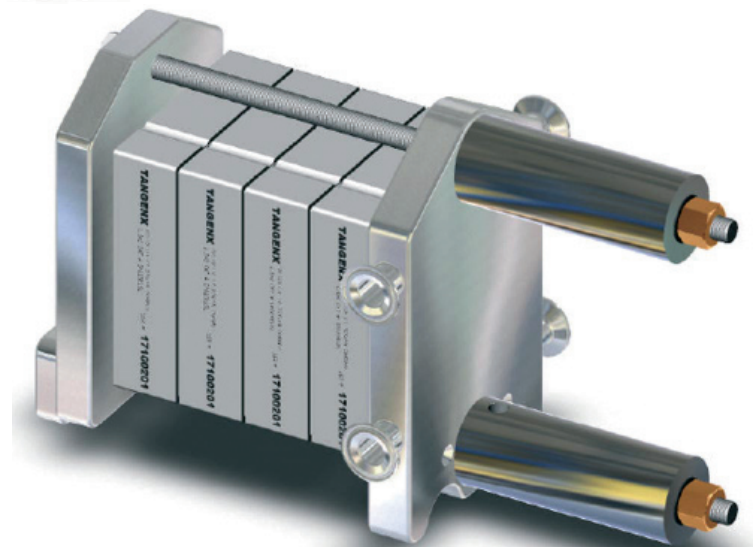
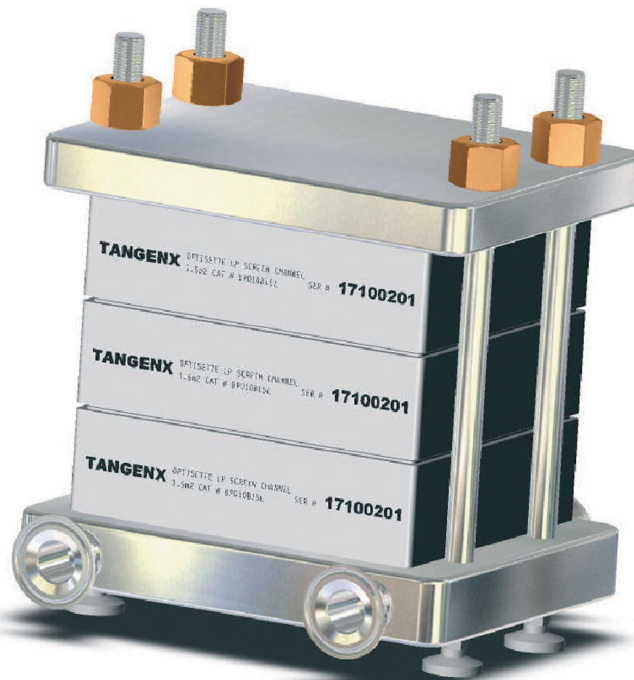


# NovaSet™ Cassette Holders

## For Production Scale Applications

### Benefit of Selecting NovaSet™ Membranes Holders:

- Engineered for optimal TFF processing
- Optimized port design
- Linearly scalable
- Sanitary design for easy SIP/CIP
- Custom designed automated or manual systems



Your Partner in Performance

Product Data Profile

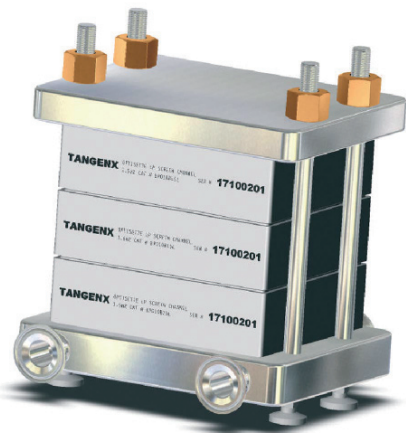


## NovaSet™-Sanitary Holders: for Processing Convenience

NovaSet™ cassette holders have been developed to satisfy the pilot and commercial-scale manufacturing requirements of the process engineer. A selection of holders is available in either a horizontal or vertical stack orientation. The choice is yours and ultimately depends upon the scale and requirements of your process application. NovaSet™ holders have been engineered to provide specific processing advantages:

- ◆ Feed and retentate ports are engineered with a less-restrictive port design that matches the optimized geometry of TangenX cassettes. Holders provide better fluid dynamics, allowing for higher flow-rates and reduced hold-up volumes to be achieved.
- ◆ Less-restrictive port design ensures safe processing of valuable product with higher yields.
- ◆ Holders are engineered with a fluid flow-path channel identical to the NovaSet™-LS lab and pilot holders for easy, direct scale-up/scale-down.
- ◆ Made from 316 L Stainless Steel, these sanitary holders are manufactured to precise specifications and feature a 20 RA finish on and all wetted surfaces. The holders' exterior is electropolished to 32 RA providing a highly polished "mirror" finish.
- ◆ Compatible with acids, bases and a variety of other cleaning agents to optimize cleaning processes.
- ◆ Holders provide easy clean-in-place capability and are steam-sterilizable or autoclavable without cassettes.
- ◆ Ports compatible with tri-clover, quick-disconnect, sanitary fittings and pharmaceutical-grade gauges that allow connections to be made easily between the holder and supporting equipment. Sanitary fittings and gauge packages are available providing the capability to create a complete sanitary system.

## NovaSet™-Horizontal: Robust Performance in a more Portable, Economical Design



- ◆ Horizontal NovaSet™ holder expands to accommodate from 0.46 to 4.6 m<sup>2</sup> (5 to 50 ft<sup>2</sup>) of screen channel or suspended screen channel cassettes (maximum recirculation rate for a suspended screen is 10.8 L/min/m<sup>2</sup> (1 L/min/ft<sup>2</sup>)).
- ◆ Smaller footprint means lower capital and operational costs. Also, holder is more maneuverable to fit in production areas that have less available space.

## NovaSet™-Vertical: Engineered for Optimal TFF Processing

- ◆ Vertical NovaSet™ expands to accommodate from 0.46 to 7 m<sup>2</sup> (5 to 75 ft<sup>2</sup>) of screen channel or suspended screen channel cassettes.
- ◆ Vertical design provides enhanced drainability.
- ◆ Available with hydraulic auto-torque closing option:
  - Minimizes the difficulty and time associated with loading large area systems.
  - Prevents cassette misalignment and potential leakage.
  - Single-sided vertical design allows for easy cassette installation and change.
  - Eliminates operator torque variability.

## NovaSet™ Cassette Holder

### NovaSet™- Process Cassette Holder for Processing Biopharmaceutical Feed Streams from 10's to 1000's of liters

#### Vertical hardware design

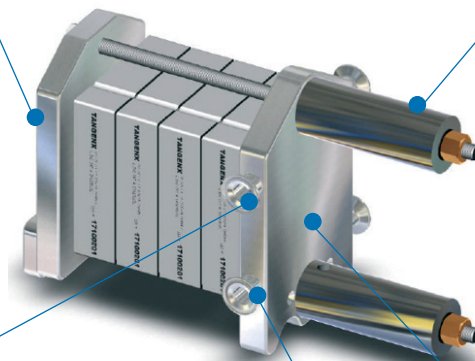
provides quick and easy access to cassettes and enhanced system drainability.

The holder is shown with the **auto-torque option**. The holder easily glides opened and closed on the rails through the use of hydraulic cylinders.

**Less-restrictive internal port design** provides optimal fluid dynamics for higher flow-rates and product recoveries.

**Tri-clover fittings and pharmaceutical series pressure gauges** may be installed on the exterior 1-1/2" ports creating a fully sanitary system that easily connects to supporting equipment.

**316 L Stainless Steel vertical holder**, accommodates up to 7 m<sup>2</sup> (75 ft<sup>2</sup>) of membrane area.



#### Custom-engineered fully-automated or manual systems:

Novasep has a proven track record in pharmaceutical systems engineering with a large base of installed purification systems worldwide. It is our understanding of basic engineering principles as well as the functional command of pharmaceutical process design that has enabled us to build large scale systems for membrane and chromatography systems that include multiton-scale processes and at 1.6 m diam, the largest preparative HPLC column in the world. With experience in most purification technologies, we can offer integrated process design and even continuous downstream process development and design. Novasep has built and runs its own FDA regulated production facilities and as such can bring pragmatic expertise to all disciplines including facility design, process design and development as well as regulatory and quality requirements.

