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I. INTRODUCTION

The Mini RO-8 can filter up to 500 gal./hr. Easy to use, the Mini RO-8 is compact and it has low energy consumption. Removes up to 80% water in one pass. Integrated recirculation. Possibility of 2-3 passes to reach a concentration up to 8°Brix. Do not concentrate above 8°Brix.

II. SPECIFICATIONS
III. MEMBRANE INSTALLATION

Figure A. Unscrew the PVC union ring (permeate outlet).
Figure B. Unscrew the two (2) screws and washers retaining the cover in place.
Figure C. Using pliers or by hand, squeeze together the two tabs of the retaining seal to remove it from the membrane vessel.
Figure D. When there is no membrane in the vessel, push slightly the cover to tilt it and facilitate its removal.

EXPLODED VIEW OF A VESSEL END CAP

Figure A
Figure B
Figure C
Figure D
Figure C'
NOTE: When there is no membrane in the vessel, you will have to push slightly the cover to tilt it and facilitate its removal.

Insert the membrane in the membrane housing.

Install the U-Cup in the groove at the end of the membrane. The U-Shape of the ring should be facing the outside of the housing. Lubricate the U-Cup and the seal cap with water safe synthetic grease. Then firmly push the membrane into the housing while turning to fit it well.

It’s important to ensure o-rings are well positioned. To facilitate handling, we highly recommend greasing the o-rings. This will allow easier insertion of the lid into the vessel and membrane.

- 1 o-ring is located on the cover;
- 3 o-ring are located on the membrane connector.

Replace the cover, the retaining seal, then the 2 screws.
IV. **STARTUP AND INITIAL RINSE**

1. Make sure the pump is not frozen;
2. Install a new 5-micron pre-filter;
3. Open the supply valve from the permeate tank;
4. Close all drain valves and close the concentrate valve;
5. Start the system and hold the switch until you reach over 40 psi. To pressurize, the system must be full of water. You can check the water level while looking at the Ronvik pre-filter, or by opening one of the drain valves.
6. Open gradually the concentrate valve;
7. To properly remove leftover soap or storage solution, run 300 gal. permeate and send to the drain (600 gallons for a organic maple farm);
8. To stop the system, close the supply valve.

NB. The pressure switch is adjusted at 40 psi. When starting the system, open gradually the concentration control valve. The Mini-Ro will run by itself when the pressure reaches 40 psi (you will hear the “click” of the pressure switch). You can release the start switch. Do not allow the pressure to drop below 25-30 psi as the system will shut down itself.

V. **CONCENTRATION**

- Open the supply valve from the sap tank;
- Put the permeate pipe in the permeate tank;
- Put the concentrate pipe in the concentrate tank or in the evaporator to boil directly;
- Close the concentrate valve;
- Start osmosis with the selector, hold the unit until you reach 40 psi and hear the “click” of the pressure switch;
- Adjust the wanted Brix with the concentration control valve.

VI. **RINSING (AFTER 4 HOURS OF CONTINUOUS OPERATION)**

- Close the sap supply valve;
- Open the feed valve from the permeate tank;
- Put the permeate pipe (1’’) in the drain;
- When your concentrate no longer contains sugar (about 2 minutes), put the concentrate pipe (1’’) in the drain;
- Start the osmosis and gradually open the concentrate valve without going below 25-30 psi;
- Circulate 150 gal. of permeate.
VII. **WASHING (END OF EACH DAY)**

- Fill the wash tank with 12 gal. of permeate. The tank must be 1 foot higher than the pump;
- Put permeate, concentrate and feeding pipes in the washing tank;
- Start the osmosis and gradually open the concentrate valve without going under 25-30 psi;
- Add 6 oz. Of Bio-Membrane in the washing tank;
- Let it run 25 minutes or until the temperature reaches 40°C (104°F);
- Stop the unit once it reaches 40°C (104°F). The system does not shut down automatically, you must stop it manually or you will damage the system;
- Do a permeate rinse (300 gal.);
- When shutting down the system, be sure to drain it properly using the drain valves. If the system freezes while it is full, you risk damaging it.

VIII. **5 MICRON FILTER MAINTENANCE**

Filter frequency of changes

- After washing, if the pressure differential between the inlet and outlet pressure gauge is 30-40 psi, it’s time to change your filter.

Replacement procedure

- Shut down the system and close the feed valve;
- Open the drain valves to bring back the system to atmospheric pressure;
- Unscrew the 5 microns housing (it should be unscrewed by hand);
- Remove the cartridge and replace with a new one;
- Retighten the filter housing by hand, ensure the O-Ring is well positioned.
IX. PRE-FILTER MAINTENANCE

Cleaning procedure, if needed, when you see dirt or when the mesh filter housing becomes opaque.

- Shut down the system and close the supply valve;
- Open the drain valves to bring back the system to atmospheric pressure;
- Unscrew the clear filter housing (it should be unscrewed by hand);
- Remove the filter, sediments and clean the filter housing;
- Retighten the clear filter housing by hand, ensure the O-Ring is well positioned.
X. END-SEASON STORAGE

For the end-season storage, it’s important to take the time to thoroughly wash your system. Do a first rinse, then wash the membrane and redo a permeate rinse. It is highly recommended to wash the membrane a second time and redo a permeate rinse before storing the system. Drain the system well.

Discard the 5 microns filter.

The storage of your membrane is the most important part of storing your MINI RO 8. Four recommendations are to be followed according to membrane manufacturers:

- The membrane should never be exposed to freezing. The warranty does not cover a membrane that has been exposed to freezing;
- The membrane must be stored in a storage solution, in a cool place above the freezing point (about 7°C);
- The membrane should always remain moist. The manufacturer recommends full immersion in a basin or box;
- The membrane must be immersed in a solution that will prevent the growth of bacteria (use 1 gallon of storage solution in a sealed storage canister without water).
### XI. SPARE PARTS LIST

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>BAS3A02B-02</td>
<td>Thermometer 3” OD x 2 ½ tige ½ NPT, 25-125F</td>
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<tr>
<td>BVPVC40010FSH</td>
<td>Ball valve SH 1” FPT PVC840 White threaded</td>
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<tr>
<td>BVSS316005C</td>
<td>Ball valve SS316 ½” FNPT 1000WOG, 2PC</td>
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<td>ERA40711SS</td>
<td>Mini sample valve SS304 F X M ¼</td>
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<td>ERARONPREF</td>
<td>Ronvik complete pre-filter</td>
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<td>SCH9013FRG2J35</td>
<td>Pressure switch 30-50psi square D</td>
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<td>FILG21136C7C00</td>
<td>Brine tank</td>
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<td>SHERH5808-A-B</td>
<td>Complete stainless filter 20”, ¼” inlet and outlet</td>
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<td>WIK9138795</td>
<td>Pressure gauge Wika 0-600psi, back mount, 2.5&quot;, 1/4&quot; NPT</td>
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<td>SPH-UNI-04-17A</td>
<td>Booster pump H2O, 5 HP, 10 GPM, 40 stages</td>
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<td>SPH-UNI-00-12D</td>
<td>Stainless steel pressure vessel 8”</td>
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<td>SPH-MINI-CONCENTRATOR-D01</td>
<td>Mini-Ro-4/8 frame</td>
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<td>H2O Membrane 8”</td>
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<td>MCM298K22</td>
<td>Water safe synthetic grease</td>
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