

DELEMIL OD-S SERIES

Seawater Desalination Reverse Osmosis Membrane

OD-S Series (Ocean Desalination) is a self-developed membrane with the world's standard of pressure bearing capacity, featuring high sodium chloride removal rate and boron removal rate. It's widely used in seawater and brackish water desalination.



Membrane Parameters

| Product Models | Effective Area FT ² (m ²) | Average Flow Rate GPD (m ³ /d) | Average Rejection Rate % |
|----------------|--|---|--------------------------|
| OD-S 10 | 375 (34.8) | 6000 (22.7) | 99.70% |
| OD-S 20 | 400 (37.2) | 6400 (24.2) | 99.70% |

Notes: The average desalination rate is tested after 24 hours operation.

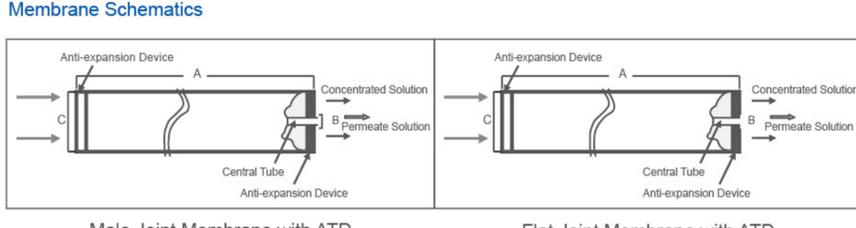
Flow fluctuation range of single membrane could be ±25%.

Test Condition : 32000ppm NaCl solution, 800 psi operating pressure, 25°C temperature , pH=7, 8% recovery rate.

Parameters of Membrane Operating and Cleaning

| Product Models | Max Operating Pressure | Typical Operating Pressure | Pressure Drop of Single Membrane | Recovery Rate |
|---------------------------|--------------------------|--------------------------------|----------------------------------|---------------|
| OD-S Series | 1200psi | 800psi | <20psi | 50% |
| Max Operating Temperature | Max Cleaning Temperature | PH Range of Continuous Working | PH Range of Cleaning | Inlet Water |
| 50°C | 50°C | 2.0-11.0 | 2.0-11.5 | SDI < 5 |

Membrane Schematics



Specifications and Parameters

| Specifications | Joint | Diameter Inch(cm) | | | Package Weight (kg) |
|----------------|------------|-------------------|--------------|------------|---------------------|
| | | A | B | C | |
| 2540 | Male Joint | 40.00 (101.6) | 0.75 (1.9) | 2.4 (6.1) | 3 |
| 4040 | Male Joint | 40.00 (101.6) | 0.75 (1.9) | 3.9 (9.9) | 4 |
| 8040 | Flat Joint | 40.00 (101.6) | 1.125 (2.85) | 7.9 (20.1) | 16 |

Special Notes:

- All membrane components are packaged under the dry/ semi-dry condition;
- Each membrane element is equipped with an accessory kit, fitted with a connector and 4 O-rings.

Storage Conditions

- Before the first use, all membrane elements must be stored under the original packaging conditions.
- The membrane is best placed in the original packaging and opened before the using of water treatment system.
- The transport temperature below 0°C may cause irreversible membrane damage, and the transport temperature above 30°C may cause membrane degradation and deterioration of the protection solution.
- Store in a cool, dry condition and the place where is not directly exposed to sunlight or artificial lighting. Storage temperature stays at 0°C to 30°C , and the longest storage time is 6 months.

General Information

- Once wetted, the membrane element must always be wet.
- The limited warranty we promised will expire due to the fact that the user does not strictly follow the operational restrictions and guidelines set forth in this Code.
- If the system is in a shut down state for a long time, the membrane element is advised to be placed in the protective solution to prevent the growth of microorganisms.
- It is the user's responsibility if use an incompatible chemical and lubricant, and cause undue influence on the original.
- The maximum allowable pressure drop of single pressure vessel is 60 psi (4.1bar).
- At no time can the backpressure be produced on the side of producing water to avoid the occurrence of harmful problems.

INSTALLATION METHOD OF MEMBRANES

Opening Membrane Packages

1. Open the membrane package, and take out membrane elements and parts. Parts are individually packaged in small plastic bags.
2. Prepare the necessary parts according to the following list.

| Component Part Names | Required Quantities |
|----------------------------------|---|
| Seal Ring of Concentrated Water | One Piece for Every Membrane |
| O-ring | Four Pieces for Every Membranes |
| Open-type Product Water Adapter | One Piece for Every Pressure Vessel |
| Close-type Product Water Adapter | One Piece for Every Pressure Vessel |
| Product Water Connecting Pipe | Numbers of Membrane Elements- Numbers of Pressure Vessels |

3. Attach O-rings to the membrane elements. Lubricate with glycerin during installation and carefully install to prevent scratches on the O-rings. Put the assembled adapter in a clean place before inserting the water pipe (Figure 1).

