







# FilBlack

Backwashable self-cleaning filters

Model: FilBlack FBK4000

# Backwashable self-cleaning filters **FilBlack FBK4000**

A self-cleaning filter is a type of filter specially designed to remove all suspended solids in surface waters (rivers, lakes, seas), wells and spring waters while automatically removing suspended solids inside the filter and guaranteeing:

-  **Time saving**  
Eliminates or reduces the time needed to replace cartridges and filtering bags
-  **Cost saving**  
Eliminates or reduces the use of cartridges and filtering bags
-  **Reduction of investment costs**  
Self-cleaning filters are much cheaper than classical sand filters
-  **Reduced installation footprint**  
Self-cleaning filters take up less space compared to classical sand filters



The backwashable self-cleaning filters manufactured by Everblue, denominated **FilBlack FBK4000**, are used to remove particles with diameter between 800 and 50 micron inside fresh, brackish and sea water in quantities that don't exceed 100 ppm of TSS (Total Suspended Solids).

Depending on the applications, the functional limit parameters can be exceeded after verification and subsequent authorization by Everblue's technicians

The peculiarity of Everblue backwashable self-cleaning filters is the ability, through a process called "regeneration", to rapidly clean themselves in complete autonomy using a very limited quantity of water.

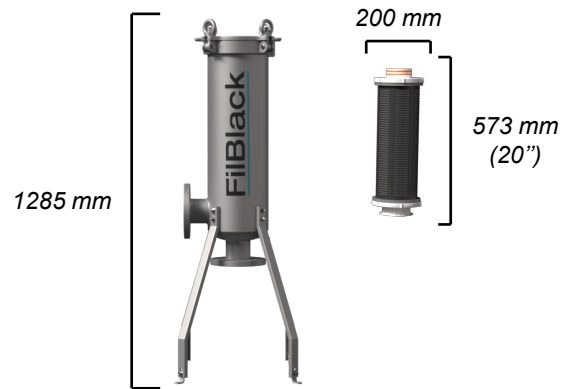


*the solutions  
technologically  
more advanced for the  
filtration  
with self-cleaning  
filters*

# Backwashable self-cleaning filters **FilBlack FBK4000**

**FilBlack FBK4000** backwashable self-cleaning filter are produced in different sizes:

The main features of **FilBlack FBK4000** backwashable self-cleaning filter are:



**FilBlack FBK4000 1x20"**  
Contains 1 cartridge of 20"  
Flow rate up to 18 m<sup>3</sup>/h



**FilBlack FBK4000 2x20"**  
Contains 2 cartridges of 20"  
Flow rate up to 36 m<sup>3</sup>/h



## High flow

*Products with lengths (1x20" e 2x20"), diameters (8"- 200mm) and connections (3"- DN80) such as to ensure flow rates from 18 m<sup>3</sup>/h to 36 m<sup>3</sup>/h*



## High pressure resistance

*Possibility to operate up to 10 bar*



## Absolute resistance to corrosion

*Guarantee of long life thanks to the treatment of micropallinatura*

# Why choose FilBlack FBK4000: structure

Backwashable self-cleaning filter **FilBlack FBK4000** are made of 3 main parts:

## 1 CARTRIDGES

The filter basket is the “operational” part of the filter, it is made entirely of plastic material (PVC) inside which there are two polypropylene drainage nets and a polyester filter net; this allows you to make the most of the entire filter surface of the basket. The filter basket retains water particles larger than 50 µm (0,05 mm) with a high efficiency of 90%.

