JeevanLite – v1

Quick guide

Aerobiosys Innovations

Changing the way you receive healthcare.

This Quick Guide is intended as a helpful resource for ventilation of patients. It does not replace the clinical judgment of a physician nor the content of the ventilator Operator's Manual, which should always be available when using the ventilator.

Some functions are optional and are not available in all markets.

The graphics shown in this guide may not exactly match what you see in your environment.

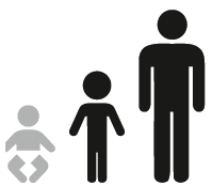


Table of Contents

1. Technical Specifications

1.1 Technical Performance

Description	Specification	
Inspiratory pressure	0 to 60 cmH2O	
Maximum inspiratory flow	20-120 lpm 60 lpm with 100% O2 (HFNC)	
Means of inspiratory triggering	Flow and Pressure trigger control	
Minimum expiratory time	1 second	
Minute volume capability	Up to 60 l/min	
Oxygen mixer accuracy	± (volume fraction of 2.5% + 2.5% of actual reading)	
Tidal volume	100 to 2000 ml	
Display device	Display of settings, alarms and monitored data Type: Color TFT Size: 1920X1200 pixels, 10.1 in diagonal	
High pressure oxygen inlet	Pressure	4 to 6 bar / 29 to 87 psi
	Flow	Maximum of 200 lpm
	Connector	DISS (CGA 1240) or NIST
Low pressure oxygen inlet	Pressure	Maximum 0.2 bar / 4 psi
	Flow	≤ 15 lpm
	Connector	Compatible BARB connector
Air supply	Integrated blower	
Input power	100 to 240 VAC, 50/60Hz	
Power consumption	50 VA typical, 150 VA maximum	
Battery	Aerobiosys Innovations provides a high-capacity battery	
	Electrical specifications	6 Ah, 145 Wh, 50 W typical, 150 W maximum
	Type	Lithium-ion
	Storage	-20°C to 60°C, ≤ 85% relative humidity. The storage location should be free from vibration, dust, direct sunlight, moisture, and corrosive gases, and with a recommended temperature range < 21°C. Extended exposure to temperatures above 45°C can degrade battery performance and life.

1.2 Standards and approvals

Classification	Class IIb, continuously operating according to EC directive 93/42/EEC
Valid versions	IEC 60601-1:2005, AMDI :2012 ISO 80601-2-12:2020
Declaration	The JeevanLite was developed in accordance with pertinent international standards. The ventilator is manufactured within an EN ISO 13485 certified quality management system.
Electromagnetic compatibility	CISPR 11 : 2015+A2: 2019 IEC 610004-2:2008 IEC 61000-4-3:2020 IEC 61000-4-5:2014 IEC 61000-4-6:2013
Safety class	Class II, Type B applied part (ventilator breathing system, VBS)

1.3 Control settings and ranges

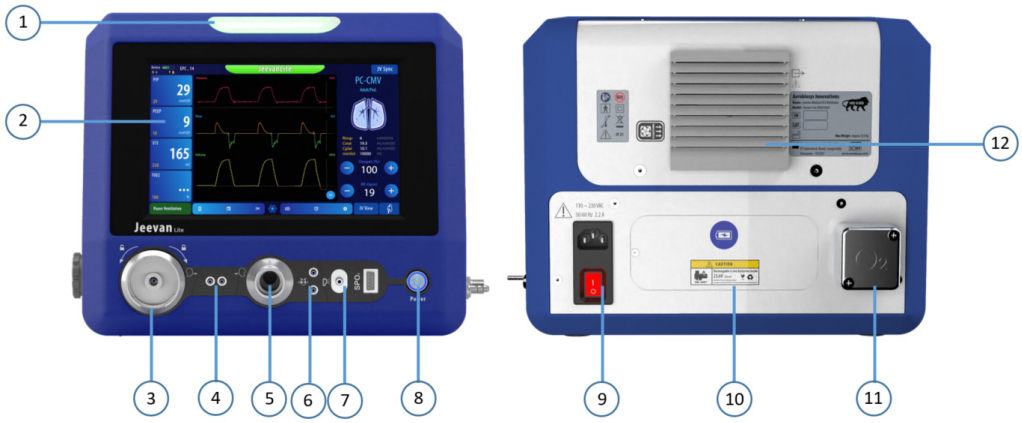
Parameter[1] (units)	**Range Adult/Ped[2]**
PIP (cmH2O)	5 to 60
PEEP/CPAP (cmH2O)	5 to 35
P high (cmH2O) (in APRV)	5 to 60
P high (cmH2O) (in BiPAP)	5 to 60
P low (cmH2O) (in APRV)	0 to 35
VTI (ml)	100 to 2000
FiO2/Oxygen (%)	21 to 100
Rise Time, RT (s)	> 0.6
Flow rate (lpm)	2 to 60 2 to 60 (for 100% O2, HFNC)
Respiratory rate (breath/minute)	4 to 60
I:E	1:9 to 4:1
Ti (s)	0.6 to 14
T high (s)	0.1 to 25
T low (s)	0.2 to 25
Trigger window (s)	> 0.5
Apnea (s)	3 to 30
Assist Control (in SIMV)	On, Off

