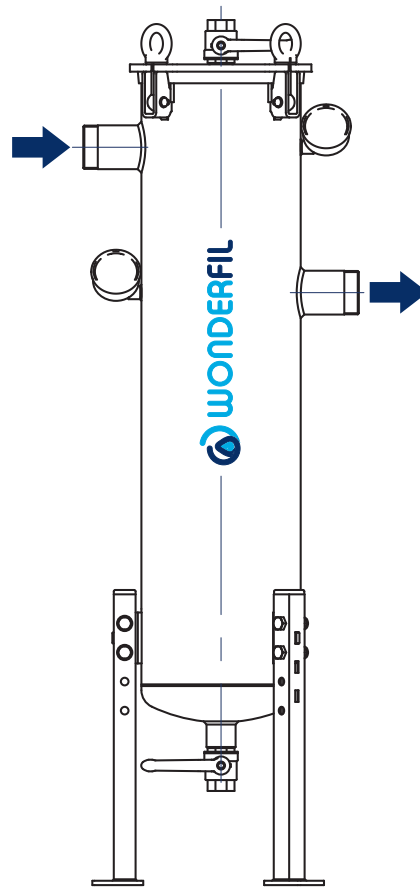


# WARDFIL

— STAINLESS STEEL BAG FILTER —

## ORIGINAL INSTRUCTIONS



— MADE IN ITALY —



**WONDERFIL**  
FILTERING IS WONDERFUL



## **READ CAREFULLY**

This Instructions Manual should be considered an integral part of the equipment, it must be kept close to it during its lifetime and it shall always be available to the operators; in case of resale it shall be delivered to the new owner.

WONDERFIL filters are always being updated and developed with new constructive solutions, therefore, although the manual includes updated information by the time of printing, WONDERFIL SRL reserves the right to modify it at any given time without notice and without incurring in any obligation.

All rights are reserved, no part of it can be reproduced, in any form, without WONDERFIL's written consent.

For any technical data or information not included or deductible from this manual, it is recommended to contact the customer service.

The manual must be kept safe, in case of loss or damage it is necessary to immediately request a new copy to WONDERFIL SRL.

This equipment is exclusively manufactured by:

**WONDERFIL Srl**  
**Piazzale G. Biguzzi 20**  
**47521 Cesena [FC] – Italy**  
**Tel: +39 0547 1825765**  
**E-Mail: [info@wonderfil.it](mailto:info@wonderfil.it)**  
**Web: <http://www.wonderfil.it>**

WONDERFIL SRL can be consulted for any technical problem or spare parts request.

For any communication relating to the purchased equipment it is absolutely necessary to provide the information engraved on the identification plate described in the chapter "FILTER'S IDENTIFICATION".

For any ordinary or extraordinary maintenance, it is recommended to use original spare parts; WONDERFIL SRL declines any responsibility concerning possible equipment's loss of performance and/or damage that might occur when using non-original spare parts.

WONDERFIL SRL is available to provide information, advices or intervene with its specialized personnel in case of doubts over the equipment's regular information.

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## I. INTRODUCTION

This manual contains the “original instructions” supplied by the manufacturer, it must be carefully preserved and read because it contains technical and operational information essential for the operators’ safety, installation, correct operation and efficient maintenance.



**Before any operation is performed with the equipment, including the handling, this manual must be read carefully.**



**The equipment must be used only for the purpose it was expressly provided for; every other use shall be considered dangerous.**



**WONDERFIL Srl shall be excluded from any responsibility for any damage caused by the heedlessness of the instructions described in this manual.**

Always following the indications described within this manual shall result in a longer duration of the equipment, a significant reduction of the maintenance expenses and following, and will allow to avoid the most common problems which might happen during the equipment’s installation, operation and maintenance.

It is of common interest that such rules are followed, that the purchaser always keeps this manual close to the equipment, that it is actually consulted by the operators and that the aforementioned rules are thoroughly respected.

### HANDBOOK USAGE

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There is an index to facilitate the consulting of this manual. The manual is divided into chapters that describe different subjects.

If not available within this manual, the instructions for handling and properly setting up the control panel are described inside the appropriate guide supplied inside an USB Key.

The version is indicated on the lower bottom part of the manual’s back cover.

Some information contained within this manual are general, only the ones referred to the purchased filter must be taken into account.

For the sake of a better comprehension of the information detailed inside this manual, instructions deemed important, critical or dangerous are highlighted with the following symbols:



**DANGER – CAUTION:** This symbol indicates dangerous situations that, if neglected, could seriously endanger people’s safety and health.



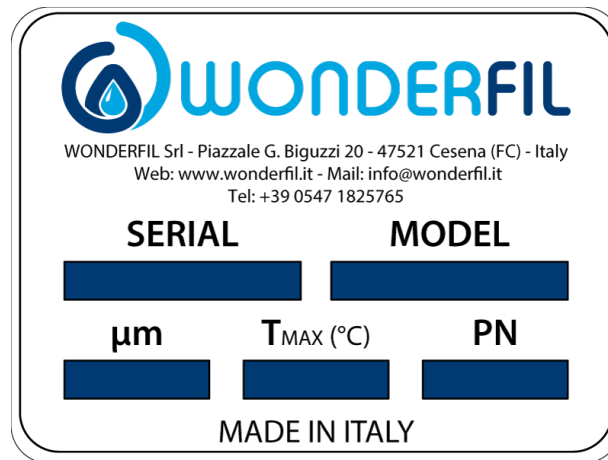
**IMPORTANT:** This symbol indicates important technical information which shall not be neglected that might lead to the voiding of the warranty.



**ENVIRONMENTAL NOTES:** This symbol indicates information about the safeguard of the environment.

## II. FILTER IDENTIFICATION

### IDENTIFICATION PLATE



The filter is identified by an identification plate as per the above image.

The identification plate shows the model (Model), serial number (Serial), filtration degree ( $\mu\text{m}$ ), nominal pressure (PN), maximum working temperature ( $^{\circ}\text{C}$ ), logo and address of the manufacturing company.



The identification plate is attached to the unit and **must never be removed**.



The  $\mu\text{m}$  field engraved on the identification plate indicates the filtration degree **at the time of manufacture** and shall therefore be considered purely illustrative; In case of replacement of the filtering element with a new one with a different filtration degree, this field would not match the one shown on the identification plate at the time of manufacture.



**Before starting the filter make sure that the filtering element's filtration degree is compliant with the specific application, in order to avoid damage to equipment that might be installed upstream or downstream.**

### SERIAL NUMBER

The serial number "SERIAL" uniquely identifies the filter and it allows to trace back to the unit's specific features and identify the installed components. Without it, it is impossible to determine the spare parts with certainty.



In case of spare parts or assistance requests, it is always necessary to provide the filter's serial number "SERIAL" and possibly the model "MODEL" as well.

## I. INSTRUCTIONS FOR CORRECT OPERATION

This chapter has the purpose of showing the filter's usage in accordance with applicable safety rules. In order to make the best use of the filter, strictly abide to the precautions and safety rules detailed hereafter.



**An incorrect usage of the filter might cause failures or malfunctions, causing serious damage to the equipment, people and things.**

- It is strictly forbidden to use the equipment for different purposes than what specified by WONDERFIL Srl. In case of doubt contact the manufacturing company.
- It is strictly forbidden to use the equipment in a different way than what it was designed for and illustrated in this Use and Maintenance manual.
- Do not alter or modify the original equipment's configuration. The equipment cannot be modified without WONDERFIL Srl giving its consent.
- Only use original spare parts.
- Perform periodical checks on the equipment: repair or replace any worn or damaged parts immediately.
- Never exceed the maximum working pressure.



**WONDERFIL Srl is not responsible for any eventual equipment's malfunctions if the same is used in conditions different than what indicated hereafter:**

- Filtration range: **3000 - 25 µm**
- Salinity: **less than 10.000 ppm TDS**
- pH: **between 3 and 9**
- Maximum Working Temperature: **indicated on the filter's identification plate**
- Maximum Working Pressure: **indicated on the filter's identification plate**
- **Absence of Water Hammers.**
- **Absence of counter-flows (flow reversals)**
- **Absence or insufficient Earthing (Grounding)**
- Type of fluid: **Fluids belonging to Group 2 according to the PED 2014/68/UE directive.**
- All dangerous or hazardous fluids belonging to GROUP 1 according to the PED 2014/68/UE directive are excluded.



NOTE: Water, Ethylene Glycol and Propylene Glycol belong to Group 2



**Filters fall under Article 4 Paragraph 3 of the PED directive, therefore it is forbidden to process all fluids belonging to Group 1 which includes: substances and mixtures, as defined in Article 2 Sections 7 and 8 of CE n.1272/2008 regulation, classified as dangerous according to the rules as per Annex I, part 2 and 3, of said regulation.**



**The customer has the responsibility to verify the compatibility of the filter's components with the physical-chemical features of the environment and fluid to be treated, in order to avoid malfunctioning, dangers and damaged to things and people.**



**Problems and failures resulting from infringement of the described procedures will void the manufacturer's warranty.**

## LEGAL REFERENCES

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This filter is compliant to the regulation:

- PED 2014/65/EU Directive, Article 4 Paragraph 3.

*“Without prejudice to other applicable Union harmonisation legislation providing for its affixing, such equipment or assemblies shall not bear the CE marking referred to in Article 18”*



## GENERAL INFORMATION

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WONDERFIL SRL advised the maximum attention to the following indications:

### **HANDBOOK INSTRUCTIONS**

Observe all the instructions contained in this Use and Maintenance Manual for all operations of receipt, handling, positioning, connection, commissioning, adjustment, maintenance, disposal and demolition of the equipment.

### **QUALIFIED PERSONNEL**

The equipment must be installed, tested and assisted only by qualified and authorized personnel, who has the legal requirements. The equipment must be used only by trained operators to whom this use and maintenance manual has been delivered.

### **SAFETY STANDARDS**

The installation must be carried out in accordance with the existing safety standards.

### **PROTECTIVE CLOTHING**

All the operations carried out on the equipment must be performed with suitable clothing including at least protective gloves and safety footwear.

### **PACKAGING**

Packaging material, as a potential source of danger, must be kept out of the reach of children and properly disposed of or recycled according to the relevant legislative provisions.

### **MAINTENANCE**

The operations must be carried out in compliance with the existing safety regulations and by prehemptively checking that the filter is not pressurized.

