

# O-Two Self-Study Guide

**e600 Transport Ventilator  
Ventilation Modes**



# e600 VENTILATION MODES

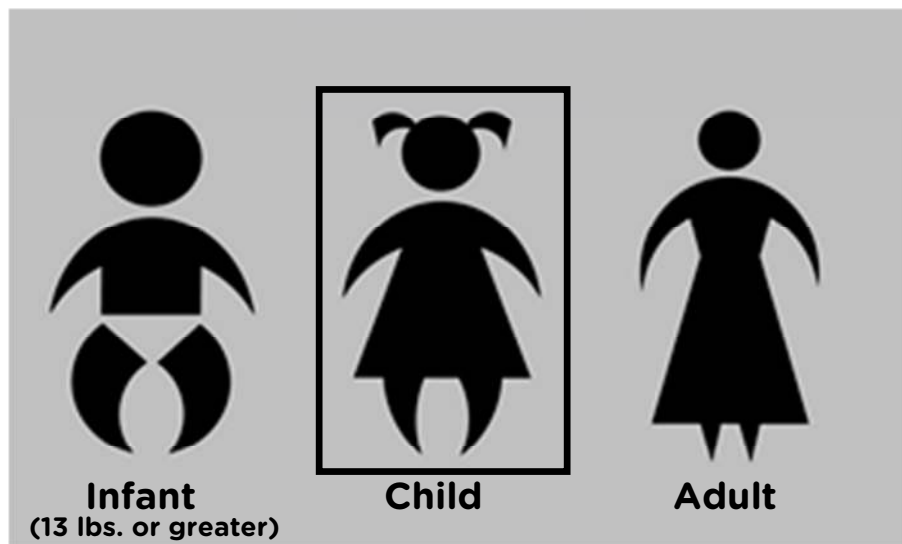
The e600 ventilator has 13 ventilation modes:

Manual Ventilation, Controlled Mandatory Ventilation (CMV), Assist Control Ventilation (A/C V), Synchronized Intermittent Mandatory Ventilation (SIMV), CPAP, Mask CPR, intubated CPR. In addition the ventilator provides a “Quick Start” mode when the ventilator is turned on.

## Quick Start Mode

The default ventilation mode for “Quick Start” is A/C V.

There are three patient size options on the startup screen:



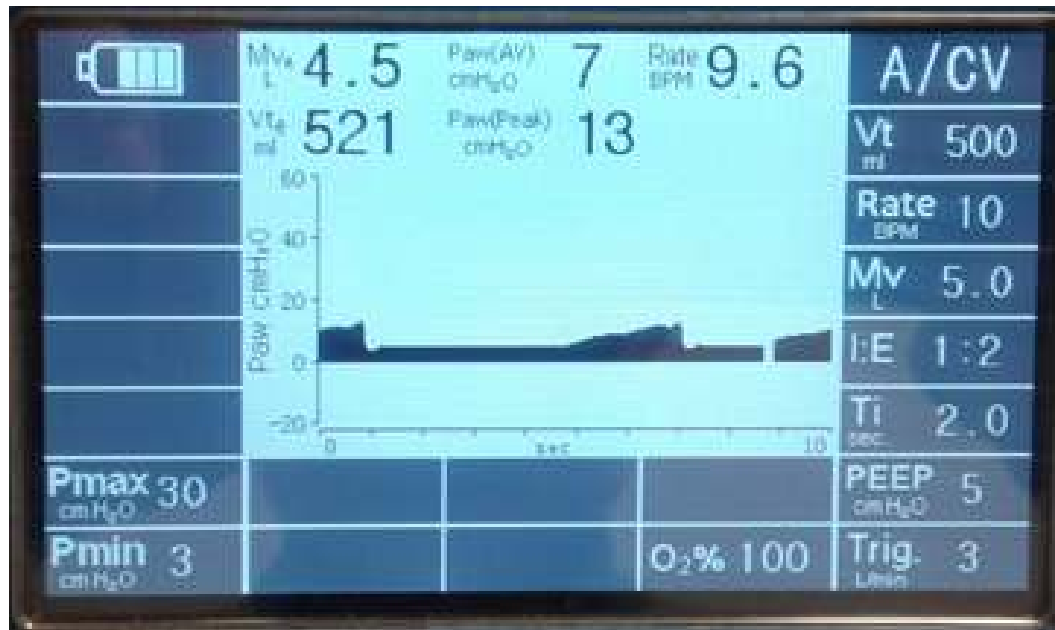
Rotate the control knob to move the cursor over the required patient size select and confirm by pressing the control knob.