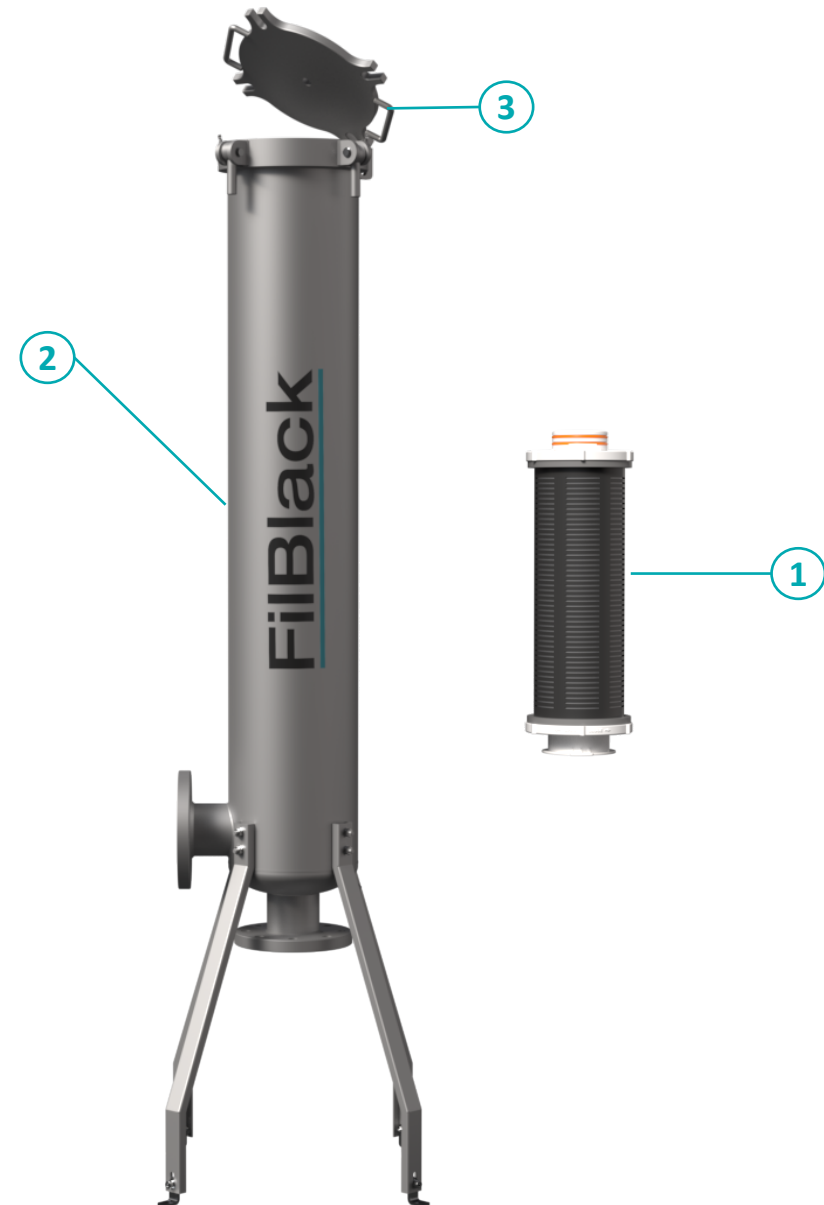
## 2 FILTER BODY

Made of AISI 316L steel and treated by passivation, pickling and micropalling processes, it can work with brackish waters having salinity below 5000 ppm of TDS (Total Dissolved Solids).

The filter body is made in such a way as to make possible the installation both vertical and horizontal, without the need to use particular brackets, but allowing the fixing through the connections (IN and OUT). Strength and solidity, moreover, allow it to work at a maximum pressure of 10 bar.

