ION EXCHANGE
Refreshing the Planet

Technical Information

Element Loading Guidelines

This document describes the installation procedure and care to be taken while loading HYDRAMEM membrane elements.

Preparation prior to installation

It is highly recommended to flush and clean the new system and hardware like clarifiers, filters, pumps and pipes before installation of new RO/NF membranes in the pressure tube. It ensures that debris, preservatives and solvents are flushed out so that they do not come in contact with the membranes. Make sure water used for flushing is chlorine free to avoid oxidation of membranes.

Tools and material require are:

- Permeate/fresh water
- Personal protection equipments (gloves, glasses, shoes, hard hat etc.)
- Glycerin
- Silicone lubricant
- Brush for lubrication of brine seals
- Tools recommended by pressure tube manufacturer to open and close the pressure tube
- Spare parts of pressure tube end-cap
- Shims of various sizes (1 , 2 & 2.5 mm)
- PVC pipe length same as that of pressure tubes
- Cotton swab

RO Pressure Tube Preparation

- Follow the guidelines mentioned by the manufacturer to open 'end-caps' of both the sides of pressure tube.
- Remove adaptors, permeate port and 'O' rings from 'end-caps'. Clean all these parts with water.
- Clean the pressure tube with water and lubricate the inner wall of pressure tube for smooth loading of RO/NF membrane element.
- Post cleaning lubricate the inside wall of pressure tube with a solution comprising of 50% water and 50% glycerin. This will ensure that the inner walls of the pressure tube and brine seals of RO/NF elements are not damaged while loading the membrane elements.

Loading of Membrane Element

1. It is very important to fix the thrust ring and end-cap assembly at the reject end of pressure tube before loading the elements, to avoid free fall of RO/NF membrane element from the reject end and damages caused due to the same.
2. Before loading arrange RO/NF element as per plant array and maintain elements loading records.
3. Lubricate element brine seal with glycerin solution using brush and also apply some amount of glycerin over membrane element shell.
4. Start loading the element from feed end of the pressure tube as per the flow direction indicated on the membrane element sticker.
5. Gently slide the first element into feed side of the pressure tube up to three-quarters of the length.
6. Apply silicon lubricant on 'O' rings of inter connector and insert the inter connector in the 1st element permeate tube.
7. Lubricate second element brine seal with glycerin solution using brush and also apply some amount of glycerin over membrane element shell.
8. Connect the second element to the inter-connector and push both the elements into pressure vessel up to three-quarters of the length of the second element.
9. Repeat step 8 for loading rest of the membrane elements.
10. Once all the membrane elements are loaded, give a final thrust to ensure that the end element is connected to the permeate port of the reject side end-cap. Check the pressure tube for shimming requirement and accordingly fix the feed side end-cap of the pressure tube.
11. Repeat above steps for rest of the pressure tubes.