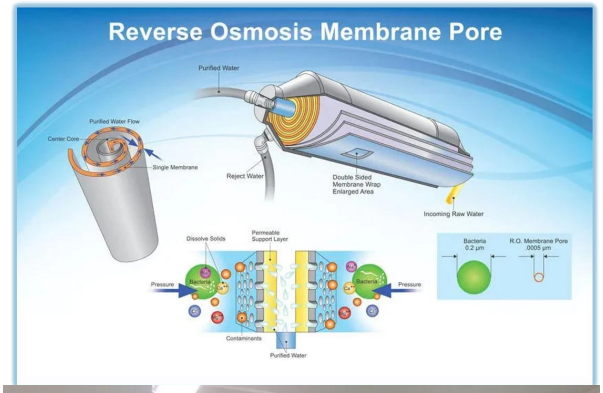


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Advanced Brackish Water Reverse Osmosis Solutions

What is BWRO

Brackish water or saline groundwater or briny water is water that has more salinity than fresh water, but not as much as seawater. It may result from the mixing of seawater with fresh water, as in estuaries, or it may occur in brackish fossil aquifers. The word comes from the Middle Dutch root "brak". Certain human activities can produce brackish water, in particular, civil engineering projects such as dikes and the flooding of coastal marshland to produce brackish water pools for freshwater prawn farming. Brackish water is also the primary waste product of the salinity gradient power process. Because brackish water is hostile to the growth of most terrestrial plant species, without appropriate management it is damaging to the environment.







The benefits of using a disc-tube reverse osmosis membrane

- Provides high purity water under continuous operation and harsh environments.
- Cost-effective and highly efficient during operations.
- Compliance with customer requirements and specifications.
- Customizable with optional operational and control features and ancillary equipment.
- Suitable for various commercial and industrial applications.
- Available in different sizes, including small, medium, and large projects.
- Can come with Solar Hybrid and/or Containerized options.
- A reliable solution for high purity water applications.

How DTRO Works

Brackish Water Reverse Osmosis (BWRO) Systems utilize a process called reverse osmosis to convert brackish water into fresh water The reverse osmosis process eliminates larger particles & impurities from brackish water, producing high-purity water suitable for various applications. This efficient and reliable technology has become increasingly popular in industries, agriculture, and residential settings.

Key Components of BWRO



- This process involves the following key components:
- **Pressure Pump:** A high-pressure pump applies pressure to saline water, forcing it through a semi-permeable membrane.
- **Semi-Permeable Membrane:** The membrane‘s small pores block the passage of dissolved salts, heavy metals and other contaminants, allowing only water to flow through.
- **Membrane Housing:** The holds the semi-permeable membrane in place and ensures proper filtration.
- **Control Panel:** The control panel allows operators to monitor and adjust the system's performance and settings.
- **Pre-Treatment System:** Before entering the reverse osmosis system, brackish water goes through pre-treatment processes such as filtration, sediment removal, and chemical dosing to optimize system performance and prevent membrane fouling.



Applications of BWRO

Agriculture

In agriculture, the BWRO system is used for irrigation water treatment, such as treating saline aquifers in Xinjiang. This provides a sustainable water source for agricultural activities and enhances crop yields.



Municipal

The BWRO system is suitable for industrial applications, including boiler feedwater treatment and mining wastewater recycling. It ensures high-quality water for industrial processes, reducing environmental impact and operational costs.

Industry

For municipal use, the BWRO system supplies drinking water to inland communities. It provides a reliable and sustainable water source, contributing to improved public health and quality of life.

Choosing the Right BWRO System



Water Capacity and TDS Range

When selecting a Brackish Water Reverse Osmosis (BWRO) system, it is important to consider the desired water capacity and Total Dissolved Solids (TDS) range. BWRO systems are available in a wide range of capacities, from small-scale residential units to large industrial systems capable of producing up to one million gallons per day. The TDS range indicates the system's ability to remove dissolved salts and other contaminants from the brackish water. Determine the required water capacity and desired TDS range based on your specific application needs.

Customer Requirements and Specifications



Ensure that the chosen BW RO system is compliant with all customer requirements and specifications. Different industries and applications have specific water quality standards that must be met. Consider factors such as water purity levels, system efficiency, maintenance requirements, and durability. Check if the system provider offers customization options to tailor the system according to your specific needs and any unique challenges or constraints you may have. By considering factors such as water capacity, TDS range, customer requirements, and specifications, you can confidently choose a Brackish Water Reverse Osmosis system that meets your water treatment needs efficiently and effectively. The right system will provide you with high-quality water for various applications, ensuring the success of your operations.

Case Studies and Success Stories



Industrial Applications

Numerous industrial facilities have successfully implemented DTRO systems, resulting in significant improvements in water quality and operational efficiency. These case studies demonstrate the effectiveness and reliability of DTRO in various industrial settings.

Municipal Water Treatment

In municipal water treatment plants, DTRO has proven to be a reliable solution for providing clean drinking water. These success stories highlight the benefits of DTRO in meeting the water needs of communities.

Project Reference



QIngdao Sea water desalination BWRO Treatment Project

- Owner: Qingdao Xinyi Industry
- Commissioning by: 2009
- Project Scale: Total treatment capacity: 200 t/h, BWRO treatment capacity: 10 t/day
- Process: BWRO
- Recovery rate: 50%



Hefei high tech E&D industry park project

- Owner: Hefei High Tech E&D
- Commissioning by: 2010
- Project Scale: Total treatment capacity 165 t/day,
- Process: BWRO
- Membrane Module Model： BW-43K-1680-3
- Recovery rate: 55%

Project Reference



Shanxi landfill leachate containerized BWRO emergency treatment project

- End user: Shanxi Municipality
- Commissioning date: 2022
- Project Scale: DTRO treatment capacity: 1,640 t /d
- Process: pretreatment + two-stage BWRO
- Recovery rate: 75%
- Membrane Module Model: BW 15-6



Morocco sea water desalination BWRO treatment Expansion Project

- End user: Morocco Municipality
- Commissioning by: 2021
- Project Scale: Total treatment capacity 2400 t/day, BWRO water intake: 800 t/day
- Membrane Module Model: DTGE-MP-75bar
- Process 2: BWRO
- Total Recovery Rate:60%

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BWRO

Advanced water treatment solutions



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