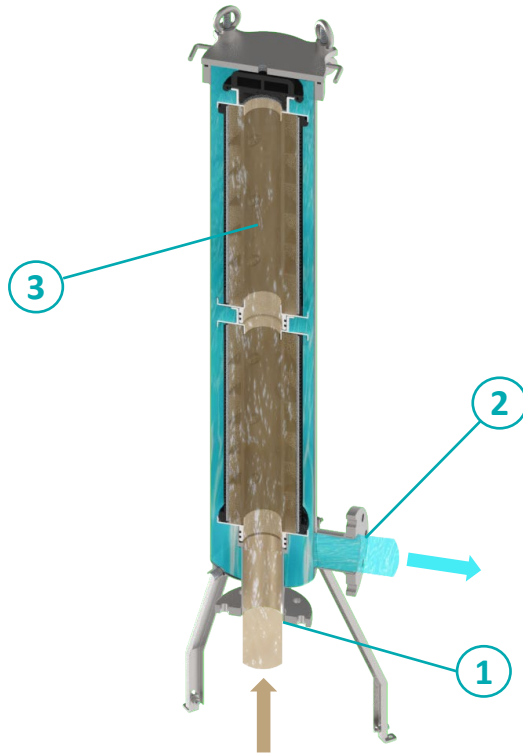
## 3 FILTER CAP

Made of the same AISI 316L steel as the filter body, treated by passivation, pickling and micro-lining processes, it can work with brackish water with a salinity below 5000 ppm TDS (Total Dissolved Solids).



# FilBlack FBK4000 operation: work

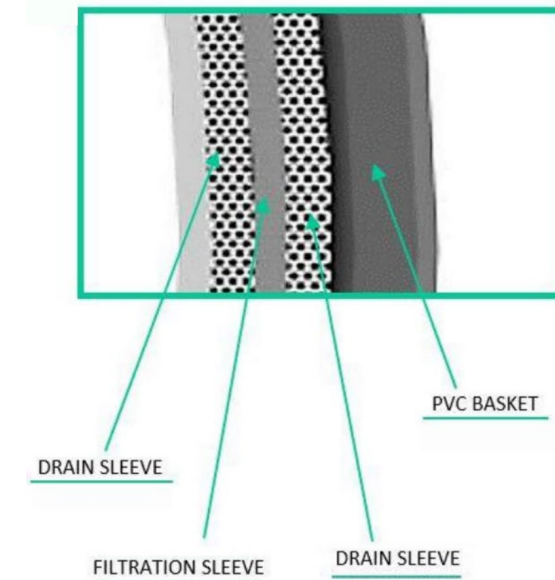
The water to be filtered enters through the inlet of the filter (1). It then filters from the internal part to the external part of the backwashable filter cartridge (3).



Foreign particles and suspended solids larger than the filtration degree of the cartridge are retained by the meshes of the filter cartridge net and accumulate progressively on it. The filtered water then comes out from the filter outlet (2).

The washable cartridge (3) consists of a micro-woven PVC basket supporting 3 different nets that allow effective and durable filtration.

- Polypropylene drainage net (placed between the PVC basket and the polyester filter net).
- Polyester filter net (carries out the filtration process)
- Spacer net (protects the filter net and maintains the correct distance between the filter net and the filter nozzle)

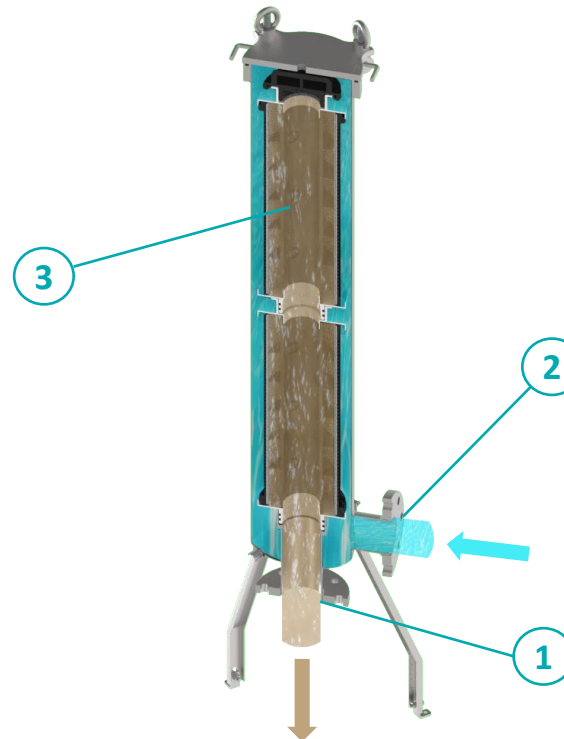


## FilBlack FBK4000 operation: backwash

The foreign particles and the suspended solids retained on the surface of the backwashable filter cartridge (3) progressively occlude the meshes of the net, increasing the pressure drop. Thus, a pressure difference ( $\Delta P$ ) will begin to exist between the inlet pressure gauge and the outlet pressure gauge. At a set value of  $\Delta P$  (variable between 0.3 ÷ 1 Bar) it is necessary to start the backwash cycle.

