



SEPARATION

HIGH-CAPACITY VACUUM FILTRATION

VACUUM DRUM FILTER YU

ANDRITZ

ENGINEERED SUCCESS



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

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

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

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.

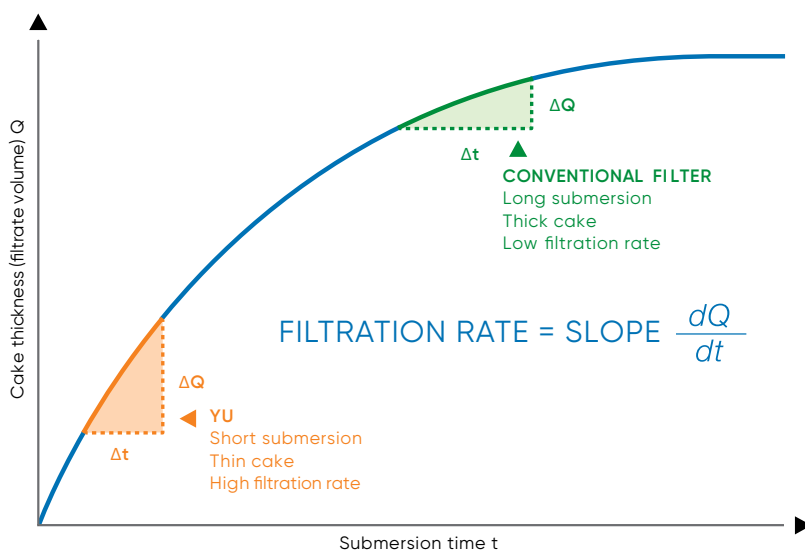
The filter cake is discharged by the blow-back shoe, which is fitted with very close clearance to the accurately machined inside surface of the cylinder, sealing off vacuum and blow-back pressure at the point of cake discharge. Cake discharge is achieved by a pulse of gas behind the cake. The snapping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

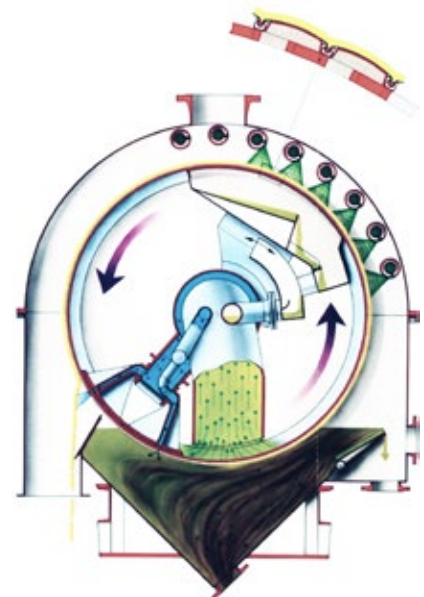
- Lower space requirements
- Fewer machines required
- No agitation necessary

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



Typical filtration curve



Functional diagram of ANDRITZ vacuum filter YU

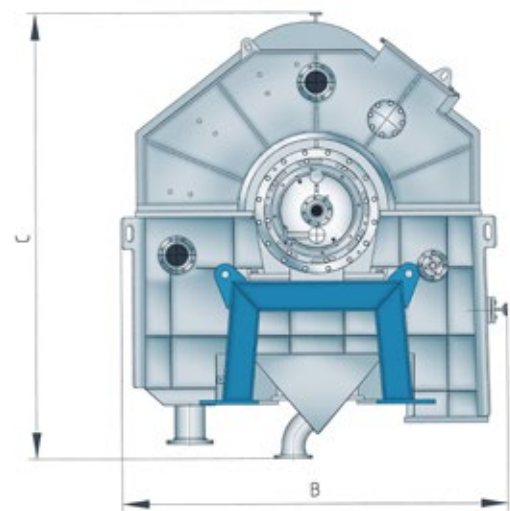
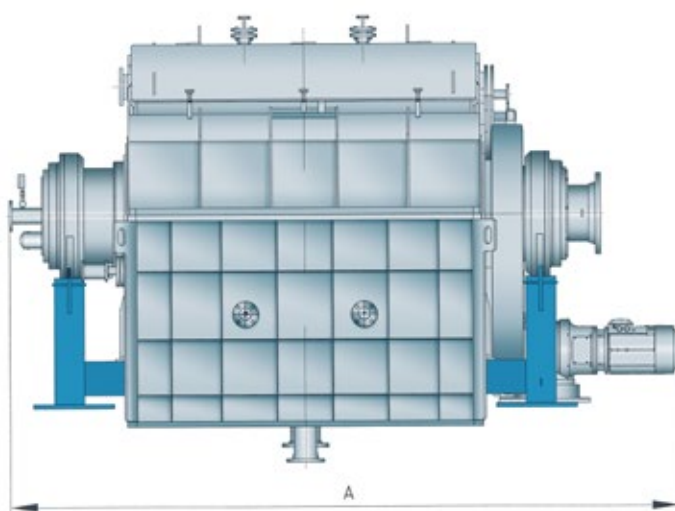
Technical data

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 filter YU

Intelligence for machine and process control

With Metris addIQ, you have a well-proven, intelligent control solution for industrial processes and machines. Our solid/liquid separation specialists use their in-depth expertise to provide scalable solutions that are individually tailored to regional and application requirements. Whether you're automating new equipment or upgrading to extend the lifecycle of existing systems, we find the ideal solution for you.