### **PERIODICAL INSPECTIONS**

Perform periodic inspections to identify any loose, damaged or broken parts. The lack of repairing involves the risk of damage to property or people.

### **DAMAGE OR MALFUNCTION**

Turn off the equipment in case of failure or malfunction. For repairing, exclusively contact WONDERFIL SRL. The lack of compliance with this indication may compromise the equipment's safety.

## SAFETY

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This section details the most common circumstances that, because they can't be controlled by the manufacturer, could cause damage and put people or things in danger.



**WONDERFIL Srl declines any responsibility in the eventuality that the user does not comply to the safety rules and in case of negligence in the usage of the equipment.**

The equipment shall not be modified without WONDERFIL's written consent, which doesn't take responsibility for any incidents or damage caused by modifications without written consent.

Any operation which has not been authorized by WONDERFIL causes an immediate invalidation of the warranty.

Wonderfil can't foresee each circumstance that might cause potential danger during the use or maintenance of the equipment. If the operator is unsure about the safety regulations for some procedures, he shall contact the support service.

Constructive materials are different and have different physical/chemical compatibilities. The customer must verify that the filter is compatible with the environment and the substances that it will come into contact with.

If the equipment is out of order for malfunction, maintenance or any other reason, it is appropriate to signal it with an appropriate signboard.



**WONDERFIL Srl declines any responsibility for damage to things or people in the eventuality that the user does not comply to the safety rules detailend in this manual and in case of negligence in the usage of the equipment.**



**If the equipment is used for a different purpose than what is allowed, the operator is responsible for its safety and that of people involved.**



**Safety is in the hands and will of the operator, an incorrect use of the equipment might be dangerous.**

**Before starting any operation or maintenance on the filter, it is necessary to focus on what needs to be done and observe all necessary precautions.**

**Once the safety and capability of the equipment has been verified, keep in mind that all people that will use the plant must be properly trained for its use and informed on the dangers arising from its usage.**



**It is strictly forbidden to process dangerous, hazardous or polluting fluids, because at the end of the cleaning cycle, the discharged material must be treated following specific procedures, with appropriate safety and protective equipment that WONDERFIL Srl can't predict.**

**HAZARD INDEX**

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**CRUSHING DANGER**

Handling operations, if carried out without the necessary safety measures and without the caution, can cause the accidental fall of the filter that might cause damage, even serious damage, to things, people and to the filter.

Handling operations shall be carried out by trained personnel, with appropriate tools and with all necessary personal protective equipment, following all the rules detailed in this manual.



**ELECTRIC DANGER**

Each operation on the plant's electric system (if present) shall be performed by trained personnel. Do not connect the power supply with wet hands.

Check that the power supply has grounding in compliance with existing regulations. Power supply must be designed, build and equipped in such manner that avoids any danger of electrical nature.

For all installation and maintenance operations, completely disconnect the power supply. For any operation on the electric circuit please refer to the annexed electric schematics.



**GENERAL RISKS**

Installation, maintenance and repairing operations performed by non-trained personell might cause damage to things, people and to the filter itsefl.

Not closing the tightening and fasting devices might cause damage to things, people or to the filter itsefl. Periodically verify the perfect fastening of the different filter's parts.



**SUSPENDED LOADS**

Be very careful to the the filter's handling operations that are performed, with or without packaging, with a forklift. The filter's handling operations must be performed by trained personell with adequate tools and with all personal protective equipment required, following the instructions detailed in this manual.






**WATER HAMMERS**

A water hammer might cause severe damage to people, pipelines and to the equipment itsefl; it is therefore advised to be very careful and slow when controlling the valves during the opening and closing operations on the plant, to avoid such phenomenon.

**PROTECTIVE CLOTHING**

The operator shall wear suitable safety and protective clothing during each operation on the filter as stated by the existing and applicable safety regulations. Do not wear chains, laces or any other object that might tangle.

				
<p>E' obbligatorio indossare le calzature di sicurezza</p>	<p>E' obbligatorio indossare i guanti protettivi</p>	<p>E' obbligatorio indossare indumenti protettivi</p>	<p>E' obbligatorio indossare gli occhiali di protezione</p>	<p>E' obbligatorio indossare il casco di protezione</p>

**SYMBOLS**

Warning and instructive stickers are applied on the filter, each one positioned close to the equipment's part that might be a source of danger or that needs further technical information. Read and acknowledge the symbols and their meaning carefully before using the equipment.

REGULARLY verify the stickers' presence, positioning and readability and immediately replace them in case of damage or absence by requesting new ones to WONDERFIL Srl.



**WONDERFIL Srl declines any responsibility for damage to things or people caused by the absence or not appropriate preservation of the safety pictograms.**

**CAUTION VESSEL UNDER PRESSURE**

This sticker warns the operator that he might be hit by pressurised fluid jets.



**TECHNICAL INFORMATION**

This sticker shows the direction of the water flow.

**WARNING! A wrong direction of the flow might damage the filter.**



**EARTHING (GROUNDING)**

This sticker shows the filter's earthing point.



## II. HANDLING AND STORAGE

### RECEIPT OF THE GOODS

---

When receiving the equipment, verify that the unit has not been damaged during transportation and that it is complete of all its parts as per purchase order. Pressure gauges and other fragile accessories, which might get damaged during transportation, are supplied disassembled and packed inside dedicated boxes.

In case of visible damage, immediately record it on the transport document by stating: "GOODS ACCEPTED UNDER RESERVE FOR EVIDENT TRANSPORTATION DAMAGE".

Document the damage with pictures and notify them by email or registered mail both to WONDERFIL Srl and to the transport company within a maximum of 8 working days from the receipt.

Late claims that do not follow this protocol will not be considered valid and acceptable.

### DOCUMENTATION

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Make sure that the filter has been delivered together with the following documentation:

- "Extract of the original instructions" Handbook
- USB drive containing:
  - Filter's original instructions
  - ANNEX A – Control panel's instructions (if present)
- Declaration of Proper Constructive Procedure or CE Declaration of Conformity

All the aforementioned documentation shall be kept throughout the entire filter's lifetime. In case of loss or damage of this documentation, please contact the support to obtain a new original copy.

### STORAGE

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The equipment waiting to be installed, packed or unpacked, shall be stored in a covered and dry place protected by weather conditions, dust and sand.



Do not stack other objects on the package.

### HANDLING

---

Handle the packages by complying with the indications provided in this manual and with those indicated on the exterior of the packing itself. Given that the volume and shape do not always allow hand carriage, it is necessary to use specific tools in order to avoid damage to people or things. Those who are authorized to perform such operations shall have specific skills and experience in order to safeguard the safety of people involved and their own.



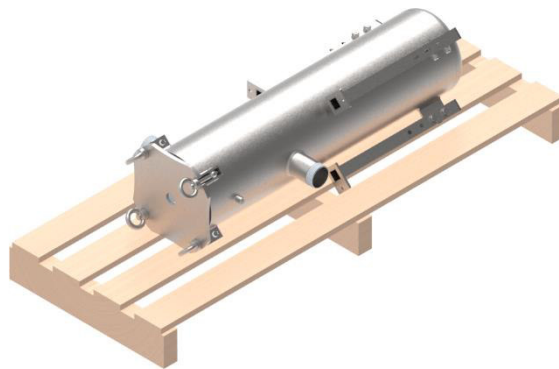
**Handling must be carried out by qualified personnel which shall arrange for all necessary safety conditions to be implemented.**

## Moving the Packages

---

- Prepare a suitable designated area with flat flooring for unloading procedures.
- Use any necessary handling equipment or tools: the choice of the appropriate lifting equipment (cranes, forklifts or hand pallet trucks) must take the package's volume, dimensions, anchoring points and centre of gravity into account. Heavy packages' harness can be carried out by using chains, laces and ropes deemed suitable to lift and handle such weight, which must be pre-emptively verified.
- During handling phases it is always appropriate to keep the package in a horizontal position to avoid loss of stability and/or overturning.
- Make sure that the unit is stable before lifting.
- Evaluate the critical points (e.g. stairs, ramps, disconnected paths, doors and obstacles).

This picture shows the type of packing which is generally used:



Once removed, packing material shall be adequately disposed of in compliance with existing regulations.

Equipment's handling

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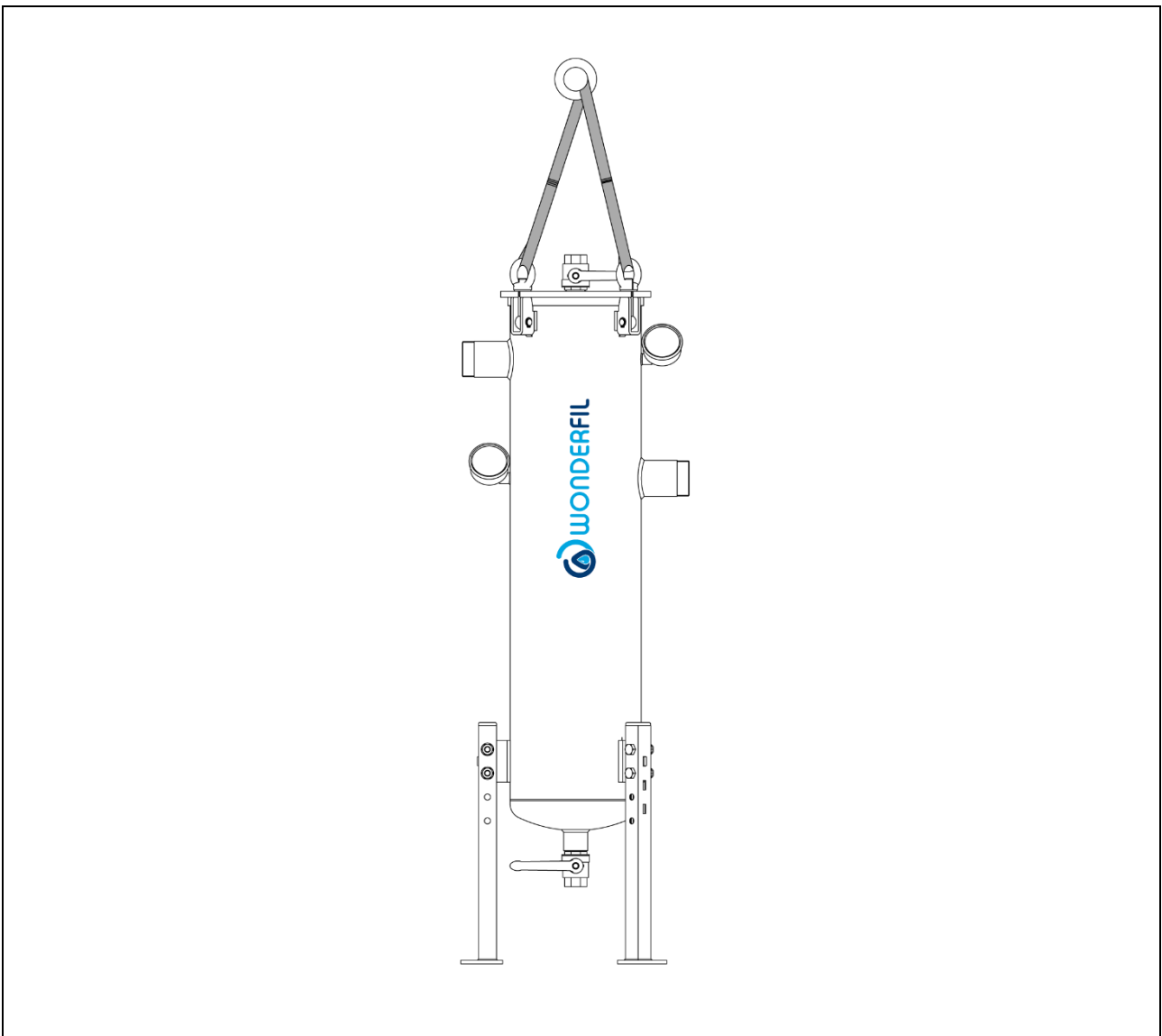
**All operations must be carried out carefully and without sudden accelerations.**



