

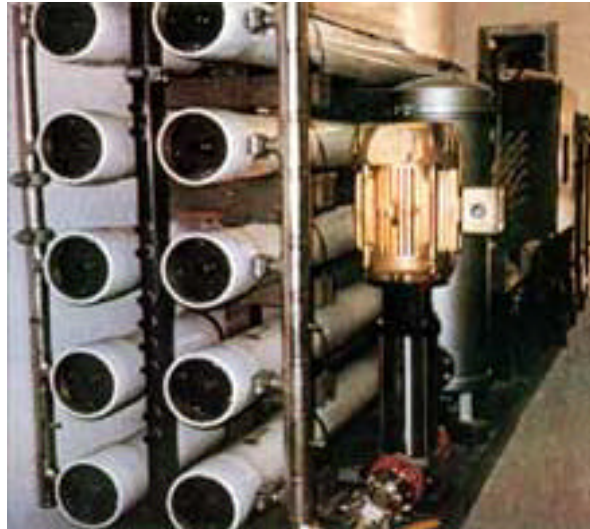


SEAWATER REVERSE OSMOSIS

Data Sheet

The Ultimate Desalting Solution

EBD Water producing potable water quality which exceeds the World Health Organization (W.H.O.) standards.



The EBD Water range of Seawater Reverse Osmosis Systems can also be used for other applications, such as increasing the overall recovery for a Brackish System by desalting the brine reject, and many industrial applications requiring high rejection features.

Principles of Design

As for Brackish Water streams, the feedwater must be properly pretreated to ensure optimum membrane performance.

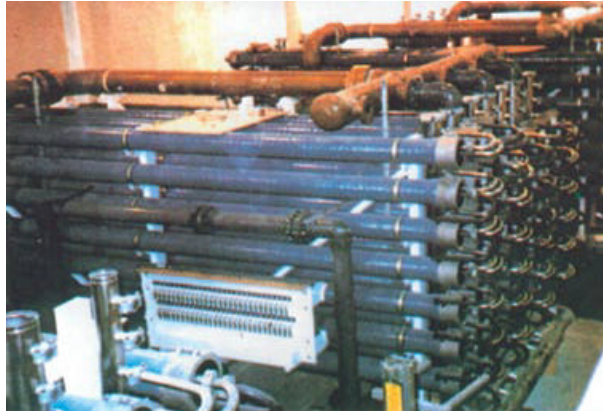
Depending on the feedwater and design specifications, recoveries of up to 50% and rejections of up to 99.9% can be achieved. At all times, EBD Water Seawater Reverse Osmosis Systems are designed to operate within the technical limitations of the water chemistry, temperature, and water velocities.

Specifically, the membranes performance is projected at the third year of operation, the average than 1 NTU [after pretreatment], inlet silt density index at less than 4 [Design range 3 - 5], feedwater TDS at 35,000 ppm [Design range 15,000 - 50,000 ppm], and inlet pressure of 25 - 60 psig. Based on the above, the highest recommended permeate flow and recovery are calculated.



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Typical Features

Hollow fiber or spiral wound membranes configuration, in 4" or 8" diameter.

Thin Film Composite (TFC), Cellulose Acetate (CA), Polyamide (PA), or Aramid membrane materials.

Extensive chemical pretreatment, such as Chlorination and Dechlorination, Coagulation, Algae control, Scale control and PH adjustment.

Extensive physical pretreatment, such as Multimedia Filtration and Micron Filtration.

Automatic flushing system using permeate water.

Energy Recovery Turbine [ERT] operating within the high pressure pump installation, achieving power consumption savings of 30 - 40%.

A full range of process instruments for complete monitoring and safety controls.

Centralized control panel, using state-of-the-art control technologies, full voltage starters, phase protection, alarm silence buttons, integral disconnect switch, control switches, heavy duty indicating lights, control logic circuits, elapsed time meters, etc.

Cleaning connections of the grooved type for easy maintenance.

Extensive sample and test valves locations.

Future expansion capabilities.

Corrosion resistant materials, using FRP for structural skid membranes and supports, control panel, and instrument panel.

All wetted parts protected by especially selected anti-corrosive materials: inert thermoplastics on low pressure sides and high quality alloys such as 904 SS and monel on high pressure sides.



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Plant Type	Model Range	Capacity Range (M /day)	Approximate Room Dimensions (meters) (L x W x H)	Recovery Range
Package Plants	SROA-020 to SROA-600	to	4 x 4 x 4 to 10 x 10 x 4	25 - 35 %
Containerized Plants	SROB-020 to SROB-500	to	_____	25 - 35 %
Modular Plants	SROC-600 to SROC-6000	to	10 x 10 x 4 to 60 x 10 x 5	30 - 45 %

Larger systems are custom designed as follows:

/day containerized.

The above specifications are based on the following:

- Third year operating performance.
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- Highest recommended permeate flow and recovery .
- Properly treated feedwater.
- Turbidity less than 1 NTU.
- Inlet silt density index less than 4 [Design Limitations at SDI = 5].
- Inlet pressure of 25 - 60 psig.
- Feed water TDS at 35,000 [Design limitations at 15,000 - 50,000 ppm].
- Membrane feed pressure: 600 - 1000 psig.
- Product pressure up to 15 psig.

Electric characteristics: 230/460 V, 3 PH, 60 HZ as standard (380 V, 3 PH, 50 HZ available).

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Auxiliary Equipment

Multimedia Filtration

Activated Carbon Filtration

Chemical Pretreatment

Chemical Post-treatment

Organic Trap

Ultraviolet Sterilization

Storage Tanks

Raw Water Booster Pumps

Transfer Pumps

Hydropneumatic Systems

Cleaning Systems

Variable Frequency Drives

Test Equipment

Spare Parts

DESALINATION PROCESSES
DEIONIZATION PROCESSES
MUNICIPAL WATER TREATMENT
INDUSTRIAL WATER TREATMENT
MUNICIPAL WASTEWATER TREATMENT
INDUSTRIAL WASTEWATER TREATMENT
CHEMICAL SERVICES
TECHNICAL SERVICES