During this cycle, the backwash water enters through the filter outlet (2). The flow of this water is distributed equally on the outside of the backwashable cartridge (3), then crossing it from the outside to the inside. The backwash water then comes out from the filter inlet (1).

This process causes foreign particles and suspended solids to detach from the surface of the backwash filter cartridge (3) and to be conveyed towards the backwash drain. The duration of this operation must be at least 10 seconds, at the flow rate and backwash pressure indicated in the technical data sheet of the backwashable filter. In any case, the effective duration of the backwash must be extended by a sufficient time to convey the backwash drain all the volume of water contained inside the pipeline between the filter outlet and the exhaust valve.

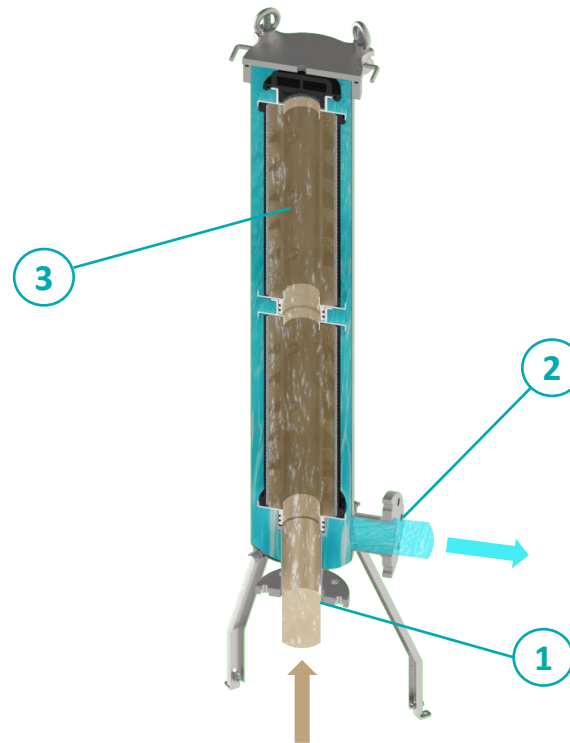


## FilBlack FBK4000 operation: rinsing

In order to avoid subsequent contamination of the filtered water downstream of the filter, it is always better to provide a rinsing phase.

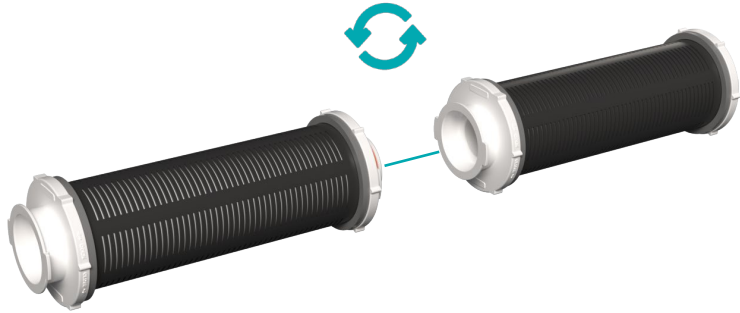
In this, the water to be filtered enters through the inlet of the filter (1). It is filtered by the backwashable filter cartridge (3) in the manner already described above. The water then exits from the filter outlet (2).

The rinsing duration must be performed at the flow rate and operating pressure of the backwashable filter. In any case, the actual duration of the described operation must be extended by a sufficient time to convey to the drain all the volume of water contained inside the pipe between the filter inlet (1) and the exhaust valve.



