

## SWER REVERSE OSMOSIS DESALINATION SYSTEMS

- ◆ Ruggedized    ◆ Energy Recovery    ◆ PLC Operation    ◆ 1200 PSI
- ◆ Fully Systemized Prefiltration + Post Treatment

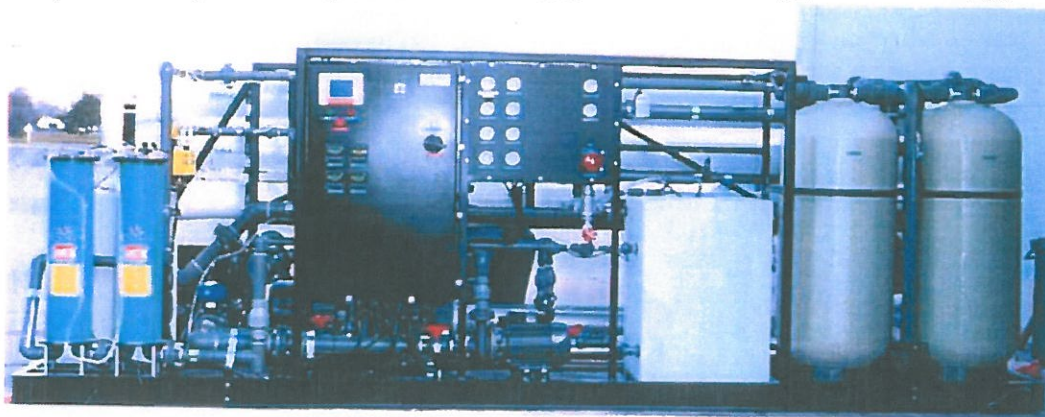
SWER systems are ruggedized desalination systems fully integrated with prefiltration and post treatment of the potable water output. They are ideal for harsh environments such as seen in the oil industry, military environments and for water with challenging contaminants and high salinity. They are also ideal where a turnkey system is desired with automation of all the components from one central location.

The systems include heavy duty steel frames with vibration isolation and energy recovery with variable frequency drives. The pressure vessel and membranes are rated to 1200 psi making the systems fully useable in high salinity applications. A Siemens PLC with a color touch screen is used on the SWER, integrating full prefiltration of the seawater, and post treatment of the permeate, all controlled from one screen.

The systems come standard skid mounted but are available modular and constructed inside ISO containers.

Larger sizes are available on request or multiple systems below may be used in parallel to provide a larger output with the advantage of redundancy.

MODEL #	PRODUCT OUTPUT			FEED FLOW GPM	Qty/Membranes (8 in. diameter)	HP Pump	System Power(kW)
	GPD	TPD	LPH				
SWER39K	39,600	150	6,203	67	12	40	50
SWER52K	52,800	200	8,333	88	18	75	60
SWER79K	79,200	300	12,407	132	18	100	60
SWER105K	105,600	400	16,543	176	24	100	70
SWER132K	132,000	500	20,833	223	36	125	100
SWER158K	158,400	600	24,816	264	42	150	120
SWER211K	211,200	800	33,088	352	48	200	178
SWER264K	264,000	1,000	41,660	447	60	200	178
SWER316K	316,800	1,200	49,632	528	72	250	200



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# 39,600 – 316,800 GALLONS/DAY ENERGY EFFICIENT REVERSE OSMOSIS SEAWATER DESALINATION SYSTEMS

## STANDARD SYSTEM FEATURES

**Booster Pump**

- √ Corrosion resistant booster pump of centrifugal design.
- √ Ensures positive water pressure to unit.
- √ Close coupled to totally enclosed motor to withstand saltwater environment.

