



8" SIDE PORT PRESSURE VESSEL

MEMBRANE SHIMMING PROCEDURE Vessels

1500 psi and 1800 psi

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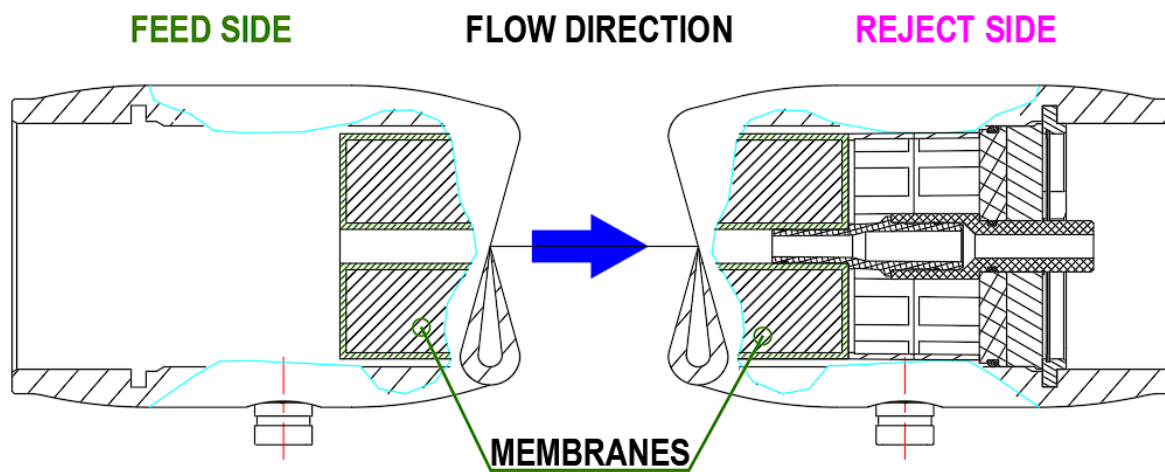
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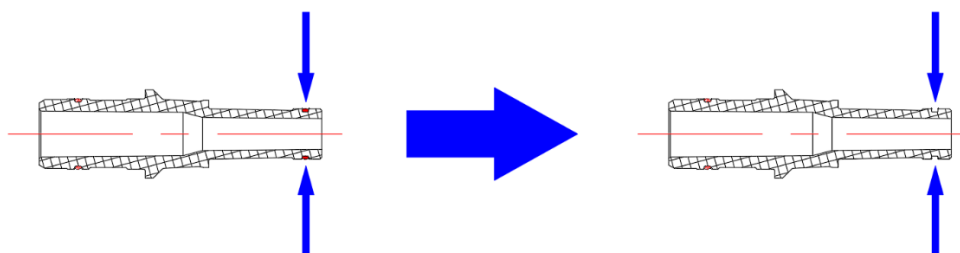
ANNEX 4 – Shimming procedure

Side / Multiport vessels 1500 psi and 1800 psi

- 1.- Close the vessel on the reject side.
- 2.- Load the membranes from feed side to reject side.



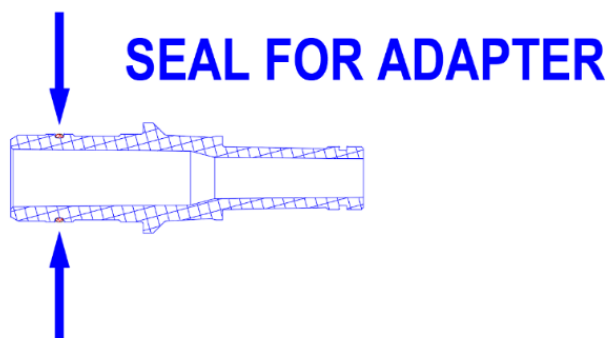
- 3.- Remove the adapter from the end cap and remove the o-rings of the membrane side.



