

Seawater Reverse Osmosis System Price List

Model Number	Pro-duction (GPD)	Production (M ³ /Day)	Regular System Price	Containerized System Price	Custom Design for Ocean Vessels	Note
SWRO-600	600	2.3	\$11,000	containerized design not available	\$11,550	
SRWO-800	800	3.0	\$19,000	containerized design not available	\$19,950	
SWRO-1000	1,000	3.8	\$25,000	containerized design not available	\$26,250	
SWRO-1500	1,500	5.7	\$35,000	containerized design not available	\$36,750	
SWRO-3000	3,000	11.4	\$39,000	\$48,000	\$40,950	1x20' container
SWRO-4500	4,500	17.0	\$43,000	\$52,000	\$45,150	1x20' container
SWRO-6000	6,000	22.7	\$50,000	\$59,000	\$52,500	1x20' container
SWRO-5GPM	7,200	27.3	\$53,000	\$62,000	\$55,650	1x20' container
SWRO-7GPM	10,080	38.2	\$66,000	\$75,000	\$69,300	1x20' container
SWRO-10GPM-cnt	14,400	54.5	\$69,000	\$78,000	\$72,450	1x20' container
SWRO-15GPM-cnt	21,600	81.8	\$129,000	\$138,000	\$135,450	1x20' container
SWRO-20GPM-cnt	28,800	109.0	\$143,000	\$152,000	\$150,150	1x20' container
SWRO-30GPM-cnt	43,200	163.5	\$165,000	\$180,000	\$173,250	1x40' container
SWRO-35GPM-cnt	50,400	190.8	\$180,000	\$195,000	\$189,000	1x40' container
SWRO-40GPM-cnt	57,600	218.0	\$205,000	\$220,000	\$215,250	1x40' container
SWRO-50GPM-cnt	72,000	272.5	\$231,000	\$246,000	\$242,550	1x40' container
SWRO-60GPM-cnt	86,400	327.0	\$250,000	\$265,000	\$262,500	1x40' container
SWRO-70GPM-cnt	100,800	381.5	\$275,000	\$290,000	\$288,750	1x40' container
SWRO-85GPM-cnt	122,400	463.3	\$375,000	\$390,000	\$393,750	1x40' container

Forever Pure- Seawater Reverse Osmosis Desalination Systems

SWRO-92GPM-cnt	132,000	499.6	\$435,000	\$450,000	\$456,750	1x40' container
SWRO-100GPM-cnt	144,400	546.6	\$465,000	\$480,000	\$488,250	1x40' container
SWRO-183GPM-cnt	264,100	1,000	\$735,000	\$750,000	\$771,750	2x40' containers

GENERAL TECHNICAL SPECIFICATIONS FOR SWRO-20GPM to SWRO-183GPM

Feed water:	less than 42,000 ppm
Required feed water pressure:	40 psi
Production rate is rated at:	25 °C/ 77 °F <i>(higher temperature will yield higher production rate, and vice versa)</i>
Product water quality:	less than 500 ppm
Recovery Rate:	35-40%
Working Pressure:	700-900 psi <i>(depending on feed water TDS and temperature)</i>
Power consumption	3.5 - 4.5 kwh/M3 <i>(depending on feed water TDS and temperature)</i>

1. RO System

ForeverPure Seawater RO systems are designed to operate under high or low TDS conditions. The built-in Variable Frequency Drive (VFD) can be adjusted to increase or lower the operation pressure according to feed water TDS and temperature. The VFD feature coupled with Energy Recovery System greatly improves the system efficiency and lowers electrical consumption. In today's high energy cost world, these are essential features to have in a seawater desalination plant.

To minimize anti-scalant consumption, the RO system utilizes low recovery ratio design. This simplifies chemical storage logistics and reduces the cost of chemicals. This design also utilized low flux rate design to ensure long membrane service life.

- **Pre-Filtration System:** Stainless Steel/fiberglass/PVC housing, 5-micron cartridge type sediment filter further reduces suspended solids in the feed water stream to RO system. It protects the RO high-pressure pump and lead end RO membrane elements from debris.
- **Membrane Housing:** fiberglass, 8" housing, 1000 psi rated pressure vessels.
- **Membranes:** New energy saving, Dow Filmtec low pressure membranes.
- **High pressure RO Pump:** 900 psi, corrosion resistant 2205 duplex stainless steel.
- **Energy Recovery Device:** High Pressure Booster energy recovery system included. 2205 duplex SS and 316L SS

- **Motor:** high efficiency, 3 Phase, TEFC. Available for power ratings worldwide.
- **High pressure side piping material:** 316 Stainless Steel
- **Low pressure side piping material:** Schedule 80 PVC
- **Concentrate control valve:** 316 Stainless Steel
- **Water quality monitor:** feed water and product water TDS meter
- **Flow meters:** Panel Mount Flow Meters for feed water and product water.
- **Pressure Gauges:** Feed Water Pressure, working pressure, Concentrate
- **System controls** (automatic operation and manual):
 - **Full Color Touch Screen Operator Interface is standard on all models SWRO-20GPM or larger. Touch screen provide online trouble shooting instructions, operation and maintenance instructions, real time monitoring of all motors, sensors, valves, and pumps.**
Allen Bradley Programmable Logic Controller (*PLC*) to provide start/stop, sequential, and alarm control.

