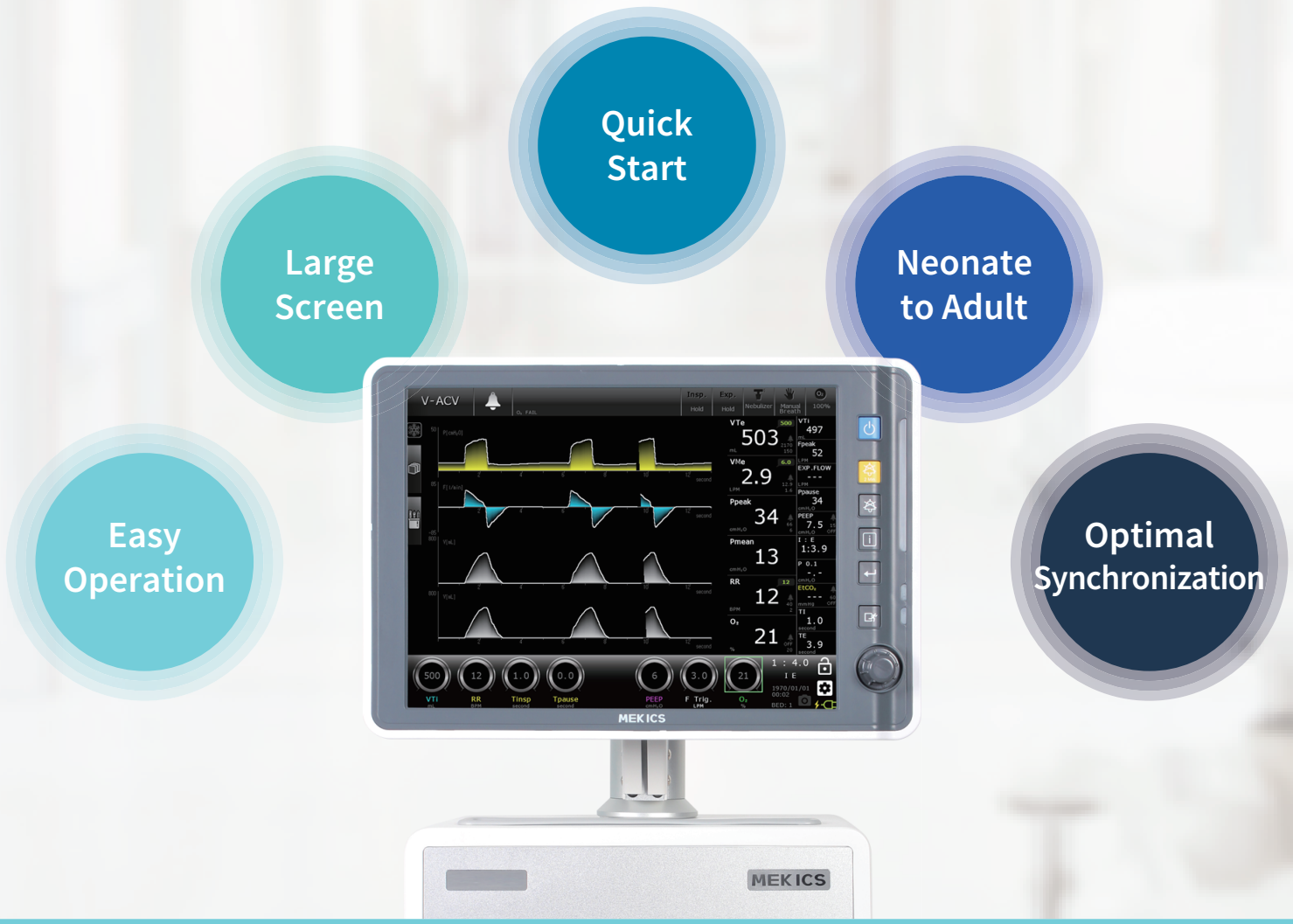


All in one  
Intensive Care  
Ventilator solution

# MV2000



# Easy, Safe and Comfort Intensive Care Ventilator



## Comfort Use Ventilator

15 inch TFT LCD screen with Easy & Simple UI



## Various ventilation modes

### Specification Ventilation Mode

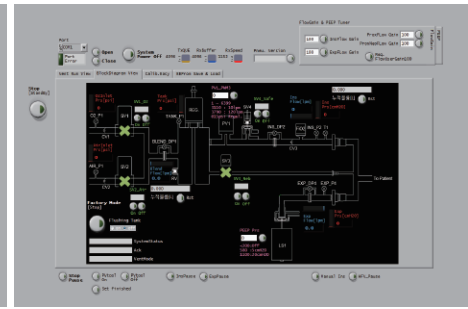
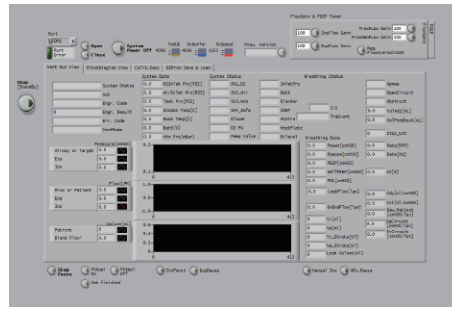
PACV, PSIMV, VACV, VSIMV, Apnea Back-up ventilation, Spont, O<sub>2</sub> Stream®, PRVC, Bi-Level, AwPRV, AutoVent®, TCPL-AC, TCPL-SIMV, PRVC-SIMV, CPR

### Specification Optional Ventilation Mode

SHFV®, DHFV®

## Easy to manage Ventilator

ID	Item	Remaining Time	Remaining Time
0000	Overall Maintenance	0000 hours	25 hours
0001	Filter #1 (Left)	0000 hours	25 hours
0002	Filter #2 (Right)	0000 hours	25 hours
0003	Filter #3 (Patient)	0000 hours	25 hours
0004	Filter #4 (PEEP)	0000 hours	25 hours
0005	Filter #5 (Bak)	0000 hours	25 hours
0006	Filter #6 (Safety Valve P2)	0000 hours	25 hours
0007	Filter #7 (Safety Valve P1)	0000 hours	25 hours
