Approved 9/04/24, Effective 1/15/25, replaces all prior versions

3L – MECHANICAL VENTILATION ADULT & INTER-FACILITY PEDIATRIC

EMT

EMT-INTERMEDIATE 85

ADVANCED EMT

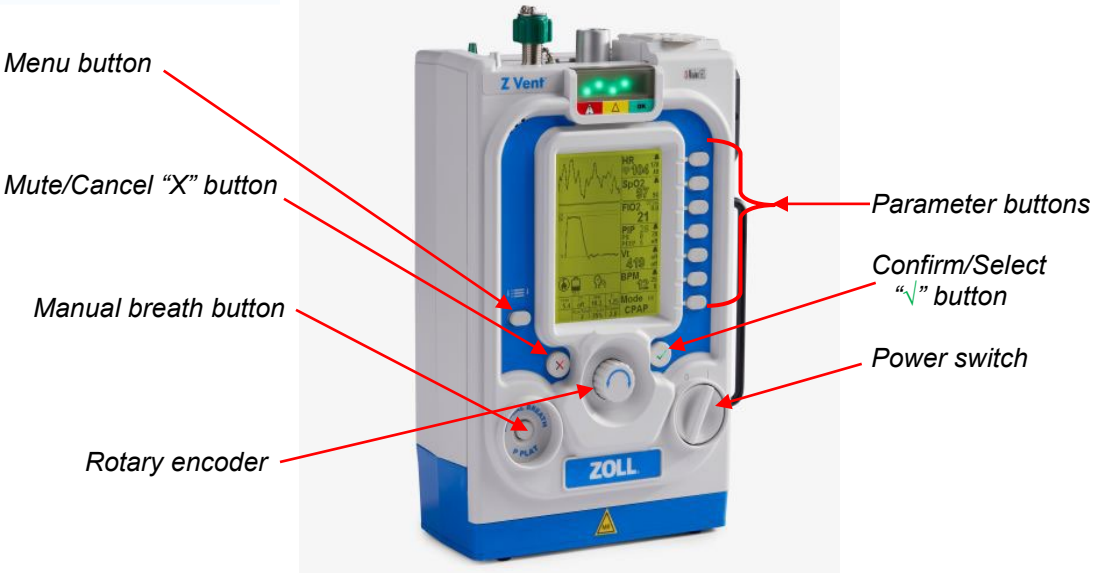
PARAMEDIC

Indications:
1. Respiratory/Cardiac Arrest Adult.
2. Any Medical Etiology of Dyspnea or Airway Management Requiring Intubation - Adult
3. Any Trauma Etiology of Dyspnea or Airway Management Requiring Intubation (except suspected pneumothorax) - Adult.
4. Pediatric Dyspnea Requiring Intubation - Inter-Facility Continuation of Care.

Contraindications:
1. Pediatric Dyspnea - Non-Inter-Facility/Non-Continuation of Care.
2. Adult dyspnea of lesser severity able to be managed without mechanical ventilation.
3. Suspected or impending pneumothorax/tension pneumothorax.

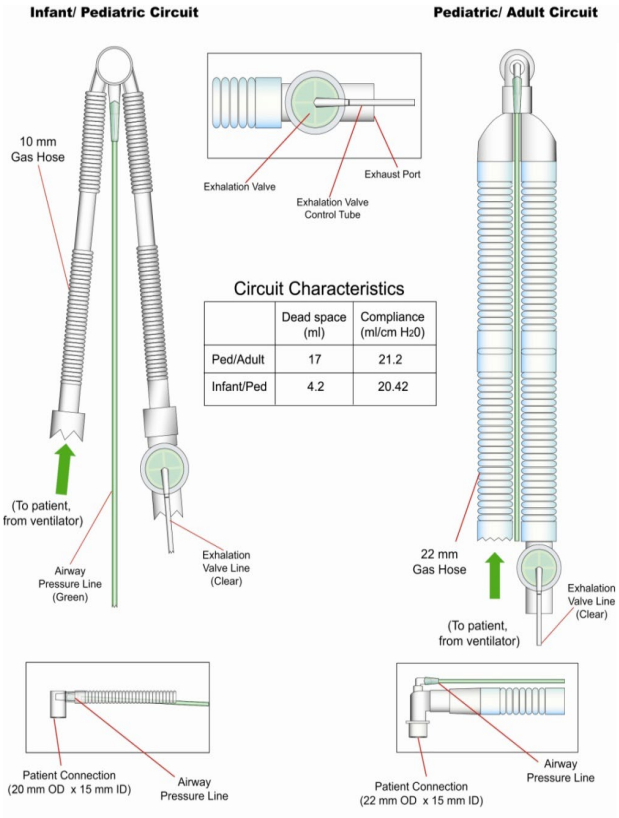
Technique (Zoll Z Vent):

Controls:



PROTOCOL 3L: Mechanical Ventilation - Adult & Inter-Facility Pediatric, cont.

