

FILTROMATIC

Automatic Backwashing Filters

APPLICATIONS

The FILTROMATIC series of self-cleaning filters incorporates decades of design and on-site experiences. The FILTROMATIC series represents an advanced solution to constantly and continuously remove solid particles from water to prevent damages to the equipment installed downstream.

The main served industries are

- Steel industry
- Paper & Pulp Industry
- Chemical & Petrochemical Industry
- Energy Generation Industry
- Refinery Industry

FILTROMATIC filters are used to protect

- Quench bathes
- Cooling towers and Cooling systems
- Anti fire equipment
- Heat exchangers (both tube and plate)
- Continuous equipment for paper production
- Spray nozzles

The main fluid filtered are

- Demi-water
- Industrial water
- Sea water
- Well water
- Surface water

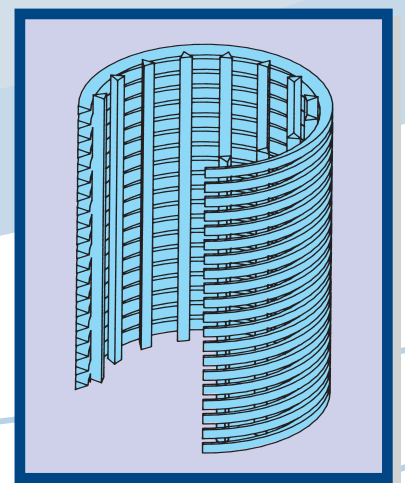


CONSTRUCTION

The pressure vessel of the filter is designed and manufactured meeting European Directives; if required Bea Technologies can meet other international manufacturing codes with eventual survey of Notified Body. The material used varies according to the different fluid to be filtered from mild steel, austenitic or austenitic martensitic stainless steel and copper alloy.

In case of aggressive fluids the body is manufactured adopting specific arrangements to allow the sealing and the continuity of the internal lining (neoprene, ebonite, etc.); the internal parts are designed and constructed in order to reduce corrosion of pitting and crevice by adopting specific arrangement (insulation of parts and/or consuming anode).

All the internal parts are therefore corrosion resistant to provide easy maintenance and long service life.



FILTERING ELEMENTS

The filter elements, available with different filtration rating, are designed in order to provide wide effective filtration surface, together with high precision and extremely long service life (BEA doesn't use wire net that are weak and easily corrosion affected). Integrally manufactured from corrosion-proof material (AISI 316L, Monel, etc.), these rugged elements withstand differential pressure over 10 bar, both side. The trapezoidal wire helically wound and welded to the vertical bars prevents particles from fixing into the slot: whatever shapes the particles have, statistically they do not touch the opening in more than two points; this feature, during backwashing cycle, provides better performance in filter element cleaning.

FILTRATION AND BACKWASHING

Filtromatic is designed to operate 24 hours per day without attendance thanks to its basically simple concept. Filtromatic is a totally automated equipment and at first works as a static filter: the raw liquid flows through the filter element from inside to outside and the impurities are captured inside the filter element. At this stage no water is being used to regenerate the filter elements.

When the predetermined differential pressure value is reached due to the progressive clogging of filter elements caused from the retained particles, the cleaning procedure is actuated.

The differential pressure switch gives the input to the control panel to activate:

- the rotation of the backwashing arm
- the opening of the actuated drain valve

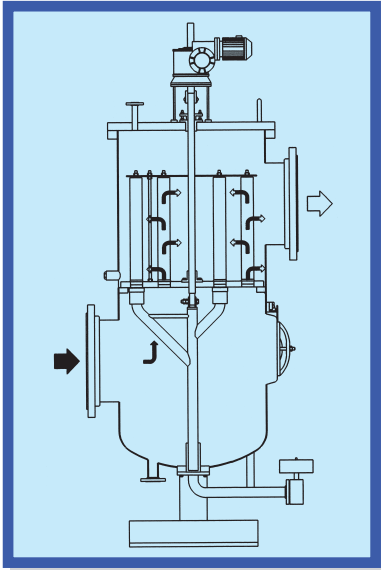
During such process each single filter elements is isolated in turn from the filtration and put in contact with the atmospheric pressure through the backwashing arm; at this stage a small part of filtered water is flushed in the reverse direction to the filtration phase, removing all captured debris from the filter elements and discharging it through the drain valve.

The backwashing arm rotates until all filter elements are regenerated, one at a time.

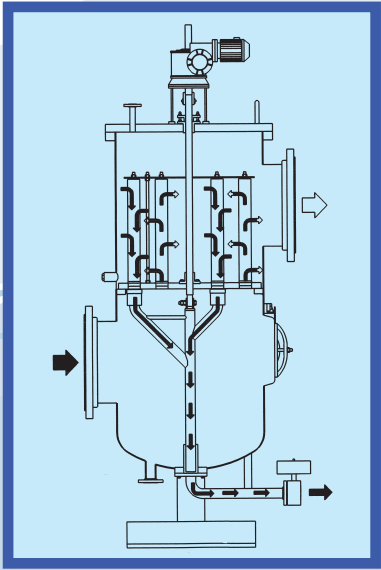
The efficiency of the filter element recovering is improved by the slide valve made in technopolymer which assure, during the rotation, a positive sealing between the backwashing arm and the filter-plate.

During the backwashing cycle the outlet flow rate is without interruption as only a small part of the clean water is being used.

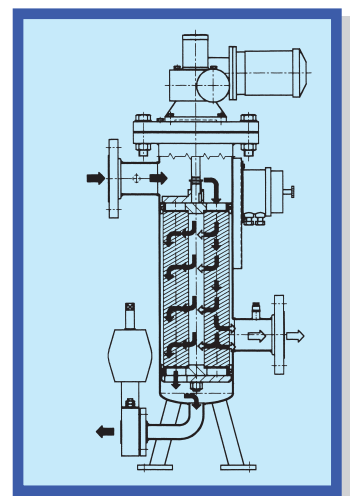
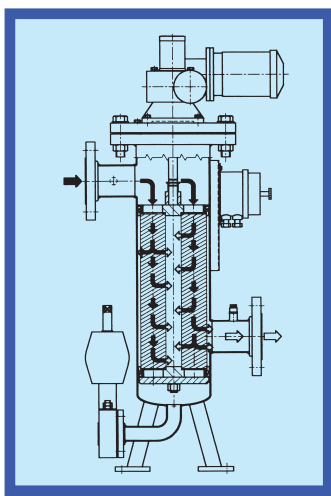
When the backwashing arm has completed at least one complete round, the gear-driven motor is being stopped, the drain valve is closed and Filtromatic goes back working as a static filter until when the predetermined differential pressure value is reached again.



Only filtration mode



Filtration and backwashing mode



AUTOMATION AND CONTROL

The Control system is very flexible and provides 3 different options that can be selected and adjusted by the operator whenever required in order to meet different operative need:

- Backwashing activated by the differential pressure switch
- Backwashing activated by a timer
- Ongoing backwashing process

The control system is made up by:

- Electric panel IP55 protection (anti-dew device available)
- gear-driven motor
- differential pressure switch
- actuated drain valve

A PLC version with electronic transmission is available, in order to have a remote control of the equipment parameters.



SPECIAL AND SKID MOUNTED EQUIPMENT

Bea Technologies provides the engineering of special equipment including skid mounted backwashing system, that varies according the customer requirements and specifications.

Skid arrangements are particularly appreciated in Offshore applications where complete filtration system can be arranged in little space.



Quality System

**COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV**

= ISO 9001:2008 =



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