

Product portfolio for excellent dewatering performance

Disc filter upgrade





1 InfiltraDiscfilter IDF570

The new generation of dewatering from Voith

Optimization solutions from Voith enhance the capacity and quality of the dewatering process. All Voith and conventional disc filters can be upgraded to these new high-quality products.

Broken filter bags result in high costs

The technology used in conventional disc filters is often obsolete and no longer meets requirements for efficient and resource-saving production. As a result, maintenance and operating costs tend to rise constantly. Conventional disc filters are fitted with filter discs that generally only have short service lives. As the filter bags tear after a short time, filter quality deteriorates rapidly and fiber loss increases. Consequently, papermakers often have difficulty maintaining desired capacities when using sectors with flat surfaces. This leads to reduced dewatering efficiency. In addition, the spray water becomes contaminated because of the filter bags tearing, and the spray nozzles of the disc filter and paper machine get

blocked. These consequences reduce the availability of the paper machine. Furthermore, the replacement of the damaged filter bags causes high maintenance and downtime costs.

Efficient and low-cost dewatering

To ensure efficient dewatering capacity, Voith has developed a new generation of products combining long service life, excellent filtration qualities, high capacities and low energy consumption. As a result of these benefits, operating costs, fresh water consumption and fiber loss can be reduced.



Upgrading your existing disc filters to FloWing, BaglessPlus or filter discs with V-bag filter bags and related spray nozzles and filtrate valves achieves excellent dewatering performance and availability of your disc filter and paper machine.

All benefits of the new Voith product portfolio

- + BaglessPlus filter discs offer a service life of 15 years and more
- + High cost savings due to low maintenance demand
- + Capacity increase of up to 40%
- + Reliable filtrate quality over the entire operating life
 - Saving of fibers and fillers
 - Reduction of fresh water consumption
- + Optimized dewatering thanks to a high and stable vacuum
- + Higher availability of the paper machine
- + All machines from Voith and conventional disc filters can be upgraded

Comparison of Voith filter discs

	Investment costs	Maintenance / Operational costs	Lifetime	Constant vacuum and filtrate quality	Capacity
V-bag P					
V-bag C with Protector sheet					
BaglessPlus					
FloWing					



2 Patented FloWing design enables a significant increase in capacity

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New design for outstanding stability and capacity

FloWing filter discs

Unprecedented capacity results

Voith achieves an unprecedented level of capacity in the dewatering process with the newly developed FloWing filter discs. Compared to filter discs with a flat profile, FloWing achieves an increase of more than 56% in filter surface area with its patented, wing-shaped profile. The sophisticated design offers a larger surface area and lower flow resistance, leading to a significant increase in dewatering capacity. By reducing the flow resistance in the sector foot, the filtrate is even easier to drain compared to BaglessPlus filters. The much more effective use of the filter surfaces results in a thicker fiber mat that easily detaches from the segments at knock-off.

Outstanding stability

High stability of the sectors is essential to withstand the demanding conditions that prevail in a disc filter. The reinforced foot, sturdier frame and stiffer filter profile make FloWing much more robust than traditional sectors. As a result, FloWing has a considerably longer service life than BaglessPlus and even longer service life of the sectors.

