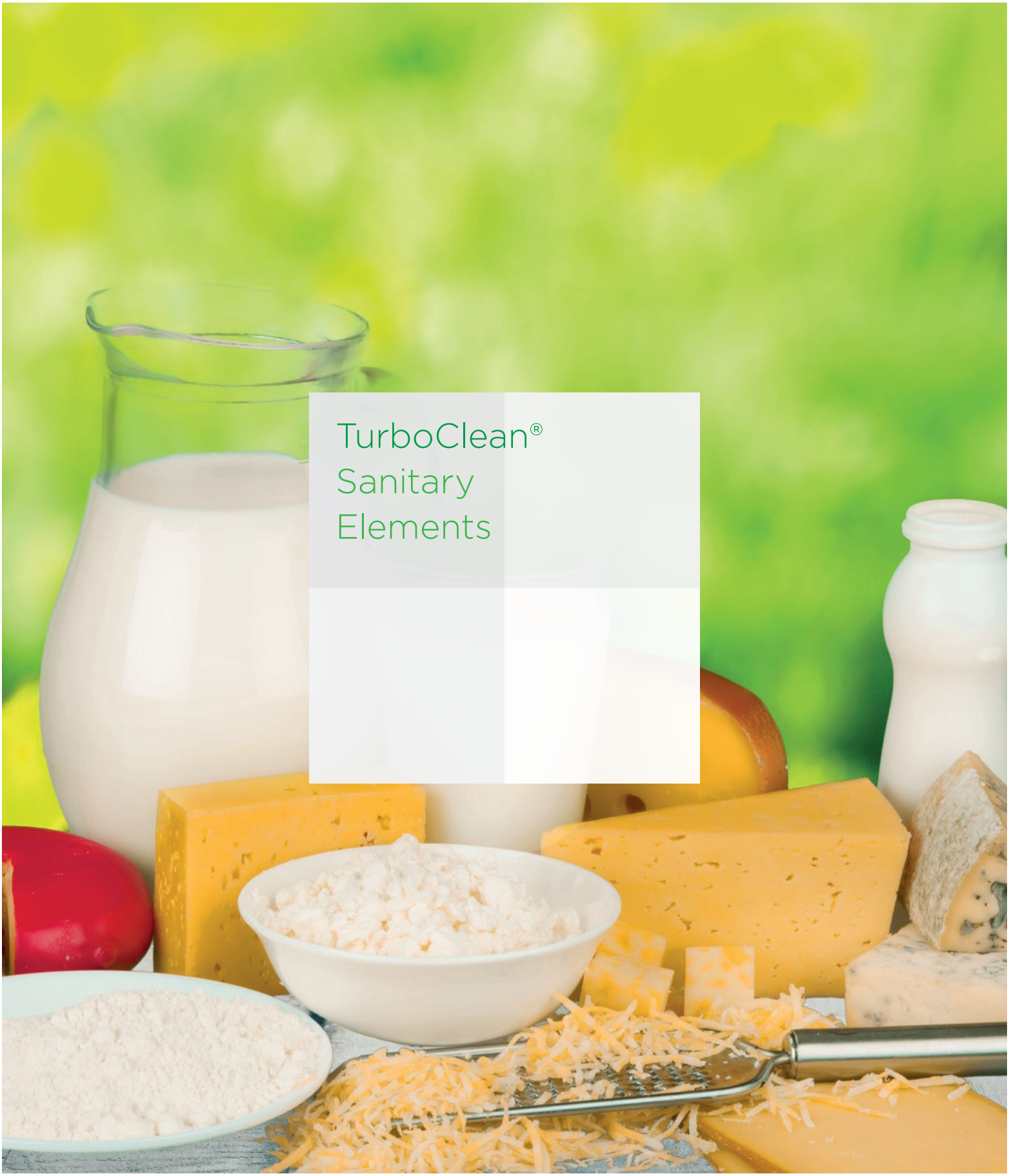


TurboClean® Sanitary Elements

MANN+HUMMEL

TurboClean®
Sanitary Elements

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 that results in a stronger, more rigid, and durable element ideal 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 that reduces bypass flow by 60% or more when compared against conventional full-fit, net-wrapped or caged membrane elements.

