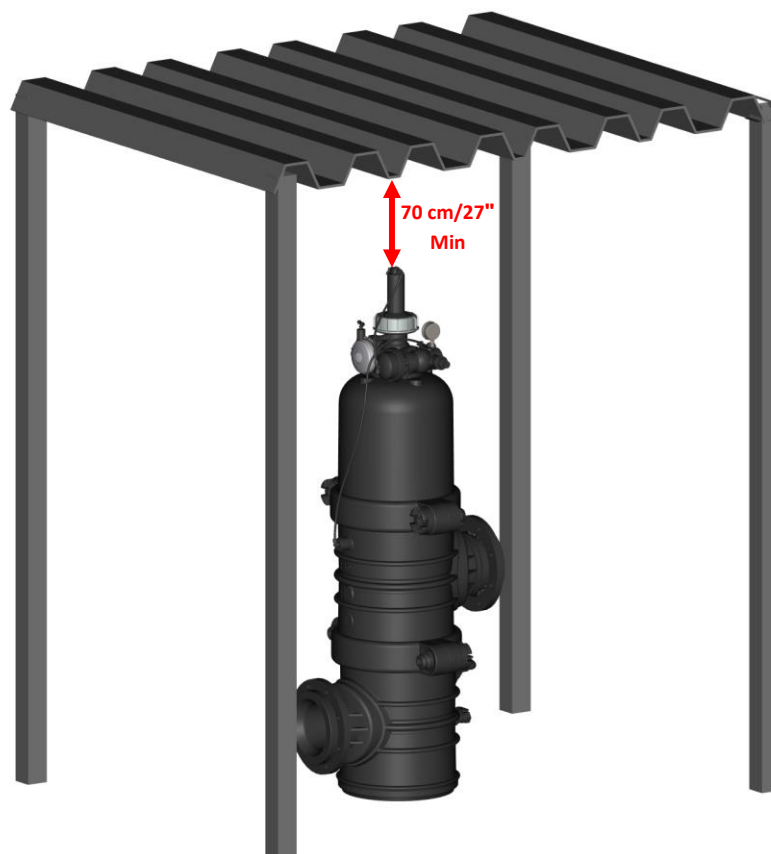
- The user should install a manual water cut-off valve next to the filter's inlet port.
- In installations where the piping network downstream of the filter is pressurized, an additional manual water cut-off valve should be installed next to the filter's outlet port.
- The user should make sure that the system includes a pressure release / drainage valve to enable release of residual pressure prior to any maintenance procedure is performed on the filter.
- The user should make sure that the filter is never exposed to water pressure exceeding the maximum designated pressure for this filter. When necessary, a pressure reduction valve should be installed upstream of the filter's water inlet port.
- Please note that the maximum working pressure indicated in the filter's specifications table includes the pressure caused by fluid hammer and pressure surge effects.
- If possible, prior to installing the filter, thoroughly flush the main line at the connection point in order to remove large objects that may damage the filter's internal mechanism.

## Important installation note

- Install the filter vertically. Please note that a minimum clearance of 70 cm (27") is required in order to disassemble the unit.

## Attention

- Ensure that the direction of the flow is aligned with the arrows marked on the filter housing.
- To prevent static backpressure or reverse flow through the filter, it is recommended to install a non-return valve.



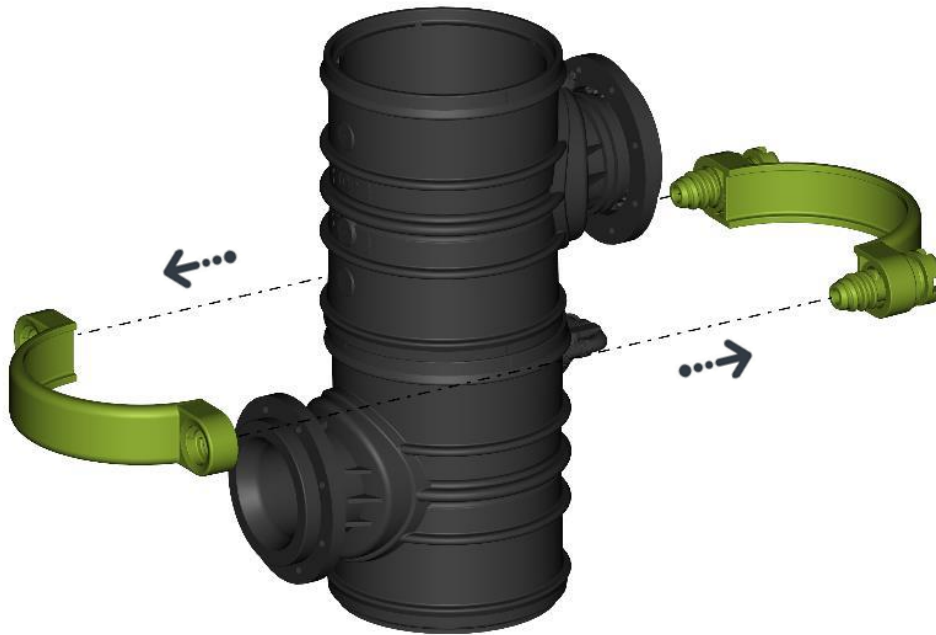
## Changing Installation Configuration

Changing the inlet/outlet direction:

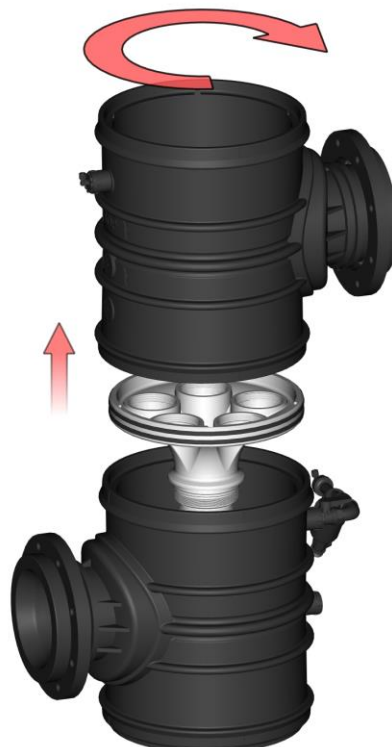
If the original configuration does not match the required installation position, the lower body can be rotated 360°.

In order to change the configuration of the filter, follow these steps:

1. Disassemble the filter according to "Basic Maintenance Disassembly" (on page 13)
2. Disconnect the pipeline from the Sigma lower body
3. Remove the clamps that connect the Sigma body to the lower body

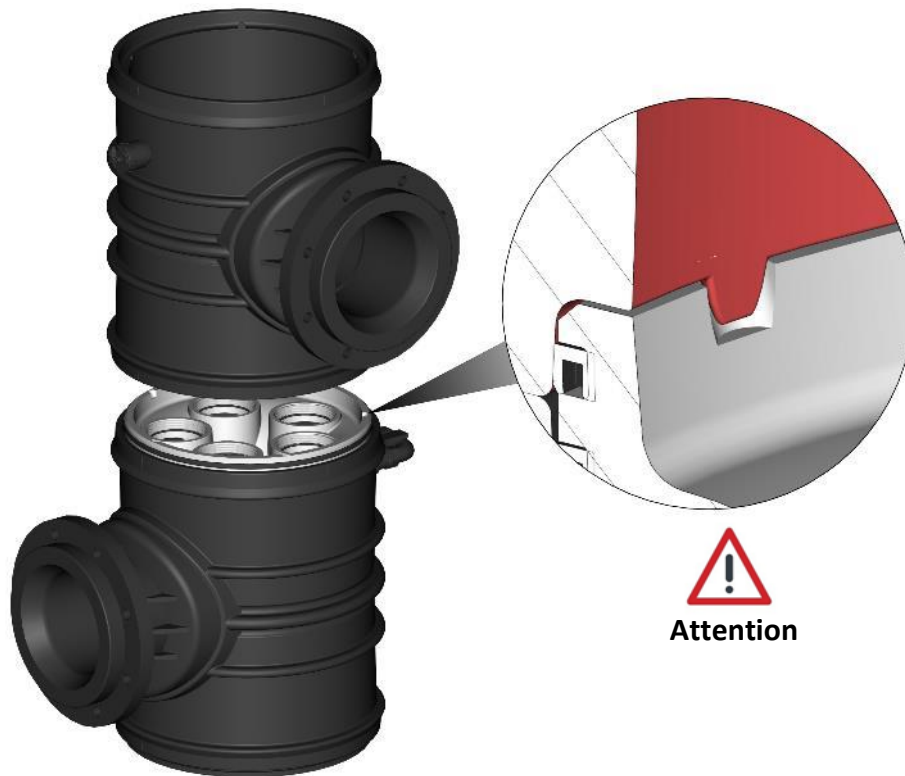


4. Lift and rotate the Sigma body and plate to the desired position

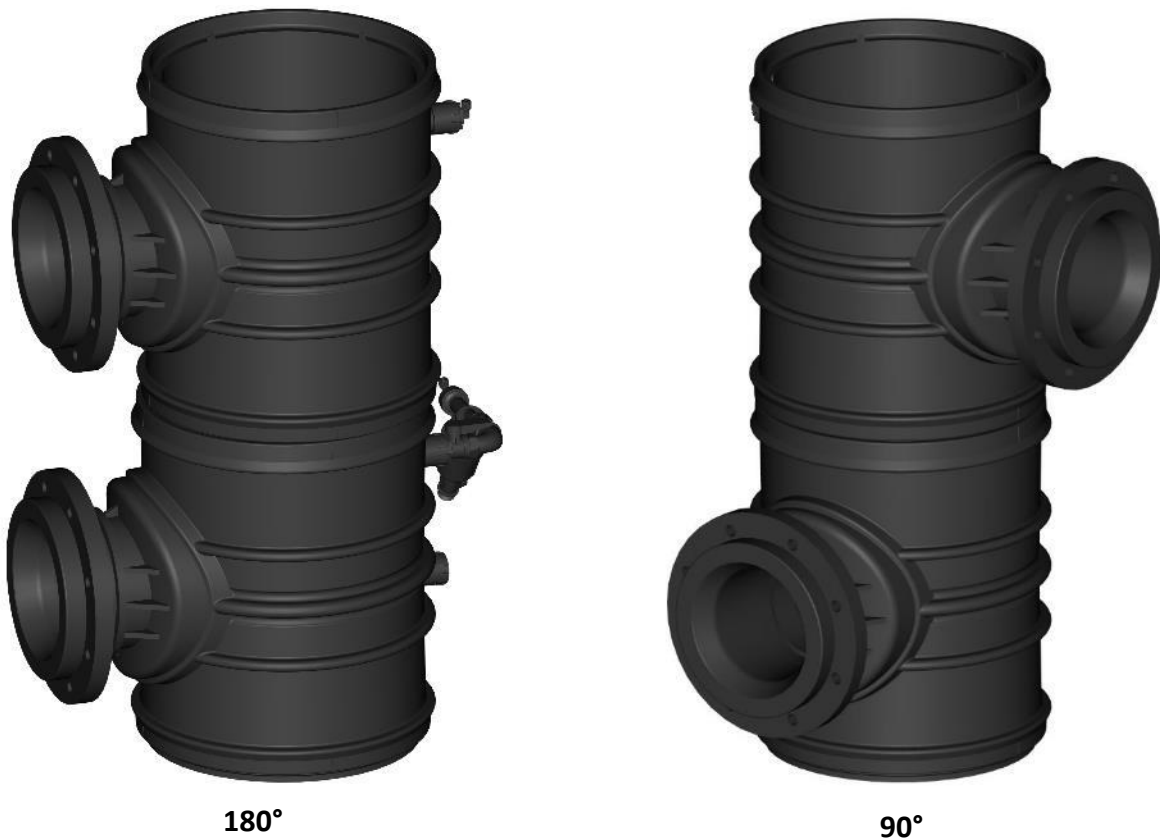




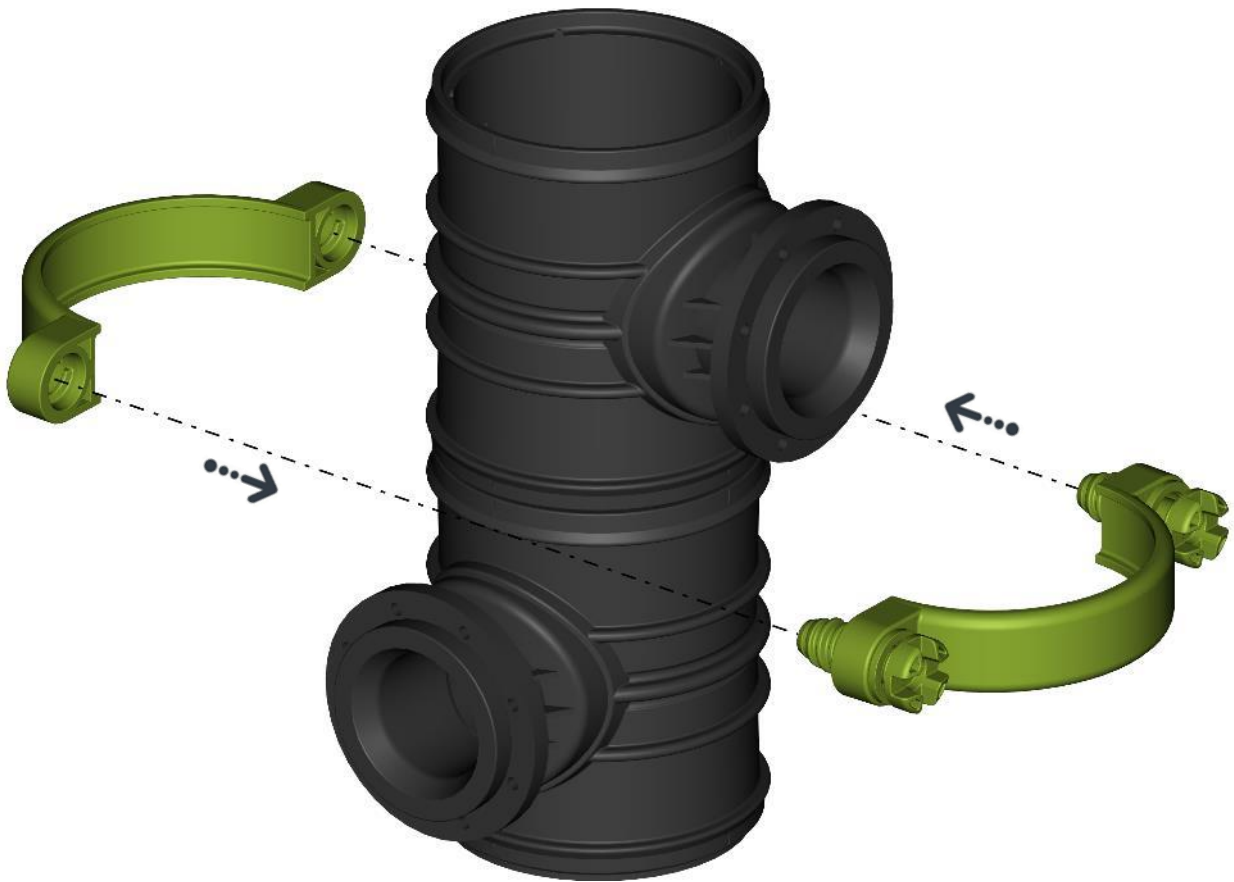
5. Make sure that the fittings on the Sigma body are set in place with the lower body



6. Connect the Sigma body to the lower body in the desired position



7. Connect the clamps and tighten the bolts using the Sigma multi-tool



8. Assemble the filter according to chapter "Basic Maintenance assembly" (on page 21).

## Initial Operation

### At the beginning/end of the growing season, or, in case of malfunction:

- Carefully read this Installation & Operation manual prior to any attempt to operate the filter.
- In order to achieve maximum performance and smooth operation of the filter, it is crucial to perform the start-up and first operation procedures exactly as described in this manual.
- An authorized technician should commission the filter. Do not attempt to commission the filter unaccompanied as it will affect your warranty coverage.
- Open the inlet valve while the outlet valve remains closed.
- If flow increases and pressure drops dramatically for a long period of time during network filling-up, it is recommended that a pressure sustaining valve be installed downstream of the filter. The pressure sustaining valve ensures a controlled filling-up of the line.
- If continual water flow is essential even during maintenance period, it is recommended that a manual or automatic bypass valve be installed together with the isolating valves that can be used to isolate each filter unit.

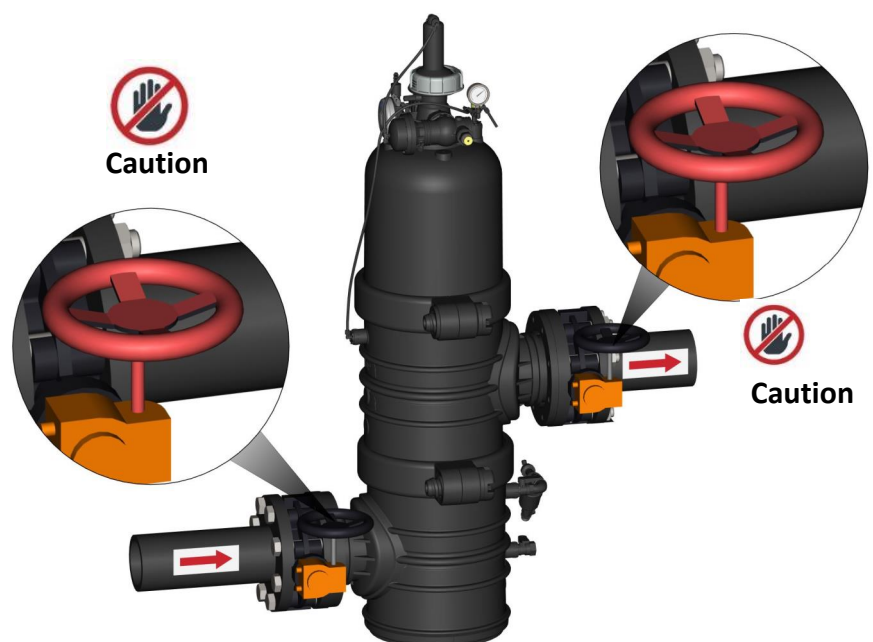
### Before any maintenance operation, please read the following:

- Installation, operation and maintenance should be done by technicians acting strictly in accordance with Amiad's instructions and in accordance with this manual. Other service should only be done by technicians authorized by Amiad.
- Disconnect the filter from the water system by closing and securing the manual inlet valve. In cases where the downstream piping network is pressurized, close and secure the manual outlet valve.
- Release the residual water pressure by opening the pressure release / drainage valve.
- Empty the filter by opening the drainage valve.
- Place warning signs around the work area as required by the local standards and procedures.
- Please note the requirements on filter's safety stickers, if any.

