



EMS System for Metropolitan Oklahoma City and Tulsa 2017 Medical Control Board Treatment Protocols



Approved 11/9/16, Effective 2/1/17, replaces all prior versions

3L – MECHANICAL VENTILATION ADULT

EMT
EMT-INTERMEDIATE 85
ADVANCED EMT
PARAMEDIC

Indications:

1. Respiratory Arrest.
2. Any Medical Etiology of Dyspnea or Airway Management Intubation.
3. Any Trauma Etiology of Dyspnea or Airway Management Intubation (except suspected pneumothorax).

Contraindications:

1. Pediatric dyspnea.
2. Adult dyspnea of lesser severity able to be managed without mechanical ventilation.
3. Active or suspected impending emesis.
4. Suspected or impending pneumothorax/tension pneumothorax.

Technique (Impact 731 Model Series AEV®):

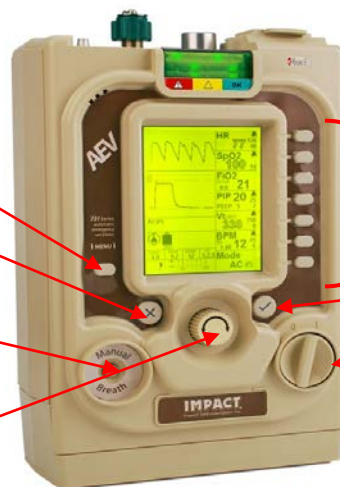
Controls:

Menu button

Mute/Cancel "X" button

Manual breath button

Rotary encoder



Parameter buttons

Confirm/Select
"✓" button

Power switch



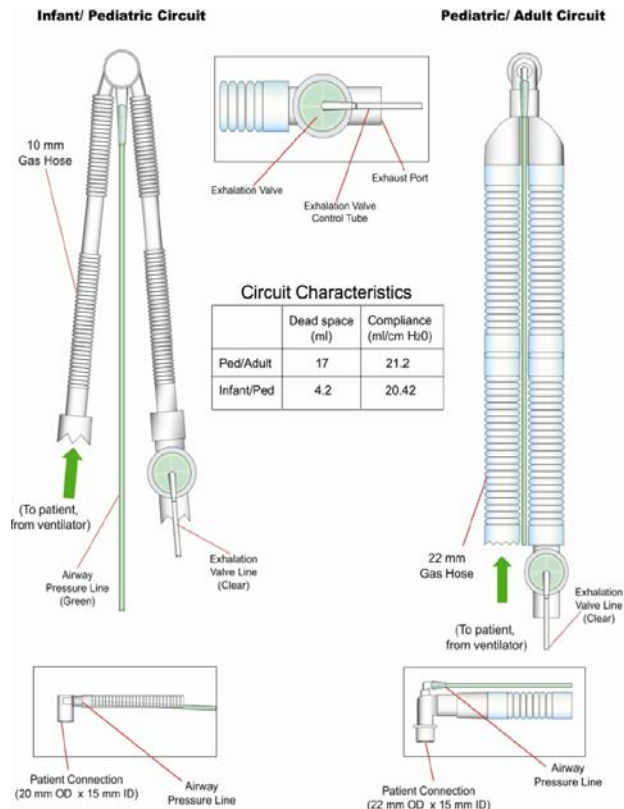
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PROTOCOL 3L: Mechanical Ventilation - Adult, cont.

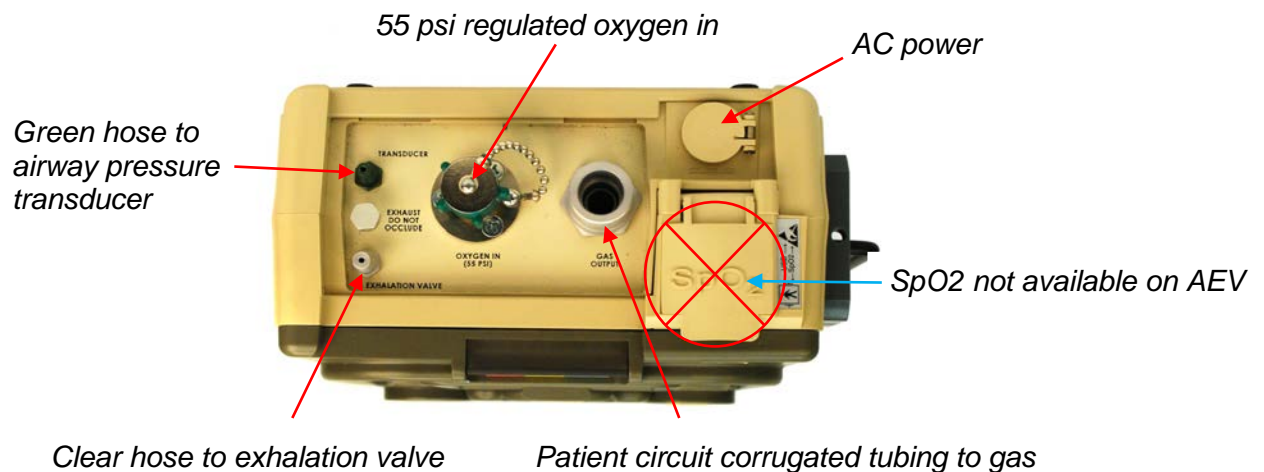
Circuits:



1. AEV[®] ventilator circuits feature a low dead space design that minimizes CO₂ re-breathing.
2. Note: dead space (circuit and HME) should never be greater than **25%** of the patient's tidal volume (set or spontaneous).
3. The 2 standard ventilator circuits cover the range of patient from infant through adult.
 - Pediatric/adult – patients 20 kg through adult, minimum tidal volume 200 mL;
 - Infant/pediatric – 5 through 30 kg, maximum tidal volume 300 mL. *****DO NOT USE FOR MECH VENT**

Connections- check the ventilator for proper operation before connecting to patient:

Step 1: Connect ventilator circuit (use test lung whenever possible) oxygen hose to 55 psi regulated output.