**Make use of certified and suitable accessories such as eyebolts, carabineers, ropes, hooks, etc. during lifting phases. The accessories must be able to lift the required weight.**

The eyebolts on the filter's cover can be used as anchoring points for lifting and moving operations.

Hereafter some examples of lifting of the products subject of this manual:




These images are merely an example and other lifting techniques can be used as long as they comply with the applicable handling requirements and all necessary safety conditions.



To avoid cargo instability or oscillations it is advised to slide the lifting ring to the point where it is aligned with the cargo's center of gravity and lock the ropes under with a clamp (or similar) that prevents scrolling. Assist the movement by hand.

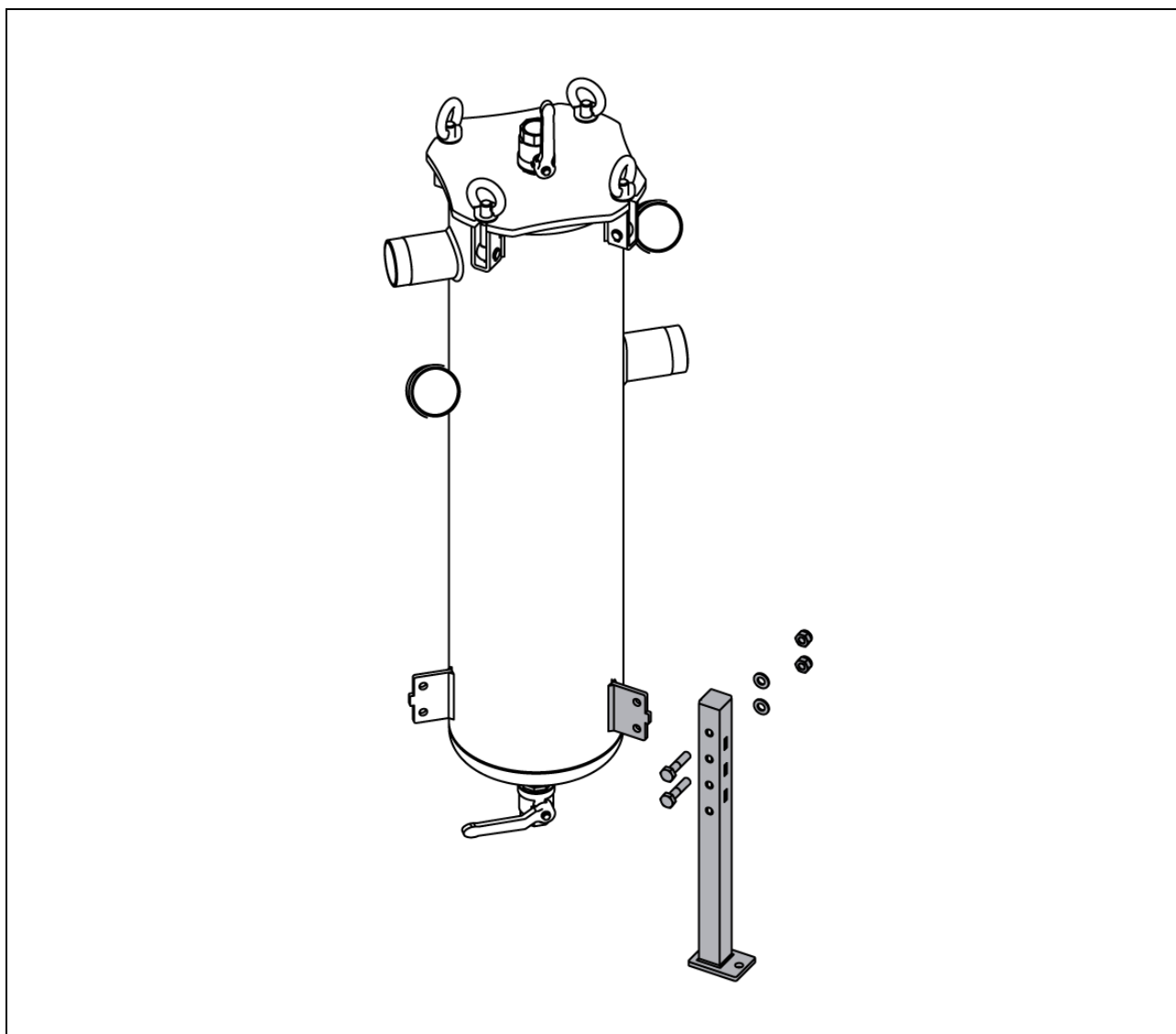
 **Respect applicable moving and lifting prescriptions.**

During lifting and moving phases the load shall remain in a horizontal position; in case of evidence of instability immediately stop and start over.

 It is advised to disassemble the pressure gauges from the filter during the moving phase to avoid possible damage.

Assemblaggio gambe di supporto

WARDFIL filters are equipped with support "legs" that have to be assembled before installation.



### **III. HYDRAULIC CONNECTIONS**

#### General information

---



**All installation and connection phases must be taken into account since the design phase. People who are authorized to perform such operations shall, if necessary, implement a safety plane to safeguard involved people and strictly follow all existing regulations.**

Filter's connectioning and installation must be performed by trained and authorized personnel which must avoid anomalous mechanical stress.

**Strictly avoid:**

- Misalignments between the IN and OUT connections and the respective piping.
- Vibration.
- Water hammers.
- Return flows to the filter.

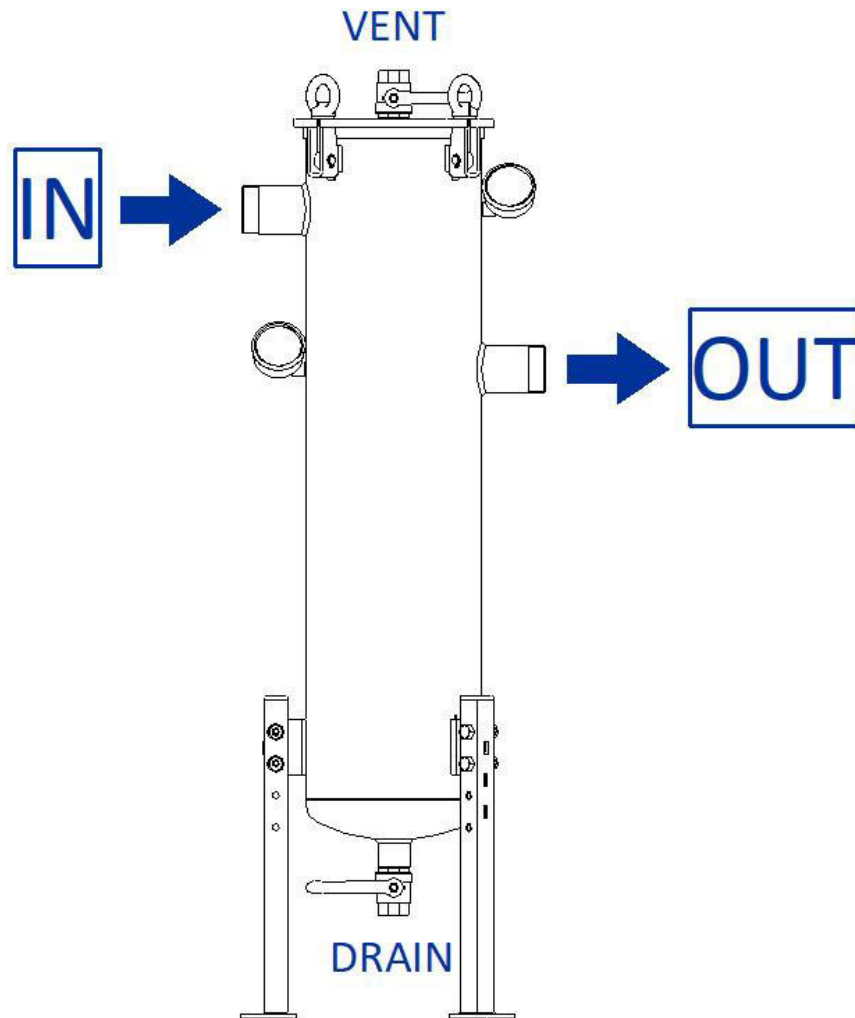
Hydraulic connections weight must be supported with appropriate structures or wall mounting brackets in order to avoid stressing the connections.

Pipelines shall be designed with as few turns and level variations as possible.

In case of malfunctions caused by an incorrect installation WONDERFIL Srl can request for specific variations or modifications to be carried out on the system to guarantee that the filter operates flawlessly.

