

Guidelines for the Use of New Elements

1. Installation

Remove the element from the packing and ensure that the element has not been damaged during transportation. Drain the element from the preserving solution into a suitable container or drain. Lightly rinse the element with dechlorinated water to remove any foreign material and the preserving solution. Introduce the element into a suitable housing in the direction of the arrow on the element. In case you cannot see the arrow, introduce the element with the side without a brine seal first. Take special care when handling the surfaces near the o-rings contact points. Damage to this area may adversely affect the performance of the element.

2. Removal of preserving solution.

Operate the system with soft/demineralized/RO water with a recirculation flow of 13 L/min, 48 L/min for 2540, 4040 elements, respectively at a pressure setting of 4 bar (60 psi) for about 30 minutes directing the feed and permeate to drain. Make sure there is no leakage from the any of the connection points. Correct as required.

3. Clean water flux measurement and standard compound test

The objectives of the clean water flux measurement and standard compound test are:

- a. Final check of the installation and review of connections to ensure there is no leakage.
- b. Confirm that the membrane was installed correctly and performing within acceptable parameters.

To measure the clean water flux:

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- a. Fill the feed tank with enough soft/demineralized/RO water.
- b. Recirculate the water at the required recirculation flow of 13 L/min, 48 L/min for 2540, 4040 elements, respectively at a pressure of 40 bar (580 psi) and a temperature of 30°C (86°F) taking care of directing the retentate and permeate to the feed tank. Take a measurement of the permeate flow after 60 minutes and compare to the data sheet specs.

Note: Avoid a sudden increase of pressure and flowrate when first operating the element. Gradually adjust the pressure and flowrate to the specified conditions. In this way, any residual air will be removed from the element avoiding an air hammer.

To perform the standard compound test:

- a. While the clean water flux test is underway dissolve in water enough material to prepare a 3-5% glucose solution.
- b. Add the prepared glucose solution to the feed tank after the clean water flux has been measured.
- c. Recirculate the solution for an additional 60 minutes before taking samples of permeate and retentate.
- d. Measure the glucose concentration in the samples, calculate the glucose rejection of the membrane and compare to the data sheet specs.

Remove the water/glucose solution from the system and replace with soft/demineralized/RO water. Operate the system with soft/demineralized/RO water with a recirculation flow of 13 L/min, 48 L/min for 2540, 4040 elements, respectively at a pressure setting of 4 bar (60 psi) for about 30 minutes directing the feed and permeate to drain. Recirculate the water at the required recirculation flow of 13 L/min, 48 L/min for 2540, 4040 elements, respectively at a pressure of 40 bar (580 psi) for another 30 min. System is ready for operation or preservation.