

NASH Vacuum Pumps & Compressors for Drum Filter Applications



Rotary Drum Filters

One of the oldest filters used in industrial applications, a rotary drum filter resembles a drum laying on its side. One third to one half of it is submerged in the slurry. The basic steps in the filtration process are:

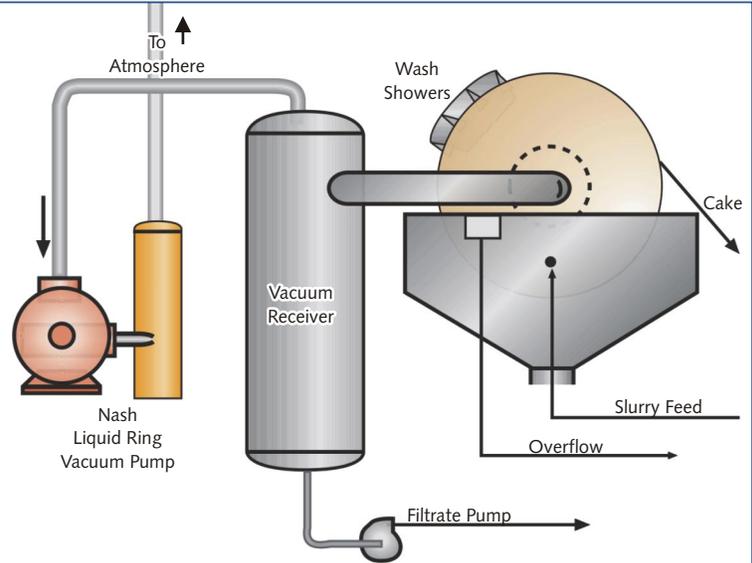
- **Cake Formation** - An internal valve opens. This allows vacuum to be applied to the underside of the filter screen. The cake starts to form on the part of the drum that is submerged.
- **Cake Washing & Drying** - As the drum rotates out of the slurry, the drying portion of the cycle begins. Vacuum 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 either a scraper, belt, roll or string. Compressed air can be used to help remove the cake from the filter screen.

Typical Applications

Kaolin clay	Metal Hydroxide waste
Titanium dioxide	Alumina (red mud)
Pharmaceuticals	Chemical processing
Gypsum	Pulp & Paper manufacturing
Food processing (starches)	Industrial water management
Mining and mineral	Sugar processing



Drum Filter Vacuum System



Rotary Drum Precoat Filters

Similar to a Rotary Drum Filter, the Precoat Filter is used to polish the filtrate. The main difference is that the scraper blade is stationary on a conventional drum filter, but slowly moving on the precoat filter. The goal is to avoid formation of a thick layer of cake by continuously shaving it off. In addition, the precoat drum is always subject to vacuum - there is no dead zone.

Precoat filters are generally used when:

- Filtrates need a very high degree of clarity
- The solids content is very low (less than 2-3%)
- The solids are sticky and would normally clog a filter clot

Typical Precoat Applications

Oily and chemical wastes	Lime mud	Polishing
Alumina (red mud)	Poultry	Pharmaceuticals
Chemical processing	Tank wash	Corn syrup
Food processing	Pulp & Paper manufacturing	



Rotary Drum Precoat Filter System

Photo courtesy of WesTech

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