

# Reverse Osmosis

# K-RO-UPT-5XX

## SPECIALTY WATER TECHNOLOGIES

### *Ultra-Pure Technologies*

**Function:** The UPT Medical Reverse Osmosis System is the primary process used for the purification of water used for hemodialysis. It utilizes a membrane separation process to remove Total Dissolved Solids (TDS) from the feed water. The process is accomplished by applying pressure to the feed water, forcing it through the RO membrane that has two outlet streams. The first is referred to as the Concentrate stream. This is the stream that contains the contaminants removed from the tap water, which exits the R.O. machine and is sent to the drain. The second stream is referred to as the Product stream. This is the purified water that is ready to be sent to the post-treatment of the system for storage, final filtration and ultimately patient use.

**Materials:** The RO system is mounted on a sturdy powder coated, steel cart with wheels. The electrical controls are housed in a NEMA rated box and features a color touchscreen. Components include a 5 HP VFD pump, stainless steel membrane vessels, stainless steel piping and *Ultra Pure Components of Teflon* on the permeate side.

**Mechanics:** Requires a properly pre-treated water supply, water temperature between 70-92 degrees Fahrenheit, Inlet pressure of 30-100 PSI. Drain must facilitate 20 GPM or better. Electrical requirements are 230 VAC, 30 AMP, 60 Hz, Three Phase.

System digitally monitors flow, pressure, temperature and conductivity with audio and visual alarms.

*Automated Chlorine Timer* starts and runs RO for programmed amount of time and alerts staff to perform chlorine checks. The *Automated Permeate Sample Port* flushes the system and alerts the user when the sample is ready to be taken. *Drain Flow Monitor* alerts user of potential membrane fouling issues. *EBCT Monitoring* constantly monitors EBCT and alerts user if parameters are not met. *Conductivity Variance Alarm* alerts user if feed water conductivity drifts from set-point. *RO Lockout Monitor* prevents RO from running during a pre-treatment regeneration cycle. *Pre-Treatment Status Verification* if connected to SWT Municipal Boost System. *% Rejection and Recovery Monitoring* with alarms. *RO Pre-Filter Delta Pressure Monitor* alerts user when filter change is required.

**User Quality Checks:** Monitor daily according to facility and regulatory protocol to ensure water quality is within specified limits. Routine inspection of the system is recommended. Follow all facility and regulatory procedures regarding regular inspection of equipment. Keep exterior clean by periodically wiping with a soft cloth. Do not use harsh chemicals to clean the outside components of the system. Do not use solvents on decals. Inspect regularly for leaks and tighten fittings gently if needed.

**Factors Effecting Operation:** To perform at peak efficiency, the R.O must be periodically cleaned with chemical cleaners to remove mineral deposits from the membranes and other internal surfaces. User will perform a manual cleaning of the system per facility protocol to maintain maximum performance. Factors such as changes in the Tap Water pH, Temperature or Pressure can cause significant changes in the overall performance of the R.O.



Specialty Water Technologies, Inc. (SWT) provides high quality, innovative water purification systems, components and supplies primarily in the medical/dialysis market. A FDA 510k company SWT is dedicated to high quality equipment manufacturing with exemplary customer service and satisfaction. The owners and employees of SWT have a diverse background of medical, dialysis, manufacturing and business management expertise.

# Clean in Place Tank

# K-A-CIP-1000

## SPECIALTY WATER TECHNOLOGIES

### *Ultra-Pure Technologies*

**Function:** The Clean in Place Tank serves as a reservoir for chemical mixing and recirculation of chemicals during the cleaning / sanitizing process of the Reverse Osmosis System.

**Materials:** 35 Gallon Polyethylene Tank with Sturdy Plastic Stand on Casters, Schedule 80 PVC pipe and fittings, Level Sensor Assembly, PVC Suction and Delivery Hose, Component and Flow Path Labeling.



**Mechanics:** Level sensors are operated from a connection on the SWT Reverse Osmosis System.

User follows directions from the SWT Reverse Osmosis Touchscreen to connect hoses and perform mixing and recirculation of chemicals to clean and disinfect the RO system.

**User Quality Checks:** *Ensure there are no patients dialyzing before disinfection is begun. Verify cleaners and disinfectants have been rinsed from the system and tested negative before patient use.*

Follow all facility and regulatory policies and protocols regarding this piece of equipment. Allow only adequately trained and qualified personnel to use and service this equipment. Routine inspection of the system is recommended.

Quarterly system should be inspected as follows: Wipe exterior and inspect for loose and/or cracked fittings. Keep lid secured on tank to prevent contamination when not in use.

**Factors Effecting Operation:** Ensure all lines are connected securely correctly. Ensure valves are turned according to outlined procedure.

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