

### REPLACEMENT OF THE CWP RO ROMA'S AND REPAIR OF LOWER SUPPORT FRAME

The following information describes the procedure to remove and replace ROMA's. In addition, the procedure for replacing damaged lower ROMA support bracket (P/N's W3T572570 / W3T572571) and the inclusion of upper spacers (P/N W2T915041) is included.

#### TOOLS REQUIRED:

- Flat screwdriver
- Phillips #2 screwdriver
- Phillips #3 screwdriver
- Rubber mallet
- Wire cutter
- Adjustable wrench
- 13 mm deep socket or open-end wrench
- 1/2" deep socket or open-end wrench
- 5 mm hex drive
- High vacuum grease
- Optional: Alignment tool (W3T573018)

#### **CAUTION:**

Disconnect power prior to servicing.

#### **NOTE:**

Disinfect RO prior to placing back into service.

#### **NOTE: Read entire replacement information before proceeding.**

1. Remove side and back panels of the enclosure to expose the housings and manifold assemblies.

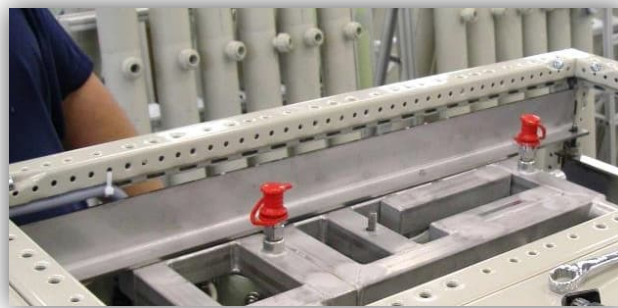
2. Disconnect outlet hose that connects the upper manifold outlet to valve assembly below.



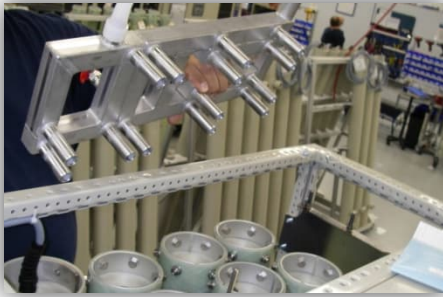
3. Remove the 4 nuts holding the top rails (angle brackets) in place. [The top rails support the upper manifold as it connects to the top of the housings]. Remove threaded rod nut on 104-106 machines.



4. Remove the two top rails (angle brackets).



5. Remove the top manifold.
  - a. May need to gently pry the manifold up away from the housings.



6. Remove the housings from the machine, one by one, and set aside.
  - a. Prior to removing the membrane housings
    - i. Mark each housing for easy identification (for ex. #1, #2, etc.) and note the position within the machine.
    - ii. Note the orientation of the end cap and place a “mark” on the side of the housing to indicate location of the feed/waste port.
  - b. Tilt/lift each housing, one by one, up and out of the machine.
  - c. May need to gently pry the housing up and off the manifold posts.



7. Remove plumbing that connects the water tank to inlet of the pump, and the plumbing that connects the water tank to the lower manifold by disconnecting the lower union.



8. Cut wire ties used to secure the pump power to the top of the frame. Do not disconnect wires from pump (not required).



9. Disconnect the water saver line from the lower manifold.



10. Lift pump up and out of the machine, set aside (lean against the side of the machine – remember, electrical wires are still attached at the top).



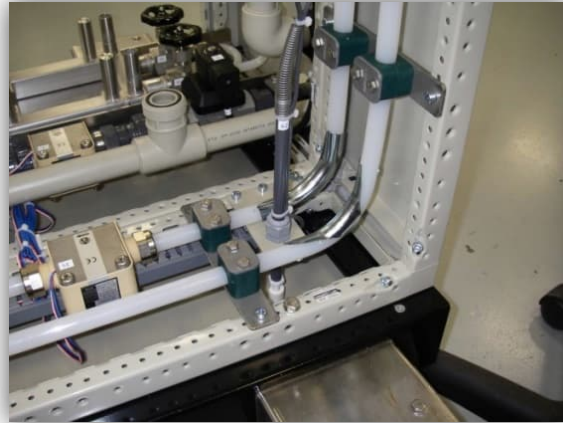
11. Locate and remove the water line that connects the valve on the end of the manifold, wrapping around/under to another part of the manifold on the opposite end (near the pump).
  - a. NOTE: The fittings contain rubber gaskets to help maintain a watertight seal. Take care to retain the gaskets for re-installation.



12. Remove manifold and lower support bars from the frame.



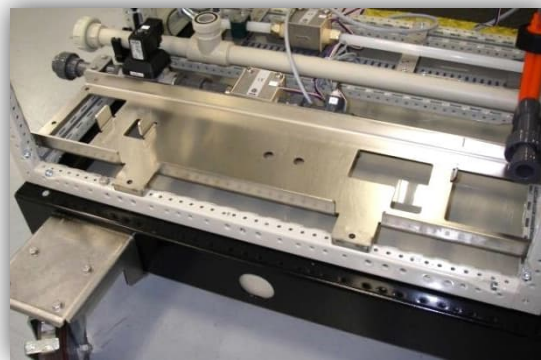
13. Remove nuts and/or spacers that create a stand-off between the frame and the manifold lower support bars.
14. On 102 & 104 series machines, it may be necessary to relocate the leak detection float to a different location.
  - a. Remove from back of machine near the lower manifold and re-position/re-install toward the front of the lower frame, as shown in the picture.



