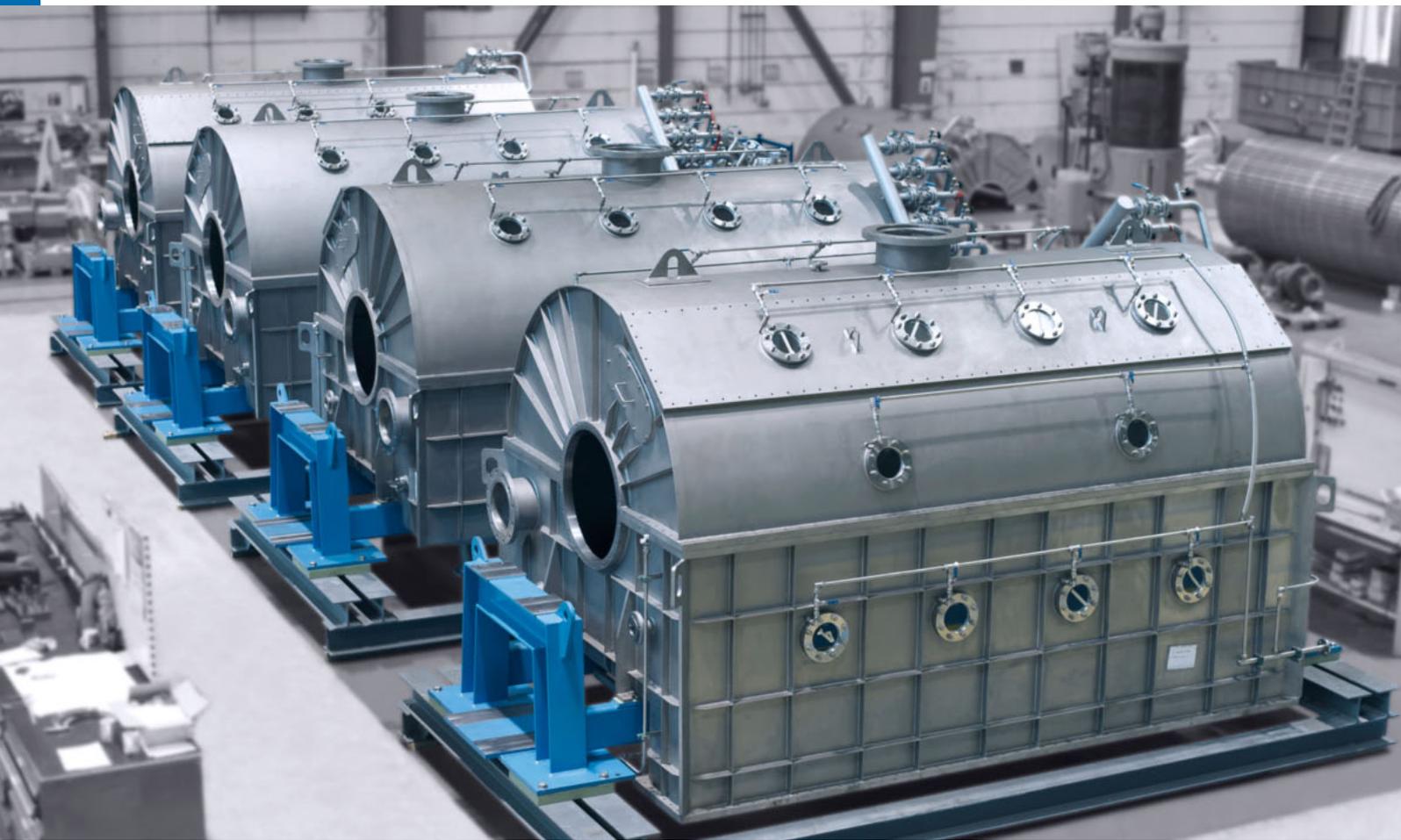


YU vacuum drum filter

High-capacity vacuum filtration



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High-capacity vacuum filtration

The high-capacity YU rotary filter, formerly the Bird Young rotary filter, is the high-end solution for rotary vacuum drum filters. The YU filter is best suited for free-filtering materials, where it can benefit from the much higher filtration rates. Its unique, single-cell design provides for very high filtration capacity (5-10 times higher than conventional drum filters), excellent cake washing due to thinner cakes, and smaller space requirements.

The advantages of the YU vacuum drum filter lie in thin cake applications, where highest filtration rates are combined with high washing rates, highest solids throughput rates, and all this also under gas-tight conditions.

The YU vacuum drum filter is available in various stainless steel materials and a wide range of sizes. Due to the long history of the single-cell design, the YU vacuum drum filter design has been proven in many applications.

