



SEPARATION

FIRST CHOICE IN A WIDE RANGE OF APPLICATIONS

KRAUSS-MAFFEI
VACUUM DRUM FILTER TSF

ANDRITZ

ENGINEERED SUCCESS

Krauss-Maffei vacuum drum filter TSF – first choice in a multitude of applications

Vacuum drum filters are the most frequently used continuous rotary filters in solid/liquid separation. From gas-tight to pressure belt designs, living up to the latest ATEX requirements, they can be tailored to tackle various filtration challenges. Ease of operation, high adaptiveness and simplicity in design make Krauss-Maffei vacuum drum filters TSF simply a clever solution.

Vacuum drum filters are very often the first choice to solve separation challenges – and not without reason. Suitable for a wide range of applications, our vacuum drum filters are versatile in use and come in a broad variety of design options. Whether it is high chemical resistance, gas-tight, heavy wear or polished design – the Krauss-Maffei vacuum drum filter TSF lives up to your needs.

The Krauss-Maffei vacuum drum filters TSF are available in various construction materials and are equipped with a productadaptive discharge system. Decades of process experience and continuous improvements are pillars of this solid and proven technology.

MAIN APPLICATIONS

ABS, aluminum hydroxide, aluminum, sulfate, antibiotics, BPA, dyestuffs, flotation concentrate such as coal, ore and potash sludge, gypsum, herbicides and insecticides, indigo, industrial and municipal wastewater, carbonates, plastic intermediates, cryolite, MBS, melamine, mycele, baking soda, pigments such as titanium dioxide and basic lead carbonate, phosphates, proteins, red mud, soda, cellulose, sugar solutions

CONSTRUCTION MATERIALS

- Carbon steel
- Stainless steel
- Special materials



YOUR BENEFITS

- Increased filtration performance
- Optimized hydraulic efficiency
- Easily accessible process area
- Maintenance-friendly
- Adaptable differential pressures for each filtration zone
- Processing in gas-tight designs
- Processing in accordance with ATEX requirements
- Reduced operating costs
- Low energy consumption
- Visual inspection of process area of gas-tight machines

PROCESSING PARAMETERS

Operating principle	Vacuum filtration
Operating mode	Continuous
Cake discharge	Scraper, roller, pre-coat, belt, string
Particle size	1-300 µm
Filter area	0.72-118 m²
Filtration capacity	100-2,000 l/m²h
Solids throughput	Up to 1,500 kg/m²h
Gas-tight operation	Up to 70 mbar
Operating temperature	Up to 95° C

OPERATION

The suspension to be filtered is fed continuously to the filter trough. Depending on the application, different systems are available to guarantee homogeneous mixing of the slurry. Thanks to the specially designed pendulum agitator from ANDRITZ Separation, sedimentation of the solids is prevented.

The shell of the filter drum is divided into cells and covered by a filter cloth. Approximately 37% of the filtration area is submerged in the suspension, and the drum rotates at up to 4 rpm. The Krauss-Maffei vacuum drum filter TSF builds up a vacuum with a liquid seal pump, which is connected to the drum cells via separators, control head and filtrate pipes. 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.

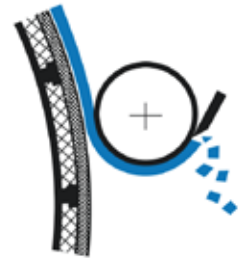
The filtrate is discharged either by pumping or by utilizing the barometric height. The filtered solids layer emerges from the slurry as the drum rotates and is then washed, dried, and removed from the filter cloth. In the course of one revolution, each point of the drum area passes through these zones in succession.

The wash liquid is applied to the cake either directly by washing devices (weirs, spray nozzles) or through a wash belt placed on top of the solids layer. The filtrates from the washing zones can be drained off separately, enabling multi-stage counter-current washing. The filter cake is discharged by means of a discharge device covering the entire drum width and which is specially suited to the cake thickness, consistency, structure, and so on (scraper, roller, pre-coat scraper, string or belt discharge).

