VONTRON **HOR21-4040 Membrane Element**

Brief Introduction

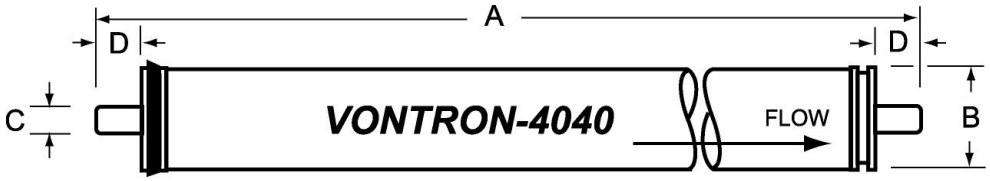
HOR (high oxidation resistant) series of aromatic polyamide compound membrane element newly developed by Vontron Membrane Technology Co., Ltd. has the properties of low operating pressure, high permeate flow and excellent rejection performance, etc. Besides, the use of special synthesizing process enhances the oxidation property of membrane element and enables the membrane element to withstand the impact of oxidative substance, thus simplifying and optimizing the pretreatment process of RO system, reducing the microbial contamination of membrane elements, saving the operating cost and elongating the service life.

Industrial HOR series is designed for the desalting treatment of those water sources with salinity lower than 10000ppm such as surface water, underground water, tap water and municipal water, and is especially applicable to reuse treatment of those water sources that contain microbial contamination or oxidative substance, such as municipal-purpose or industrial-purpose reclaimed water, electroplating waste water.

Model	**Active Membrane Area** $ft^2(m^2)$	**Average Permeate** GPD(m^3/d)	**Stable Rejection Rate** %	**Min. Rejection Rate** %
HOR21-4040	90（8.4）	2200（8.3）	99.5	99.2

Testing Conditions	Testing Pressure	225 psi (1.55MPa)
	Testing Solution Temperature	25 ℃
	Concentration of Testing Solution (NaCl)	2000ppm
	pH value of Testing Solution	7.5
	Recovery Rate of Single Element	15%
Operation Limits & Conditions	Max. Working Pressure	600psi（4.14MPa）
	Max. Volume of Feed water	16gpm（3.6 m^3/h）
	Max. Temperature of Feed water	45℃
	Max. Feed water SDI_{15}	5
	pH Range of Feed water during Continuous Operation	3～10
	pH Range of Feed Water during Chemical Cleaning	2～12
	Residual Chlorine Concentration of Feed Water	＜0.1ppm
	Max. Pressure Drop of Single Membrane Element	15psi（0.1MPa）
	Max. Pressure Drop of Single Pressure Vessel with Six RO Membranes	50psi（0.34MPa）

Size of Membrane Element： 1.0 inch = 25.4 mm



A/mm(inch)	B/mm(inch)	C/mm(inch)	D/mm(inch)
1016.0(40)	99.7(3.9)	19.1(0.75)	26.7(1.05)

Notice:

1. All data and information provided in this manual have been obtained from long-term experiment by Vontron. We confirm the effective and accuracy of the data. assumes no liability for any aftermath caused by user's failure in abiding by the conditions specified in this manual in use or maintenance of membrane products. It is strongly recommended that the user shall strictly abide the designed use and maintenance requirements and keep relevant records.
2. The permeate value listed in the table is the average value. The permeate flow of single membrane element is tolerance not exceeding ±20% of the nominal value.
3. When sodium hypochlorite is dosed, the catalytic and oxidative metallic ions in the feed water, such as Cu^{2+}, Ni^{2+}, etc. shall be completely removed.
4. When sodium hypochlorite is dosed, the pH value and temperature of feed water shall be kept under careful control to make sure that the feed water temperature doesn't exceed 30℃ and the pH value is preferably between 6~8. Higher feed water temperature or improper pH value may accelerate the oxidation.
5. The salt permeation rate shall not exceed 4 times of the initial value within 3 years of service life.
6. It would be best to use the feed water pipe made of high-pressure PVC or stainless with high resistance to corrosion, the membrane housing made of FRP, the pump and instrument made of FRP with high resistance to corrosion and containing no bronze component.
7. In order to remove residual chlorine in the side of permeated water, dechlorination process is required. Post carbon process is recommended for this purpose.
8. When it is required to carry out impact disinfection, the sodium hypochlorite solution with 2ppm concentration can be selected.
9. Dry-type membrane leave the factory without any protective solution treatment. Wet-type membrane elements have been treated with the solution of 1.0% sodium hydrogen sulfite (10% glycerin antifreeze required in winter) for storage purpose, then sealed with plastic bag in vacuum.
10. The membrane used should remain wet after being used; In long term suspension, to prevent the breeding of microbes, soak the membrane elements with protective solution is highly recommended, the solution (prepared with RO filtered water) containing 1.0% sodium hydrogen sulfite (foodstuff-purpose).
11. Operate low pressure flushing for 15-25 minutes of first use, high pressure flushing for 60-90 minutes when first use (Permeate volume no less than 50% of designed volume). Discard all the permeate and condensed water produced during the first one hour after system start-up.

12. During storage time and operation period, it is strictly prohibited to added any chemical medicament that may be harmful to membrane elements. In case of any violation in adding chemical medicament, Vontron assumes no liability for any damages incurred.

13. Along with technical development and product renovation, all information will be subject to modification without prior notification. Please keep notice the website of Vontron for any updates of the product.