**Before disconnecting the filter from the water supply and before releasing the filter's residual pressure,**

#### DO NOT:

- **Loosen or unscrew bolts**
- **Remove any protection cover**
- **Open any service port flange**



## Maintenance

### General inspection

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

### General inspection procedure:

1. Initiate a flushing cycle
2. Check that the exhaust valve opens and closes normally
3. Visually check the filter housing and valves for leakage

### Note for long-term cessation of filter operation

The following must be done if the filter will not be operated for the season:

1. Perform a flushing cycle (if possible, with a closed downstream valve)
2. Release pressure from the filter and drain it

### Avoid damage due to frost

To avoid damages or breakages in the filter, the filter must be drained prior to periods of frost, including the cylinder and command tubes.

### Before any maintenance operation, please read the following:

- Installation, operation and maintenance should be performed by technicians in accordance with Amiad's instructions and in accordance with this manual. Other service should only be done by authorized technicians.
- Disconnect the filter from the water system by closing and securing the manual inlet valve. In cases where the downstream piping network is pressurized, close and secure the manual outlet valve.
- Release the residual water pressure by opening the pressure release/ drainage valve.
- Empty the filter by opening the drainage valve.

## Basic Maintenance - Disassembly

1. Perform manual flush (please see **ADI-P** manual):
  - a. Close the filter's outlet valve
  - b. Perform a manual flushing with the controller



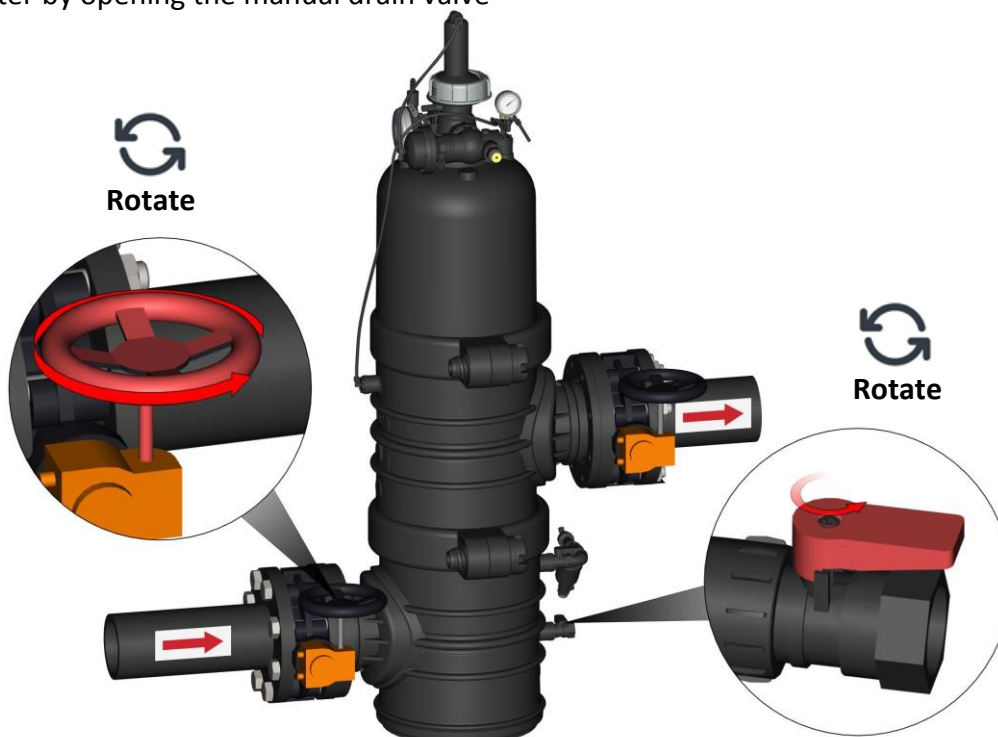
**Attention**

**Please note:**

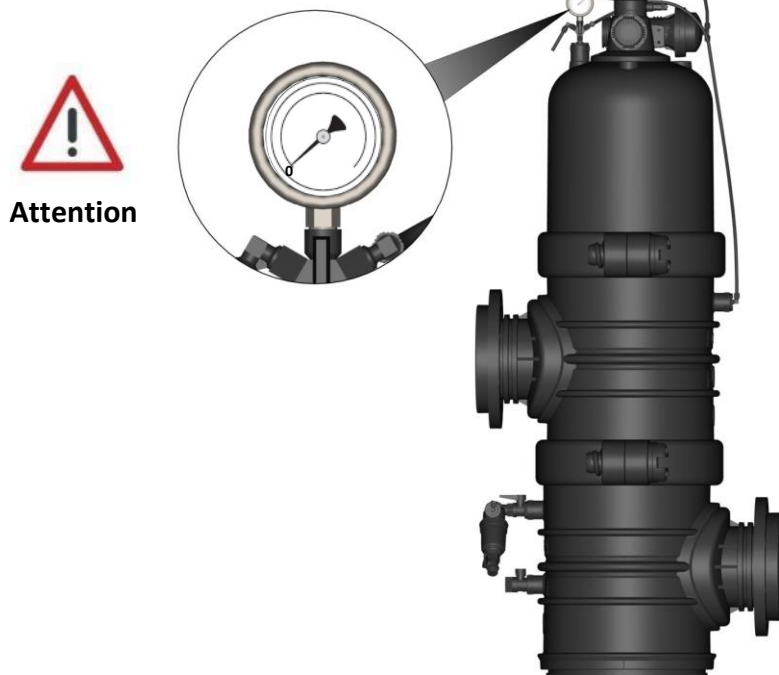
**Always open and close the valves slowly and gradually!**

**The filter enters a flushing mode automatically, without warning.**

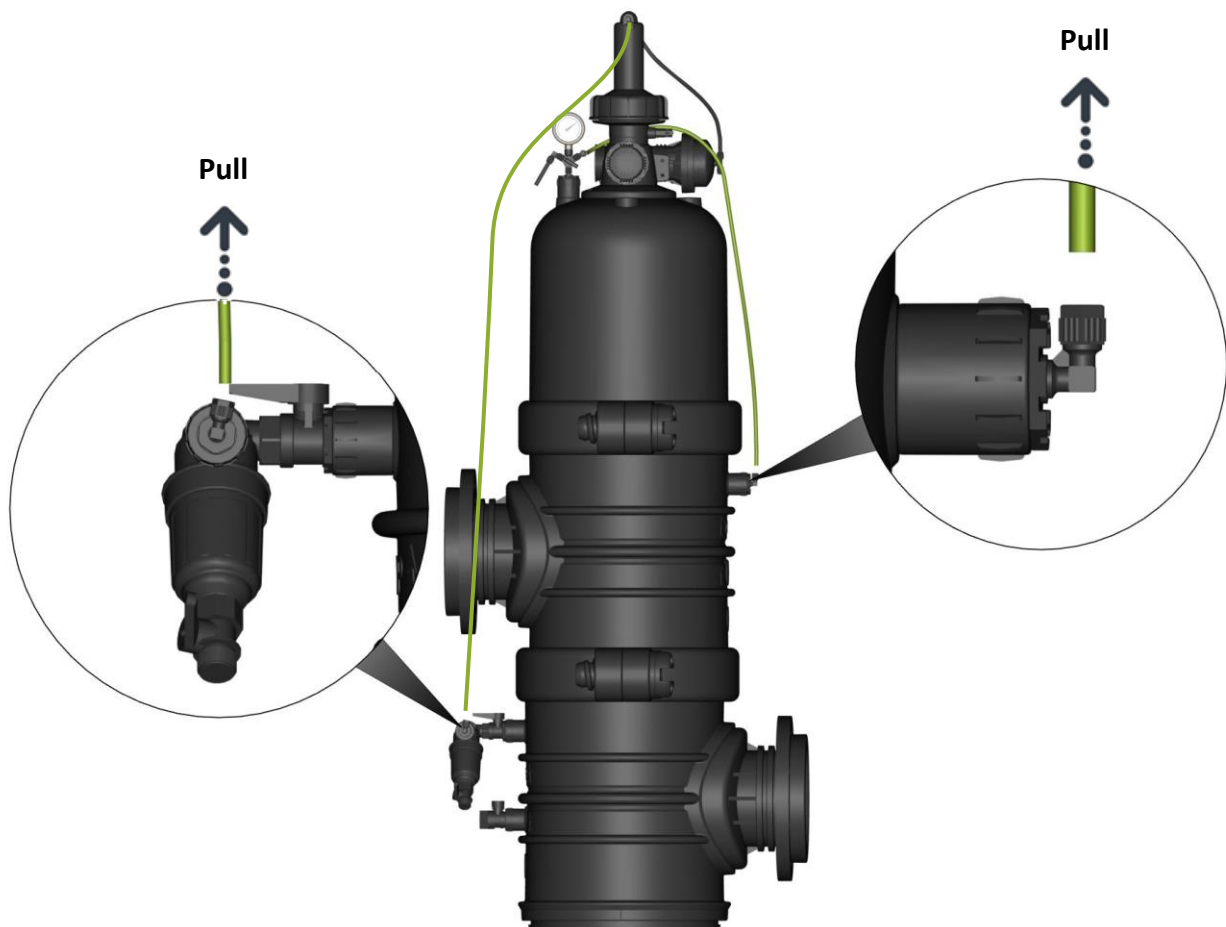
2. Close the filter's inlet valve
3. Drain the filter by opening the manual drain valve



4. Make sure that the pressure gauge is on zero!

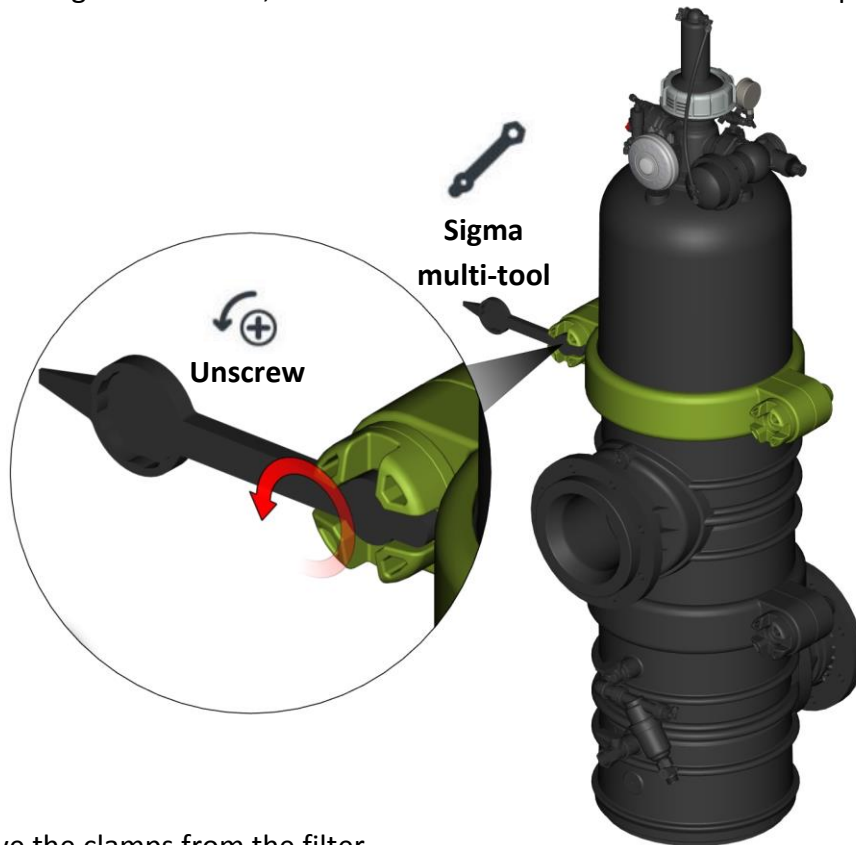


5. Disconnect the command tubes:  
a. Pull up the command tube

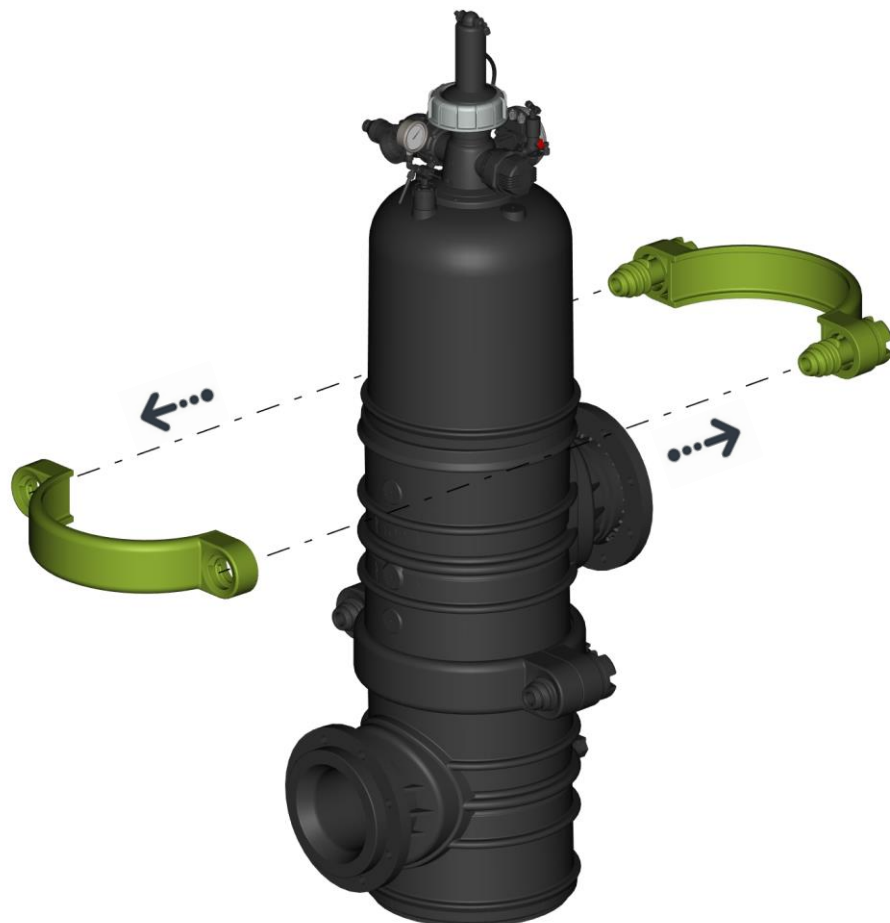




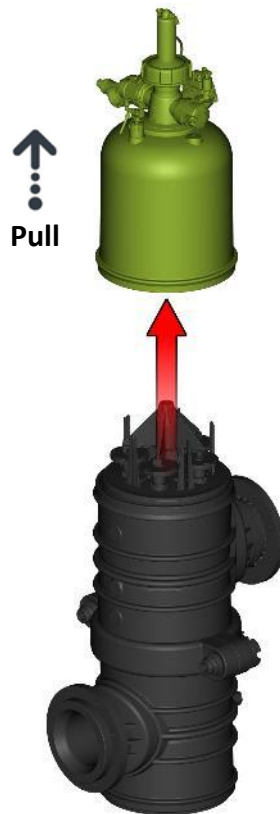
6. Release the upper clamp:
  - a. Using the Sigma multi-tool, unscrew the bolts at both sides of the clamps



- b. Remove the clamps from the filter

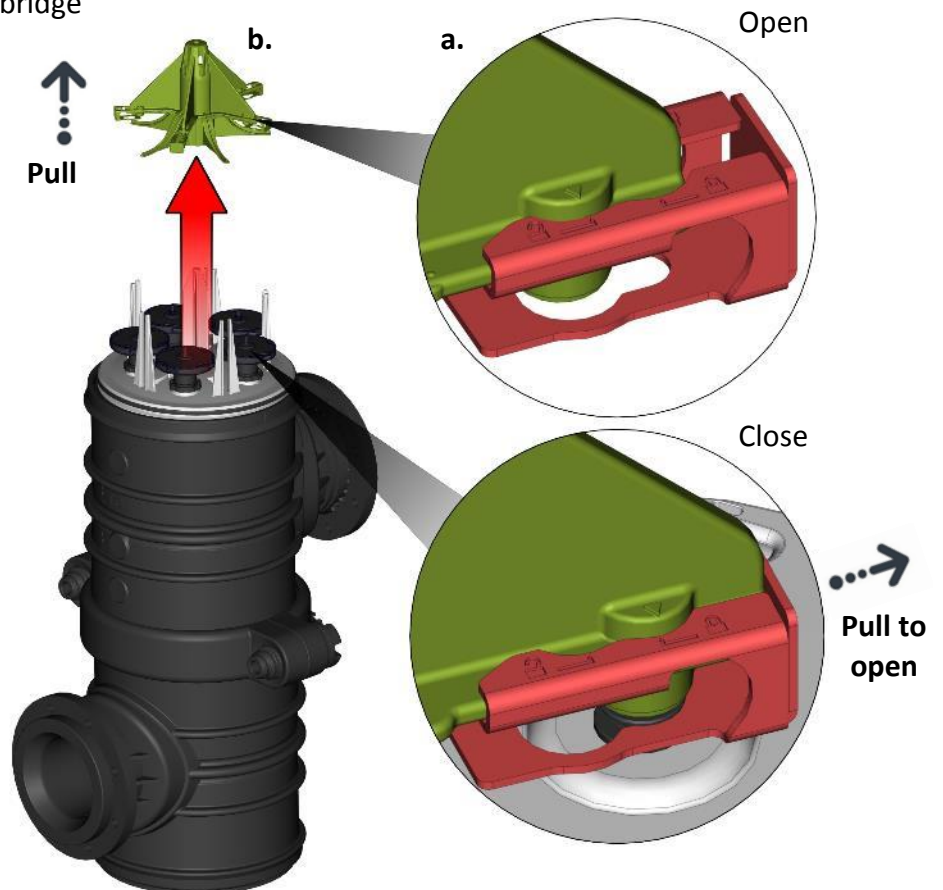


7. Pull up and remove the filter's lid



8. Pull up and remove the bridge according to the following steps:

- a. Slide open the bridge clip x5 to disconnect the bridge from the turbine
- b. Pull up and remove the bridge



