



Reverse Osmosis (RO) Technologies  
for Commercial & Industrial Applications



## Reverse Osmosis (RO)

Eco-Chem's Comprehensive Range of RO Systems for Your Varying Treatment Needs.

The development and application of Reverse Osmosis (RO) to purify water began a few decades ago. In the older days, RO was primarily developed and used for desalination purposes for potable water, particularly in desert-related territories such as Asia, Middle East & African Region.

**Sea Water Desalination - ECO Desal**

**Containerized RO Unit - EROS**

**Brackish Water RO Plant - EROS**



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## Containerized RO Unit - EROS

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The development and application of Reverse Osmosis (RO) to purify water began a few decades ago. In the older days, RO was primarily developed and used for desalination purposes for potable water, particularly in desert-related territories such as California of the USA and in the Middle-East.

These days, with the advancement and decreasing costs of RO membrane and its applications, RO technologies and processes have been applied to purify not just seawater, but highly contaminated or brackish water for potable and industrial applications (or for industries requiring highly purified water).

IWW-ECOCHEM has a relatively long history in developing and integrating various types of RO systems for a wide spectrum of commercial and industrial applications in the region. Today, we are a leading water company in manufacturing and distributing a comprehensive range of standard, modular and packaged (and custom-designed –and-built) RO systems including the following series:



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## Eco Chem Containerized Sea Water RO Specifications

PART NUMBER	RO 1000 LPH	RO 2000 LPH	RO 3000 LPH	RO 4000 LPH	RO 5000 LPH
CAPACITY	20 Cubic meter/Day (20 TPD)	40 Cubic meter/Day (40 TPD)	60 Cubic meter/Day (60 TPD)	80 Cubic meter/Day (80 TPD)	100 Cubic meter/Day (100 TPD)
WORKING PRESSURE	50 – 60 BAR				
MEMBRANE SIZE X UNIT	8040 x 4	8040 x 6	8040 x 10	8040 x 12	8040 x 15
MEMBRANE MAKE	GE / HYDRANAUTICS	GE / HYDRANAUTICS	GE / HYDRANAUTICS	GE / HYDRANAUTICS	GE / HYDRANAUTICS
MEMBRANE HOUSING	1000 psi / 8 inch 3 element Long	1000 psi / 8 inch 3 element Long	600 psi / 8 inch 2 element Long	600 psi / 8 inch 3 element Long	600 psi / 8 inch 3 element Long
WATER QUALITY MONITOR	TDS METER WITH LCD DISPLAY / HANNA-USA				
PRESSURE GAUGES	FEED WATER PRESSURE/BOOSTER PUMP OUTLET PRESSURE				
CONTAINER TYPE	10 FEET CONTAINER	20 FEET CONTAINER	20 FEET CONTAINER	20 FEET CONTAINER	20 FEET CONTAINER
PUMPS	DANFOSS/CAT PUMPS/FEDCO-GERMANY				
FLOW METER	ROTA METER / FLOW MAX				
DIMENSION (m)	2.4x2.6x3	2.4x2.6x6	2.4x2.6x6	2.4x2.6x6	2.4x2.6x6
PRE FILTRATION	DMF	DMF	DMF	DMF	DMF
OPERATION	AUTO/MANUAL	AUTO/MANUAL	AUTO/MANUAL	AUTO/MANUAL	AUTO/MANUAL
DOSING SYSTEM	✓	✓	✓	✓	✓
RAW WATER PUMP	✓	✓	✓	✓	✓
ELECTRICAL CONTROL	AUTO/MANUAL MODE (MICROPROCESSOR BASED OPERATION / PLC)				

## Brackish Water RO Plant - EROS

### Commercial/Industrial RO Systems

This series of RO systems consists of a range of systems integrated with either one, two or three elements of RO within entire fully wired- and-plumbed skids ready for "plug-and-play" installation in-situ. Our systems are fully automated with high-quality parts and components and instrument, and are well programmed for varying applications.