[1]Tested and recorded with Fluke Gas analyzer VT 900 and Fluke test lung

[2] Parameter settings and ranges can vary depending on the selected mode

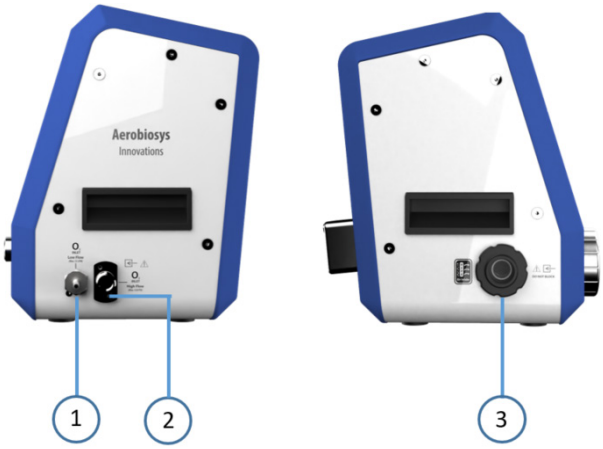
2. JeevanLite basics

2.1 Ventilator, front and back view



1	Alarm indicator	7	Nebulizer port
2	Display	8	Power button
3	Expiratory valve port	9	AC power socket
4	Expiratory valve feedback port	10	Battery
5	Inspiratory port (To patient)	11	O2 sensor
6	Proximal flow sensor port	12	Cooling air outlet

2.2 Ventilator, side view



1 Low flow O2 inlet

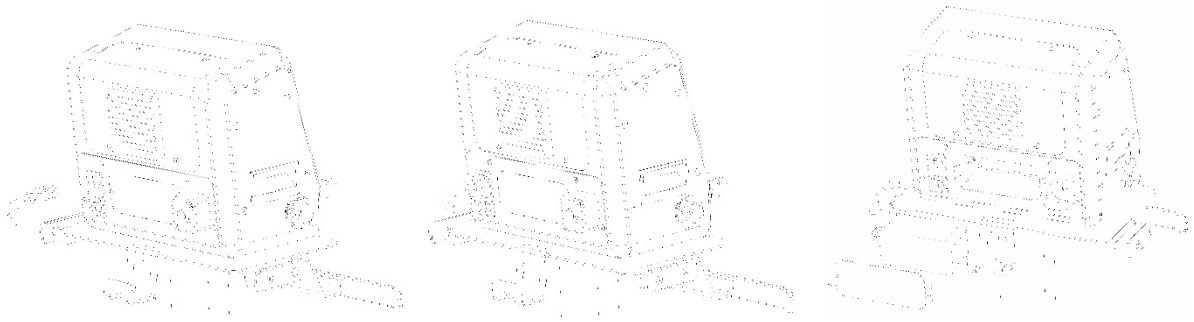
2 High flow O2 inlet

3 Suction inlet. *Do not obstruct*

3. Setting up the ventilator

3.1 Connecting the Power cord and Battery

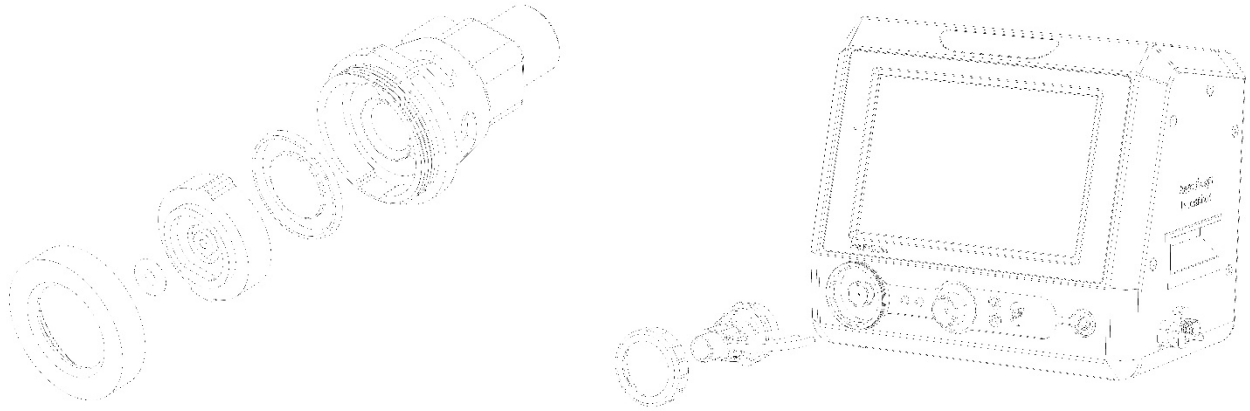
Before turning on the ventilator, always ensure that the power switch is turned off, the battery is connected and the air filter is clean.



Connect the ventilator to an outlet that supplies AC power. Ensure the power cord is well seated and secured into the ventilator socket to prevent unintentional disconnection.