P&ID

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## INSTALLATION

---

For a correct filter installation, from a hydraulic point of view, respect the following indications and perform the following checks:

1. Install the filter taking care of positioning it in the correct flux direction by following the indications attached on the connections. It is advised to install isolation valves on the inlet (IN) and outlet (OUT) in order to be able to isolate the filter in case of maintenance.
2. It is advised to install a non-return valve downstream to avoid return flows to the filter.
3. It is advised to install anti-vibration joints on the inlet (IN) and outlet (out) connections.
4. Assemble the pressure gauges and accessories included in the supply.
5. Make sure that the connections are properly sealed.
6. Make sure that the feed pressure does not exceed the filter's maximum allowable pressure (engraved on the identification plate).
7. Install a safety valve in the plant to reduce the pressure in case it exceeds the filter's maximum allowable pressure.
8. Make sure that the filter is installed so that there is enough space for maintenance with particular focus on leaving a sufficient distance from the cover to allow for an easy removal of the filtering element; this distance is indicated with an arrow and subscript "M" in the tables at the chapter TECHNICAL DATA, "Constructive Shapes" paragraph.
9. Make sure that the filter is grounded, the grounding/earthing point is indicated by the specific marking.



**The filter's pressure must never exceed the nominal pressure indicated on the identification plate, it is advised to install a safety valve in the plant.**



**A return flow to the filter might cause damage to the filtering element and internal components, it is advised to install a non-return valve on the outlet.**

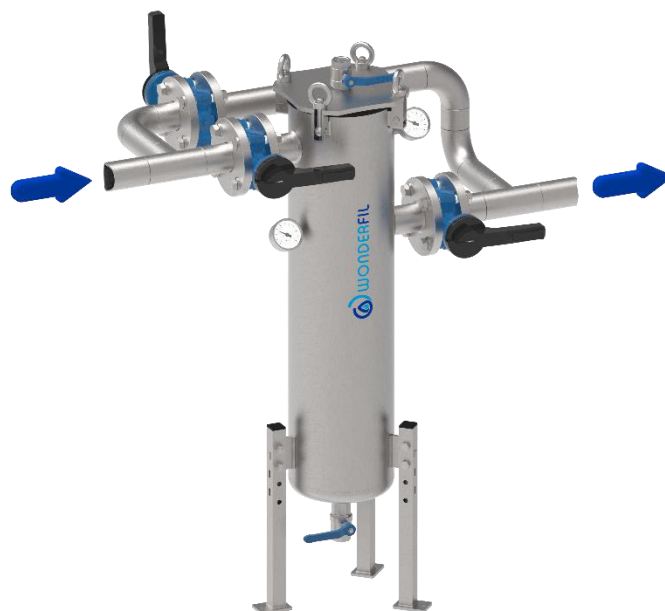


It is advised to install the filter so that there is enough space for maintenance and support its weight.

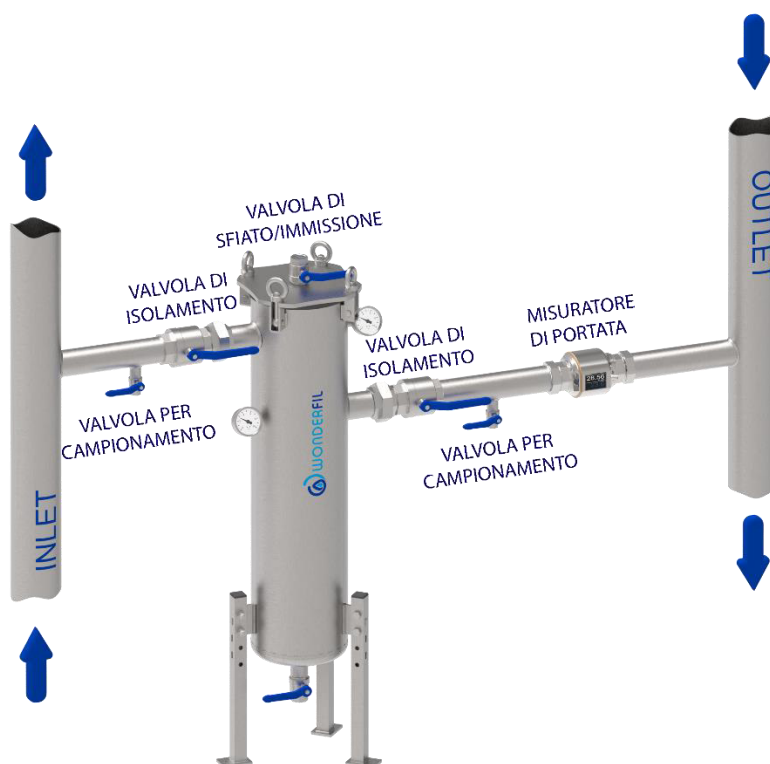
## INSTALLATION EXAMPLES

WONDERFIL Srl usually advises to proceed with the “by-pass installation layout” so that the filter can be isolated from the hydraulic circuit without causing following.

Hereafter some typical installation examples are shown. These layouts are illustrative and can be implemented by further components.



**Installation with Bypass**



**Side-stream installation**

## **IV. ELECTRICAL CONNECTIONS**

### General information

---

WARDFIL are static filters without moving parts or electrical automation systems but require grounding nonetheless. Protective grounding does not include only the electrical system but also other systems and metallic parts (piping, hydraulic system, beams, heating system and so on) so that the building is secured even when struck by lightning.



**Provide for an efficient grounding.**

## V. COMMISSIONING

### PRELIMINARY TESTS

---

Before commissioning it is best to perform the following tests to avoid damage or malfunctionings:

1. Make sure that the isolation valves (not included in the filter's supply) are closed.
2. If any, make sure that the filter's emptying valve is closed.
3. Make sure that the pipes are free from foreign residual particles. It is important to clean the pipeline before commissioning the filter because the dirt can clog the filter during the first commissioning.
4. Check that the filter is correctly connected and installed to the pipeline.

### FIRST COMMISSIONING

---

To start the first filtration, perform the following operations:

1. Slowly open the inlet (IN) isolation valve.
2. Make sure there is no water leakage or get rid of it in case it is present.
3. Slowly open the outlet (OUT) isolation valve.



**WARNING! A sudden opening of the valves can cause water hammers during the plant's commissioning.**

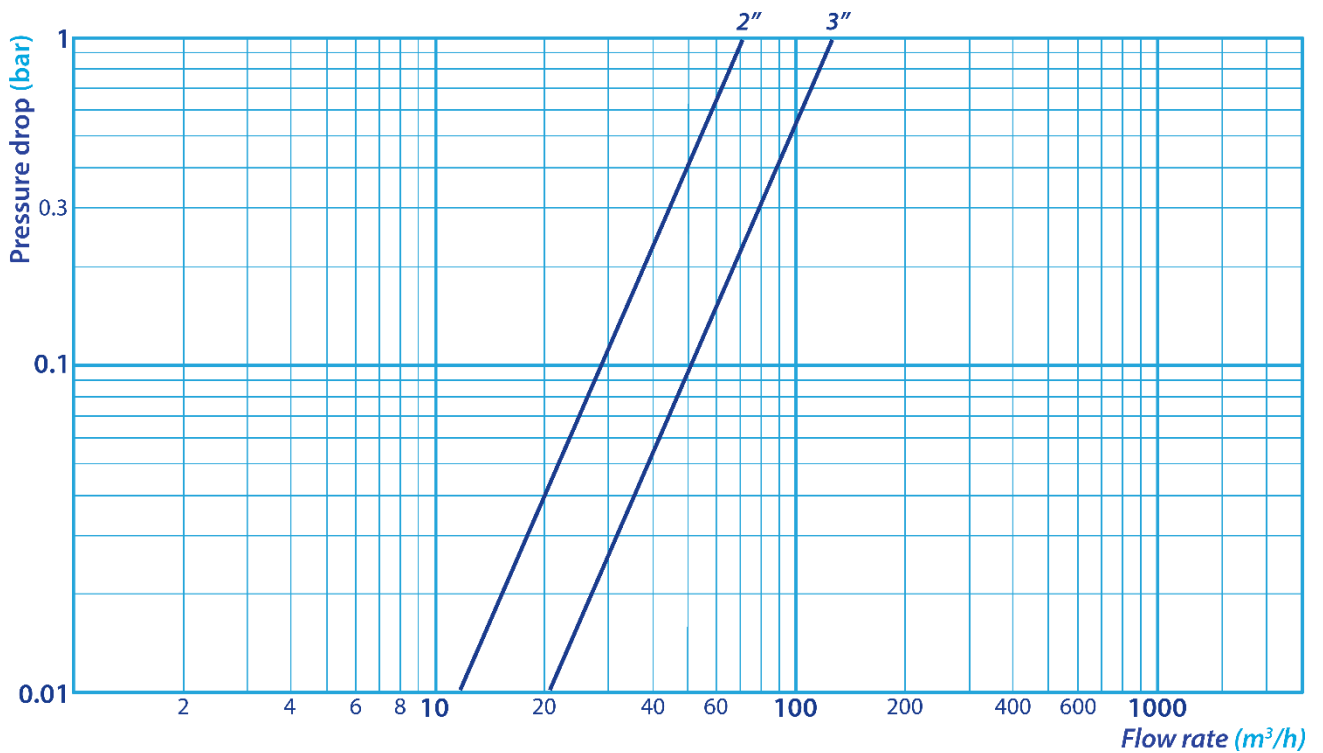
## VI. TECHNICAL DATA

### GENERAL FEATURES

The equipment described in this manual is a static bag filter which requires for an operator's manual maintenance for its periodical cleaning.

The flow always crossed the filtering bag from the inside out.

