

**LTV® Series Ventilators  
& Hospital Quick Reference Guide**  
Home Medical Equipment Company



**LTV® Series Quick Look**

- ▶ **On/Off Switch.** Simply press to turn on. To turn off press and hold for 3 seconds. An audible alarm will sound when the vent is turned off. Press the **Alarm Silence/Reset** button to silence.
- ▶ **Volume Control/Pressure Control Modes.** Press to activate the switch between modes. After the button is pressed once the green LED will flash for 5 seconds to indicate that the mode button has been pressed. To confirm the mode change, press the mode button again while the green LED is flashing.
- ▶ **Assist/Control/SIMV/CPAP Modes.** Press to activate the switch between modes. After the button is pressed once the green LED will flash for 5 seconds to indicate that the mode button has been pressed. To confirm the mode change, press the mode button again while the green LED is flashing.
- ▶ **Inspiratory/Expiratory Hold Button.** Press this button to activate the insp./exp. hold maneuvers. Please refer to LTV Series Ventilators Operator's Manual for procedure.
- ▶ **Manual Breath Button.** Press to deliver a single volume or pressure breath. When this is done the pressure/sense lines are purged which may help to alleviate condensation in the pressure/sense lines.
- ▶ **Low Pressure Oxygen Source (LTV 1000 only).** Please refer to LTV Series Ventilators Operator's Manual for detailed information.

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- ▶ **Pressure Control.** Range: 1 - 99 cmH<sub>2</sub>O
- ▶ **Inspiratory Time.** Range: 0.3 seconds - 9.9 seconds
- ▶ **Pressure Support.** Range: "--" (off), 1 - 60 cmH<sub>2</sub>O. Pressure Support breaths may be terminated by either time or flow.
- ▶ **O<sub>2</sub>% (LTV1000 only).** Range: 21 - 100%
- ▶ **Sensitivity (lpm).** Range: "--" (off), 1 lpm - 9 lpm, 1 is the most sensitive and 9 is the least sensitive. This allows the patient to flow trigger the ventilator and spontaneous breaths. Please see the LTV Series Ventilator Operators Manual for further information.

**Quick Note:** Remember when the sensitivity is set to "--", this is control mode ventilation.

- ▶ **High Pressure Limit Alarm.** Range: 5 - 100 cmH<sub>2</sub>O
- ▶ **Low Pressure Alarm.** Range: "--" (off), 1 - 60 cmH<sub>2</sub>O
- ▶ **Low Minute Volume.** Range: "--" (off), 0.1 - 99 liters

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**Quick Note:** Remember the LTV Series ventilator is not PEEP compensated.

**Example:** If a Pressure Support of 20 cmH<sub>2</sub>O is ordered with a PEEP of 5 cmH<sub>2</sub>O, then a Panel setting of 25 cmH<sub>2</sub>O would be set to yield a delta pressure of 20 cmH<sub>2</sub>O.

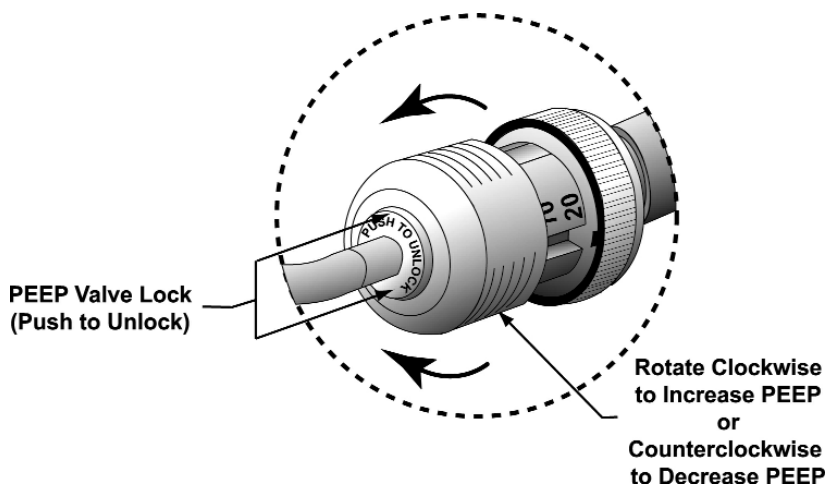


Figure 1: PEEP Valve Lock

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General Email: info@pulmonetic.com  
Service Email: service@pulmonetic.com  
Web Site: www.pulmonetic.com

www.Pulmonetic.com

**Customer Care Center: 1-800-754-1914**  
Phone: (763) 398-8300  
Fax: (763) 398-8400  
Pulmonetic Systems®, Inc.  
17400 Medina Road, Suite 100  
Minneapolis, MN 55447-1341