RO System start permissible conditions:

1. Power On
2. Start button pushed
3. Low pressure switch closed
4. Permeate water tank level below low level (low and high level switches are on open position)

Five conditions will cause the RO to shut down the machine:

1. High working pressure,
 2. Low inlet pressure (<20 psi)
 3. Starter overload trip
 4. Product water storage tank level high
 5. Emergency shut-down button pushed.
- Low Feed Pressure Shut Off with indicator light
 - High pressure shut-off switch
 - Product Water and raw water Tank level control
 - System On switch with light
 - Power On switch with light

Pre-Treatment Systems

2. Anti-scalant Dosing System

One metering injection systems will be supplied for controlling different elements in the feed water of the RO plant. The metering pump will allow controlling of different functions such as the stroke length and percentage rate. The Antiscalant Dosing System prevents the membrane from scaling.

3. Biocide Dosing System

One metering injection systems will be supplied for controlling different elements in the feed water of the RO plant. The metering pump will allow controlling of different functions such as the stroke length and percentage rate. The Biocide Dosing System prevents biofouling of multi-media and RO membranes.

4. Multi-Media Filter

A multimedia filter is designed to make better use if the bed depth in the removal of a greater volume of suspended solids. This is achieved by loading larger media granules of lower density at the top of the bed, with at least one layer of smaller media granules of higher density below it. The larger granules remove the larger suspended particles, leaving the smaller particles to be filtered by the finer media. Three depth multi-media filtration system is used to filter sand and sediment (turbidity) down to approximately 20 Microns. Automatically backwashes when clogged. Saves replacement filter cost. All units are made using high performance, corrosion resistant composite & fiberglass tank.

Membrane Cleaning and Flushing Systems

5. Permeate Water Flush

The Permeate Water Flush function purges the salt water out of the system by pumping permeate water into the membrane housing before each shut down. This maintains product water quality and extend the membrane life time.

6. Built-in Membrane Cleaning System

Includes high flow pump. It cleans membranes and can be used to sanitize the membrane system. Automatic cleaning/flushing. This system dramatically increases the life of the membranes.

Miscellaneous

7. High Product Water TDS Diversion With Alarm

If the product water TDS rises above a preset value, then the system will trigger an alarm and divert the unqualified product water into the drain. This function ensures product water quality.

8. Container (for containerized models)

Logo on both sides of the container
Complete insulation of the container
Pre-plumbed
Pre-wired
Pre-test before shipping
Air conditioning system
Floor-3/4" plywood on 16" centers
Door -High security double swing out doors with
Paint white rust inhibitive paint inside and outside.
Interior Lights
Main power panel

GENERAL TECHNICAL SPECIFICATIONS FOR SWRO-3000 to SWRO-15GPM

Feed water:	less than 42,000 ppm
Required feed water pressure:	40 psi
Production rate is rated at:	25 °C/ 77 °F <i>(higher temperature will yield higher production rate, and vice versa)</i>
Product water quality:	less than 500 ppm
Recovery Rate:	35-40%
Working Pressure:	700-900 psi <i>(depending on feed water TDS and temperature)</i>
Power consumption	6-8 kwh/M3 <i>(depending on feed water TDS and temperature)</i>

1. RO System

ForeverPure Seawater RO systems are designed to operate under high or low TDS conditions. The built-in Variable Frequency Drive (VFD) can be adjusted to increase or lower the operation pressure according to feed water TDS and temperature.

To minimize anti-scalant consumption, the RO system utilizes low recovery ratio design. This simplifies chemical storage logistics and reduces the cost of chemicals. This design also utilized low flux rate design to ensure long membrane service life.

- **Pre-Filtration System:** Stainless Steel/fiberglass/PVC housing, 5-micron cartridge type sediment filter further reduces suspended solids in the feed water stream to RO system. It protects the RO high-pressure pump and lead end RO membrane elements from debris.
- **Membrane Housing:** fiberglass, 1000 psi rated pressure vessels.
- **Membranes:** New energy saving, Dow Filmtec low pressure membranes.
- **High pressure RO Pump:** 900 psi, CAT plunger pump, 316 stainless steel.
- **Motor:** high efficiency, 3 Phase, TEFC. Available for power ratings worldwide.
- **High pressure side piping material:** 316 Stainless Steel
- **Low pressure side piping material:** Schedule 80 PVC
- **Concentrate control valve:** 316 Stainless Steel
- **Water quality monitor:** feed water and product water TDS meter
- **Flow meters:** Panel Mount Flow Meters for feed water and product water.