**Note:** If a patient size selection is not made and confirmed within 20 Seconds of start up, the e600 Ventilator will automatically commence ventilation in the Child Mode. Following startup it is easy to make setting changes to ventilation parameters, alarms or to select other ventilation modes.

The pre-set “Quick Start” defaults are based on the American Heart Association Resuscitation Guidelines recommended Tidal Volume/Ventilation Frequencies for the patient sizes indicated.

## 1. Assist/Control Volume Ventilation (A/C V)

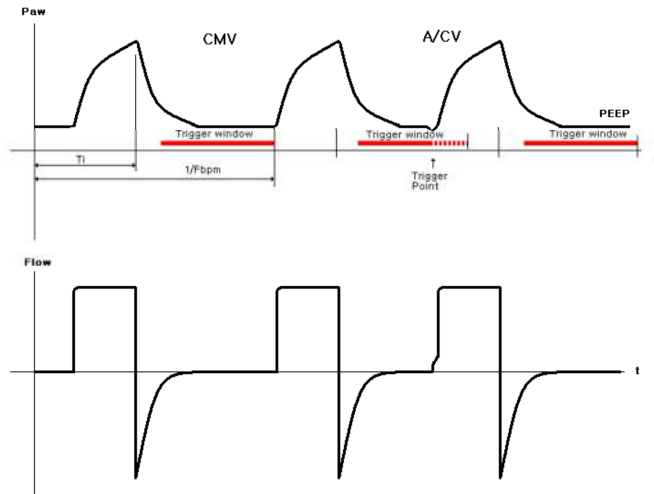
Assist Control Ventilation (A/C V) - Ventilator will deliver Mechanical Ventilation at the set Tidal Volume (Vt) and Rate (BPM). If the patient makes a spontaneous effort and initiates the start of the ventilation cycle the ventilations then become Patient Triggered however, the Ventilator will maintain the selected ventilation parameters.