METRIS addIQ CONTROL SYSTEMS

Our tailored turnkey systems from a single supplier can improve entire plants or individual machines. By providing state-of-the-art automation technologies and digitalization, we ensure best-in-class performance. Automating machine and plant equipment measurably reduces gaps in many different production process steps. By using automation from ANDRITZ, you can reduce downtime thanks to features such as predictive analysis that allow you to optimize productivity.

Metris addIQ covers all levels of automation, starting at basic automation (machine, process, and plant control), to upgrades, and add-ons for process optimization. Together, you have a full range of optimized solutions that help reduce maintenance efforts and ensure preventive service for your machines and plants. These are all delivered from a single source and always individually tailored to your business demands. addIQ control systems are part of Metris, the ANDRITZ brand for digital solutions.



Metris
ANDRITZ Digital Solutions



ANDRITZ offers a broad and constantly growing range of innovative products and services in the industrial digitalization sector under the brand name Metris, helping customers to enhance plant efficiency and profitability, optimize the use of resources, achieve constant and highest product quality, reduce production downtime, and maximize user-friendliness.



Put our 150 years of OEM experience to work for you

Need to optimize your process? Boost availability? Ensure non-stop productivity? When you work with ANDRITZ, you gain access to one of the world's largest OEM manufacturers for solid/liquid separation. Put our in-depth knowledge of separation equipment and processing to work for you.

VAST EXPERIENCE THROUGH LARGE INSTALLED BASE

With an installed global base of more than 55,000 solid/liquid separation machines and systems, you can imagine that we take service seriously. Wherever these customers are located, we work very closely with them to maximize uptime and boost efficiency.

WELL-KNOWN OEM BRANDS

Some customers know us as the people with ANDRITZ on our overalls. Others have come to understand that we are the OEM behind former brand names like 3Sys Technologies, Bird, Delkor Capital Equipment (Pty) Ltd., Escher Wyss dryers, Frautech, Guinard Centrifugation, KHD Humboldt Wedag, Krauss-Maffei centrifuges, dryers, and filters, Lenser, Netzsch Filtration, Rittershaus & Blecher, Royal GMF Gouda, Sprout Bauer, and Vandenbroek – all companies that have been acquired by ANDRITZ. But frankly, we are capable of servicing and supplying spare parts for nearly all brands of solid/liquid separation equipment on the market.

LOCAL SUPPORT BACKED BY GLOBAL EXPERTISE

Our service philosophy is simple: One phone call, one contact person, one dedicated team that speaks your language and knows your equipment and process. This is not an empty promise. It is backed by a network of 550 service specialists for separation equipment and systems as well as service centers all around the world.

A TRUE FULL-SERVICE PROVIDER

Whether you need spare parts, rentals, local service, repairs, upgrades, or modernization of your equipment, ANDRITZ is your service specialist in all aspects of separation. From initial consulting through to service agreements, process optimization, and training programs, we are always looking for ways to minimize downtime and increase predictability in operations while raising your overall production efficiency. In short, we've got you covered.



LOCAL SUPPORT

Responsive local service centers and field service technicians



REPAIRS & UPGRADES

Optimization of machine and process performance, repair work, retrofitting, and modernization



LAB AND ON-SITE TESTS

Lab and testing capabilities for process optimization and machine upgrades



TRAINING

Operator training and tailored seminars for operating and maintenance personnel



OEM SPARE PARTS

Filter cloths, spare and wear parts from OEMs or with OEM level quality, all readily available



SERVICE AGREEMENTS

Preventive maintenance, contracts for spare parts, maintenance, inspections, repairs, upgrades, operation, and equipment monitoring



PROCESS OPTIMIZATION

Automation tools and process expertise to boost your profit



SECOND-HAND & RENTALS

Certified second-hand and rental machines





WHAT'S YOUR SEPARATION CHALLENGE?

ANDRITZ Separation is the world's leading separation specialist with the broadest technology portfolio and more than 2,000 specialists in 40 countries. For more than 150 years, we have been a driving force in the evolution of separation solutions and services for industries ranging from environment to food, chemicals, and mining & minerals. As the OEM for many of the world's leading brands, we have the solutions and services to transform your business to meet tomorrow's changing demands – wherever you are and whatever your separation challenge. **Ask your separation specialist!**

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