Processing parameters

Operating principle:	vacuum filtration
Operating mode:	continuous
Cake discharge:	blow-off
Particle size:	50-300 µm
Filter area:	0.1-35 m ²
Filtration capacity:	up to 4,500 l/m ² h
Solids throughput:	up to 3,500 kg/m ² h
Gas-tight operation:	possible
Operating temperature:	up to 95 °C

Main applications

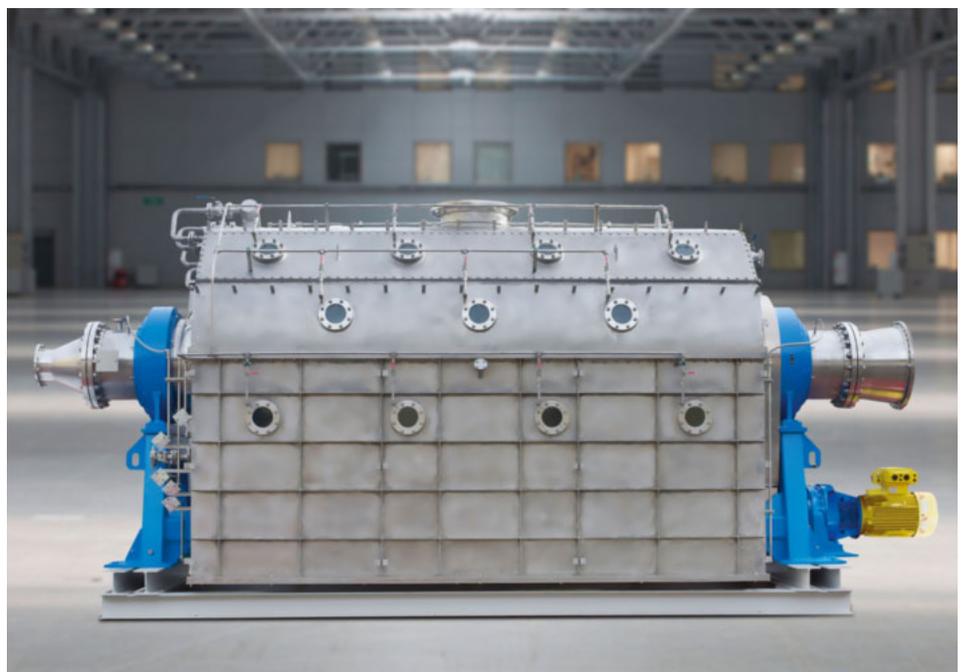
Terephthalic acid, bisphenol A, polymers, sodium sulfate, boric acid, explosives, aspirin, antibiotics, time-release medicine, winterized salad oils, sterates, sodium bicarbonate, starches

Construction materials

- Stainless steel
- Special materials

Your benefits

- Highest filtration performance
- Easily accessible process area in open design
- Processing in gas-tight models
- Visual inspection of process area in gas-tight machines
- Highest vacuum area (up to 93%) due to single-cell design
- Highest solids throughput rates
- Excellent cake washing
- Ease of operation
- High rotation speed
- Quick initial formation of thin cake
- Unrestricted gas flow



▲ YU vacuum drum filter with housing

Operation

The suspension to be filtered is fed continuously to the filter trough. Due to the exclusive, inverted pyramid-shaped compartment design of the trough, the slurry is distributed equally and no agitation system is needed as a result.

The single-cell drum is usually submerged for between 11% and 19% of the filtration area. Up to 93% of the filtration area is constantly under vacuum, and the drum rotates at up to 30 rpm. A thin cake forms on the drum because of the high rotation speed.

The YU filter operates on the steepest slope of the filtration curve as a result of the fast filtration possible with the open design of the filter internals (see chart with "Typical filtration curve").

The YU vacuum drum filter builds up a vacuum with a liquid seal pump, which is connected to the drum via the separator

to the hollow axle. This causes the liquid to filter through the filter cloth. The solids contained in the suspension are deposited in a uniform layer on the filter cloth, thus forming a filter cake.

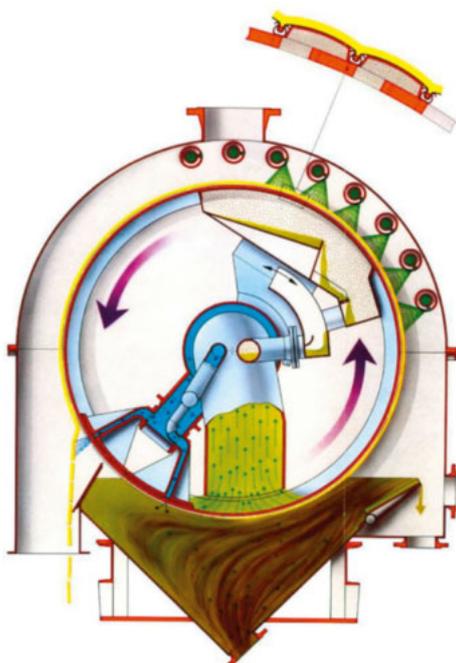
The filtered solids layer emerges from the slurry as the drum rotates and is then washed, dried, and removed from the filter cloth. The wash liquid is applied to the cake directly through washing pipes.

The filter cake is discharged by the blow-back shoe, which is fitted with very close clearance to the accurately machined inside surface of the cylinder, sealing off vacuum and blow-back pressure at the point of cake discharge. Cake discharge is achieved by a pulse of gas behind the cake. The snapping action of the filter media initiated by the flow of gas discharges the cake entirely and cleans the filter medium at the same time.

