

PureBox™ ROWPU

5000 GPD Reverse Osmosis Water Purification Unit

The RODI Systems PureBox™ Reverse Osmosis Water Purification Unit (ROWPU) is a fully self-contained, fully functional water treatment system housed in a military grade quadcon shipping container. The PureBox™ ROWPU is designed to treat virtually any naturally water supply including fresh water, brackish water, or seawater. It is designed with simplicity and durability in mind and is easy to transport, install, operate, and maintain. The PureBox™ ROWPU is suitable for a number of applications:

- **Emergency Relief**
- **Small Communities**
- **Remote Work Camps**
- **Military Facilities**
- **Hotels and Resorts**
- **Housing Developments**

Benefits

The PureBox™ water treatment systems have a number of benefits that makes them an excellent choice for your water treatment application.

Portability — The system is completely self-contained in an intermodal shipping container. Simply unload the container, make piping and electrical connections, and start treating water.

Flexibility — As your water treatment needs change, additional PureBox™ systems may be added or changed easily.

Security — The lockable containers provide excellent security for the water treatment equipment.

Quality — PureBox™ is designed and built by RODI Systems Corp., a leader in the construction of portable water treatment systems.

Dependability — RODI's portable systems are serving as dependable sources of clean water around the world.

Treatment Technologies

The PureBox™ ROWPU incorporates the following treatment steps:

Primary Media Filter — The primary media filter consists of a fiberglass composite pressure vessel containing anthracite filter media. The primary filter is backwashable and removes larger suspended solids which might otherwise have a detrimental effect on the other system components.

Secondary Media Filter — The secondary media filter consists of a fiberglass composite pressure vessel containing Turbidex™ high performance filter media. Turbidex™ granules consist of a high surface area aluminosilicate mineral that provides exceptional suspended solids filtration. The secondary media filter is backwashable and the macro porous nature of Turbidex™ allows for filtration at levels approaching five microns in particle size.

Cartridge Filter — The secondary media filter is followed by a cartridge filter to insure that stray particulate does not inadvertently enter the high pressure pump or RO membrane elements.

Reverse Osmosis — Reverse osmosis (RO) is the heart of the ROWPU. By utilizing high rejection thin film composite membrane elements, the ROWPU is capable of removing a vast number of contaminants from the feed water. This includes salinity, heavy metals, arsenic, organic compounds, not to mention viruses and bacteria.

Disinfection (Optional) — As an option, the ROWPU can be equipped with one or more disinfection steps to further disinfect the RO permeate. This may include chemical (bleach) injection or ultraviolet (UV) treatment.



The RODI Systems PureBox™ ROWPU systems incorporate a number of specifications which make them a high quality choice for your water purification application.

Container — The system is totally self-contained inside a military quality quadcon shipping container. The quadcon containers are designed in that four quadcons can be connected to form the same footprint (and be shipped) as a standard 20 ft ISO container.

Construction — The PureBox™ ROWPUs are constructed of new, industrial quality materials. Piping, vessels, and other system components are supported inside the container with fiberglass structural members.

Piping — All low pressure piping is Schedule 80 PVC or other non-metallic materials. High pressure piping utilizes 316 stainless steel. Welded joints are used wherever possible and threaded joints are avoided as much as possible to prevent leaks. All valves and fittings are of industrial quality.

Pressure Vessels — Membrane pressure vessels are filament wound using fiberglass roving and sealed with an epoxy resin. This results in a corrosion-proof vessel that will last for years with little or no maintenance.

Membrane Elements — The PureBox™ ROWPU utilizes spiral wound membrane elements with thin film composite membrane. This results in high quality permeate with only a single pass, low operating pressures, and a long service life.

