Spectra/Por®
Dialysis Recirculation Tank

Introduction

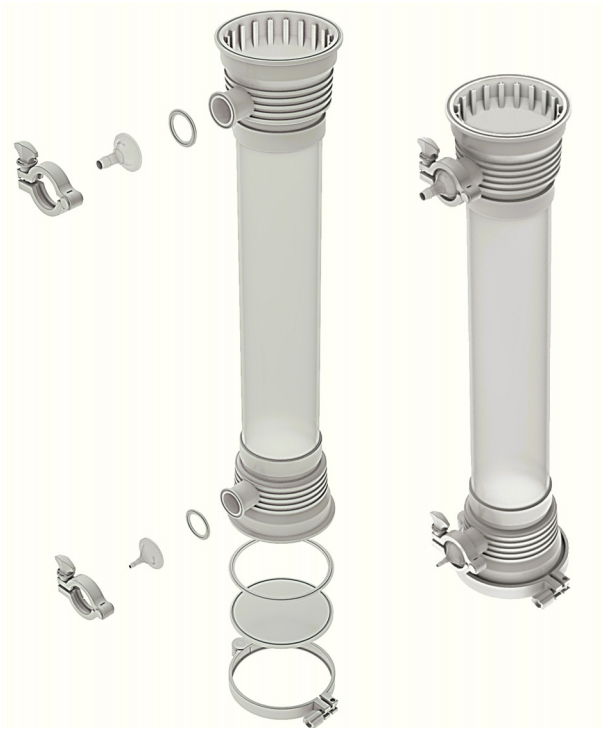
The Spectra/Por® Dialysis Recirculation Tank makes dialysis of larger sample volumes ranging from 100 ml to 2 liters (depending on tank size) faster and more efficient. The Tank is equipped with lower inlet and upper outlet flow-through ports that allows connection to a separate, large-volume reservoir (20 – 1000 liters) that can be located remotely for continuous buffer circulation at a rate of 100-200 ml/min via flexible tubing and a peristaltic pump. The recirculation or single pass (to drain) flow of buffer maintains a higher concentration gradient and rate of dialysis as compared to static buffer changes (4 – 10 volume changes). The narrow cylindrical tank shape maintains the buffer flows within close proximity of the membrane surface. This increased efficiency often reduces the total buffer volume required for sample purification. The Dialysis Recirculation Tank is available in 3 volume sizes: 5, 7 and 10 Liter.

Modes of Operation

Recirculation Mode: Buffer flow returned to remote source
Single-pass Mode: Buffer flow directly to discharge/drain

Benefits

- Connects to remote buffer source
- Increases dialysis efficiency
- Reduces duration of dialysis
- Small foot-print conserves space
- Reduces the volume of buffer required



Description	Material	Qty
1. Tank Body (5, 7 or 10 L)	polysulfone	1
2. Sanitary Base Plate, 6 in.	316 SS	1
3. Adaptor, 1.5 in. San x 1/4 in. HB	polypropylene	1
4. Adaptor, 1.5 in. San. x 1/2 in. HB	polypropylene	1
5. Sanitary Gasket, 6 in.	silicone Pt cured	1
6. Sanitary Gasket, 1.5 in.	silicone Pt cured	2
7. Sanitary Clamp, 6 in.	nylon	1
8. Sanitary Clamp, 1.5 in.	nylon	2
9. Instructions for Use	N/A	1

Contents

Part Number	163009	163010	163011
Volume Size	5 L	7 L	10 L
Tank Height	63 cm	81 cm	121 cm
Base Width (with clamp)	23.5 cm	23.5 cm	23.5 cm
Top Diameter	16.5 cm	16.5 cm	16.5 cm
Minimum Internal Diameter	10.5 cm	10.5 cm	10.5 cm

Spectra/Por® Dialysis Recirculation Tank

Tank Dimensions (assembled)

Assembly Instructions:

1. Remove the contents from the packaging and check to make sure nothing is missing. If a part is missing, contact Spectrum for a replacement.
2. Clean all fluid contact parts (1-6) with appropriate lab detergent prior to assembly.
3. Standing the Tank Body (1) upright, place the 6 in. Sanitary Gasket (5) on the upper 6 in. sanitary opening of the Tank Body with the Gasket's outer lip facing downward. Make sure the Gasket's circular ridge rests completely in the circular groove of the tank's open end.
4. Place the 6 in. SS Base Plate (2) with the circular groove facing downward over the 6 in. Sanitary Gasket. Make sure the Gasket's circular ridge rests completely in the circular groove of the Base Plate.
5. Open the 6 in. Sanitary Clamp (7) by first loosening the hinge wing nut and then loosening and pulling sideways the locking wing nut. Secure the 6 in. Sanitary Clamp around the perimeter of the SS Base Plate, Gasket and Tank upper opening by hand-tightening first the hinge wing nut and then the locking wing nut. (Note: make sure the "wings" end-up parallel to the ground).
6. Invert the Tank so that the SS Base Plate is now on the bottom. This is the tank orientation during operation. (Note: Make sure the wing nuts do not cause wobbling. A slight wobble due to clamp distortion is okay.)
7. Secure the 1.5 in. Sanitary to 1/4 in. HB Adaptor (3) to the Tank lower side-port using a 1.5 in. Sanitary Gasket (6) and a 1.5 in. Sanitary Clamp (8). Secure the 1.5 in. Sanitary to ½ in. HB Adaptor (4) to the Tank upper side-port using a 1.5 in. Sanitary Gasket (6) and a 1.5 in. Sanitary Clamp (8). Make sure to hand tighten the clamp enough to prevent leaks.
8. Connect one end of 1/4 in. ID flexible tubing (not included) to the 1/4 in. HB on the lower side-port. Thread this tubing through the pump-head on a peristaltic pump (not included) and connect the other end to the buffer source reservoir. This will be the feed line for the Dialysis Recirculation Tank.
9. Connect one end of ½ in. ID flexible tubing (not included) to the ½ in. HB on the upper side-port. Connect the other end to the buffer source reservoir or direct to drain. This will be the return or drain line. (Note: it is important that the HB and flexible tubing connected to the upper side-port is larger than HB and flexible tubing on the lower side-port to avoid over-flowing the Dialysis Recirculation Tank. Also, the return/drain line should be oriented downward to allow proper draining.)

Operating Instructions:

1. Fill the Tank by turning on the pump and adjusting the flow rate to 1-2 L/min. This can take 5-10 min. When the buffer level is about 4 inch (10 cm) below the upper side-port, place the dialysis sample in the Dialysis Tank. (Note: sample volumes larger than 1 L should be placed in the Tank sooner.) When the buffer starts pouring out the return/drain line, reduce the pump flow rate to 100-200 ml/min.
2. Continue to dialyze at the recommended flow rate of 100-200 ml/min. (Note: flow rate may need to be optimized for the application). If desired, loosely cover (not included) the tank opening. (Note: DO NOT seal the upper end closed since this may allow pressure to increase and adversely affect dialysis.)
3. Single Pass Mode: since the buffer volume is not maintained by recirculation, the level in the source reservoir will diminish over time. Make sure that the buffer source does not run out by periodically replenishing the volume level.
4. When done, remove dialysis sample from the Dialysis Recirculation Tank. To empty the Tank back into the buffer source; turn the pump off, reverse the flow direction, turn the pump back on and adjust the flow rate to 2 L/min. To empty the Tank to drain; turn the pump off, disconnect the feed line from the buffer source, direct feed line to drain, reverse the pump flow direction, turn the pump back on and adjust the flow rate to 2 L/min.
5. When the pump starts pulling air, lift and tilt the Dialysis Tank to allow remaining buffer to drain out the lower side port. When the tank is empty, turn off the pump.

SPECTRUMLABS.COM

SpectrumLabs.com - the Americas

Worldwide Headquarters

voice 310-885-4600 (world-wide) • 800-634-3300 (toll-free US and Canada)
fax 310-885-4666 (world-wide) • 800-445-7330 (toll-free US and Canada)
e-mail customerservice@spectrumlabs.com
web www.spectrumlabs.com

SpectrumLabs.com Europe

voice +31 (0) 76 5719 419
fax +31 (0) 76 5719 772
e-mail info@spectrumlabs.eu
web www.spectrumlabs.eu

SpectrumLabs.com China

voice (+86) 21 68810228
fax (+86) 21 60919246
e-mail spectrum.cn@spectrumlabs.com
web www.spectrumlabs.cn

SpectrumLabs.com Japan

voice +81-77-552-7820
fax +81-77-552-7826
e-mail spectrum.jp@spectrumlabs.com
web www.spectrumlabs.jp