

Informative brochure
Filblack FBK2000A – Automatic self-cleaning filters

FILBLACK FBK2000A Self-cleaning filters

Introduction

This manual is created to offer EVERBLUE'S customers all the necessary tools in order to choose the type of self-cleaning filter that best suits their needs.

To better understand this manual, you need to understand the filtration process, the filtering septa and the efficiency of the filter.

The technical manual called "FILTRATION" contains all the necessary information to understand the functioning and the advantages of the self-cleaning filters.

What is a self-cleaning filter?

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:

- work continuity
- 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 choice of the correct filter

The choice of the self-cleaning filter depends on the following information:

- size, shape and nature of the particles you need to remove
- quantity of these particles
- nature and volume of the fluid to filter
- flow
- pressure of the system
- compatibility of the filtering tool with the fluid
- temperature of the fluid
- filtering grade requested
- application

By comparing the information available with the data sheets of the products, it's easy to choose the self-cleaning filter you need.

You can also choose the self-cleaning filter using the EVERBLUE SELECTOR program available on our website www.everblue.it.

Automatic self-cleaning filters with suction nozzles

The automatic self-cleaning filters with suction nozzles manufactured by EVERBLUE, **FILBLUE FBL2000A** e **FILBLACK FBK2000A** 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).

Nevertheless, depending on the applications, the functional limit parameters can be exceeded after verification and subsequent authorization by EVERBLUE's technicians.

The peculiarity of EVERBLUE automatic 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.

FILBLACK FBK2000A

FILBLACK FBK2000A self-cleaning filters are made of 3 main parts:

- FILTER BODY

Made of stainless steel Aisi 316 L and treated through passivation, pickling and micro-shot peening processes, it can work with brackish water with a salinity lower than 5000 ppm of TDS (Total Dissolved Solids) it is perfectly compatible with all kinds of waters.

The filter body is made in such a way as to make it possible to install both vertically and horizontally, without the need to use special brackets, but allowing fixing through the connections (IN and OUT). Furthermore, robustness and solidity allow it to work at a maximum pressure of 8 bar

- FILTRATION CARTRIDGE

Entirely made of plastic material (PVC and PP) they are the elements necessary for filtration and for the "regeneration" system.

Inside, a rotating system in which the basic elements are the suction nozzles, allows the cartridge to continue filtering even during the regeneration and cleaning process of the net.

- FILTER COVER

Made following an in-depth study, this assembly of components constitutes the soul of the filter, which is what makes it a completely autonomous and automatic product in all respects. The control panel, a basic element for the lid, allows constant monitoring of operation and allows the management of all the filter functions.



Modello: **FILBLACK FBK2000A**

Flow rate: from 25 m³/h to 300 m³/h

Micron: 50 μ, 80 μ, 125 μ, 200 μ, 300 μ, 500 μ, 800 μ

Sizes: DN 50 FLANGE EN1092, DN 80 FLANGE EN1092, DN 100 FLANGE EN1092, DN 125 FLANGE EN1092, DN 150 FLANGE EN1092, DN 200 FLANGE EN1092



The main features of the self-cleaning filters **FILBLACK FBK2000A** are:

- REMOVAL OF DEPOSITS THANKS TO SPECIAL SUCTION NOZZLES
- SUITABLE FOR REMOVING MOST SUSPENDED SOLIDS
- DOES NOT INTERRUPT THE WATER FLOW DURING THE REGENERATION PHASE-