0008	Battery	0000 hours	25 hours
0009	PEEP Valve	0000 hours	25 hours
0010	PEEP Valve	0000 hours	25 hours



### Parts remaining time indication

- Improved intuitiveness of maintenance
- Efficient management of expected replacement time
- Reminder display with automatic alarm system when replacement cycle is imminent

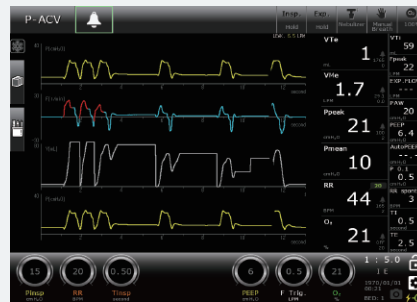
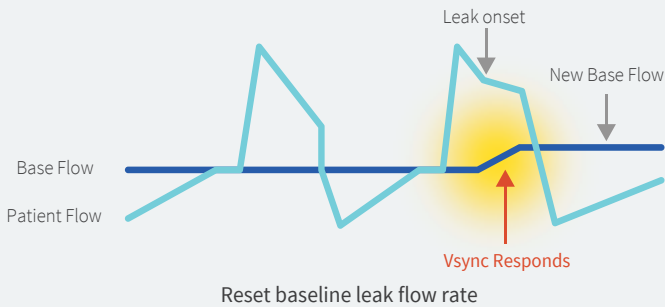
### Smart PC viewer system (PC program)

- Easy to understand with block diagram
- Easy to check internal system status
- Easy to adjust & calibrate without disassembly (Programmable pneumatic system)
- e-Manual & e-Instruction

## Ventilator with patient's safety

### Leak compensation and triggering sensitivity

MV2000 Leak Compensation is up to 25 l/min, it helps to prevent auto-triggering and asynchrony caused by leaks.



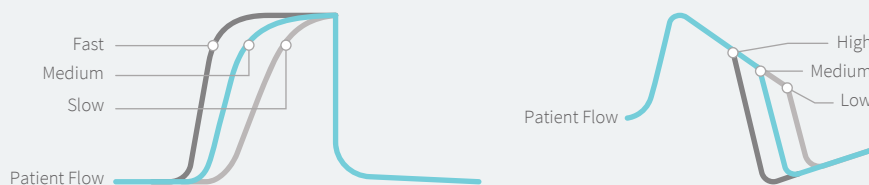
Patient-ventilator asynchrony is typically uncomfortable for the patient. In addition, it may have an impact on patient outcomes.

