Backwashing pressure filter systems

RPA Process Technologies

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A member of the Dover Resources group of the Dover family of companies.
With a cleanable, reusable media system, you can eliminate annual disposal costs and start achieving payback soon after installation. In the long term, cleanable media systems also reduce, or eliminate, waste disposal costs and enable environmentally responsible manufacturing initiatives. These savings more than overcome a slightly higher initial purchase price over traditional disposable media systems.

Knowledge, experience, resources a partner you can trust
With installations in thousands of the world’s leading manufacturing plants, and experience in over 10,000 applications, no one knows more about process filtration than RPA Process Technologies.

Systems thinking enables solutions
Upstream and downstream, your process parameters have a significant impact on the best total filtration solution. We can recommend a system that addresses your specific needs, increases throughput, maximizes solids capture and reduces maintenance demands. And, a comprehensive family of backwashing pressure filters, bag- and cartridge-style filters, our patented Disc Cleaning Filter (DCF) and other products help us develop total filtration system solutions tailored to your exact application and business needs.

Computerized application database speeds solutions
We’ve solved thousands of filtration challenges worldwide over almost sixty decades. We maintain a searchable knowledge database of our filter installations that can help accelerate development of your solution and ensure timely, responsive system design. Bring us your toughest problem, chances are we’ve already solved one like it.

Cleanable, reusable media saves cost,
Driven by a culture of innovative thinking, we created the Ronningen-Petter AFR-Series. This revolutionary system was designed from the ground up for the most demanding applications. Consisting of a simple, exclusive circular configuration, including four to eight stations, the AFR-Series delivers high performance and high volume in a compact, space-saving design with very few moving parts. The result? A system capable of handling flow rates as high as 2,000 gpm (454 m³/hr) at operating pressures up to 250 psi (17 bar). In fact, a single AFR-Series filter can replace a 13-station multiplexed system. For even higher flow rates, AFR-Series filters can be easily combined.

In addition, this unique configuration allows use of a single rotating flow diverter that replaces multiple valves for fewer moving parts and longer service life. Like our other multiplex filters, the AFR-Series supports automated backwashing, triggered by reaching a pre-set differential pressure threshold.

Ronningen-Petter F-Series
For continuous, high-flow service and solids removal from 10 mesh to 1 micron, our compact, efficient F-Series multiplex filter systems are ideal. A Ronningen-Petter F-Series filter includes 2–20 stations, valued in parallel to common inlet, outlet and drain headers. A unique bottom-to-top flow pattern ensures more equal distribution of solids on the filter surface for longer operation time between cleanings. Standard F-Series systems are sized for 250 psi (17 bar) service and optional high-pressure systems can handle up to 1,000 psi (69 bar) ratings. A rugged, easy-access tube-lid enables access to filtration media for changeover.

When loss of filtrate through cleaning is undesirable (when dealing with a valuable or dangerous feedstock), or when pressure is too low to effectively clean media, F-Series filters can utilize external backwashing.

Filtres Philippe VWS-Series
When your application demands very high flow rates with a small footprint, our Filtres Philippe VWS-Series system is an ideal solution. Capable of up to 22,000 gpm (4,997 m³/hr), the VWS-Series can be used in a variety of applications requiring surface and drilling water. The VWS-Series is capable of retention from 50 to 2,000 microns utilizing stainless steel wedge wire media. Fully automatic backwashing, based on time or pressure differential, can occur while the system remains on-line for no interruption of your process.

Ronningen-Petter A-Series single- and duo-tube
For small batch processing, with flow requirements of less than 250 gpm (<57 m³/hr), Ronningen-Petter A-Series single-tube systems are an ideal balance of performance and economy. Offered in standard and Strate-Thru (for applications processing liquids greater than 500 centipoise) configurations, these systems are well-suited to batch applications such as tank loading and unloading, product mixing and machine coolant cleanup.

Our duo-tube systems are perfect for low-volume continuous processes. Consisting of two single filters connected in parallel with a 3-way T-ported ball valve to provide continuous service, the system enables you to
Better engineered for better performance

RPA Process Technologies filters are known for the industry’s best engineering and construction. Our backwashing pressure filters are designed and built to last. And, with the industry’s broadest range of available media, your investment can be quickly and easily reconfigured for efficiency with rapidly changing feedstocks.

Industry-leading media choices
To ensure the broadest range of applicability for our backwashing pressure filters, we offer a broad range of available media.

AFR-Series, F-Series, and A-Series media
Our four basic media choices handle a wide range of applications:
- Wire mesh 1,650 to 2 microns
- Perforated 1,650 to 600 microns
- Slotted 1,650 to 15 microns
- Fabric 610 to 1 micron

AFR-Series media
AFR-Series filters offer the four options above, plus two additional choices in retentions from 1 to 1,650 microns:
- TRI-CLUSTER three-tube media for greater surface area than single-element designs, with an economical up-front investment
- ACCUFLOX seven-tube media that increase surface area from 364 to 791 square inches (.23 to .51 square meters), as compared to single-element filters, and flow by up to 30 percent

VMS-Series media
Our VMS-Series filters use slotted wedge wire media, available in retentions from 80 microns to 2 millimeters. Optional special protective coatings ensure reliable performance in seawater intake applications.

A fundamentally better seal
Every RPA Process Technologies backwashing pressure filter system is designed to ensure a positive seal that prevents bypass conditions. Our sealing systems are designed to ensure that even with minimal training, your operators can easily obtain a perfect seal.

Optimized flow for greater efficiency
Every Ronningen-Petter tubular filter from our simplest A-Series to the cutting-edge AFR-Series is engineered to ensure maximum liquid flow. Most of these systems use pulled headers to eliminate 90-degree angles and reduce pressure drop. Inlet and outlet nozzles are also gradually curved for the same reason. Finally, 3-way, 7-port ball valves are utilized to minimize pressure drop between inlet and outlet.

Automated control solutions simplify operation
Our automated backwashing filter systems virtually eliminate operator intervention requirements. Automated control systems trigger and control the backwash process, as defined by the parameters you set. To seamlessly integrate with your existing industrial automation platform, we offer a choice of control systems, including:
- DeltaGard solid-state controller IC-based construction for reliable operation in demanding industrial environments. This advanced proprietary system requires 110-220 volt 1-phase current and only 5 SCFM at 60 psi (140 litres/min at 4 bar) shop air for operation.
- Siemens Simatic S7 microprocessor-based controller standard with both an adjustable timer and pressure differential driven cleaning. This system is readily integrated into your plant automation system for remote monitoring and available remote access and diagnostic software.
- Pneumatic control for explosion-proof applications or applications where electrical componentry is not an option, a pneumatic programmer is available.

If your process control needs change, most of these control solutions can be easily retrofitted to our backwashing pressure filters. We can also offer other custom control options. Just ask your sales representative for details.