**Assistance** .....

**Quick Note:** Please make sure all oxygen is bled into the ventilator. The LTV 1000 can be used either with a 50-PSI source or low flow. Press the **Low Pressure Oxygen Source** button to switch between modes. When this button is pressed and the Green LED is lit the display will dim and go to dashes. This will indicate you are using the low-pressure source mode. A nut nipple adapter may be placed where the 50-PSI hose would be placed to entrain low-pressure oxygen.

- ▶ **Control Lock.** There are two types: hard and easy. This feature is set in the Extended Features. When the panel is locked only three buttons are functional: **Alarm Silence Reset**, **Manual Breath** and the **Select** button.
- ▶ **Breath Rate.** Range: "--" (off), 1 - 80 bpm
- ▶ **Tidal Volume.** Range: 50 ml - 2000 ml  
Minimum flow 10 lpm - maximum flow 100 lpm (Peak flow is calculated from the V/T and the Inspiratory Time). Flow is decelerated from the calculated peak flow to 50% of the calculated peak flow.

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- ▶ **Silence/Reset.** Silences audible alarms for 60 seconds and clears inactive alarms.
- ▶ **Vent Inop/Standby Alarms.** The **Vent Inop** light will stay lit for a minimum of 5 minutes after the ventilator is turned off. This does not adversely affect battery life.
- ▶ **Set Value Knob.** Used to set or change a value.
- ▶ **PEEP.** Range: "0 - 20 cmH<sub>2</sub>O" The PEEP valve is located on the exhalation valve assembly. PEEP should be set according to a physician's order.

1. To set the PEEP valve press the **Select** button to display PEEP in the monitor.
2. Press and hold the PEEP valve lock (Figure 1), then rotate the PEEP valve clockwise to increase the PEEP or counter-clockwise to decrease the PEEP.
3. View the display while adjusting the PEEP to the desired level.

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**Extended Features**

These features can be accessed by pressing and holding the **Select** button for 3 seconds. To view menu items turn the **Set Value** knob. To enter a menu item or select a setting, press the **Select** button.

**Alarm Operations**


- ▶ **Alarm volume:** Range: 60 - 85 dBA
- ▶ **Apnea interval:** Range: 10 - 60 seconds  
The ventilator has a back-up rate of 12 bpm pre-programmed and will ventilate at this rate with the volume or pressure that was last set. The ventilator will reset after two consecutive spontaneous breaths.
- ▶ **High Pressure Alarm/Delay:** Range: 0 - 2 seconds  
Used to select immediate or delayed audible notification for High Pressure Alarms.
- ▶ **Low Peak Pressure Alarm.** Used to select the breath types the Low Pressure alarm applies to. When ALL BREATHS is selected the Low Pressure Alarm applies to both the ventilator and spontaneous breaths.  
When VC/PC ONLY is selected the Low Pressure alarm applies to the ventilator cycled breaths only.

**Quick Note:** LPPS OFF will appear on the display as a reminder that the LPP Alarm has been set to ventilator breaths only.

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## Ventilator Operations

- ▶ **Rise Time (Profile).** Range 1 - 9 with 1 being the fastest and 9 being the slowest. Starting with the fastest rise time, each time is 33% longer than the previous one.

 **Quick Note:** Start with a Rise Time profile of 4 and adjust as needed for patient comfort.

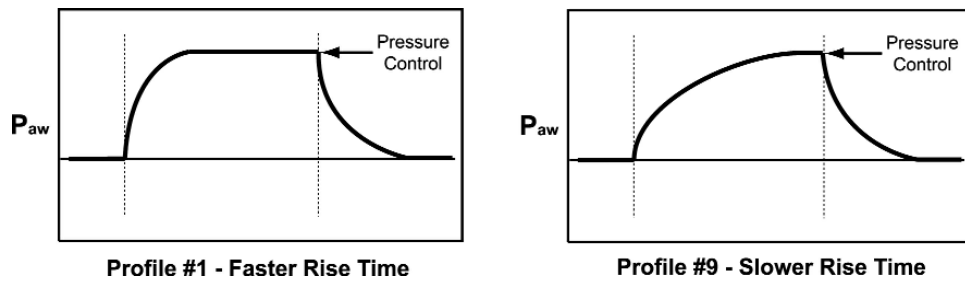



Figure 2: Rise Time Profiles

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- ▶ **Variable Time Termination.** Range: 0.3 to 3.0 seconds. Used to set the maximum inspiratory time for cycling Pressure Support breaths. When a breath is cycled based on the time setting, the Pressure Support display is flashed briefly.