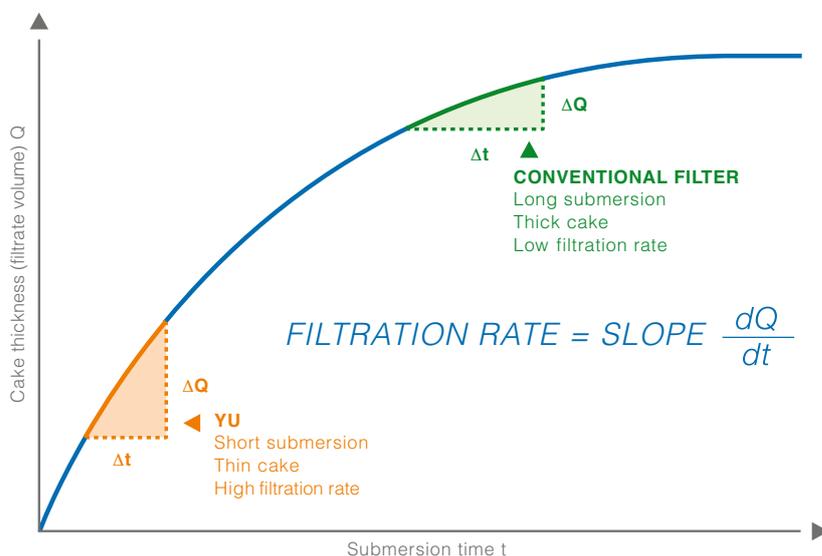
As the drum rotates, it is re-immersed in the suspension. The filter cloth can be cleaned before the next filtration cycle, either by means of water jets, bubbling, or both.

Your savings

- Lower space requirements
- Fewer machines required
- No agitation necessary



▲ Functional diagram of YU vacuum drum filter



▲ Typical filtration curve

YU vacuum drum filter

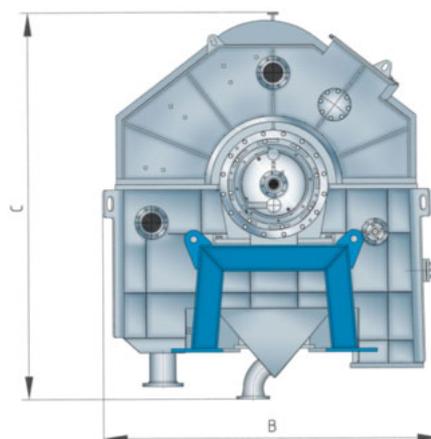
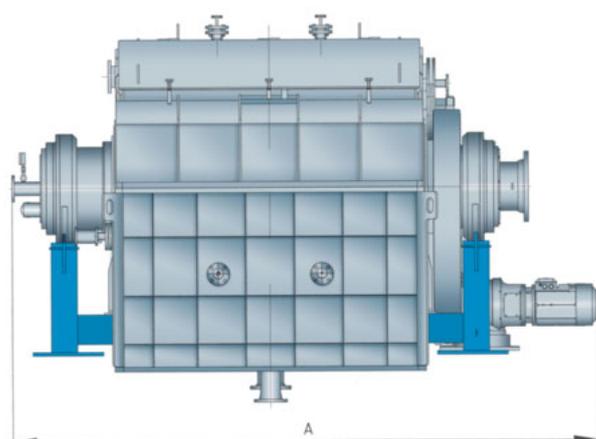
Technical data

Filter size	Nominal diameter [mm]	Width [mm]	Motor** [kW]	Weight* [kg]	Area [m ²]	A [mm]	B [mm]	C [mm]
12" x 4"	300	100	0.4	320	0.1	810	1,300	1,220
18" x 12"	450	305	1.5	810	0.5	1,850	1,830	1,470
18" x 24"	450	610	2.2	960	0.9	1,550	1,830	1,470
3' x 3'	900	915	4	2,230	2.8	2,340	1,400	1,400
4' x 4'	1,200	1,220	15	5,090	4.9	2,850	1,800	1,880
4' x 6'	1,200	1,830	15	5,880	7.2	3,450	1,800	1,880
5.5' x 6'	1,650	1,830	18.5	9,480	9.8	4,270	2,540	2,490
5.5' x 8'	1,650	2,440	18.5	11,045	13.0	4,880	2,540	2,490
5.5' x 10'	1,650	3,050	18.5	12,620	16.3	5,490	2,540	2,490
5.5' x 12'	1,650	3,660	22	14,180	19.2	6,095	2,540	2,490
6.5' x 12'	1,950	3,660	37	33,000	25	8,080	2,710	3,250
8' x 14'	2,400	4,270	45	50,510	35	9,295	3,380	4,250

All information is subject to change.

* Operating weight of filter includes filling (app. data)

** Power requirements in kW for drum drive (excl. vacuum and filtrate pump), depending on application



▲ Outline sketch of the YU vacuum drum filter

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