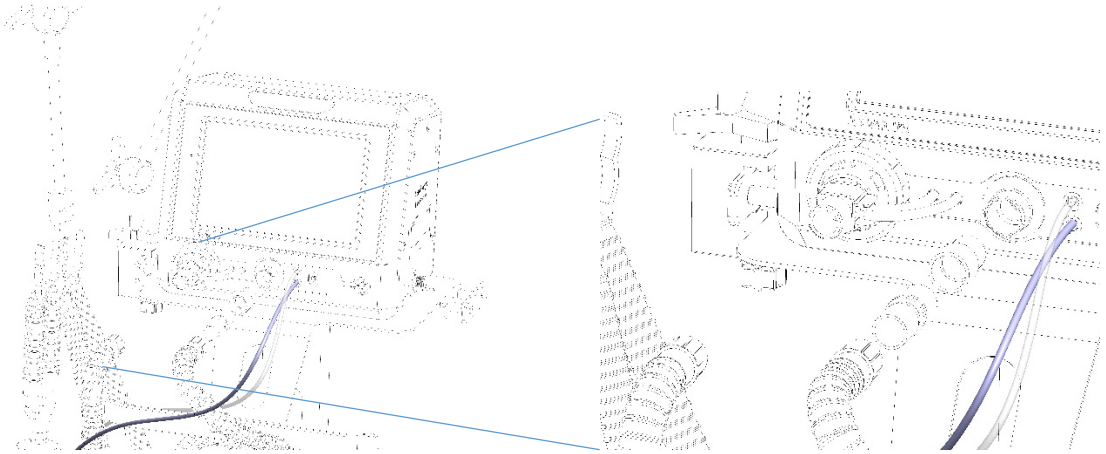
3.2 Installing the expiratory valve set

To install expiratory valve set,

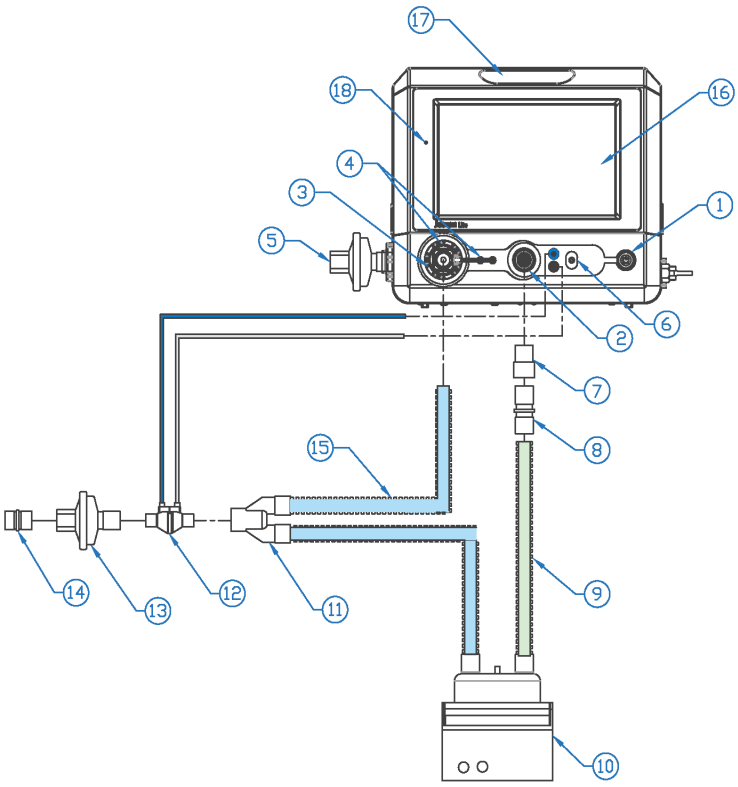


1. Place the silicon membrane in the housing in the valve
2. Attach the membrane cap and twist the cap clockwise until it locks into place
3. Ensure the valve set is properly aligned with the expiratory valve housing.
4. Insert the expiratory valve ring and twist the ring clockwise until it locks into place
5. Attach the feedback tubes from the valve to the ventilator

3.3 Connecting a breathing circuit

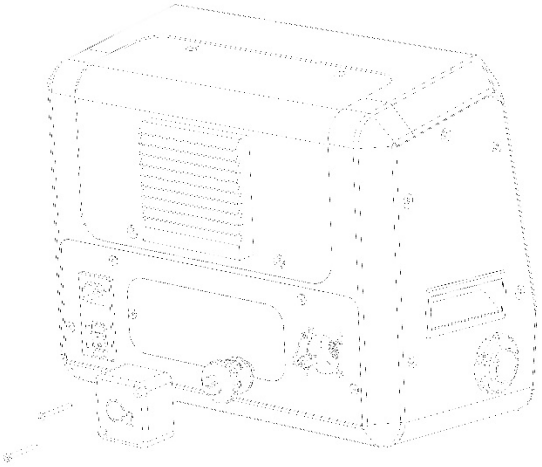


1. Connect the NRV to the inspiratory port.
2. Connect the 22mm straight connector to the NRV.
3. Connect the one end of the breathing circuit to the straight connector and the other to the expiratory valve.
4. Connect the flow sensor to the Y-piece of the breathing circuit
5. Connect the flow sensor tube to the ventilator according the color code



1. Power/Standby button
2. To patient (Inspiratory port)
3. From patient (Expiratory port)
4. Expiratory valve & feedback connectors
5. Suction filter
6. Nebulizer connector
7. Inspiratory NRV
8. 22mm straight connector
9. Inspiratory limb
10. Humidifier
11. Y-piece (integrated with breathing circuit)
12. Proximal Flow sensor
13. HME filter
14. Multi Adaptor IDI 5mm x OD22mm connector
15. Expiratory limb
16. Touch Display
17. Alarm (LED indicator)
18. Reset switch