Screen display for A/C V mode

### A/C V Ranges and the Default “Quick Start” settings for Infant, Child and Adult.

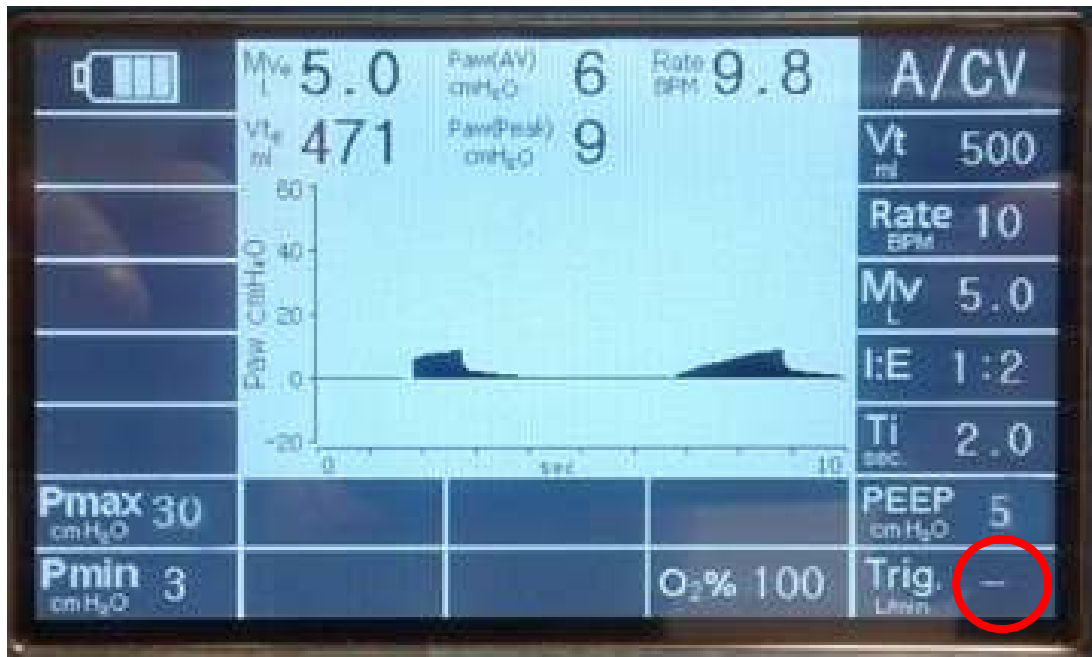
Parameter	Range	Default		
		Infant	Child	Adult
Tidal Volume	(50 - 2000 ml)	100	250	500
Rate	(5 - 60 BPM)	30	15	10
Mv	Calculated based on Vt & f	3.0	3.7	5.0
I:E ratio	(1:4 - 3:1)	1:2	1:2	1:2
Ti*	(0.2 - 9 sec.)	0.66	1.33	2.0
PEEP	(OFF, 4-20 cm H <sub>2</sub> O)	5.0	5.0	5.0
Trig.	(OFF, 1 -15 L/min)	3.0	3.0	3.0
O <sub>2</sub> %	(100% or 60% O <sub>2</sub> )	100	100	100
P max.	10 -80 cm H <sub>2</sub> O	25	25	30
P min.	0-20 cm H <sub>2</sub> O during I time only	3.0	3.0	3.0
Manual	Refer to Manual and I-Hold section	ready	ready	ready



**Assist/Control Volume (A/C V) Waveform**

## 2. Controlled Mandatory Ventilation (CMV)

In the A/C V mode if the Trigger (Trig) is turned off (“-“) the ventilator will deliver mandatory ventilation regardless of the patient’s inspiratory effort.



**Screen display for CMV mode**

### 3. Synchronized Intermittent Mandatory Ventilation - (SIMV)

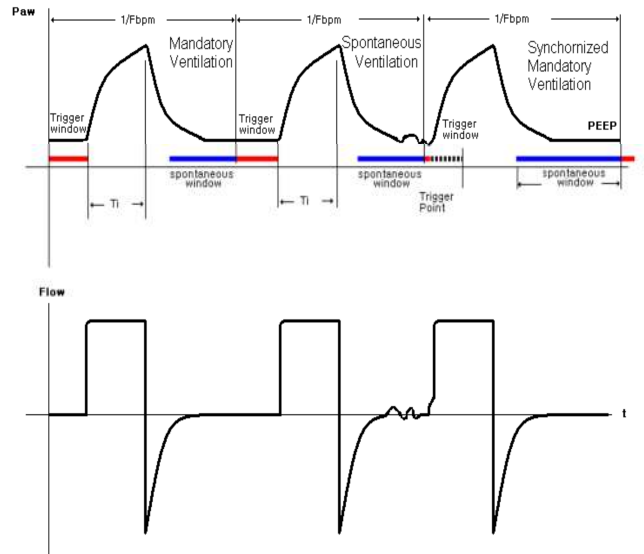
The SIMV mode allows the patient to breath spontaneously. If assistance is needed the vent will assist. If NO patient effort during trigger window - Ventilator will initiate Mandatory Ventilation.



