

VACUUM FILTRATION WITH A DISC FILTER

The BoVac Disc filter – rotary disc filter for the filtration of large amounts of suspension.



Filter Segments

Each filter disc consists – depending on the diameter – of 20 to 30 filter segments which are mounted on the filter shaft. They are robust and have optimal hydraulic properties. Their special design and very low weight make them easy to assemble and ensure that maintenance is quick and easy – with no safety or health risk for the maintenance team.

A special feature are the fiber-reinforced polymer segments. With a weight of less than 10 kg, they facilitate the re-clothing and maintenance work significantly.

These are the benefits:

- very light segment weight of only 10 kg for polymer segments and 19.5 kg for metal segments
- fast and easy segment change due to the special bayonet shape of the segment foot
- optimized hydraulics ensure fast filtrate drainage and efficient compressed air blow-back for cake discharge
- shape of segments helps to seal the filter bag and prevents product loss





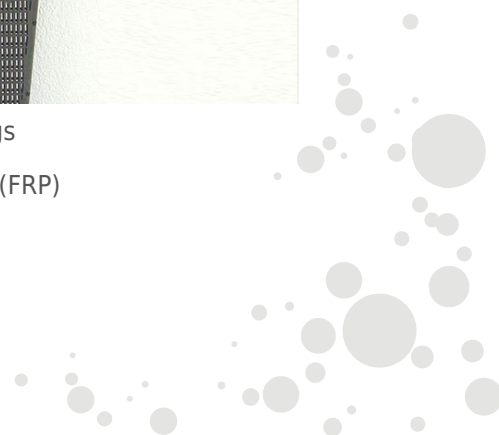
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MetSeg - filter segments made of metal



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PolySeg - light weight filter segment made of polymer (FRP)



Filtrate tubes and filter shaft

Each segment mounted on the filter shaft ends with the segment foot in a filtrate collecting pipe. In contrast to conventional filters, the filtrate pipes have no round but a trapezoidal cross-section. This enables a large-sized cross-section of the filtrate pipes with optimum hydraulics through optimal utilization of the available cross-section of the filter shaft.

These are the benefits:

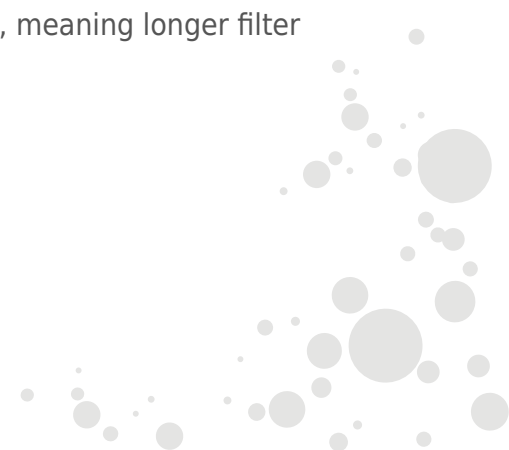
- optimal hydraulics due to large, trapezoidal filtrate pipes
- bolted, exchangeable stub shafts allow easy replacement and access to the filtrate tubes
- shaft seal allows maximum slurry level and maximum capacity
- slip on gear

Control head

The BoVac Disc control head is designed to pre-separate the incoming filtrate/air mixture into a gas and liquid flow. This minimizes pressure loss because in a two-phase flow, the pressure loss is up to ten times higher than in a single-phase flow. Entrainment of filtrate from the cake forming zone in the dewatering zone is prevented even at high filter speed. This ensures a sharp filtrate separation.

These are the benefits:

- minimum pressure loss through pre-separation design
- improved flow rates through flow-optimized design
- simply changeable wear inserts in place
- system for cloth protection during compressed air blow-back, meaning longer filter cloth life
- simplified labyrinth seal to prevent vacuum loss



Filter trough

The design of the BoVac Disc filter trough combines the advantages of different types of filter troughs commonly found in rotary disc filters. Special compartments inside the trough ensure that homogenization of the suspension is caused by the stirring effect of the rotating filter discs. Thus, an agitator is not needed.

These are the benefits:

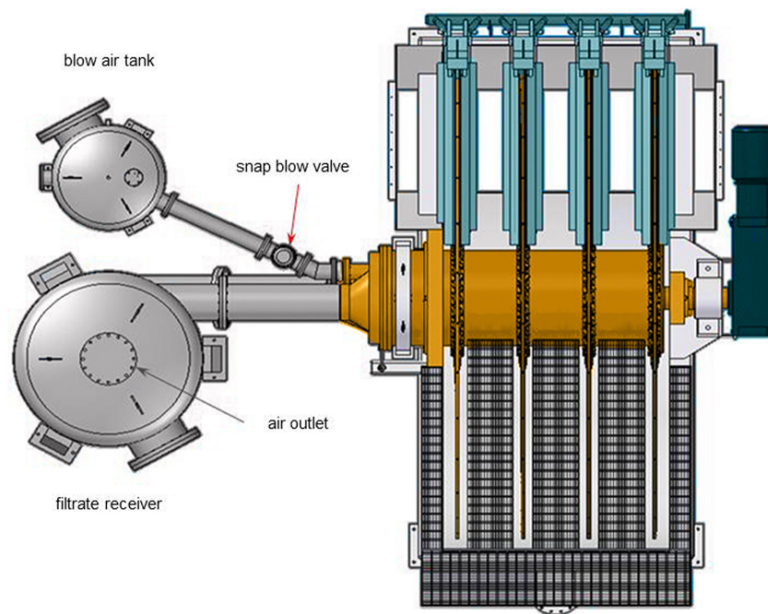
- suspension homogenization without agitator, meaning no leakage, no maintenance, no additional power consumption, high availability
- same level and uniform cake thickness on all filter discs
- operation with level control, meaning without suspension overflow
- 50 % immersion depth of the filter discs, meaning maximum cake formation angle
- large-dimensioned drain valves that allow a quick trough emptying
- spray bars for online cloth wash during filter operation
- permanently installed walkways between the discs for a quick re-clothing