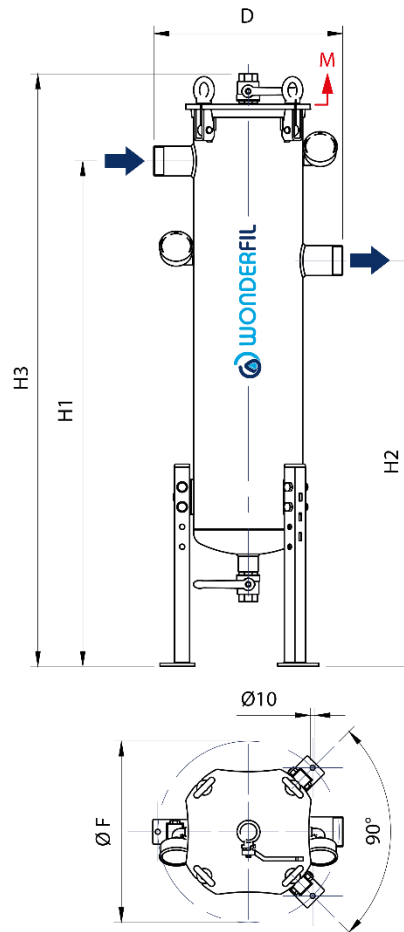
### HOUSING'S HEAD LOSS





**CONSTRUCTIVE SHAPES**

**“Z” Shape SIZE 02**



**M Space and direction necessary for maintenance operations.**

MODEL	IN/OUT	FILTER BAG FILTERING AREA		MAX FLOW RATE		H1	H2	H3	D	M min	ØF	WEIGHT
		[cm <sup>2</sup> ]	[in <sup>2</sup> ]	[m <sup>3</sup> /h]	[l/min]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[Kg]
<b>WDFI 2 Z S2</b>	2" BSPP	4500	697	38*	633*	1015	815	1190	379	850	364	32
<b>WDFI 2 Z S2 GR</b>	2" GROOVED	4500	697	38*	633*	1015	815	1190	379	850	364	32
<b>WDFI 50 Z S2</b>	DN 50	4500	697	38*	633*	1015	815	1190	389	850	364	34
<b>WDFI 3" Z S2</b>	2" BSPP	4500	697	70*	1166*	1015	815	1190	379	850	364	32
<b>WDFI 3" Z S2 GR</b>	3" GROOVED	4500	697	70*	1166*	1015	815	1190	379	850	364	32
<b>WDFI 80 Z S2</b>	DN 80	4500	697	70*	1166*	1015	815	1190	389	850	364	35

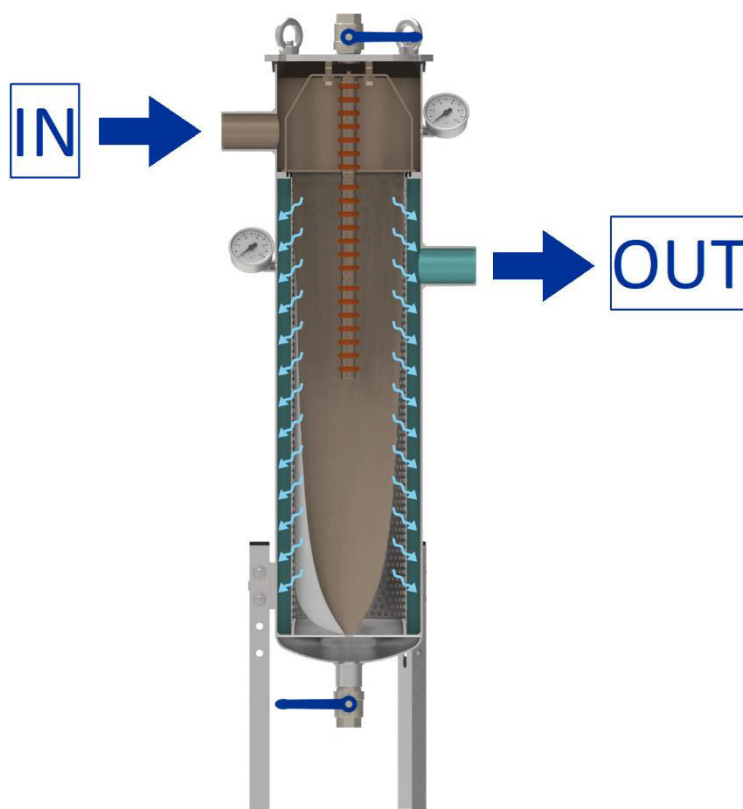
\* Max flow rates refer to the housing without filtering bag.

## FILTRATION PROCESS

---

To be treated raw liquid enters the filter through the inlet connection (IN), suspended solids are retained inside the filtering element and purified liquid flow out of the outlet connection (OUT).

Retained suspended solids are trapped inside the filtering bag, and their progressive build-up creates a differential pressure between inlet and outlet which can be read on the two pressure gauges installed on the filter.



## CLEANING OF THE FILTERING ELEMENT

---

When the differential pressure  $\Delta P$  between the filter's inlet and outlet reaches a value included between **1,2 ÷ 1,7 bar** it is advised to replace the filtering element as soon as possible.

For this procedure please read the following chapter's paragraph "Replacing the filtering element".

## **VII. MAINTENANCE**

### General notes

---

An adequate and correct maintenance represents a crucial factor when it comes to a longer duration of the filter in terms of functioning and performance, granting it an optimal operation over time.



**Maintenance must be performed by qualified personnel which must grant the necessary conditions to safeguard the safety of people directly involved.**



**Maintenance operations must be performed when the filter is stationary, isolated from the system, empty and disconnected from the electric control system (if present).**

## PERIODICAL ORDINARY MAINTENANCE

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The frequency of maintenance depends on the environmental conditions and heaviness of the filter's work, but it is advised to frequently perform the following operations in order to avoid serious problems and unscheduled maintenances:

- Periodically read the inlet (IN) and outlet (OUT) pressure gauges.
- Visually check the integrity of the filter's body.
- Visually check that no leakage is present.
- Keep the stainless-steel bolts lubricated with specific products to avoid seizures.



Rinse the filter's interior thoroughly after each maintenance to clean any impurity that might have deposited.



In case one or more components are found to be damaged or worn, replace them.



The repeated breaking of the filtering element at very close time intervals can happen for many reasons including:

- presence of abrasive or gross particles inside the liquid;
- physical/chemical incompatibility between the filtered liquid and the filtering element;
- water hammers up/downstream.

**N.B.:** The breaking of the filtering element, even if rarely occurring, is an event that cannot be excluded.



Verify the chemical/physical compatibility of detergents and equipment used during the maintenance which will come into contact with the filter during the cleaning.



Periodically check the status of closing cover's gasket; if it is damaged or worn, replace it. In case of frequent deterioration of the same, verify its physical/chemical compatibility with the treated fluid.

## COMPONENTS REPLACEMENT

If during scheduled maintenance, the filtering element or other components are found to be worn or damaged, replacing them by following the instructions detailed hereafter will become necessary.

### Securing the filter

Before performing any maintenance operation, it is necessary to secure the filter by performing the following operations in this sequence:

- Slowly close the filter's outlet valve
- Slowly close the filter's inlet valve
- Open the filter's bottom drain valve and upper vent valve and wait for the filter to be empty.

### Replacing the filtering element

Suspended solids are retained on the inner wall of the filtering element, causing its progressive clogging.

When the differential pressure  $\Delta P$  between the filter's inlet and outlet reaches a value included between **1,2 ÷ 1,7 bar** it is advised to replace the filtering element as soon as possible.



**It is recommended not to exceed a maximum value of  $\Delta P = 1,7$  bar**



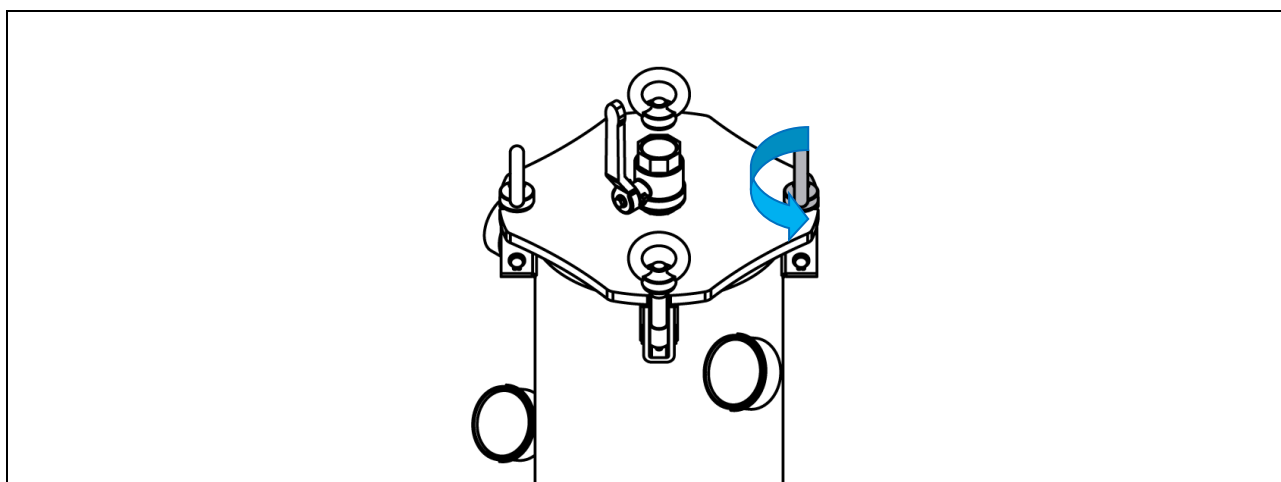
**The filtering bag has a breaking  $\Delta P$  equal to  $\Delta P = 3,5$  bar at 20°C.**



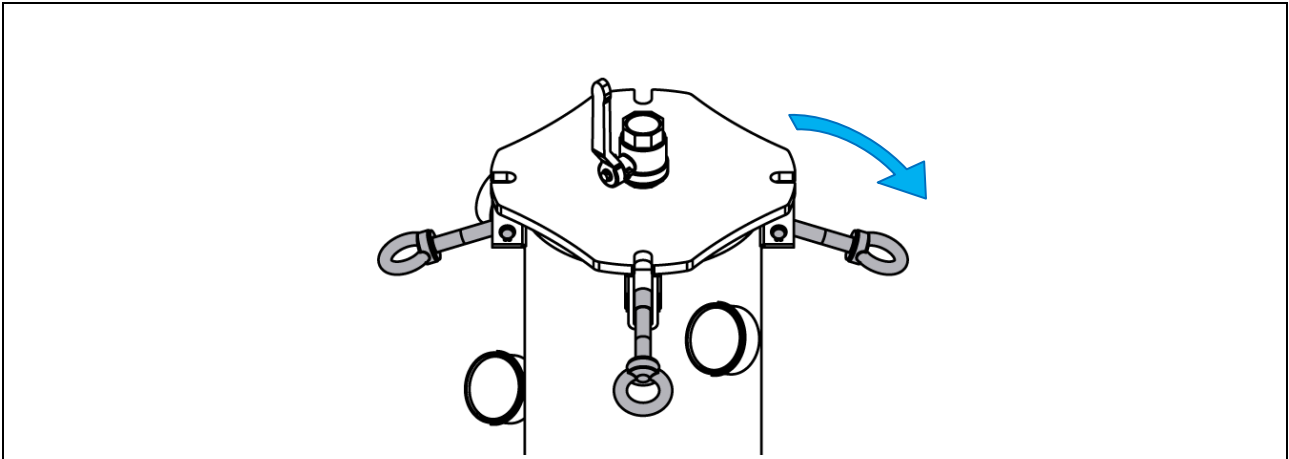
**Cleaning operations must be performed only when the filter has been isolated and emptied.**

