



**MODEL MN-PWV  
PRESSURIZED WATER VESSEL ASSEMBLY  
OPERATING MANUAL**

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## PRESSURIZED WATER VESSEL OPERATING MANUAL

### 1. Background

1.1 The Pressurized Water Vessel (PWV) for the Miller-Nelson Atmosphere Generator consists of a stainless steel, gas-tight pressure vessel capable of storing 7.5 liters of extremely pure water and delivering it, on demand, to support the humidification capability of the Miller-Nelson Atmosphere Generator.

1.2 In addition to a stainless steel pressure vessel, the PWV includes the regulator, gauge, fittings, and tubing.

1.3 The PWV assembly includes an "air circuit" which provides pressurized air (at 60 psi) to the "Air IN" port of the pressure vessel and a "water circuit" which conveys pressurized water (at 20 psi) from the "Water OUT" port of the pressure vessel to the Miller-Nelson Atmosphere Generator. (The compressed air system and master pressure regulator must be pre-existing and are not included with this product.)

1.4 The PWV assembly concludes with connection of its "water circuit" output to the Miller-Nelson Atmosphere Generator (which must be pre-existing and is not included with this product).

### 2. Materials and Specifications

2.1 The PWV includes air-contacting components in its "air circuit" and water-contacting components in its "water circuit".

2.2 Air-contacting components include brass, aluminum, steel, and plastic. All water-contacting components are made of non-contaminating 304 stainless steel or plastic (polyethylene, polypropylene, or polyvinyl chloride).

2.3 The PWV is designed to store and dispense high-purity water having a resistivity >18 meg-ohm-cm.

### 3. Schematic Description of the PWV Assembly

In the schematic illustration below (Fig. 1), the flow path of the PWV includes the following elements:

- 3.1 Master Pressure Regulator (not included)
- 3.2 Adapter, Brass, T-style (not included)
- 3.3 Adapter, Plastic, Male 3/8" NPT (normal pipe thread) x 1/4" tube
- 3.4 Tubing, Plastic, 1/4" w/ Nuts and Fittings
- 3.5 Regulator w/ Gauge
- 3.6 Brass Elbow
- 3.7 Pressure Vessel Port, "Air IN"
- 3.8 Standpipe
- 3.9 Pressure Vessel Port, "Water OUT"
- 3.10 Water Delivery Tubing w/ Nuts & Fittings
- 3.11 Miller-Nelson Atmosphere Generator, Back Panel, showing air & water ports (not included)

#### **4. Assembly**

4.1 Prior to assembly, adjust the master pressure regulator counter-clockwise until there is no air flow and zero pressure out.

4.2 Beginning at the master pressure regulator (Section 3.1), assemble the PWV components in sequence as shown in the schematic illustration (Fig. 1).

#### NOTES:

4.2.1 These assembly instructions assume a 3/8" Female NPT connection at the master pressure regulator. If the master pressure regulator has a different output fitting, an additional adapter must be secured.

4.2.2 The regulator with gauge must be connected to the pressure vessel "Air IN" port, which is in contact only with the air space above the water level inside the pressure vessel.

4.2.3 The water delivery tubing must be connected to the pressure vessel "Water OUT" port, which is connected directly to the standpipe. The standpipe extends to the bottom of the pressure vessel to ensure filling with water for delivery to the Miller-Nelson Atmosphere Generator.

#### **5. Making Connections and Leak Testing**

5.1 Wrap each male NPT fitting tightly with 1-2 thicknesses of PTFE tape and connect to the corresponding female NPT fitting.

5.2 Connect tube fitting nuts to male thread without PTFE tape. Never use PTFE tape with tube fittings!

5.3 Tighten all plastic fittings until finger tight, then tighten each fitting 1/4 turn beyond finger-tight using a small wrench.

