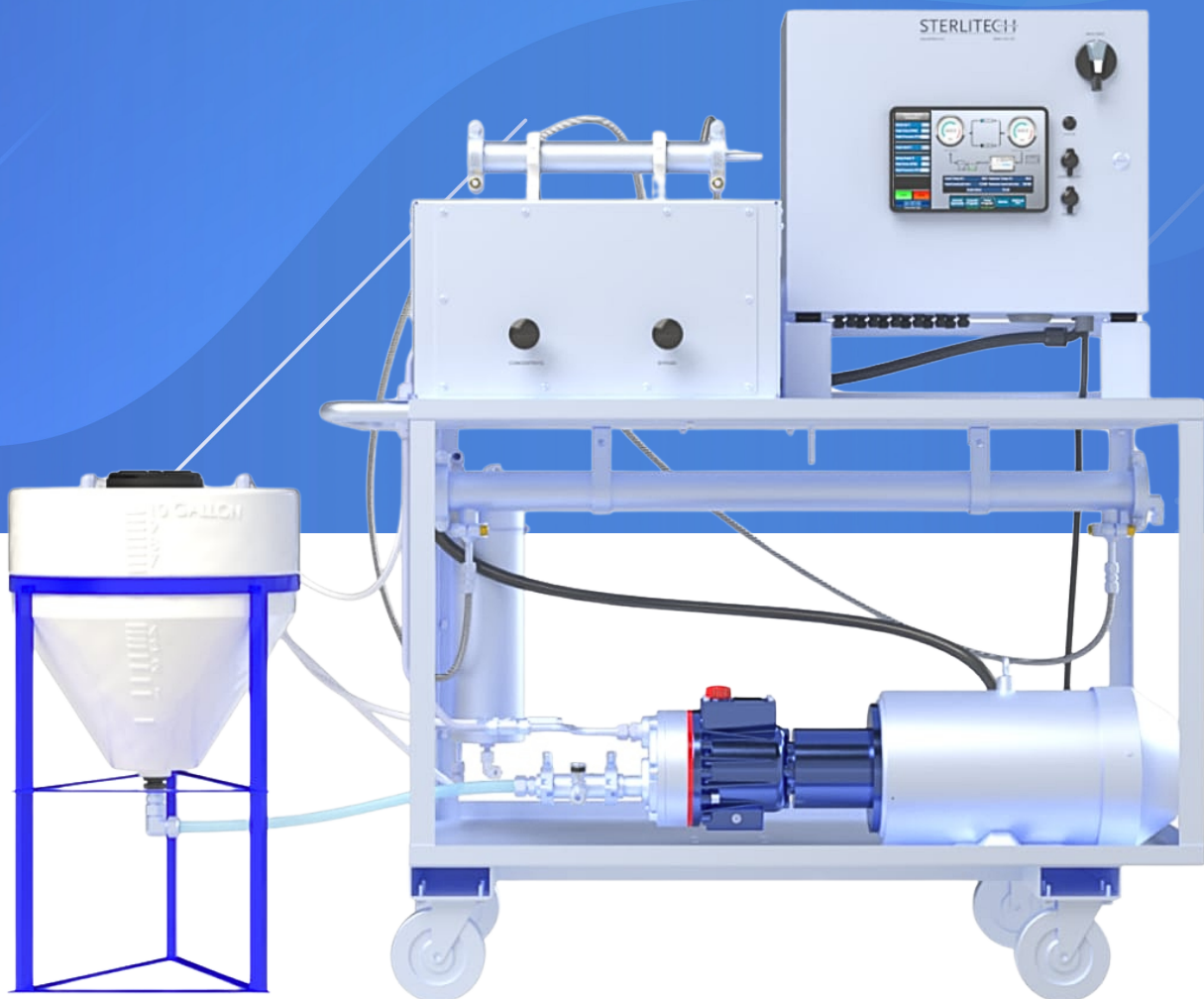


STERLITECH

C o r p o r a t i o n

Sterlitech™ Digital Pilot Skid System Owner's Manual



Introduction

The Sterlitech™ Pilot Membrane Test System is designed to evaluate the performance of smaller spiral-wound membrane elements widely used in RO, NF, UF, and MF applications for small-scale production or to simulate the performance of larger, commercially available elements. Configured with 2 parallel lines and the ability to scale to multiple housing sizes, this test bench unit offers precise adjustment and control of flow parameters with data collection and feedback from sensors to accommodate a wide range of applications. Housing options can be interchanged as required, including integration of tubular ceramic housings.

System Features

SYSTEM FEATURE	DESCRIPTION
Cell Type	Spiral Wound Membrane Housings
Configuration	2 Parallel Lines
Feed Flow Rate	33.31 LPM (8.8 GPM)
Feed Tank	1-1/2" Sanitary Connection Port Optional: LLDPE, Full Drain, Conical, 38 Liter (10 Gallon)
Feed Controls	Manual Bypass Valve Manual Concentrate Control Valve: 0-1000 PSI (0-69 bar)
Flow Control	via Variable Frequency Drive (VFD)
Max Pressure	69 bar (1000 PSI)
Electrical Supply	Designated by SKU Description
Motor Rating	Washguard Motor: 5 hp, 12.4 A, 1745 RPM, 230 V, 60 Hz, 3 Ph.
Pump	Hydra-Cell, High Pressure Diaphragm Pump

LOCATION	MATERIALS OF CONSTRUCTION
Pump	316L SS / FKM / Nitronic 50 / Elgiloy / Celcon
Plumbing	316L SS / FKM / PTFE / Nylon / Polypropylene / PVC / LLDPE / PVDF / FFKM
Cell / Housing	316L SS / EPDM / FKM

Use this [Chemical Compatibility Chart](#) to check the compatibility of your process fluid with the wetted parts. For fluids not listed, contact Sterlitech.