Screen display for SIMV mode

#### Range and Ventilation Settings for SIMV.

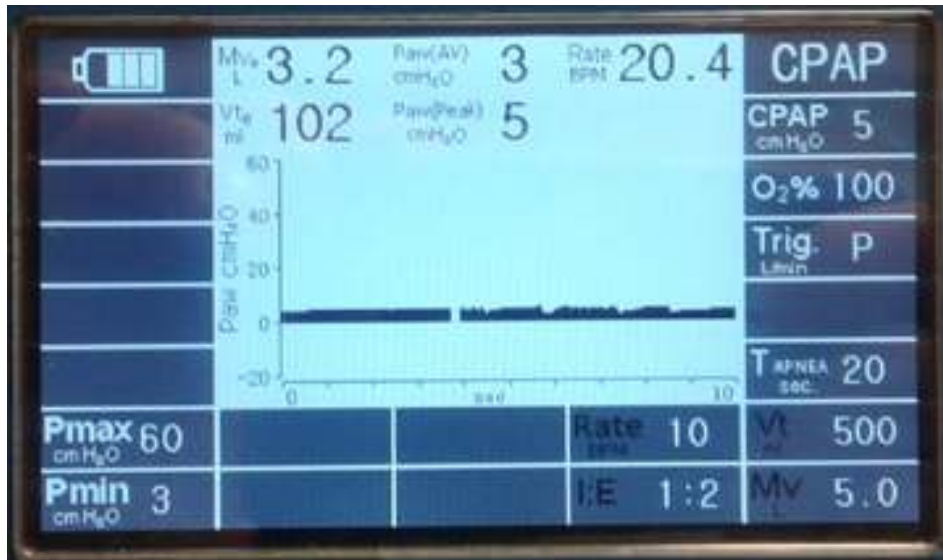
Parameter	Range	Default		
		Infant	Child	Adult
Tidal Volume	(50 - 2000 ml)	100	250	500
Rate	(5 - 60 BPM)	30	15	10
Mv	Calculated based on Vt & f	3.0	3.7	5.0
I:E ratio	(1:4 - 3:1)	1:2	1:2	1:2
Ti*	(0.2 - 9 sec)	0.66	1.33	2.0
PEEP	(OFF, 4-20 cm H <sub>2</sub> O)	5.0	5.0	5.0
Trig.	(1 -15 L/min)	3.0	3.0	3.0
O <sub>2</sub> %	(100% or 60%)	100	100	100
P max.	10 -80 cm H <sub>2</sub> O	25	25	30
P min.	0-20 cm H <sub>2</sub> O (during I time only)	3.0	3.0	3.0
Manual	Refer to Manual and I-Hold section	ready	ready	ready



**SIMV Waveform**

## 6. Constant Positive Airway Pressure (CPAP)

In CPAP mode, the ventilator will deliver a continuous flow rate to generate a continuous positive pressure in the airway. The ventilator uses the control valve to maintain the CPAP level.