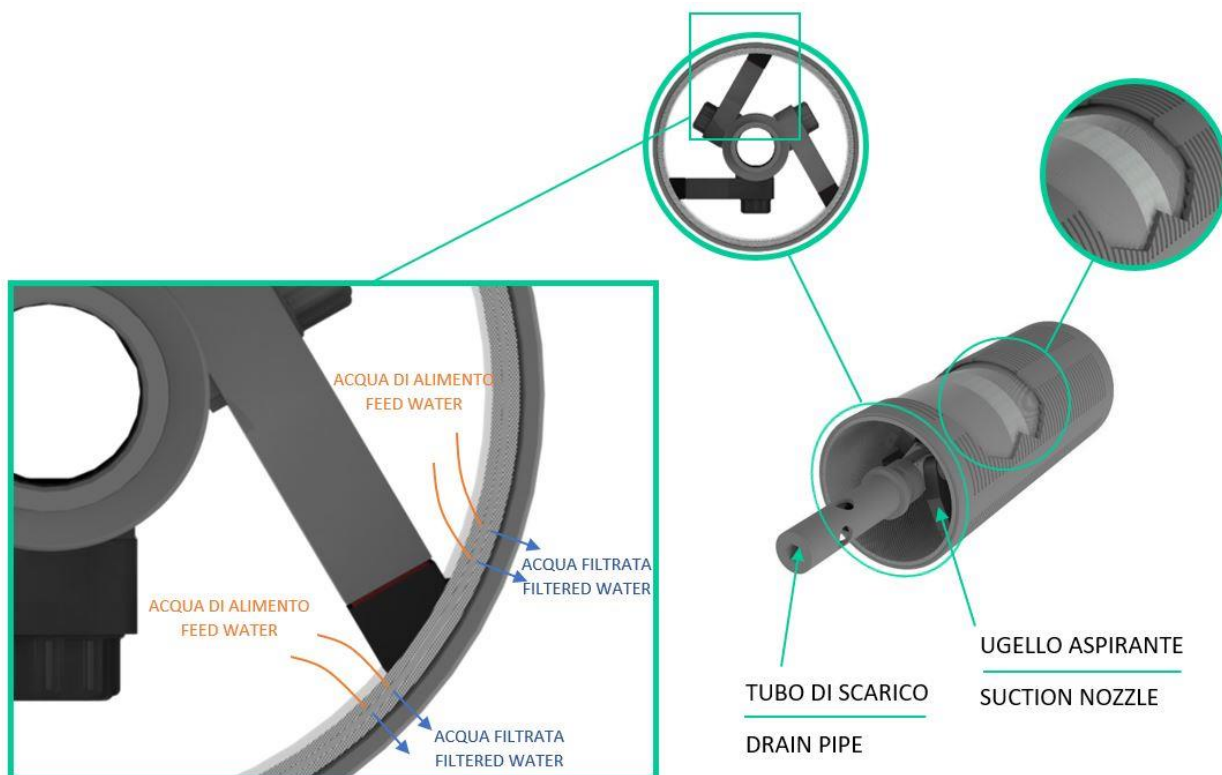
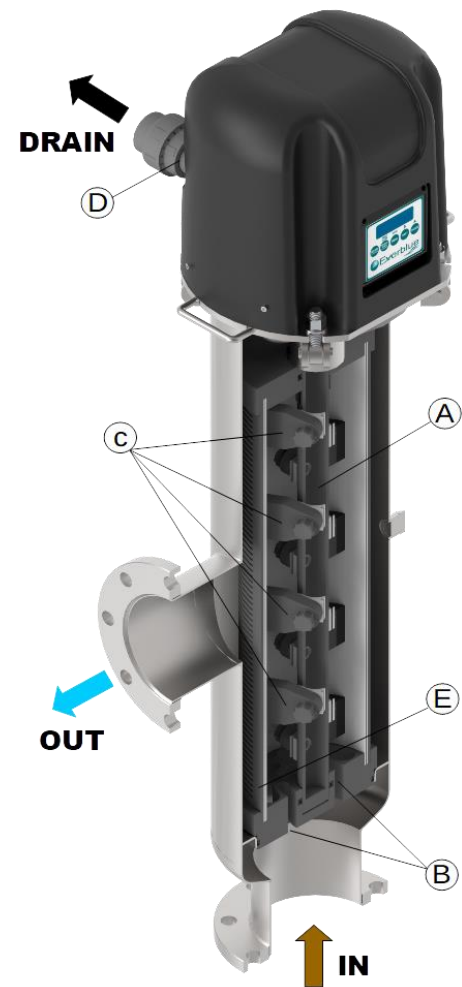
Functioning

Water enters the filter (IN) it goes through the tube (B) from the outside to the inside, then it is distributed inside the filtering mesh (E), which retains all suspended solids larger or equal to the degree of filtration installed. The filtered water leaves the filter (OUT).