## Applications

#### Biopharma, Biotech, Life Sciences:

- ◆ Concentrate and desalt proteins, peptides, nucleic acids (DNA, RNA, oligonucleotides)
- ◆ Separate and purify biopharmaceuticals
- ◆ Recover and purify antibodies or recombinant proteins from cell culture media
- ◆ Fractionate dilute protein mixtures
- ◆ Remove pyrogens from water, buffers, and media solutions
- ◆ Sample preparation prior to chromatography

## Ordering & Specifications

### NovaSet™ Vertical Holder

Cat #: SS NST 000V

#### Includes

- Cassette holder - top and bottom manifold plates: 316 L Stainless Steel
- Connections for inlet/outlet: sanitary flange
- Tie rods and washers: 316 L Stainless Steel
- Tri-clover fittings
- Nuts for tie rods: bronze silicon

#### Holder Dimensions

- Width: 17" (43 cm)
- Depth: 10-1/4" (26 cm)
- Height: 13" (33 cm)
- Shipping Weight: 75 lbs. (34 kg) ex fitting

### NovaSet™ Horizontal Holder

Cat #: SS NST 000H

#### Includes

- Cassette holder - top and bottom manifold plates: 316 L Stainless Steel
- Connections for Inlet/outlet: sanitary flange
- Tie rods and washers: 316 L Stainless Steel
- Tri-clover fittings
- Nuts for tie rods: bronze silicon

#### Holder Dimensions

- Width: 10-1/12" (25.6 cm)
- Depth: 10-1/4" (26 cm)
- Height: 12" (30.4 cm)
- Shipping Weight: 67 lbs. (30.4 kg) ex fitting

### 2 Fitting / Gauge Package

Cat #: SS NST 02VF

- (2) 0-60 psi sanitary dual scale fluid filled gauge Stainless Steel 1-1/2" TC
- (3) EPDM gaskets 1"
- (7) EPDM gaskets 1-1/2"
- (1) Common filtrate manifold, SS 1" ID
- (2) Instrument tee SS 1-1/2" to 1-1/2"
- (8) TC clamps SS 1-1/2"
- (1) Diaphragm valve 1-1/2"

### 2 Fitting / Gauge Package

Cat #: SS NST 02HF

- (2) 0-60 psi sanitary dual scale fluid filled gauge Stainless Steel 1-1/2" TC
- (8) EPDM gaskets 1"
- (2) EPDM gaskets 1-1/2"
- (1) Common filtrate manifold, SS 1" ID
- (2) Instrument tee SS 1" to 1-1/2"
- (10) TC clamps SS 1-1/2"
- (1) Diaphragm valve 1"

### 3 Fitting / Gauge Package

Cat #: SS NST 03VF

- (3) 0-60 psi sanitary dual scale fluid filled gauge Stainless Steel 1-1/2" TC
- (5) EPDM gaskets 1"
- (8) EPDM gaskets 1-1/2"
- (1) Common filtrate manifold, SS 1" ID
- (2) Instrument tee SS 1" to 1-1/2"
- (2) Instrument tee SS 1-1/2" to 1-1/2"
- (11) TC clamps SS 1-1/2"
- (1) Diaphragm valve 1-1/2"
- (1) Diaphragm valve 1"

### 3 Fitting / Gauge Package

Cat #: SS NST 03HF

- (3) 0-60 psi sanitary dual scale fluid filled gauge Stainless Steel 1-1/2" TC
- (10) EPDM gaskets 1"
- (3) EPDM gaskets 1-1/2"
- (1) Common filtrate manifold, SS 1" ID
- (3) Instrument tee SS 1" to 1-1/2"
- (13) TC clamps SS 1-1/2"
- (2) Diaphragm valve 1"

### NovaSet™ Universal Torque Wrench & Socket Set

Cat #: SS NST 000W

- 1) Torque wrench 150 - 1000 inlbs (19.8 - 110.2 Nm)
- (1) 1-1/4" Hex Socket

## Contacts



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