

Filtration and separation technology

Lenzing OptiFil® – Automatic backwash filter



Lenzing OptiFil®

Automatic backwash filter – filtration down to 1 µm

OptiFil® is a fully automatic, continuous system that works according to the principle of depth, surface or cake filtration. A metal fiber fabric or fleece is used as filter material, which retains particles of different sizes either inside or on its surface. After the pre-determined degree of contamination has been reached, the filter material is cleaned by backwashing a small quantity of filtered medium, while filtration continues during the backwash.

Features

- filter fineness from 1 µm to 100 µm
- high solid content compared to other common automatic filtration systems
- high flow rates
- highest filtration efficiency
- partial backwash during filtration
- minimum losses due to patented regeneration system
- low operation and maintenance costs
- sizes for virtually all flow rates available
- filters designed for operation pressure of 10 bar, higher pressures are possible upon request
- space-saving plant setup and maintenance area
- completely closed system

Markets

- pulp and paper industry
- fiber industry
- chemical industry
- textile industry
- electronic and photovoltaics
- steel industry
- galvanic and surface treatment
- automotive industry
- water treatment
- power supply
- chemistry, paint and coat
- petrochemistry

Fluids

chemicals:
acids, lyes, solvents, resins, paint

water:
process water, river water, sea water, drinking water, demineralised water, cooling water, circulation water, waste water

food and beverage:
juice, wine and beer

oils:
mineral oil, synthetic oil, hydraulic oil, lubrication oil, gear oil



Operating principle

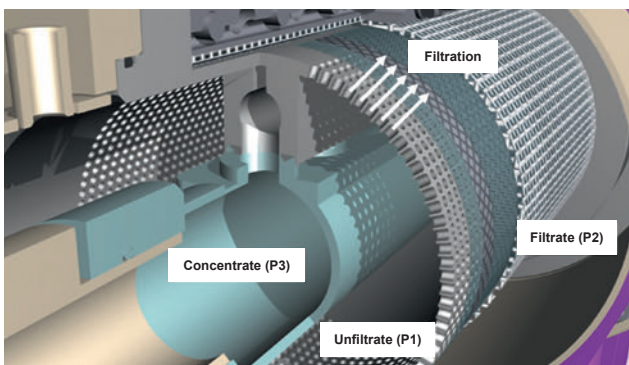
OptiFil® is a fully automatic filtration system

Filtration

The unfiltered fluid is transported into room P1 through the inlet by means of the feed pump. Separation of particles out of the liquid occurs while the unfiltered fluid flows from room P1 into room P2. Between these both chambers the filter material is installed on a perforated drum.

The filtered fluid is discharged through the outlet and goes to the P2-pressure equalizing tank, the spin tank or the P2-control valve. The blockage of the filter material causes a continuously increasing differential pressure ΔP between room P1 and room P2. This increase of the differential pressure is analysed by a PLC control system. After reaching a preselected differential pressure, the backflush will be started.

Status "Filtration"

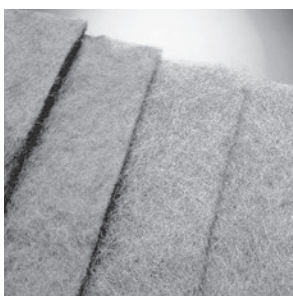
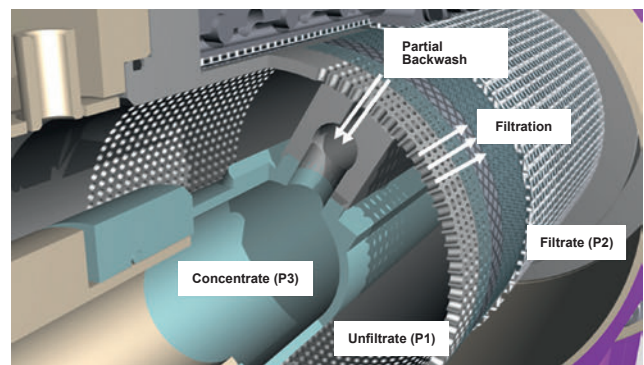


Backwashing

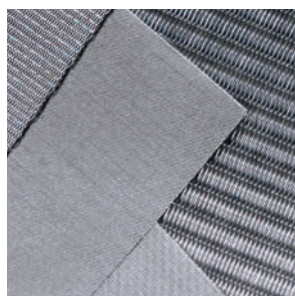
After the maximum degree of contamination has been reached, the total surface of the filter material is cleaned by a backwash procedure. This takes place by one rotation (360°) of the backwash device. The channel, shaped opening in the backwash strip, which seals to the inside surface of the perforated drum (carrier of the filter material), executes the backwash with the minimum quantity of backwash liquid (filtrate), which is necessary to rinse the filter material from impurities.

After having cleaned the whole surface, the backwash device remains in the waiting position until the differential pressure reaches the preselected value again.