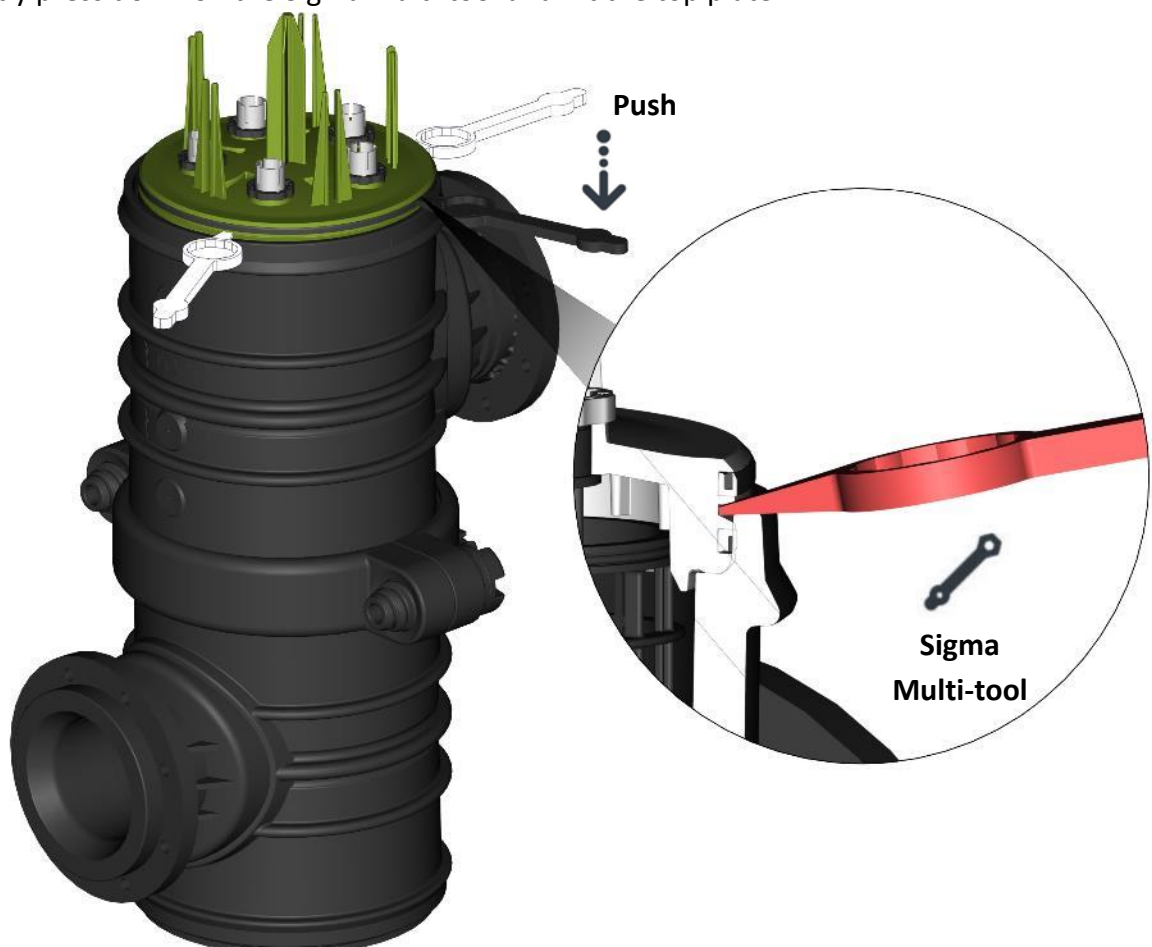


9. Remove the turbine from the five suction-scanner's upper shaft

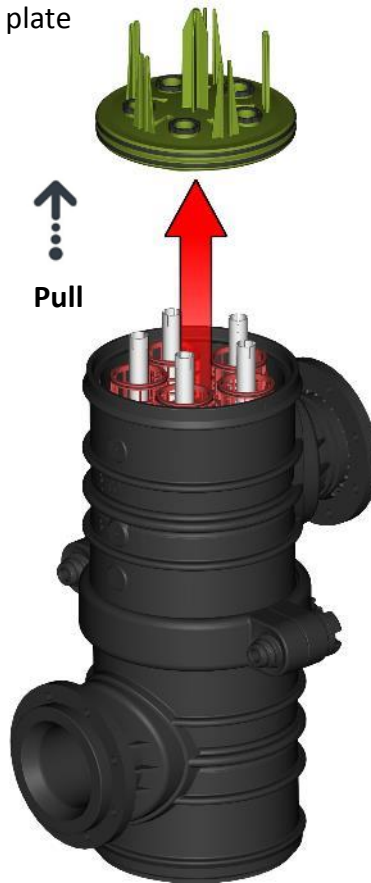


10. Remove the suction-scanner's top plate:

- a. Place the Sigma multi-tool between the top plate grooves
- b. Gently press down on the Sigma multi-tool and lift the top plate

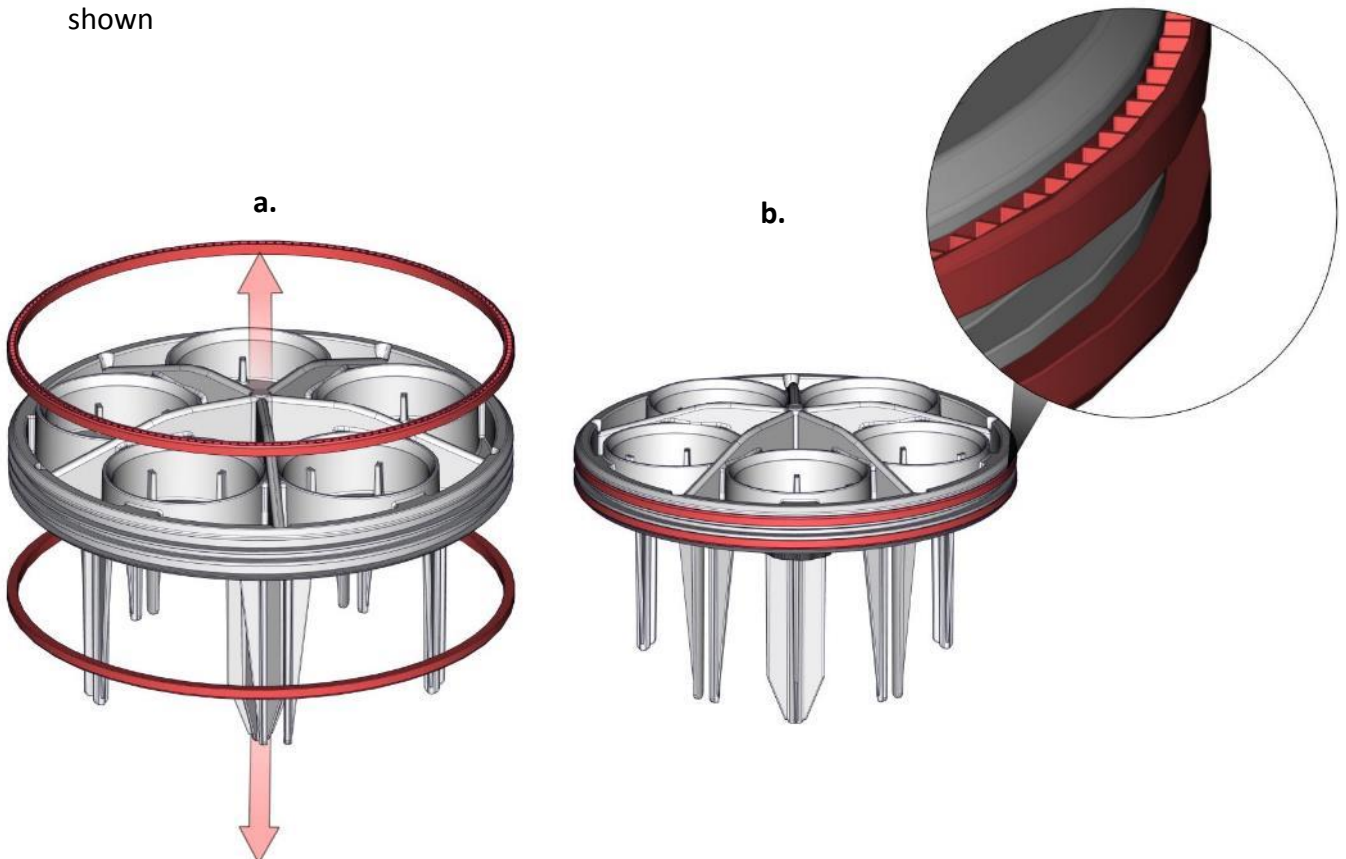


c. Remove suction-scanner's top plate



11. Replace the gaskets if needed

- a. Remove the used gaskets
- b. Insert new gaskets, making sure that the open side of the gaskets are turned out as shown



12. Remove the five suction-scanners out of the screens:



13. Remove the five screen units:

- Coarse and fine screen together

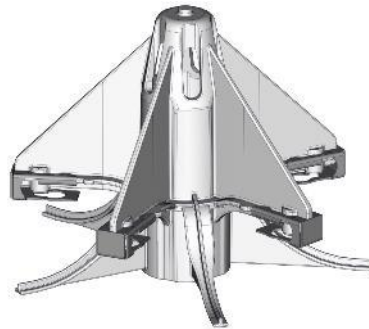


**Before the re-assembly:**

- a. Make sure that all parts below are undamaged
- b. Replace dry or damaged gaskets and o-rings
- c. Make sure that the coarse screen is clean
- d. Apply silicon grease on the o-rings (760190-000127 – tube of grease PG-21)



**Clamps**



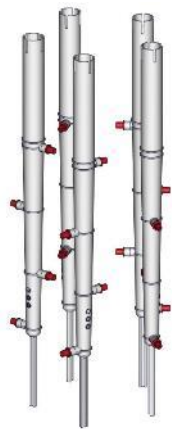
**Bridge**



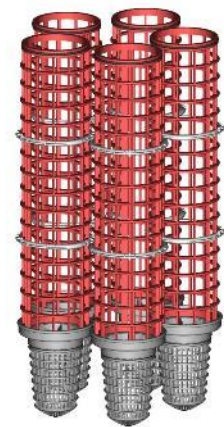
**Top plate**



**Turbines**



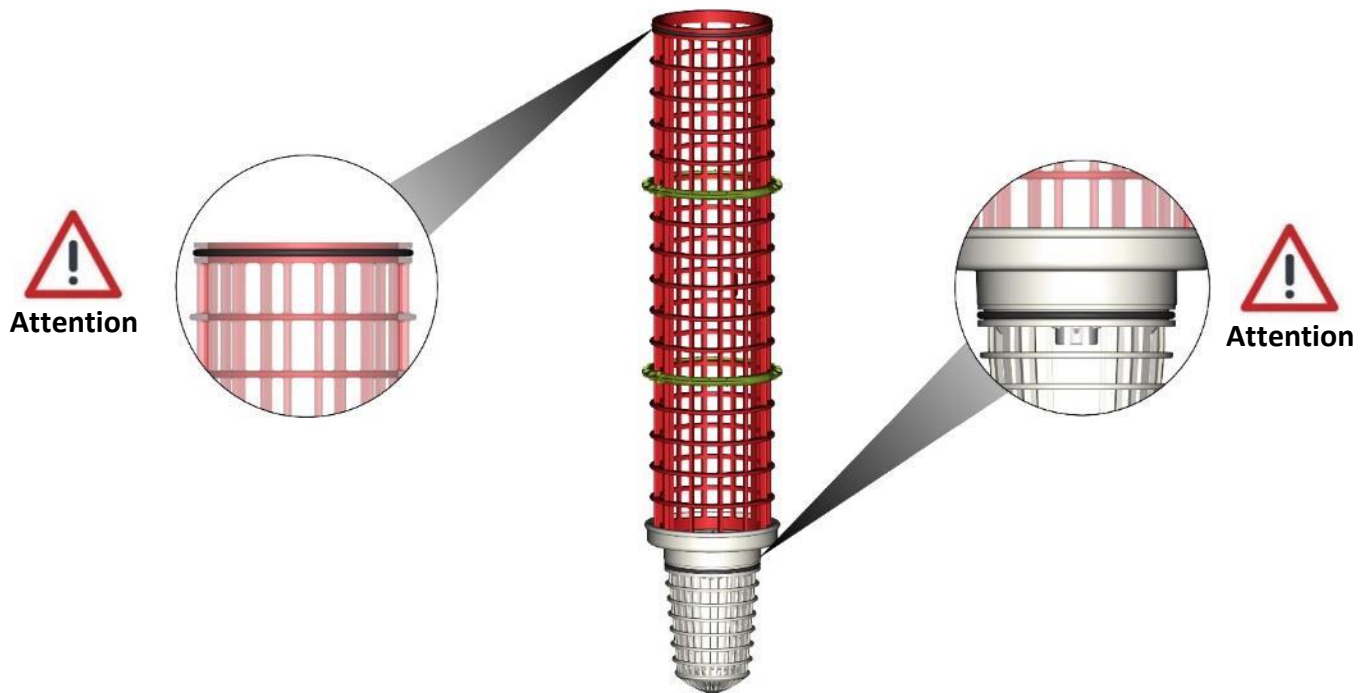
**Scanners and  
Nozzles**



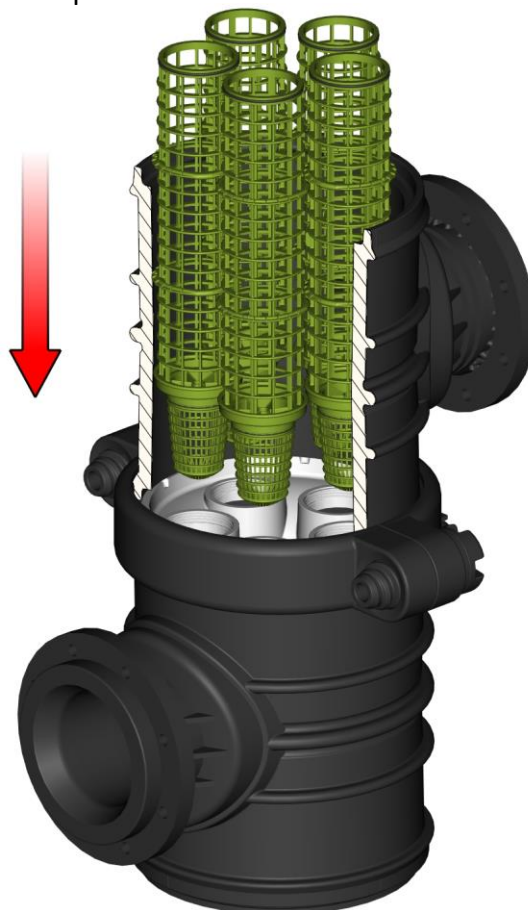
**Fine and  
Coarse Screen**

## Basic Maintenance - Assembly

1. Insert the five screens into the filter housing:
  - a. Make sure that the o-ring is in place

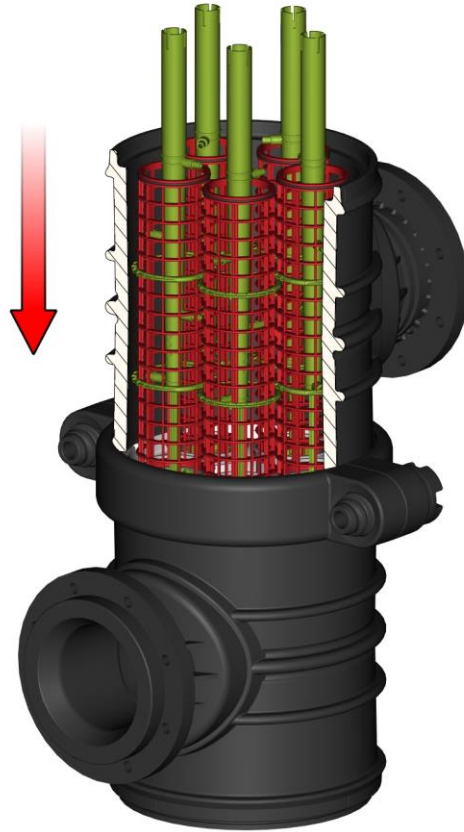


- b. Insert the five screens into place





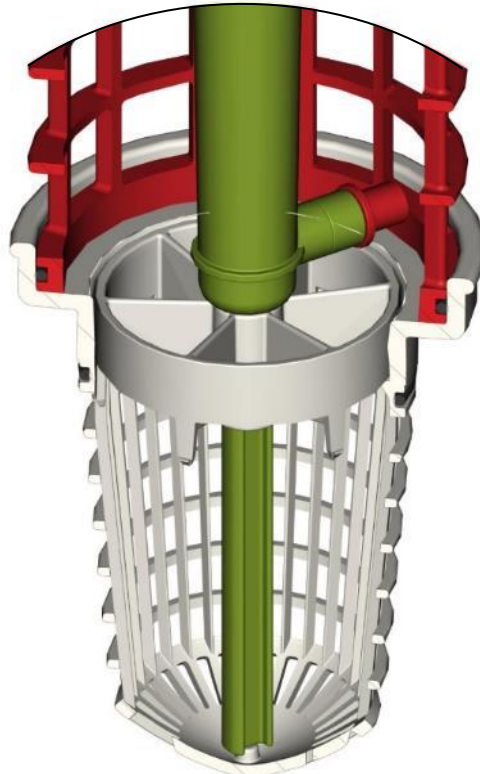
2. Insert the five suction-scanners into place



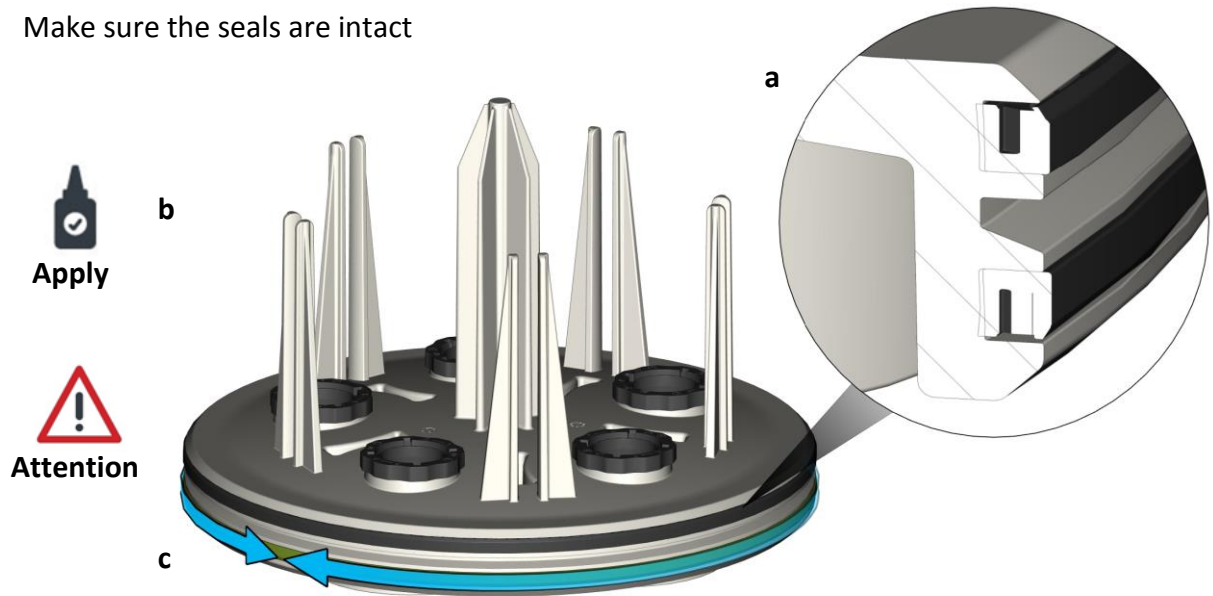
Make sure that each scanner shaft passes through its socket at the center of its designated coarse screen.