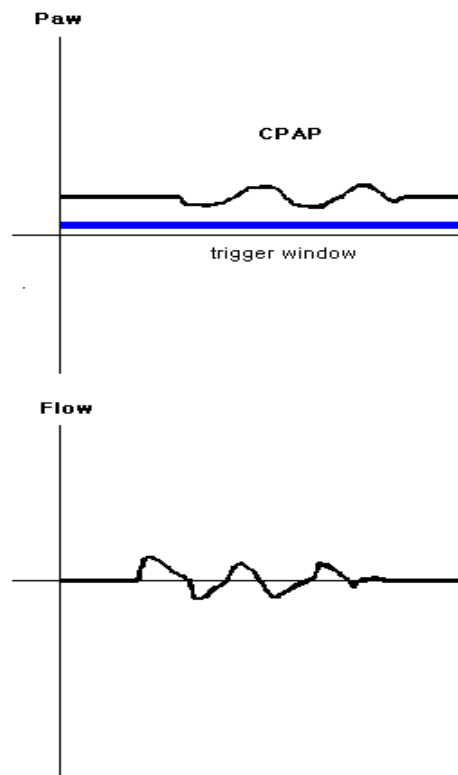


**Screen display for CPAP mode**

### Range and Default Ventilation Setting - CPAP

Parameter	Range	Default		
		Infant	Child	Adult
CPAP	(4-20 cm H <sub>2</sub> O)	5	5	5
Trig.	(P or I -15 L/min) P = 2 cm H <sub>2</sub> O below base line	P	P	P
O <sub>2</sub> %	(100% or 60%)	100%	100%	100%
T APNEA	(10-60 seconds)	20	20	20
Vt(A)	(50 - 2000 ml)	100	250	500
Rate (A)	(5 - 60 BPM)	30	15	10
Mv (A)	Will be calculated based on Vt & f	3.0	3.7	5.0
I:E ratio (A)	(1:4 - 3:1)	1:2	1:2	1:2
P max.	10 -80 cm H <sub>2</sub> O	25	25	30
P min.	0-20 cm H <sub>2</sub> O during I time only	3.0	3.0	3.0

**Note:** CPAP is pre-set with 20 second APNEA backup - settings for Rate BPM, Tidal Volume (Vt), I:E ratio, and Minute Volume (Mv) location is set at the bottom of the screen. The default settings can be adjusted by the operator.



**CPAP waveform**

## 7. CPR Modes

The CPR Mode consists of timed chest compression audible prompts coupled with automatically delivered breaths for both intubated and mask ventilated patients. The screen displays a visual animated display to guide the health care provider while performing CPR. Oxygen is delivered automatically at 100%.

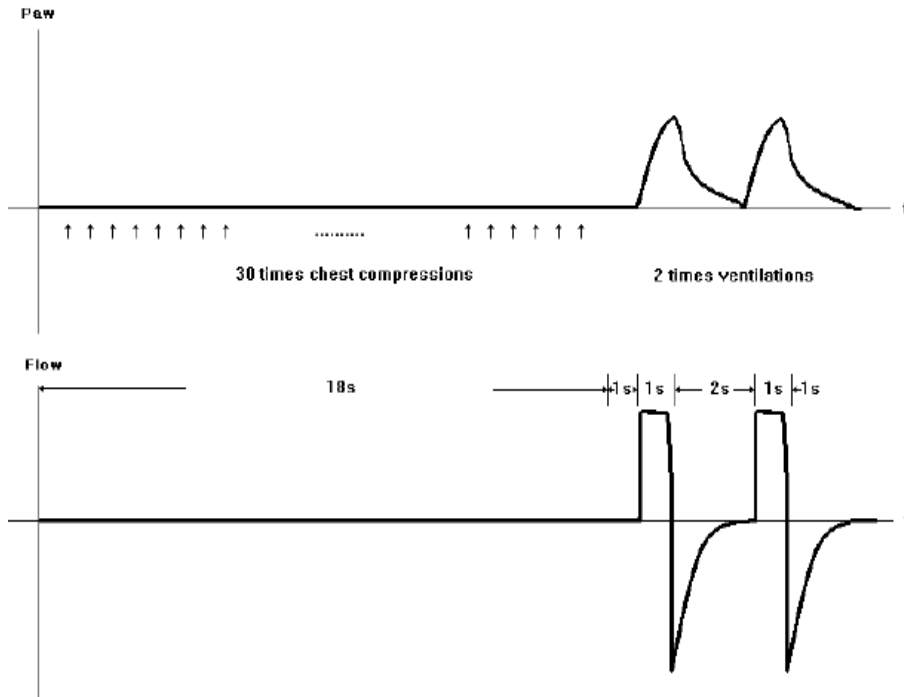
Parameter	Range	----- DEFAULT -----		
		Infant	Child	Adult
Ti (Tidal Volume)	50 - 1400 ml	100	250	500
PCV (Pressure Controlled Ventilation)	Off, 4 - 50 cm H <sub>2</sub> O	Off	Off	Off
<b>Alarm Levels</b>				
Mv Max (Minute Volume Maximum)	2 - 40 Liters	30	30	30
Mv Min (Minute Volume Minimum)	0.5 - 35 Liters	0.5	0.5	0.5
P Max (Pressure Maximum)	10 - 80 cm H <sub>2</sub> O	40	40	60
P Min (Pressure Minimum)	0 - 20 cm H <sub>2</sub> O during I time only	3	3	3