Per eseguire la sostituzione dell'elemento filtrante, seguire i seguenti passaggi:

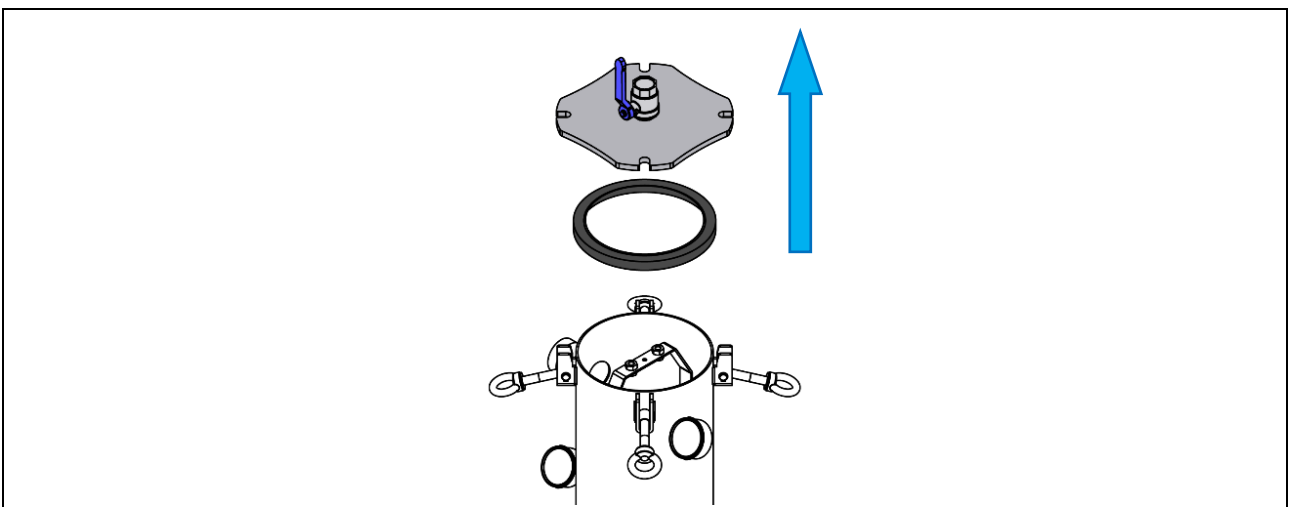
1. Secure the filter as shown in the previous paragraph "Securing the filter".
2. Loosen the tightening bolts.



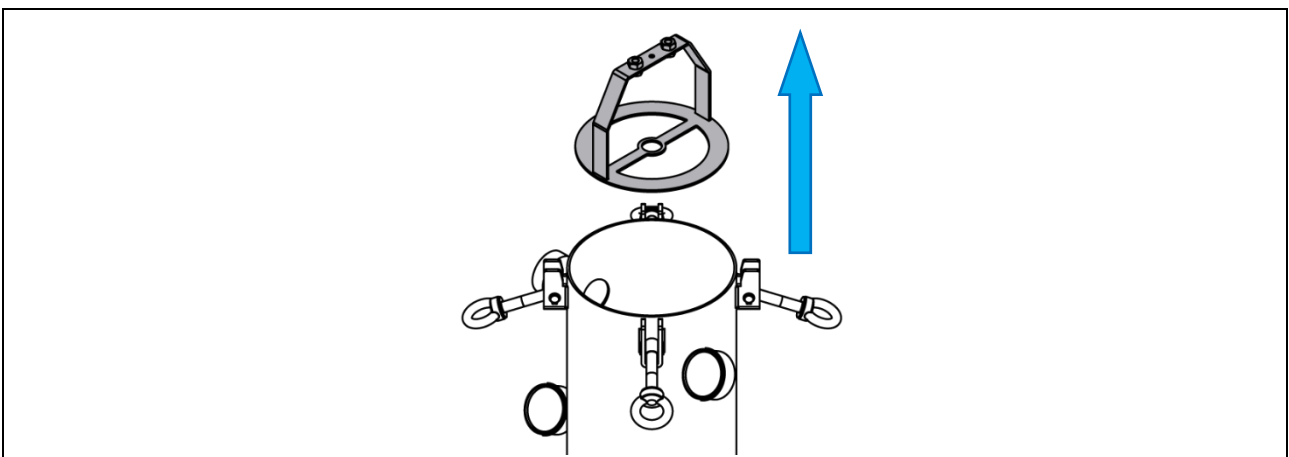
3. Turn the tilting bolts.



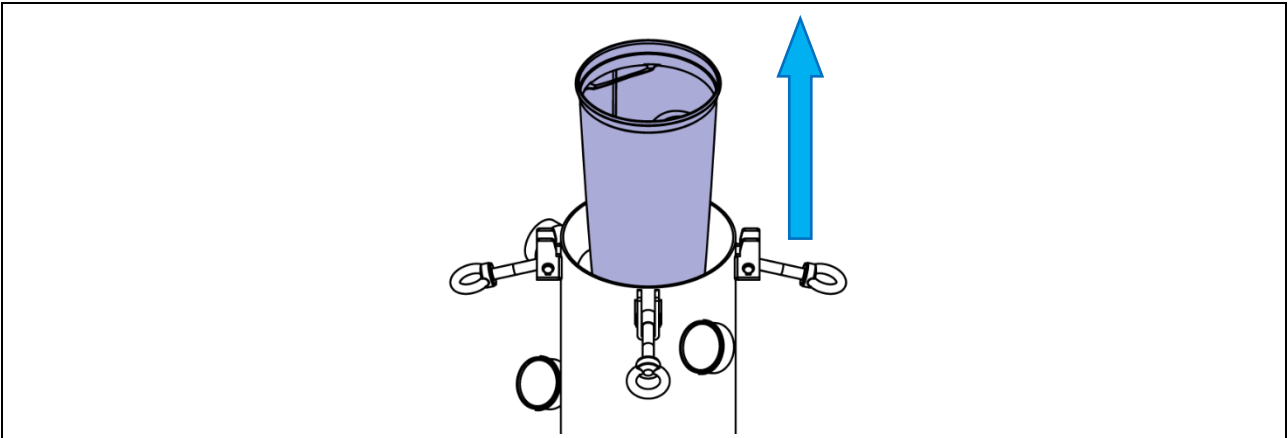
4. Remove the closing cover and body gasket.



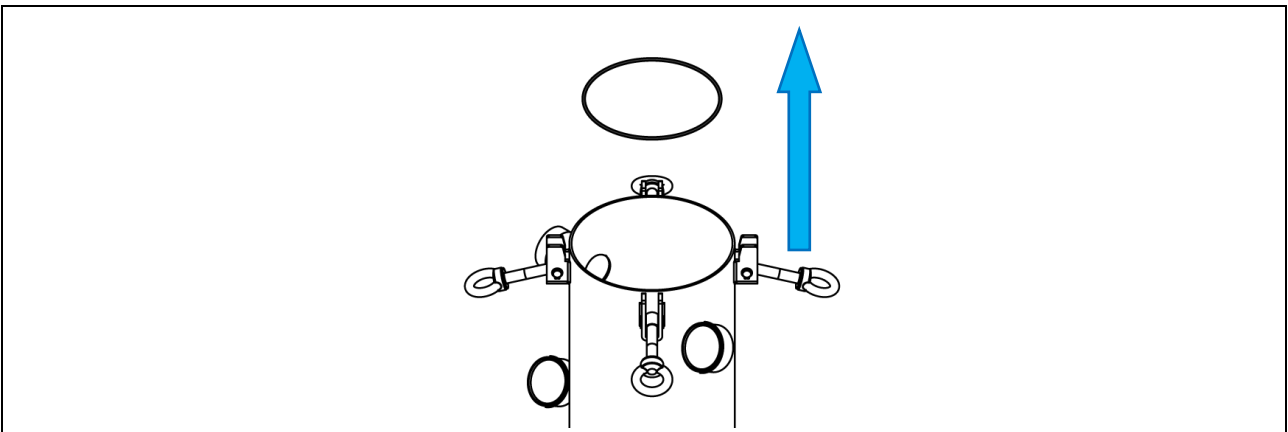
5. Remove the bag-holding spacer.



6. Extract the filtering bag.



7. Check the status of the filtering bag's O-ring sealing gasket. If necessary, replace it with the help of a flathead screwdriver.