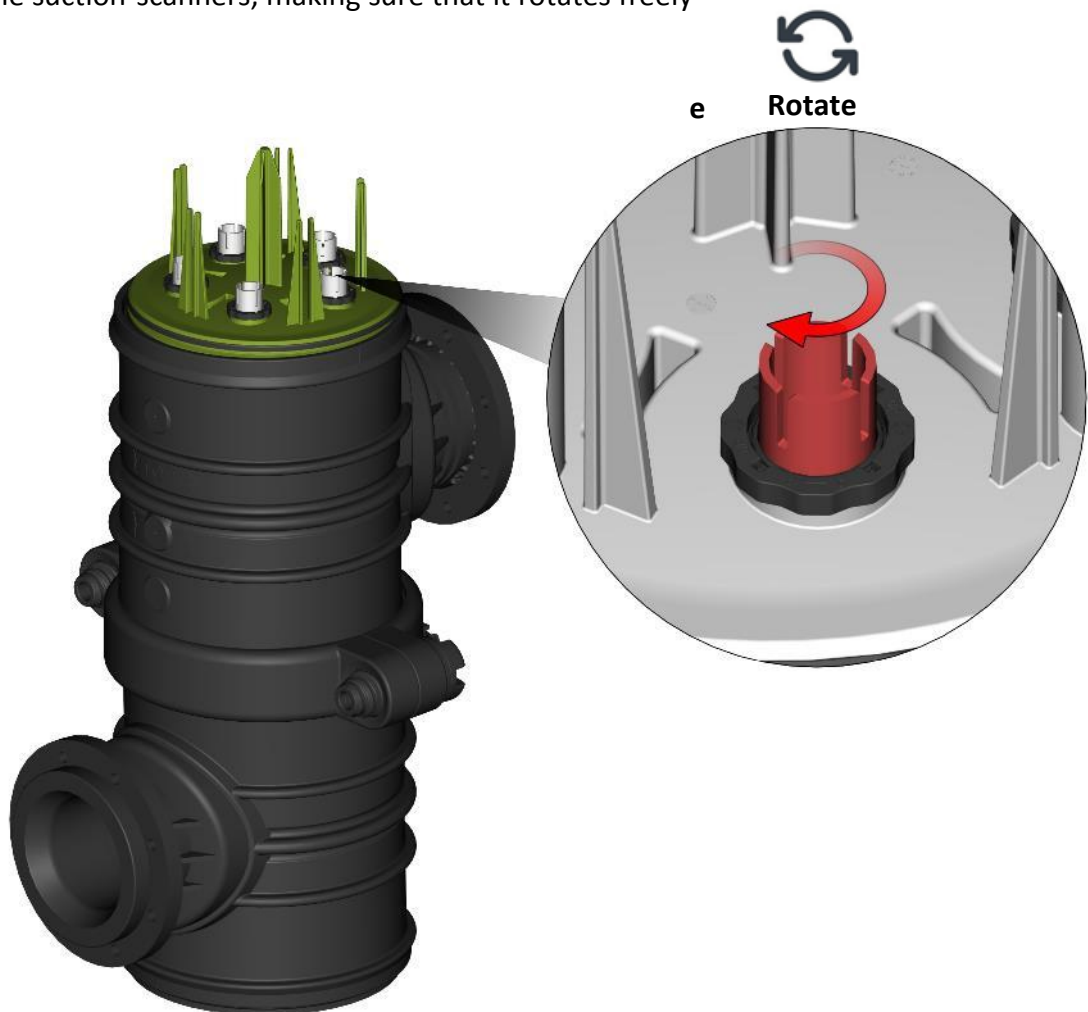
Center



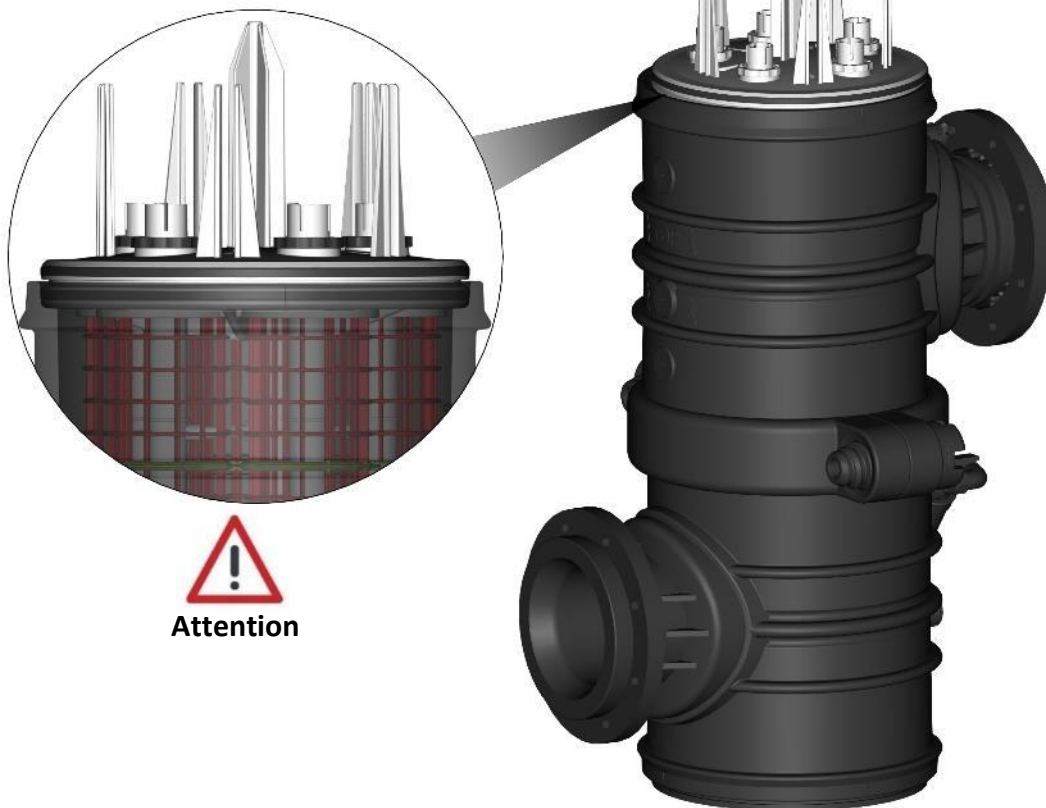
3. Re-install the suction-scanner's top plate:
  - a. Make sure the seal is in place and the open side of the seals turn out as shown
  - b. Apply 760190-000127 grease to the seals
  - c. Make sure the seals are intact



- d. Avoid damaging the seal during plate insertion
- e. Rotate the suction-scanners, making sure that it rotates freely



- f. Make sure that the plate is inserted correctly and creates a caulking between the bottom and the top

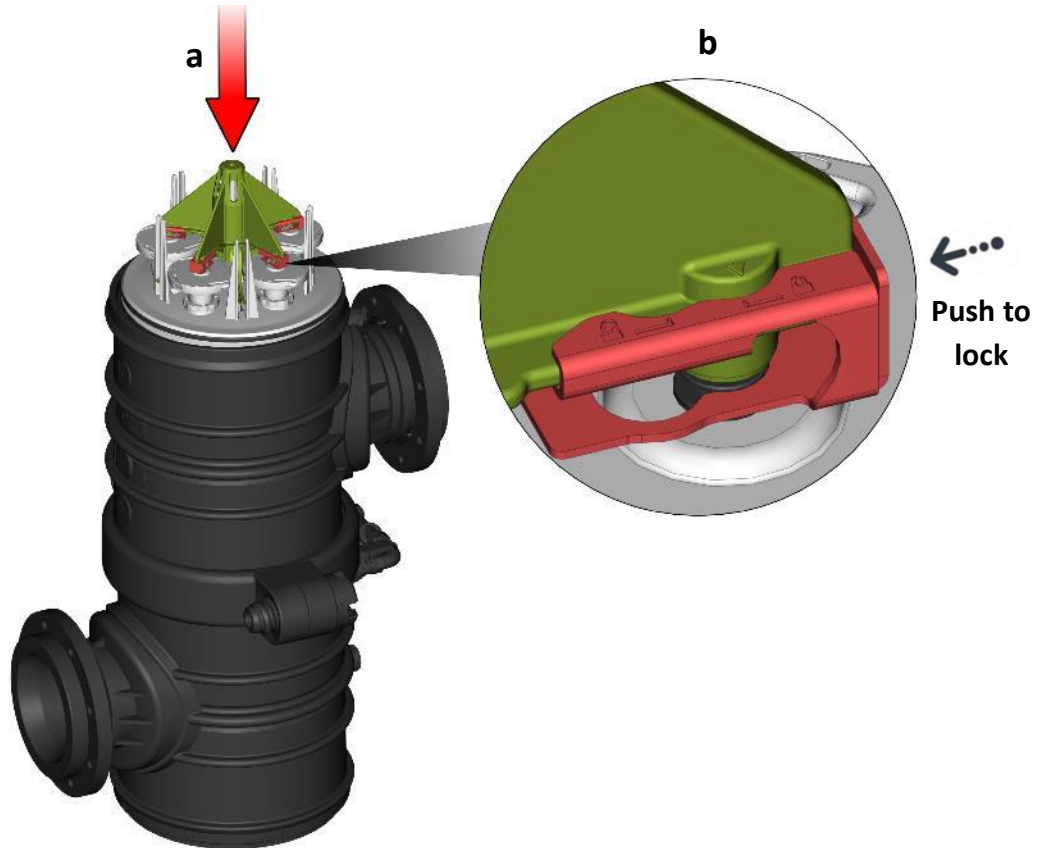


- 4. Install the turbine on the scanners

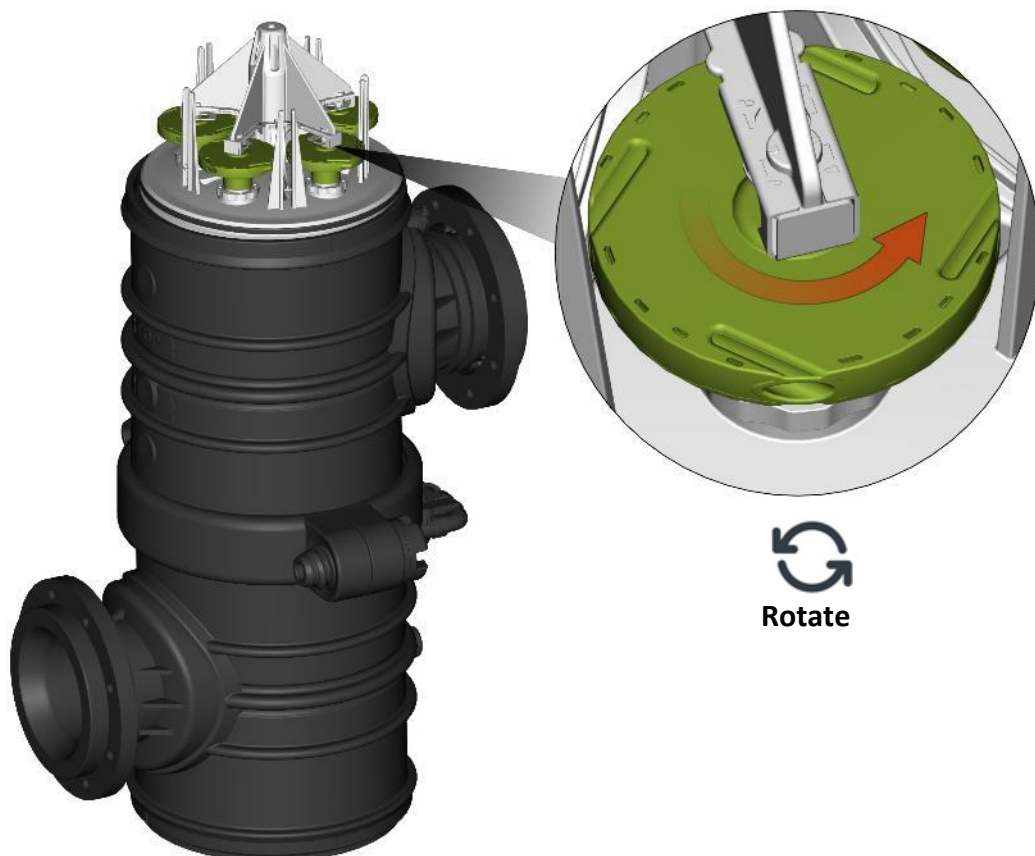




5. Install the bridge according to the following steps:
  - a. Insert the bridge on the top plate
  - b. Lock the five bridge clips on the turbine's edges



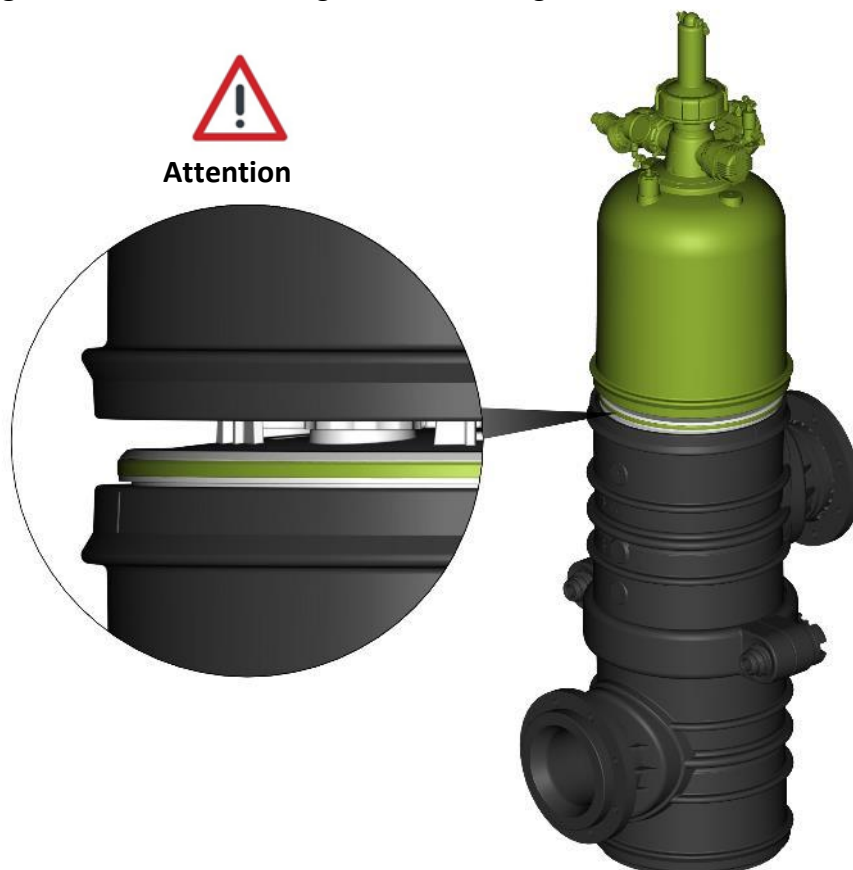
6. Rotate the turbines, making sure that all five turbines rotate freely



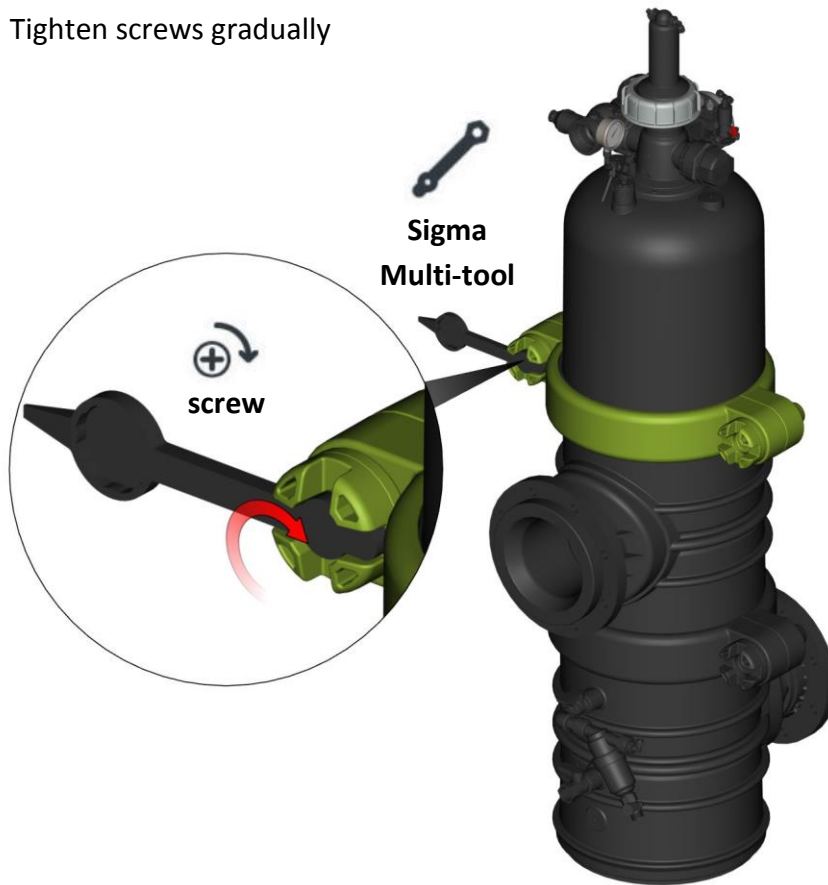
7. Lift the bridge up and down to make sure all turbines connect to the bridge and the scanners move freely



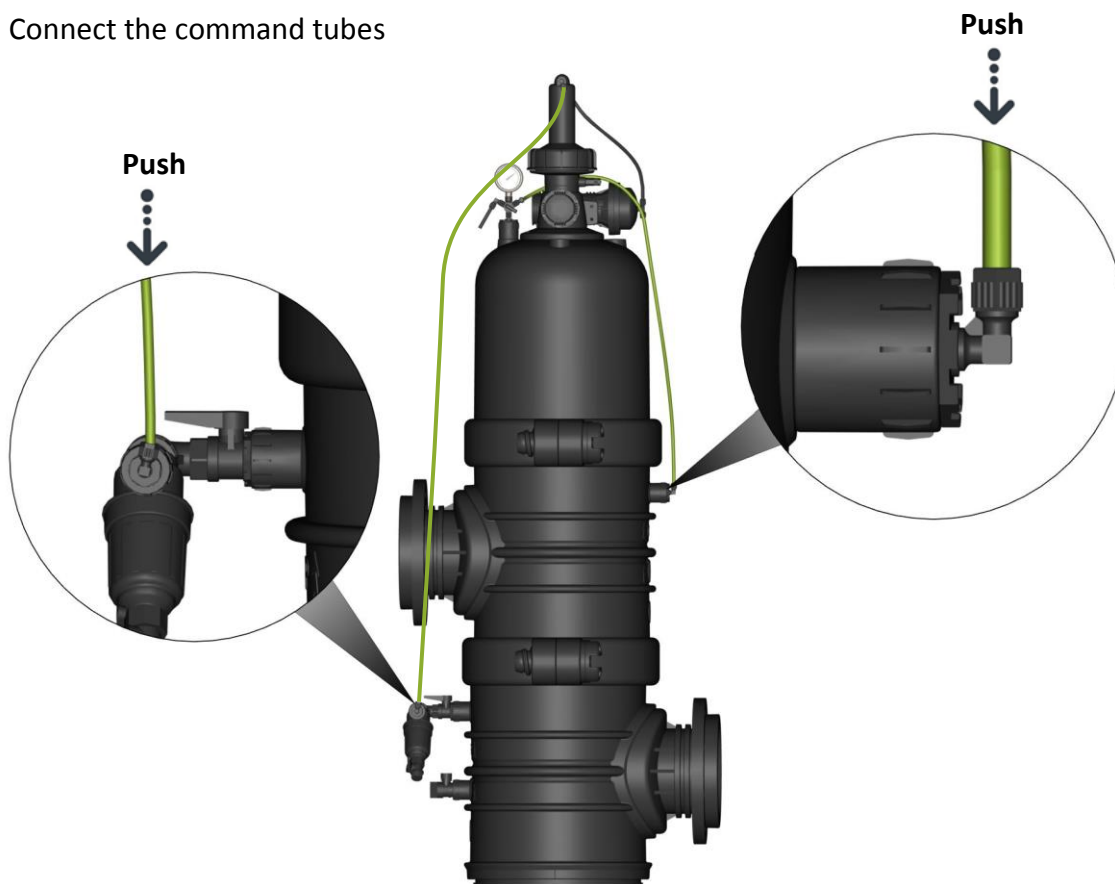
8. Re-install the filter cover:  
**Paying attention** to not damage the seal during the cover installation



