

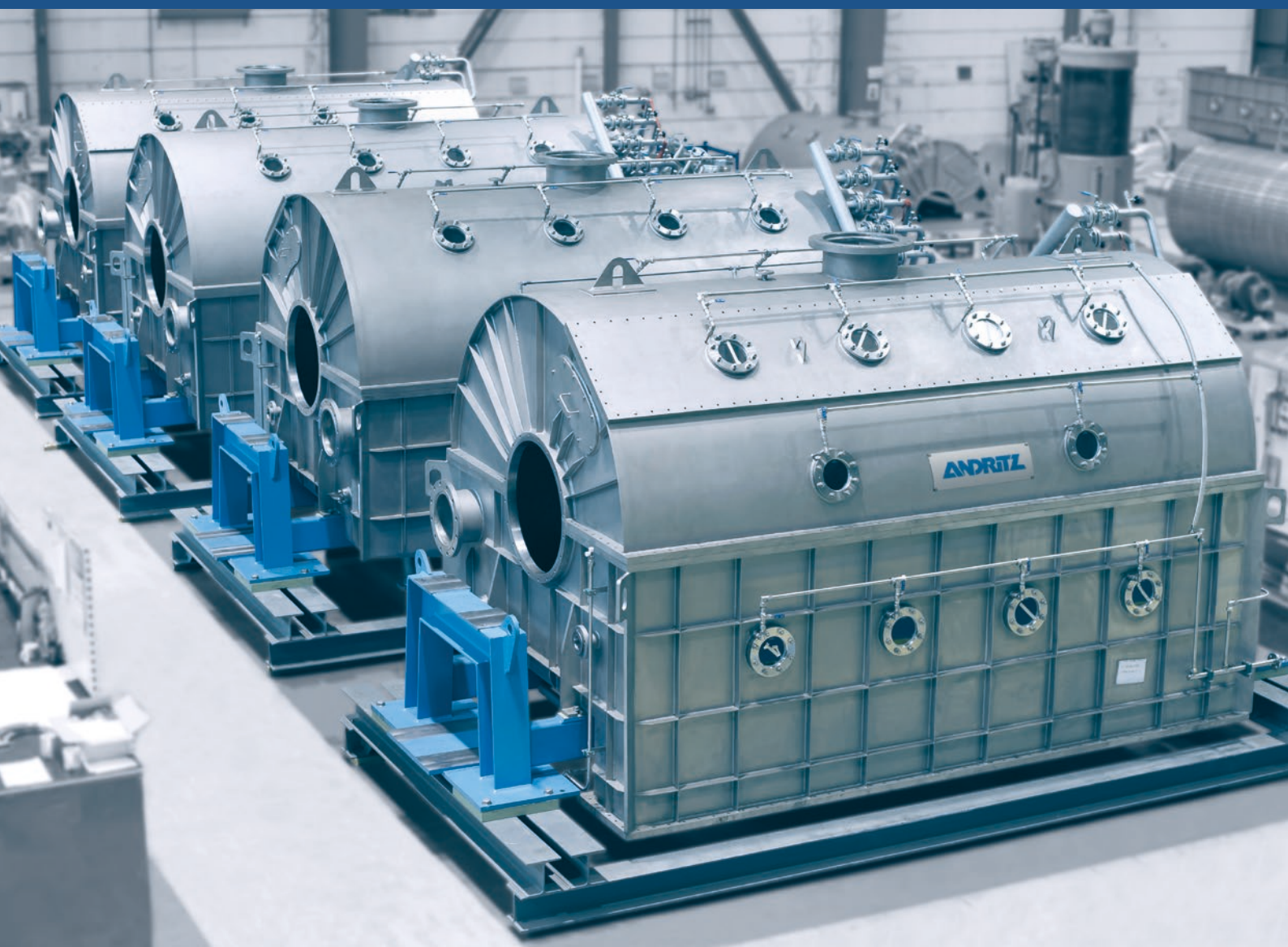


REDEFINING HIGH-CAPACITY FILTRATION

Vacuum and pressure drum filters YU and PYU

ANDRITZ

The high-capacity YU and PYU drum filters, formerly the Bird Young rotary filter, are the high-end solution for rotary vacuum and pressure drum filters. They are best suited for free-filtering materials, as they can benefit from the significantly 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.