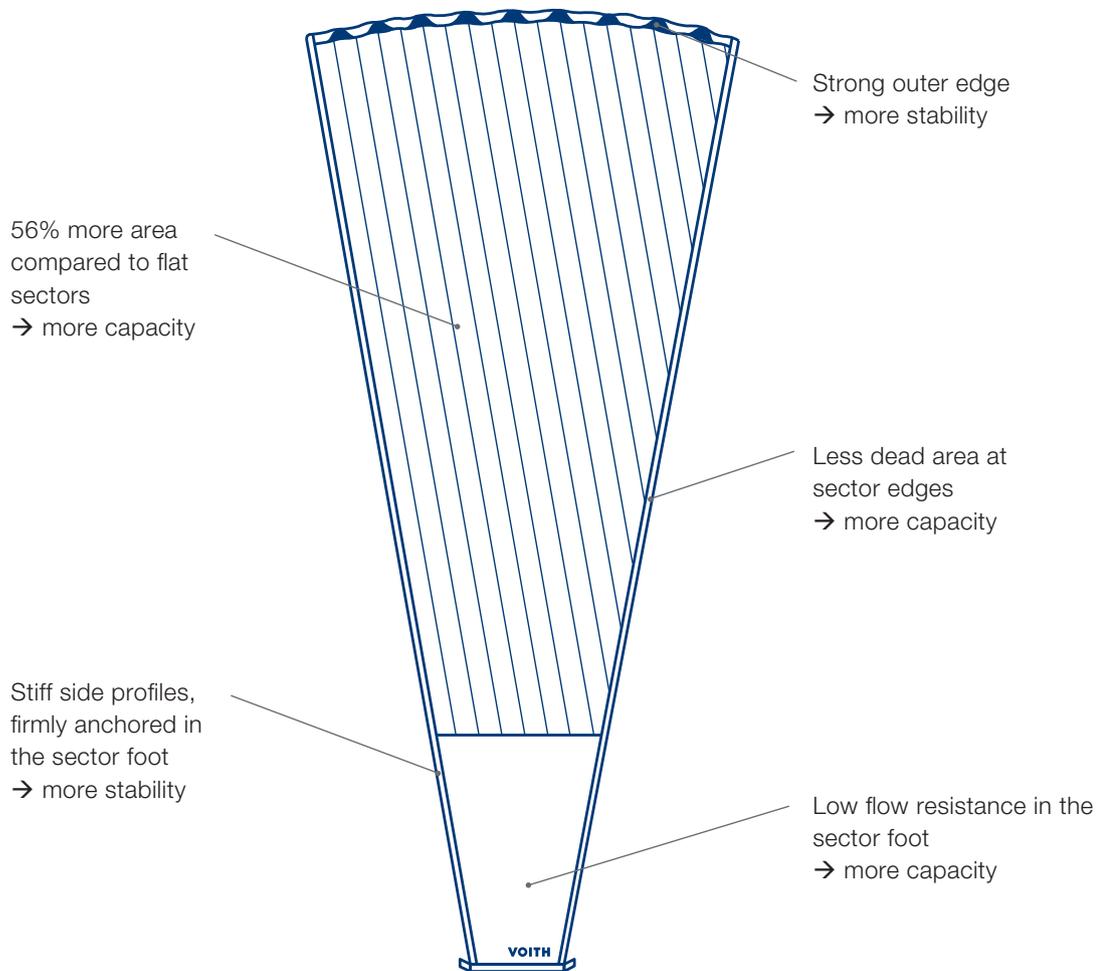
Proven in practice

Initial results of disc filters that are completely or partially operated with FloWing fully confirm the high expectations of the new filter segments. The capacity can be significantly increased and the knock-off of the fiber mat works well even in difficult operating conditions such as when starting and stopping. The strength of the FloWing discs compared to BaglessPlus discs is impressive.

Your benefits with FloWing

- + Significant capacity increase through patented wing-shaped profile
 - + Longer life due to outstanding stability and rigidity
 - + Consistently high filtrate quality
 - + Minimal maintenance
-

FloWing filter sector – construction





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Outstanding running times due to an efficient dewatering without filter bag

BaglessPlus filter discs

Slash your maintenance costs

Papermakers can achieve unrivaled running times and low maintenance costs thanks to the proven BaglessPlus filter discs. BaglessPlus sectors are made from corrugated stainless steel and are, besides FloWing, the only filter discs on the market that operate without filter bags. Upgrading disc filters to BaglessPlus completely eliminates expensive and time-consuming replacement of damaged filter bags as well as high maintenance costs. In addition, the low maintenance and cleaning requirement for the BaglessPlus sectors ensures high availability of the disc filters.

Operating costs are reduced enormously, as the filter discs have a service life of more 15 years and more, the longest in the industry. The improved knock-off performance, combined with the larger available filter disc surface due to the corrugated design of the segments, increases capacity by up to 20%. The consistently high filtrate quality over the entire service life

of the BaglessPlus filter discs leads to a significant reduction of fiber loss and fresh water consumption. There are no restrictions on using the super-clear filtrate on the spray nozzles of the paper machine.

Upgrades to BaglessPlus are possible for all Voith disc filters, as well as disc filters from other suppliers, including:

- GL&V
- Andritz
- Impco
- Wenrui

Area of application

BaglessPlus filter discs are used in stock preparation and as save-all within the paper machine circuit.



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- 3 Detailed view of BaglessPlus
- 4 Available sizes of BaglessPlus filter discs
- 5 BaglessPlus for CDI 5.0 disc filter (GL&V)

Your benefits with BaglessPlus

- + Maintenance and running costs are reduced to a minimum
 - + Filter disc service life of 15 years and more
 - + Reliable filtrate quality over the entire operating life
 - Saving of fibers and fillers
 - Reduction of fresh water consumption
 - + Increase in capacity of up to 20%
 - + Saves on fibers and fillers within the paper machine circuit
 - + Reduction of fresh water consumption
 - + Higher availability of the paper machine
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“With BaglessPlus technology, you save 50 000 €/year for servicing and operation of a disc filter with 12 filter discs in stock preparation applications and 200 000 €/year for save-all applications!”

Volker Niggel, Global Product Manager



Innovative products for a reliable dewatering process

V-bag filter bags and nozzles

The right filter bag for any requirement

The new generation of V-bags from Voith achieves longer service life and therefore more reliable and stable operation of the disc filter. The integration of the Protector sheet in the filter bags offers the bags additional protection against damages caused by sharp sector edges. This substantially extends the service life and as a result the maintenance intervals of the disc filter. In addition, capacities can also be adjusted by means of special blind strips on the filter bags.