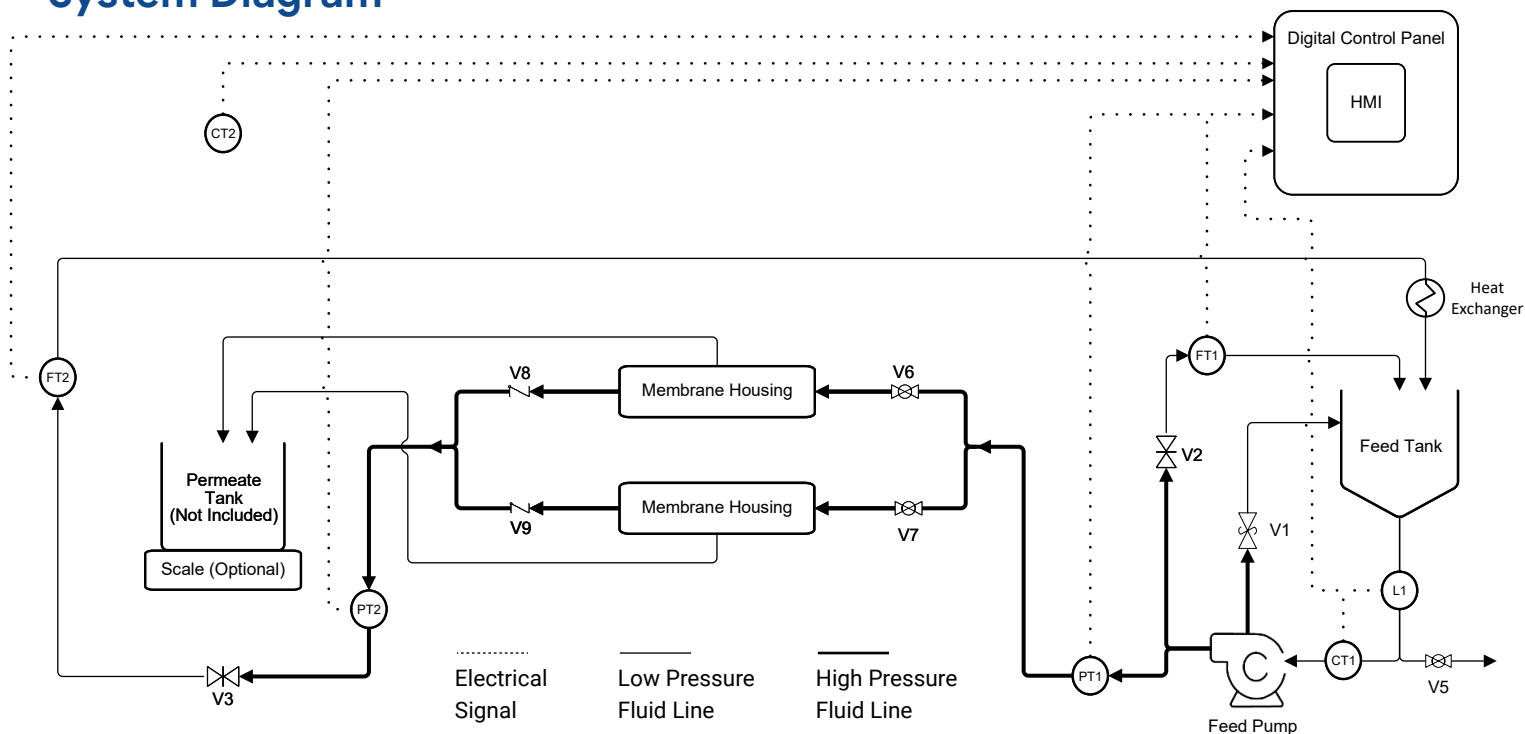
Temperature Limit

The system should not be operated above 180 °F (82 °C). The membranes, feed/permeate spacers, O-rings, and cell body material may contribute to lower the actual temperature limit of the system.

**Maximum pressure and temperature ratings are dependent on a variety of factors. Listed values are guidelines based upon material properties and cannot be guaranteed in every application.*