Unlock the full potential of thin-cake filtration

The advantages of the ANDRITZ YU and PYU drum filters are particularly evident in thin-cake applications, where exceptionally high filtration rates, excellent cake washing, and outstanding solids throughput can be achieved, also available in gas-thigh design.

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

ONE CHALLENGE, TWO PROVEN FILTRATION SOLUTIONS

Every filtration process has unique requirements. To meet a wide range of operating conditions, ANDRITZ offers two complementary drum filter technologies: the YU vacuum drum filter and the PYU pressure drum filter.

Both solutions are based on the proven single-cell drum, excellent cake washing, and high solids throughput. The choice between the two technologies depends primarily on process requirements, product characteristics, and operating conditions.

- **YU vacuum drum filter** is the preferred solution for free-filtering materials where high filtration rates and efficient cake washing are required under vacuum conditions. Its unique single-cell design maximizes the active filtration area and enables high throughput in a compact installation footprint.
- **PYU pressure drum filter** operates under pressure, making it suitable for applications that require enhanced process containment, elevated temperatures, or increased filtration driving force. It combines high filtration capacity with reliable performance in demanding process environments.

MAIN APPLICATIONS

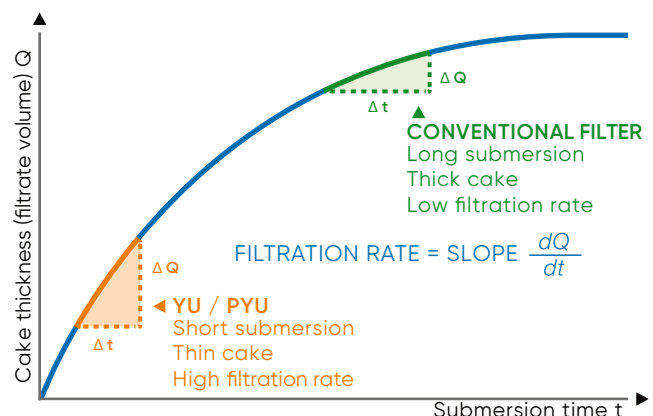
Terephthalic acid, bisphenol A, polymers, sodium sulfate, boric acid, explosives, aspirin, antibiotics, time-release medicine, winterized salad oils, sterates, sodium bicarbonate, starches

YOUR BENEFITS

- Highest filtration performance and solids throughput rates
- Outstanding cake washing efficiency through thin-cake filtration
- Maximum active filtration area (up to 93%) enabled by the unique single-cell design
- Open, accessible design for simple operation
- Gas-tight configuration available with visible process inspection
- High rotation speeds with rapid thin-cake formation
- Unrestricted gas flow for optimized process efficiency

YOUR SAVINGS

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



Typical filtration curve

Single-cell design for exceptional results with the YU drum filter

The ANDRITZ YU vacuum drum filter combines exceptional filtration capacity with superior cake washing and high solids throughput. Built on a proven single-cell design, it delivers reliable, efficient performance for demanding industrial applications while minimizing space requirements.

OPERATION

The suspension is continuously fed into the filter trough, whose unique inverted-pyramid design ensures uniform slurry distribution without the need for agitation. The single-cell drum is partially submerged, with up to 93% of its filtration area operating under vacuum. Rotating at speeds of up to 30 rpm, the drum forms a thin, uniform filter cake and delivers high filtration rates.

A liquid ring pump generates the vacuum, drawing the liquid through the filter cloth and leaving the solids deposited as a filter cake. As the drum rotates, the cake is lifted from the slurry and passes through washing and drying zones before reaching the discharge stage.

Cake discharge is achieved through a short gas pulse behind the filter cloth. This creates a snapping action that releases the cake completely while simultaneously cleaning the filter medium and maintaining vacuum integrity. The drum then re-enters the slurry to begin the next filtration cycle.

For enhanced performance, additional filter cloth cleaning can be achieved using water jets, bubbling, or a combination of both, ensuring reliable operation and consistent filtration efficiency.