3.4 Connecting or replacing an Oxygen sensor



To install or replace Oxygen sensor,

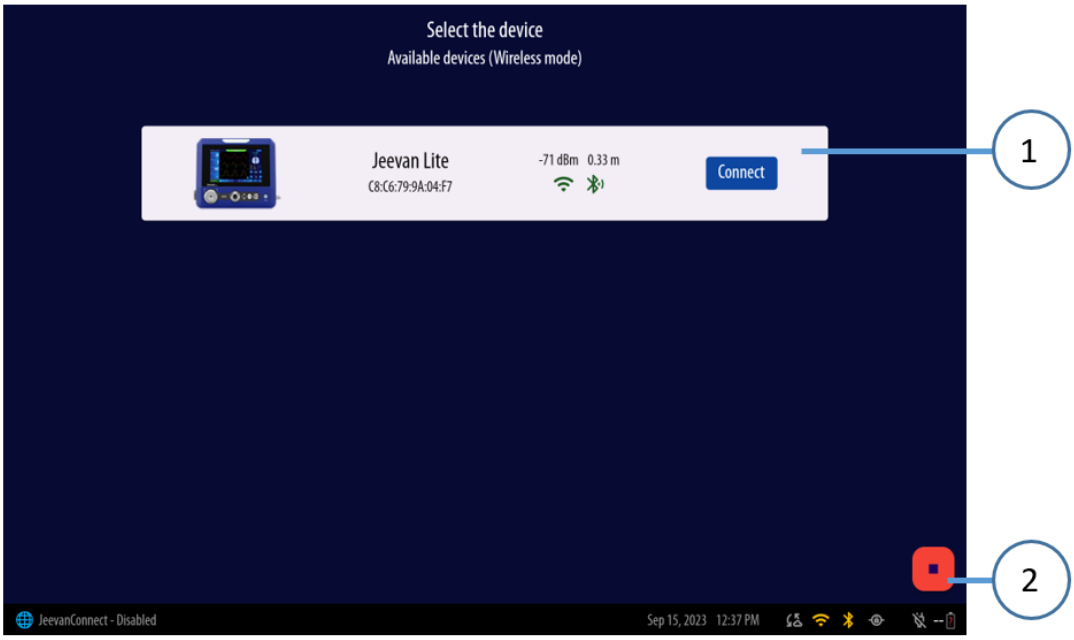
1. Remove the Oxygen sensor cap
2. Place the O sensor and rotate clockwise until it locks into place
3. Connect the Oxygen sensor pin and attach the sensor cap with the screws.

3.5 Turning on the ventilator

To turn on the ventilator

1. Connect the ventilator to AC power and oxygen supply
2. Assemble and connect the patient breathing circuit
3. Turn on the switch at the back of the ventilator to boot the display
4. Press power button (1).

3.6 Connecting the ventilator



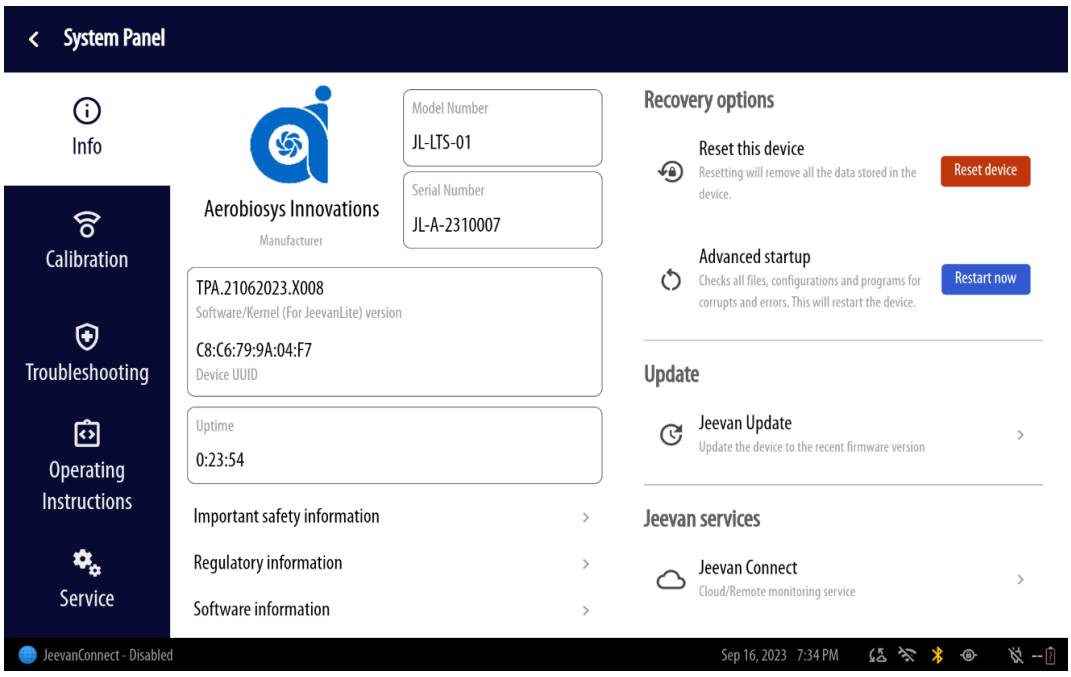
1 **Connect button**. Connects the ventilator and the display

2 **Turn on the radio adapters**. Turns on Wi-Fi & BLE for Cloud monitoring and Location services

The ventilator will display select device window and will search for the device (If logged in, else you can either log in or skip). Click the connect button to connect to the ventilator

3.7 Ventilator Info

Access the device info page from the dashboard. Control Panel > Info window.



Info window provides the following options:

1. **Reset this device** – Resetting will remove all device data (presets, custom settings and user options will be changed to installation defaults) while preserving the patient data.

2. **Advanced Startup** – Checks all files, configurations and checks for service and security updates. This may help when you don't want to reset the device.

3. **Jeevan Updates**[3] – We regularly provide security and performance updates to improve our ventilator and user and patient experience.

4. **Jeevan Connect** – Jeevan Connect is a remote monitoring service for the Jeevan series ventilators. See Section 12 for more details.

Info page provides device details like Serial number, Version and model number. Please read safety information before using the device.

