



Containerized Seawater Desalination System

KEY FEATURES

Automated Protection Features

Equipped with high and low-pressure protection switches that automatically initiate system shutdowns and alarms to safeguard the high-pressure pump and RO membrane elements.

Automatic Multivalve

The system includes an automatic multivalve that initiates backwashing of the multimedia filter when the pressure differential reaches 0.1 MPa.

RO Membrane Cleaning System

Equipped with a cleaning system that allows for physical cleaning, chemical cleaning, and the application of protective fluids for the reverse osmosis membrane elements.

Durable Construction

The frame, piping, and fittings are crafted from stainless steel and corrosion-resistant materials. This ensures long-term durability and low maintenance expenses.

High-Efficiency and Low-Energy Consumption

Produces high-quality water with minimal energy consumption, typically requiring 3.0-5.5 kWh per ton of water, making it cost-effective and environmentally friendly.

Minimal Environmental Impact

The technology does not involve phase changes or the use of chemicals, minimizing environmental impact.

Broad Application and High-Quality Water

Widely applicable in various sectors, including marine fisheries, resource development, scientific research, and coastal urban water supply, providing water that meets drinking standards.

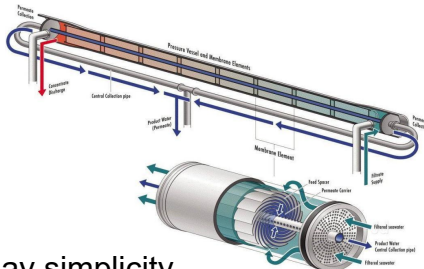
Preservation of Beneficial Elements

Can preserve beneficial trace elements in the water, enhancing its quality and suitability for drinking.

SOLUTIONS

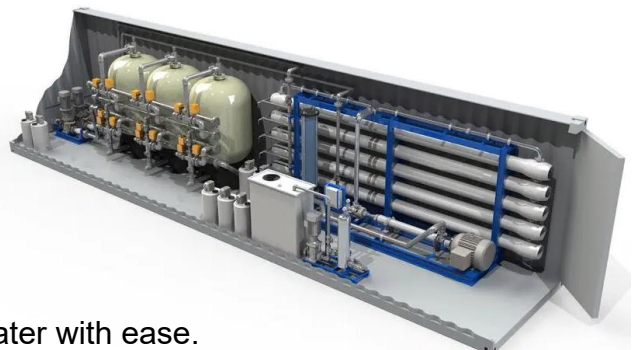
MCT Seawater RO Desalination Containerized Solution

Model	MCT-96T /day /20GP	Model	MCT-250T /day /40GP
Production Capacity	4t/hour	Production Capacity	10.42t/hour
Desalination Rate	>99.5%	Desalination Rate	>98.5%
Salinity Level of Produced Water	<500mg/L	Salinity Level of Produced Water	<500mg/L
Recovery Rate	40%	Recovery Rate	45%
Operating Pressure	<6.5Mpa	Operating Pressure	<6.5Mpa
RO Membrane Qty	8	RO Membrane Qty	20
Number of Membrane Shell	8	Number of Membrane Shell	10
Power Usage	20.5 kW	Power Usage	85.9 kW
Power Supply	AC 380V / 50Hz / Three-phase (customized)	Power Supply	AC 480V / 60Hz / Three-phase (customized)
Electrical Control Protection Rating	IP54	Electrical Control Protection Rating	IP54
Net Weight	4,000 kg	Net Weight	6,000 kg



