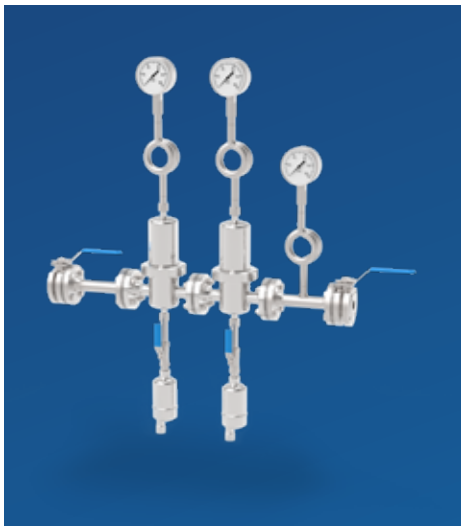
Donaldson
FILTRATION SOLUTIONS

SYSTEM ENGINEERED SOLUTIONS



WHY SYSTEM ENGINEERED SOLUTIONS?

The right choice for food and beverage customers

Our System Engineered Solutions are designed for point-of-use filtration of process and ingredient liquids to meet the filtration requirements of the food and beverage industry. We work together with our customers to develop the most efficient filtration systems to meet their product requirements and ensure easy integration in the production processes.

Our Market Sector Specialists understand the process, integrity and sustainability needs; dedicated application engineers design filtration solutions to help to meet unique requirements.

Our skid solutions are available in different sizes and can be custom-adapted to the needs of the production and to the product characteristics. They support flexible and efficient production processes.

The configuration with the premium LifeTec™ liquid filter elements offers best-in-class filtration technology to support product and process integrity. The elements are extremely robust and come with an excellent flow rate and low pressure drop, reducing total cost of ownership.

MODULAR SKID FILTRATION SYSTEMS

Modular to your needs

A Modular Skid consists of one or more filtration stages for manual operation, ranging from prefiltration to final filtration. The skids come with premounted valves and manometer and are available in different sizes, according to the number of filter elements in place. A connection to a Clean In Place (CIP) system is easily possible.

The skid can be assembled in a modular way with the possibility to add further filtration steps whenever required.

The Plug-and-Play functionality of the Modular Skid enables fast and fluent integration into your manufacturing plant. The easy integration supports a high flexibility in the process lines of the food and beverage industry and helps to save maintenance costs and production downtime. This leads to an increased operational efficiency.

Application Examples

- Bottled Water
- Wine/Spirit Clarification
- Wine Cold Stabilization
- Beer Clarification
- Beer Cold Stabilization

Model	PF-MS 0130	PF-MS 0330	PF-MS 0530	PF-MS 0830	PF-MS 1230
Stages of filtration	1 - 4				
Number of filter elements per housing	1	3	5	8	12
Size of filter element [inch]	30 standard (10, 20 and 40 upon request)				
Inlet/outlet size, tri-clamp ASME-BPE	DN40 (1.5 in)	DN40 (1.5 in)	DN50 (2.0 in)	DN50 (2.0 in)	DN65 (2.5 in)
Operating temperature	Minimum -10 °C (14 °F) – Maximum 150 °C (302 °F)				
Max. operating pressure	10 bar at temperature 120 °C (248 °F)				
Filter vessel volume [l]	6.6	17.8	39	49.8	77
Performance with water [hl/h]	Up to 240				
Filter elements range [µm]	LifeTec™ filter elements graded sterile, absolute and nominal 0.2, 0.45, 0.6, 0.8, 1, 2.4, 5, 10				

FULL FLOW FILTRATION SYSTEMS

Versatile and tailor made

Our Full Flow Filtration systems range from completely manual to fully automated filtration systems available in different volumetrics and customizable options.

The system is specifically designed around our premium LifeTec filter elements, offering best-in-class filtration for clarification, trap-filtration and cold sterile filtration of water, beer, and wine.

The system's design follows a tailor made approach while using standard housings on a skid that can be designed to your needs. Configurations with one to three pre-filtration steps are equally possible as parallel configurations for redundancy or continuous filtration.

Integration of the system into the existing plant is possible upon request.

Application Examples

- Bottled Water
- Wine/Spirit Clarification
- Wine Cold Stabilization
- Beer Clarification
- Beer Cold Stabilization
- Trap Filtration
- Process Water (all sectors)

Model	PF-FF-3 0130	PF-FF-3 0330	PF-FF-3 0530	PF-FF-3 0830	PF-FF-3 1230	PF-FF-3 1830	PF-FF-3 2430	PF-FF-3 3030
Stages of filtration	1 - 4							
Number of filter elements per housing	1	3	5	8	12	18	24	30
Size of filter element [inch]	30 standard (10, 20 and 40 upon request)							
Inlet/outlet size, tri-clamp ASME-BPE	DN25 (1.0 in)	DN40 (1.5 in)	DN50 (2.0 in)	DN50 (2.0 in)	DN65 (2.5 in)	DN65 (2.5 in)	DN80 (3.0 in)	DN80 (3.0 in)
Operating temperature	Minimum 5 °C (41 °F) - Maximum 80 °C (176 °F)							
Max. operating pressure	10 bar at temperature 25 °C (77 °F)							
Performance with water [hl/h]	Up to 600							
Filter elements range [µm]	LifeTec™ filter elements graded sterile, absolute and nominal 0.2, 0.45, 0.6, 0.8, 1, 2.4, 5, 10							

STEAM MANIFOLDS FOR CULINARY & PROCESS STEAM

All-in-one steam solution

Donaldson Steam Manifolds provide a ready-to-install steam solution with housings, condensate traps, lockable isolation valves and upstream and downstream pressure gauges.