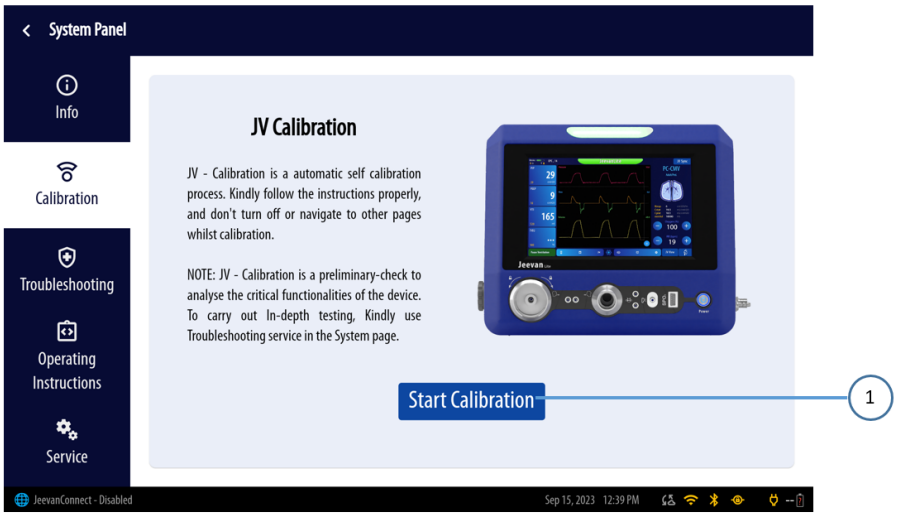
[3] Updates are rolled out every quarter. Please read our Update policy to gain more insights.

4. Performing the preoperational checks

Perform the following steps disconnected from the patient.

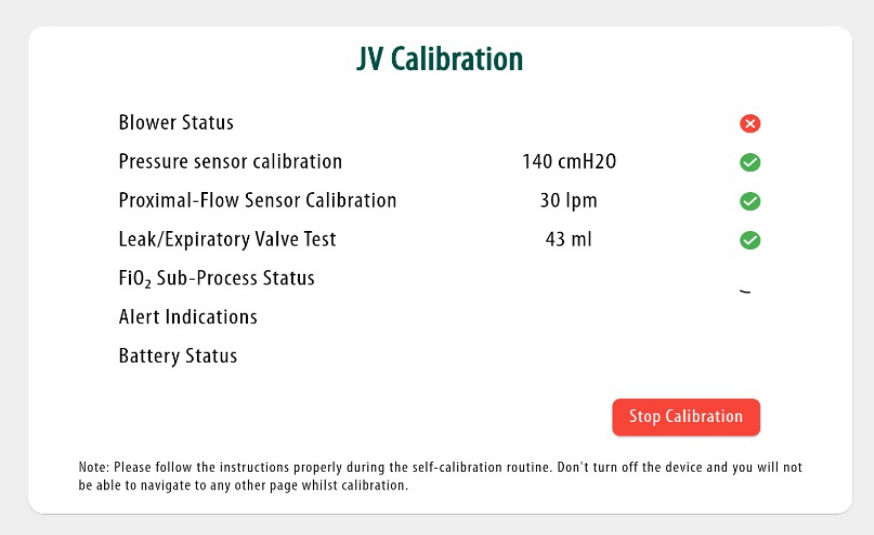
Prompts are provided in the Control panel > Calibration window

4.1 JV Calibration



1 **Start Calibration**. Initiates JV Calibration routine

JV Calibration is an assisted calibration routine. All instructions will be prompted during the calibration process.



Pass  or fail  and result of completed test are displayed for every calibration maneuver.

If desired, you can perform all the above tests individually using Troubleshooting menu. For details, see your ventilator Operator's manual.

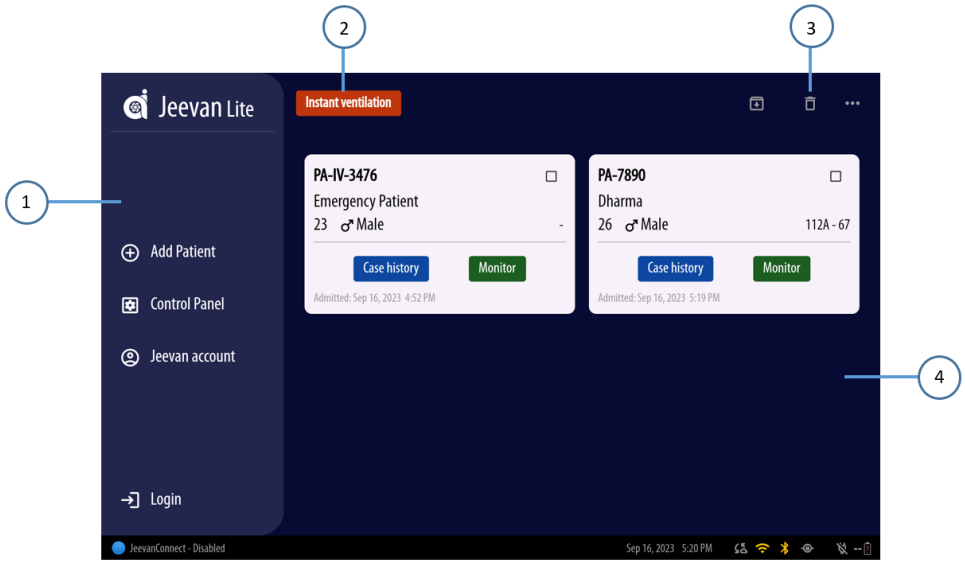
When calibration and tests are complete, the ventilator is ready for use.

4.2 If calibration fails

Visit our website or contact the support team for instructions.

5. Patient settings

Add new patients with the add patient form or with Instant Ventilation. You can view all the patient details in the dashboard below.