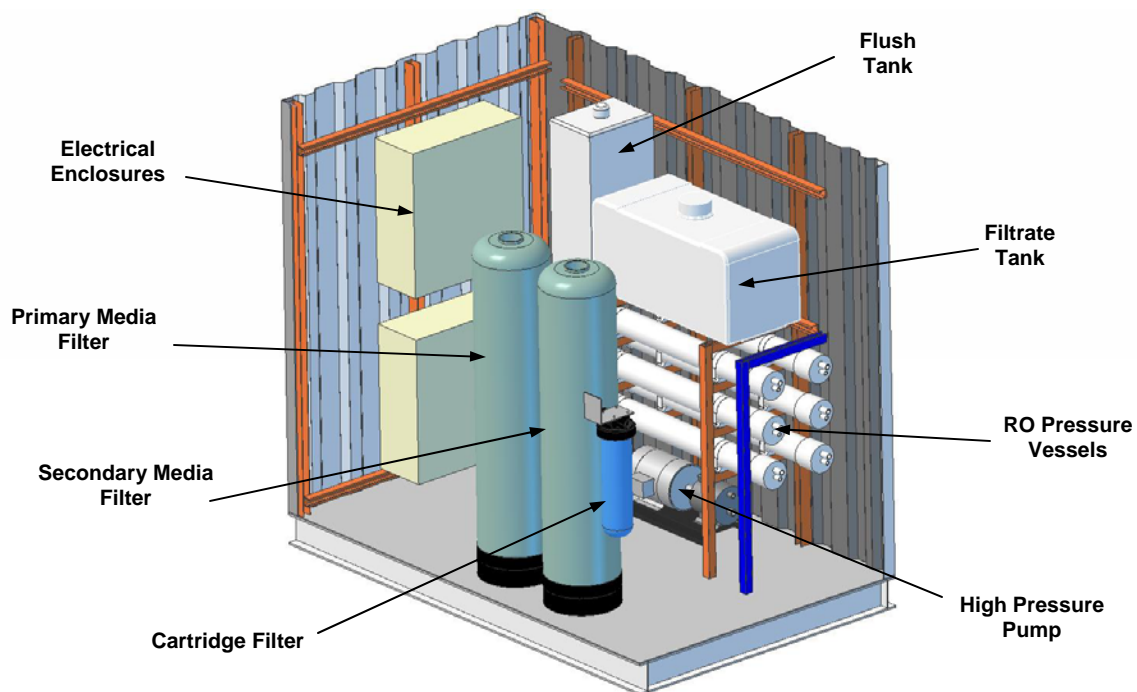
High Pressure Pump — The PureBox™ ROWPU utilizes Wanner Hydra-Cell D10 pumps. These pumps are chosen for their efficiency, dependability, and compact size.

Electrical — All electrical construction is done to recognized standards. Rigid or flexible PVC conduit and PVC junction boxes are used to prevent corrosion. Only NEMA 4X non-metallic enclosures are used. All electrical systems are thoroughly tested before the treatment system is shipped.

Documentation — All systems are provided with a complete set of documentation which includes component O&M manuals and wiring diagrams.



Major Components



PureBox™ ROWPU

Specifications

PureBox™ ROWPU General Specifications

Feed Required (Gal/Min)	Container Size L x W x H Weight	Primary Filter Vessel	Secondary Filter	RO Array	Product Capacity (Gal/Day)	Power Required
7 gpm Service 12 gpm Backwash	4' 9-3/8" x 8' x 6' 10" 2500 lbs	12" diameter x 54"	10" diameter x 54"	Six 4" x 40" Elements in Series	5000 @ 10 GFD	240 VAC, 1 Phase, 40 Amps, 50/60 Hz

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Options

The RODI Systems PureBox™ ROWPU water treatment systems are available with a number of options. This allows clients to customize a system to fit their particular water treatment application.

Integral Generator —

The system can be equipped with an integral 8,000 watt diesel genset. This option also includes an integral fuel tank for extended operation. The genset is capable of operating the entire treatment system in addition to providing auxiliary power for other uses.



Filter Aid Injection — A chemical injection system can be provided to inject a filter aid into the inlet of the primary filter. This chemical filter aid helps coagulate small suspended particles thus increasing the efficiency of the filter. The filter aid injection system includes an injection pump and chemical day tank.



