

Winery Achieves Process Improvement and Cost Savings Using SUPRADisc™ II Modules with Inside/Outside Separator Technology

Overview

Classical sheet filtration and stacked disc methods of filtration continues to be well represented in the wine industry. Wineries today consistently meet the demand for supplying top quality wines using lenticular modules and membrane filter cartridges as the final filtration steps prior to bottling. With enclosed designs and their capability for adsorption, surface and depth filtration, filter sheet-based modules enable particle, colloidal haze and bacteria reduction to maximize protection of downstream membrane filters while maintaining the highest possible wine quality.

The Challenge

A large producer of premium bottled wines was using classical stacked disc modules as a prefilter for the final membrane cartridge filters in the bottling lines.

The winery was observing problems with handling their classical stacked disc modules such as discs falling apart during dismantling from the housing and module deformation during use. Additionally, the customer was unhappy with the limited total throughputs and service life. As a result, the customer decided to use SUPRADisc II modules to improve his process.



The Solution

Pall Corporation recommended testing SUPRAdisc II filter modules to facilitate better handling, increased process safety and higher total throughput by using a backflush procedure.

Four 12" SUPRAdisc II depth filter modules, type SUPRAdisc II SD200X900C232SPW, were installed in the filtration line for prefiltration of wines. As with the legacy modules, the SUPRAdisc II filters were used in process until they achieved a differential pressure of 3.0 bar. With the existing modules, once this differential pressure was achieved, the modules were typically clogged and could not be regenerated. However, with the SUPRAdisc II modules, after the filtration run, the modules were backflushed with cold water and forward rinsed with hot water (about 60-65 °C (140-149 °F)) for regeneration which proved successful. Upon restart of the filtration, the customer achieved an initial differential pressure of only 0.3 bar so they could continue on with filtration. As a result of these trials, the winery standardized on SUPRAdisc II Modules, implemented backflush to regenerate the modules in the process, and is now able to achieve up to 40% higher total throughput which significantly reduces OPEX.

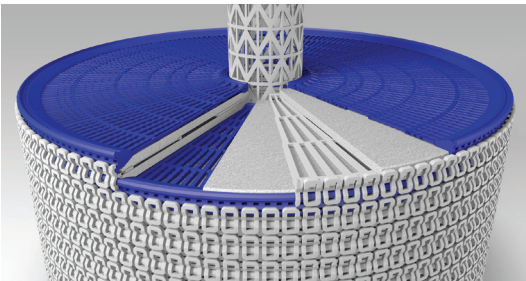


SUPRAdisc II Filter Module

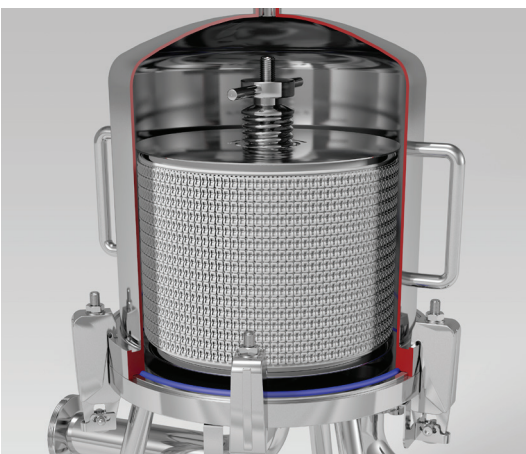
The Benefits



- ◀ The classical stacked disc module represents the earliest lenticular module design with performance disadvantages like modules deformation and inability to withstand reverse pressure or backflushing.



- ◀ With a dual plate or inside/outside separator design as shown at left, SUPRAdisc II modules are a significant improvement on the stacked disc design and can be used as an advancement in classical stacked disc and sheet filtration applications.



- ◀ In summary, SUPRAdisc II modules meet customer requirements for improved capacity and process safety. The innovative design characteristics based on the inside/outside separator technology are the key to unique filtration performance, easy handling, higher process safety and the possibility to use backflush procedures to improve total throughput.

SUPRADisc II depth filter modules provide:

- Lower filtration cost per liter
- Increased total throughput
- Feasibility to use backflush for regeneration
- Easier and faster modules changeouts than conventional stacked disc modules



About Pall

Pall Corporation provides critical filtration, separation and purification solutions to meet the demanding needs of a broad spectrum of life sciences and industrial customers around the globe.

Across 80 locations and 10,000 people worldwide, we are unified by a singular drive: to solve our customers' biggest fluid management challenges. And in doing so advance health, safety and environmentally responsible technologies.



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NOVEMBER 2021