

## INCREASED EBCT ON PORTABLE RO SYSTEMS

In ANSI/AAMI RD52:2004, Dialysate for Hemodialysis, Amendment 3 – Annex E: Special considerations for acute hemodialysis (Approved 24 April 2009) **Section E.3.4 Carbon adsorption media** states “Where practical, portable water treatment systems should include two carbon adsorption beds in series, which together provide a minimum of 10-minutes Empty Bed Contact time (EBCT).” The document goes on to state, “Where it is not possible to provide the equivalent of a 10-minute EBCT with carbon, practical alternatives include the addition of ascorbic acid to the acid concentrate (see ANSI/AAMI RD62, subclause A.4.2.9) or more frequent monitoring of the product water during the dialysis treatment.” More recently, ANSI/AAMI 23500, subclause B.2.5. states that “possible alternatives include: ...two carbon block filters in series.”

Based on the AAMI standards of recommended practices, Mar Cor Purification offers both carbon block filtration to meet these standards (see Application Brief P/N 3027158 for more information) and carbon adsorption tanks in both rental and purchase exchange styles to obtain 10-minutes of EBCT.

To achieve 10-minutes of EBCT, identify the portable RO as outline below to see how this can be accomplished. If carbon block is desired, a Carbon Block Filtration System can be attached to nearly any of our portable carts or directly onto applicable portable RO devices. Please contact Sales or Technical Support for more information.

### CAUTION:

1. Adding the 0.85 cuft carbon tanks to any of the portable systems will add weight to the units. Each in-service 0.85 cuft carbon tank weights approximately 80 lbs.
2. Use proper handling techniques to avoid injury when transporting these systems.
3. Alert staff when incorporating the increased EBCT on any portable RO system.
4. Consult Mar Cor Purification's Technical Support at 1-800-633-3080, ext. 2904 for questions and part numbers for any of the upgrades mentioned.

### Millenium™

Customers who own and operate a Millenium RO machine and want to increase to 10-minutes of EBCT will require (2) 0.85 cuft portable exchange carbon tanks and will need the M2 Ergo Cart. The M1 Cart is not designed to hold (2) 0.85 cuft tanks and is not recommended for use with these size tanks. The M2 Ergo Cart increases stability, distributes weight more evenly by using a larger footprint, and improves rolling capability by incorporating 6" diameter casters instead of the standard 4" diameter casters. Customers who use the Millenium on a Fresenius

Ergo Docking Station can add (2) 0.85 cuft tanks without having to add bolt-on frames or acquire a different Docking Station. Dimensions and weight will increase when utilizing the M2 Ergo Cart and 0.85 cuft tanks as noted in this comparison:

- M1 Cart with Millenium and either (2) or (3) non-0.85 cuft tanks
  - Dimensions. (2) Tanks: 19-1/2" W x 35" H x 23-3/4" L
  - Dimensions. (3) Tanks: 19-1/2" W x 35" H x 31-1/2" L
  - Weight: ~ 250 lbs. (Note: This is ~ weight with three tanks).
- M2 Ergo Cart with Millenium and (2) 0.85 cuft carbon tanks
  - Dimensions. All Sizes: 25-1/8" W x 42-1/2" H x 33-1/8" L
  - Weight: ~ 300 lbs. (Note: A third tank will increase weight).
- Fresenius Ergo Docking Station with Millenium and (2) 0.85 cuft carbon tanks
  - Dimensions. All Sizes: 31-1/2" W x 42-1/2" H x 53" L
  - Weight: ~ 400 lbs.

## Semper Pure™

Customers who own and operate a Semper Pure RO machine and want to increase to 10-minutes of EBCT will require (2) 0.85 cuft portable exchange carbon tanks and will need the M2 Ergo Cart. The MC100, MC110, MC120, and MC130 carts are not designed or capable of holding (2) 0.85 cuft tanks (See Millenium section for benefits of the M2 Ergo Cart). Dimensions and weight will increase when utilizing the M2 Ergo Cart and 0.85 cuft tanks as noted:

- M2 Ergo Cart with Semper Pure and (2) 0.85 cuft carbon tanks
  - Dimensions. All Sizes: 25-1/8" W x 42-1/2" H x 33-1/8" L
  - Weight: ~ 325 lbs. (Note: A third tank will increase weight.)

