



ULTRA PURE SYSTEMS 36 & 50 GPD RODI INSTALLATION AND OPERATION MANUAL

Thank you for choosing **UPS** (Ultra-Pure Systems) for your RO/DI solution. We are confident you have made the right decision. This system will effectively remove contaminants as well as organic and inorganic compounds.

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Product Specification

General:

5 - Stage Reverse Osmosis + DI Water Purification System

Capacity Generates: 36 or 50 gallons per day depending on water temperature, pressure and chemistry variations.

Dimensions:

Cabinet: Height 20 1/2", Width 31", Depth 9 1/2".

About the System:

Reverse Osmosis process:

- The Reverse Osmosis process works via separation. Tap water enters the system, separated at the 4th stage membrane filter. One side would go to the storage tank (purified water); the other side carrying lead, sodium and other water constituents purged down the drain. The ratio of purified water to drain water is approximately 1:1. That means for every gallon of RO water produced it will drain approx. One gallon of water. The drain is required for the RO process to work. If the drain is intentionally shut off, all contaminants will be accumulated inside the membrane, and will permanently damage the membrane filter.
- All Reverse Osmosis units require purging of water when it's producing water.

Purification Processes/ Filter specifications:

Removes microbiological contaminants like Cysts (protozoan), inorganic/Radiological contaminants like Barium, Cadmium, Copper, Chromium (hexavalent), Chromium (trivalent), Fluoride, Lead, Radium 226/228, Selenium, etc. Ammonia, Arsenic, chloramines, chlorine, copper, lead, nitrate, phosphate, silica, hardness, calcium, magnesium, other dissolved solids.

- 1st Stage: 5 micron sediment filter 2" X 20" height, made by 100% pure polypropylene fibers
- 2nd and 3rd Stage: One each carbon filter, 2" X 20" height, composed of high-performance coconut carbon
- 4th Stage: TLC type membrane rated for 36GPD or 50GPD 2.5" X 15.14" in composite housing.
- 5th Stage: DI Resin tank .19 cu/ft replaceable resin.



Production:

The final purity of the water leaving the RO/DI System is between 0-2 TDS . Systems flow is rated at 36 or 50 gpd +/- 15% based on 77 degree water, 60 psi applied pressure. 500 ppm NaCl softened filtered water.

Drain rate:

The drain rate of the system is set at 100 ml/min using a flow restrictor. This drain rate is constant and independent of input pressure.

Performance:

Average rejection rate is 92% to 98% of dissolved solids after RO. 98% to 100% rejection rate after RO/DI resin.

Warranty:

- 1-year complete system warranty on parts, hardware, Filters are not under warranty.
- **WARNING:** DO NOT CONNECT HOT WATER TO THIS SYSTEM
- **WARNING:** INCORRECT INSTALLATION WILL VOID WARRANTY
- **WARNING:** USING OTHER BRANDS OF FILTERS WILL VOID WARRANTY

System Requirements:

- Working pressure 40-80 psi feed water pressure required. In order to produce the maximum amount of water, pressure must be between 60-80 psi maximum.
- Working temperature 40° to 100° F (4° to 37° C).
- pH range 2-11.



System Includes:

- RO/DI unit 5 stages, all filters included and factory wet tested prior to shipment.
- High density polyethylene cabinet designed for durability. Easy access hinged door with 1/4" turn lock.
- Storage Tank pressurized with precharge of 7-10 psi.
- (2) Pressure gauges 0-150 psig mounted on side of cabinet. Inlet pressure and Feed pressure.
- (3) Single Point 1/2" FPT connections.

Installation:

We have designed this system to be a turnkey solution to obtain RO/DI without using salt and associated costs with soft water systems.

Once the RO/DI system arrives inspect for damage, notate on delivery BOL all evident damage with a picture. Contact UPS promptly at 800-729-5192. We will resolve issue in a timely manner.

If no damage is evident proceed with un-boxing the system.

- (1) Pipe city water to UPS system and terminate piping with 1/2" MPT connection to inlet water connection. If necessary include a ball valve to isolate city water manually.
- (2) Pipe drain water to approved Local Code waste water and terminate piping with 1/2" MPT connection to Drain/Concentrate fitting.
- (3) Pipe DI water with (2) tees in line. See attached drawing last page.

Piping outside of RO/DI cabinet is recommended with 316 S/S, however there are several manufacturers of Polyethylene plastic pipe that withstand DI water. Refer to local municipally code for DI water delivery.

WARNING: Confirm City water IN and Concentration OUT is piped correctly. Severe damage will occur if piped backwards.



System gauge tolerances after initial start-up:

- Feed Pressure Gauge: (40-80 psi)
- Inlet Pressure Gauge: Not to exceed a 20 psi drop from feed pressure.

Operation:

UPS - 36 & 50

- Tap water enters the system via city water inlet on side of box. Once flow is initiated city water passes through the 1st stage sediment filter, 2nd carbon filter and one final pass through the 3rd carbon filter.

Inlet/Feed pressure: (psi) gauge:

- Feed & Inlet glycerin gauges mounted on the cabinet side monitor pressure of water before and after sediment and carbon filters. Once delta reaches 20 psi or greater, changing pre-filters is recommended.



Maintenance / Filter Replacement:

Filter Life:

- 1st **Stage Sediment Filter:** Recommend changing every 2 months or when pressure difference of 20 psi from inlet and feed gauges appear Part # UPS SED 5M
- 2nd & 3rd **Stage Carbon Block Filter:** Recommend changing every 2-3 months or when pressure difference of 20 psi from inlet and feed gauges appear. Part # UPS CH 10M
- 4th Stage **RO Membrane:** Recommend changing RO Membrane every 6 months not exceeding 150 PPM.
- 5th Stage **DI Polish Resin:** Every 3-6 months depending on PPM. Not exceed 10 PPM

Filter replacement:

Filter replacement changes from site to site. In order to maintain your system we recommend a regimented filter replacement throughout the year.

Pre-filters and Membrane:

- 1) Twist used pre filters (CCW) counter clockwise until filter drops off.
- 2) All pre filters have alignment notches. Confirm notches match inside housing for proper sealing. Proceed to install replacement pre filters (CW) clockwise.
- 3) Disconnect ¼" tubing from both ends of the Membrane housing. Careful attention required. (Blue tubing is Blue fitting on RO membrane) (Black tubing is Red fitting on RO membrane) Discard old Membrane and connect the ¼" tubing to the new membrane in the same order.



- 4) Once filters and membrane have been replaced confirm all valves are closed turn system on.

DI Resin:

- 1) DI Resin needs to be changed if meter exceeds 10PPM. Visit www.ultrapureus.com for replacement bottle and resin. Do not throw used DI bottle away. Return to Ultra Pure Systems for credit.

Ultra Pure Systems is always here to help. If at any time you have questions or concerns regarding the system please feel free to Contact us @ 1-800-729-5192. Thank you once again for choosing **UPS** for your RODI needs.