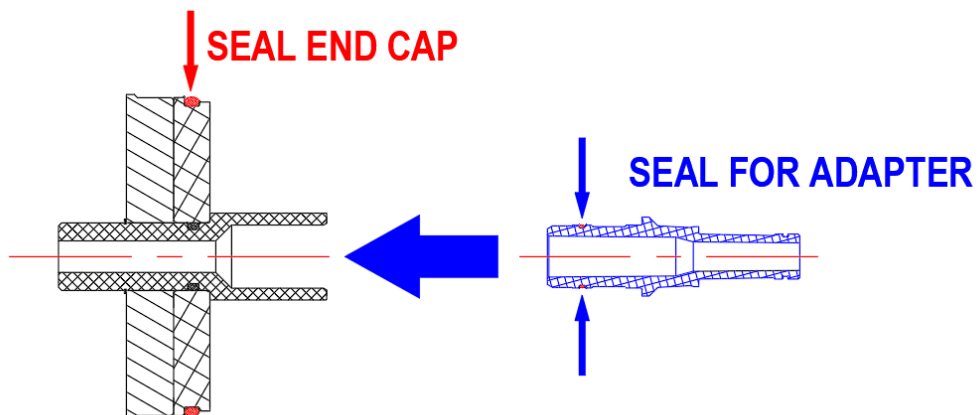
- 4.- Settle the adapter without o-rings (*in the membrane side of the adapter*) into the end cap.

NOTE 1: Keep the adapter o-ring at the end cap side

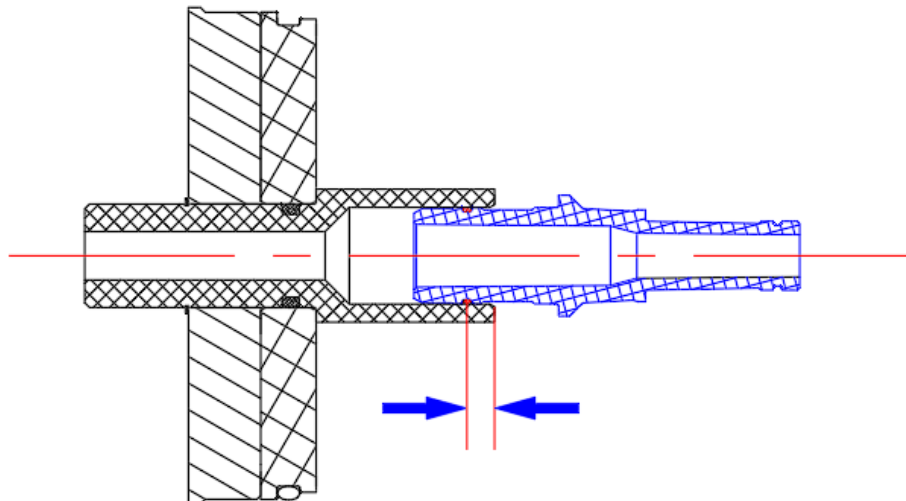
NOTE 2: Apply some lubricant (glycerin) on the adapter o-ring, at the end cap side, as it is shown in the next figure.



5.- Remove the seal for end cap.

