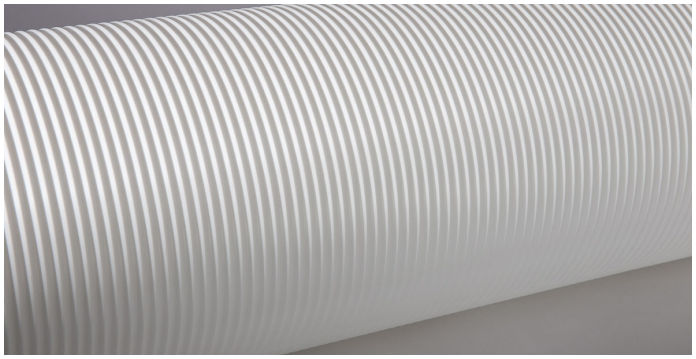
TurboClean
Beverage Elements

MANN+HUMMEL

TurboClean Bev Elements

When it comes to sanitary membrane elements, there is a stronger choice for processors of soft drinks, juice, beer and wine, drinking water, and many other process streams. TurboClean elements feature a rugged polypropylene shell that 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), including cellulose acetate and thin-film varieties, 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.



STRONGEST SANITARY 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.

MOST EFFECTIVE CLEANING AND SANITIZING

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.

LOWER EFFECTIVE RECOVERY

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

ENERGY SAVINGS

Decreased bypass flow saves energy by pumping more water through the membrane instead of around it. This translates to lower pumping costs and reduced operating expenses.

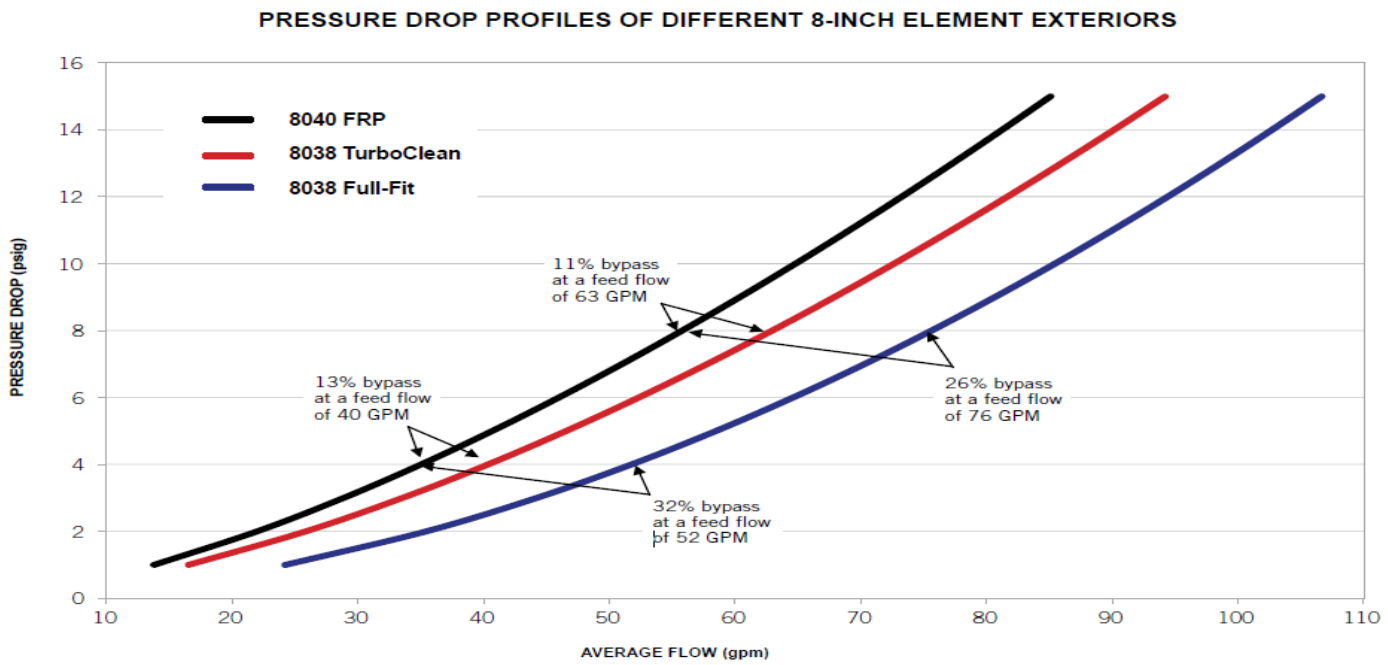
LESS SCALING

Increased crossflow velocities reduce the potential for scaling and prolong the life of the membrane elements.

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-style 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
- High Rejection, Low Energy, Low Fouling, and Cellulose Acetate options available
- 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 4" to 8" 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 beverage and water purification applications, including:

- Beverage Water Make-Up
- Juice Processing
- Soft Drink Production
- Beer and Wine Processing
- Drinking Water
- Dialysis and Pharmaceutical
- 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

Select TurboClean models are NSF/ANSI Standard 61 for use in drinking water systems. Sanitary elements for 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.

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

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

Europe
Germany: +49 611 7118 7480
Italy: +39 0721 1796201
info.wfs@mann-hummel.com

MANN+HUMMEL

www.mann-hummel.com