

SS Series by SpinTek

Tubular Membrane Systems



SpinTek's Membrane Products Group specializes in solutions for waste and process streams formerly considered untreatable.

High Solids, Low Fouling

The SpinTek SS series of tubular membrane systems are designed for small to medium flow rates with feed streams that are high in suspended solids. The SS tubular membranes have 1.0" diameter feed channels to allow large solids to pass through the system without plugging the membranes. Perfect for oil/water separation applications including metal working fluids and oily emulsions, the SS system uses high cross flow velocity developed by a recirculation pump to reduce membrane fouling. The SS system is available in standard sizes suitable for many industrial applications. Custom systems can be designed for larger applications of where the solution being processed requires special materials of construction.

Membrane Composition

The SS series can use a wide variety of standard membranes. Membranes available are manufactured of polyvinylidene fluoride (PVDF), polysulfone (PS), and polyether sulfone (PES). Membrane pore sizes range from 5,000 NMWC (nominal molecular

weight cutoff) up to 100,000 NMWC.

Membrane Housing

Standard membrane housings contain 1" diameter tube and are constructed of PVC with a maximum operating pressure of 70 psig. PVC maximum pressure rating is 120F. CPVC can be used where operating conditions are at a maximum pressure of 160F and 90 PSIG. Alternate housings are available constructed of 304 SS.

Membrane Cleaning

The membrane surface can be mechanically cleaned by passing special sponge balls through the tubes. The flow can be reversed for multiple passes if needed.

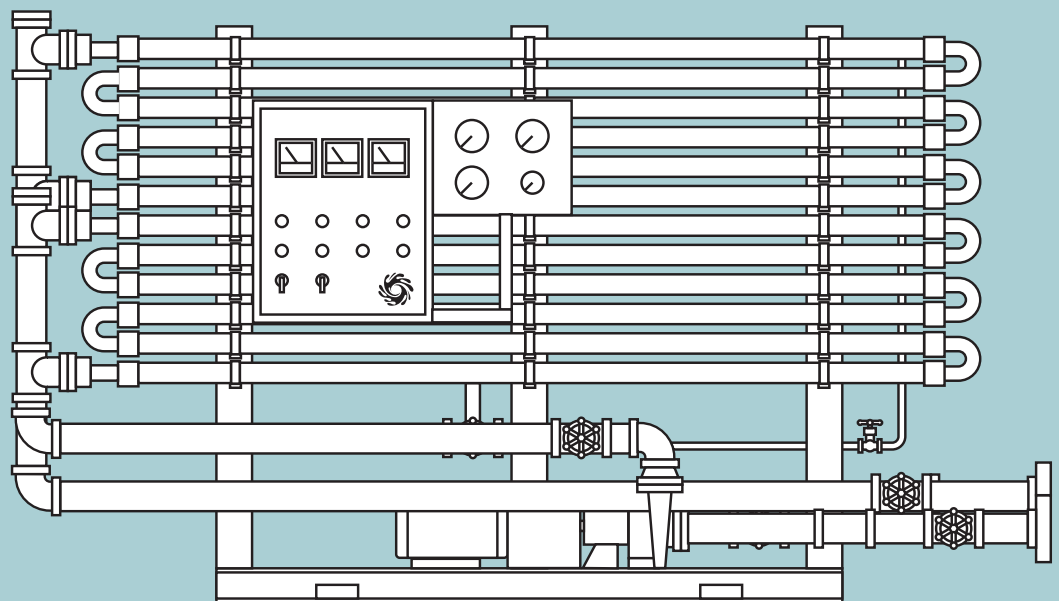
Controls and Instrumentation

The SpinTek SS systems are fully instrumented and automated for production use. The SS controller is simple to operate and has lights, switches and enclosure rated NEMA 12. alternate NEMA ratings are available. Standard instrumentation includes feed, recycle, and concentrate pressure gauges and flow

Membrane

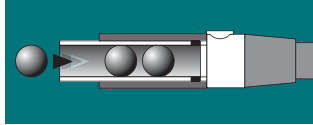
KEY BENEFITS

- High solids handling capability
- Wide diameter open feed channel
- High cross flow velocities to prevent membrane fouling
- Cost effective for difficult applications
- Custom features available
- Clean-In-Place system (CIP)
- Variety of UF membranes available
- Optional automatic sponge ball cleaning system promotes easy maintenance and less downtime



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Cutaway showing sponge ball cleaning

meters, and a temperature indicator. Alarms with safety shut down are provided for high and low feed pressure and high temperature. Special instrumentation can be provided on request.

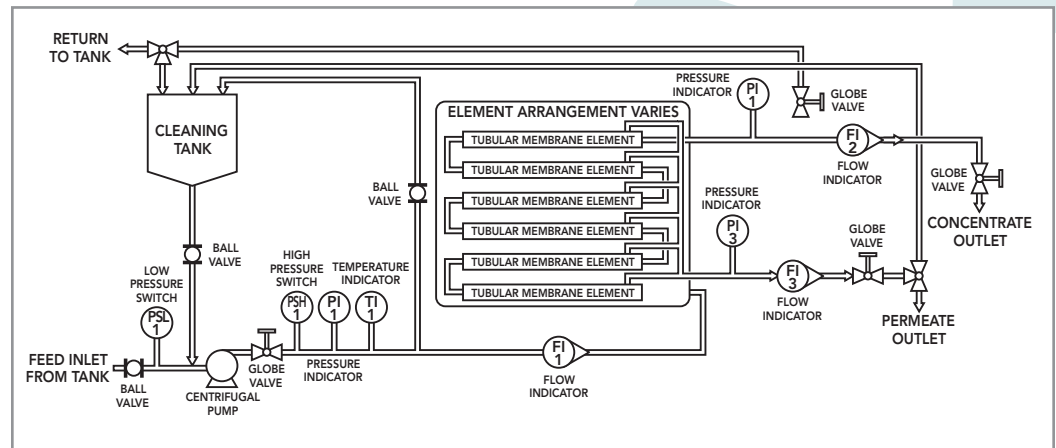
Construction

The SS systems are built to operate in a wide variety of industrial applications and on an extensive range of feed solutions. To meet the stringent requirements of

industrial filtration, all piping, valves and housings are manufactured of schedule 80 PVC while the pressure gauges, temperature gauge and feed pump are constructed of 304 stainless steel. All-stainless steel SS ultrafiltration systems are available upon request.

