

Process Pumps for Vacuum Filtration



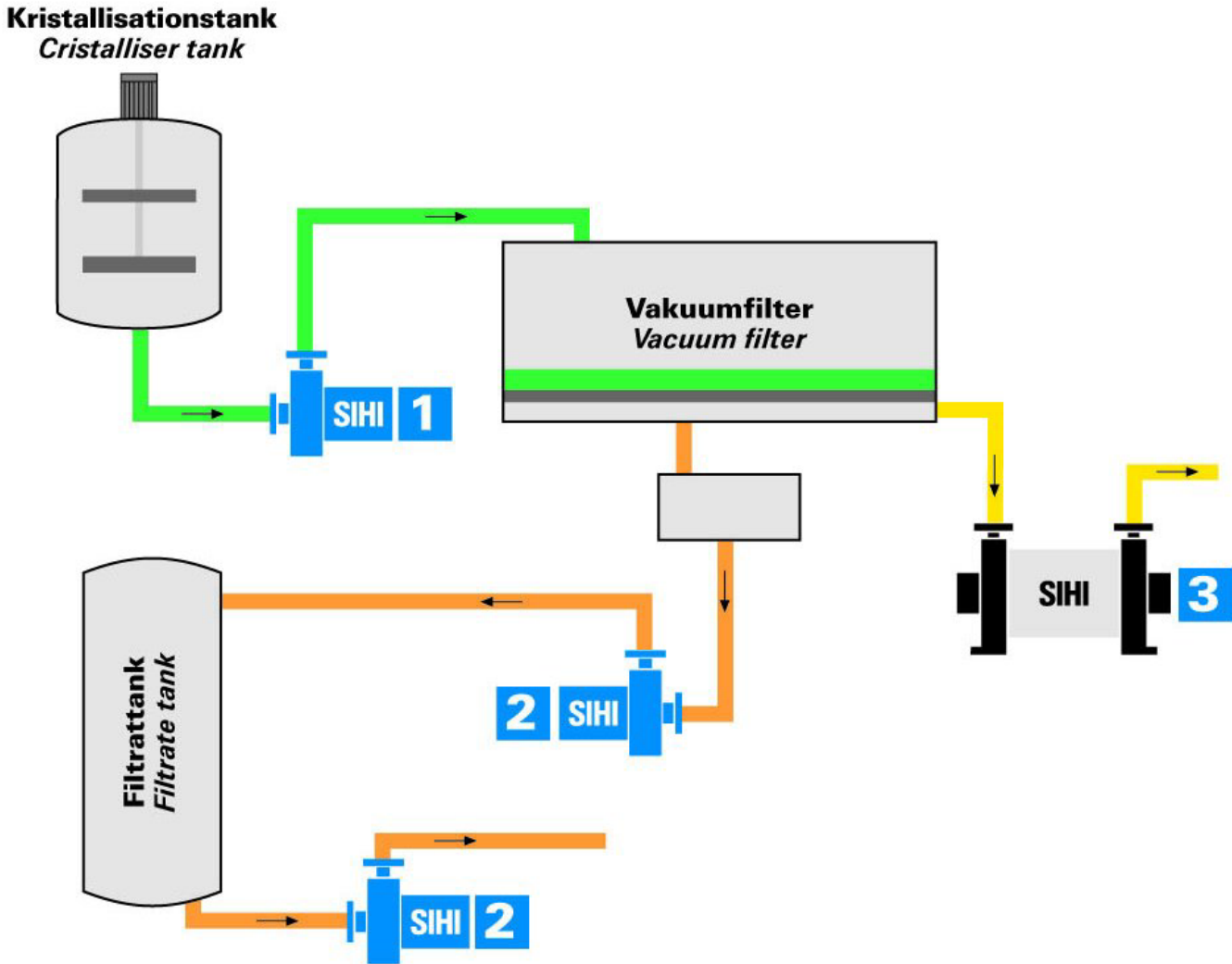
The vacuum filtration process uses a mechanical system where the suspended mixture that needs to be separated is passed through a filter made of textile or paper tissues.

The filter has very fine holes built into it thereby preventing the larger particles from passing through. These retained particles build up on the filter and form a layer, which is called the filter cake.

In the chemical industry a typical machine utilises a strainer under suction and this filter design has a hopper with a flat perforated plate covered with filter paper. The liquid that needs to be filtered has the air drawn through it by the suction vessel that is positioned underneath it ensuring a rapid and effective method of filtration.

The liquid then flows through the filter but as the filter cake builds up it prevents the smaller particles from passing through the filter. To overcome this problem and to improve the filter results it is possible to add filter aids such as activated carbon or diatomaceous earth to the suspension.

Process Pumps for Vacuum Filtration



An overview of the various Process Pumps

- 1 Feed pumps**
The feed pumps transfer the liquid to the vacuum filter. The requirements for these pumps vary depending on the filter volume and the substance properties.
- 2 Discharge pumps**
The discharge pumps transfer the filtrate to other stages in the process or into tanks where it is stored. Depending on the properties of the filtrate and the availability of by-products, the requirements for the discharge pumps vary.
- 3 Vacuum pumps**
Vacuum pumps are used for the filtration process to generate the differential pressure in the filter. Often dry running vacuum pumps or liquid ring vacuum pumps are used.

Innovative Solutions from Sterling SIHI

Process pumps	Pump types	Pump execution		
1 Feed pumps	Chemical process pumps Type CBS, CBM, CBE, CBT		Capacity: max. 2200 m³/h Shaft sealing: mechanical seal, mag drive Materials: nodular iron, stainless steel, special materials on request	
	Side channel pumps Type CEH		Capacity: max. 35 m³/h Shaft sealing: mechanical seal, mag drive Materials: nodular iron, stainless steel	
2 Discharge pumps	Chemical process pumps Type CBS, CBM, CBE, CBT		Capacity: max. 2200 m³/h Shaft sealing: mechanical seal, mag drive Materials: nodular iron, stainless steel, special materials on request	
	Liquid ring vacuum pumps Type LPHX/LPH		Capacity: max. 10700 m³/h Shaft sealing: stuffing box, mechanical seal Materials: grey cast iron, stainless steel	
3 Vacuum pumps	Dry running vacuum pumps Type SIHI ^{dry}		Capacity: max. 1000 m³/h Suction pressure: > 0.001 mbar abs Materials: nodular iron / steel	



... Liquid pumps, vacuum pumps and complete vacuum systems ... from one source

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