



Los Angeles Fire Department

# TRAINING BULLETIN

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*Date of Issue: 01/2003 Revision Date: 11/6/2008*

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## DISPOSABLE BAG-VALVE MASKS

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## I. INTRODUCTION

New Bag-Valve Masks (BVMs) are being introduced on all emergency apparatus (Paramedic Rescue Ambulances (RAs), EMT RAs, Engines, and Trucks), to replace the existing BVMs. The new *Ambu Spur II Resuscitator* BVMs are similar to the previous devices with a few changes.

Features of the Ambu Spur II include:

- Disposable (One-time use)
- Available in three different sizes (adult, pediatric, infant/neonate)
- Have an integral oxygen tubing and reservoir bag
- Have an in-line carbon dioxide detector

The color change indicator designation is as follows:

“Yellow = Yes”, meaning ventilations are being performed correctly with good CO<sub>2</sub> exchange.

“Purple = Problem”, meaning that no CO<sub>2</sub> is being detected, and therefore no effective ventilations are occurring (or else the patient has been down for an extended time).

**NOTE: The in-line carbon dioxide detector color change is from PURPLE TO YELLOW (NOT WHITE TO PURPLE).**

## II. USE OF DEVICE

### A. Disposable

Ambu Spur II BVMs are 100% disposable. Therefore, the BVM shall be discarded after a single patient use. If a Basic Life Support (BLS) resource uses the BVM on a patient, the paramedic resource should continue to use that same BVM when they take over medical care for the patient. Upon completion of the incident, the BVM shall be discarded at the hospital and the BLS resource should restock the BVM from their station or from the Advanced Life Support unit.

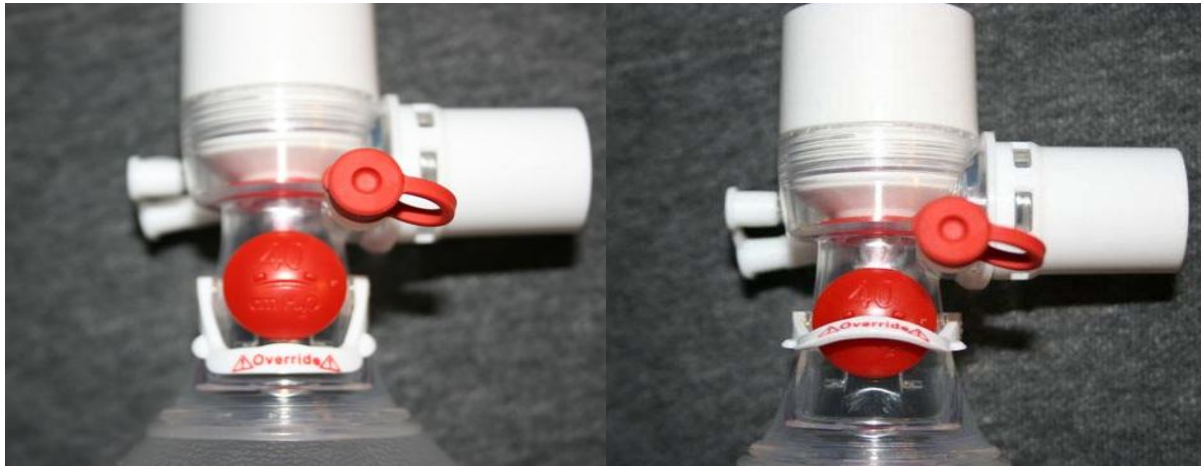
*The same BVM should never be used on more than one patient.*

### B. Sizes

BVMs will be stocked at the stations with a back-up supply at the Supply and Maintenance Division (S&M). Each apparatus should have at least one of each of the three different BVM sizes:

- Adult
- Pediatric
- Infant/neonatal

**\*\*NOTE:** There is a small red safety valve near the diaphragm valve assembly included on the small child and infant BVMs. This is a pressure relief port, and is used to limit positive pressure, which helps to prevent barotrauma. This should be left in the off position, which is how it is packaged.