Compact arrangement with minimal space requirement

The arrangement of filter and filtrate receiver affects the filter operation, the filter performance and the required space. Therefore, BoVac Disc filters and filtrate receivers are arranged as close and as straight as possible:

- compact arrangement with minimal space requirement
- minimal pressure loss due to very short and straight flow path for the filtrate/air mixture between the control head and the separator
- fail-safe design with barometric foot – no moving parts





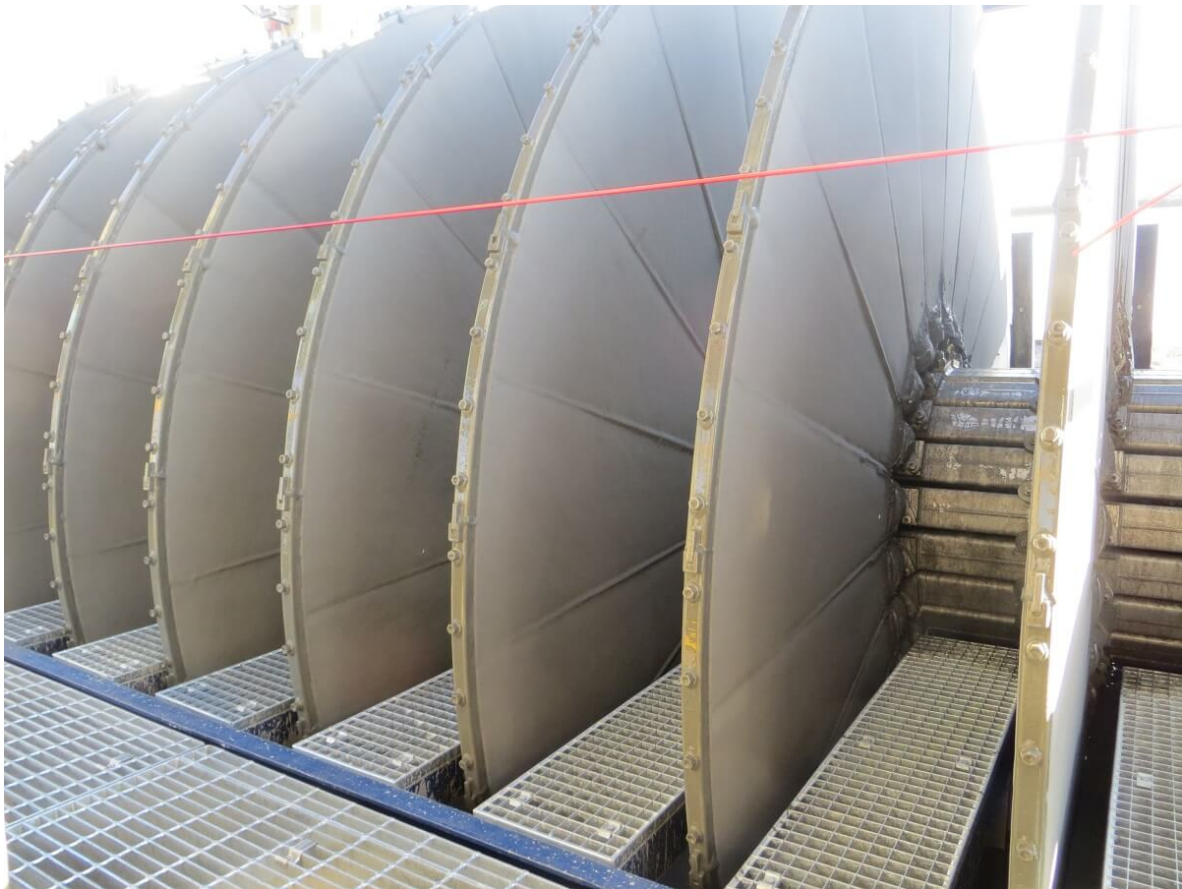
Compact arrangement with minimal space requirement – Infographic

Easy maintenance, high availability

BoVac Disc filters are easy to maintain:

- permanently installed walkways between the filter discs
- no agitator
- easy handling of the light filter segments
- easy and fast segment mounting with bayonet foot
- easy cloth change
- online cloth washing
- maintenance-free shaft seal





Permanent walkways for ease of maintenance

Technical Data

Filter Type [-]	M22	M44	M66	M88	M176	L88	L132	L176	XL352
Disc Diameter [m]	4.1	4.1	4.1	4.1	4.1	5.6	5.6	5.6	6.4
No. of Discs [-]	1	2	3	4	8	2	3	4	6
Filtration Area [m²]	22	44	66	88	176	88	132	176	352
No. Control Heads [-]	1	1	1	1	2	1	1	1	1
No. of Segments per Disc [-]	20	20	20	20	20	30	30	30	30