Hypochlorite Injection — A chemical injection system can be provided to inject sodium hypochlorite (bleach) into the RO permeate to insure disinfection of the stored permeate. The hypochlorite injection system includes an injection pump and chemical day tank.

Trailer Mounting — With this option, the container housing the ROWPU is mounted on a heavy duty trailer. The trailer is equipped with ISO locks at each corner to lock the ROWPU container to the trailer forming an integral mobile treatment system.

Automatic Filter Backwash — The standard ROWPU is equipped with manual valves to control filter backwash. Automatically actuated valves are available as an option to insure proper backwash without operator attention.

Climate Control — The container housing the system can be equipped with approximately 2 inches of solid foam insulation covered with rigid waterproof plastic. The container may also be equipped with an electric heater.

Ultraviolet Treatment — Additional bacterial protection can be provided in the form of a UV treatment system on the filtered water before final chlorination.

Operator Training — Training is available at RODI's facility for those individuals responsible for operating and maintaining the PureBox™ systems. Training and technical support are also available on-site for most locations.



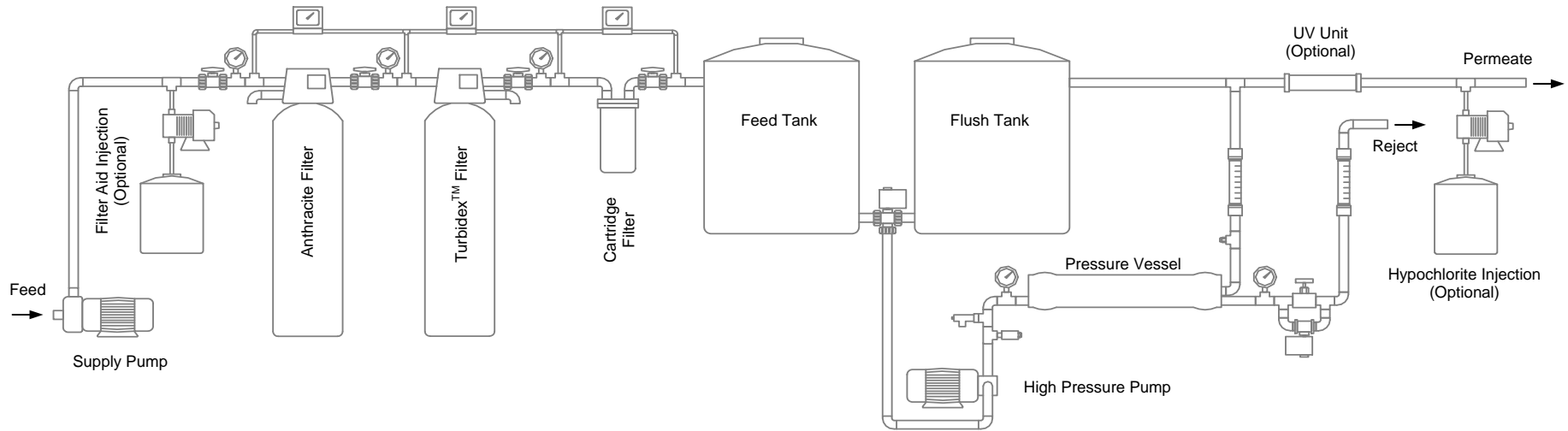
Remote Monitoring — This option allows the system to be monitored remotely via the GSM cellular phone network.













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Basic System Diagram

The basic version of the RODI Systems PureBox™ ROWPU is illustrated in the diagram below. NOTE: This diagram is for general information only. Certain components on the actual system will vary depending upon system size and selected options. Refer to the system proposal or quotation for specific information on a given system configuration.



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|--|---|---|
|  Differential Pressure Switch |  Conductivity Sensor |  Relief Valve |
|  Pressure Indicator |  Variable Area Flowmeter (Rotameter) |  Isolation Valve |
|  Pressure Switch |  Needle Valve or Globe Valve |  Electrically Actuated Three-Way Valve |
| |  Electrically Actuated Two-Way Valve | |

NOTE: All specifications are subject to change without notice.

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