9. Re-install the upper clamp:  
- Tighten screws gradually



10. Connect the command tubes

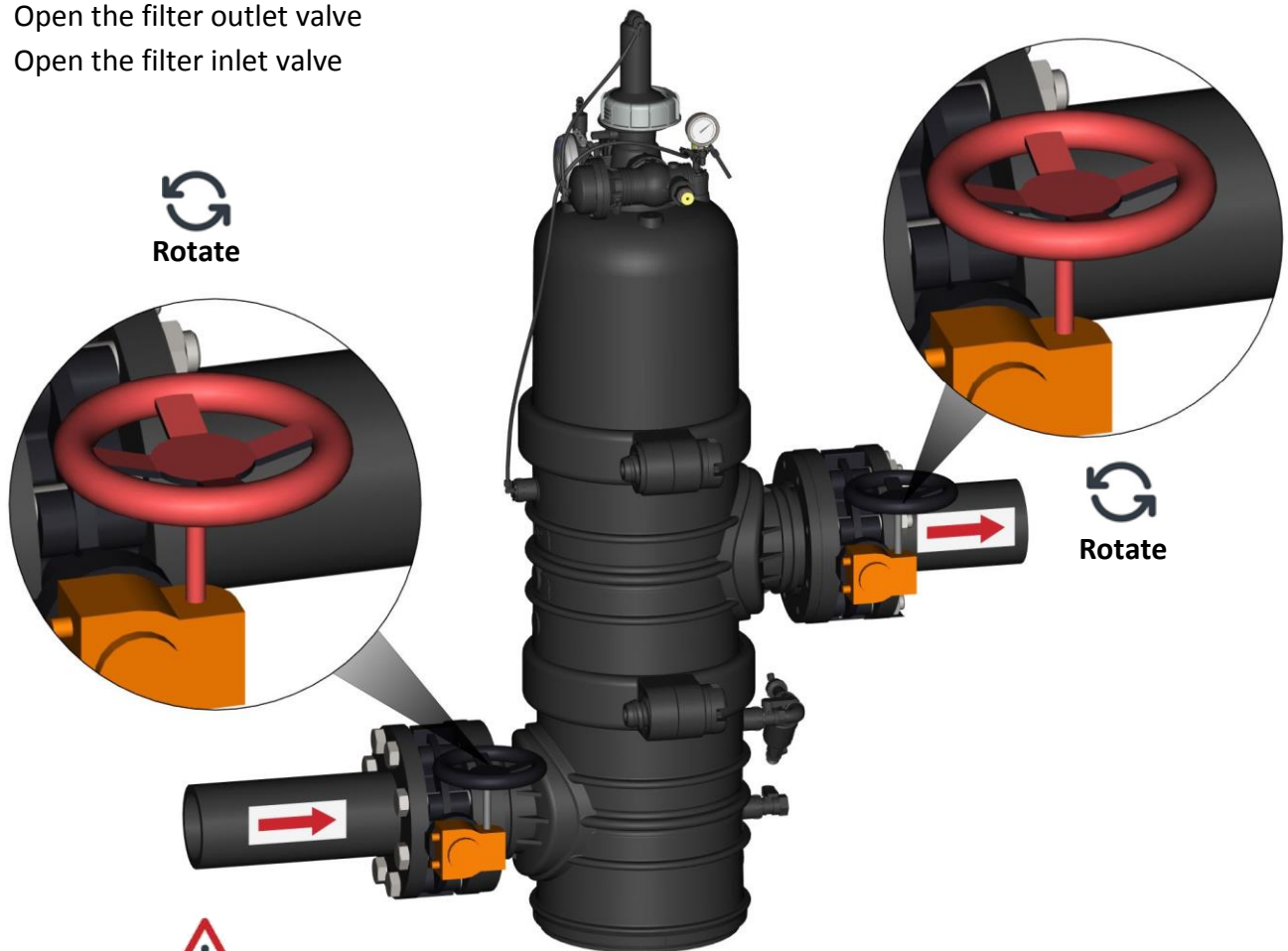


11. Close the manual drain valve



12. Open the filter outlet valve

13. Open the filter inlet valve



**Always open and close the valves slowly and gradually!**

14. Operate the Sigma filter

- See "Initial Operation" (on page 11)



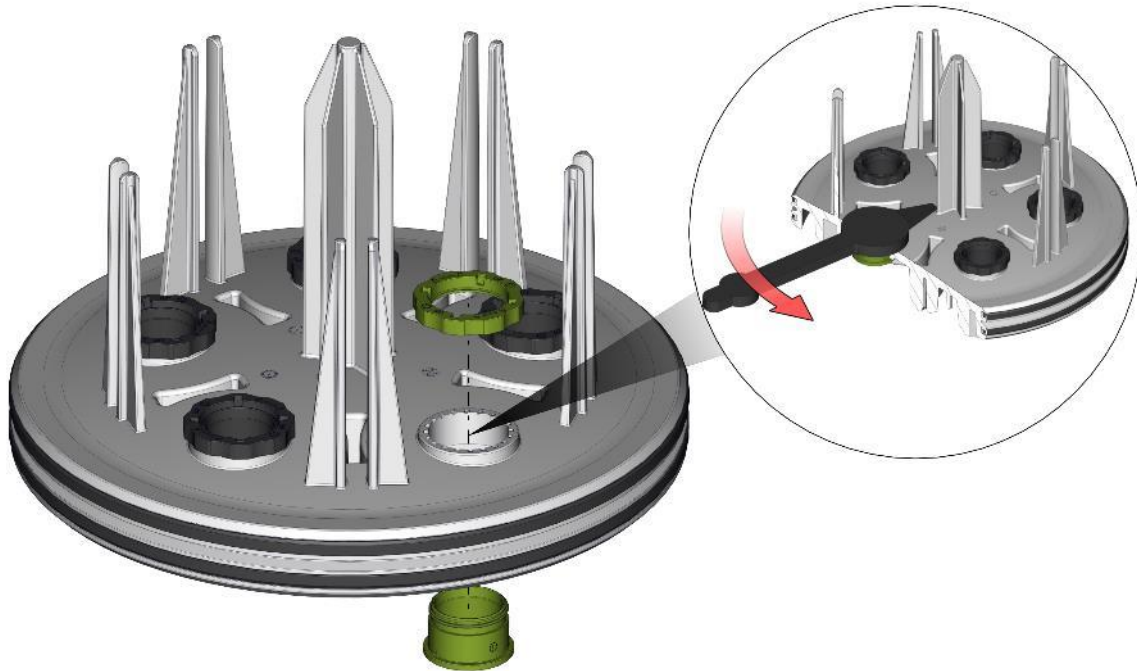


## Bushing Replacement

Following extensive use, the bushings may be worn out and should be replaced.

Follow these steps to replace the bushing:

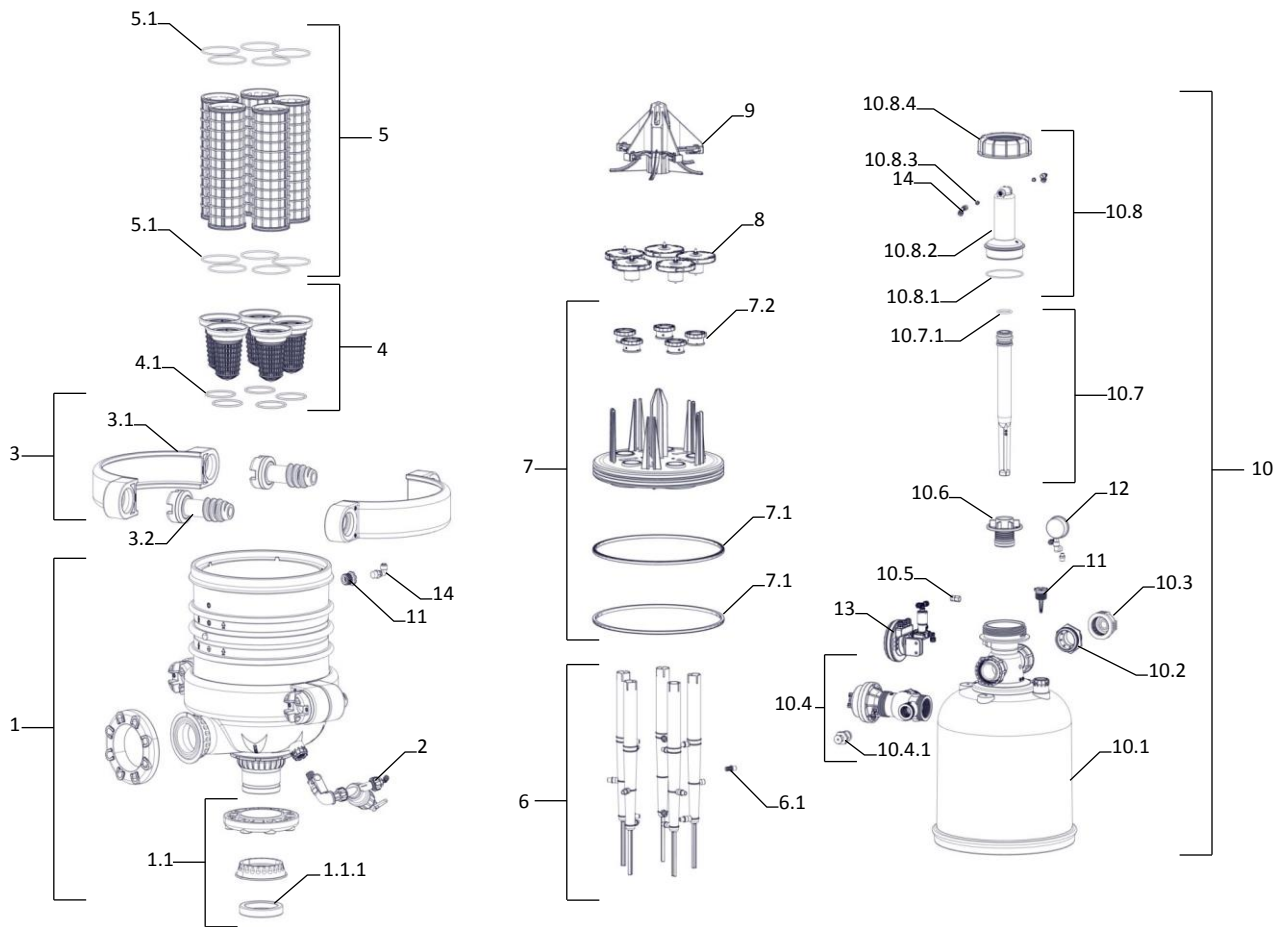
1. Disassemble the top plate, see "Basic Maintenance - Disassembly" (on page 13)
2. Hold the lower part of the bushing with one hand and open the ring using the Sigma multi-tool



3. Insert a new bushing and tighten the nut by hand - do not use any tool to tighten the bushing

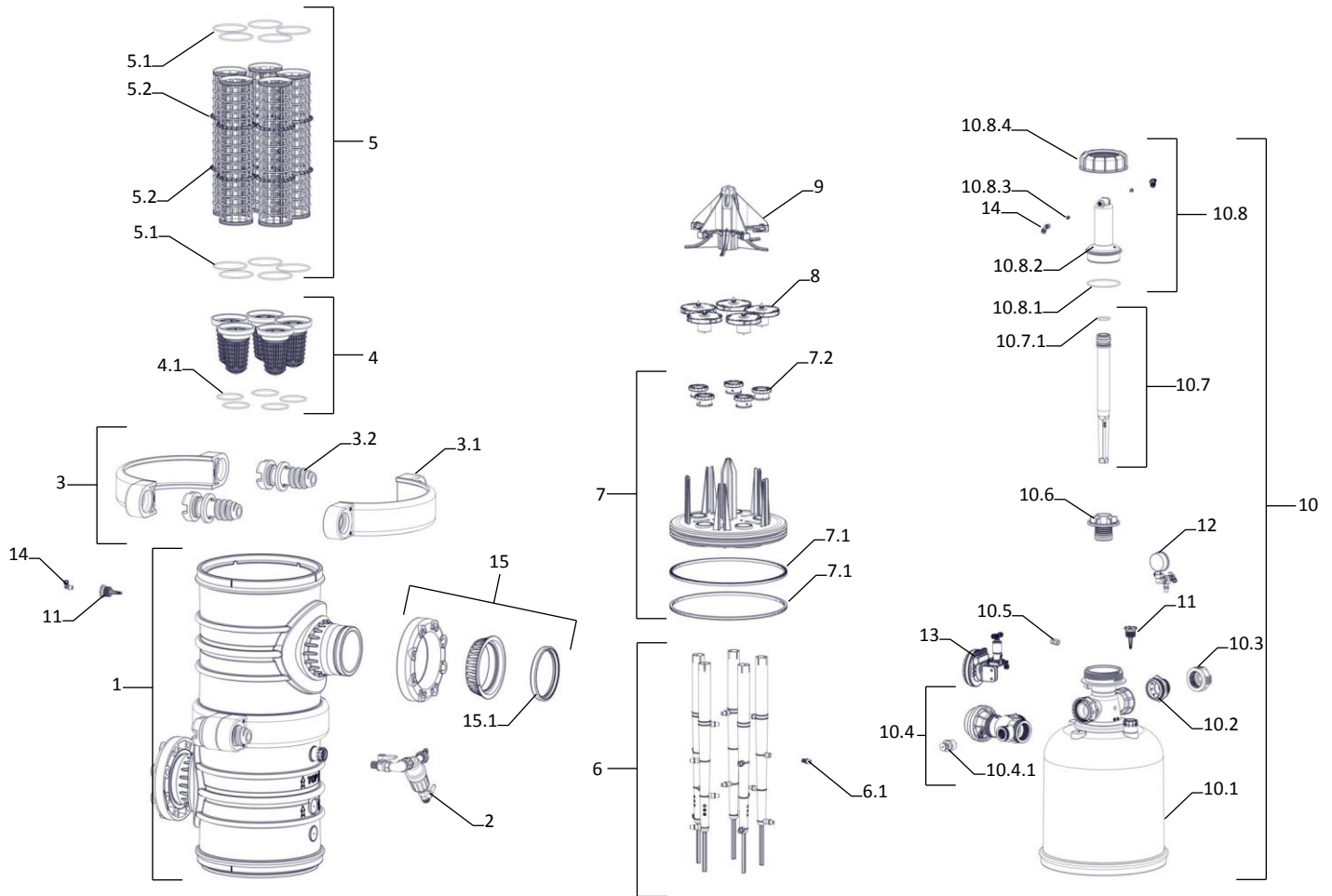


## Bill of Materials – 4" Electronic



ITEM NO.	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	700190-004220	BODY W/SLEEVE ASSEMBLY F/4" SIGMA/AKF	1	10.1	700190-004685	COVER W/DRAIN BODY ASSEMBLY F/SIGMA 4"/6"/8"	1
1.1	700190-000227	4" AKF UNIVERSAL ASSEMBLY	2	10.2	700190-000195	ADAPTOR ASSY NUT+SEALS	1
1.1.1	770104-000253	GASKET 4" EPDM 70 SHORE QUICK FLANGE	1	10.3	700190-001241	CAP ASSEMBLY 2" T BSP	1
2	700190-004877	1" CONTROL FILTER ASSY 8MM TF F/SIGMA	1	10.4	700190-004807	POLYMERIC FLUSH VALVE ASSEMBLY 2" NC BSP STD	1
3	700190-004133	CLAMP ASSEMBLY FOR 4" GALAXY/SIGMA	1	10.4.1	700190-003406	1" VACUUM BREAKER	1
3.1	710103-005220	CLAMP 4" GALAXY/SIGMA RPA W/O RUNNER	2	10.5	720501-000134	STRAIGHT CONNECTOR 1/4" F X 8MM BSPT RPP BLACK TEFEN	1
3.2	700190-005415	SET SCREW WASHER F/CLAMP SIGMA PRO ASSY	2	10.6	700190-005420	PISTON BUSHING ASSEMBLY W/ O-RINGS F/SIGMA PRO ASSY	1
4	700190-004222	BOTTOM W/PRESCREEN ASSEMBLY F/4" SIGMA	5	10.7	700190-005441	PISTON W/U-CUP SEAL F/SIGMA PRO ASSY	1
4.1	770102-000034	PARKER O-RING 2-237 EPDM 70 SHORE YELLOW DOT	1	10.7.1	770105-000011	U-CUP SEAL NBR OD50MM ID40MM H7MM 70 SHORE	1
5	700101-001505	MOLDED WEAVEWIRE SCREEN S/ST316L 130MIC SIGMA W/O-RINGS	5	10.8	700190-005421	PISTON CYLINDER ASSEMBLY F/SIGMA PRO ASSY	1
5.1	770102-000384	PARKER O-RING 2-244 EPDM 70 SHORE YELLOW DOT	2	10.8.1	770102-000027	PARKER O-RING 2-156 EPDM 70 SHORE YELLOW DOT	1
6	700190-005106	SCANNER 375 ASSEMBLY W/STRAIGHT NOZZLE 8MM F/SIGMA 4"	5	10.8.2	710101-001295	SIGMA PISTON CYLINDER PBT BLACK	1
6.1	700190-005419	SET STRAIGHT NOZZLE 8MM HDPE RED F/SIGMA PRO	1	10.8.3	710101-001308	SIGMA PISTON NOZZLE 1.2 MM PP RED	2
7	700190-005418	UPPER PLATE ASSEMBLY F/SIGMA PRO	1	10.8.4	710103-010056	PISTON HOUSING EXTERNAL NUT SIGMA PRO RPA	1
7.1	770104-000311	HYDRAULIC SEAL EPDM SIGMA	2	11	700190-000206	1"*1/4" BUSHING + SEAL	2
7.2	700190-005417	BUSHING W/LOCK RING ASSEMBLY F/SIGMA PRO	5	12	700190-001980	PRESSURE GAUGE COMPLETE F/2" TEF8	1
8	700190-005150	TURBINE ASSEMBLY F/MINI AND PRO SIGMA	5	13	700103-001636	ADI-P CONTROLLER 8MM TEFEN F/SIGMA	1
9	700190-005416	BRIDGE ASSEMBLY W/CLIPS F/SIGMA PRO ASSY	1	14	720501-000139	L-CONNECTOR 1/4" M X 8MM BSPT ACETAL BLACK TEFEN	3
10	700190-004641	FLUSHING ASSEMBLY F/SIGMA 4"/6"/8"	1				