Before the self-cleaning filter you must install a pre-filtration filtering basket to block all solids larger than 3 mm that could obstruct the suction nozzles compromising the washing effectiveness and damaging the filtering net, compromising the effectiveness of the filter and its integrity

The filtering cylinder (E) is made of a micro-cracked PVC basket that supports 3 different meshes that allow effective and long-lasting filtration:

- draining polypropylene mesh (placed between the PVC basket and the polyester filtering mesh)
- polyester filtering net (carries out the filtration process)
- separating net (protects the filtering net and maintains the correct distance between the filtering net and the filtering nozzle)



Regeneration

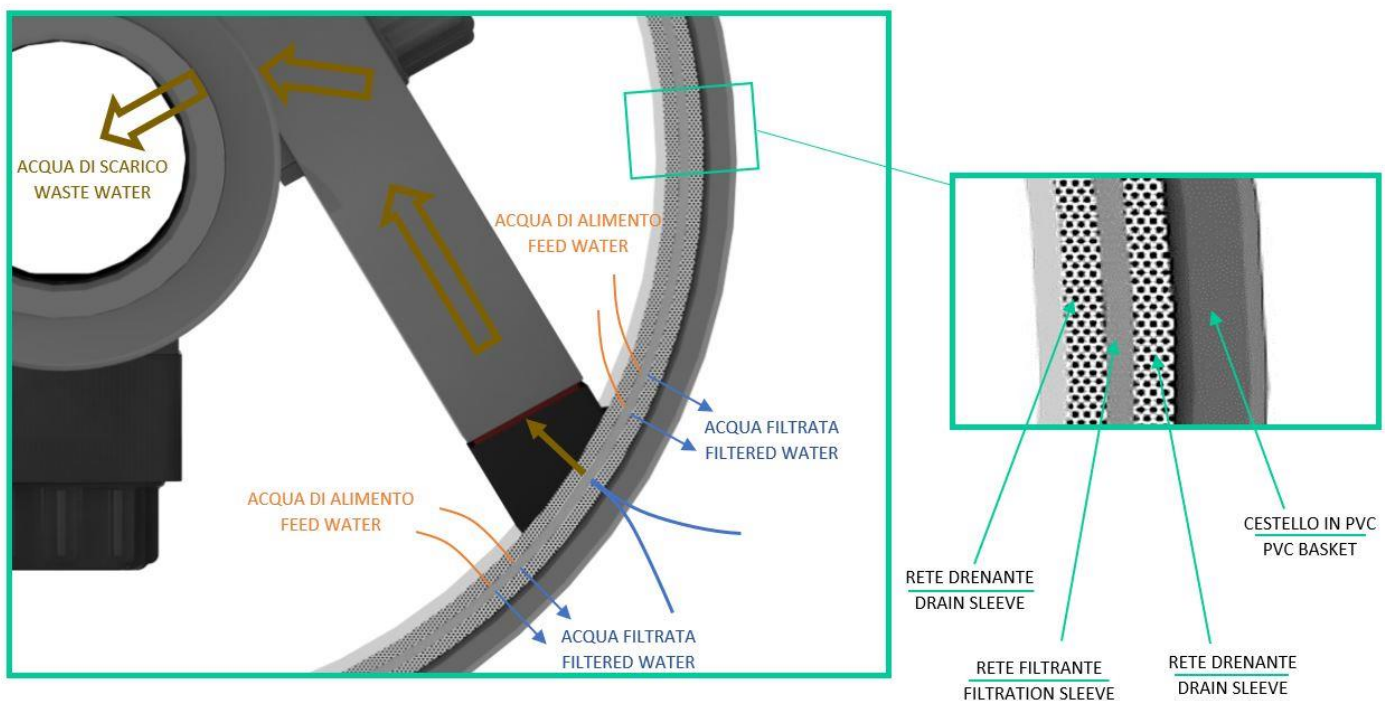
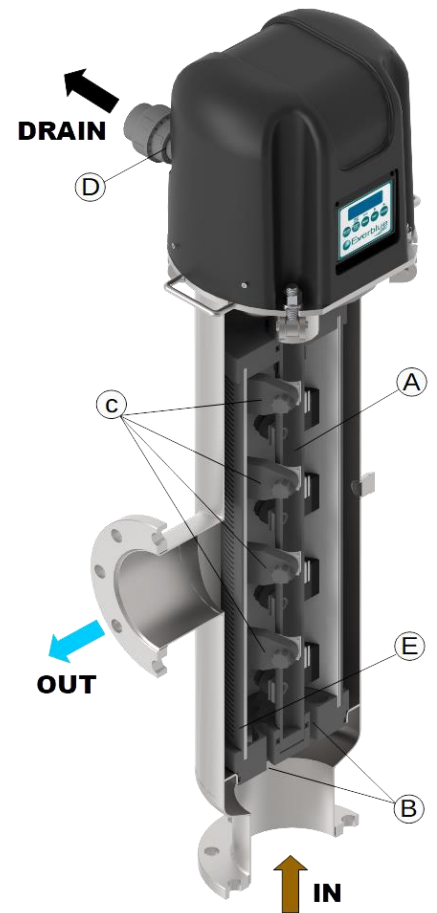
The continuous settling of suspended solids inside the filtering mesh (E) form an impediment to the passage of water, which is manifested in a pressure difference (ΔP).