Various filter bags are available for sectors from Voith and other suppliers. If required, Voith offers filter bags tailored to customer needs:

- Voith V-bag P: Polypropylene bag
- Voith V-bag C: Corrugated polypropylene bag
- Protector sheet: Can be combined with V-bag C and V-bag P

The patented nozzles optimize disc filter operation

Fast and clean removal of the fiber mat and cleaning of the filter discs are necessary for constant disc filter operation. The Voith nozzles achieve reliable knock-off of the fiber mats over the entire life cycle of the disc filter. This means that the pulp can be removed via the transport shafts quickly and without leaving residues. Continuous and thorough cleaning of the filter discs is achieved by the cleaning nozzles. Any blockages can be removed during operation by turning the lever.



- 6 V-bag with Protector sheet
- 7 Knock-off and cleaning nozzle
- 8 InfiltraValve filtrate valve

Stable vacuum creation increases disc filter capacities

Filtrate valves

Consistently good filtrate qualities

A constant vacuum in the range of 0.4 - 0.5 bar is the basis for reliable and constant operation of the disc filter. A low fines burden and high dry content at rated capacity can only be achieved with optimum vacuum, for which the filtrate valve is largely responsible.

The Voith filtrate valve distinguishes between two filtrate qualities during dewatering: cloudy and clear filtrate. When used in the paper machine circuit, super clear filtrate is also produced. This distinct separation into the different filtrate qualities is made possible by the innovative design of the filtrate valve. As a result, accumulation of air is avoided and a high, stable vacuum is therefore generated.

With the InfiltraValve for the new generation of InfiltraDiscfilter IDF570 and IDF370, Voith successfully optimizes disc filters from other manufacturers aimed at higher vacuum.

Holey bridge increases capacity by up to 20%

The vacuum is formed more gently through the additional use of the holey bridge in the filtrate valve. The fiber layer occurs more slowly, which leads to improved filtration. This optimization produces a capacity increase of up to 20% and at the same time an improvement of quality. The holey bridge can be installed in new machines or upgrades.



High production capacity and operational safety

HiCon 2.0 technology

Long service life thanks to better stability

Voith HiCon 2.0 disc filters were specially developed to dewater suspensions with high stock consistencies and for stocks that dewater quickly and therefore need mechanically stable filter discs. Compared with conventional disc filters, the sectors in HiCon 2.0 disc filters are additionally supported and guided by integrated rails, and the position of the inlet box is adjusted to achieve stronger circulation in the disc filter. In the case of high stock consistencies, the suspension has to be mixed to avoid deposits in the lower section of the machine.

The combination of HiCon 2.0 disc filters, BaglessPlus filter discs and Voith filtrate valves achieves high production capacities, excellent filtrate quality and the longest service life available in the industry. This reduces the high costs for maintenance and investment and cuts the fresh water requirement.

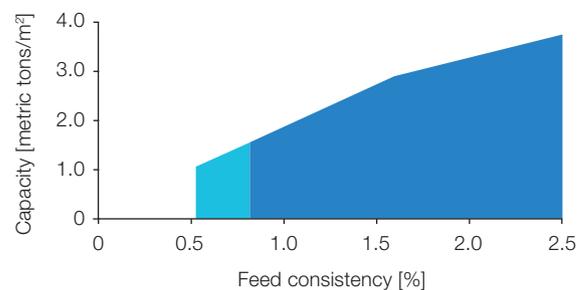
Another major advantage of the HiCon 2.0 technology is that due to the high stock consistency noticeably less pumping capacity is required and consequently significant energy savings can be realized.

Benefits of upgrading to HiCon 2.0 technology

- + High capacities in combination with BaglessPlus filter discs and filtrate valves
- + Long service life with high stock consistencies
- + Maintenance requirements reduced to a minimum
- + Significant cost savings for maintenance and investment
- + Minimal fresh water requirement due to high filtrate quality

Increase in production capacity due to HiCon 2.0 technology

- Standard disc filter
- InfiltraDiscfilter with HiCon 2.0 technology



9 InfiltraDiscfilter

10 BaglessPlus filter discs with
HiCon 2.0 Technology

Optimal performance and highest system availability

Disc filter service

Best filtrate quality and trouble-free operation

Wear or incorrect operation settings can affect filtrate quality and limit availability of your disc filters and paper machine. Regular inspection and maintenance by Voith ensure optimum resource savings and efficient operation of your disc filters.

Benefit from the sound expertise of our service personnel. Our experts are familiar with the latest optimization options and stay informed about the performance of your disc filter through regular inspections. This keeps your disc filters current with the latest technology.

Worn parts are detected early, thus ensuring availability of the required parts and replacement during planned shutdowns. The necessary parts are not only replaced, but also optimally adjusted to ensure the best performance using minimal resources.

We cover all services related to your disc filters and flexibly adapt to your conditions and requirements. Do you own a disc filter from a third-party supplier? Again, our service team can support you.

Your benefits at a glance

- + Highest availability
 - + Optimal performance
 - + Longer service life thanks to predictive maintenance
 - + Qualified service, directly from the manufacturer
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