

Oxylator[®] FR-300 Protocols

(Always Consult the Supplied Oxylator Technology Operating Manual)

Use of the FR-300 Oxylator[®]: First Responders, as well as ALS and BLS technicians may use the FR-300 effectively.

Indications: The FR-300 Oxylator is designed to be used at any time a Bag-Valve-Mask (BVM) would be used for ventilatory support of individuals weighing more than 10 kg (22 pounds). The Oxylator FR-300 can be the preferred device used with a cuffed facemask (BVM mask, pocket mask). If an ET-tube is utilized, then use tubes with diameters of 7.5 mm and larger.

Procedure: BLS

1. Connect the FR-300 directly to the facemask (BVM mask / “rigid” pocket mask).
2. With the O₂ tank FULLY turned on, depress the Oxygen Release Button (**the gold button marked O₂**), then turn the button ¼ turn “clockwise” to lock. This allows a constant flow of ~500 ml of 100% O₂ / second.
3. Place the mask on the patient’s face. Make sure that you have a good seal and an open airway. The Oxylator will ventilate the patient, and chest rise and fall will begin to occur, provided there is a proper mask / face seal. The Oxylator will cycle on and off. A sensing chamber in the Oxylator FR-300 allows the airway pressure to increase to the maximum limit of 20 cmH₂O, at which point the system shuts off the inspiratory flow, allowing passive exhalation to take place. Upon sensing the completion of the exhalation phase, the valve automatically resets and allows the inspiratory flow to start a new cycle. The new inspiratory cycle will begin at the point at which the expiratory flow reduces the airway pressure to a level of 2 to 4 cmH₂O PEEP.
4. If a “stuttering” sound is heard or rapid cycling occurs, then turn the **gold button marked O₂** “counter-clockwise” ¼ turn to off position, and check for airway blockage or head extension. Try again to make sure that repositioning or opening of the airway has been successful. If no change, you should check again for airway blockage or head extension. Observe for chest rise and fall, and color improvement.
5. If (while using the “automatic” or “hands-free” ventilation mode) the operator observes an **inhalation phase of greater than 2 seconds in an adult or greater than 1 second in a child**, then the operator is instructed to use the “**manual**” mode of ventilation (manually depressing the **gold button marked O₂** to achieve 1½ to 2 seconds of inspiration. In adults, this scenario may present itself when a compliant and/or large lung is encountered or on children intubated with uncuffed tubes.

Pulmonary Edema

1. Let the patient know what you are doing. Let them know the Oxylator will assist their breathing.
2. Place the mask over the bridge of their nose and work it down onto their face.
3. When a seal is obtained the Oxylator will assist the patient’s ventilations while maintaining a minimal amount of PEEP.

CPR

When performing CPR using the one or two rescuer standard 30:2 ratio in a pre-intubated patient (per the AHA guidelines), it is necessary to pause for two ventilations. If only one rescuer is present, use the Oxylator's "manual" mode of ventilation. If two rescuers are present, use the automatic mode of ventilation with one of the rescuers maintaining proper mask seal at all times. After the Oxylator has finished the 2nd ventilatory cycle, administer 30 compressions, pausing compressions once again for two complete ventilatory cycles, then beginning 30 compressions once again, etc.

When performing CPR using continuous chest compressions with asynchronous ventilations on the intubated patient, set the Oxylator FR-300 to the automatic mode by pushing in and turning the **gold button marked O₂** ¼ turn "clockwise", and begin continuous chest compressions.

Should the patient regain spontaneous respirations with adequate ventilation, turn the "automatic" mode off by turning the **gold button marked O₂** ¼ turn "counter-clockwise". You may assist the patient's inhalation depth by depressing the Oxylator's **gold button marked O₂**. When the patient inhales on his or her own, press the **gold button marked O₂** for an assist of approximately one second. When the patient begins to exhale, the Oxylator will shut down and allow passive exhalation, either when the **gold O₂ button** is released, or after the 20 cmH₂O pop-off pressure is attained.

If (while using the "automatic" / "hands-free" ventilation mode), the operator observes an **inhalation phase of greater than 2 seconds in an adult or greater than 1 second in a child**, then the operator is instructed to use the "manual" mode of ventilation to achieve 1½ to 2 seconds of inspiration. In adults, this scenario may present itself when a compliant and / or large lung is encountered or on children intubated with uncuffed tubes.

Common Pitfalls

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| 1. Tank not turned on fully or capacity below 50 PSI | Results in longer than normal Inhalation ("I") time due to reduced flow. |
| 2. Inadequate Mask / Face Seal | Results in longer than normal "I" time, or no "automatic" cycling at all. |
| 3. Oxylator BPM "speeds-up" <u>suddenly</u> | Check lung fields, possible developing <u>tension pneumo</u> , or right mainstem (with ET-tube) |
| 4. Oxylator BPM <u>slowly</u> "speeds-up" | Check lung fields, possible filling of lung field with fluids or compliance is falling. |
| 5. Won't cycle in "automatic" mode on pediatric patient | Uncuffed tube? If Oxylator will not cycle, then use gold O₂ button for "manual" ventilations. |
| 6. "Stuttering" sound occurs if attached | Any ET-tube smaller than 7.5 to 8.0 is too restrictive to air flow, thus an obstruction "stuttering" sound occurs. |