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Step 2: Power:



Turn power switch to "ON"

- Unit performs a Self-Check and AUTO-CAL of the internal transducers.
- AEV® then begins operation using the default settings.
- AUTO-CAL is performed every 5 minutes thereafter or when an altitude or temperature change is detected.
- Start-up settings may be changed during operation at any time.

Factory Defaults:

- | | |
|--------------------------|-----------|
| • <i>FiO2:</i> | 21% |
| • <i>High PIP Limit:</i> | 35 cm H2O |
| • <i>PEEP:</i> | 5 cm H2O |
| • <i>Vt:</i> | 500 ml |
| • <i>BPM:</i> | 12 |
| • <i>I:E</i> | 1:2.5 |
| • <i>Mode:</i> | AC (V) |

Step 3: Changing a Primary Parameter:

4. Press select "✓" to accept new value



1. Press mode parameter button adjacent to setting to be changed.
2. Current value is highlighted.
3. Turn rotary encoder to desired value.



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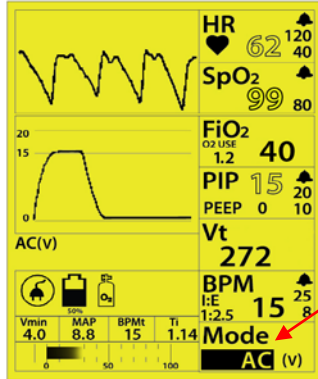


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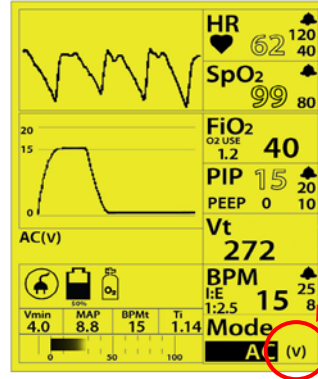
Changing a Primary Parameter:

Changing a Secondary Parameter:



Change the Mode by pressing the Mode parameter button and turn rotary encoder. Modes are:

- Assist/Control (AC)
- Continuous Positive Pressure Ventilation (CPAP)

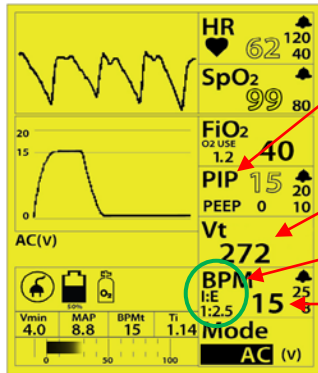


Select Breath Target:

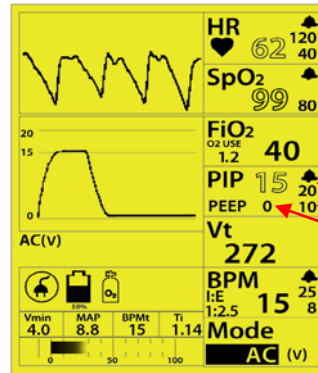
- Volume (V) or Pressure (P)
- Press the mode parameter button twice; (V) is highlighted; then turn the rotary encoder to change to (P) and press Select "V" button to accept change.
- Note: pressing the parameter button sequentially highlights the primary parameter first and then scrolls through the secondary parameters moving clockwise.
- Repeat these steps to return to (V).

Volume Targeted Operation:

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- PIP (Peak Airway Pressure)
Note: PIP cannot be adjusted during operation
- Tidal volume controlled directly
- Adjust I: E ratio
- Adjust breathing rate



- Adjust peak pressure limits:
- PIP (Peak Airway Pressure)
- High Pressure
- Low Pressure
- Adjust PEEP
- NOTE: trigger is PEEP compensated

Safety notes:

- A. Initial airway management and ventilation must not be compromised while preparing mechanical ventilation equipment.
- B. If problems arise during AEV[®] use or if there is uncertainty about the adequacy of oxygenation and ventilations with the AEV[®], then STOP and ensure oxygenation and ventilation with the usual methods.
- C. Using a mechanical ventilation device will remove the ability to determine early changes in pulmonary compliance, such as may be detected using a bag-ventilation technique.
- D. The incidence of a pneumothorax is increased in the presence of chest trauma with any form of positive pressure ventilation.
- E. Gastric distention can cause resistance to mechanical ventilation. Gastric distention should be suspected in patients with an acutely distended abdomen after non-intubate positive pressure ventilation. Relieve gastric distention impairing respiratory mechanics with either a nasogastric or orogastric tube with low suction until distention is relieved.
- F. Continuous waveform capnography is indicated for mechanical ventilation utilizing the AEV[®]. If transporting a patient with a home ventilator that remains on baseline settings the use of continuous waveform capnography is optional.