1 **Side menu.** Quick access menu provides the following options,

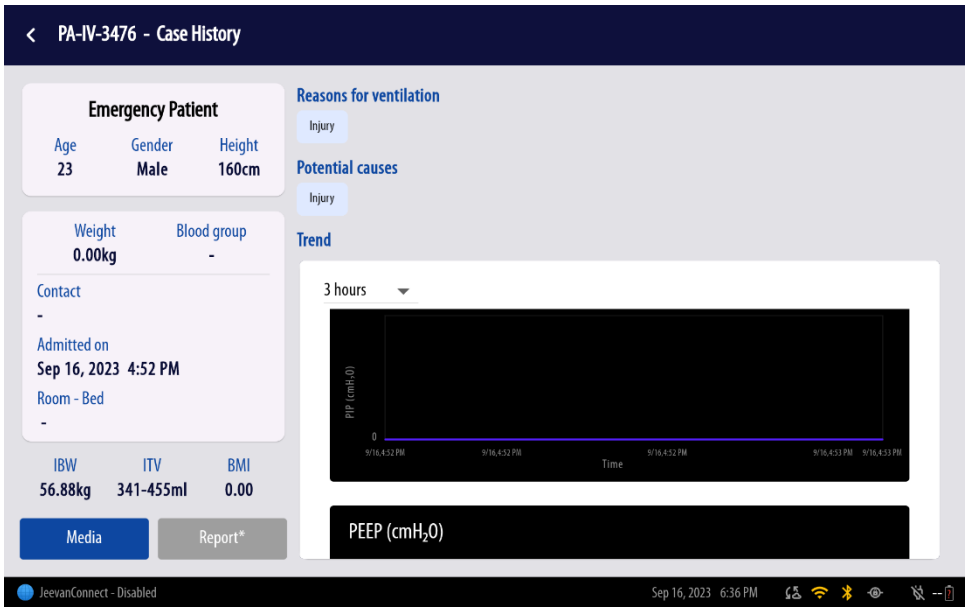
1. Add patient – Creates a new patient with detailed information
2. Control panel – Ventilator control panel to view all features
3. Jeevan account – Launches the Jeevan account settings.

2 **Instant ventilation.** Creates an Instant ventilation patient with default patient settings. (25, Male and 175 cm height)

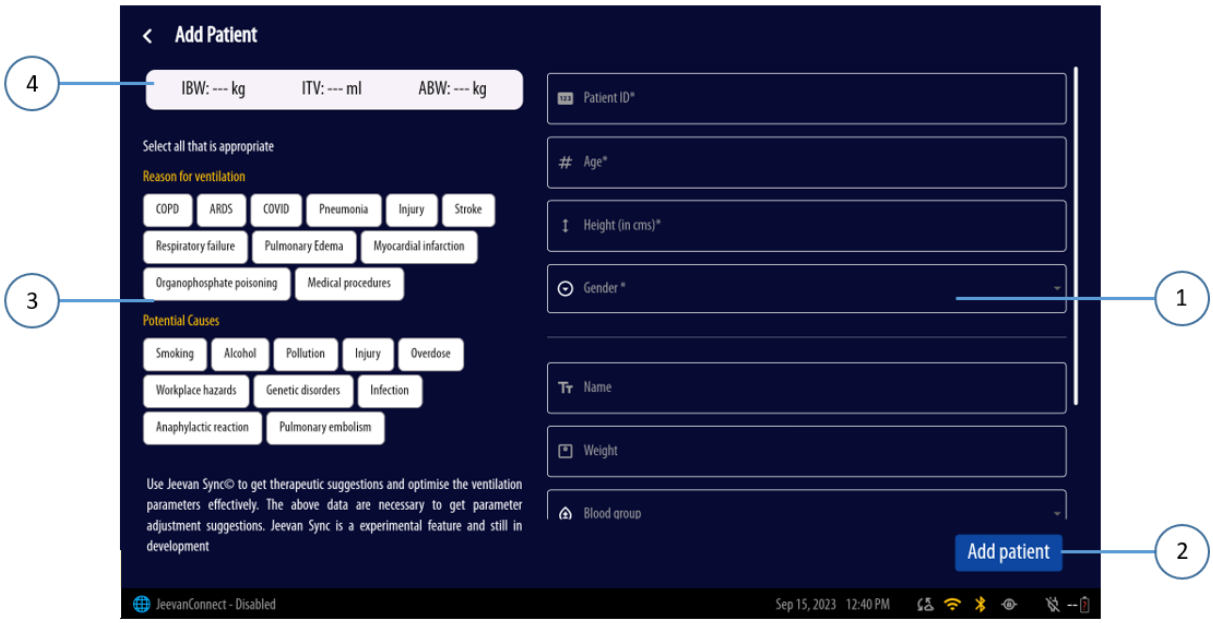
3 **Patients list Manager.** Archive, Delete and Sync Patient list

4 **Patients list.** Patient list

Click Monitor to monitor the patient and click on case history to view patient's case history.



To add a patient, click the Add Patient button in the dashboard.



1 **Patient Form**. New patient form (Patient ID, Age, Height and Gender are mandatory fields)