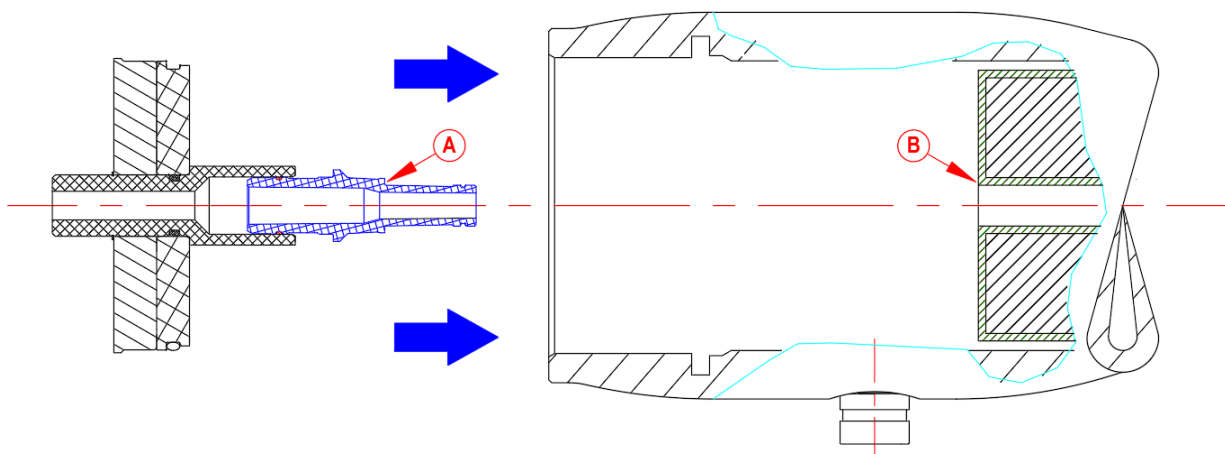


6.- Push the adapter into the end cap until the edge of the seal for adapter reach the end cap hole to place it.

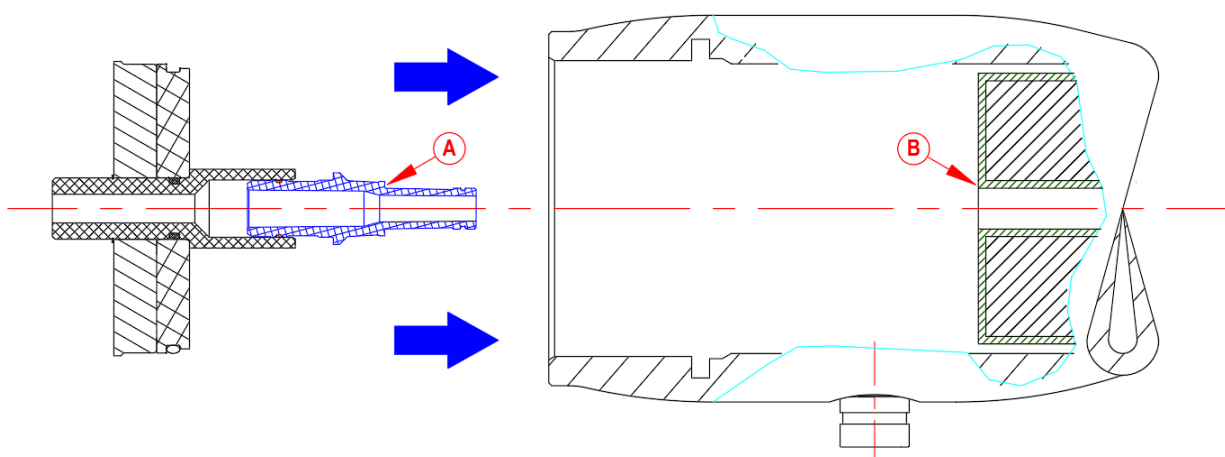


NOTE 3: Do not push the adapter too much into the end cap hole

7.- Insert the kit end cap – adapter into the vessel.



NOTE 4: insert the kit slowly until the point "A" be in contact with point "B", as it is shown in the next figure.



