PRESSURE FILTRATION WITH DRUM FILTERS

BoHiBar Drum filter – for filtration, washing and dewatering of fine-grained products.

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Plant design & functionality

BoHiBar drum filters from BOKELA represent the most advanced technology for continuous pressure filtration.

The basic principle is also known as hyperbaric filtration and is very simple: a continuous rotary filter is installed completely in a pressure vessel filled with compressed gas of up to 7 bar (a). A pump feeds the suspension into the filter trough in the pressure vessel. The filtrate flows through the filtrate pipes to the control head of the filter apparatus and from there to the filtrate reveivers. The filter cake is discarded from the filter cloth by a reversed blast of compressed gas and discharged through solids locks from the pressure vessel.

- filtration with high differential pressures Δp up to 6 bar (g)
- most modern drum filters with features known and proven by the BoVac Drum filter technology (replaceable filter cells are optional)
- operating temperature up to 200 °C
- option of installing a steam hood for steam pressure filtration
- closed, contamination and emission-free process chamber: gas-tight and leakproof
- no filter cake conveyor in the pressure vessel required
- fully automatic cleaning-in-place (CIP) system
- vertical pressure vessel*, horizontally split and fully opening – optional automatic opening
- fast and excellent accessibility of the filter
- proven gate valve systems for different requirements (double gate valve, rotary valve)

*) for filter sizes up to 18 m² filter surface, drum filters with 40 m² filter surface have a horizontal pressure vessel.

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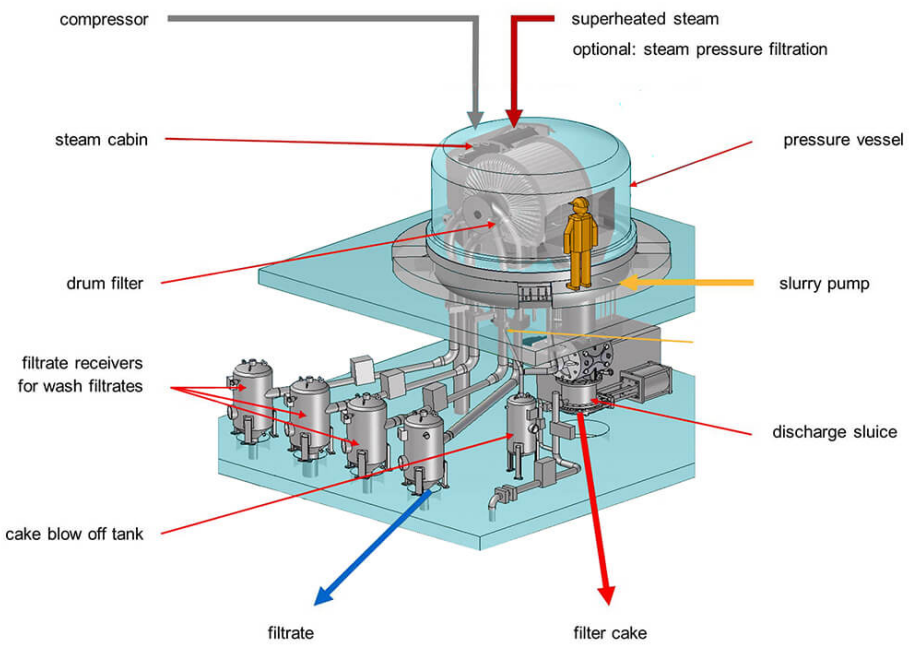

Plant design & functionality

Clean filter cake

On BoHiBar Drum filter, filter cakes are intensively washed with a low wash liquor requirement. Like the BoVac Drum filters, they have a hydraulically optimized filter design that meets all the requirements for intensive replacement cake wash.

The results are:

- clean filter cake by high washout in up to 3-stage countercurrent washing
- low washing medium consumption
- sharp separation and separate removal of the individual filtrate streams

High solids throughput & low residual moisture

By applying overpressure of up to 7 bar (a) BoHiBar Drum filters offer considerably higher pressure differences for filtration and demoisturing of the filter cake than with vacuum filters.

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Benefits:

- low residual moisture due to intensive demoisturing
- high solids throughputs even with fine particulate suspensions
- smaller filter area

Dry solids by steam pressure filtration

BoHiBar steam pressure filtration is an innovative hybrid process which releases synergies through the combination of mechanical and thermal principles of action. In order to accelerate and intensify the demoisturing process, the filter cake is treated with steam. The filter drum is equipped with a specially developed steam cabin which covers only a limited part of the filter surface up to the steam break-through point. The cake is then dried by a compressed air stream to its final moisture content. Due to the accelerated dewatering, the residual moisture of the filter cake can be halved compared to a pressure filtration.

Benefits:

- extremely low residual cake moistures
- highly effective cake washing
- saving of drying air

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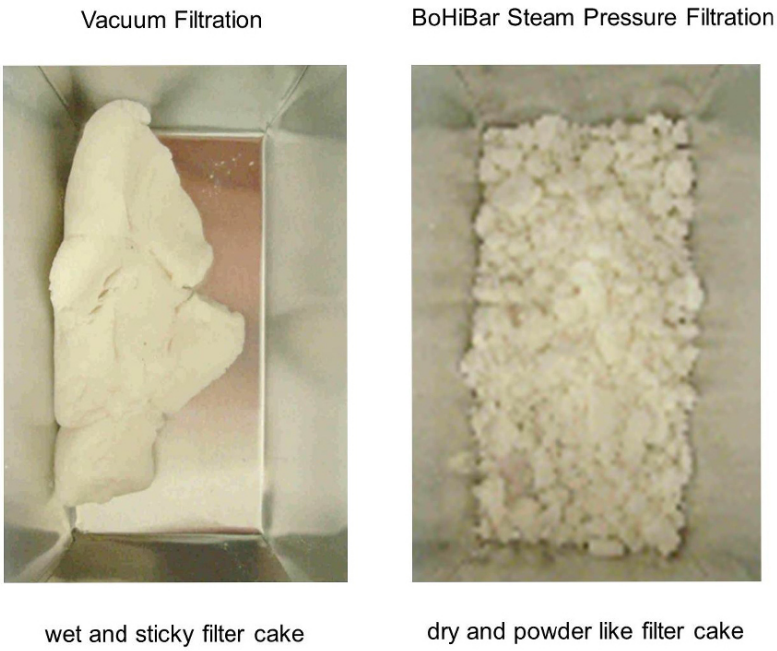

Dry solids by steam pressure filtration

Easy maintenance & high availability

BoHiBar Drum filters stand out with their most modern filter and plant design, characterized by reliable operation and ease of maintenance:

- high availability (> 92 %) thanks to innovative design and preventive maintenance concept
- fully automated operation with automatic startup, shutdown and cleaning procedures (cleaning in place)
- high flexibility in operation in case of product fluctuations
- excellent accessibility of the filter with the vessel open
- low maintenance requirement due to innovative wear protection components
- fast and effective maintenance of the entire system due to good accessibility and sophisticated maintenance aids
- quick re-clothing, as no wire winding is required

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Technical data

Filter Type [-]	S5	M9	M13	L18	L40	XL26
Filter Area [m²]	5	9	13	18	40	26
Drum Diameter [m]	1.4	1.9	1.9	2.4	2.5	3.2
Length of drum [m]	1.2	1.5	2.2	2.4	5.3	2.6
No. of filter cells [-]	24	30	30	36	24	48
Pressure Vessel Design[-] Pressure Vessel Diameter [m]	vertical 3.6	vertical 3.6	vertical 4.3	vertical 5.0	horizontal 4.8	vertical 6.0

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