

PRODUCT MANUAL

Disk Tubular RO

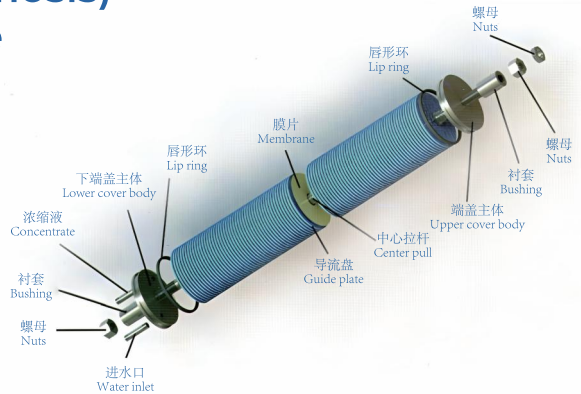
2025

Shanghai CM Environmental Technology Co., Ltd.

DTRO(Disc-Tube Reverse Osmosis) Membrane Product Brochure

STRUCTURE CHARACTERISTICS

A disc tube membrane module mainly consists of reverse osmosis membrane sheets, flow guide plates, a central tie rod, a housing, end plates, various seals, and connecting bolts. The membrane sheets and flow guide plates are stacked together at intervals in a groove, secured with the central tie rod and end plates, and then placed into a pressure-resistant housing to form a disc tube membrane module.



PRODUCT FEATURES

▶ Effectively Reduces Physical Clogging

The open flow channel design provides a wide effective flow path, reducing physical clogging.

▶ Reduces Scaling and Enhances Anti-fouling Properties

The guide plate with radial protrusions creates turbulence during feed flow, minimizing membrane surface scaling, fouling, and concentration polarization.

▶ Extends Membrane Life in Highly Polluted Water

Effectively reduces membrane scaling and fouling, extending cleaning cycles. The special structure and hydraulic design of the membrane module facilitate cleaning, resulting in good flux recovery life after cleaning and extending membrane life.

▶ Convenient Operation and Maintenance

Standardized design allows for easy disassembly and maintenance; internal units can be replaced individually, offering high flexibility.

▶ High Recovery Rate

DTRO membrane modules operate at four pressure levels: 75 bar, 90 bar, 120 bar, and 160 bar, representing the highest pressure levels currently available for industrial applications. Combined use can achieve a maximum recovery rate of 95%.



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SPECIFICATION PARAMETER

Item	Parameter			
	75	90	120	160
Pressure level(bar)	75	90	120	160
Membrane column diameter(mm)	216	218	234	234
Membrane column length(mm)	1400			
Membrane column area>(m ²)	9.76			
Diaphragm quantity(pieces)	209			
Number of guide plates	210			
Water inflow per membrane (L/h)	800-1200			
Water production per membrane (L/h)	100-300			
Extreme operating temperature (°C)	5-37			
Running pH	5-8			
Cleaning method	Forward cleaning			
25°C standard desalination rate (one year)	≥97%			
25°C standard desalination rate (three years)	≥95%			
Membrane housing materia	FRP			
Membrane housing pressure	75	90	120	160

OPERATING LIMITS

Item	Parameter			
	75	90	120	160
Pressure level(bar)	75	90	120	160
Maximum operating pressure(bar)	75	90	120	160
Maximum pressure drop(bar)	8			
pH range, continuous operation	5-8			
pH range, short-term cleaning (30minutes)	1-13			
Maximum allowable free chlorine-content(mg/)	0.1			
Maximum allowable water supply SDI	20			
Maximum allowable oil and fat content in feed water (mg)	0.1			
Maximum allowable iron content in feedwater(mg/L)	0.05			
Maximum allowable hardness on the concentrate side (mg/L, in CaCO ₃)	800-1000			
Maximum allowable silicon content on the concentrate side (mg/L, SiO ₂)	200			

Note:

Desalination rate is based on the following test conditions:
50000ppm NaCl; 1160psi (80bar); 77°F(25 C); pH 8; recovery rate 15%