### Plant Requirements

1. Continuous municipal or deep well feed water supply.
2. 3-phase power with neutral 50/60 Hz.

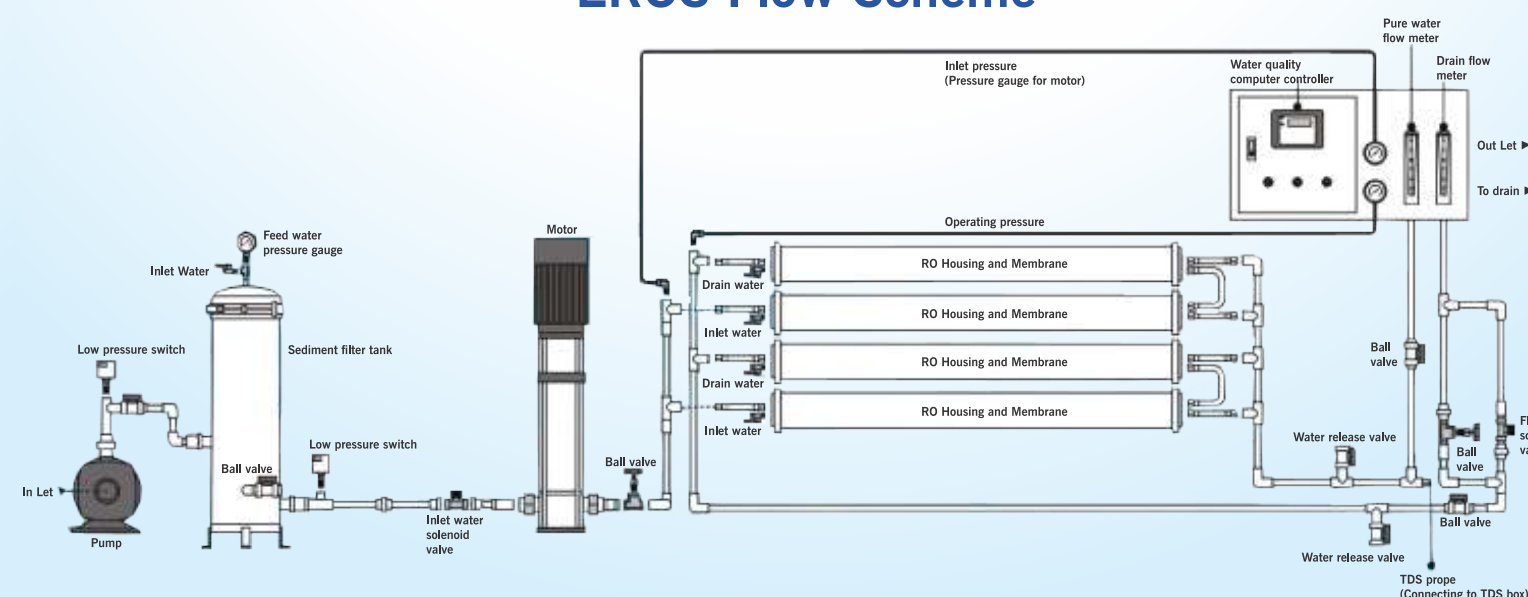
Nominal production based on feed water with TDS of 1500 ppm and temperature of 25°C (77°F).

### Treated Water Qualities

1. Typical Conductivity: 10 – 25 mS/cm<sup>2</sup> based on 500 mg/L feedwater TDS
2. pH: 5.5 to 7.5: based on 60% recover



## EROS Flow Scheme





## RO Features with Main Equipment & Components

Standard Features	Main Equipment & Components
<ul style="list-style-type: none"> <li>• Complete plant with pretreatment and industrial high rejection 8" RO</li> <li>• Installed anti-scalant pump with tank</li> <li>• Automatic fast flush</li> <li>• Automatic 'Dump' valve</li> <li>• Small footprint with compact skid mounted arrangement.</li> <li>• Packaged into modular system with 6 models and multiple options for every application</li> <li>• Fully automatic, PLC based</li> <li>• Operator Interface (HMI)</li> <li>• Dual channel conductivity analyzer with digital display</li> <li>• Flowmeters for feed stream, reject, permeate and recycle</li> <li>• Visible and audible alarm for poor water quality and faults</li> <li>• Supplied complete with Stn Stl pump with VSD</li> <li>• Minimal site installation</li> </ul>	<p><b>1 CONTROLS</b></p> <p>Control Panel : IP55 weatherproof fully automatic PLC based with HMI touch panel for user selectable values.</p> <p>Operating Modes : Fully Auto, Semi Auto or Manual.</p> <p>Indicator : Conductivity &amp; optional flow totalizer.</p> <p>Pressure Gauges : 0 - 100psi range</p> <p>Level Switches : All tanks fitted with PVC chemical resistant 24V switches</p> <p><b>2 FRONTAL PIPING</b></p> <p>Low Pressure Piping : Schedule 40 PVC/UPVC</p> <p>High Pressure Piping : SS 316</p> <p>Flowmeters : 2 Nos</p> <p><b>3 PUMPS</b> : Stn Stl multistage Grundfos pumps</p> <p><b>4 PREFILTER</b></p> <p>Material of Construction : NSF approved FRP Composite Tank With P.E. inner lining</p> <p>Max. Working Temp. : 500C (127.50F) Max.</p> <p>Working Pressure : 10.5 bar (150psi)</p> <p>Openings : 4" UN threaded or 6" flanged top &amp; bottom</p> <p>Colour : Natural Almond</p> <p><b>5 STORAGE TANKS (OPTIONAL)</b></p> <p>Material : Polyethylene</p> <p>Raw Water Tank : Min 1 hr service flowrate volume</p> <p>Product Water Tank : Min 2 hr service flowrate volume</p> <p><b>6 STRUCTURE</b> : Epoxy coated carbon steel</p>
<p><b>Options</b></p> <ul style="list-style-type: none"> <li>• Point – of – use system with pumps, UV sterilizer and cartridge filters</li> <li>• Flow totalizer</li> <li>• Raw &amp; product water tanks</li> </ul>	