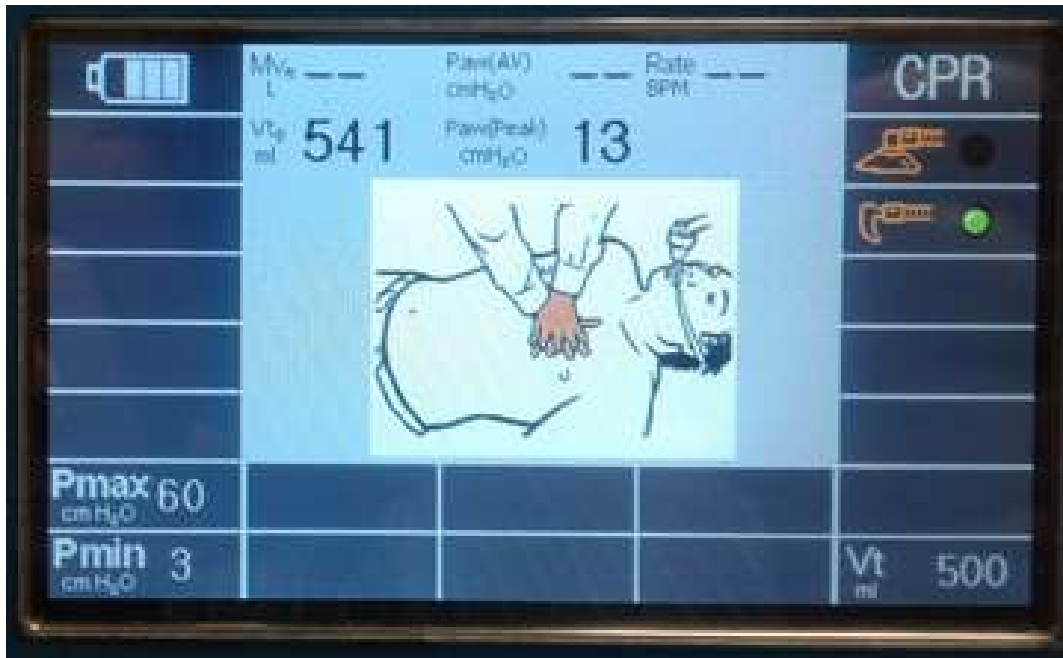
### **Mask Ventilated Patient Basic Airway - 30:2**

With each chest compression the hands are highlighted;  
the mask highlights in blue when a breath is delivered.