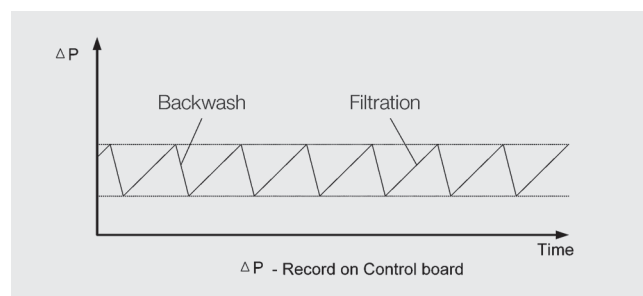
Status "Backwash"



Stainless steel fleece for depth filtration



Stainless steel fabric for sieve- and cake filtration

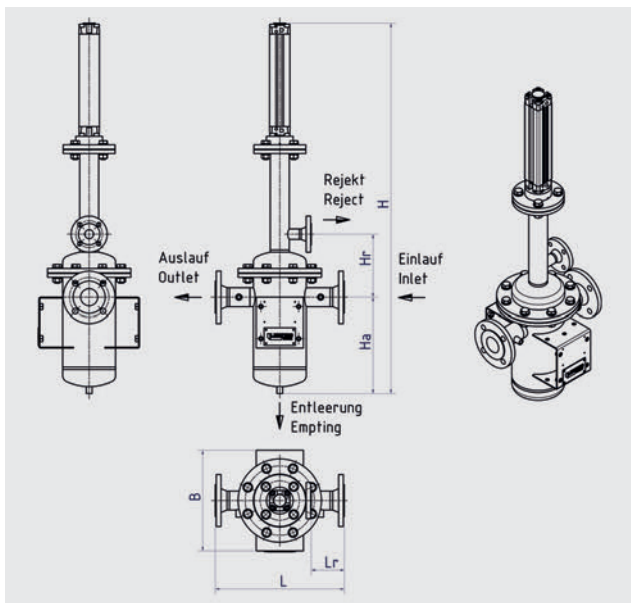


Differential pressure

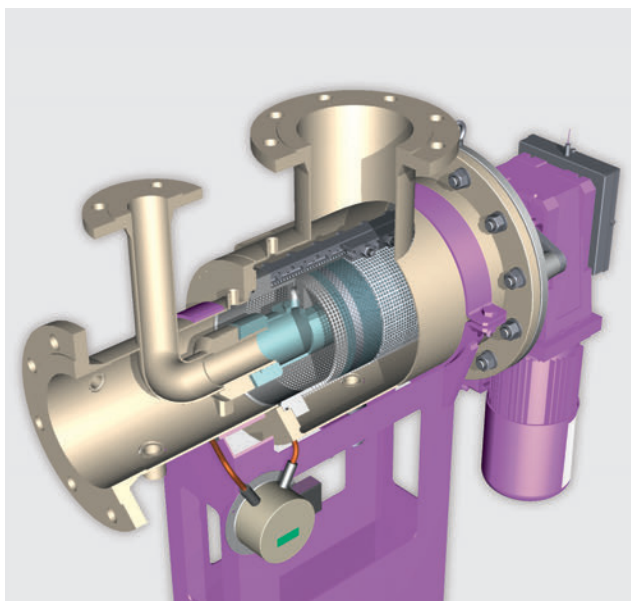
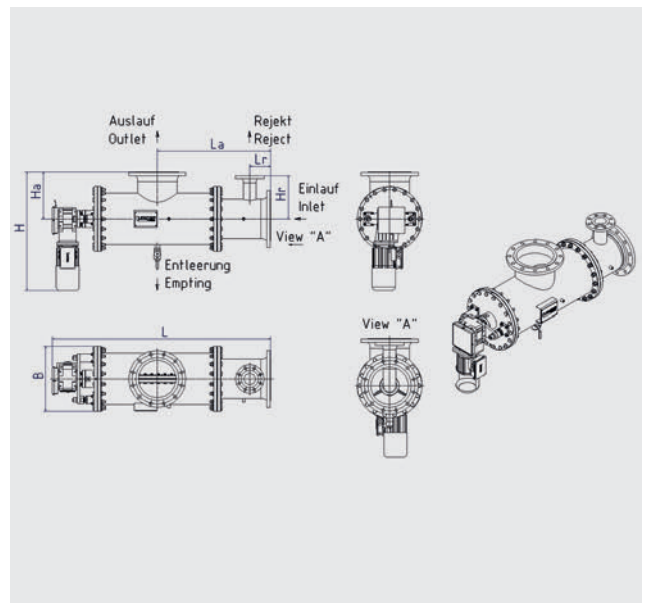
Design / construction type

OptiFil® is available in different sizes

OptiFil®-050 - 100



OptiFil®-150 - 500



Lenzing OptiFil® - automatic backwash filter

Design / construction type

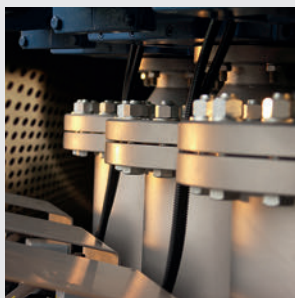
	from	to
flow rate	1 m ³ /h	1.500 m ³ /h
fineness of filtration	1 µm	2.000 µm
flange dimensions	DN50	DN500
design pressure	10 bar	16 bar
design temperature	0 °C	200 °C
range of application	filtration for low viscose fluids	

Fabrication material

Carbon steel, Stainless steel AISI 316Ti/L (1.4404, 1.4571)
AISI 904L (1.4539)

Gaskets

EPDM, Silicone, Buna, FPM, PTFE



Filtration and separation technology

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Automatic backwash filters ■ Self-cleaning scraper filters
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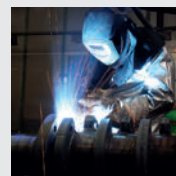


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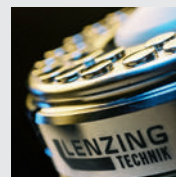


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