

Krauss-Maffei TDF pressure drum filter

Highly reliable pressure filtration



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When it comes to pressurized drum filtration, there is always a basic challenge to overcome – achieving low residual moisture at high capacities. With its fully automated operation, ease of maintenance and flexibility in use, the Krauss-Maffei TDF pressure drum filter stands for reliability in quality, at low production costs and high efficiency.

Especially for fine and, in particular, ultra fine-grained products, pressurized filtration is the technology of choice to achieve an increased specific filtration rate and higher product quality.

The Krauss-Maffei TDF pressure drum filter comes in a closed design, which allows processing of toxic products under inert gas. When conventional methods have to pass or are becoming insufficient, our pressure drum filters are the right choice to meet your separation requirements efficiently and reliably. Operation at pressures of up to 10 bar and temperatures of up to 200 °C are thus no obstacle anymore.

Your benefits

- High flow rates at low residual moisture and high washing efficiency
- Optimized hydraulic efficiency
- Easily accessible process area, locking of pressure vessel with fast clamp ring
- Maintenance-friendly, wear-resistant discharge system
- Suitable for effective steam pressurization
- Processing of suspensions at high pressures and temperatures
- Handling of toxic products
- Adaptable differential pressures for each filtration zone

Processing parameters

| | |
|------------------------|---------------------------------|
| Operating principle: | pressure filtration |
| Operating mode: | continuous |
| Cake discharge: | scraper, roller |
| Particle size: | 1-300 µm |
| Filter area: | 0.1-41 m ² |
| Filtration capacity: | 1,000-10,000 l/m ² h |
| Solids throughput: | up to 9,000 kg/m ² h |
| Pressure operation: | up to 10 bar |
| Operating temperature: | up to 200 °C |



▲ Krauss-Maffei TDF pressure drum filter with open housing

Main applications

- Plastic intermediates (e.g. BPA, PTA, PET, melamine, etc.)
- Iron ore beneficiation pigments (e.g. iron oxides)
- Titanium dioxide
- Coal preparation
- Dyestuff
- Soda
- Food
- Pharmaceuticals

Materials of construction

- Carbon steel
- Stainless steel
- Special materials

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 special designed pendulum agitator from ANDRITZ SEPARATION, sedimentation of the solids is prevented.

The shell of the filter drum is divided into cells and is covered by a filter cloth. Approximately 30% of the filtration area is submerged in the suspension and the drum rotates at up to 6 rpm.

The Krauss-Maffei TDF pressure drum filter operates with overpressure inside the pressure vessel, forcing the liquid to filter through the filter cloth. Inside the control head, the drum surface is divided into different process steps: cake formation, cake wash, demoisturing, discharge, and cloth

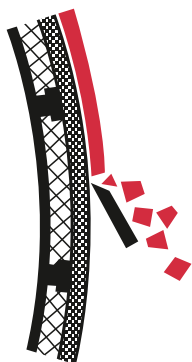
wash. In the course of one revolution, each point of the drum area passes through these zones in succession. The filtrate drains off through hydraulically optimized suction cells, filtrate pipes, control head, and separator.

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 either directly by washing devices (weirs, spray nozzles) or through a wash belt placed on top of the solids layer.

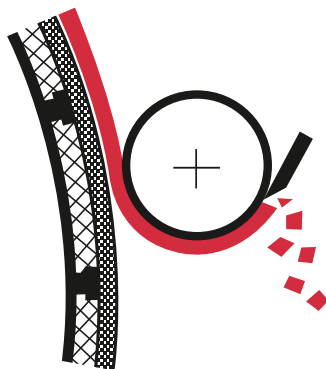
The filtrates from the washing zones can be drained off separately, enabling multi-step counter-current washing. The filter cake is discharged by means of a discharge device covering the entire drum width and which is specially suited to the cake thickness, consistency, structure, etc. (scraper, roller).

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 or with bubbling.