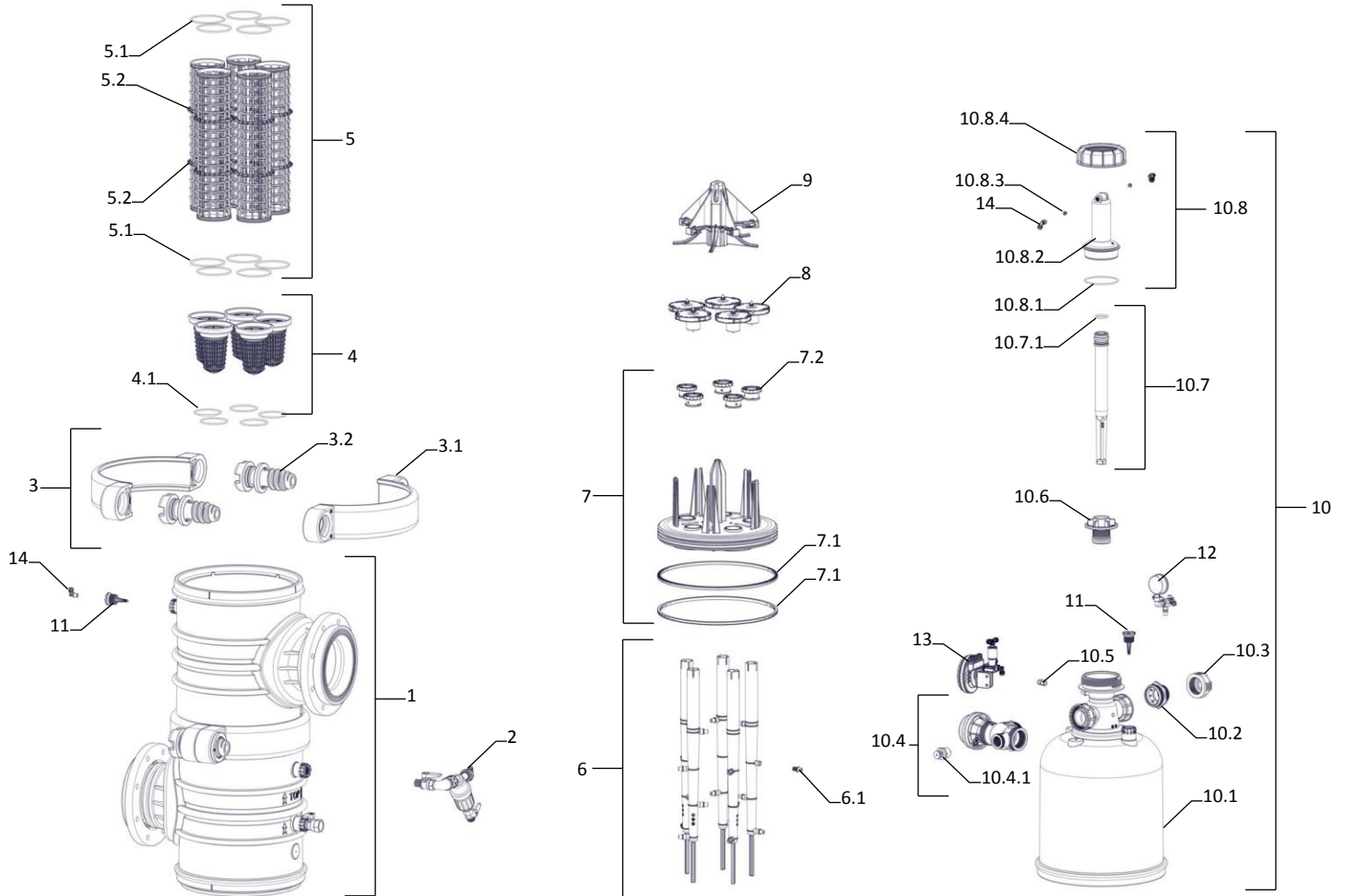
## Bill of Materials – 6" Electronic



ITEM NO.	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	700190-005116	BODY W/SLEEVE ASSEMBLY F/SIGMA 6"VIC	1	10.2	700190-000195	ADAPTOR ASSY NUT+SEALS	1
2	700190-004877	1" CONTROL FILTER ASSY 8MM TF F/SIGMA	1	10.3	700190-001241	CAP ASSEMBLY 2" T BSP	1
3	700190-004133	CLAMP ASSEMBLY FOR 4" GALAXY/SIGMA	1	10.4	700190-004807	POLYMERIC FLUSH VALVE ASSEMBLY 2" NC BSP STD	1
3.1	710103-005220	CLAMP 4" GALAXY/SIGMA RPA	2	10.4.1	700190-003406	1" VACUUM BREAKER	1
3.2	700190-005415	SET SCREW WASHER F/CLAMP SIGMA PRO ASSY	2	10.5	720501-000134	STRAIGHT CONNECTOR 1/4" F X 8MM BSPT RPP BLACK TEFEN	1
4	700190-004222	BOTTOM W/PRESCREEN ASSEMBLY F/4" SIGMA	5	10.6	700190-005420	PISTON BUSHING ASSEMBLY W/ O-RINGS F/SIGMA PRO ASSY	1
4.1	770102-000034	PARKER O-RING 2-237 EPDM 70 SHORE YELLOW DOT	1	10.7	700190-005441	PISTON W/U-CUP SEAL F/SIGMA PRO ASSY	1
5	700101-001534	MOLDED WEAVEWIRE SCREEN S/ST316L 130MIC 6"-8" SIGMA EPDM SEALS	5	10.7.1	770105-000011	U-CUP SEAL NBR OD50MM ID40MM H7MM 70 SHORE	1
5.1	770102-000384	PARKER O-RING 2-244 EPDM 70 SHORE YELLOW DOT	2	10.8	700190-005421	PISTON CYLINDER ASSEMBLY F/SIGMA PRO ASSY	1
5.2	710101-001380	SIGMA SCREEN SUPPORT RING RPP GREY	4	10.8.1	770102-000027	PARKER O-RING 2-156 EPDM 70 SHORE YELLOW DOT	1
6	700190-005105	SCANNER 500 ASSEMBLY W/STRAIGHT NOZZLE 8MM F/SIGMA 6"/8"	5	10.8.2	710101-001295	SIGMA PISTON CYLINDER PBT BLACK	1
6.1	700190-005419	SET STRAIGHT NOZZLE 8MM HDPE RED F/SIGMA PRO	1	10.8.3	710101-001308	SIGMA PISTON NOZZLE 1.2 MM PP RED	2
7	700190-005418	UPPER PLATE ASSEMBLY F/SIGMA PRO	1	10.8.4	710103-010056	PISTON HOUSING EXTERNAL NUT SIGMA PRO RPA	1
7.1	770104-000311	HYDRAULIC SEAL EPDM SIGMA	2	11	700190-000206	1"*1/4" BUSHING + SEAL	2
7.2	700190-005417	BUSHING W/LOCK RING ASSEMBLY F/SIGMA PRO	5	12	700190-001980	PRESSURE GAUGE COMPLETE F/2" TEF8	1
8	700190-005150	TURBINE ASSEMBLY F/MINI AND PRO SIGMA	5	13	700103-001636	ADI-P CONTROLLER 8MM TEFEN F/SIGMA	1
9	700190-005416	BRIDGE ASSEMBLY W/CLIPS F/SIGMA PRO ASSY	1	14	720501-000139	L-CONNECTOR 1/4" M X 8MM BSPT ACETAL BLACK TEFEN	3
10	700190-004641	FLUSHING ASSEMBLY F/SIGMA 4"/6"/8"	1	15	700190-000238	6" AKF UNIVERSAL	2
10.1	700190-004685	COVER W/DRAIN BODY ASSEMBLY F/SIGMA 4"/6"/8"	1	15.1	770104-000036	GASKET 6" EPDM 70 SHORE QUICK FLANGE	1

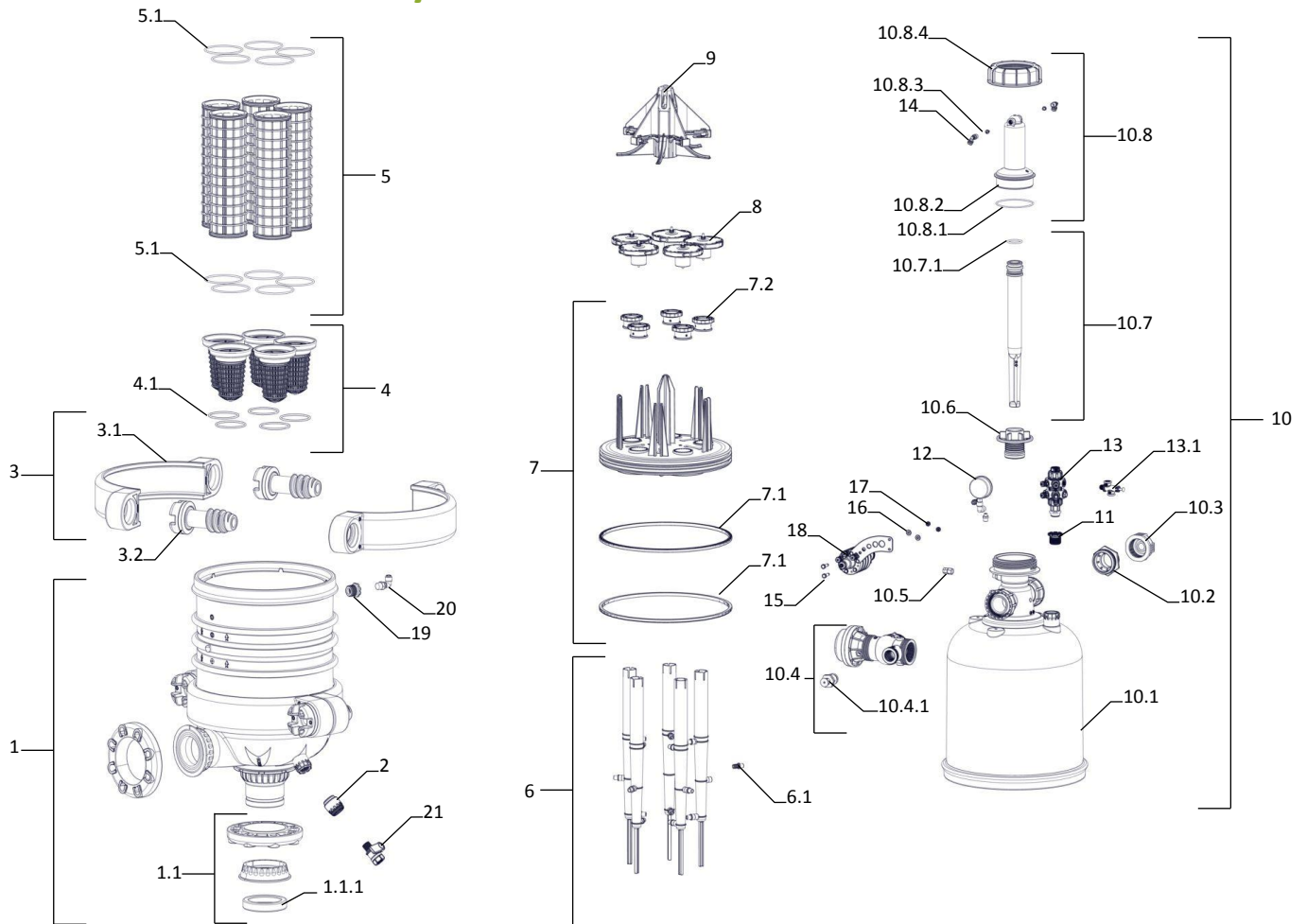


## Bill of Materials – 8" Electronic



ITEM NO.	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	700190-004635	BODY W/SLEEVE ASSEMBLY F/SIGMA 8" ASA	1	10.1	700190-004685	COVER W/DRAIN BODY ASSEMBLY F/SIGMA 4"/6"/8"	1
	700190-004636	BODY W/SLEEVE ASSEMBLY F/SIGMA 8"BSTD	1	10.2	700190-000195	ADAPTOR ASSY NUT+SEALS	1
2	700190-004877	1" CONTROL FILTER ASSY 8MM TF F/SIGMA	1	10.3	700190-001241	CAP ASSEMBLY 2" T BSP	1
3	700190-004133	CLAMP ASSEMBLY FOR 4" GALAXY/SIGMA	1	10.4	700190-004807	POLYMERIC FLUSH VALVE ASSEMBLY 2" NC BSP STD	1
3.1	710103-005220	CLAMP 4" GALAXY/SIGMA RPA W/O RUNNER	2	10.4.1	700190-003406	1" VACUUM BREAKER	1
3.2	700190-005415	SET SCREW WASHER F/CLAMP SIGMA PRO ASSY	2	10.5	720501-000134	STRAIGHT CONNECTOR 1/4" F X 8MM BSPT RPP BLACK TEFEN	1
4	700190-004222	BOTTOM W/PREScreen ASSEMBLY F/4" SIGMA	5	10.6	700190-005420	PISTON BUSHING ASSEMBLY W/ O-RINGS F/SIGMA PRO ASSY	1
4.1	770102-000034	PARKER O-RING 2-237 EPDM 70 SHORE YELLOW DOT	1	10.7	700190-005441	PISTON W/U-CUP SEAL F/SIGMA PRO ASSY	1
5	700101-001534	MOLDED WEAVEWIRE SCREEN S/ST316L 130MIC 6"-8" SIGMA EPDM SEALS	5	10.7.1	770105-000011	U-CUP SEAL NBR OD50MM ID40MM H7MM 70 SHORE	1
5.1	770102-000384	PARKER O-RING 2-244 EPDM 70 SHORE YELLOW DOT	2	10.8	700190-005421	PISTON CYLINDER ASSEMBLY F/SIGMA PRO ASSY	1
5.2	710101-001380	SIGMA SCREEN SUPPORT RING RPP GREY	4	10.8.1	770102-000027	PARKER O-RING 2-156 EPDM 70 SHORE YELLOW DOT	1
6	700190-005105	SCANNER 500 ASSEMBLY W/STRAIGHT NOZZLE 8MM F/SIGMA 6"/8"	5	10.8.2	710101-001295	SIGMA PISTON CYLINDER PBT BLACK	1
6.1	700190-005419	SET STRAIGHT NOZZLE 8MM HDPE RED F/SIGMA PRO	1	10.8.3	710101-001308	SIGMA PISTON NOZZLE 1.2 MM PP RED	2
7	700190-005418	UPPER PLATE ASSEMBLY F/SIGMA PRO	1	10.8.4	710103-010056	PISTON HOUSING EXTERNAL NUT SIGMA PRO RPA	1
7.1	770104-000311	HYDRAULIC SEAL EPDM SIGMA	2	11	700190-000206	1" * 1/4" BUSHING + SEAL	2
7.2	700190-005417	BUSHING W/LOCK RING ASSEMBLY F/SIGMA PRO	5	12	700190-001980	PRESSURE GAUGE COMPLETE F/2" TEF8	1
8	700190-005150	TURBINE ASSEMBLY F/MINI AND PRO SIGMA	5	13	700103-001636	ADI 1.8MM TEFEN F/SIGMA	1
9	700190-005416	BRIDGE ASSEMBLY W/CLIPS F/SIGMA PRO ASSY	1	14	720501-000139	L-CONNECTOR 1/4" M X 8MM BSPT ACETAL BLACK TEFEN	3
10	700190-004641	FLUSHING ASSEMBLY F/SIGMA 4"/6"/8"	1				