2 **Add Patient**. Creates a new patient

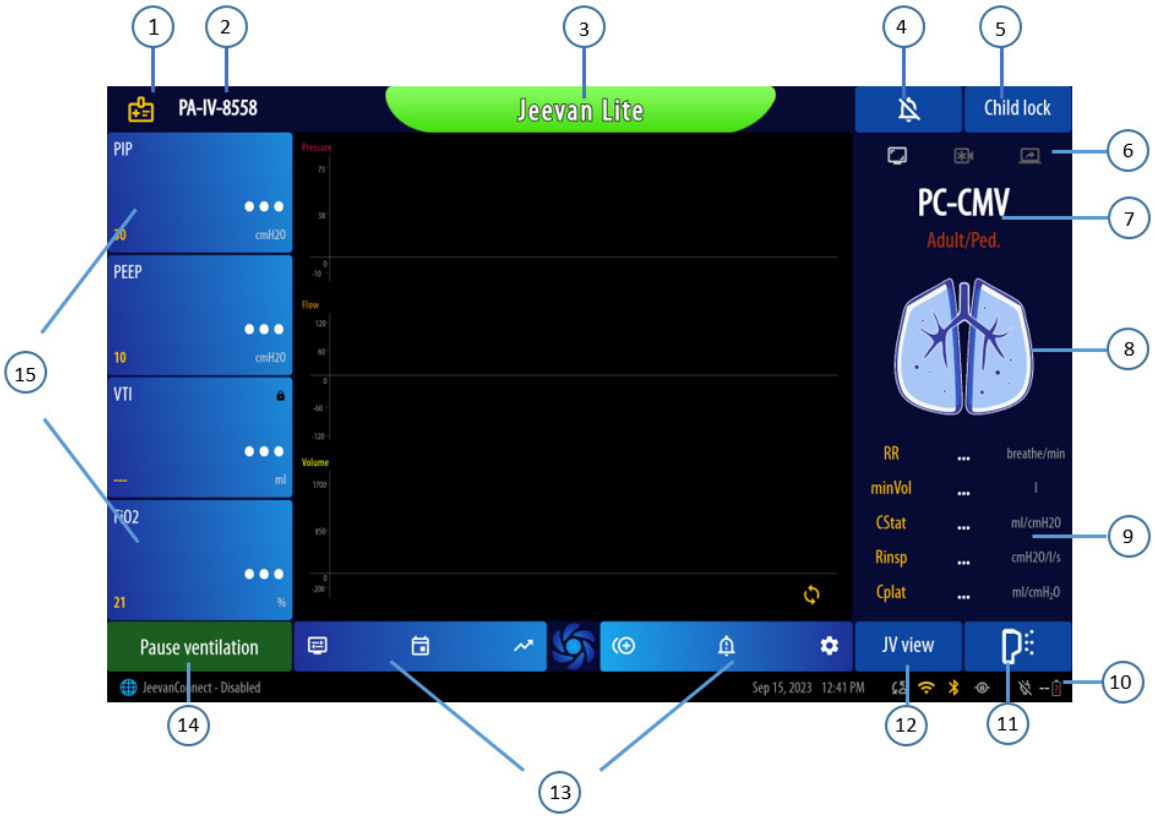
3 **Patient History Form**. Collects the reason for ventilation and the potential causes. This details are used by Jeevan Sync © [4] to provide ventilation parameter settings.

4 **Ideal Settings**. Displays patient's Ideal Body Weight (Calculated from Gender and Height), Ideal Tidal Volume (Calculated from IBW with 6ml – 8ml/kg) and Adjusted Body Weight

[4] Jeevan Sync is an experimental feature to assist medical practitioners in ventilation parameter settings

6. Configuring ventilation settings

6.1 Ventilation window



1 **Instant Help button**. Instant help through Jeevan Connect ©

2 **Patient ID button**. Opens the patient details

3 **Message bar**. Displays alerts and other messages

4 **Snooze button**. Snoozes alert indication for 2 minutes

5 **Child Lock**. Lock screen

6 **Media bar**. Capture, record and share ventilation screen

7 **Active mode and patient group**. Shows the active mode and selected patient group

8 **Dynamic lung**. Displays graphical patient lung

9 **Derived parameters Display**. Displays PFV derived Lung parameters

10 **Tool bar**. Displays battery, Wi-Fi, and other connection indication (see Section. 10)

11 **Nebulizer**. Turn on/off in-built nebulizer

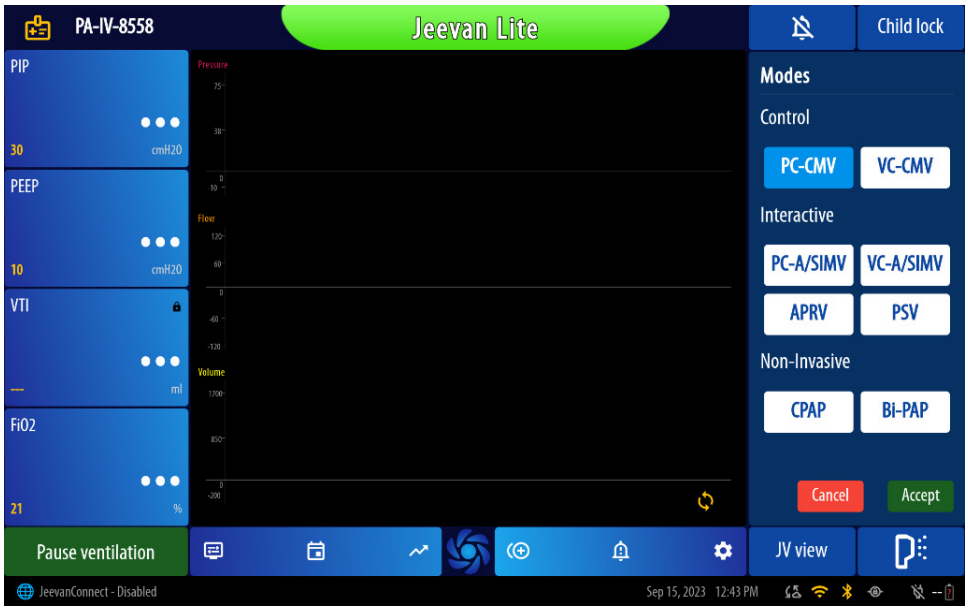
12 **JV View**. View all derived parameters (Refer Section 12) in one place

13 **Navigation bar**. Navigation bar to navigate into other settings.

