

MVM - MECHANICAL VENTILATOR MILANO



- HEALTH CANADA COVID-19 MEDICAL DEVICE AUTHORIZATION FOR IMPORTATION OR SALE
- FDA CLASSIFICATION - EMERGENCY USE AUTHORIZATION (EUA)

PRODUCT OVERVIEW

The MVM is an electrically operated, microprocessor controlled, pneumatically driven ventilator. It is designed for the treatment of adult patients suffering from respiratory failure due to Covid19 who require temporary or longer-term invasive ventilatory support. The touchscreen panel color LED provides real time graphic displays and digital monitoring capabilities. The touch screen is designed for easy interaction for setting the modes, parameters and alarms.

The ventilator requires electrical source (100-240V) and a high-pressure air and oxygen source which connects to a built in blender providing adjustable FIO₂, ranging between 21 and 100%. A battery provides 2 hours of power

FEATURE MODES

The MVM features two basic modes: Pressure controlled ventilation (PCV) for patients requiring a controlled ventilation strategy and pressure-support ventilation (PSV) a mode that provides a supported approach, suitable for the weaning phase of intubated patients.

PRESSURE CONTROLLED VENTILATION (PCV)

PCV is a time-cycled ventilation mode in which the operator sets the desired inspiratory pressure level, a positive end expiratory pressure, the length of the inspiratory time, the number of breaths per minute and trigger criteria. A new inspiration begins when the timed respiratory rate is met or when the patient initiates a breath.

PRESSURE SUPPORTED VENTILATION (PSV)

PSV is a mode in which the operator sets the desired inspiratory pressure level, a positive end expiratory pressure, and a cycle criteria to end inspiration. The patient controls the number of breaths per minute. PSV is not suitable for patients unable to breathe spontaneously.

The MVM has 12 different alarm capabilities and can monitor up to 9 patient and parameter data.

KEY FEATURES

This ventilator is a low cost solution for providing ventilatory support for patients suffering from COVID-19.

- LARGE SCALE PRODUCTION
- LOW COST
- SIMPLICITY OF CONSTRUCTION
- CONVENIENCE OF DEPLOYMENT
- CUSTOMIZABILITY
- COMPACT UNIT
- USER FRIENDLY
- EASY SET UP

GENERAL SPECIFICATIONS

DIMENSION UNIT MVM	266 w x 256 d x 146 h mm
WEIGHT	6 kg
ALARMS	Adjustable alarm sound level (65 - 85 dBA at 1 meter) Distributed alarm system output
DIMENSION POWER SUPPLY	210 w x 133 d x 75 h mm
WEIGHT	3 kg

ENVIRONMENT SPECIFICATIONS

OPERATING TEMPERATURE	+10° C to +40° C
OPERATING HUMIDITY	10% to 95% RH
OPERATING ATMOSPHERIC PRESSURE	700 hPa to 1060 hPa
MAX ALTITUDE	3000 m
STORAGE TEMPERATURE	-25° C to +70° C
STORAGE HUMIDITY	10% to 95% RH
STORAGE ATMOSPHERIC PRESSURE	500 hPa to 1060 hPa

ELECTRICAL CHARACTERISTICS

POWER SUPPLY	100 – 240 Vac
FREQUENCY	50/60 Hz
POWER CONSUMPTION	60 VA
APPLIED PARTS	TYPE B
INTERNAL BATTERY	Yes
AUTONOMY TIME IN BATTERY MODE	2 hours
EXTERNAL CONNECTION	USB compatibility for flash memory 2.0

PERFORMANCE SPECIFICATION FOR PCV - PRESSURE CONTROLLED VENTILATION

CONTROL PARAMETER	RANGE
RESPIRATORY RATE	4-50 rpm
INSPIRATORY TIME INSPIRATORY - EXPIRATORY RATIO	0.4-1.5 s 1:1-1:4
PEEP*	5-20 cm H ₂ O
MAX INSPIRATORY PRESSURE	68 cm H ₂ O
Inspiratory Trigger Sensitivity	1-9 cmH ₂ O/sec ²
FiO ₂	21-100%
BATTERY	OBSTRUCTION