At a preset value of ΔP (range $0,3 \div 1$ Bar) the automatic filter cylinder cleaning cycle will start. This operation begins with a signal that opens the drain valve (D) and rotates the scanner (A) through the electric motor . Dirt is sucked up by the nozzles (C) and evacuated through the drain valve. The cleaning cycle lasts approximately 10 seconds.

Suction through the suction nozzles is possible thanks to the different pressure on the surface of the suction nozzles and the filtering basket. The suction nozzles are connected, through the related supports, to the discharge pipe located inside the self-cleaning filter that is also connected to the discharge valve.

When the discharge valve, connected to the cockpit or a pipe with no pressure opens, it generates a different pressure compared to the inside of the filter (with pressure) creating the sucking effect on the nozzles. To create the suction the filter need 1 bar of pressure only and can guarantee great energy savings.

FILBLACK FBK2000A allows continuous flow even during the regeneration phase, while maintaining its productivity and reducing the waste of water to a minimum.



Considering all these features and comparing them to our main competitors, we can say with no doubt that FILBLACK FBK2000A represents one of the most performing and most efficient solutions in the wide range of industrial automatic self-cleaning filters on the market. FILBLACK FBK2000A is unique and unrivalled for the speed of installation and maintenance.

Application

Automatic self-cleaning filter with suction nozzles are successfully used for the filtration of fresh waters, brackish and seawaters whether it is surface waters or from wells or springs. The versatility, efficiency and quality of the filters allows them to be used for different applications:

- well water filtration for drinking
- surface water filtration for industrial use
- water filtration of towers and cooling circuits
- water filtration for irrigation
- water filtration for nozzle protection
- pretreatment of ultrafiltration systems
- reverse osmosis systems pretreatment

Our experience with over 20 years of successful installations, allows EVERBLUE to affirm that **FILBLACK FBK2000A** self-cleaning filters:

- satisfy most of the requests for filtration systems
- guarantees high performance
- reduce cost of installation and maintenance
- are easy to service
- are entirely manufactured in Italy with certified raw materials exclusively of European Community origin.

EVERBLUE, upon specific request of the customer, can provide the complete reference list of our installations of self-cleaning filters.

Thanks to this list it's easy to understand how the Everblue self-cleaning filters product range is successfully used to meet the various filtration needs.



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