**\*Epstein** put together a list of adverse effects associated with poor patient-ventilator interaction.

- A higher or wasted work of breathing
- Patient discomfort
- An increased need for sedation
- Confusion during the weaning process
- Prolonged mechanical ventilation
- A longer stay
- The possibility of higher mortality

During mechanical ventilation, system leak is a major cause of patient-ventilator asynchrony. Leaks may be caused by the endotracheal tube cuff, ventilator circuit, or chest drain during invasive ventilation. The incidence of endotracheal tube cuff leaks has been reported at ranges from 11% to 24%.

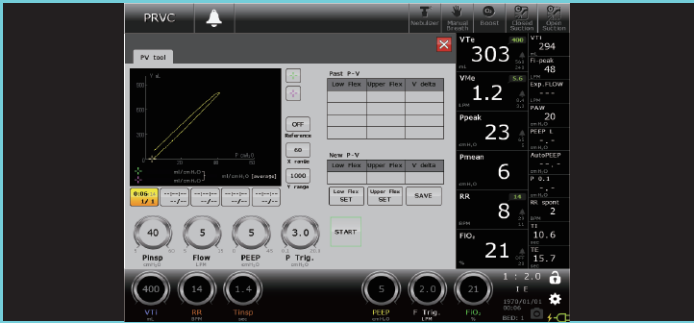
### Rise time & patient cycling in mandatory breath (PRVC, PCV, TCPL)



\* Epstein ([FOOTNOTE=Sassoon C. Triggering of the ventilator in patient-ventilator interactions. Respiratory Care. 2011;56(1):39-51.]

# Reduce Ventilator Induced Lung Injury

## Lung protection tool



The MV2000 lung protective tool is one of solution to perform lung recruitment maneuvers.

The lower inflection point indicates the point at which collapsed airways reopen. This can be affected by both airway closure and alveolar collapse (causing the point to be farther to the right – more pressure required to open the airways).

The upper inflection point represents the point at which further applied pressure will result in over-distention. The ventilator will automatically recalculate the Vdelta once the new inflection point is identified.

## High frequency ventilation for rescue use



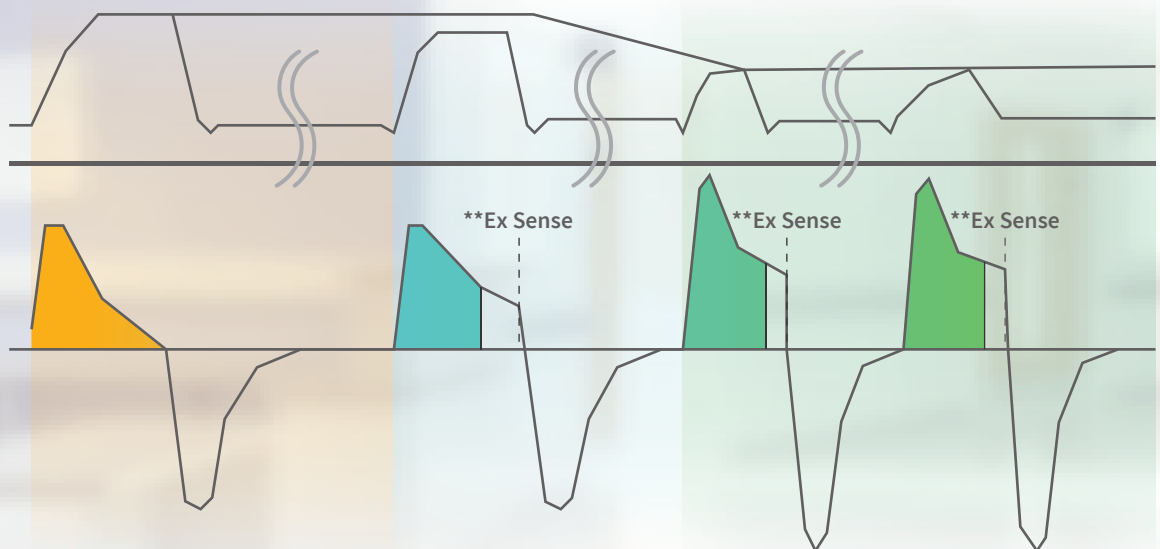
MV2000 provides a high level of clinical performance for all the clinical demands from conventional to high frequency ventilation. MEKICS unique pneumatic technology extends the applicability of MV2000 EVO 5 to HFV without any additional hardware apparatus such as specific breathing circuit and respiratory tubes. It has also possibility to extend the use from neonatal to adult patient.