15. Carefully inspect the lower frame sections and verify that all related/supporting components are straight. Replace sections as needed.
16. Set the new lower manifold support bracket in place. Locate the corresponding holes (if required) for the two new "tabs". Remove the bracket and cut/tap threads into the respective holes using a M6 thread tap.



17. Install the new lower manifold support bracket using M6 bolts and flat washers. On 104-106 machines, it is convenient to install manifold and threaded rod prior to attaching support bracket.
  - a. NOTE: the manifold “rests” in the lower support bracket “cradle”. The position is secured by other components in and around the bracket.
  - b. NOTE: CWP’s built prior to 2012 may have four (5mm diameter X 10mm long) metal pins welded to the bottom surface of the lower manifold. These pins prevent the lower manifold from resting level on the new lower manifold support bracket. If applicable, mark the contact points between these pins and the support bracket. Drill holes in the support bracket using an appropriately sized drill bit so the lower manifold will seat level.



18. Re-install tubing from valve to manifold.
19. Re-install pump. Set in place and verify that pump inlet connections align with the inlet water line coming from the bottom of the water tank. Re-install plumbing that connects to Inlet and outlet of the pump to the tank. Note: if the plumbing does not align correctly with the fittings on the bottom of the tank, the tank position can be adjusted up or down until alignment is correct. Apply recommended o-ring lubricant to the o-rings in the end caps and to the “posts” of the lower manifold.



20. Reinstall housings, [verify proper orientation from step 6 above]. Use care not to damage O-rings. NOTE: The CWP RO pump endcap center hole always goes on the outside port

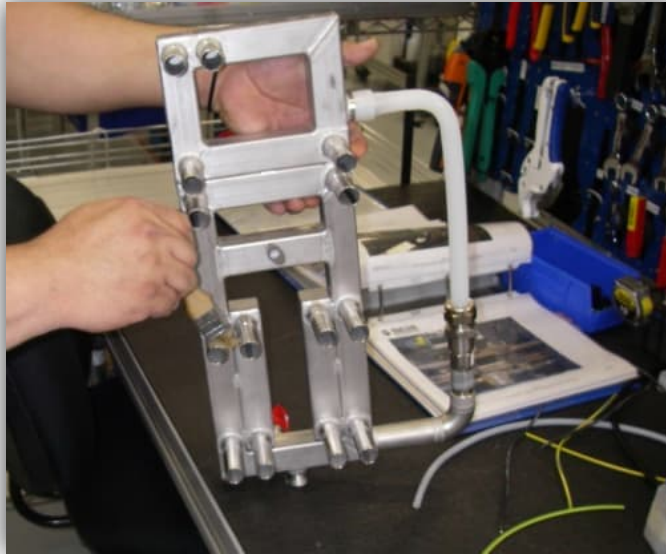


21. Using the upper manifold as a guide, verify proper alignment of the upper end caps in accordance with the respective upper manifold posts.
- If adjustments to the alignment are required, install the alignment tool and gently turn the end caps to the proper orientation.





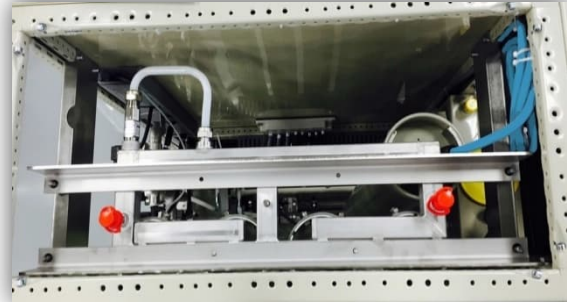
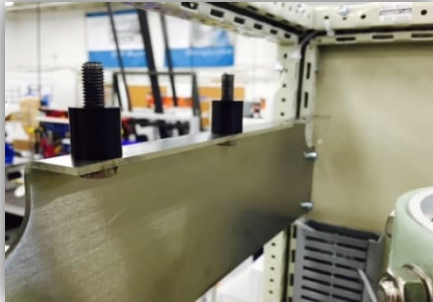
22. Apply recommended o-ring lubricant to the “posts” of the upper manifold.



23. Reinstall upper manifold. Use care not to damage O-rings.



24. Place nylon spacers (P/N W2T915041) on threaded studs of upper bracket supports. Reinstall upper angle brackets, set in place.



25. Apply anti-seize compound to the threads.

26. Install flat washer and nyloc nut to each of the treaded studs.
- Tighten the nyloc nuts until snug with the support bracket. **DO NOT OVERTIGHTEN.** Bracket may not be tight against the top of the membrane housing. Damage to the top or bottom support bracket will occur during operation if nyloc nuts are too tight.



27. Re-connect outlet hose that connects the upper manifold outlet to valve assembly.



28. Turn on water, pressurize, start up, and check for leaks. Repair as needed.

**29. DISINFECT RO FOLLOWING INSTRUCTIONS IN MANUAL BEFORE RETURNING RO TO SERVICE.**