

SMART BAG[®] and Controlled Ventilation v Standard Bag-Valve-Mask and Ventilation Monitoring “Putting the records straight”!

In an emergency it has been shown that rescuers, because of the stress of an incident, do not maintain constant visualization of the ventilation process and is therefore of little value in ensuring controlled ventilation.

The O-Two Medical Technologies' SMART BAG[®] and SMART BAG[®] MO are the only manual resuscitation devices (Bag-Valve-Masks or BVMs) to provide rescuer and patient responsive controlled flow. Other companies have made claims that the use of a manometer and pressure relief system provides the same functionality as the SMART BAG[®] and SMART BAG[®] MO however this is simply not true.

The **pressure relief system** on a standard bag **allows the airway pressure to reach a maximum 40 cm H₂O**, twice the lower esophageal sphincter opening pressure, allowing gastric insufflation to occur. The use of the Mini Ventilation Training Analyzer provides clear and indisputable evidence of this. In addition, these high pressures, because rescuers generally ventilate with very short expiratory times, will **also cause reduced venous return to the heart**.

While a **pressure manometer** may be of some assistance, it does require continuous monitoring and in and of itself does **not ensure that the delivered airway pressure is not excessive**. In an emergency it has been shown that rescuers, because of the stress of an incident, do not maintain constant visualization of the ventilation process and

is therefore of little value in ensuring controlled ventilation.

By responding to the rescuer's squeeze and release of the BVM, the SMART BAG[®] and SMART BAG[®] MO limit the excessive flow of gas into the patient's airway, lowering the airway pressure generated to a pressure of between **12 and 14 cm H₂O (in a normally compliant and resistant airway)** which is well below the **lower esophageal sphincter opening pressure of 19 cm H₂O**. This significantly reduces the risks of “inadvertent hyperventilation”. If the bag is squeezed too hard the SMART VALVE moves forward to lower the flow rate and the bag becomes stiff to squeeze. The SMART VALVE also balances against resistance and compliance changes in the airway keeping the pressure to the minimum required to achieve adequate ventilation.

While competitors may claim that their pressure relief and manometer provide controlled ventilation, these devices only provide for monitoring of poor ventilation performance. The SMART BAG[®] and SMART BAG[®] MO are the only manual resuscitators (BVMs) to provide true “Controlled Ventilation”.