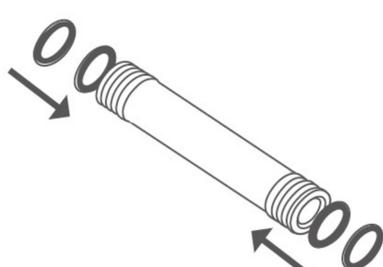


Figure 1



Figure 2

4. Safety instructions before opening the package:

The package of the new membrane contains about 0.5-1.0% sodium bisulfate or a magnesium sulfate solution with oxygen absorbent. This solution has irritating effects on the skin and eyes. Do not eat, and please prepare necessary protective equipment (Figure 2). The membrane housing is made of FRP. Please be careful of glass fiber.

5. Open the membrane package and prepare to fill (Figure 3).

In order to facilitate the installation description, the membrane element has an arrow indicating direction on the housing. This arrow does not indicate the installation direction that must be followed.

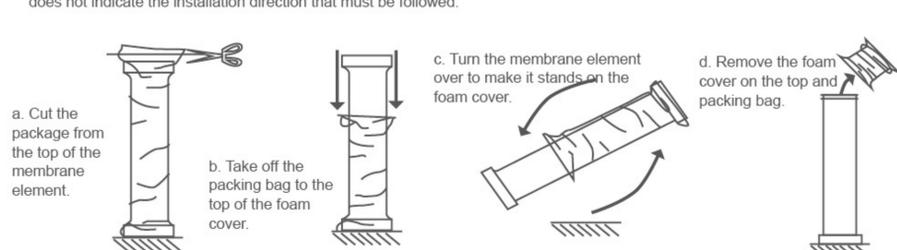


Figure 3

Explanation: the packing bag is made of a material that has a very high oxygen isolation effect, which can extend the storage time of the storage solution. If the packing bag is cut only from one end, it can be stored for use when the membrane needs to be stored and transported.

INSTALLATION METHOD OF MEMBRANES

Assembly of membrane elements and components

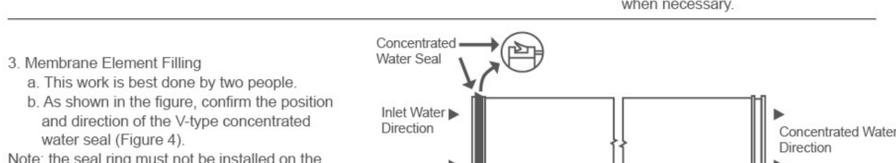
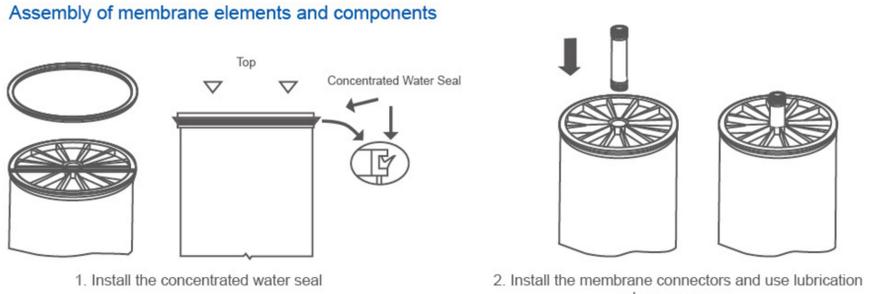


Figure 4

- c. Open the inlet of the RO pressure vessel.
- d. Lubricate the inside of the RO pressure vessel with water and glycerin. About 10 ml of glycerol is required for each pressure vessel. If the viscosity of glycerol is high, it can be diluted with water to ensure adequate wetting. Use a mop or similar tool to lubricate the entire pressure vessel (Figure 5).

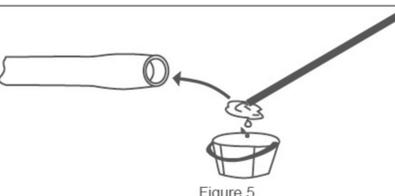


Figure 5

- e. After lubricating the seal ring of concentrated water and inner wall of the pressure vessel with glycerin, install the membrane approximately 2/3 from the inlet of the pressure vessel (Figure 6). Carefully and smoothly install the membrane, especially the first membrane.

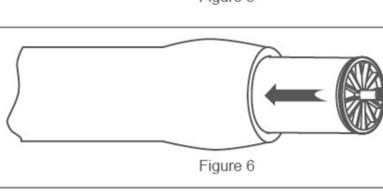


Figure 6

- f. Install the concentrated water seal as the first membrane. Use a membrane adapter to connect two membranes (Figure 7). Partially load membrane elements at the fixed place and push the two pressure vessels safely and forcefully to keep them in a straight line and avoid damages to the membrane adapter or the concentrated water seal.

- g. Repeat the above steps to load the membrane element into the pressure vessel one by one. When the last membrane element is installed, load the product water adapter by the pressure vessel manufacturer and push it into the position to ensure that the first loaded membrane has been connected tightly.