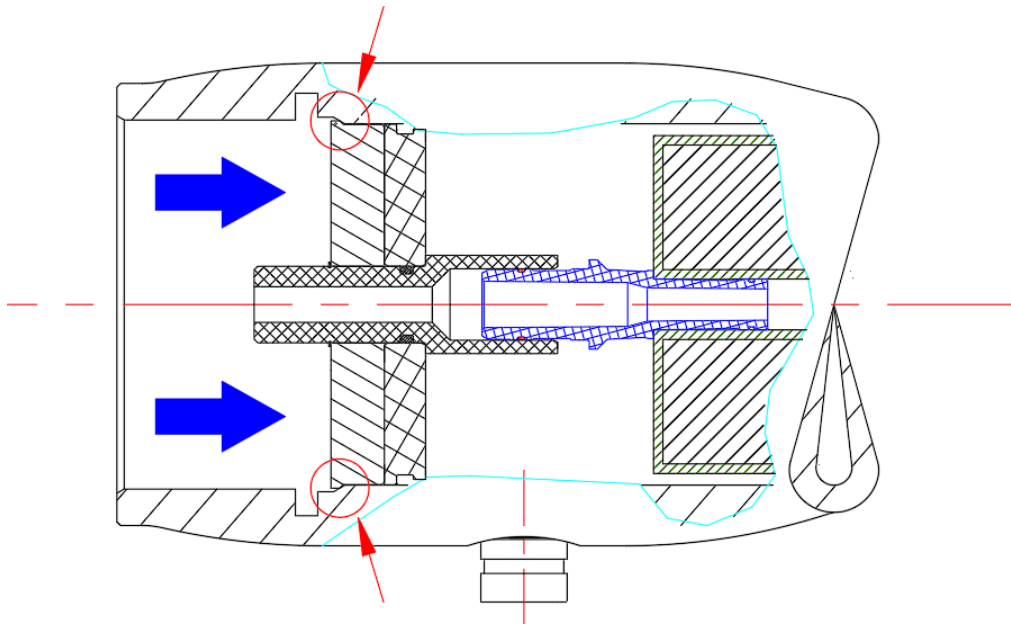
8.- As the adapter has no o-ring in the membrane side, the adapter will be placed into the membrane permeate tube without any resistance.

NOTE 5: the adapter will keep the same position into de end cap hole

9.- Keep on pushing the end cap until it reach its final position into the vessel.

NOTE 6: in the process of pushing the adapter will move into the end cap hole.

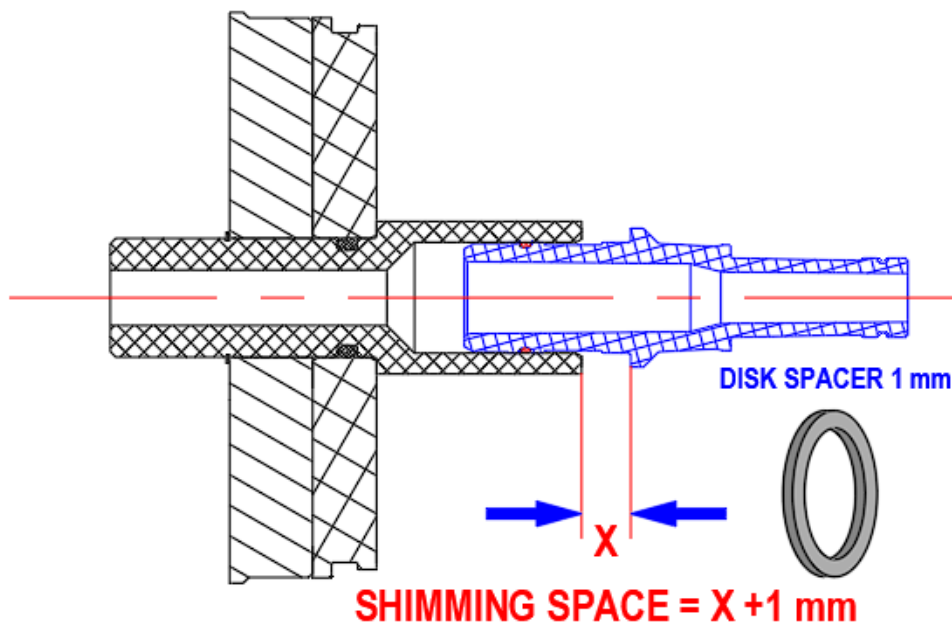
END CAP FINAL POSITION



10.- Remove the kit end cap – adapter and measure the distance "x".

In order to avoid any possible mismatch with the tolerances of the pieces involved, we will add one additional 1 mm shimming disk.

The distance " $x+1\text{mm}$ " is the real space to be shimmed with disk spacers



11.- Repeat the operation with every vessel to obtain the real shimming distance for every vessel.