# HOBIT Technical Safety Bulletin No. 2

**SUBJECT: Witt Oxygen Blender and Proper Pressure Settings**

**Issue Date: 9/25/18**

## NOTICE:

The Magellan ventilator uses the Witt oxygen blender for adjusting the FiO2. The inlet and outlet pressures on the Witt oxygen blender need to be set correctly to ensure proper flow and function of the Witt blender. Please refer to photos at the end of this bulletin.

### Concern:

The Witt oxygen blender (Fig. 1) requires a minimum 15 psig pressure differential (△P) between the inlet pressure and the outlet pressure to ensure proper flow of the outlet / supply gas to the Magellan ventilator. If the pressure differential is set too narrow (less than 15 psig) the gas flow will be decreased significantly and may even stop flowing, especially with the increased back pressure inside the monoplace hyperbaric chamber while ventilating with the Magellan ventilator.

### Proper Pressure Settings:

The Magellan gas manifold system (Fig. 2) has high pressure air and oxygen cylinders that each have an adjustable two-stage regulator (Fig. 3). Both regulators should be adjusted to have equal pressures (+/- 2 psig) in the range of 160 psig to 165 psig. This air and O2 pressure going to the Witt blender is called the "**inlet pressure**". On the face of the Witt blender is a small black adjustable regulator (Fig. 4). This should be adjusted between 135 psig and 140 psig. This is called the **"outlet pressure".** The difference between the inlet pressures and the outlet pressure is termed the **pressure differential or △P** which should be in the range of 20 to 30 psig.

**EXAMPLE:**

**Inlet pressure** is set on the air and O2 regulators at 165 psig.

**Outlet pressure** is set on the Witt blender regulator at 135 psig.

**Pressure differential or △P** is 30 psig (165 - 135 psig = 30 psig)

## NOTE:

The Magellan ventilator is rated for 150 psig supply pressure. Both air and O2 regulators have a 175 psig safety relief valve on the back side (Fig. 5 & 6) normally called a "pressure relief valve" (PRV). This protects the Magellan from an excessive supply pressure. If the air and O2 regulators are adjusted much above 165 psig the PRV may start to open and you will hear a loud "fluttering" sound. To remedy, just turn back the regulator pressure below 165 psig or to a point where the fluttering stops.

## Recommendation:

1. Always turn on both air and O2 regulators. The blender will not function properly if only one gas is turned on.
2. Set both air and O2 regulators at relatively equal pressures (+/- 2 psig)
3. Adjust air and O2 regulators for a pressure reading between 160 and 165 psig.
4. Adjust Witt regulator (small black regulator) between 135 and 140 psig.
5. When adjusting the FiO2 knob on the Witt blender from 21% to 100% or visa versa, turn the knob slowly.

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Please post this caution label near to the Witt oxygen blender.

## CAUTION:

**Witt Oxygen Blender Instructions**

Always TURN ON both air and O2 regulators

Always have near equal air and O2 pressures

The inlet and outlet pressure differential should be 20 to 40 psig

Turn FiO2 knob slowly when adjusting FiO2

(Ref: HOBIT Trial TSB No. 2)

Please contact me with any concerns or questions.

Thank you,

**Bill Gossett** CHT, RRT
Director of Hyperbaric Technical Operations
**HOBIT Trial** | www.hobittrial.org

HennepinHealthcare Research Institute
701 Park Avenue | Minneapolis, MN 55415
Direct: 612-873-3961 | Cell: 612-868-1254
bill.gossett@hcmed.org | www.hennepinhealthcare.org

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FIGURE 1 WITT OXYGEN BLENDER

FIGURE 2 MAGELLAN MANIFOLD SYSTEM


FIGURE 3 HIGH PRESSURE (HP) ADJUSTABLE REGULATOR

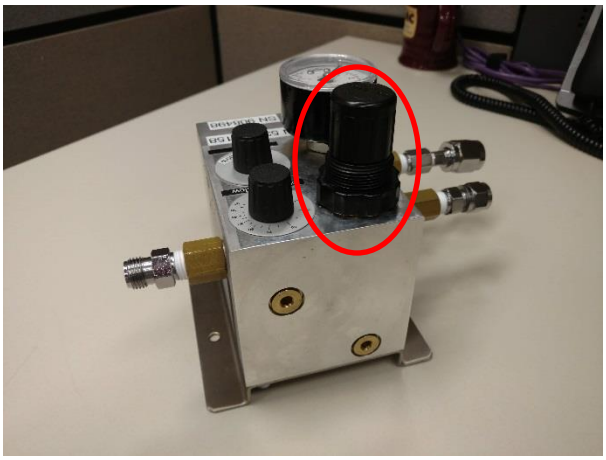

FIGURE 4 TOPSIDE VIEW OF WITT BLENDER ADJUSTABLE REGULATOR

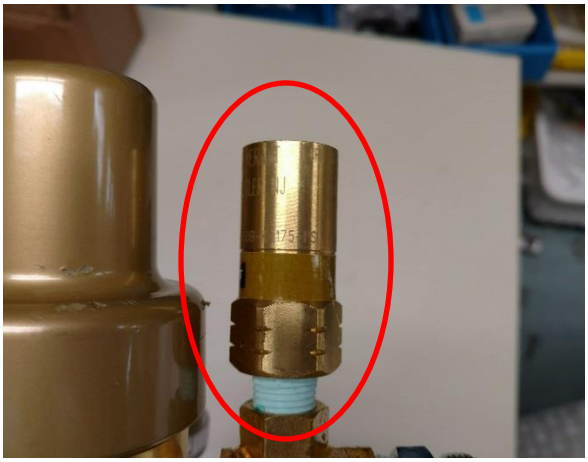

FIGURE 5 PRESSURE RELIEF VALVE (PRV)

Figure 6 Pressure Relief Valve (PRV)



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