ENHANCED WATER & ENERGY SAVINGS

Reduced bypass flow is the key to water and energy savings with TurboClean sanitary elements. Studies show up to 35% water savings and 22% energy savings are possible. TurboClean elements can help companies as they work to achieve sustainability goals now and in the future.

MOST DURABLE SANITARY ELEMENT

TurboClean elements have a patented hard-shell design and are the strongest sanitary elements available. 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.

HIGHER PRODUCTIVITY

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

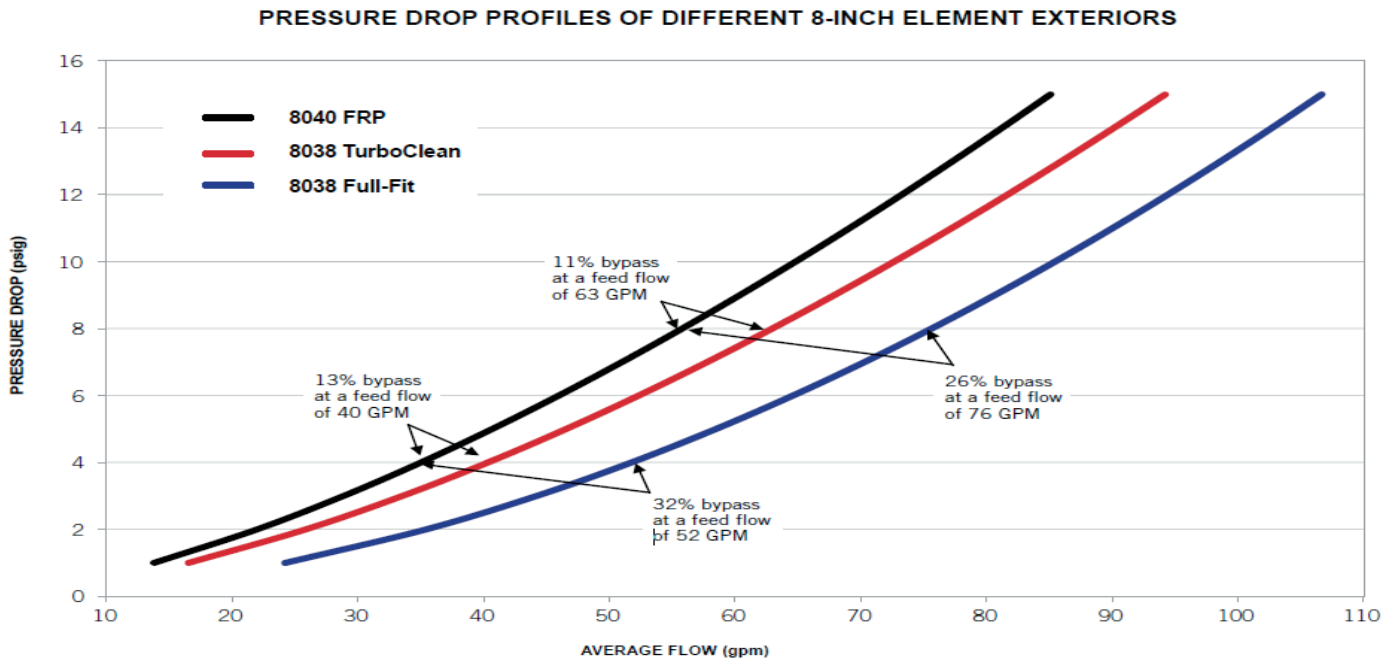
MOST EFFECTIVE CLEANING

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 crossflow 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