## AutoVent

**Status 1**  
CMV + No Trg

**Status 2**  
CMV + Trg

**Status 3**  
Spont + PS



## Esophageal pressure



The problem of determining patient's PEEP is a very important issue in determining alveolar adsorption and basal lung pressure. If the patient's PEEP is set low, gas exchange is difficult to be sufficient, and if it is excessively large, the patient's lung will be stressed. By measuring esophageal pressure, trans-pulmonary pressure can be inferred. It helps to set the PEEP proportional to the trans-pulmonary pressure.

## Tracheal pressure



Patient's circuit and intubation, ET tube, leakage, etc. may cause patient to have pressure in the lung and measurement error of the equipment. This function allows the ventilator to be controlled by measuring the direct pressure by insert a catheter into the intubation tube. The airway pressure displayed on the ventilator is higher than the set value.

In single mode, ACV, SIMV and spontaneousness operates actively according to patient's condition and guarantees minute volume simultaneously.

There is no respiratory function for abnormal situation, especially at the recovery room. However, in case of self-sustained respiration after the end of anesthesia, it is necessary to maintain the patient's respiration by mechanical ventilation (spontaneous breathing) or with other effective ventilation mode.

## Predicted Body Weight

When if PBW function being used, the single ventilation amount of mechanical ventilation is determined to Predicted Body Weight formula based on selected patient's category and gender. The default setting value is 8 ml/kg. This value can be changed in the BWF (Body weight factor) field in the SYSTEM column of the active window. When operated with PBW turned on, the setting value of the once ventilation amount is limited according to the set patient's height and gender's BWF setting.

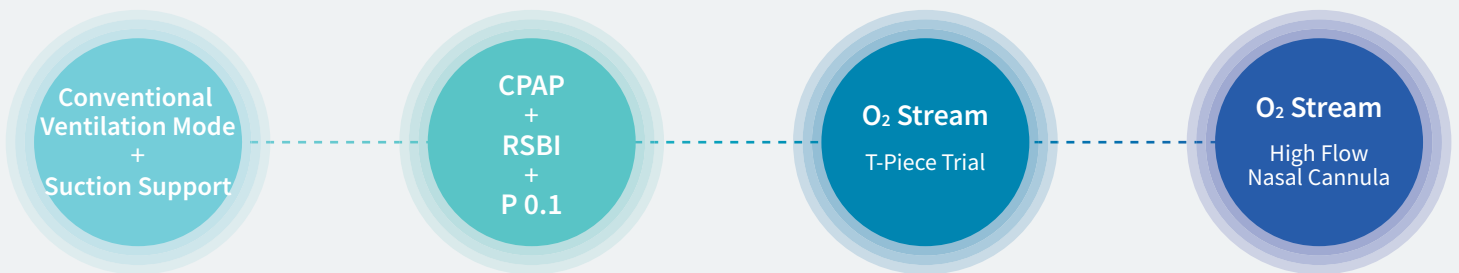
## CPR ventilation (Cardiopulmonary Resuscitation)

CPR mode helps to patient ventilation in the CPR situation of patient.

# Non-disconnection solution to avoid Ventilator-Associated Pneumonia

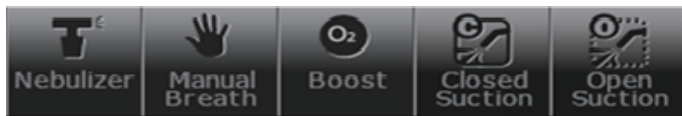
Weaning the ventilation is possible without disconnected mechanical controlled ventilation Till to T-piece trial ventilation.

## Successful Weaning with variety Modes

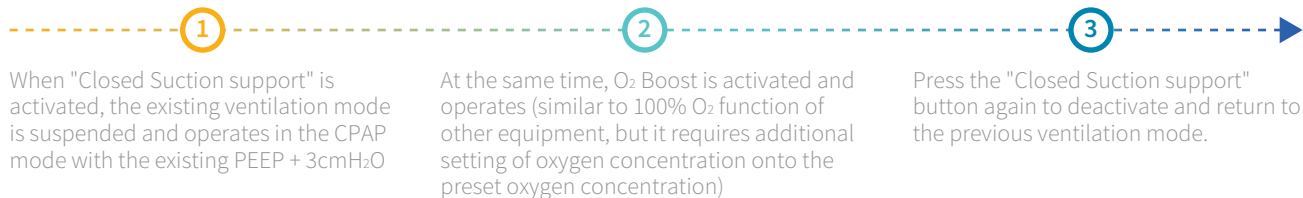


## Closed Suction Support

Auto-triggering can be occurred caused by the negative pressure that occurs during suction, which can be increased the asynchrony.