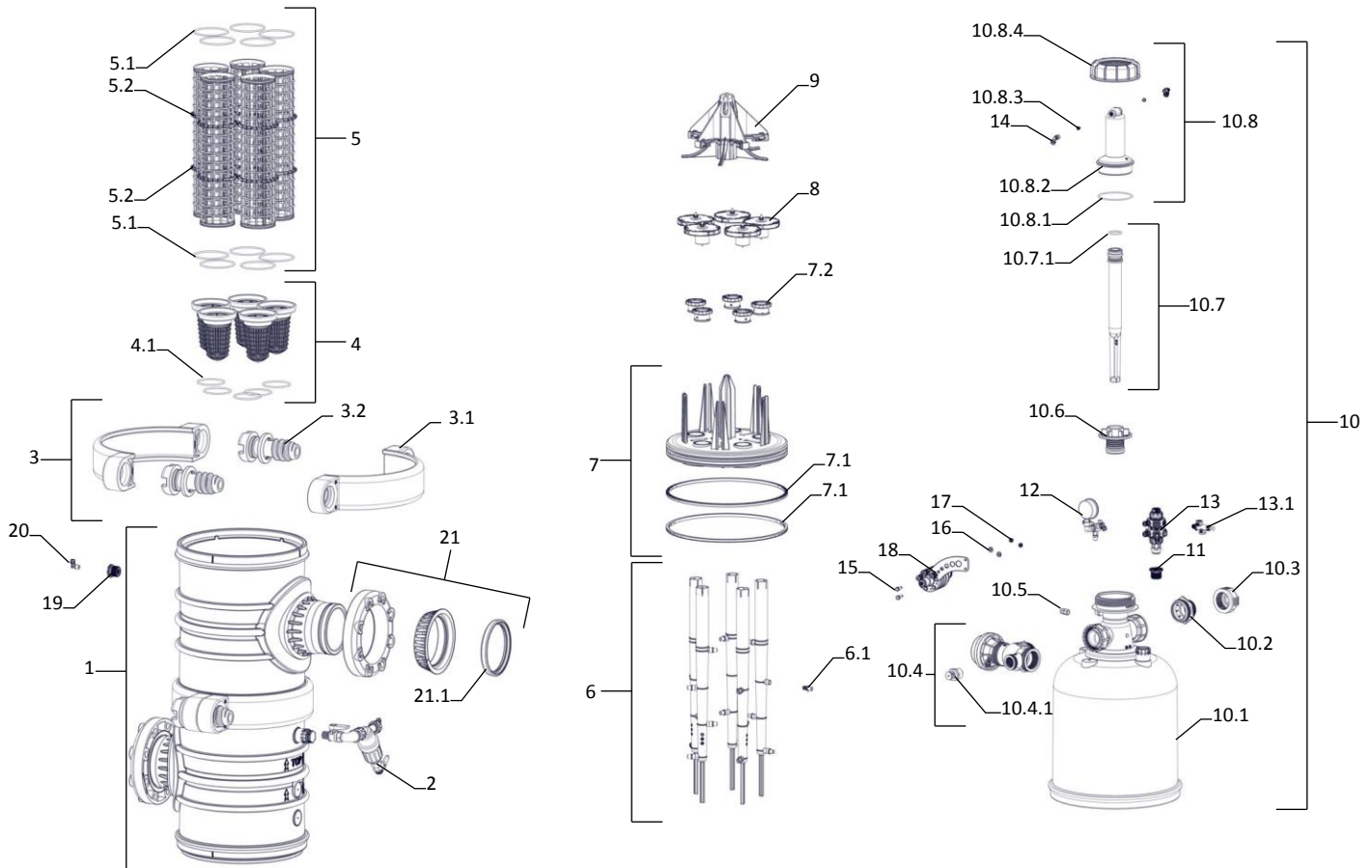
## Bill of Materials – 4" Hydraulic



ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	700190-004220	BODY W/SLEEVE ASSEMBLY F/4" SIGMA/AKF	1
1.1	700190-000227	4" AKF UNIVERSAL ASSEMBLY	2
1.1.1	770104-000253	GASKET 4" EPDM 70 SHORE QUICK FLANGE	1
2	780101-000220	REDUCER 3/4"X1" MALE PP PLASSON	1
3	700190-004133	CLAMP ASSEMBLY FOR 4"GALAXY/SIGMA	1
3.1	710103-005220	CLAMP 4" GALAXY/SIGMA RPA	2
3.2	700190-005415	SET SCREW WASHER F/CLAMP SIGMA PRO ASSY	2
4	700190-004222	BOTTOM W/PRESCREEN ASSEMBLY F/4" SIGMA	5
4.1	770102-000034	PARKER O-RING 2-237 EPDM 70 SHORE YELLOW DOT	1
5	700101-001505	MOLDED WEAWEWIRE SCREEN S/ST316L 130MIC SIGMA W/O-RINGS	5
5.1	770102-000384	PARKER O-RING 2-244 EPDM 70 SHORE YELLOW DOT	2
6	700190-005106	SCANNER 375 ASSEMBLY W/STRAIGHT NOZZLE 8MM F/SIGMA 4"	5
6.1	700190-005419	SET STRAIGHT NOZZLE 8MM HDPE RED F/SIGMA PRO	1
7	700190-005418	UPPER PLATE ASSEMBLY F/SIGMA PRO	1
7.1	770104-000311	HYDRAULIC SEAL EPDM SIGMA	2
7.2	700190-005417	BUSHING W/LOCK RING ASSEMBLY F/SIGMA PRO	5
8	700190-005150	TURBINE ASSEMBLY F/MINI AND PRO SIGMA	5
9	700190-005416	BRIDGE ASSEMBLY W/CLIPS F/SIGMA PRO ASSY	1
10	700190-004641	FLUSHING ASSEMBLY F/SIGMA 4"/6"/8"	1
10.1	700190-004685	COVER W/DRAIN BODY ASSEMBLY F/SIGMA 4"/6"/8"	1
10.2	700190-000195	ADAPTOR ASSY NUT+SEALS	1
10.3	700190-001241	CAP ASSEMBLY 2" T BSP	1
10.4	700190-004807	POLYMERIC FLUSH VALVE ASSEMBLY 2" NC BSP STD	1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
10.4.1	700190-003406	1" VACUUM BREAKER	1
10.5	720501-000134	STRAIGHT CONNECTOR 1/4" F X 8MM BSPT RPP BLACK TEFEN	1
10.6	700190-005420	PISTON BUSHING ASSEMBLY W/ O-RINGS F/SIGMA PRO ASSY	1
10.7	700190-005441	PISTON W/U-CUP SEAL F/SIGMA PRO ASSY	1
10.7.1	770105-000011	U-CUP SEAL NBR OD50MM ID40MM H7MM 70 SHORE	1
10.8	700190-005421	PISTON CYLINDER ASSEMBLY F/SIGMA PRO ASSY	1
10.8.1	770102-000027	PARKER O-RING 2-156 EPDM 70 SHORE YELLOW DOT	1
10.8.2	710101-001295	SIGMA PISTON CYLINDER PBT BLACK	1
10.8.3	710101-001308	SIGMA PISTON NOZZLE 1.2 MM PP RED	2
10.8.4	710103-010056	PISTON HOUSING EXTERNAL NUT SIGMA PRO RPA	1
11	700190-000207	1" * 3/4" BUSHING + SEAL	1
12	700190-003224	PRESSURE GAUGE ASSEMBLY F/3" SK	1
13	700190-004632	TOP DIVISOR ASSEMBLY F/4"-6"-8" SIGMA PRO	1
13.1	300005-000022	RINSE ACTIVATION VALVE PP	1
14	720501-000139	L-CONNECTOR 1/4" M X 8MM BSPT ACETAL BLACK TEFEN	2
15	760101-000030	HEX BOLT FULL THREAD 1/4" UNC 1" ST/ST304 ASME B18.2.1	2
16	760103-000005	FLAT WASHER 1/4" SPECIAL ST/ST 304	2
17	760102-000006	HEX NUT 1/4" UNC ST/ST 304 B18.2.2	2
18	700190-004532	SIGMA 6-8 RINSE CONTROLLER ASSY LONG	1
19	700190-004472	1" * 1/2" BUSHING + SEAL	1
20	720501-000663	L-CONNECTOR 1/2" M X 12MM BSP ACETAL BLACK JOHN-GUEST	1
21	300005-000001	BALL VALVE AC 3/4" 10 BAR BLACK	1

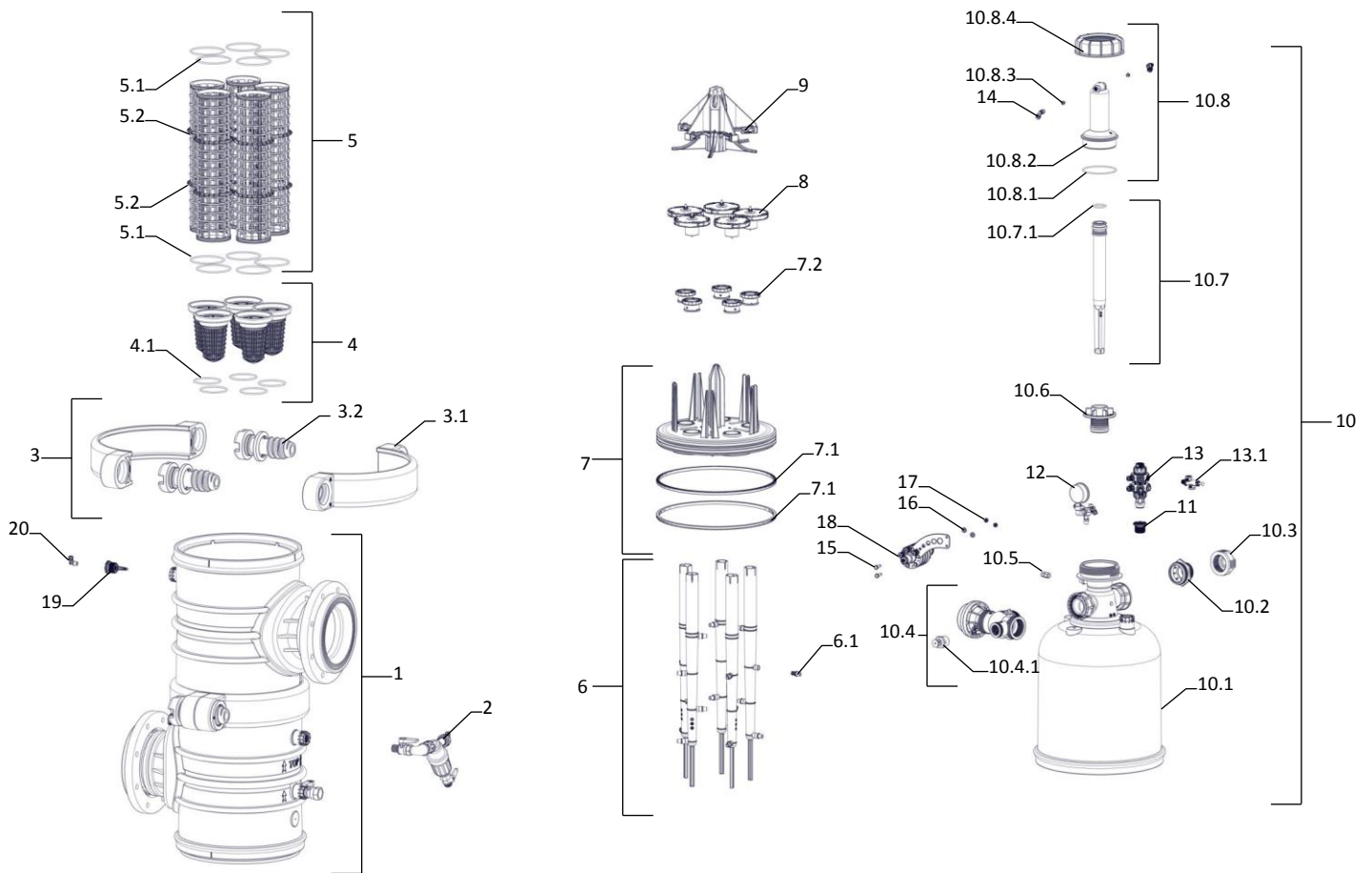
## Bill of Materials – 6" Hydraulic



ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	700190-005116	BODY W/SLEEVE ASSEMBLY F/SIGMA 6"VIC	1
2	700190-004893	1" PLUG TAVLIT ASSEMBLY WITH O-RING 2-123 EPDM	1
3	700190-004133	CLAMP ASSEMBLY FOR 4"GALAXY/SIGMA	1
3.1	710103-005220	CLAMP 4" GALAXY/SIGMA RPA	2
3.2	700190-005415	SET SCREW WASHER F/CLAMP SIGMA PRO ASSY	2
4	700190-004222	BOTTOM W/PRESCREEN ASSEMBLY F/4" SIGMA	5
4.1	770102-000034	PARKER O-RING 2-237 EPDM 70 SHORE YELLOW DOT	1
5	700101-001534	MOLDED WEAWEWIRE SCREEN S/ST316L 130MIC 6"-8" SIGMA EPDM SEALS	5
5.1	770102-000384	PARKER O-RING 2-244 EPDM 70 SHORE YELLOW DOT	2
5.2	710101-001380	SIGMA SCREEN SUPPORT RING RPP GREY	4
6	700190-005105	SCANNER 500 ASSEMBLY W/STRAIGHT NOZZLE 8MM F/SIGMA 6"/8"	5
6.1	700190-005419	SET STRAIGHT NOZZLE 8MM HDPE RED F/SIGMA PRO	1
7	700190-005418	UPPER PLATE ASSEMBLY F/SIGMA PRO	1
7.1	770104-000311	HYDRAULIC SEAL EPDM SIGMA	2
7.2	700190-005417	BUSHING W/LOCK RING ASSEMBLY F/SIGMA PRO	5
8	700190-005150	TURBINE ASSEMBLY F/MINI AND PRO SIGMA	5
9	700190-005416	BRIDGE ASSEMBLY W/CLIPS F/SIGMA PRO ASSY	1
10	700190-004641	FLUSHING ASSEMBLY F/SIGMA 4"/6"/8"	1
10.1	700190-004685	COVER W/DRAIN BODY ASSEMBLY F/SIGMA 4"/6"/8"	1
10.2	700190-000195	ADAPTOR ASSY NUT+SEALS	1
10.3	700190-001241	CAP ASSEMBLY 2" T BSP	1
10.4	700190-004807	POLYMERIC FLUSH VALVE ASSEMBLY 2" NC BSP STD	1
10.4.1	700190-003406	1" VACUUM BREAKER	1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
10.5	720501-000134	STRAIGHT CONNECTOR 1/4"F X8MM BSPT RPP BLACK TEFEN	1
10.6	700190-005420	PISTON BUSHING ASSEMBLY W/ O-RINGS F/SIGMA PRO ASSY	1
10.7	700190-005441	PISTON W/U-CUP SEAL F/SIGMA PRO ASSY	1
10.7.1	770105-000011	U-CUP SEAL NBR OD50MM ID40MM H7MM 70 SHORE	1
10.8	700190-005421	PISTON CYLINDER ASSEMBLY F/SIGMA PRO ASSY	1
10.8.1	770102-000027	PARKER O-RING 2-156 EPDM 70 SHORE YELLOW DOT	1
10.8.2	710101-001295	SIGMA PISTON CYLINDER PBT BLACK	1
10.8.3	710101-001308	SIGMA PISTON NOZZLE 1.2 MM PP RED	2
10.8.4	710103-010056	PISTON HOUSING EXTERNAL NUT SIGMA PRO RPA	1
11	700190-000207	1"*3/4" BUSHING + SEAL	1
12	700190-003224	PRESSURE GAUGE ASSEMBLY F/3"SK	1
13	700190-004632	TOP DIVISOR ASSEMBLY F/4"-6"-8"SIGMA PRO	1
13.1	300005-000022	RINSE ACTIVATION VALVE PP	1
14	720501-000139	L-CONNECTOR 1/4"M X8MM BSPT ACETAL BLACK TEFEN	2
15	760101-000030	HEX BOLT FULL THREAD 1/4"UNC 1" ST/ST304 ASME B18.2.1	2
16	760103-000005	FLAT WASHER 1/4" SPECIAL ST/ST 304	2
17	760102-000006	HEX NUT 1/4"UNC ST/ST 304 B18.2.2	2
18	700190-004532	SIGMA 6-8 RINSE CONTROLLER ASSY LONG	1
19	700190-004472	1"*1/2" BUSHING+SEAL	1
20	720501-000663	L-CONNECTOR 1/2"M X12MM BSP ACETAL BLACK JOHN-GUEST	1
21	700190-000238	6" AKF UNIVERSAL	2
21.1	770104-000036	GASKET 6" EPDM 70 SHORE QUICK FLANGE	1

## Bill of Materials – 8" Hydraulic



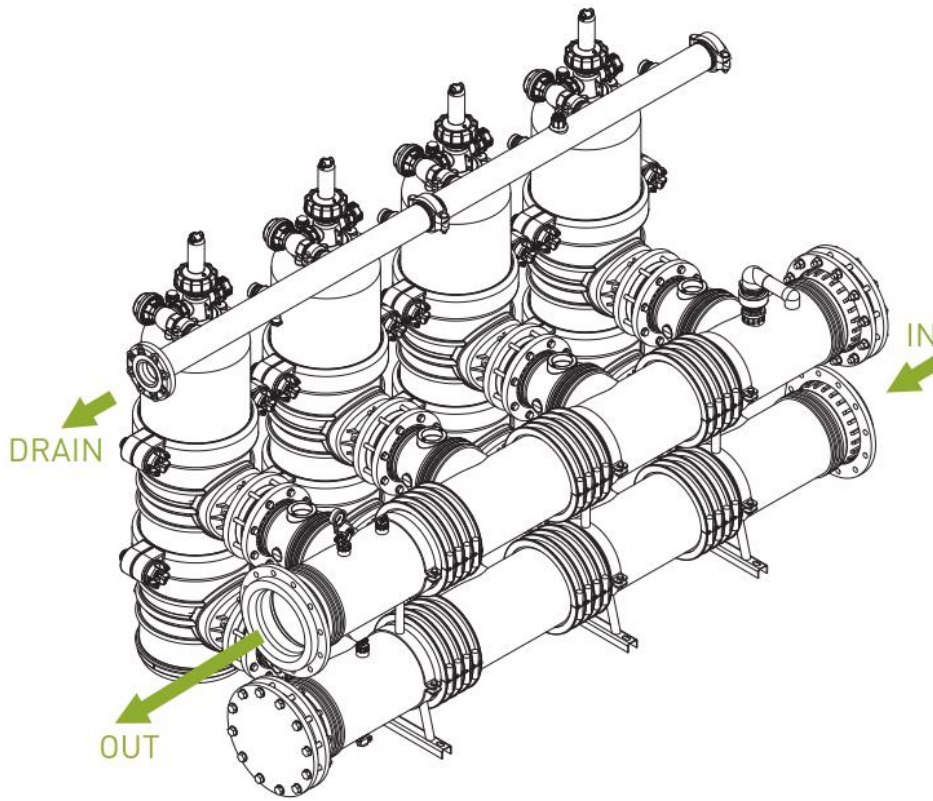
ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	700190-004635	BODY W/SLEEVE ASSEMBLY F/SIGMA 8" ASA	1
	700190-004636	BODY W/SLEEVE ASSEMBLY F/SIGMA 8"BSTD	1
2	700190-004893	1" PLUG TAVLIT ASSEMBLY WITH O-RING 2-123 EPDM	1
3	700190-004133	CLAMP ASSEMBLY FOR 4" GALAXY/SIGMA	1
3.1	710103-005220	CLAMP 4" GALAXY/SIGMA RPA W/O RUNNER	2
3.2	700190-005415	SET SCREW WASHER F/CLAMP SIGMA PRO ASSY	2
4	700190-004222	BOTTOM W/PRESCREEN ASSEMBLY F/4" SIGMA	5
4.1	770102-000034	PARKER O-RING 2-237 EPDM 70 SHORE YELLOW DOT	1
5	700101-001534	MOLDED WEAVEWIRE SCREEN S/ST316L 130MIC 6"-8" SIGMA EPDM SEALS	5
5.1	770102-000384	PARKER O-RING 2-244 EPDM 70 SHORE YELLOW DOT	2
5.2	710101-001380	SIGMA SCREEN SUPPORT RING RPP GREY	4
6	700190-005105	SCANNER 500 ASSEMBLY W/STRAIGHT NOZZLE 8MM F/SIGMA 6"/8"	5
6.1	700190-005419	SET STRAIGHT NOZZLE 8MM HDPE RED F/SIGMA PRO	1
7	700190-005418	UPPER PLATE ASSEMBLY F/SIGMA PRO	1
7.1	770104-000311	HYDRAULIC SEAL EPDM SIGMA	2
7.2	700190-005417	BUSHING W/LOCK RING ASSEMBLY F/SIGMA PRO	5
8	700190-005150	TURBINE ASSEMBLY F/MINI AND PRO SIGMA	5
9	700190-005416	BRIDGE ASSEMBLY W/CLIPS F/SIGMA PRO ASSY	1
10	700190-004641	FLUSHING ASSEMBLY F/SIGMA 4"/6"/8"	1
10.1	700190-004685	COVER W/DRAIN BODY ASSY F/SIGMA 4"/6"/8"	1
10.2	700190-000195	ADAPTOR ASSY NUT+SEALS	1
10.3	700190-001241	CAP ASSEMBLY 2" BSP	1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
10.4	700190-004807	POLYMERIC FLUSH VALVE ASSEMBLY 2" NC BSP STD	1
10.4.1	700190-003406	1" VACUUM BREAKER	1
10.5	720501-000134	STRAIGHT CONNECTOR 1/4" F X 8MM BSPT RPP BLACK TEFEN	1
10.6	700190-005420	PISTON BUSHING ASSEMBLY W/ O-RINGS F/SIGMA PRO ASSY	1
10.7	700190-005441	PISTON W/U-CUP SEAL F/SIGMA PRO ASSY	1
10.7.1	770105-000011	U-CUP SEAL NBR OD50MM ID40MM H7MM 70 SHORE	1
10.8	700190-005421	ASSEMBLY PISTON CYLINDER F/SIGMA PRO	1
10.8.1	770102-000027	PARKER O-RING 2-156 EPDM 70 SHORE YELLOW DOT	1
10.8.2	710101-001295	SIGMA PISTON CYLINDER PBT BLACK	1
10.8.3	710101-001308	SIGMA PISTON NOZZLE 1.2 MM PP RED	2
10.8.4	710103-010056	PISTON HOUSING EXTERNAL NUT SIGMA PRO RPA	1
11	700190-000207	1" * 3/4" BUSHING + SEAL	1
12	700190-003224	PRESSURE GAUGE ASSEMBLY F/3" SK	1
13	700190-004632	TOP DIVISOR ASSEMBLY F/4"-6"-8" SIGMA PRO	1
13.1	300005-000022	RINSE ACTIVATION VALVE PP	1
14	720501-000139	L-CONNECTOR 1/4" M X 8MM BSPT ACETAL BLACK TEFEN	2
15	760101-000030	HEX BOLT FULL THREAD 1/4" UNC 1" ST/ST304 ASME B18.2.1	2
16	760103-000005	FLAT WASHER 1/4" SPECIAL ST/ST 304	2
17	760102-000006	HEX NUT 1/4" UNC ST/ST 304 B18.2.2	2
18	700190-004532	SIGMA 6-8 RINSE CONTROLLER ASSY LONG	1
19	700190-004472	1" * 1/2" BUSHING + SEAL	1
20	720501-000663	L-CONNECTOR 1/2" M X 12MM BSP ACETAL BLACK JOHN-GUEST	1