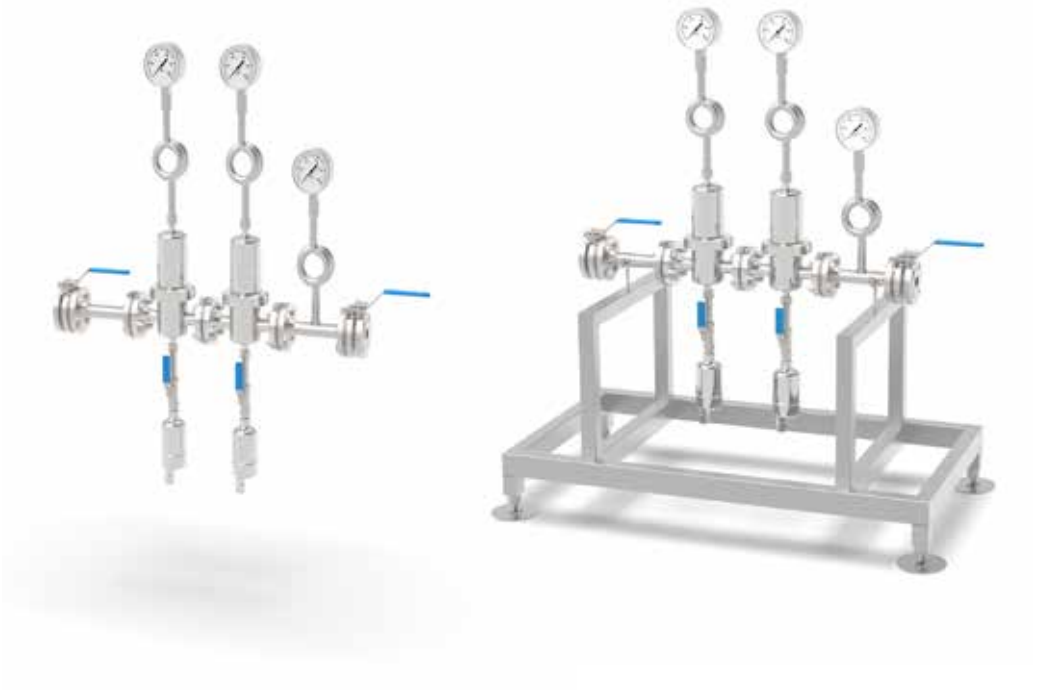
Culinary Steam Manifolds

Donaldson Culinary Steam Manifolds are designed for direct food contact applications. US Culinary Steam products also include a sanitary check valve and sampling valve to incorporate all required piping components listed in the 3-A Accepted Practice for culinary steam. Culinary steam is free of entrained contaminants and suitable for use in direct contact with food products or product contact surfaces.

Process Steam Manifolds

Process Steam Manifolds are designed for non-food contact applications. Process steam is used as a source of energy for many process applications like heating and temperature control. Improved steam quality ensures increased process efficiency and longer service life of downstream heat transfer equipment.

A mounting stand with leveling feet is also available as an optional accessory.



Application Examples

- Sterilization in Place (SIP)
- Fermentation
- Pasteurization
- Rust Capture
- Bottled Water
- Dairy
- Breweries
- Wineries

PRODUCT SPECIFICATIONS				
Parameter	US Culinary	US Process	Global Culinary	Global Process
Max. Operating Temperature	150 °C (302 °F)			180 °C (356 °F)
Max. Operating Pressure	10.3 barg (150 psig)			
Max. Differential Pressure	Defer to filter element datasheets			
Components	Manometers, isolation ball valves, optional support stand, housing jackets			
Internal Surface Finish [Ra]	Ra < 1.6 µm (< 64 µin) Before Final Filter Ra < 0,8 µm (< 32 µin) After Final Filter	Ra < 1.6 µm (< 64 µin)		
Metal Materials	All product contact surfaces made from EN 1.4404 (AISI 316L) or EN 1.4301 (AISI 304) series Stainless Steel			
Elastomer Materials	EPDM			Fluoraz, Teflon
Inlet/Outlet Connections	ANSI 150 RF Inlet Sanitary Tri-Clamp Outlet	ANSI 150 RF Inlet ANSI 150 RF Outlet	DIN Flange Inlet DIN Flange Outlet	
Connections	1/2 IN NPT		1/2 IN BSP	

CROSS FLOW SYSTEMS

Flexible and Reliable

The Cross Flow system is a fully automated solution for the clarification and stabilization of process and ingredient liquids. The system allows for multi-stage filtration and customers can opt for custom-designed vessels with integrated smart sensor technology offering an optimal process workflow.