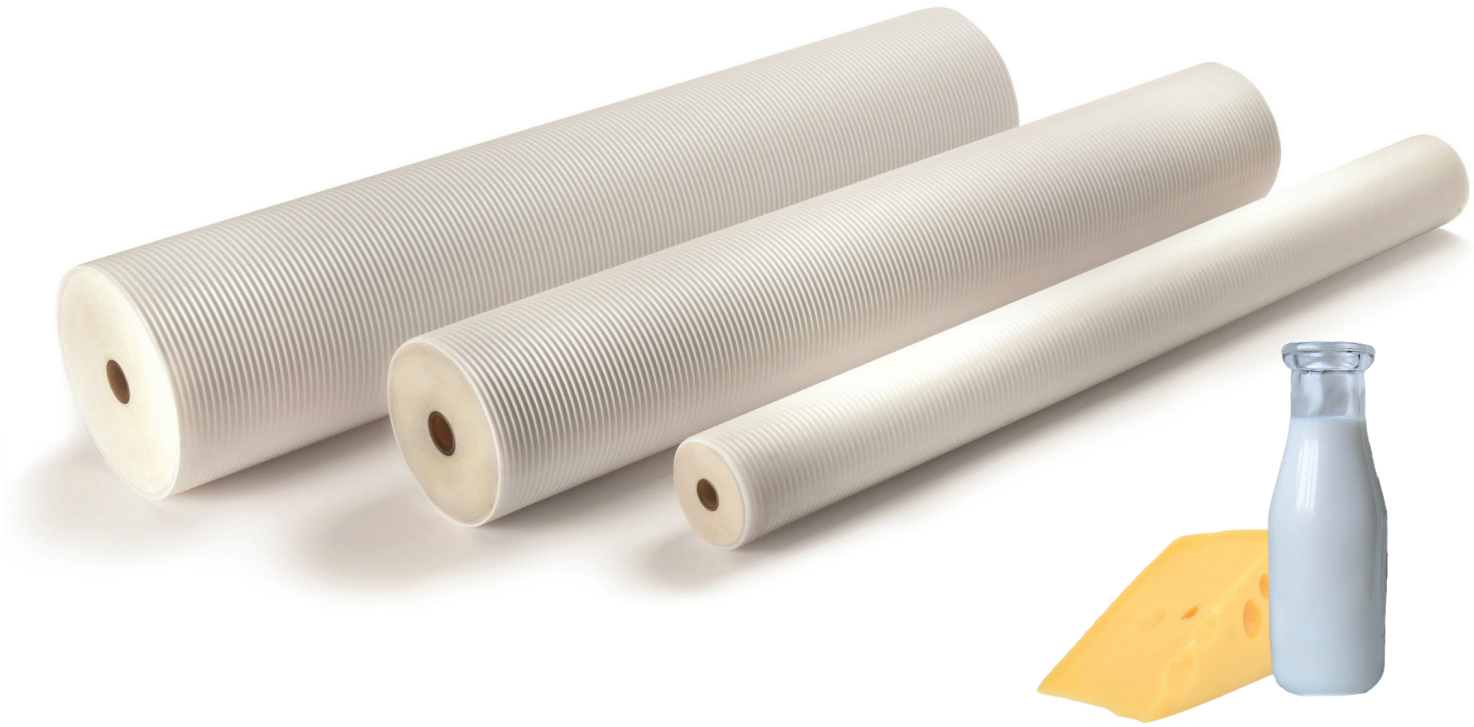
As shown in the chart above, TurboClean® elements allow less flow to bypass the element, resulting in higher cross-flow velocity at the membrane surface. TurboClean elements typically exhibit about 12% bypass flow—60% less than the 30% bypass flow from competitive full-fit elements.

WIDE VARIETY OF PRODUCT CHOICES

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

- Membranes: TRISEP® and NADIR® membranes ranging from MF to RO including "XT" options
- 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: 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.



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 MANN+HUMMEL does not already have a TurboClean model for an application, we will customize one to your specifications!

APPROVALS

TurboClean sanitary elements are USDA-accepted and comply with 3-A Sanitary Standard 45-03. 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.

EUROPE
Germany: +49 611 962 6001
Italy: +39 0721 1796201
info.wfs@mann-hummel.com

AMERICAS
USA: +1 805 964 8003
sales.mnus@microdyn-nadir.com

ASIA
APAC: +65 6457 7533
info.wfs@mann-hummel.com
China: +86 10 8413 9860
waterchina@mann-hummel.com

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