PROCESSING PARAMETERS

Operating principle	Vacuum filtration
Operating mode	Continuous
Cake discharge	Blow-off
Particle size	50–300 µm
Filter area	0.1–35 m²
Filtration capacity	Up to 4,500 l/m²h
Solids throughput	Up to 3,500 kg/m²h
Gas-tight operation	Possible
Operating temperature	Up to 95 °C



YU vacuum drum filter for exceptional filtration capacity

Pressure-tight filtration for superior process performance with the PYU filter

The ANDRITZ PYU pressure drum filter combines the proven advantages of the single-cell drum design with the benefits of pressure-assisted operation. Designed for demanding applications requiring gas-tight processing, it delivers high filtration rates, excellent cake washing, and exceptional solids throughput while ensuring reliable, fully contained operation.

OPERATION

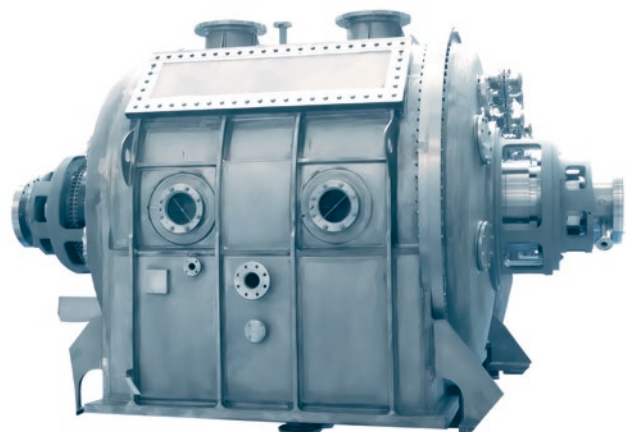
The PYU pressure drum filter combines the proven advantages of continuous operation with the performance benefits of pressure filtration. Operating within a fully enclosed, pressurized housing, the filter uses positive pressure as the driving force for solid-liquid separation. Compared to conventional vacuum filtration, the higher pressure differential across the filter cake enables significantly faster filtration rates, increased throughput, and superior dewatering performance.

As the drum rotates continuously, a thin and uniform filter cake is formed on the filter medium. The elevated filtration pressure accelerates liquid removal while promoting effective cake compaction, resulting in lower residual moisture and improved product quality. At the same time, the thin cake structure allows highly efficient displacement washing, achieving excellent purity levels while minimizing wash liquid consumption.

The combination of continuous operation, high filtration efficiency, and effective cake washing delivers greater plant productivity, reduced operating costs, and consistent process performance. With its ability to achieve high capacities, short cycle times, low residual moisture, and outstanding washing results, the PYU pressure drum filter is ideally suited for demanding applications where product quality, operational efficiency, and process economics are paramount.

PROCESSING PARAMETERS

Operating principle	Pressure filtration
Operating mode	Continuous
Cake discharge	Blow-off
Particle size	50-300 µm
Filter area	0.1-19 m ²
Filtration capacity	Up to 15,000 l/m ² h
Solids throughput	Up to 10,000 kg/m ² h
Max. operation pressure	6 bar
Operating temperature	Up to 160 °C



