

Avin Palayesh Niroom LTD.

Sea Water Reverse Osmosis Summary



Sea Water Reverse Osmosis Machine 10 m³/h



Sea Water Reverse Osmosis Machine 100 m³/h

Optional features:

- Back-washable disk filter as a substitute to sand filter
- Feed pH monitoring
- Feed ORP monitoring
- Feed conductivity monitoring
- Panel view (touch screen control)
- Trans membrane pressure transmitter
- Variable frequency drive starter
- And more

Operating parameters:

- Operating pressure: Up to 68 bar
- Recovery: 30 to 45%
- Nominal rejection: 97 to 99%
- Operating temperature: 10 to 40 °C
- Minimum inlet pressure: 4 bar

Materials of construction:

- High pressure Duplex SS piping and fitting
- Low pressure PVC piping, fitting & valves
- High thickness epoxy coated steel frame
- All clamps & supports corrosion proof

Documentation available:

Operating and maintenance manual including:

- Machine specification
- Installation guidance
- Control narrative
- Commissioning description
- Maintenance
- Necessary drawings

SWRO-APS-5 Series (50/60 Hz)

SWRO-APS-5 Series combines high quality product water, user friendly controls, durable construction and easy installation. Our SWRO comes as a complete package, skid mounted with all necessary accessories instruments & controls.

Standard Capacities:

From 5 to 100 m³/h

Higher capacities as required

Standard Features:

- Scale inhibitor dosage system
- Micron filtration with synthetic coating
- Automatic inlet shutoff valve
- Duplex SS high pressure feed pump
- Duplex SS energy recovery above a given capacity
- High quality side ported FRP housing
- Well selected high rejection membranes
- Automatic permeate flushing at stand by
- Integrated Cleaning-In-Place (CIP) system
- Integrated or stand alone control panel

Control and Instrumentation:

- NEMA4X control panel
- PLC for automatic operation
- Indication/monitoring for: permeate/concentrate flow, permeate conductivity
- Safety pressure switches for: high pressure pump feed & discharge, permeate
- Liquid filled corrosion proof pressure indicator for: Pre/post micron filter, high pressure pump discharge, permeate, concentrate CIP pump discharge
- Emergency stop and alarms for: Low/high feed pressure, high permeate pressure, high permeate conductivity

Typical Applications:

- Drinking water
- Power generations
- Refineries
- Offshore platform
- Any applications requiring low dissolved solids

SWRO-APS-5 SERIES

SPECIFICATIONS	SWRO-APS-5 SERIES									
SWRO Model	APS-5-5	APS-5-10	APS-5-20	APS-5-30	APS-5-40	APS-5-50	APS-5-60	APS-5-80	APS-5-100	
APPROXIMATE CAPACITIES										
Permeate Rate(m ³ /h)*	5	10	20	30	40	50	60	80	100	
(Approx. GMP)	(22)	(44)	(88)	(132)	(176)	(220)	(264)	(352)	(440)	
Recovery Range (%)	25-35	30-40	30-45	30-45	30-45	30-45	30-45	30-45	30-45	
Feed Rate (m ³ /h)	20/14	33/25	66/45	100/66	133/90	165/110	200/133	266/178	330/222	
(Approx. GMP)	(88/62)	(145/110)	(290/198)	(440/290)	(585/396)	(726/484)	(880/585)	(1170/785)	(1452/977)	
HOUSING & MEMBRANE ELEMENTS QUANTITY										
Housing Qty **	2 (4)	3 (5)	5 (6)	8 (6)	9 (7)	11 (7)	13 (7)	18 (7)	22 (7)	
Element Qty ***	8	15	30	48	69	77	91	126	154	
INSTALLATION AND UTILITY REQUIREMENTS										
Inlet Flange - inch (DN)	2-½" (65)	3" (80)	4"/5" (100/125)	5"/6" (125/150)	6" (150)	6"/8" (150/200)	6"/8" (150/200)	8"/10" (200/250)	8"/10" (200/250)	
Perm. Flange - inch (DN)	1-½" (40)	2" (50)	2-½" (65)	3" (80)	4" (100)	4" (100)	5" (125)	5" (125)	6" (150)	
CIP drain size (m ³ /h)	16	24	30	64	72	88	104	144	176	
Feed Pressure (bar)	4 Bar as a minimum									
Power - Main ****	380-Volts 3-Phases 50-Hertz or 460-Volts 3-Phases 60-Hertz									
Control	220-Volts 1-Phases 50-Hertz or 110-Volts 1-Phases 60-Hertz									
APPROXIMATE OVERALL DIMENSIONS & WEIGHT										
Height (cm)	190	190	190	190	200	200	210	275*****	275*****	
Width (cm)	470	580	690	690	805	805	805	805	805	
Depth (cm)	110	110	120	200	210	230	230	230	230	
Weight (kg)	1500	2100	2900	4200	5900	7100	8200	11100	14500	
* Machines available with other capacities										
** All 8" (20.3 cm) housing are with side ports										
*** All membrane elements are with an area of 400 sq.ft. (37m ²) Flux at 15 to 17 l/m ² /h (GFD 9 TO 10)										
**** Any other standard voltages (400/415 . 230/240)										
***** These SWRO consist of a skid in two sections for containerized shipment purpose										

Sea Water Membranes Details:

- Type : T.F.C (polyamide)
- Area : 37 m² (400 sq. ft.)
- Flux : 15 to 17 l/m²/h (9 to 10 GFD)
- Rejection : 99.5 TO 99.8%

Feed Water Requirements:

- Temperature (°C) : 10 to 40
- Residual Chlorine (mg/l) : < 0.05 to Nil
- silt density index (sdl) : ≤ 5
- Metals-Iron, Manganese (mg/l) : < 0.03
- Operating pH range : 2 to 11