Cross flow filtration, also called tangential flow filtration, is referring to a process in which an unfiltered product (retentate) flows tangentially across a membrane surface. The turbulence created across the membrane surface reduces fouling and provides better flux performance and prolongs filter life. The thrust produced tangentially allows for working at low pressure, thus avoiding compression and the consequent stress of the product.

Our Cross Flow System comes with a 21.5" touch panel, pre-filter (strainer), dry running protection, over- and under-pressure protection, automatic backwash, two tanks to buffer filtrate and retentate and centrifugal pumps for supply and transfer of the product. Filtration and CIP-programs run completely automatic and can easily be monitored and adapted.

Application Examples

- Wine Clarification
- Cider Clarification
- Juice Clarification
- Kombucha Clarification
- Water Clarification

Model	With Polymeric Membrane	With Ceramic Membrane
Operating Temperature	Minimum 0 °C (32 °F) - Maximum 45 °C (113 °F)	Minimum 0 °C (32 °F) - Maximum 80 °C (176 °F)
Cleaning	Chemical	Chemical or Hot Water
Automation	Siemens TIA Portal	
Components	Pneumatic stainless steel butterfly valves from Inoxpa • Pressure, flow and level transmitters from IFM • Centrifugal pumps • PLC, automation components and HMI from Siemens	
Materials	The housings and all contact with product surfaces available in Stainless Steel EN 1.4404 (AISI 316L) or EN 1.4301 (AISI 304)	
Installation Requirements	• Air supply with 6-8 bar. Air quality must meet ISO 8573-1 class 2 • Electricity: 380V/50 Hz or 480V/60 Hz	

MARKETS AND APPLICATIONS

Our System Engineered Solutions can be used for multiple purposes in the food and beverage industry.

Examples of application areas:

- Beer Clarification
- Beer Cold Stabilization
- Bottled Water
- Cider Clarification
- Cold Stabilization
- Fruits Clarification
- Process Water
- Spirit Clarification
- Trap Filtration
- Vinegar Clarification
- Water Sterilization
- Water Treatment
- Wine Clarification
- Wine Cold Stabilization

Feel free to send your request to SES@donaldson.com

Bottled Water

Breweries

Wineries

Dairies

Fruit Juice

Food Processing

Process Water

DONALDSON SERVICE

Donaldson's filtration and application experts are in action for you on site on six continents. We combine the resources and expertise of a global corporation with the personal touch of customer service from a local enterprise. We understand that fast and timely support for your application is very important.

Total Filtration Management

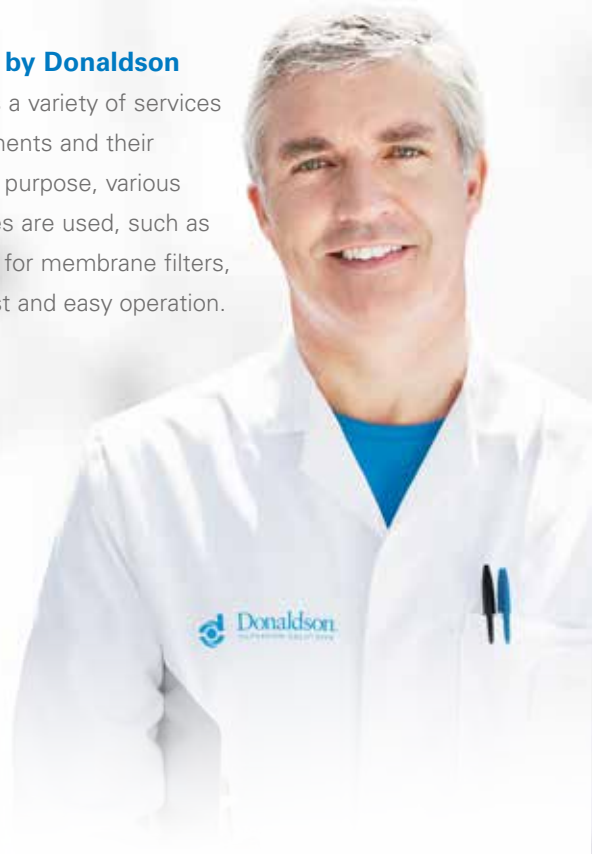
In light of the growing need to reduce complexity, combine supply sources and lower administrative costs, Donaldson developed Total Filtration Management. As an original equipment manufacturer and as a filter medium provider and manufacturer, Donaldson offers highly modern filter replacement from a single source, no matter which type or which design you need

Our Service Range - Your Benefit

- Thorough customer support
- First-class service for compressed air preparation
- Industry-leading filtration expertise
- Local proximity to customers

Services Offered by Donaldson

Donaldson provides a variety of services regarding filter elements and their installation. For this purpose, various integrity test devices are used, such as the Membra Check for membrane filters, characterized by fast and easy operation.



You can find further information at www.donaldson.com

Donaldson
FILTRATION SOLUTIONS

donaldson.com/process

Donaldson Company, Inc.
Minneapolis, MN

Contact us