 **Quick Note:** Patients may be more comfortable with a Time Term slightly longer than the Set I-Time.

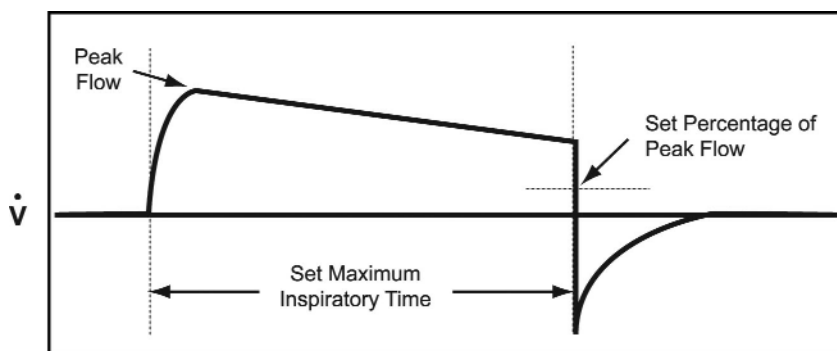
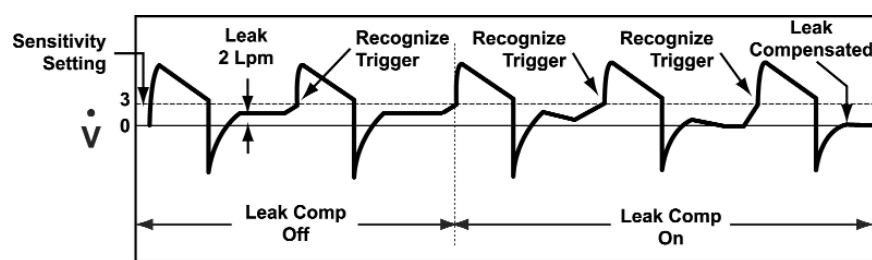


Figure 4: Time Termination

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- ▶ **Leak Compensation.** ON or OFF. Use the Leak Compensation option to enable or disable tracking of the baseline flow to improve triggering when a circuit leak is present.

Leak Compensation can compensate for a maximum patient circuit leak of 6 lpm. Refer to Figure 6.





Leak Compensation - Off to On


Figure 6: Leak Compensation


 **Quick Note:** Most patients are more comfortable with Leak Compensation ON.

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 **Quick Note:** The **RT XDCR DATA** (real time transducer data) can be used to measure a leak within the circuit. This is measured at the patient wye. Select this feature and use the Set Value knob until LEAK is displayed.

 **Quick Note:** The **Control Lock** button can be used as an escape key to exit the extended menu.


 **Quick Note:** Be sure the **Battery Level** indicator LED is green (full) when the vent is unplugged from an external power source (8 consecutive hours of charging). If not contact Pulmonic Technical Support at 1-800-754-1914.

 If starting with a new fully charged internal battery, approximate battery time (at nominal settings) will be as follows:  
Indicator LED Green - 45 minutes  
Amber - 10 minutes  
Red - 5 minutes

If the ventilator's internal battery reaches the RED level it will alarm continuously until the ventilator is plugged into an external power source.

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- ▶ **Variable Flow Termination.** Range 10% - 40%. Used to select the percentage of peak flow for cycling Pressure Support breaths. Pressure Support breaths are cycled from inspiration to exhalation when the flow reaches the set percentage of the peak flow, or when flow goes below 2 lpm. This can also be used to terminate Pressure Control breaths when PC Flow Term is turned ON.

 **Quick Note:** Start with a Flow Term of 25% and adjust as necessary for patient comfort and leak termination. Infants may be more comfortable with a Flow Termination toward 40%.