***The materials listed are the standard materials of construction for this model and are subject to change.*

System Diagram

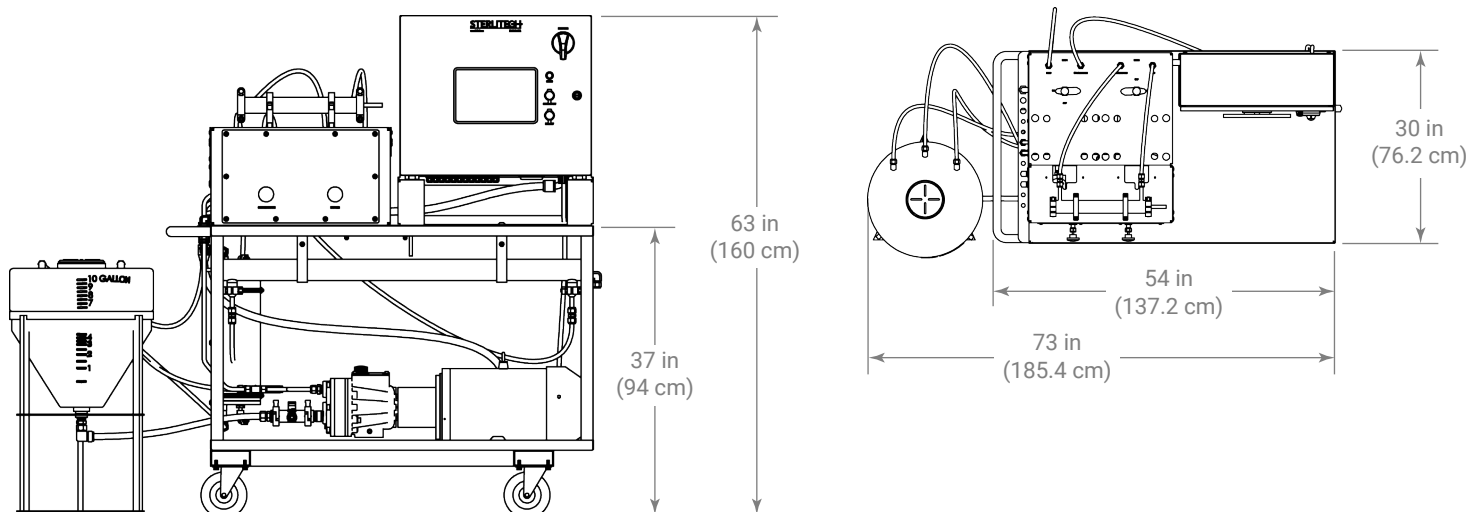


Legend

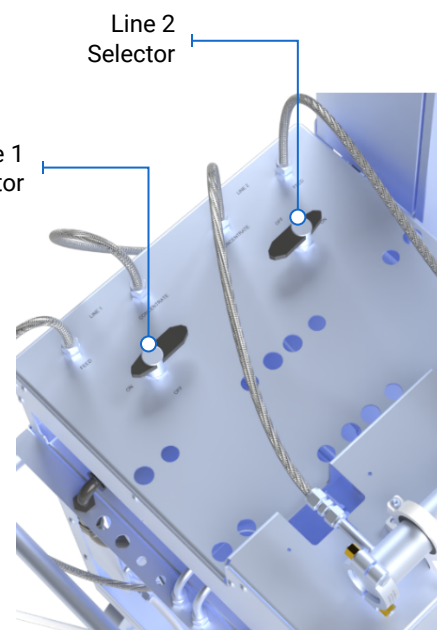
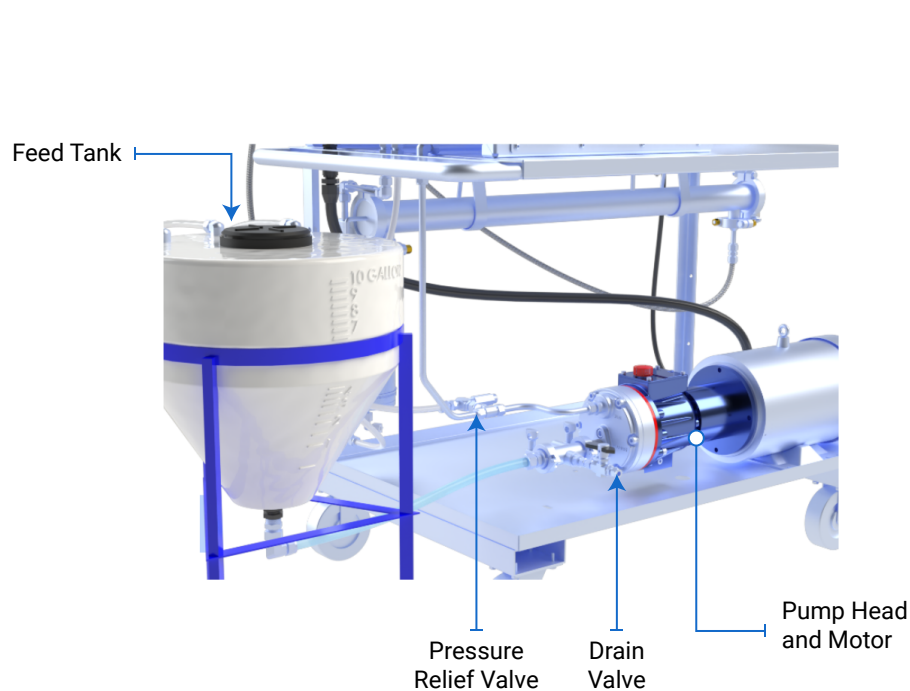
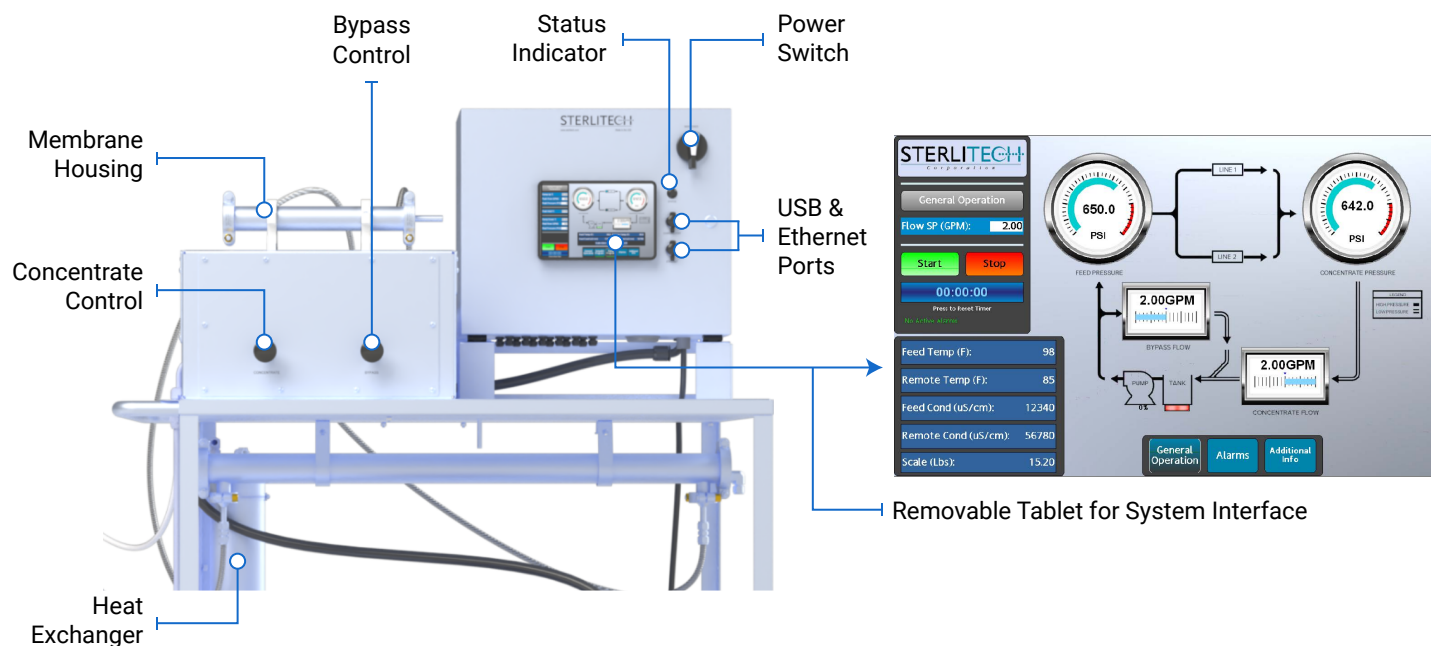
V1	Feed Pressure Relief Valve
V2	Feed Bypass Valve
V3	Pressure Control Valve
V4	N/A
V5	Drain Valve
V6	Bank Selector Valve #1
V7	Bank Selector Valve #2
V8	Back Flow Preventer Valve #1

V9	Back Flow Preventer Valve #2
PT1	Feed Pressure Transmitter
PT2	Concentrate Pressure Transmitter
FT1	Feed Bypass Flow Rate Transmitter
FT2	Concentrate Flow Rate Transmitter
CT1	*Feed Inlet Conductivity/Temperature Transmitter
CT2	*Remote Conductivity/Temperature Transmitter
L1	Level Switch

System Dimensions



System Overview and Feature Identification



Basic Operating Resources

[Skid System Video Resources](#)

Includes:

- Initial Setup
- Chiller Setup
- System Startup, Operation, and Shutdown
- Fluid Recovery Process

Additional Operation Resources

System Testing Best Practices

[CF Filtration Handbook](#)

Includes:

- Basics of Forward Osmosis Filtration
- FAQs
- Example Studies
- Cutting Custom Membrane Filters
- Preconditioning Membranes
- Temperature Effect on Membranes

[Compression Connection Video](#)

[Cutting Custom Membrane Filters](#)



Troubleshooting Resources

Online we have many video references should you encounter any issues with your system.

