Automatic backwash filters for medium to high viscosity fluids

Lenzing AKF/KKF/ViscoFil® Filters

Lenzing AKF, KKF and ViscoFil® filters are fully automatic, continuous depth filtration systems. A sintered metal fleece is used as the filtration layer of the multi-layer cylindrical screen. This depth filter fleece layer captures various sized and shaped solid particles. After the predetermined degree of solids contamination has been reached, the screen is cleaned via a systematic back-washing of small sections in a circular rotation pattern. Filtration continues during the backwash process.

Advantages

- Applicable for very highly viscous fluids
- Filter fineness down to 3 µm
- Gel removal capability

Fluids Filtered

- Spinning solutions including viscose, polyacrylics, polyimides, cellulose acetate, spandex and aramid
- Resin, varnish, petrochemical products, hot-melt adhesives

Lenzing
Innovative by nature

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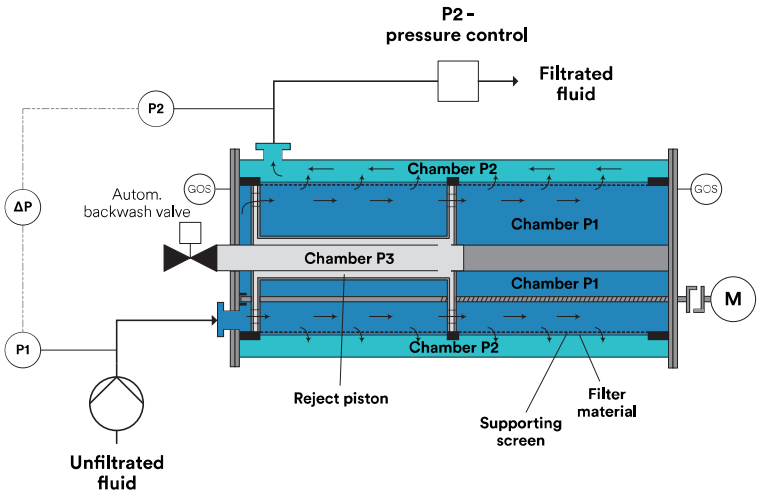
Filtration

Unfiltered fluid is pumped to the inlet of the P1 chamber. Separation of the solid particles occurs as the fluid flows from the P1 (unfiltered fluid) chamber into the P2 (filtrate) chamber. The fluid is fed into a perforated cylindrical screen positioned between these two chambers. The filtered fluid is discharged through the outlet and then flows to a P2 pressure control valve or a P2 tank. Blockage of the filter media by captured solids results in a steady increase in differential pressure (delta P) between chambers P1 and P2. The increase in differential pressure is managed by the control system.

Operating principle



Backwashing

After reaching the preset differential pressure level, the backwash process begins and the filter media is cleaned automatically. This cleaning process is effectuated by the movement of the reject piston from lid to bottom or in reverse direction. The piston rings seal to the inside surface of the perforated cylindrical screen that supports the filter media. During the backwash cycle, the differential pressure between the P2 (filtrate) chamber and P3 (reject) chamber forces a small volume of the filtrate backwards through the filter media. After having cleaned the entire filter media surface, the backwash device returns to a waiting position until such time as the differential pressure again reaches the preset level.