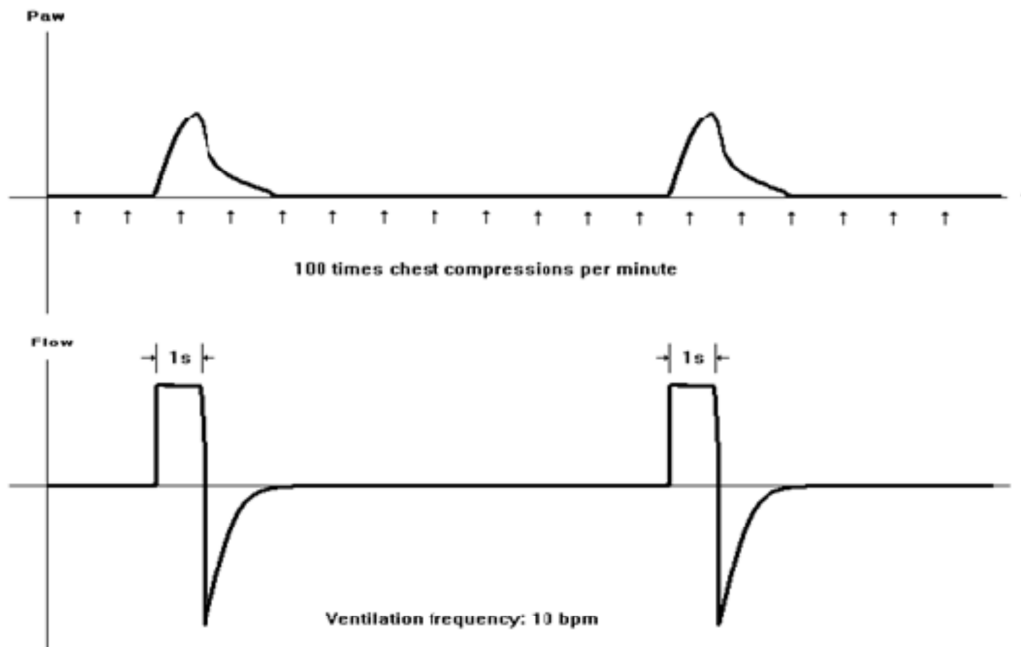


**Mask CPR Ventilation Waveforms**



**Intubated Airway Ventilation  
Advanced Airway - Asynchronous**

With each chest compression the hands are highlighted; the ET tube highlights in blue when a breath is delivered



### Intubated CPR Ventilation Waveforms

### Use of a Chest Compression Device

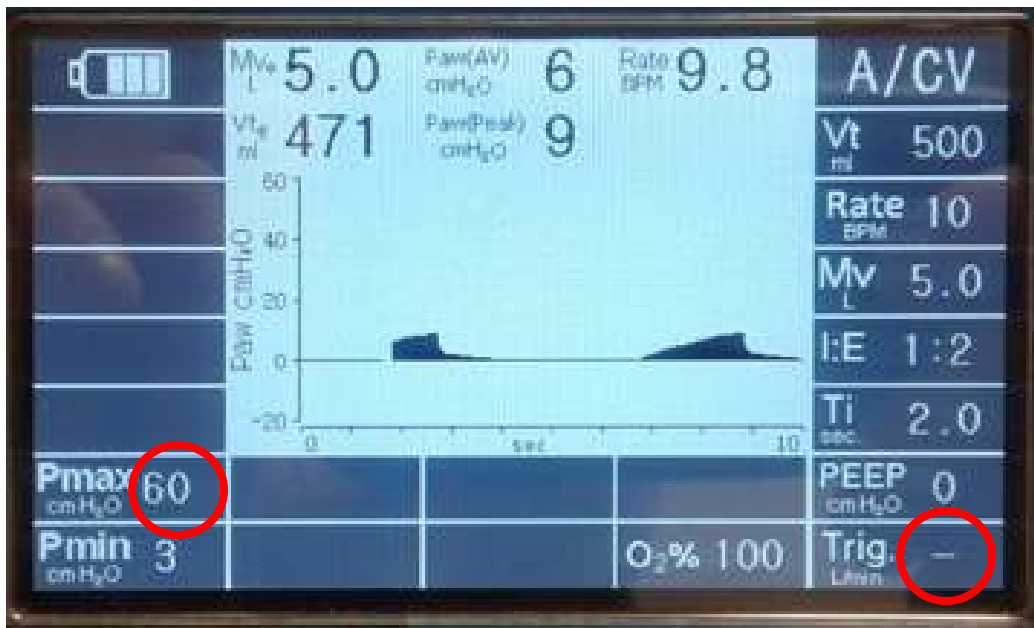
or

### CPR with no Pictogram or Sound

**Note:** When using a chest compression device with the e600, the set CPR modes with pictogram and sound will be difficult to synchronize with the device.

To use a chest compression device simply....

- Set the e600 to A/C V mode
  - Turn off the PEEP
  - Turn off the Trigger
  - Set Pressure Max (Pmax) at 60 cm H<sub>2</sub>O
1. Appropriate size of patient is already selected – pre-set default in A/CV start up mode -or operator can select the proper preferred Tidal Volume and Rate.
  2. Operator has the option to adjust other parameters based on local protocol.



A/C V setting with Trigger turned off, "0" PEEP and Pmax set to 60 cm H<sub>2</sub>O.

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