

Skid Mounted and Containerised Reverse Osmosis Package Water Treatment Plants for Potable Water and Industrial Water Re-Use

Skid mounted or ISO Container
Manufactured Systems.

Automatic operation and Clean-in-Place

Brackish Water and Sea Water Reverse
Osmosis

Stainless Steel High Pressure pipes and
valves

Thin Film Composite Membranes

Max Pressure 82 bar for SWRO

Max Inlet TDS 45,000 ppm

Average Salt Rejection 98%

pH Range 3 - 10

Max Temperature 45 deg C

Reverse Osmosis removal of minerals and total dissolved solids from **Sea Water (SWRO)** and **Brackish Water (BWRO)**. Also, for polishing of low grade water to potable quality. High quality reverse osmosis skid mounted plants designed and constructed to meet all demands for ultra pure water. Five different families of the RO units are introduced as standard packages, skid mounted RO systems with production capacities up to 1,000 cubic metres per day permeate flow

TWRO: **Tap Water Reverse Osmosis** plants with raw water TDS up-to 3,000 ppm

BWRO: **Brackish Water Reverse Osmosis** plants with raw water TDS up-to 5,000 ppm

HBWRO: **Highly Brackish Water Reverse Osmosis** plants with raw water TDS up-to 15,000 ppm

SWRO: **Sea Water Reverse Osmosis** plants with raw water TDS up-to 45,000 ppm

SWRODP: **Double Pass Sea Water Reverse Osmosis** plants with raw water TDS up-to 70,000 ppm

FRO: **Low Fouling Reverse Osmosis** for effluent polishing for reuse



Typical RO Skid Mounted Sea Water Reverse Osmosis (SWRO) plant with a production capacity of 150 cubic metres per day.

This skid can be shipped globally either export packed or the entire plant can be manufactured and assembled to sit within an ISO shipping container for immediate installation on site.

Standard Features

- Thin film membranes.
- Stainless steel centrifugal, multi-stage pump and NAB plunger pumps.
- Fibreglass membrane housings.
- Antiscalant, pre and post chlorination, de-chlorination and pH correction dosing systems.
- 5 micron pre sediment multi cartridge.
- Inlet water shut off valve.
- Low pressure pipes and valves 16 Bar uPVC.
- Stainless steel high pressure pipes and valves.
- Reject regulation valve.
- Permeate and reject float type flow meters.
- Permeate water TDS monitor



RO containerised Sea Water Reverse Osmosis package plant with a production capacity of 100 cubic metres per day

Operating Conditions	TWRO	BWRO	HBWRO	SWRO
Maximum Pressure	15 Bar	20 Bar	30 Bar	82 Bar
Maximum Temperature	45 Deg C	45 Deg C	45 Deg C	45 Deg C
pH Range	3 - 10	3 - 10	3 - 10	3 - 10
Maximum Inlet TDS	3,000 ppm	7,000 ppm	15,000	45,000
Minimum Salt Rejection	96%	96%	96%	96%
Average Salt Rejection	98%	98%	98%	98%
Feed Water Chlorine Content	Nil	Nil	Nil	Nil
Maximum Inlet Water SDI	3	3	3	3
Maximum Feed Water Turbidity	1 NTU	1 NTU	1 NTU	1 NTU



Chemical dosing system. Diaphragm doing pumps for pre and post chlorination, de-chlorination and pH adjustment.

RO Sea Water Models	Production Capacity	Skid Foot Print	Installed Power 50Hz
SWRO 12	12	4.0m x 1.5m	9 kW
SWRO 17	17	4.0m x 1.5m	9 kW
SWRO 25	25	4.0m x 1.5m	10 kW
SWRO 34	34	4.5m x 1.5m	17 kW
SWRO 67	67	4.7m x 1.3m	27 kW
SWRO 100	100	5.0m x 1.5m	35 kW
SWRO 150	150	5.0m x 1.5m	50 kW
SWRO 200	200	5.5m x 1.6m	67 kW
SWRO 250	250	6.5m x 1.6m	80 kW
SWRO 300	300	6.5m x 1.6m	81 kW
SWRO 350	350	6.5m x 1.8m	83 kW
SWRO 400	400	7.0m x 2.0m	98 kW
SWRO 450	450	7.0m x 2.0m	118 kW



Typically arrangement of membrane housings for a containerised RO with a production capacity of 450 cubic metres per day. This particular plant include spare membranes which could be brought into use by the operator.

Chart showing the various models for the SWRO packages. The production capacity is dependent upon the sea water inlet TDS. The SWRO models shown here are based on an inlet TDS of 45,000 ppm which would be considered high. The inlet TDS will also effect the absorbed power of the process motors. This chart is indicative and an accurate production capacity for each sized plant along with the installed power and absorbed power will be provided if a sea water analysis is provided.

With containerised RO systems, the container is typically a single use model which is undergoes a full refurbishment and internal build including grp flooring, full wall and roof lining, utility services including lighting, sockets, water and if required air conditioning. A separate side opening door is provided for easy access.

