

NASH Vacuum Pumps & Compressors for Disc Filter Applications



Disc Filters

A disc filter consists of several vertical discs on a common shaft. Each disc is made up of several pie-shaped sections. Disc filters can operate as either vacuum filters or pressurized 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.

Pressurized Disc Filters

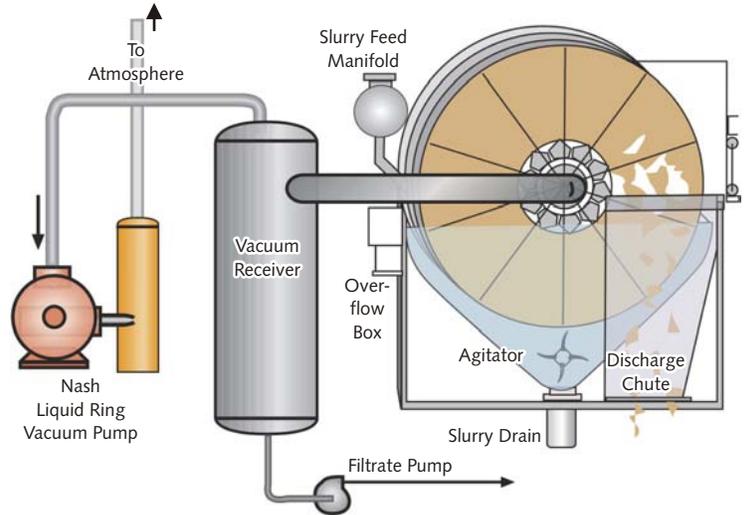
- A pressurized disc filter applies relatively low pressure gas to the slurry side of the filter screen.
- The compressed gas (either air or recirculated process gases) is used to create the pressure differential necessary to achieve filtration.
- The filter is contained in an air-tight housing.
- Filtration begins when the disc leaves the slurry.
- 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 gasses 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 gasses. It can be manufactured from various materials of construction.

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 pelletising feed slurries. Micro porous 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 with conventional vacuum filters, this product can offer greater productivity for your filter system.

Typical Applications

- | | |
|-------------------------------|---------------------|
| Iron ore taconite | Hematite |
| Aluminum hydrate | Coal |
| Aluminum seed filter | Copper concentrate |
| Pyrite flotation concentrates | Molybdenum |
| Food processing | Chemical processing |
| Pulp & Paper manufacturing | |



Pressurized Disc Filter

Photo courtesy of Andritz AG

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