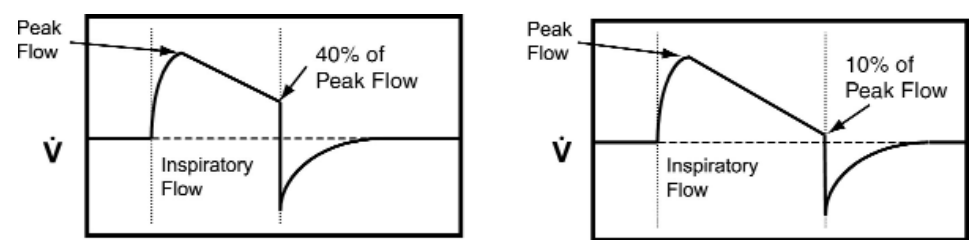


Figure 3: Flow Termination

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- ▶ **Pressure Control Flow Termination.** Enables or disables flow termination for Pressure Control Breaths. When turned ON, Pressure Control breaths are cycled at the set percentage of the peak flow if it is reached before the set Inspiratory Time elapses. The percentage of peak flow is set in the Variable Flow Termination option. When this option is turned OFF the Pressure Control breaths are cycled when the set Inspiratory Time is reached.

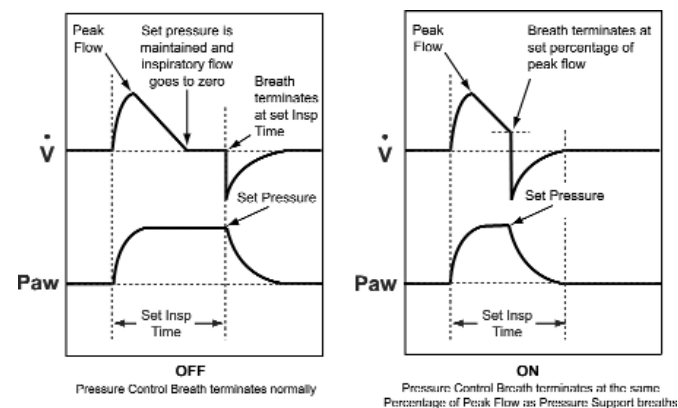




Figure 5: PC Flow Termination

 **Quick Note:** Turning the Pressure Control Flow Termination ON may make the patient more comfortable by allowing exhalation before the inspiratory time has elapsed.

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- ▶ **NPPV MODE.** Please refer to LTV Series Ventilators Operator's Manual.
- ▶ **Control Unlock.** Can be set to EASY or HARD. If set to HARD lock press and hold for 3 seconds to unlock the control panel.
- ▶ **Language.** Select appropriate language desired.
- ▶ **Software Version.** Displays version of software in the ventilator.
- ▶ **Usage Meter.** Displays hours of use.
-  **Quick Note:** The last digit is a decimal.
- ▶ **Communications Setting.** Set this to MONITOR if the LTM Graphics Monitor is being used.
- ▶ **Set Date/Set Time/Date Format.** Use these setting to set the correct time and date and desired date format.
- ▶ **PIP LED.** ON or OFF. Used to turn the display of the PIP LED on the Airway Display on or off.

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## Ventilator Checkout

**WARNING** - Disconnect the patient prior to running the Ventilator Checkout tests. The ventilator does not deliver gas during the Ventilator Checkout tests.

**(BE SURE THE PATIENT HAS A BACK-UP VENTILATOR FOR USE WHILE THIS TEST IS BEING PERFORMED OR IS BEING MANUALLY VENTILATED)**

To enable the Ventilator Checkout menu:


- ▶ Disconnect the patient from the ventilator.
- ▶ With the Ventilator in Standby, press and hold the Monitor Select button.
- ▶ While holding the Select button, press the On/Standby button.
- ▶ Hold the Select button until the Power On Self Tests (POST) complete and "REMOVE PTNT" appears. Follow the prompts from the ventilator to run this test.

On/Standby



Select



 **Quick Note:** The directions for running this test are on the back of the dust cover panel.

**PLEASE REFER TO THE LTV SERIES OPERATOR MANUAL FOR COMPLETE DETAILS AND PRODUCT SPECIFICATIONS. THE ABOVE IS STRICTLY A QUICK OVERVIEW OF THE LTV SERIES VENTILATOR.**

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