PYU pressure drum filter for demanding applications

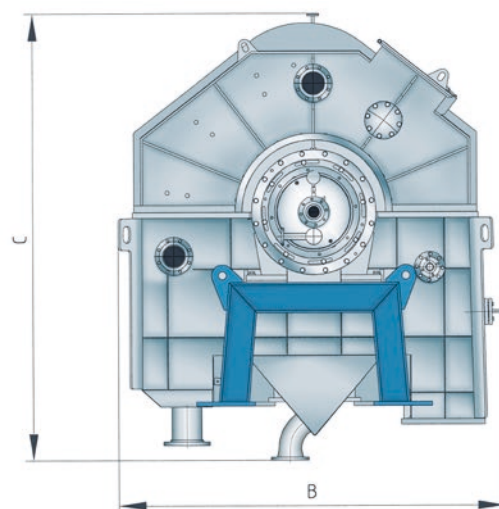
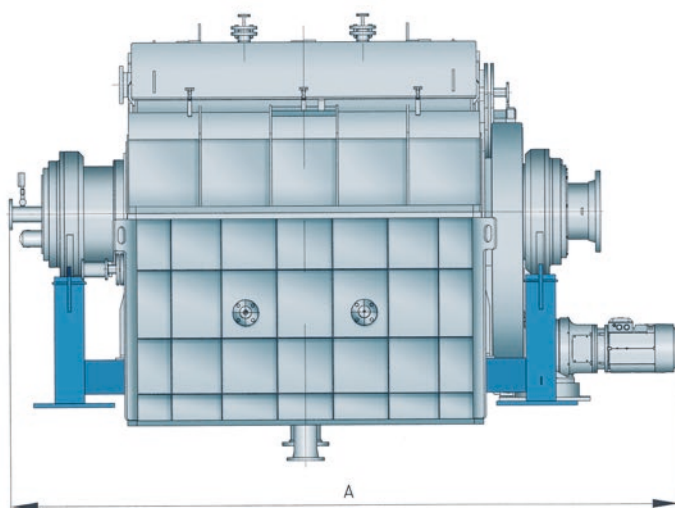
Technical data

Filter size	Nominal diameter [mm]	Width [mm]	Motor** [kw]	Weight* [kg]	Area [m²]	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	25	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 ANDRITZ vacuum drum filters YU / PYU

The right solution for any separation challenge

PEACE OF MIND, COST EFFICIENCY, AND SUSTAINABILITY – ALL FROM ONE TRUSTED PARTNER.

Regardless of your industry – whether environmental, chemicals, mining and minerals, or food and beverage – efficient separation processes are essential for high product quality, reduced waste, and the responsible use of valuable resources. With our advanced technologies, comprehensive services, and smart automation and digitalization solutions, we deliver peace of mind today and lasting success for tomorrow – efficiently, responsibly, and with measurable impact. What's more, with us you also gain access to one of the world's largest OEM manufacturers for solid/liquid separation for well-known brands such as 3Sys Technologies, Bird, Dedert, Delkor Capital Equipment (Pty) Ltd., Escher Wyss dryers, Guinard Centrifugation, KHD Humboldt Wedag, Krauss-Maffei centrifuges, dryers, and filters, LENSER Filtration, Netzsch Filtration, REINEVELD centrifuges, Rittershaus and Blecher, Royal GMF Gouda, Sprout Bauer, and Vandenbroek.

SEPARATION EQUIPMENT AND SYSTEMS

- Decanter and filter centrifuges
- Filter presses
- Dryers
- Presses and screens
- Extractors
- Thickeners
- Evaporators and crystallizers
- Disc and drum filters
- Screening and filtration components
- Specialized thermal systems



FULL-SERVICE OFFERING

- OEM spare and wear parts
 - Maintenance and repairs
- Service agreements
 - Automation and digitalization
 - Machine and process optimization
 - Second-hand and rentals

AUTOMATION AND DIGITALIZATION SOLUTIONS

Site assessment and integration • Advanced process control and artificial intelligence • Simulation and training • Digital twin technology • Data analytics and prediction • Electrification, instrumentation and controls

Enabling the green transition

As a technology leader in a changing world, we strive to make a positive impact on our environment. We believe that what we do today can make a difference tomorrow and in the future. We drive change and enable our customers to achieve their sustainability goals and make the world greener with our sustainable solutions in decarbonization, circular economy, renewable energy, and environmental technologies. It all starts with your specific process requirements and ends with a system that gives you the best results – day in and day out, for decades to come.

ANDRITZ. FOR GROWTH THAT MATTERS.



A WORLD OF SEPARATION SOLUTIONS

ANDRITZ provides mechanical and thermal solid/liquid separation technologies, complemented by comprehensive services, automation, and digitalization solutions for the chemicals, environment, food and beverage, as well as mining and minerals industries. Our customized, innovative solutions focus on minimizing resource consumption and maximizing process efficiency, thus making a substantial contribution towards sustainable environmental protection. With over 150 years of experience and more than 2,700 separation specialists around the globe, we are a driving force in the evolution of separation solutions – enabling industries to meet tomorrow's demands responsibly. **ANDRITZ. FOR GROWTH THAT MATTERS.**

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