- **Pressure Gauges:** Feed Water Pressure, working pressure, Concentrate
- **System controls** (automatic operation and manual):
 - **Touch Screen Operator Interface is standard on all models SWRO-20GPM or larger.** Touch screen provide online trouble shooting instructions, operation and maintenance instructions, real time monitoring of all motors, sensors, valves, and pumps.
Idec/Allen Bradley Programmable Logic Controller (*PLC*) to provide start/stop, sequential, and alarm control.

RO System start permissible conditions:

1. Power On
2. Start button pushed
3. Low pressure switch closed
4. Permeate water tank level below low level (low and high level switches are on open position)

Five conditions will cause the RO to shut down the machine:

1. High working pressure,
 2. Low inlet pressure (<20 psi)
 3. Starter overload trip
 4. Product water storage tank level high
 5. Emergency shut-down button pushed.
- Low Feed Pressure Shut Off with indicator light
 - High pressure shut-off switch
 - Product Water and raw water Tank level control
 - System On switch with light
 - Power On switch with light

Pre-Treatment Systems

2. Anti-scalant Dosing System

One metering injection systems will be supplied for controlling different elements in the feed water of the RO plant. The metering pump will allow controlling of different functions such as the stroke length and percentage rate. The Antiscalant Dosing System prevents the membrane from scaling.

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One metering injection systems will be supplied for controlling different elements in the feed water of the RO plant. The metering pump will allow controlling of different functions such as the stroke length and percentage rate. The Biocide Dosing System prevents biofouling of multi-media and RO membranes.

4. Multi-Media Filter

A multimedia filter is designed to make better use of the bed depth in the removal of a greater volume of suspended solids. This is achieved by loading larger media granules of lower density at the top of the bed, with at least one layer of smaller media granules of higher density below it. The larger granules remove the larger suspended particles, leaving the smaller particles to be filtered by the finer media. Three depth multi-media filtration system is used to filter sand and sediment (turbidity) down to approximately 20 Microns. Automatically backwashes when clogged. Saves replacement filter cost. All units are made using high performance, corrosion resistant composite & fiberglass tank.

Membrane Cleaning and Flushing Systems

5. Permeate Water Flush

The Permeate Water Flush function purges the salt water out of the system by pumping permeate water into the membrane housing before each shut down. This maintains product water quality and extend the membrane life time.

6. Built-in Membrane Cleaning System

Includes high flow pump. It cleans membranes and can be used to sanitize the membrane system. Automatic cleaning/flushing. This system dramatically increases the life of the membranes.

Miscellaneous

7. High Product Water TDS Diversion With Alarm

If the product water TDS rises above a preset value, then the system will trigger an alarm and divert the unqualified product water into the drain. This function ensures product water quality.

8. Container (for containerized models)

- Logo on both sides of the container
- Complete insulation of the container
- Pre-plumbed
- Pre-wired
- Pre-test before shipping
- Air conditioning system
- Floor-3/4" plywood on 16" centers
- Door -High security double swing out doors with
- Paint white rust inhibitive paint inside and outside.
- Interior Lights
- Main power panel

GENERAL TECHNICAL SPECIFICATIONS FOR SWRO-600 to SWRO-1500

Feed water:	less than 42,000 ppm
Required feed water pressure:	40 psi
Production rate is rated at:	25 °C/ 77 °F <i>(higher temperature will yield higher production rate, and vice versa)</i>
Product water quality:	less than 500 ppm
Recovery Rate:	35-40%
Working Pressure:	700-900 psi <i>(depending on feed water TDS and temperature)</i>
Power consumption	8-9 kwh/M3 <i>(depending on feed water TDS and temperature)</i>

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- **Membrane Housing:** fiberglass, 1000 psi rated pressure vessels.
- **Membranes:** New energy saving, Dow Filmtec low pressure membranes.
- **High pressure RO Pump:** 900 psi, CAT plunger pump, 316 stainless steel.
- **Motor:** high efficiency, 3 Phase, TEFC. Available for power ratings worldwide.
- **High pressure side piping material:** 316 Stainless Steel
- **Low pressure side piping material:** Schedule 80 PVC
- **Concentrate control valve:** 316 Stainless Steel
- **Water quality monitor:** hand held TDS meter
- **Flow meters:** Panel Mount Flow Meters for feed water and product water.
- **Pressure Gauges:** Feed Water Pressure, working pressure, Concentrate
- **System controls** (automatic operation and manual):
Idec/Allen Bradley Programmable Logic Controller (*PLC*) to provide start/stop, sequential, and alarm control.

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