

One Source

Dorr-Oliver Vacuum Drum Filter



FLSmidth's Dorr-Oliver Brand: The Leader in Filtration Technology

About FLSmidth

FLSmidth is your One Source for the world's largest installed base of original equipment, enhanced products, technologies, and

services unmatched in the mining and minerals processing industries. FLSmidth offers a broad range of equipment and processes including: crushing, grinding, classifying, flotation, thickening and clarifying, vacuum and pressure filtration, pyroprocessing, material handling, slurry handling, automation, along with OEM quality spare parts, revamping services and other customer-service activities.

To successfully compete in today's challenging world economy, companies often require innovative solutions to make their plant operating systems function at highest efficiency. Utilizing the latest equipment technology, resources, and materials, we deliver the optimum design, equipment, and process support needed. When you select FLSmidth as your partner, we bring in our full capabilities to support your business.

About the Dorr-Oliver Brand

For more than 100 years, FLSmidth's Dorr-Oliver brand has supplied equipment for liquid/Solid separation and especially for filtration on a worldwide scope. During all that time we have gained extensive know-how which is the basis of our success. Our know-how linked with the continuous improvements of our processes and machines leads to best performance, high energy efficiency and maximum economical solutions.

Drum Filter Applications

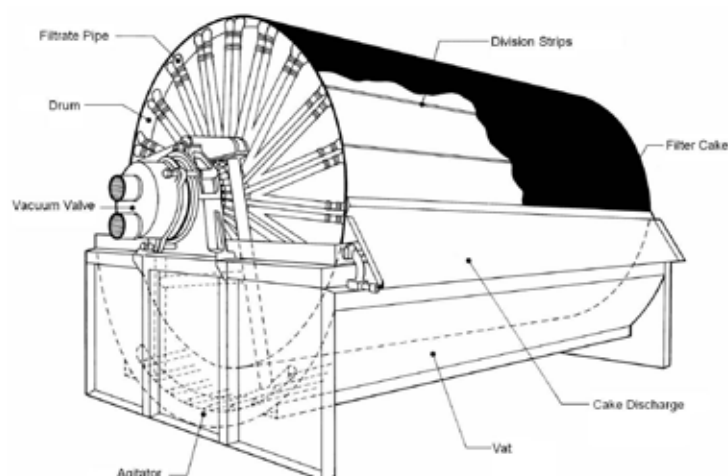
FLSmidth's Dorr-Oliver drum filters have been used for dewatering slurries of chemical and pharmaceutical, pulp, food, minerals beneficiation and metallurgical applications, as well as in waste-water treatment plants to dewater industrial and municipal sludges.

Design and Operating Principle

The drum filter's basic operating principle is easy. Everything happens during one revolution of the drum: with filter cake forming, cake drying, filtrate discharge and cake discharge for continuous production. The filtration area on the drum surface is divided into separate cells, connected by individual pipes to a vacuum system.

Filtrate piping can be arranged outside or inside of the drum. The drum deck, equipped with replaceable filter grids, supports the filter medium (cloth made from fabric or metal). A vacuum pump provides the necessary gas stream to accomplish dewatering. The vacuum sucks the liquor through the filter medium and forms a filter cake out of the solids, contained in the fed slurry. The drum can be operated at various speeds to control cake thickness. The time available for the various filtration steps (cake filtration, washing, air drying) can be adjusted via the filter control valve.

Slurry is continuously fed into the filter vat and an adjustable overflow weir controls the liquid level. For efficient operation of the filter, the vat is equipped with an agitator to prevent solids from settling. Cake discharge takes place on the descending side of the drum. Various kinds of discharge devices can be used.



Low Maintenance, Cost-efficient, and High Performance

Drum Filter Sizes

We provide drum filters in drum sizes from 900 to 4200 mm diameter, with standard sizes from 0.5 to 140 m² filtration areas. This wide product range offers the most appropriate filter for each application. For particular requirements we supply special solutions.

Materials of Construction

We build our filters using a variety of materials depending on application (mild steel, rubber-lined steel, stainless steel, exotic metals, e.g. Titanium, Hastelloy, Feralium). We can customize piping arrangements, discharge devices, and control devices. We will design and build units to whatever specification required, to fulfill our customer's needs.

For filtration processes with temperature extremes of temperature -40°C up to +85°C we can offer special design.

Each FLSmidth Dorr-Oliver Eimco drum filter will be designed for the hydraulic and pneumatic capacities required for the process and the material to be treated - it goes without saying that for higher filtration temperatures, the effect of vapour development on the suction side can be offered as a solution.

Each filter is therefore a tailor-made solution for the specific filtration process applicable to each client. Where possible, we standardize components to accelerate delivery to simplify supply of spare parts and keep the spare parts stock to a minimum.

Operation Benefits and Advantages

- **High Capacity**
Continuous high production for maximum filtering capacity - wide latitude in productivity per unit area.
- **Low Operation Cost**
Minimum maintenance due to easy operation and simple control features.
- **Efficient Vacuum Use**
Optimal hydraulic design and a perfectly seal low air leakage solution allows maximum dry cake discharge.
- **Excellent Filtrate Clarity**
Drum Filters frequently produce solids as low as 100 PPM. Precoat designs can achieve concentrations of 10 PPM or less.
- **Effective Cake Washing**
High purity of valuable product can be achieved with cake washing.
- **Flexibility**
Frequency controlled drives allow high flexibility to varying feed conditions.



Special Dorr-Oliver designs

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Special Drum Filters designs

- Extra Heavy Drum Filter for Iron Ore
- Press Belt Drum Filters for Pigment Industry
- Press Belt Drum Filter for Powdered Glass Filtration
- Vacuum Rotary Drum Filter
- Vapour-tight High-Flow Drum Filter
- Compact Filter for Food & Beverage Industry
- Red Mud Filter Filter for Alumina Industry
- Complete enclosed Gas-tight Drum Filter
- ATEX-Filter
- Dewaxing Filter for petrochemicals
- Dregs Filter



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