## Operating Scenario



## SpO<sub>2</sub>, EtCO<sub>2</sub> Measurements Hemodynamics

This option can provide information of metabolic CO<sub>2</sub> and SpO<sub>2</sub> as the result of respiration. This information can be useful to a clinician for patient care without independent gas monitoring system and for reducing complete dependency on Arterial Blood Gas Analysis (ABGA).



## Two type of nebulization system

MV2000 EVO 5 offers Micro-pump Nebulizer & Pneumatic Nebulizer.

**Standard :** Pneumatic nebulizer (Power source)

**Option :** Micro-pump nebulizer (Aerogen)

## Monitoring parameter for ventilator weaning

- RSBI** Rapid Shallow Breathing Index
- P 0.1** Respiratory Drive (P 0.1), is the negative pressure that occurs 100 ms after an inspiratory effort has been detected
- RR spont.** Spontaneous breath rate
- VEmin S.** Spontaneous minute volume

## O<sub>2</sub> Stream High Flow Nasal Cannula Therapy

It is non-invasive respiratory therapy to improve of lung oxygenation that as supplying the heated and humidified oxygen requirements that exceed the patient's inspiratory peak flow rate through nose, reduce the intake of work of breathing, increase the functional residual capacity by rising of PEEP, optimize the nasal and the status of the mucosa of the upper respiratory track, and reduce the residual exhalation gas of dead space anatomically.

### Feature of Nasal High Flow Oxygen Therapy

- Efficient Oxygenation
- Washout of nasopharyngeal dead space (CO<sub>2</sub> Ventilation)
- Increase Functional Residual Capacity
- Reduce Work Of Breathing
- Reduce Energy Cost of Gas Conditioning



## All in One Central Monitoring System



- Dual LCD screen : 32 bedsides patient monitoring system
- Single LCD screen: 32 bedsides monitoring display
- 10 days graphic trend for each patient monitor
- Displays 12 waveforms of patient monitoring for each patient monitor
- Displays 3 waveforms of a ventilator display
- Available wireless LAN or Cable wired network

# MV2000 monitor options



**EVO 5** 15 inch monitor option

### Display

15" Color TFT 1024\*768, Touch Screen & Knob  
HDMI ( External Monitor )

### Peripheral port

USB ( Screen Capture ), Micro SD ( SW Upgrade )

### Ventilation Mode

PACV, PSIMV, VACV, VSIMV, Spont, Apnea Back-up ventilation,  
O<sub>2</sub>Stream®, PRVC, Bi-Level, AwPRV, AutoVent®, TCPL-AC,  
TCPL-SIMV, PRVC-SIMV, CPR

### Lung mechanics

Ins Pause, Ex Pause, PV Tool

### Optional

Ventilation Mode	SHFV®, DHFV®
Lung Mechanics	Paux ( Esophageal & Tracheal Pressure )
Accessory	Proximal Sensor ( Pressure/Flow ), Nasal Cannula for O <sub>2</sub> Stream®
Vital Sign Functions	SpO <sub>2</sub> , EtCO <sub>2</sub>
Cart	Mobile Cart for MV2000



**EVO 2** 12 inch monitor option

### Display

12.1" Color TFT, Touch Screen & Knob with communication port

### Ventilation Mode

PACV, PSIMV, VACV, VSIMV, Spont, Apnea Back-up ventilation, O<sub>2</sub>Stream®

### Lung mechanics

Ins Pause, Ex Pause, PV Tool

### Optional

Ventilation Mode	PRVC, Bi-Level, AwPRV, AutoVent®, TCPL-AC, TCPL-SIMV, PRVC-SIMV, SHFV®, DHFV®, CPR
Accessory	Proximal Sensor ( Pressure / Flow ), Nasal Cannula for O <sub>2</sub> Stream®
Vital Sign Functions	SpO <sub>2</sub> , EtCO <sub>2</sub>
Cart	Mobile Cart for MV2000

As MEKICS's products are ceaselessly improved, the actual product may differ from the descriptions, specifications, and the pictures in this publications.



**MEKICS CO., LTD**  
21, Sangjiseok-gil, Paju-si, Gyeonggi-do, 10911, Korea  
T. 82 70 7119 2521 F. 82 70 5052 5800 sales@mek-ics.com  
www.mek-ics.com