*via spring-loaded PEEP valves

PERFORMANCE SPECIFICATION FOR PSV - PRESSURE SUPPORT VENTILATION

CONTROL PARAMETER	RANGE
*PEEP	5-20 cm H ₂ O
INSPIRATORY PRESSURE	2-50 cm H ₂ O
Expiratory Trigger Sensitivity	5-60%
Inspiratory Trigger Sensitivity	1-9 cmH ₂ O/sec ²
FiO ₂	21-100%
Apnea Backup Ventilation	
ALARM PARAMETER	
HIGH/LOW - PRESSURE	HIGH/LOW - TIDAL VOLUME
INSPIRATORY TIME	HIGH/LOW - MINUTE VOLUME
LOW - PEEP	APNEA
FiO ₂	GAS FAILURE

*via spring-loaded PEEP valves

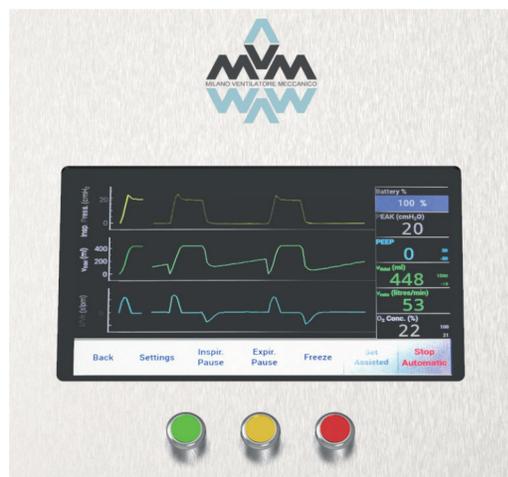
ADDITIONAL SAFETY FEATURE

Another adjustable pressure limiting valve is connected to the inspiratory line and ensures that the maximum pressure delivered does not exceed the pre-set value.



A front 7" wide TFT Touch screen display is the user interface for data entry and monitoring functions.

The display shows numerical and graphical data and trends in real time, as well as current alarm and ventilator settings.



REFERENCE STANDARDS

NUMBER	TITLE
ISO 14971	Medical devices - Application of risk management to medical devices
ISO 80601-2-80*	Medical electrical equipment - Part 2-80: Particular requirements for basic safety and essential performance of ventilatory support equipment for ventilatory insufficiency
EN 60601-1	Medical electrical equipment - Part 1: General requirements for basic safety and essential performance
EN 60601-1-2	Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral standard: Electromagnetic disturbances - Requirements and tests
EN 60601-1-6	Medical electrical equipment -- Part 1-6: General requirements for basic safety and essential performance - Collateral Standard: Usability
EN 60601-1-8	Medical electrical equipment - Part 1-8: General requirements for basic safety and essential performance - Collateral Standard: General requirements, tests and guidance for alarm systems in medical electrical equipment and medical electrical systems
ISO 18562-1/2/3/4	Biocompatibility of breathing gas pathways in healthcare application

* "Emergency Use Ventilator Design Guidance, modeled upon ISO 80601-2-80:2018 presuming usage in traditional healthcare facilities.

ACCESSORIES

CONSUMABLE ASSESSORIES INVASIVE VENTILATION
Patient circuit item: DEAS 04775 NS
Respiratory system Filter items (antibacterial and viral): DEAS HMEF8 DEAS HMEF7 AIRLIFE 001851
Patient Connection Adaptor: DEAS 1510TG (rotatable) DEAS 22xxDV (straight)
Flex tube items: DEAS ETANXXC02 DEAS ETSLXXC02
PEEP Valve items: DEAS 03986 NS LAERDAL 845240

ACCESSORY

TROLLEY SUPPORT FOR MVM MEDICAL
DEVICE AND POWER SUPPLY



TO LEARN MORE

For additional information, please contact
call: Toll Free: **844-300-7680**
Email: vexos-support@valleyassociates.com
or visit: vexos.com/mvm-ventilator

MANUFACTURING LOCATIONS

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