You can view these at this link: [Membrane Process and Development Channel](#).

Maintenance

Pump Maintenance:

Refer to the [Pump Installation and Service Manual](#)

General Maintenance:

Proper flushing/cleaning is recommended after each run (e.g., brackish, seawater, or organic solvents).

This will eliminate the formation of deposits/scales or corrosion of the system.

Replacement Accessories

CELL TYPE	SPARE PARTS AVAILABLE	SPARE PARTS LINK
1812 / 2540 Housing	Alternative O-rings, Elements , Fittings	Spiral Wound Housings Sterlitech
Tubular Ceramic Housing	Alternative O-rings/Gaskets	Ceramic Housings - Membrane Housings and Elements Sterlitech

Return Material Order Procedure

If materials are to be returned to Sterlitech for repair, evaluation, or warranty consideration, a Return Material Authorization (RMA) number must be obtained from Sterlitech prior to the return. Contact Sterlitech Customer Service Department for return forms and procedures.

Be sure to include a complete, detailed written reason for the return. Also, include serial numbers, installation and removal dates, and any other pertinent information that is available. The crossflow cells have a serial number imprinted on them.

Indicate the proposed disposition of the material and reference the RMA number on all the packages or cartons. All material must be shipped to Sterlitech with freight prepared by the customer.

Warranty

The following is made in lieu of all other warranties expressed or implied. Sterlitech Corporation guarantees equipment to be free from defects in material and workmanship when operated in accordance with written instructions for a period of one year from receipt. Parts not manufactured by Sterlitech are covered by their manufacturer's warranties, which are normally for one year.

For Sterlitech skids and systems, material compatibility with liquids is not covered by warranty. The end user is responsible for ensuring compatibility due to variable factors, such as the processing fluids used, operating conditions, and cleaning procedures.

The Manufacturer's and Seller's only obligation shall be to issue credit against the purchase or replacement of equipment proved to be defective in material or workmanship. Neither manufacturer nor seller shall be liable for any injury, loss or damage, direct or indirect, special or consequential, arising out of the use of, misuse, or the inability to use such product.

The information contained herein is based on technical data and tests, which we believe to be reliable, and is intended for use by persons having technical skill at their discretion and risk. Since conditions of use are outside Sterlitech's control, we can assume no liability whatsoever for results obtained or damages incurred through the application of the data presented.

This information is not intended as a license to operate under, or a recommendation to infringe upon, any patent of Sterlitech or others covering any material or use.

The foregoing may not be altered except by a written agreement signed by officers of the manufacturer.

Technical Assistance

Please contact us if you have any questions or technical inquiries about our products.

Call Sterlitech Corporation at **1-877-544-4420** or email sales@sterlitech.com.

Company Background

Founded in 2001 in Kent, WA, Sterlitech Corporation manufactures and markets filtration-focused laboratory products to a broad spectrum of scientific and industrial sectors. Its line of flat sheet membranes and tangential flow cells deliver industry-leading performance and reliable results. Configured for reverse osmosis, nanofiltration, ultrafiltration, and microfiltration applications, Sterlitech's benchtop cross flow membrane test system provides the versatility required to innovate.

Sterlitech's comprehensive line of products is supported by the expertise of its technical specialists who can assist with application-specific product selection, and provide customized solutions where necessary. Unique problem-solving approaches, flexibility, and consistent quality have made Sterlitech Corporation a renowned global provider of filtration products and equipment.

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