DEKKER Vacuum Pumps and Compressors for Disc Filter Applications

In every filtration application, a DEKKER liquid ring vacuum pump or compressor can reduce operating costs and minimize downtime.

DISC FILTERS

A disc filter consists of several discs. Each disc is made up of several pie-shaped sections. Disc filters can operate as either vacuum disc filters or pressurized disc filters. Because a pressure differential is applied across both disc faces, the effective filter area of a disc filter is much greater than that of a drum filter requiring the same floor space.

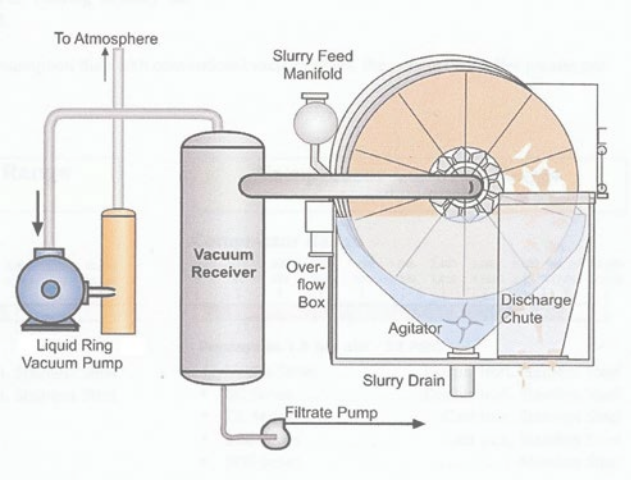
VACUUM DISC FILTERS

The operation of a vacuum disc filter is, except for washing, similar to a drum filter. The basic steps in the filtration process are:

- Cake Formation – An internal valve opens. This allows vacuum to be applied to the underside of the filter screen. The cake starts to form on the part of the disc that is submerged.
- Cake Drying – As the disc rotates out of the slurry, the drying portion of the cycle begins. Vacuum continues to be applied in order to create the pressure differential necessary to remove the filtrate.
- Cake Discharge – An internal valve is used to close off the vacuum at this point. The discharge mechanism can be; a scraper, belt, roll or string. Compressed air can be used to help remove the cake from the filter screen.

PRESSURIZED DISC FILTERS

- A pressurized disc filter applies relatively low pressure gas to the slurry side of the filter screen.
- The compressed gas (either air or recirculated process gases) is used to create the pressure differential necessary to achieve filtration.
- The filter is contained in an air-tight housing.
- Internal valves and piping channel the filtrate away from each disc and into a receiver.
- From the receiver, a compressor is used to recirculate the process gases back into the filter hood. The filtrate is pumped away for further use in the process.
- The filter housing is designed to contain the recirculated process gases. It can be manufactured from various material of construction.



TYPICAL APPLICATIONS:

Aluminum Hydrate
Aluminum Seed Filter
Chemical Processing
Coal
Copper Concentrate
Food Processing
Hematite
Iron Ore Taconite
Molybdenum
Pulp & Paper Manufacturing
Pyrite Flotation Concentrates

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PRECOAT DISC FILTERS

A Precoat Disc Filter can function as either a vacuum disc filter or a pressurized disc filter.

CAPILLARY ACTION (CERAMIC) DISC FILTERS

Ceramic filters are used to dewater mineral concentrates and for pelletizing feed slurries. Microporous ceramic discs replace conventional filter cloth. Capillary action draws liquid through the pores, and only a small vacuum pump is required, resulting in significantly reduced energy consumption.

The range of capillary action filters available covers a variety of process sizes and throughput requirements. Filtering capacity can reach as high as 100 tons an hour per unit.

With high availability and lower power consumption than conventional vacuum filters, this product will meet or exceed your vacuum requirements.

Pressurized Disc Filter

Photo Courtesy of Andritz AG

Flue Gas Desulfurization (FGD) Belt Filter Conveyor

Rotary Disc Filter

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GOLD STANDARD SUPPORT

Your Knowledge-Backed Guarantee. Need help sizing a vacuum pump? Having application problems? With over 100 years of combined experience, we've made it our business to know your needs as well as our systems capabilities. With DEKKER, you get a team of vacuum experts dedicated to helping you resolve system challenges, streamline processes, and optimize results.

Maintenance, service and repair so you keep operating at maximum efficiency.

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