#### **6. Operation**

6.1 Carefully pour 1-2 gallons of purified water (> 18 Meg Ohm-cm resistivity) into the pressure vessel.

6.2 Close and secure the cover with the rubber gasket in place.

6.3 Adjust master pressure regulator output to 50-60 psig.

6.4 Adjust the regulator included (section 3.5) to 20 psi.

6.3 Test for leaks in the "air circuit" and in the "water circuit".

6.3.1 Leak testing in the "air circuit" may be accomplished by spraying pressurized fittings with soap solution or "Snoop" and observing for air bubbles.

6.3.2 Leak testing in the "water circuit" may be accomplished by observing for water seepage from fittings.

6.4 Turn on the Miller-Nelson Atmosphere Generator as directed in its manual.

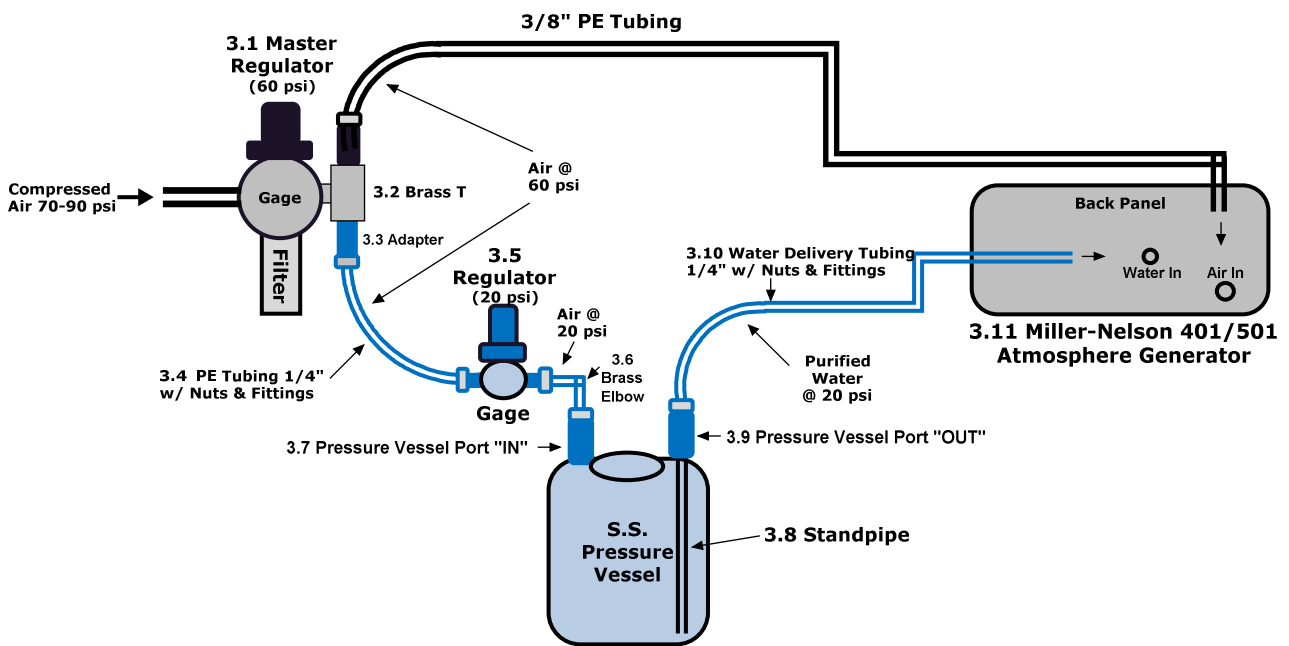
6.5 Allow 5-10 minutes for the water reservoir within the Miller-Nelson Atmosphere Generator to fill as water is delivered from the PWV.

6.7 Water is being delivered on demand to Miller-Nelson Atmosphere Generator if the Atmosphere Generator's red status lights labeled "Water Pressure" and "Water Level" light up and remain lit.

6.8 For Customer Service or Technical Support, call 1-800-833-1258 and choose extension "6".

Fig. 1

### Schematic Diagram of Water Reservoir Assembly



NOTE: Blue Items included in this Kit. Black and Gray Items purchased separately.