**Media Filter**

- √ Tank prefilter with backwash valve to reduce particles to 25 micron  
Fiberglass + 316 SS

**Prefiltration**

- √ 20 & 5 micron cartridge prefilters to remove particulate matter.
- √ Filter housing designed for easy filter change.
- √ Chemical Injection System for Antiscalant

**High Pressure Pump/Motor Assembly: SWER39K, SWER52K**

- √ Positive Displacement pump of 2205 Duplex stainless steel.
- √ TEFC Motor

**High Pressure Pump/Motor Assembly: SWER79K - SWER316K**

- √ Multistage centrifugal with TEFC motor.
- √ Duplex stainless steel 2205 steel shaft inlet and outlet.
- √ 316 SS impeller, diffuser, spacer sleeves
- √ 316 SS motor coupling guard and base.
- √ VFD included.

**Reverse Osmosis Membrane - Pressure Vessel Assembly**

- √ Spiral wound, polyamide, thin film composite reverse osmosis membrane representing state of the art technology rated to 1200 psi
- √ High water purity with membrane rejection of 99.7%.
- √ Membrane is designed for long life with easy cleaning rated to 1200 psi
- √ Membrane is enclosed in fiberglass pressure vessel with ratings to 200 psi.
- √ Easy to change end plug assembly with long life and durability.
- √ SS alloy high pressure fittings.
- √ High pressure components rated at 1.5 times maximum operating pressure for safety.
- √ Test taps for sampling membrane product water quality.

**Membrane Care**

- √ Automatic Fresh Flush System to supply fresh water to membranes upon shutdown.
- √ Membrane Cleaning System valving and controls to facilitate in place cleaning of membranes.

**Instrumentation & Protective Features**

- √ PLC Operation - Siemens
- √ Digital salinity controller with readout for temperature and salinity.
- √ Color Touch Panel operation.
- √ Unit has multiple fault messages.
- √ Remote control panel available (optional)
- √ Easy to read gauges including product flowmeter and low and high pressure gauges
- √ Built in motor overload protectors.
- √ Totalizing hour meter.
- √ High pressure regulating valve.
- √ Electronic salinity controller to automatically direct product water to waste when non potable or to tank when potable by means of an actuated valve.
- √ High quality water indicator lights.
- √ All water tight electrical connections (Nema 4).
- √ Splash resistant electrical enclosures (Nema 4).
- √ Brine check valve ensures only first quality water to storage tank.
- √ Glycerine filled high and low pressure gauges for long life.

**Energy Recovery Turbocharger**

- √ Duplex 2205 construction
- √ Designed for easy maintenance.

**Frame - Ruggedized**

- √ Fabricated steel frame with multilayer corrosion resistant coating.
- √ Open design for easy maintenance.
- √ Unitized in integrated components for easy maintenance.
- √ Secure mounting tabs/holes for stability.
- √ Also available in modular format or containerized

**Connections**

- √ Food grade components for contact with potable water.
- √ 316 stainless steel fittings and HP piping.

**Post Treatment**

- √ 2 chemical injection systems for PH adjustment + Chlorination

### SPECIFICATIONS

<b>Minimum Salt Rejection:</b>	<b>99.7%</b>
<b>Feed Water Pressure:</b>	<b>Minimum - Flooded, Maximum - 25 PSI</b>
<b>Max Operating Pressure:</b>	<b>1200 PSI</b>
<b>Feed Water Temperature:</b>	<b>Minimum 2°C (35°F) Maximum 45°C (113°F)</b>
<b>Max Feed Water Salinity:</b>	<b>50,000 PPM TDS</b>
<b>Recovery Rate:</b>	<b>41%</b>
<b>Electrical:</b>	<b>To customer specifications (Nema 4)</b>

**Dimensions:**

SWER39K, SWER79K: 14'L x 6'W x 6'H  
 SWER105K, SWER132K, SWER158K: 22'L x 6'W x 6'H  
 SWER211K, SWER264K, SWER316K: 30'L x 7'W x 7'H

**Connections:**

Inlet	Brine	Product
3"	3"	1½"
4"	4"	3"
6"	6"	4"

Note: All specifications are shown for 60 Hz systems. Contact factory for 50 Hz data.