



LENNTECH

The Specialty Membrane Company

TurboClean® SANITARY ELEMENTS



turbocleantm



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*When it comes to sanitary membrane elements, there is a stronger choice for processors of dairy products, sweeteners, beer and wine, pharmaceutical products, proteins and many other process streams. **TurboClean®** elements feature a rugged polypropylene shell which results in a stronger, more rigid and durable element better suited for the most challenging process applications.*

TurboClean elements are available with all membrane types (RO, NF, UF and MF) and are manufactured to a precise diameter which reduces bypass flow by 60% or more when compared against conventional full-fit, net-wrapped or caged membrane elements.

STRONGEST ELEMENT

TurboClean elements have a patented hard-shell design and are the strongest sanitary elements available. With this robust design, **TurboClean** elements are better suited for challenging applications where their superior structural strength protects the membrane from damage.

LONGER OPERATING LIFE

Proprietary fabrication technology results in extremely tight elements that virtually eliminate channeling (“smiles”) and feed spacer migration, enabling longer operating life and better system economics.

BETTER PERFORMANCE

Reduced bypass flow maximizes cross-flow velocity at the membrane surface resulting in more product throughput and better overall product yields.

MOST EFFECTIVE CLEANING

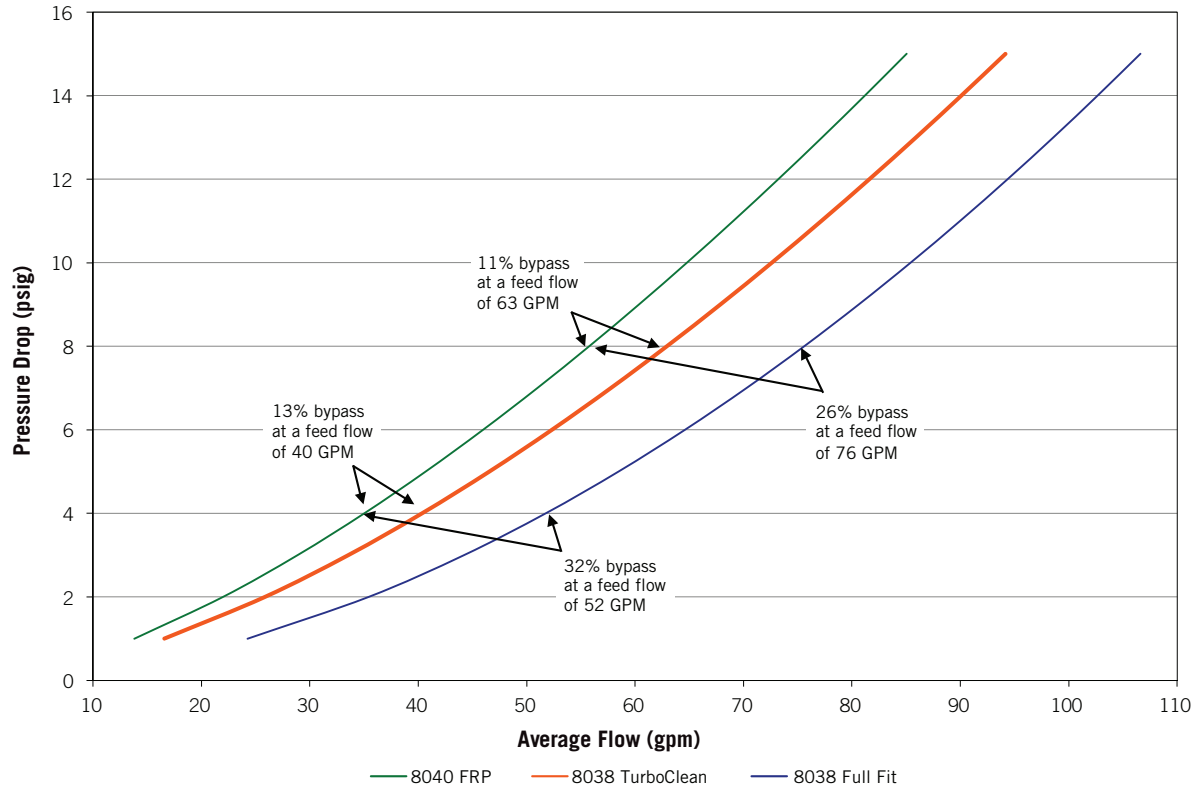
The lower bypass flow of **TurboClean** elements means more of the cleaning solution is flowing inside of the membrane element, across the membrane surface. In addition to better performance during operation, higher cross-flow velocity also results in the most effective cleaning and lower microbial levels.

EASIEST INSTALLATION

Because of their consistent and controlled outside diameter, **TurboClean** elements are easy to load into and unload from systems with no “tails” to trim. **TurboClean** elements are “plug and play” and may be interchanged with competitive sanitary elements.

LESS BYPASS FOR BETTER PERFORMANCE

Pressure Drop Profiles of Different 8-inch Element Exteriors



As shown in the chart above, **TurboClean®** elements allow less flow to bypass the element, resulting in higher cross-flow velocity at the membrane surface. **TurboClean** elements typically exhibit about 12% bypass flow – 60% less than the 30% bypass flow from competitive full-fit elements.

WIDE VARIETY OF PRODUCT CHOICES

TurboClean elements are available for countless process applications and may be customized for specific requirements.

- + Membranes: RO, NF, UF and MF
- + Feed Spacer Thickness: Many sizes available from 24 to 90 mils
- + Feed Spacer Configurations: Diamond, parallel, asymmetric and open channel designs
- + Element Sizes ranging from 3.8" to 8.3" diameters plus 1812 elements for testing
- + Permeate Tubes in polysulfone and stainless steel

TurboClean elements are available in engineered designs for continuous high temperature operation up to 80°C, ultra-high pressure operation up to 1,500 psi (100 bar) and higher pressure drop of up to 6 bar (90 psi) per housing.



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APPLICATION EXPERIENCE

TurboClean® elements are used in a wide variety of process applications, including:

- + Milk and Cheese Whey Processing
- + Dextrose Purification
- + Blood Plasma Demineralization
- + Sugar Concentration
- + Beer and Wine Processing
- + Protein Concentration
- + Antibiotic Purification and Concentration
- + Clarification of Corn Syrup
- + Egg White Concentration
- + And many more...



CUSTOM DESIGNS

If TriSep does not already have a **TurboClean** model for an application, we will customize one to your specifications!



APPROVALS

TurboClean sanitary elements are USDA approved and conform to 3-A Sanitary Standard 45-02. Sanitary elements for food, dairy and beverage applications are constructed with materials compliant with the U.S. Food, Drug and Cosmetic Act for applications involving foodstuffs for human consumption in contact with membrane separation devices as listed in the United States Code of Federal Regulations, Title 21.



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TriSep Corporation

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info@lenntech.com Tel. +31-152-610-900
www.lenntech.com Fax. +31-152-616-289