## SEA WATER DESALINATION - ECO DESAL

### Energy - Saving RO Systems

This is an energy-saving series employing the ultra-low pressure membranes to lower the energy consumption. It is capable in application where water quality is not stringent but unit cost of operation is a key factor. Capacities : 0 .5 ~ 600 m3/Hr.

**(Please contact us or our distributor/agent for enquiries).**



### Simple, Standard, Modular & Compact Seawater Desalination Systems

This is a series with extra high rejection that can purify brackish water with salt content up to 15 gm/L. Capacities 1 ~ 250 m³/hr (110 gpm).

(Please contact us or our distributor/agent for enquiries).

This series is a range of stand-alone standard, modular and packaged seawater desalination systems for seawater of up to 40000 ppm in salt content. The systems work in tandem with built-in pre-treatment process for seawater and optional energy recovery unit for lower unit cost of treatment of water. Capacities: 0 ~ 600 m³/day (10 gpm).

(Please contact us or our distributor/agent for enquiries)

## TURNKEY BASED PACKAGED DRINKING WATER PROJECT (WITH MARK)

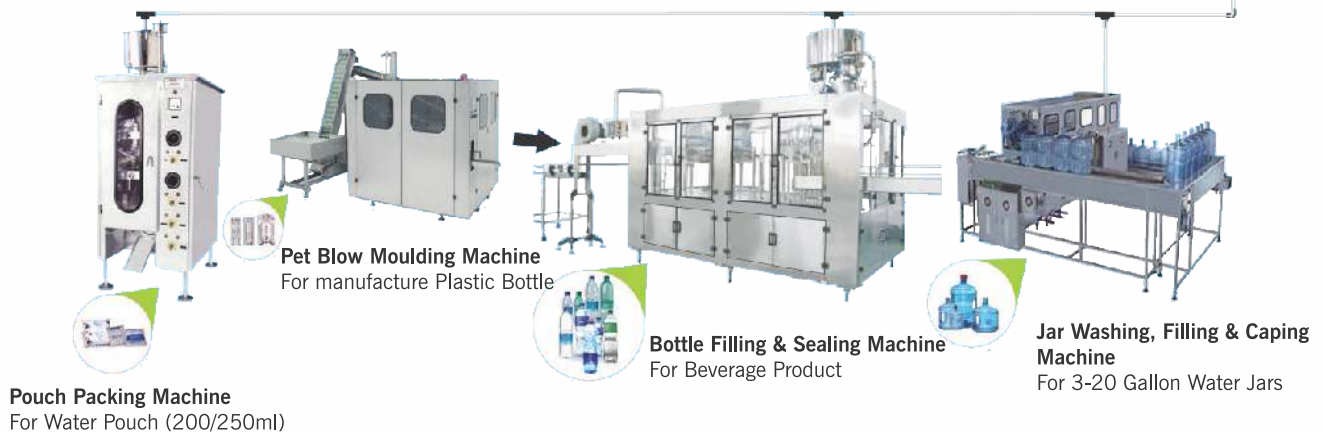
### Water Ozonator

kill bacteria and parasites, remove bad taste, chlorine, heavy metals, and bad odors.  
provides safe, economical alternative to distilled or bottled water



RO 10000 to 50000 Lph Plant  
provide purest drinking water

UV with Final Polishing Filter  
Prevent fungal & bacterial formation in  
the line and before packing.



Pouch Packing Machine  
For Water Pouch (200/250ml)

Pet Blow Moulding Machine  
For manufacture Plastic Bottle

Bottle Filling & Sealing Machine  
For Beverage Product

Jar Washing, Filling & Capping  
Machine  
For 3-20 Gallon Water Jars

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