If the pressure level in the connecting process steps is different to the operating pressure of the Krauss-Maffei TDF pressure drum filter, a rotary valve is used for equalization.



▲ Scraper discharge



▲ Roller discharge

Your savings

Lower investment costs due to

- reduction of the total number of machines employed in the process
- smaller foot print
- less peripheral equipment needed

Lower operation costs due to

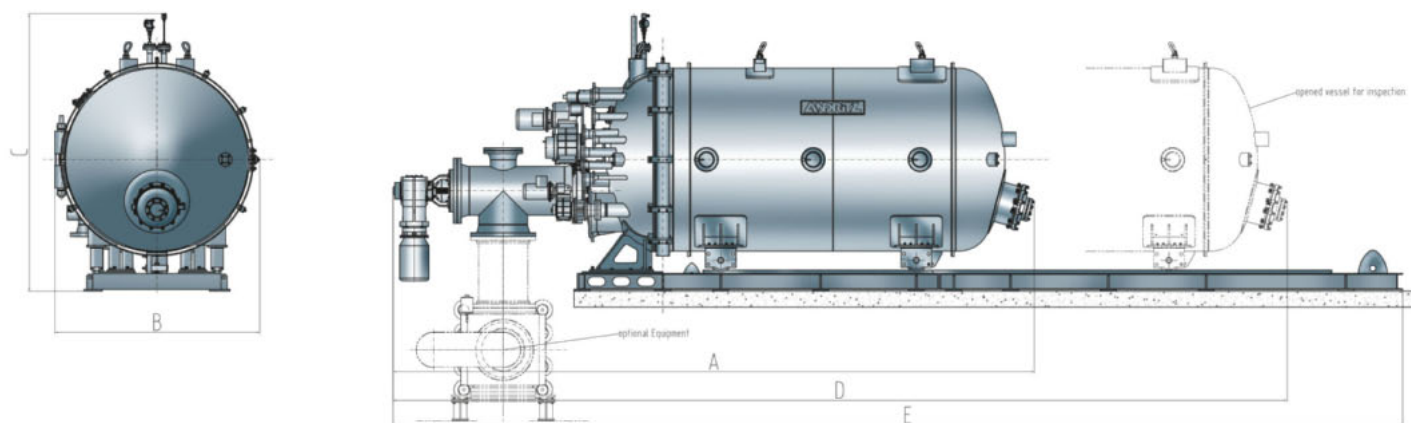
- lower specific energy consumption
- fewer spare parts needed
- optimized design for ease of inspection and time savings
- lower maintenance costs
- minimized downtimes

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Technical data

| Technical data | Unit | TDF 9.2 | TDF 13.1 | TDF 20.9 | TDF 26.2 |
|--------------------------|----------------|-------------|---------------|---------------|---------------|
| Filter area | m ² | 0.72-4.3 | 6-12 | 16-26 | 29-41 |
| Drum diameter | mm | 920 | 1,310 | 2,090 | 2,620 |
| Drum width | mm | 250-1,500 | 1,500-3,000 | 1,500-4,000 | 3,500-5,000 |
| Number of cells | | 20 | 20 | 24 | 24 |
| A | mm | 3,200-4,550 | 6,550-8,050 | 8,350-9,850 | 10,400-11,900 |
| B | mm | 2,300 | 2,575 | 3,600 | 4,650 |
| C | mm | 2,650 | 3,475 | 4,350 | 5,375 |
| D | mm | 4,750-6,000 | 9,700-11,200 | 12,750-14,250 | 14,900-16,400 |
| E | mm | 5,100-6,350 | 11,150-12,650 | 14,275-15,775 | 16,300-17,800 |
| Weight (without product) | t | 6.35-7.5 | 13.5-22.0 | 32.8-36.5 | 45.0-51.0 |
| Weight (with product) | t | 6.53-7.95 | 14.2-23.6 | 35.3-39.9 | 48.5-56.5 |

All information is subject to change.



▲ Outline of the Krauss-Maffei TDF pressure drum filter.

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