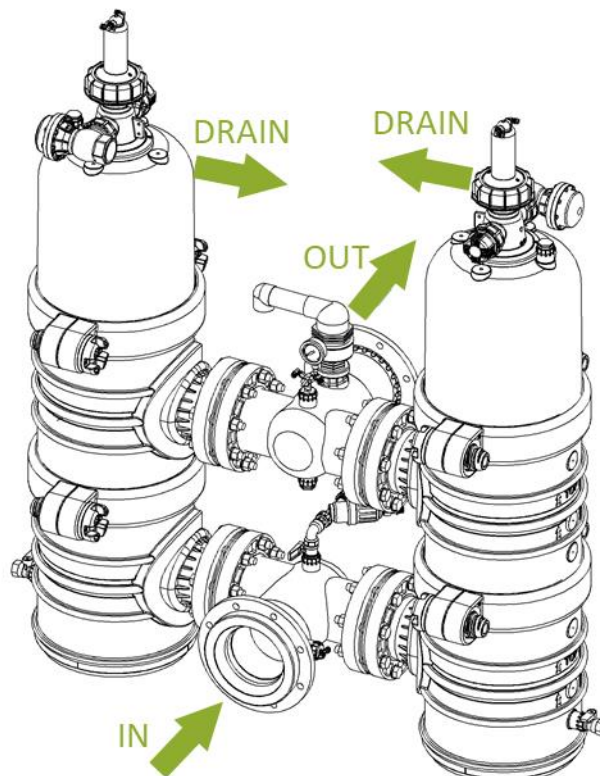


## Sigma Pro – Installations of Multiple Units

Sigma Pro 8" installation of 4 units with manifold, for flow rates up to 1,120 m<sup>3</sup>/h (4,932 gpm)



Sigma Pro 6" installation of 2 units with manifold, for flow rates up to 360 m<sup>3</sup>/h (1,584 gpm)



## Control Schematic - Electronic Model

### LEGEND:

PG - PRESSURE GAUGE

SV - SOLENOID VALVE 12v DC LATCH

HV - HYDRAULIC VALVE

### SYMBOLS:

COMMAND 8mm

HP 8mm

LP 8mm

VENT 8mm

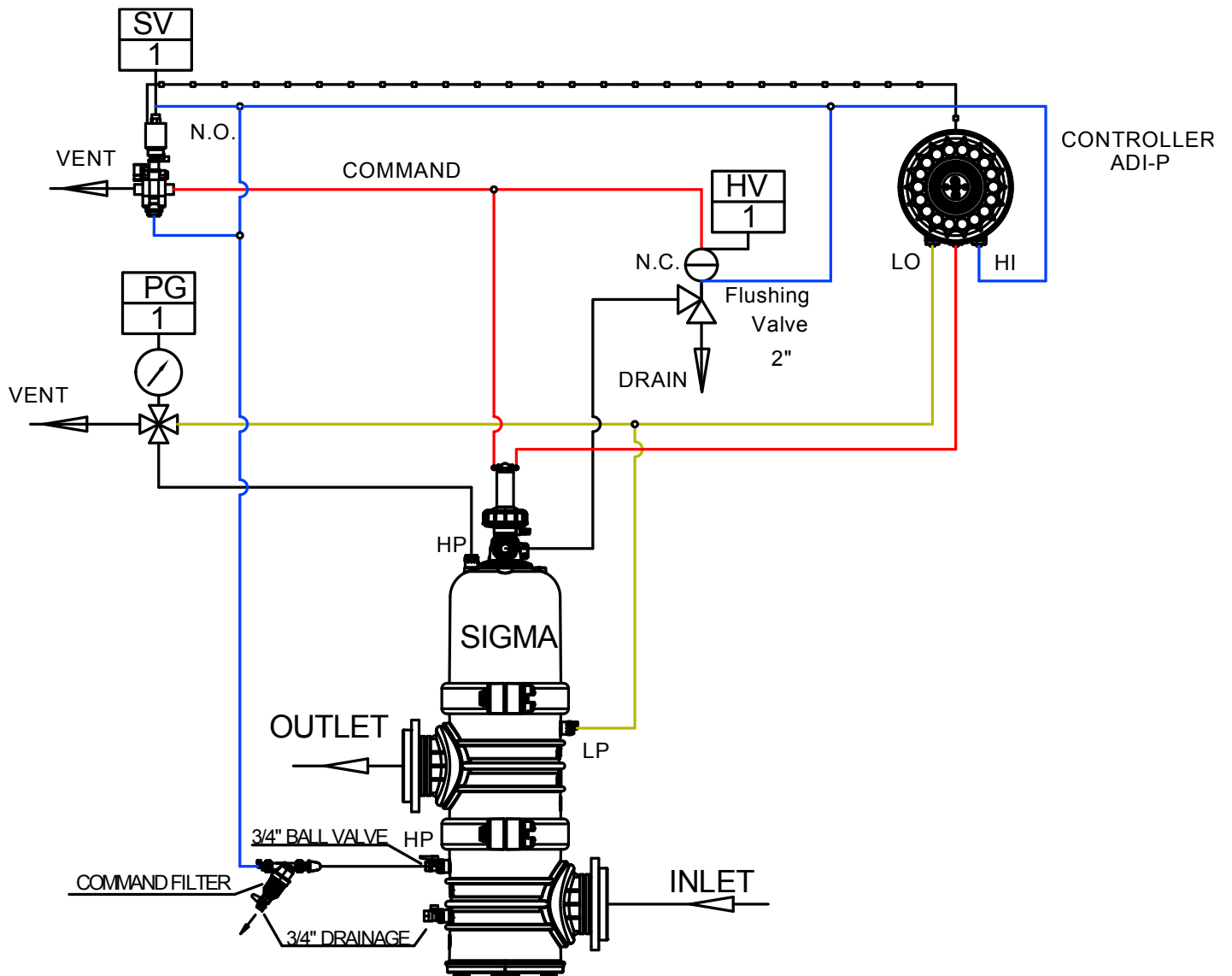
ELECTRIC

- PRESSURE GAUGE

- 3-WAY BALL VALVE

- 2-WAY HYDRAULIC VALVE

- 3/2 SOLENOID VALVE








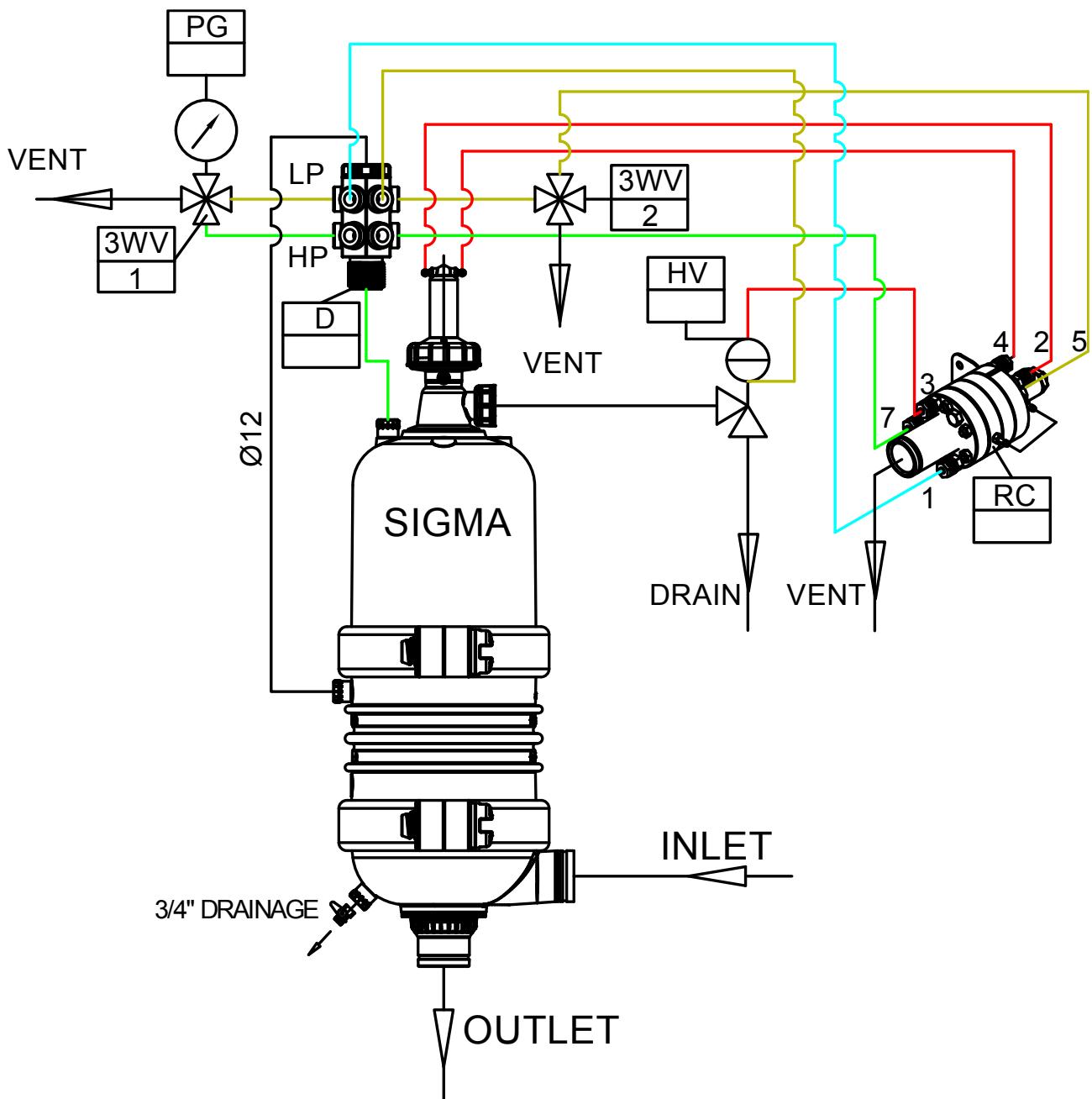
## Control Schematic - Hydraulic Model

### LEGEND :

PG - PRESSURE GAUGE  
 RC - RISE CONTROLLER  
 D - DISTRIBUTER  
 HV - 2" N.C. HYDRAULIC FLUSHING VALVE  
 3WV- 3-WAY VALVE

### SYMBOLS :

COMMAND		8 mm
LOW PRESSURE		8 mm
HIGH PRESSURE		8 mm
VENT		8 mm
WATER SUPPLY		8 mm



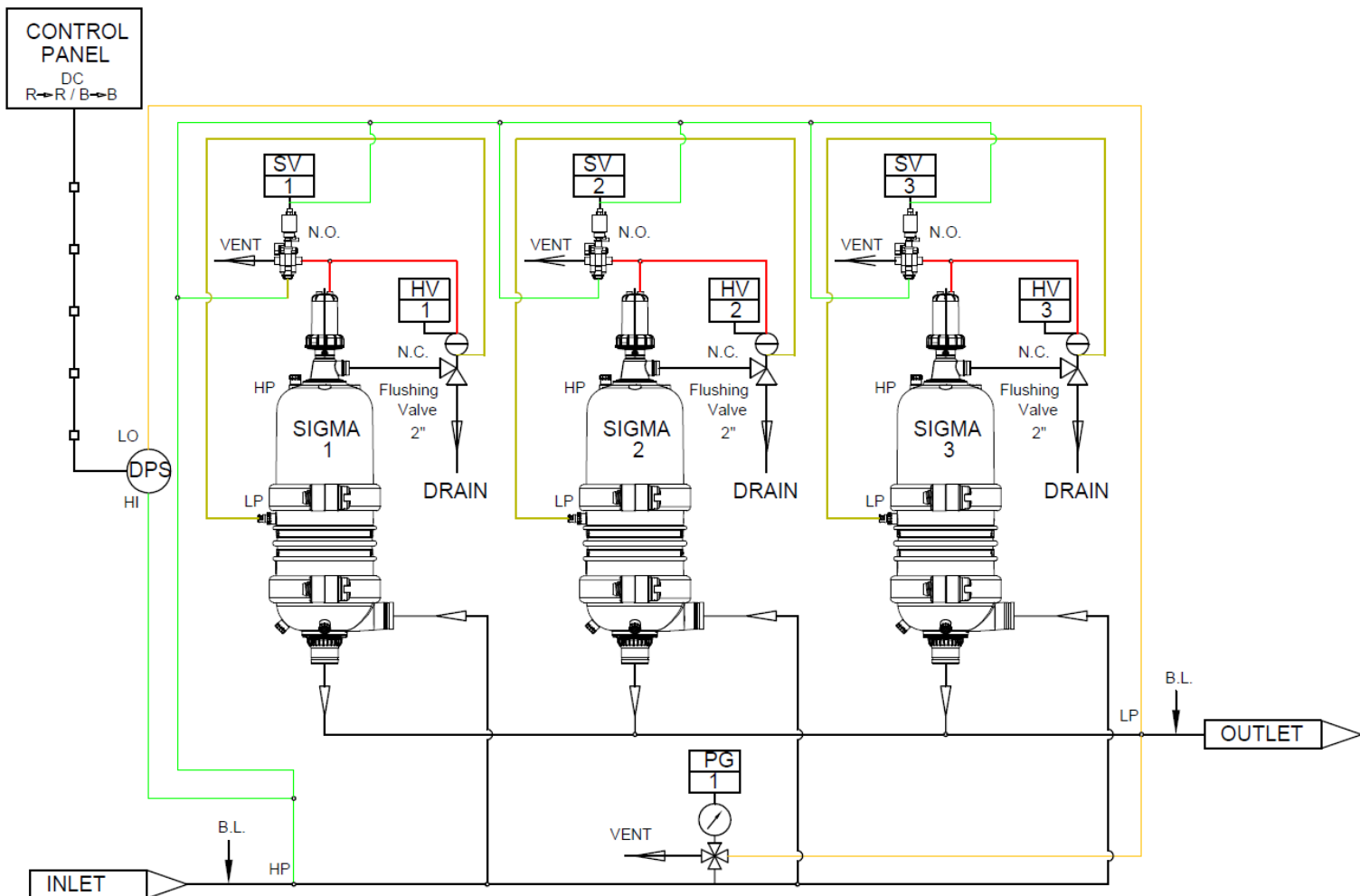
## Control Schematic - Electronic Model for Multiple Units

### LEGEND :

PG - PRESSURE GAUGE  
 SV - SOLENOID VALVE  
 DPS - DIFFERENTIAL PRESSURE SWITCH  
 HV - HYDRAULIC VALVE

### SYMBOLS :

COMMAND	<span style="color: red;">—</span>	8 mm
HP	<span style="color: green;">—</span>	8 mm
LP	<span style="color: yellow;">—</span>	8 mm
DPS	<span style="color: orange;">—</span>	8 mm
VENT	<span style="color: black;">—</span>	8 mm
ELECTRIC		





## Troubleshooting

No.	Symptom	Possible Causes	Required Action
1	High or elevated pressure differential between upstream and downstream	Coarse or fine screens are totally clogged	<ol style="list-style-type: none"> <li>1. Perform automatic flushing               <ol style="list-style-type: none"> <li>a. Close the downstream valve</li> <li>b. Start a manual flush cycle using the flushing controller.</li> <li>c. Verify that the downstream pressure is equal or slightly lower than the upstream pressure</li> <li>d. If symptom continues and the filter remains clogged, stop the operation and manually clean the fine screen</li> </ol> </li> <li>2. Perform manual flushing               <ol style="list-style-type: none"> <li>a. Extract the coarse and fine screens. Clean manually with a high pressure wash before returning to regular operation. Please refer to filter disassembly instruction on page 21</li> <li>b. Verify that the downstream pressure is equal to or slightly lower than the upstream pressure</li> </ol> </li> </ol>
2	System flow rate seems to be lower than usual	Coarse screens are clogged	Manually clean the coarse screens: <ol style="list-style-type: none"> <li>a. Dismantle the coarse screens. Please refer to filter disassembly instruction on page 21</li> <li>b. Return to regular operation and check the filter's performance</li> </ol>
3	Frequent/excessive flush cycles	Water quality has changed	Check the source water quality for poor quality conditions (e.g. flood, heavy rain, works upstream of intake, new dam)
		Controller flush duration set-point too low (electronic control)	Check the "Flush Duration"- set-point 10 seconds
4	The filter doesn't flush automatically (electronic controller)	Controller batteries are dead, or power supply is isolated	Check battery status by ADI-P mobile app. Replace the controller's batteries if needed
		The solenoid is set in manual position	Switch the solenoid to "Auto" position
		No pressure on the main command tube line	Rinse and clean the command line filter (if it exists), otherwise check the finger filter for blockage and clean as required
		The controller is in "Fault" mode	Please see ADI-P controller manual "DP Fault" parameter is set to an appropriate value (AMC Controller)
5	The flush valve remains open	Air in the valve's command line or control tube is disconnected	<ol style="list-style-type: none"> <li>1. Bleed air from the control tubing</li> <li>2. Reconnect control tube</li> <li>3. Replace control tube if damaged</li> <li>4. Electronic controller – check the solenoid, bleed the command line, and verify that the controller is not in "Flushing" mode</li> </ol>
		The solenoid manual override is activated	Switch the solenoid to "Auto" position
		Controller programmed for a very long flush duration (electronic controller)	Check the "Flush Duration"- set-point 10 seconds
		Blocked flush port	Remove any blockage from the flush port