## 700 Series

Customers who own and operate a 700 Series RO machine and want to increase to 10-minutes of EBCT will require (2) 0.85 cuft portable exchange carbon tanks. Depending on the cabinet and number of tanks required, the customer may need to change and/or add straps to properly secure the tanks. Dimensions and weight will increase when utilizing the 0.85 cuft tanks on the 700 Series RO as noted:

- 700 Series with (2) 0.85 cuft carbon tanks
  - Dimensions. Short Cabinet: 18" W x 33" H x 29.5" L  
Tall Cabinet: 18" W x 41" H x 29.5" L
  - Weight: ~ 310 lbs.

To improve mobility, 4" diameter, all-plastic sturdy casters are available for the 700 Series RO's that currently have the 3" diameter metal frame casters. These larger casters make it easier to maneuver the unit over uneven thresholds with the heavier tanks. Additionally, a bolt-on-handle is available to improve ergonomics when maneuvering this RO. Instructions on properly moving the 700 Series RO systems are detailed in the Operating Manual.

## F-801

Customers who own and operate an F-801 RO machine and want to increase to 10-minutes of EBCT will require (2) 0.50 cuft portable exchange carbon tanks. This is only possible if operating at 500 ml/min dialysis flow rate. If a higher flow rate is desired, then an additional third tank (1) 0.25 cuft portable exchange tank would be required. The standard F-801 cart/frame is designed to securely hold (2) 0.50 cuft tanks. A third tank of equal or lesser cuft value can be added if necessary (i.e. carbon or softener) by attaching a bolt-on frame kit. There is no change in overall dimensions, unless a third tank is added. Weight may increase on the overall system based on ~ 50 lbs. per 0.50 cuft tank. Larger casters, designed to support a heavier load, are available making it easier to maneuver with the heavier tanks. Instructions on properly moving the F-801 RO system are detailed in the Operating Manual.

## WRO 300 and WRO 300 H

Customers who own and operate a WRO 300 or WRO 300 H machine and want to increase to 10-minutes of EBCT will require (2) 0.85 cuft portable exchange carbon tanks and will need the M2 Ergo Cart. The heritage Stainless Steel Cart is not designed to hold (2) 0.85 cuft tanks and is not recommended for use with these size tanks (see Millenium section for benefits of the M2 Ergo Cart). Dimensions and weight will increase when utilizing the M2 Ergo Cart and 0.85 cuft tanks as noted:

- M2 Ergo Cart with WRO 300 / 300 H and (2) 0.85 cuft carbon tanks
  - Dimensions. All Sizes: 25-1/8" W x 42-1/2" H x 33-1/8" L
  - Weight: ~ 300 lbs. (Note: A third tank will increase weight.)

## Millenium HX<sup>®</sup>

Customers who own and operate a Millenium HX (MHX) RO machine and want to have 10-minutes of EBCT will require (2) 0.85 cuft portable exchange carbon tanks and will need the M2 Ergo Cart (see Millenium section for benefits of the M2 Ergo Cart). Dimensions and weight will increase when utilizing the M2 Ergo Cart and 0.85 cuft tanks as noted:

- M2 Ergo Cart with MHX and (2) 0.85 cuft carbon tanks
  - Dimensions. All Sizes: 25-1/8" W x 42-1/2" H x 33-1/8" L
  - Weight: ~ 325 lbs. (Note: A third tank will increase weight.)

### NOTE:

The older style or plain M2 Cart and Docking Stations (non-Ergo) are no longer available but will support up to (2) 0.85 cuft portable exchange carbon tanks.