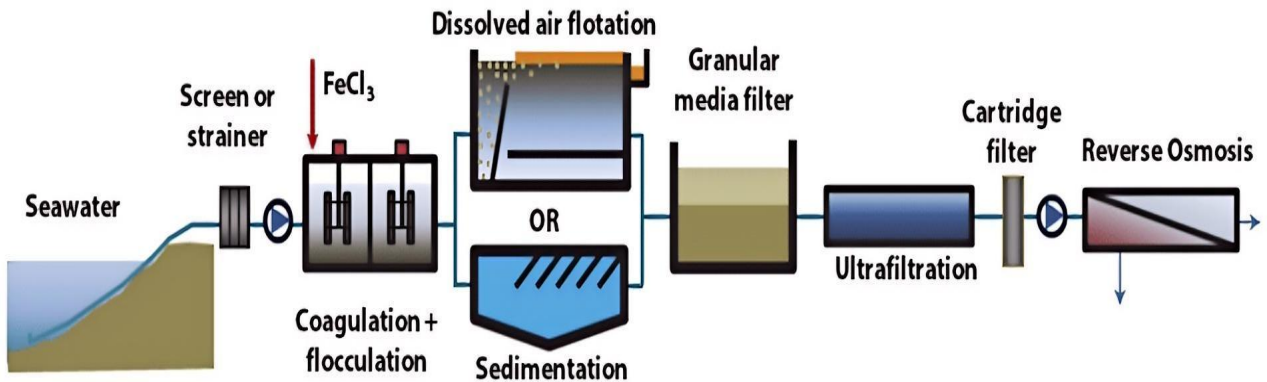
Plug-and-play simplicity.

Transform seawater into safe, reliable fresh water with ease.





Processing Techniques



Pre-Treatment

Ensuring Optimal Input Quality. Efficiently separates pure water from seawater, removing dissolved minerals, organic compounds, bacteria, viruses, and metals.

- **Screening**

Seawater enters the system through screens that remove large particles and debris.

- **Coagulation/Flocculation**

Chemicals may be added to coagulate or flocculate smaller particles, making them easier to remove.

- **Sediment Filtration**

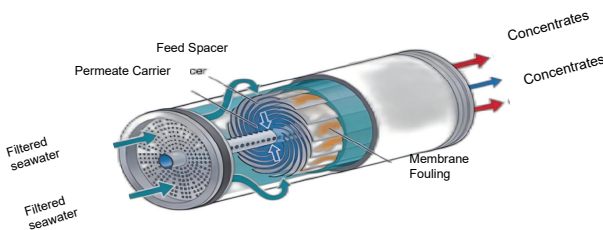
The water passes through filters to remove sediment and other suspended solids.

- **Ultrafiltration**

Removes suspended solids and microorganisms, enhancing the efficiency and longevity of the reverse osmosis membranes.

Reverse Osmosis

Reverse osmosis is a physical process where water molecules are pushed through a semi-permeable membrane under pressure. Specialized equipment effectively removes salt and other impurities from seawater, producing potable fresh water.



- **High-Pressure Pump**

The pre-treated seawater is pumped through a high-pressure pump, increasing its pressure significantly.

- **RO Membrane**

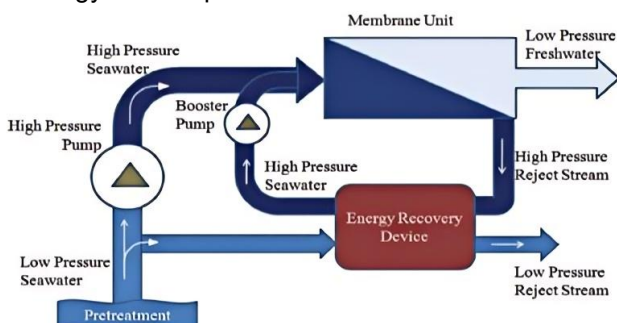
The pressurized seawater is forced through semi-permeable membranes, which allow water molecules to pass while blocking salt and other contaminants.

- **Brine Disposal**

The concentrated brine (the remaining salty water) is discharged back into the ocean.

Energy Recovery

The energy recovery device captures the energy from the reject stream of the RO system, saving up to 60% of its energy consumption.



- **Function**

The energy recovery device recovers the pressure energy from the brine (concentrated seawater) that is discharged after passing through the RO membranes.

- **Impact**

This recovered energy is then used to drive the high-pressure feed pumps that push seawater into the RO membranes, thereby reducing the overall energy consumption of the system.