



# EMS System for Metropolitan Oklahoma City and Tulsa 2020 Medical Control Board Treatment Protocols



Approved 9/11/19, Effective 1/15/20, replaces all prior versions

## 3L – MECHANICAL VENTILATION ADULT

EMT
EMT-INTERMEDIATE 85
ADVANCED EMT
PARAMEDIC

### Indications:

1. Respiratory/Cardiac 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 ( Zoll Model 731 Series):

### Controls:

Menu button

Mute/Cancel "X" button

Manual breath button

Rotary encoder



Parameter buttons

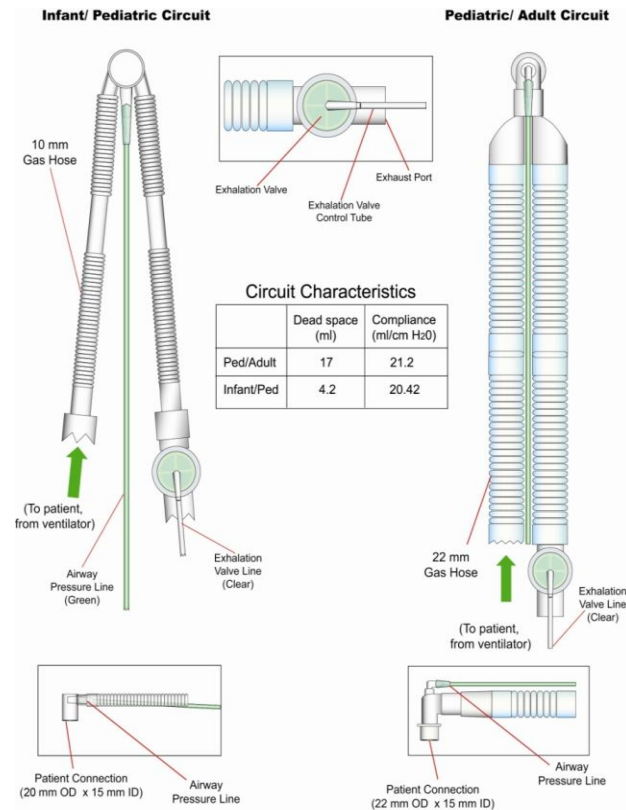
Confirm/Select  
"✓" button

Power switch

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## PROTOCOL 3L: Mechanical Ventilation - Adult, cont.

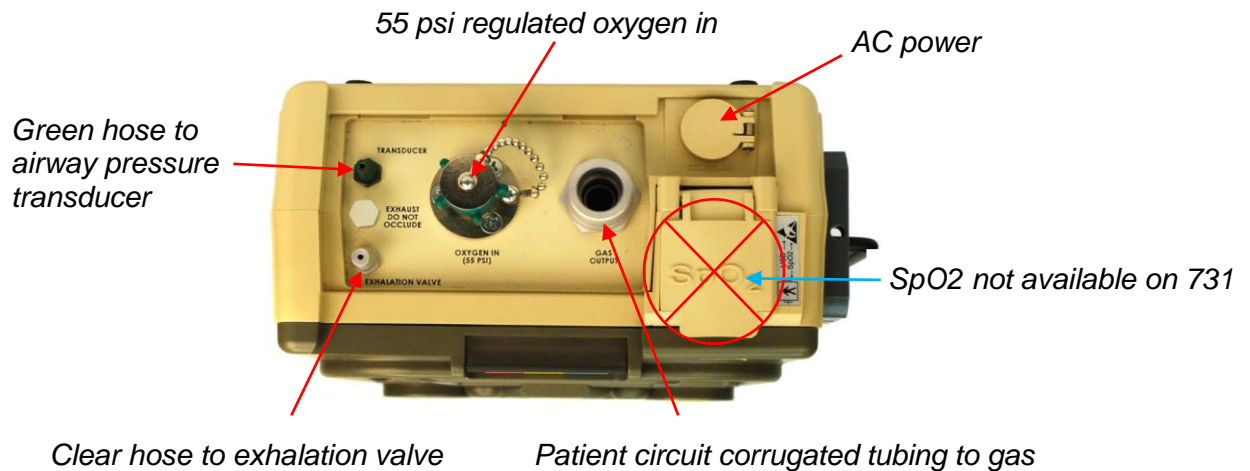
### Circuits:



- 731 ventilator circuits feature a low dead space design that minimizes CO<sub>2</sub> re-breathing.
- Note: dead space (circuit and HME) should never be greater than **25%** of the patient's tidal volume (set or spontaneous).
- 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.
- 731 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:

- *FiO2:* 21%
- *High PIP Limit:* 35 cm H2O
- *PEEP:* 5 cm H2O
- *Vt:* 450 ml
- *BPM:* 12
- *I:E* 1:3
- *Mode:* AC (V)

### Step 3: Changing a Primary Parameter:

### Custom Setting (Cardiac Arrest):

3. Press select "✓" to accept new value



- *FiO2:* 100%
- *High PIP Limit:* 25 cm H2O
- *PEEP:* 0 cm H2O
- *Vt:* 400-500 ml (keep within since it will be an end result not a setting.)
- *BPM:* 10
- *I:E* 1:2.5
- *Mode:* AC (P)

1. Current value is highlighted.
2. Turn rotary encoder to desired value.
  - Adult
  - Pediatric
  - NIPPV
  - Custom (Cardiac Arrest)
  - Last setting

Remember: "Touch, Turn, Confirm"™



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### **PROTOCOL 3L: Mechanical Ventilation - Adult, cont.**

#### Safety notes:

- A. Initial airway management and ventilation must not be compromised while preparing mechanical ventilation equipment.
- B. If problems arise during 731 use or if there is uncertainty about the adequacy of oxygenation and ventilations with the 731, then STOP and ensure oxygenation and ventilation with the usual methods.
- C. Using the 731 mechanical ventilation device will give 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 731. If transporting a patient with a home ventilator that remains on baseline settings the use of continuous waveform capnography is optional.