The SS system skids are welded carbon steel, sandblasted and coated with corrosion-resistant urethane epoxy.

PROCESS AND INSTRUMENT DIAGRAM



SPECIFICATIONS

| Model Number | Membrane | | Feed | | Recycle | | | Concentrate | | Permeate | | Skid | |
|--------------|----------|--|-----------------------|---------------|-----------------------|--------------------|---------------|-----------------------|---------------|-----------------------|---------------|------------------------|-----------------|
| | Qty | Total Area ft ² (m ²) | Flow Rate gpm (l/min) | Pipe Size NPT | Flow Rate gpm (l/min) | Pump Motor hp (kW) | Pipe Size NPT | Flow Rate gpm (l/min) | Pipe Size NPT | Flow Rate gpm (l/min) | Pipe Size NPT | Size LxWxH ft (m) | Weight lbs (kg) |
| SS-02006 | 6 | 42 (3.9) | 0.8(3.1) | 1/4 | 35 (132) | 5.0 (3.7) | 1 1/4 | 0.1 (0.3) | 1/4 | 0.7 (3) | 1/4 | 12x3x4 (3.7x.9x1.2) | 500 (227) |
| SS-02012 | 12 | 84 (7.8) | 1.6(6.1) | 1/4 | 70 (265) | 5.0 (3.7) | 2 | 0.2 (0.6) | 1/4 | 1.5 (6) | 1/4 | 12x3x4 (3.7x.9x1.2) | 600 (272) |
| SS-02018 | 18 | 126 (11.7) | 2.4(9.2) | 1/2 | 105 (397) | 7.5 (5.6) | 2 1/2 | 0.2 (0.9) | 1/4 | 2.2 (8) | 1/4 | 12x3.5x4 (3.7x1.1x1.2) | 700 (318) |
| SS-02024 | 24 | 168 (15.6) | 3.2(12.3) | 1/2 | 140 (530) | 7.5 (5.6) | 2 1/2 | 0.3 (1.2) | 1/4 | 2.9 (11) | 1/4 | 12x4x4 (3.7x1.2x1.2) | 800 (363) |
| SS-02030 | 30 | 210 (19.5) | 4.1(15.3) | 1/2 | 175 (662) | 15 (11) | 3 | 0.4 (1.5) | 1/4 | 3.6 (14) | 1/2 | 12x4.5x4 (3.7x1.4x1.2) | 900 (408) |
| SS-02042 | 42 | 294 (27.3) | 5.7(21.5) | 1/2 | 245 (927) | 15 (11) | 4 | 0.6 (2.1) | 1/4 | 5.1 (19) | 1/2 | 12x5.5x4 (3.7x1.7x1.2) | 1000 (454) |
| SS-02060 | 60 | 420 (39.1) | 8.1(30.7) | 3/4 | 350 (1325) | 20 (15) | 4 | 0.8 (3.1) | 1/4 | 7.3 (28) | 1/2 | 12x5.5x5 (3.7x1.7x1.5) | 1500 (680) |
| SS-02072 | 72 | 504 (46.9) | 9.7(36.8) | 3/4 | 420 (1590) | 25 (19) | 6 | 1.0 (3.7) | 1/4 | 8.8 (33) | 3/4 | 12x5.5x5 (3.7x1.7x1.5) | 1900 (862) |
| SS-02084 | 84 | 588 (54.7) | 11.3(42.9) | 3/4 | 490 (1855) | 30 (22) | 6 | 1.1 (4.3) | 1/4 | 10.2 (39) | 3/4 | 12x6x5 (3.7x1.8x1.5) | 2200 (998) |
| SS-02096 | 96 | 672 (62.5) | 13.0(49.1) | 3/4 | 560 (2120) | 40 (30) | 6 | 1.3 (4.9) | 1/4 | 11.7 (44) | 3/4 | 12x7.5x5 (3.7x2.3x1.5) | 2500 (1134) |
| SS-02114 | 114 | 798 (74.2) | 15.4(58.3) | 1 | 665 (2517) | 40 (30) | 6 | 1.5 (5.8) | 1/4 | 13.9 (52) | 3/4 | 12x8x5 (3.7x2.4x1.5) | 3000 (1361) |
| SS-02132 | 132 | 924 (85.9) | 17.8(67.5) | 1 | 770 (2914) | 50 (37) | 6 | 1.8 (6.7) | 1/4 | 16.0 (61) | 3/4 | 12x9x5 (3.7x2.7x1.5) | 3500 (1588) |
| SS-02150 | 150 | 1050 (97.7) | 20.3(76.7) | 1 | 875 (3312) | 50 (37) | 8 | 2.0 (7.7) | 1/4 | 18.2 (69) | 1 | 12x10x6 (3.7x3x1.8) | 4000 (1814) |

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