Circuits:



	Dead space (ml)	Compliance (ml/cm H2O)
Ped/Adult	17	21.2
Infant/Ped	4.2	20.42

1. Zoll Z ventilator circuits feature a low dead space design that minimizes CO2 re-breathing.

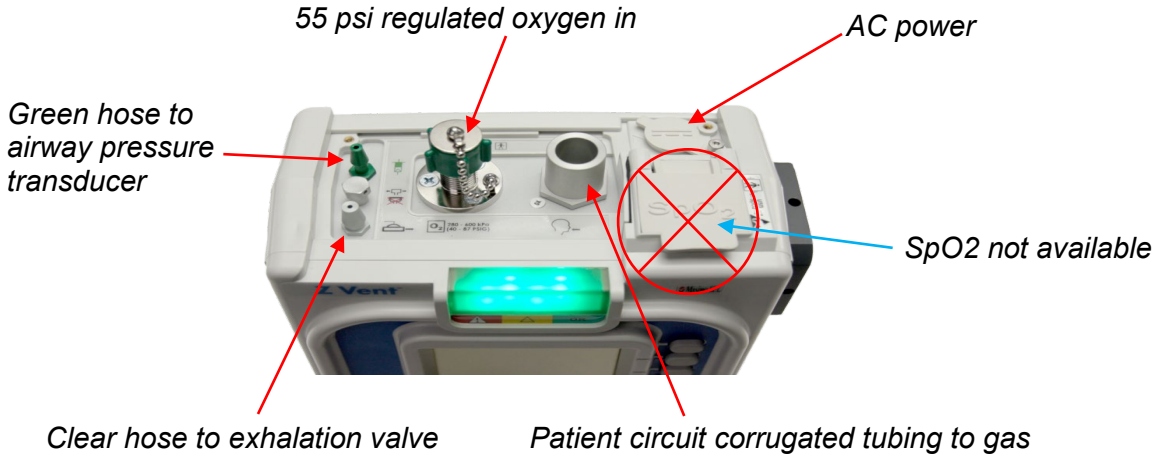
2. Note: dead space (circuit and HME) should never be greater than **25%** of the patient's tidal volume (set or spontaneous).

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; *****Ventilator use in pediatrics restricted to inter-facility transport only.*****
   - Infant/pediatric – 5 through 30 kg, maximum tidal volume 300 mL. *****Ventilator use in pediatrics restricted to inter-facility transport only.*****

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.



PROTOCOL 3L: Mechanical Ventilation - Adult & Inter-Facility Pediatric, cont.

Step 2: Power:

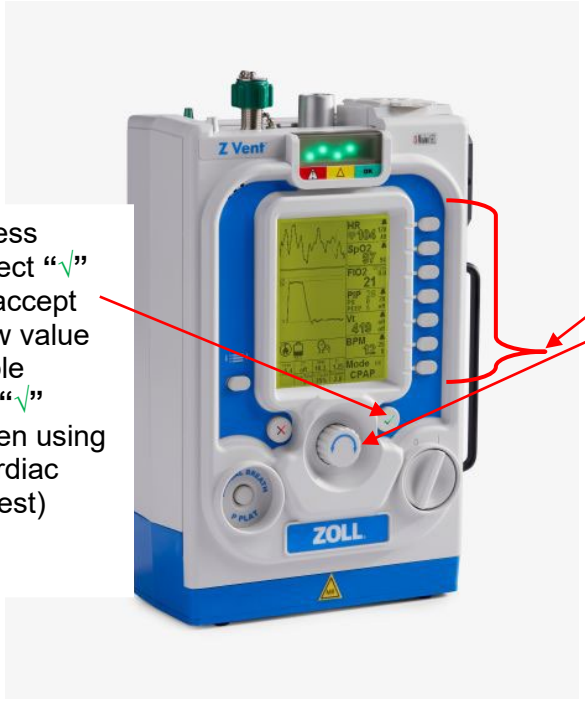
Turn power switch to "ON"

- Unit performs a Self-Check and AUTO-CAL of the internal transducers.
- Zoll Z 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:



3. Press select "√" to accept new value (Double tap "√" when using Cardiac Arrest)

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

Remember: "Touch, Turn, Confirm"™

PROTOCOL 3L: Mechanical Ventilation - Adult & Inter-Facility Pediatric, cont.

*"Custom" (For Adult Cardiac Arrest **ONLY**):*
(Figure 1)

- *FiO2:* *100%*
- *PIP:* *25 cm H2O (Max 50 cm H2O)*
- *PEEP:* *3 cm H2O*
- *Vt:* *400-500 ml (titrate PIP to keep tidal volume within this range.)*
- *BPM:* *10*
- *I:E* *1:3*
- *Mode:* *SIMV (P)*

Once Ventilator Powered On;
- Select "Custom" from Start Menu
- Press select "√" green check twice (double tap) at startup
- Confirm Correct Pre-programmed Settings
- Titrate only PIP, other settings remain as specified above

Figure 1

Safety notes:

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