DATASHEET

KOVALUS Separation Solutions™

Sani-Pro® RO and NF Polishing Elements

Sanitary RO & NF Spiral Elements with Attached ATD

PRODUCT DESCRIPTION	
Membrane Chemistry	Proprietary TFC® polyamide
Membrane Type:	HRX Pro – high flow and high rejection reverse osmosis SR3D - selective rejection nanofiltration with Molecular Weight Cutoff (MWCO) of 200 Daltons
Construction:	Sanitary spiral wound elements with net outerwrap and attached ATD's with two BAND-TITE® reinforcement straps
Regulatory Status:	Compliant with US FDA CFR Title 21, EC Reg. No. 1935/2004, and EU Reg.No. 10/2011. Halal-certified by the Islamic Food and Nutrition Council ofAmerica (IFANCA). All spiral element components in contact with the process fluid have passed USP Class VI guidelines

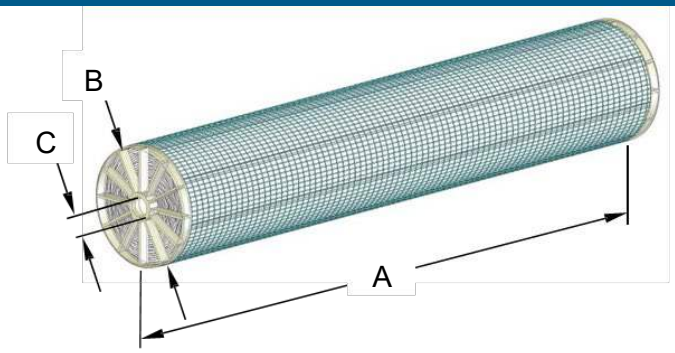
NOMINAL SPECIFICATIONS

Part Number	Model	Feed Spacer mil (mm)	Active Membrane Area ft^2 (m^2)
8882280	8040-HRX Pro-30	31 (0.8)	371 (34.5)
8882286	8040-SR3D-30	31 (0.8)	371 (34.5)
8882287	8040-SR3D-45	45 (1.1)	290 (26.9)

OPERATING AND DESIGN INFORMATION*	
Maximum Operating Pressure:	650 psi (44.8 bar)
Maximum Pressure During Cleaning:	150 psi (10.3 bar)
Operating Temperature Range:	40°-122°F (5-50°C)
Maximum Cleaning Temperature:	140°F (60°C)
pH Range - Continuous Operation:	4.0-10.0
pH Range - Clean-In-Place (CIP):	1.8-11.0
Design Pressure Drop Per Element:	3-6 psi (0.2-0.4 bar)
Design Pressure Drop Per Vessel:	15-35 psi (1.0-2.4 bar)

*Consult KSS Process Technology Group for specific applications.

NOMINAL DIMENSIONS



Model	A		B		C	
	inches	mm	inches	mm	inches	mm
All models	40.0	1,016	7.9	201	1.125	28.6

* Including two integral anti-telescoping-devices (ATD's)

OPERATING GUIDELINES

Membrane Characteristics:

Sani-Pro® HRX Pro reverse osmosis elements are selected when high rejection to organic and inorganic material is the objective. Sani-Pro® SR3D nanofiltration elements are selected when high rejection to organic matter is the objective, while high passage of salts is required for deashing.

Operating Limits:

- **Operating Pressure:** The maximum operating pressure for the Sani-Pro® RO and NF element is listed in the first page of this document. Actual operating pressure is dependent upon system flux rate (appropriate for feed source) as well as feed, recovery and temperature conditions.
- **Permeate Pressure:** Permeate pressure should not exceed baseline (concentrate) pressure at any time (including online, off-line and during transition). Reverse pressure will damage the module.
- **Differential Pressure:** Maximum differential pressure limit is 6 psi (0.4 bar) per element. Maximum differential pressure for any length vessel is 35 psi (2.4 bar).
- **Temperature:** Maximum operating temperature is 122°F (50°C). Maximum cleaning temperature is 140°F (60°C).
- **pH:** Allowable range for continuous operation is 4.0 to 10.0. Allowable range for cleaning is 1.8 to 11.0.

Water Quality for Cleaning & Diafiltration:

- **Turbidity and SDI**: Maximum feed turbidity is 1 NTU. Maximum feed Silt Density Index (SDI 15-minute test) is 5.0.
- **Guidelines:** Please refer to the KSS “Water Quality Guidelines for CIP and Diafiltration” for more detailed information.

Chlorine and Chemical Tolerance:

- KSS recommends removing residual free chlorine prior to membrane exposure to prevent premature membrane failure.
- Sodium metabisulfite (without catalysts such as cobalt) is the preferred chemical to eliminate free chlorine or similar oxidizers in the feed.

Cationic Polymers and Surfactants:

Sani-Pro® RO and NF membranes may be irreversibly fouled if exposed to cationic (positively charged) polymers or surfactants. Exposure to these chemicals during operation or cleaning is not recommended and will void the warranty.

Lubricants:

For element installation, use only water or glycerin to lubricate seals. The use of petroleum or vegetable - based oils or solvents may damage the element and will void the warranty.

Supplemental Technical Bulletins:

- RO/NF Module Cleaning Procedures
- Water Quality Guidelines for CIP and Diafiltration

KSS ASSIST™ Service and Ongoing Technical Support:

KSS has an experienced staff of professionals available to assist end-users and OEMs for optimization of existing systems and support with the development of new applications. Along with the availability of supplemental technical bulletins, KSS also offers a complete line of cleaning and maintenance chemicals.

KSS Capability

KSS is the leader in crossflow membrane technology, manufacturing reverse osmosis, nanofiltration, microfiltration, and ultrafiltration membranes and membrane systems. The industries we serve include food, dairy and beverage, semiconductors, automotive, water and wastewater, chemical and general manufacturing. KSS adds value by providing top quality membrane products and by sharing our experience in the design and supply of thousands of crossflow membrane systems worldwide.

The information contained in this publication is believed to be accurate and reliable, but is not to be construed as implying any warranty or guarantee of performance. We assume no responsibility, obligation or liability for results obtained or damages incurred through the application of the information contained herein. Refer to Standard Terms and Conditions of Sale and Performance Warranty documentation for additional information

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