

COMPOSITE VESSELS for RO/UF APPLICATIONS
ASSEMBLY AND OPERATING INSTRUCTIONS FOR 4 INCH
FRONT PORT VESSELS
SERIES RO4Z_M_-V4I_

1. Delivery

Make sure that the delivery is complete.

Make sure that the vessels and accessories are not damaged during transportation or handling.

Before installing a vessel in a system, check the label on the vessel in order to be sure about the appropriate pressure rating.

1.1 Element adaptor / seals

The vessels are delivered assembled and the endplates are fixed with the retaining ring (2 pieces).

The closed adaptor for connection of the permeate tube of the element is packed separately in a bag together with the required seals.

This version has no open adaptor. The endplate will be directly connected to the membrane (only suitable for male membranes with centercore tube OD19.2mm)

2. Operating conditions and intended use

The vessel is designed in accordance to ASME X pressure vessel code.

It is designed for long term use as a housing for spiral elements to desalt brackish water or sea water.

For pressure and temperature limits refer to the table on the drawing

If the medium has different properties than water as described above, make sure that the medium does not affect the materials in contact with the medium

List of materials in contact with the medium:

- **LINER**

The liner is pure food grade PVC and matches the requirements of the KTW (German) and EU for potable water

- **Endplates**

The endplates are pure food grade PPE and match the requirements of the KTW (German), WRAS, ACS and EU for potable water

- **Seals**

The orings are pure food grade EPDM and match the requirements of the EU for potable water

- **Adaptor**

The element adaptor is pure food grade PPE and matches the requirements of the KTW (German), WRAS, ACS and EU for potable water

Knappe Composites will assist the customer in determining the suitability of their specific operating conditions in regards of the use of our standard vessels. Do not hesitate to contact us.

3. Cleaning / Preservation

Make sure that the chemicals used comply in the used concentration with PVC, PPE and EPDM.

WARNING ! After any preservation you have to check the endplate system before repressurization of the vessel. Examine at least one endplate from the inner side to confirm that no chemical attack occurred !

4. Installation of Seals

Before installing the endplate with the orings please make sure that the pressure vessels have been cleaned and are completely free from dirt and small particles. Small deposits and tiny scratches can be smoothed with 400 grain wet type emery paper.

For installation of all rubber parts like orings lubrication by glycerin is required. Do not use lubricating agents which may contain petrol or are made on a petrol basis. Sponge or lint free cloth should be used for application of lubricant.
Do not use any tools.

Remove the orings only by hand, the use of screwdrivers, knives or similar tools risk to damage the surface of the endplate and/or the orings and may lead to leakages.

Make sure that all outer couplings fit. Do not apply force to make things fit.
A tension free connection of the vessel with the piping is required.

5. Precautions

Read and follow instructions

Danger ! Disregarding the following precaution may cause loss of life !!!!

No warranty will be applicable if the vessels and the assembly parts have been subject to any accident, faulty installation and misapplication of the following points:

The head assembly must be free of corrosion.

Loosen deposits carefully with a brush or sponge in time.

Flush away loosened deposits with fresh water

Allow for thermal growth of the pressure vessel

Expansion will be approx. DIA = 0,8mm and L= 8-10mm for a six element vessel.

6. Trouble shooting

Leakage at low or no pressure

- a) With increasing pressure the leakage disappears

Cause: Oring damaged

Solution: Replace oring

- b) Leakage persists with increasing pressure

Cause: May be due to dirty surface and/or damaged oring

Solution: Examine the inliner for scratches

Clean the surface and oring

Small scratches can be eliminated by sanding carefully (grain 400 or more wet type)

- c) At time of shutdown, limited leakage appears.

Cause: This may be due to drain of water or suction of air

Solution: If this problem appears, please contact your supplier

All information and data are our best actual knowledge.

However this information does not create any liabilities nor whatsoever for the pressure vessels.