## Why choose **FilBlack FBK4000**: easy maintenance

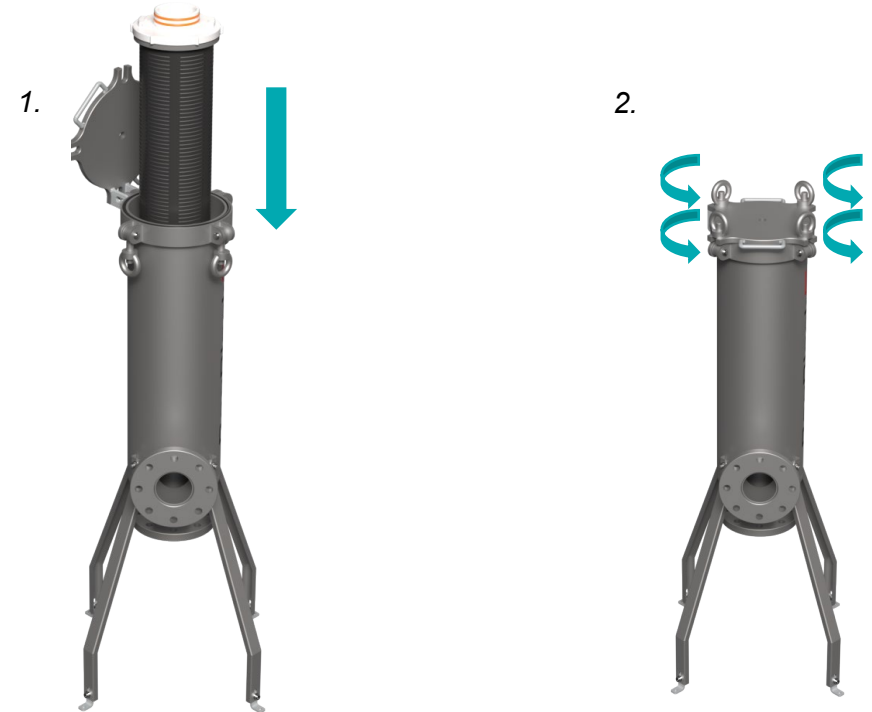
- A** Insert the cartridges one on top of the other, then rotate clockwise all the way



- B** Insert the handle in the cartridges block, and turn it clockwise all the way



- C** Insert the cartridge block, complete with handle, into the body of the **FilBlack FBK4000** container (1). Next, close the head of the container and screw the eyes clockwise until the end of the course (2):



*To remove the cartridge from the backwashable self-cleaning filter **FilBlack FBK4000** proceed in reverse with respect to installation. Inserting and removing cartridges is very easy and takes only couple of minutes.*

# Why choose **FilBlack FBK4000**

## Uniqueness

Backwashable self-cleaning filters **FilBlack FBK4000** are **unique** products because:

- They are the combination of the best technologies currently available on the market.
- They are produced in 2 different lengths that are easily assembled into batteries with special assembly kits (frame and manifolds).
- They are designed to accommodate a multi-layer cartridge that allows optimal filtration



## Simplicity

Backwashable self-cleaning filters **FilBlack FBK4000** are **easy** to use:

- A single operator opens and closes the **FilBlack FBK4000** container manually in a few minutes.
- The **FilBlack FBK4000** cartridges are inserted and removed quickly by coupling to one another thanks to the special bayonet mount.
- They have 4 different configurations, obtained by rotating the body and inverting the position of the caps.



## Why choose FilBlack FBK4000: modularity

Backwashable self-cleaning filters **FilBlack FBK4000** allow the construction of ideal **modular** batteries to meet all flow rates at reduced costs.



**FilBlack FBK4000**  
FBK4000-2RS  
Flow rate up to 72 m<sup>3</sup>/h



**FilBlack FBK4000**  
FBK4000-3RS  
Flow rate up to 108 m<sup>3</sup>/h



**FilBlack FBK4000**  
FBK4000-4RS  
Flow rate up to 144 m<sup>3</sup>/h

## More info



**Data Sheet**  
FBK4000



**Case History**  
FBK4000



**Technical Courses**



# Contact Us



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