8. Rinse the filter in case of internal particles deposit.
9. Follow all the steps backwards and carefully and correctly lock the filter bag to its support.
10. Proceed with the filter's commissioning as detailed in the chapter "COMMISSIONING"



**Check the tightening bolt's lubrication to avoid seizures.**

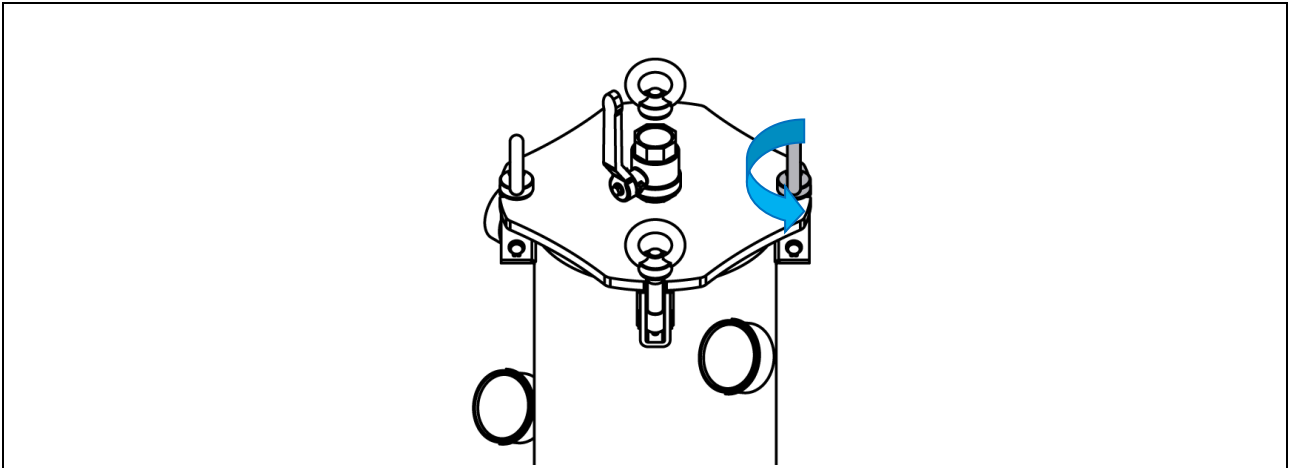


**Tighten the bolts with a tightening torque between 30÷35Nm.**

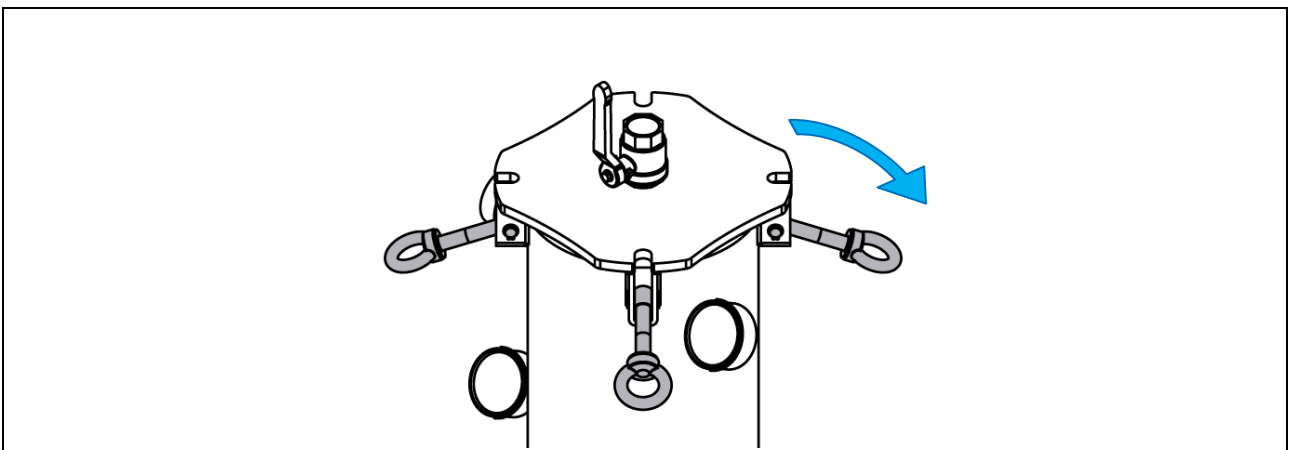
Sostituzione della guarnizione corpo

Per eseguire la sostituzione della guarnizione corpo, seguire i seguenti passaggi:

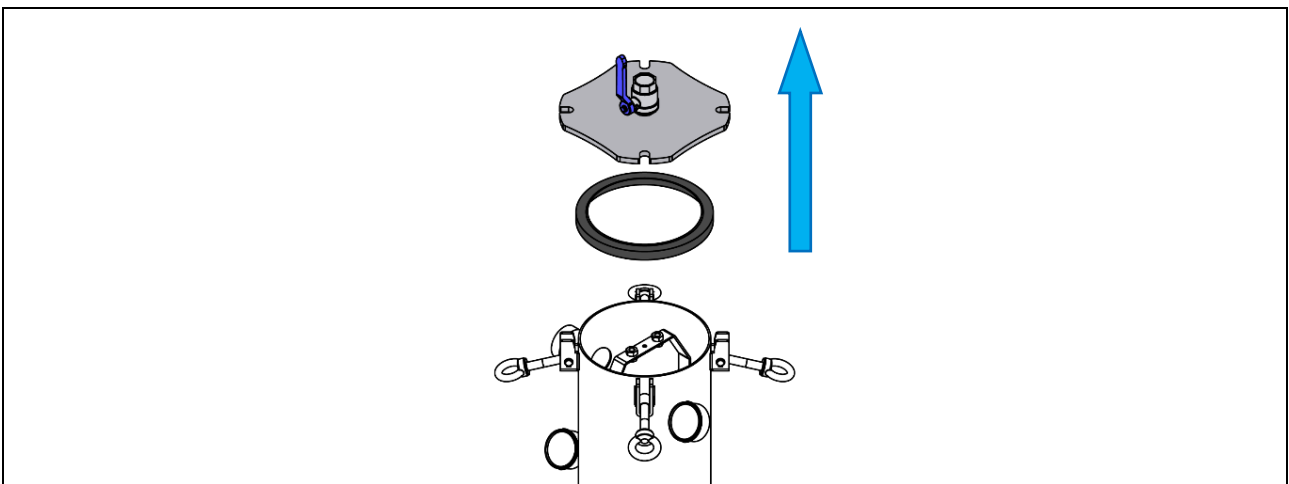
1. Secure the filter as shown in the previous paragraph "Securing the filter".
2. Loosen the tightening bolts.



3. Turn the tilting bolts.



4. Remove the closing cover and body gasket.



5. Replace the body gasket.



6. Follow all the steps backwards and carefully and correctly lock the filter bag to its support.
7. Proceed with the filter's commissioning as detailed in the chapter "COMMISSIONING"



**Check the tightening bolt's lubrication to avoid seizures.**



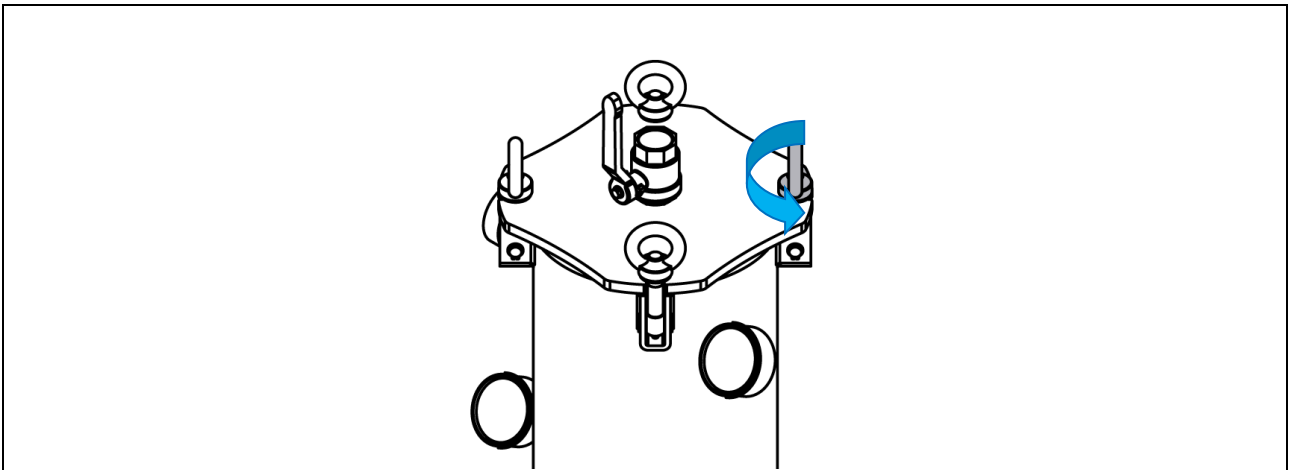
**Tighten the bolts with a tightening torque between 30÷35Nm.**

### Cleaning or replacing magnetic candles (optional)

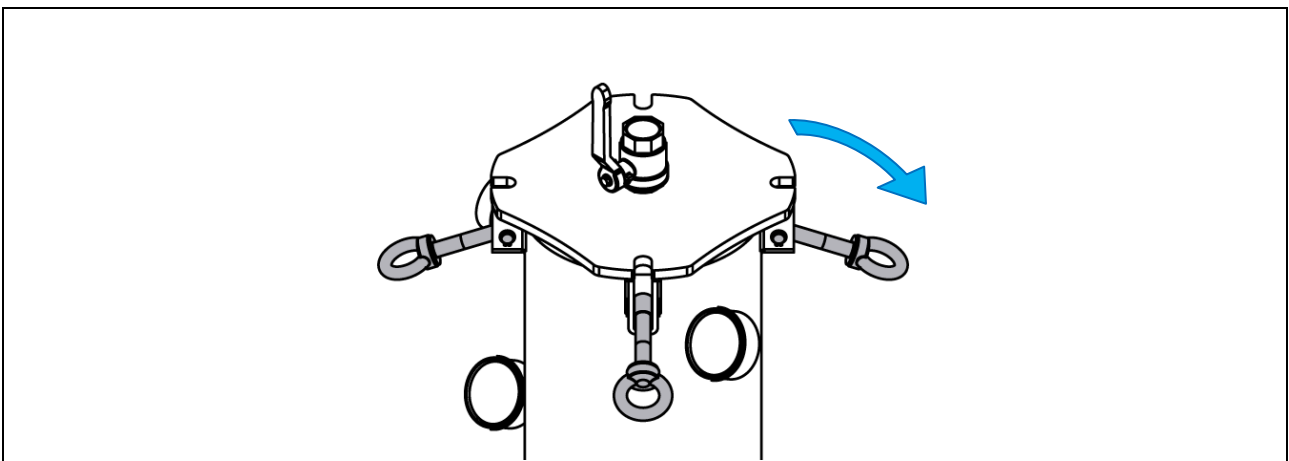
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To perform the cleaning or replacing of the magnetic candles, follow the following steps:

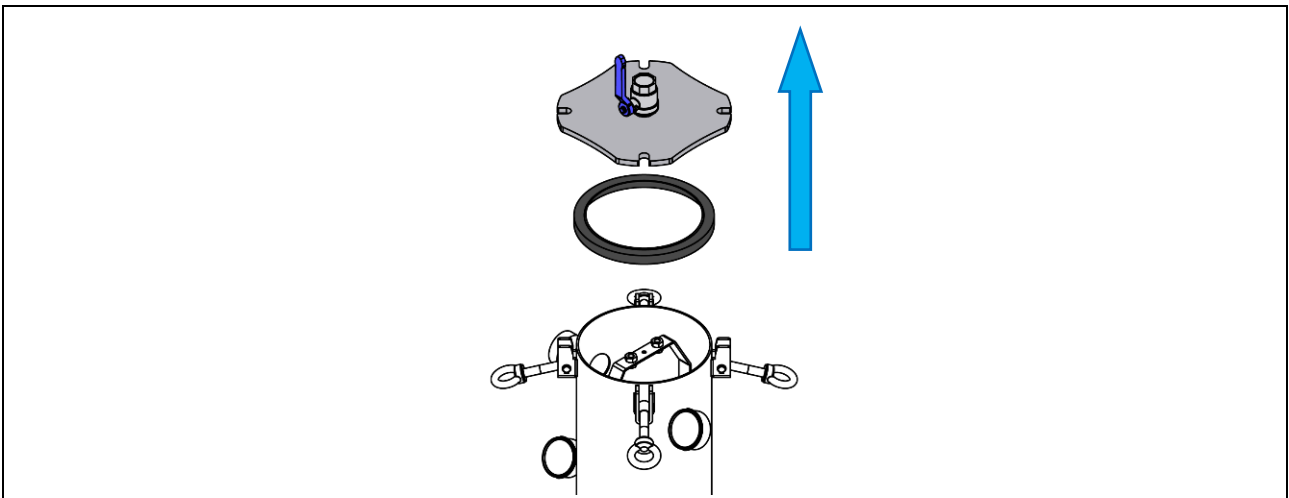
1. Secure the filter as shown in the previous paragraph "Securing the filter".
2. Loosen the tightening bolts.



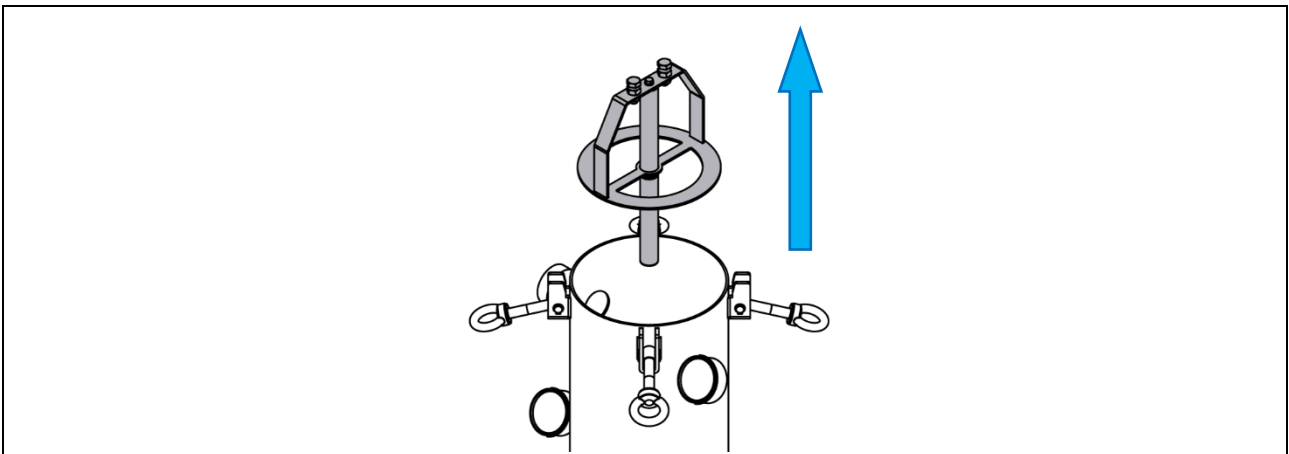
3. Turn the tilting bolts.



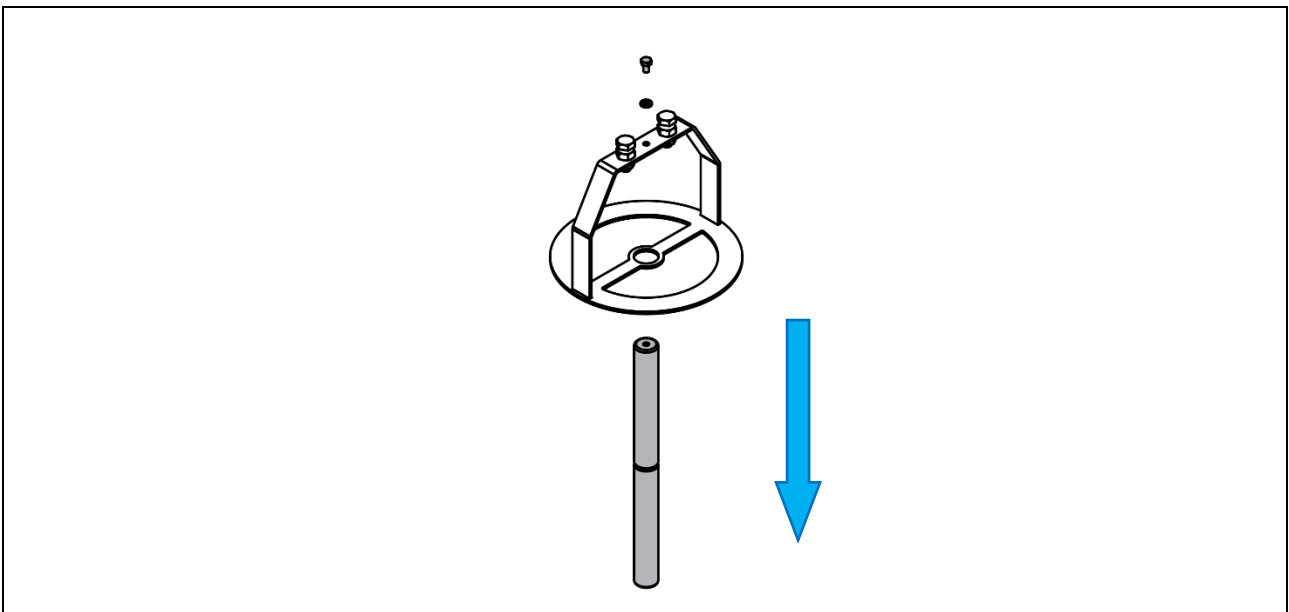
4. Remove the closing cover and body gasket.



5. Remove the bag-holding spacer to which the magnetic candles are connected.



6. The magnet kit is fixated on the spacer thanks to a screw which, if unscrewed, allows to unthread the candles to clean or replace them.



7. Clean the magnets by removing the ferrous particles. To facilitate the cleaning, it is possible to unscrew every single magnet.



**In order to avoid accidents or injuries, proceed with caution when handling magnets because the magnetic field is particularly attractive. In particular, be careful not to approach ferrous objects such as pipelines or tools and be careful when two magnets are close.**

8. Check the status of the filtering bag and replace it if necessary, as shown in previous paragraphs.
9. Follow all the steps backwards and carefully and correctly lock the filter bag to its support.
10. Proceed with the filter's commissioning as detailed in the chapter "COMMISSIONING"



**Check the tightening bolt's lubrication to avoid seizures.**



**Tighten the bolts with a tightening torque between 30÷35Nm.**

## VIII. TROUBLESHOOTING

As an example, hereafter some of the most common anomalies and their fixes are detailed.

### Anomaly 1

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Breaking of the filtering bag

#### Solution

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In ordinary conditions the filtering bag does not break, the users are advised to periodically check its integrity status during maintenance operation and to replace them at least once or twice over 1 year.

To preserve its integrity, it is very important to avoid water hammers up and downstream and never exceed the maximum delta P value indicated in this manual.

### Anomaly 2

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Frequent wear of the gaskets.

#### Solution

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Gaskets manufactured by WONDERFIL are produced with top-quality material, it is advised to check their integrity status during ordinary maintenances and perform at least one or two replacements over 1 year.

To preserve the integrity, it is crucial to avoid exceeding the maximum working temperature engraved on the filter's identification plate and avoid the contact with corrosive substances for EPDM mixtures.

-  For information about the other available mixtures, it is advised to contact WONDERFIL and provide details on the chemical substances inside the fluid.
  
-  For any other anomaly not described in this manual, please contact WONDERFIL Srl.

## IX. DECOMMISSIONING

### Storage

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If the filter is not going to be used for a certain amount of time, the following operations are advised: Completely empty the filter.

- Clean the filter from any residuals or deposits.
- Leave the filter empty and dry.
- Cover the filter with a waterproof cloth.
- Keep the filter safe from weather conditions.

### Disposal

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If for any reason it is decided to dispose of the filter, it is necessary to follow some essential rules to safeguard the environment:

Sheaths, flexible pipes, plastic or non-metallic material must be disassembled and disposed of separately.

It is mandatory to comply with the existing regulations when it comes to producing, handling, gathering and disposing of waste material.



#### **DISMANTLING, DEMOLISHING AND DISPOSAL**

Rules that regulate the dismantling, demolishing and disposal of the components, material and polluting substances are different between each Country of use. It is recommended to follow the existing rules adopted by the bodies responsible



Improper disposal of the waste material can severely damage the environment.



It is recommended to directly address to a waste-disposal specialized company.

## **X. WARRANTY CONDITIONS**

WONDERFIL Srl filters are guaranteed for a duration of 1 year from the delivery date indicated on the transport document.

Warranty covers all manufacturing and material defects and provides for replacement of the components or repairing of the damaged parts exclusively by WONDERFIL Srl.

It should be noted that there is an internal procedure concerning “Means of returning goods for warranty replacement”

### **EXCLUDED FROM WARRANTY COVERAGE:**

- Components subject to wear.
- Any damage or malfunction cause by an incorrect usage or installation.
- Any damage arisen from the inobservance of the periodic maintenance operations specified in this manual.
- Any damage or malfunction caused by non-original or incorrect replacement spare parts
- Any damage or malfunction caused by an incorrect preservation, storage or transportation.
- Any damage arisen from any operation, deliberate or not, that deviates from what specified in this manual.
- Any damage caused by modifications or installation of secondary products which have not been approved by WONDERFIL Srl that have a negative impact on the functionality/efficiency of the filter.