As the drum rotates, it is re-immersed in the suspension. The filter cloth can be cleaned before the next filtration cycle, either with water jets, bubbling or both. For transport of solids our drum filters can be adapted with screw or belt conveyors as well as special designed chutes if the next process step is located near by the filter.



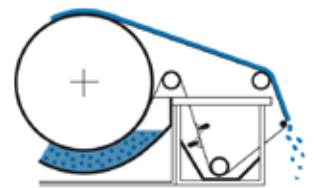
Scraper discharge



Roller discharge



Pre-coat scraper discharge



String/belt discharge

YOUR SAVINGS

- Fewer spare parts needed
- Optimized design for ease of inspection and time savings
- Lower maintenance costs
- Minimized downtimes

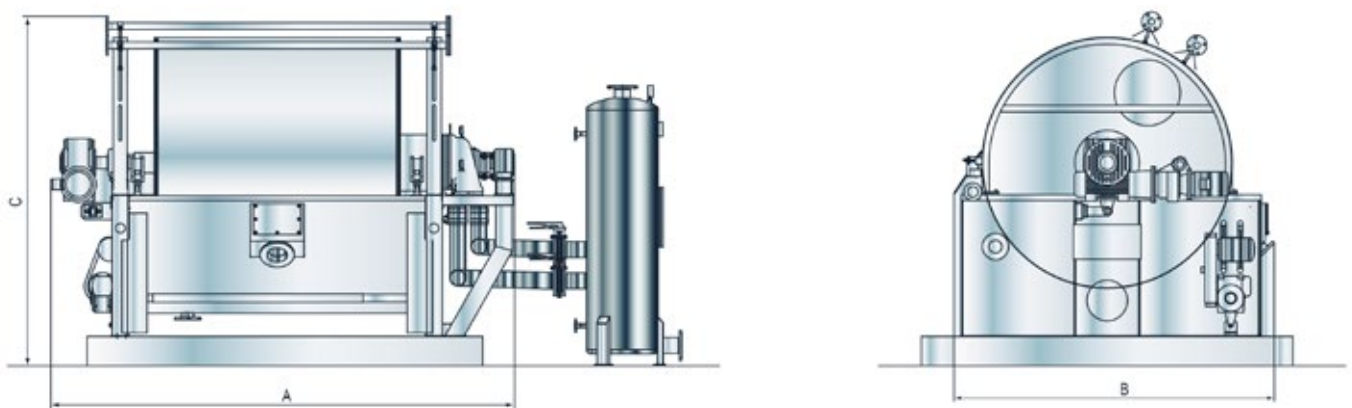
Technical data

Filter type	Filter area	Drum diameter	Drum width	Number of cells	A	B	C	Weight*	Drive**
	[m²]	[mm]	[mm]		[mm]	[mm]	[mm]	[t]	[kW]
TSF 9.2	0.72–5.80	920	250–2,000	14	2,050–3,800	2,050	1,700	2.0–4.1	1.5
TSF 13.1	4.00–12.00	1,310	1,000–3,000	20	2,900–4,700	2,300	2,000	3.5–7.5	2.2
TSF 20.9	10.00–19.00	2,090	1,500–3,000	16	3,500–5,000	3,700	2,800	9.5–13.5	3.0
TSF 26.2	20.00–33.00	2,620	2,500–4,000	20	4,900–6,400	4,100	4,000	17–23	4.4
TSF 31.4	30.00–60.00	3,140	3,000–6,000	24	5,400–8,400	4,700	4,000	24–42	6.0
TSF 36.6	69.00–75.00	3,660	6,000–6,500	28	8,250–9,250	5,700	4,200	56–59	8.0
TSF 41.8	100.00–118.00	4,180	7,500–9,000	32	9,850–11,350	6,000	5,300	68–70	11.0

All information is subject to change.

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

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



Outline of the Krauss-Maffei vacuum drum filter TSF

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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