**OVERRIDE OFF**

**OVERRIDE ON**

### C. Oxygen Tubing

The BVMs have attached oxygen tubing that **must** be connected to supplemental oxygen **each time it is used**. An oxygen reservoir bag is connected to the BVM, which will inflate when proper oxygen flow is established. The reservoir bag serves to deliver 100% oxygen at 15 lpm. This is the maximum amount of oxygen to the patient, which is similar to the reservoir bag attached to a non-rebreather mask. If this bag does not inflate, then the oxygen flow from the cylinder needs to be increased.



### D. Carbon Dioxide (CO<sub>2</sub>) Detectors.

An End-Tidal Carbon Dioxide Detector" (ETCO<sub>2</sub>) is contained in a silver foil wrapper, which is packaged with each BVM. When there is adequate gas exchange from proper BVM ventilation or from proper ventilation through an endotracheal tube (ETT), small amounts of carbon dioxide (CO<sub>2</sub>) are excreted from the patient through exhalation. If a sufficient concentration of CO<sub>2</sub> is detected, the color strip in the ETCO<sub>2</sub> will change color from **purple to dull yellow** with each breath. This **yellow color** indicates adequate ventilation and **good air exchange**. If no color change occurs and the detector remains purple, the rescuer should assume that airway management has not been performed properly.

The CO<sub>2</sub> detector comes packaged in a silver wrapper, with an expiration date printed on the package. CO<sub>2</sub> detectors shall be attached to the BVM at the time of use (keep wrapped in foil package until ready for use). Printed on the carbon dioxide detector package is an expiration date. If the carbon dioxide detector is expired, remove it from the BVM package and replace it with a current carbon dioxide detector. Carbon dioxide detectors can be ordered from the Supply and Maintenance Division, utilizing normal medical supply ordering procedures.



**PURPLE = PROBLEM / YELLOW = YES**



(No effective vent)



(Effective vent/CO<sub>2</sub> exchange)

### E. Mediport

The Ambu Spur II is equipped with a medication syringe port. Since the practice of administration of medications via endotracheal tube has been discontinued, this port shall be left covered and *shall not be used*.



### III. USE OF THE BVM WITH AN ENDOTRACHEAL TUBE

When the BVMs are used in conjunction with an ETT, the BVM should be connected to the ETT in the usual fashion. **Waveform Capnography shall be used for all intubated patients, as well as for those patients for whom a Combitube has been inserted.** Waveform Capnography tracks the carbon dioxide in the patient's exhaled breath.

After six breaths, the ETCO<sub>2</sub> color strip should change color from purple to dull yellow. Lack of a color change indicates one of two possibilities:

- The ETT has been placed in the esophagus or the patient has been down too long to excrete measurable levels of CO<sub>2</sub>

***Since an undetected esophageal intubation is invariably fatal, this must be immediately recognized.*** If the ETCO<sub>2</sub> fails to change color after intubation, correct ETT placement shall be confirmed with auscultation and the syringe aspiration technique. Auscultation is sometimes inaccurate since breath sounds may be heard over both the chest and the stomach or if the patient has aspirated, gurgling sounds may be heard over both regions. Therefore, another objective method to confirm ETT placement must be utilized.

**The CO<sub>2</sub> detector is not a replacement for the use of Waveform Capnography in the intubated patient.**

#### **IV. ORDERING AND STOCKING**

All resources shall maintain a minimum of one of each size BVM on board. Additional back-ups shall be maintained in quarters for emergency paramedic resources. There should be five adult BVMs, three pediatric BVMs, and two infant BVMs for each ALS resource. There are no MMS Stock Code Numbers for these items. They shall be ordered by size.

Adult

Pediatric

Infant/Neonate 60cc Catheter Tipped Syringe 8650235

Replacement CO<sub>2</sub> Detector, call S&M for information