14 **Pause monitoring**. Standby button / Pause ventilation

15 **Main monitoring parameters**. Configurable monitoring data and current monitored data

6.2 Selecting a mode



To change the ventilation mode

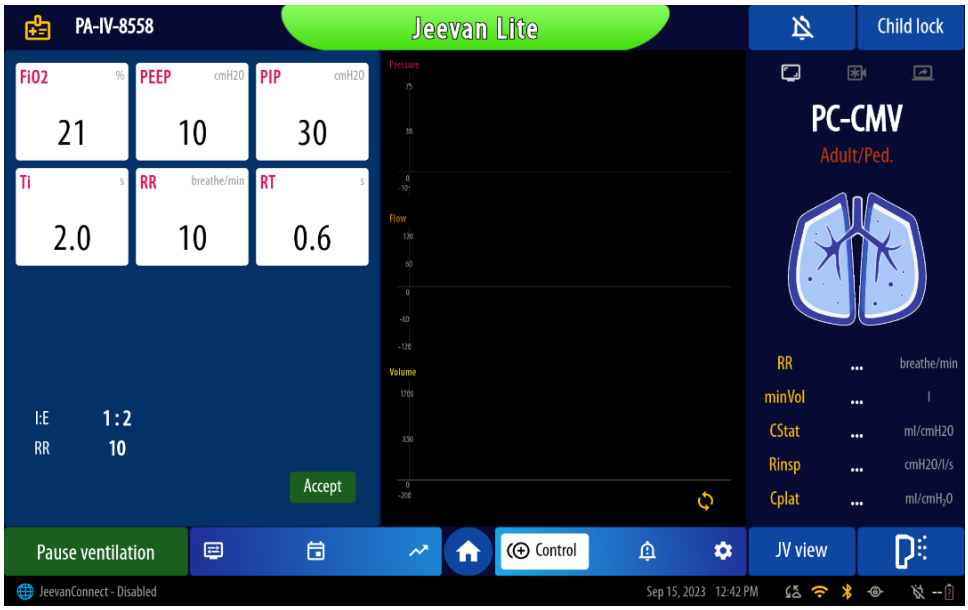
1. Touch the mode name in the main window (Refer 4.1). The modes window opens.
2. Touch the desired ventilation mode and touch accept. The Control window opens
3. Review and adjust the ventilation settings and touch accept

The mode and settings become active.

6.3 Reviewing and adjusting mode controls

To adjust settings

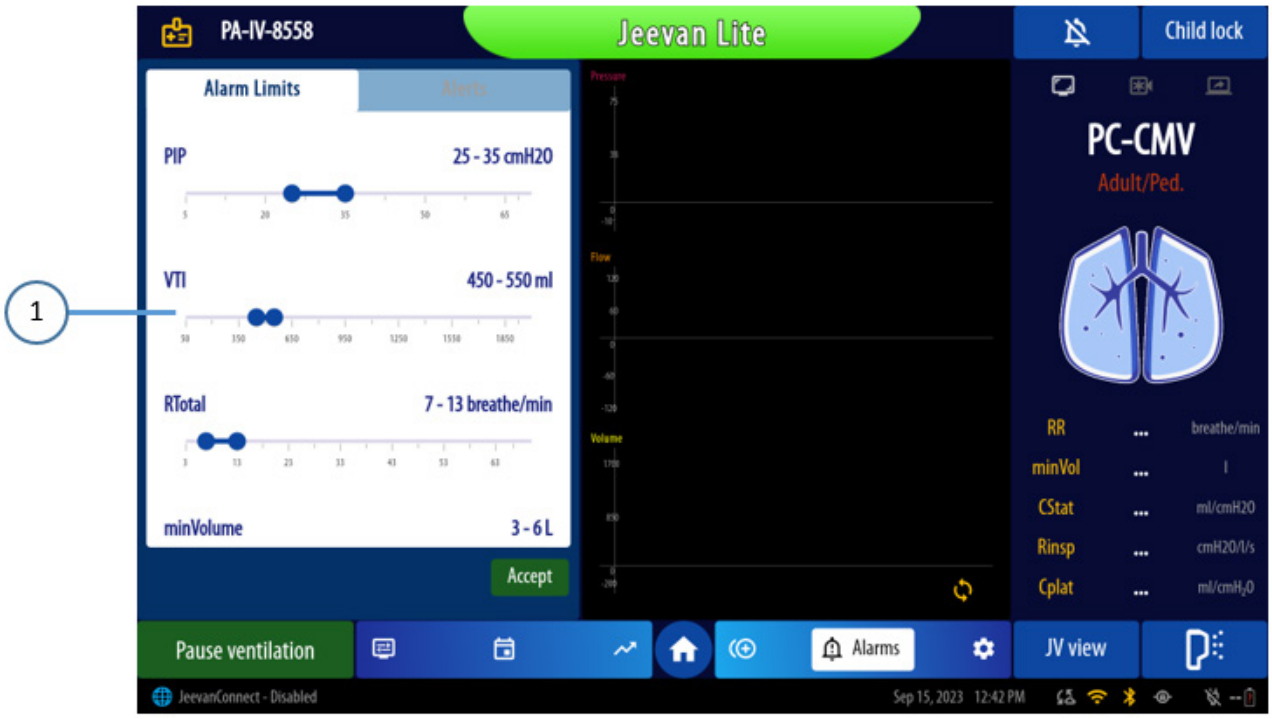
1. Touch the Controls button in the navigation bar
2. Adjust control settings as needed by clicking on the appropriate parameter and touch accept



In case of modes with backup ventilation, touch the backup ventilation button shown at the bottom of the control window. All changes will be applied in the immediate breath cycle.

Adjust controls at any time during ventilation. For details about control settings, see the ventilation Operator's manual.

6.4 Reviewing and adjusting alarm limits



1 **Alarm Parameter Range**. Set lower and upper alarm limits for the parameter.

To change alarm limits,

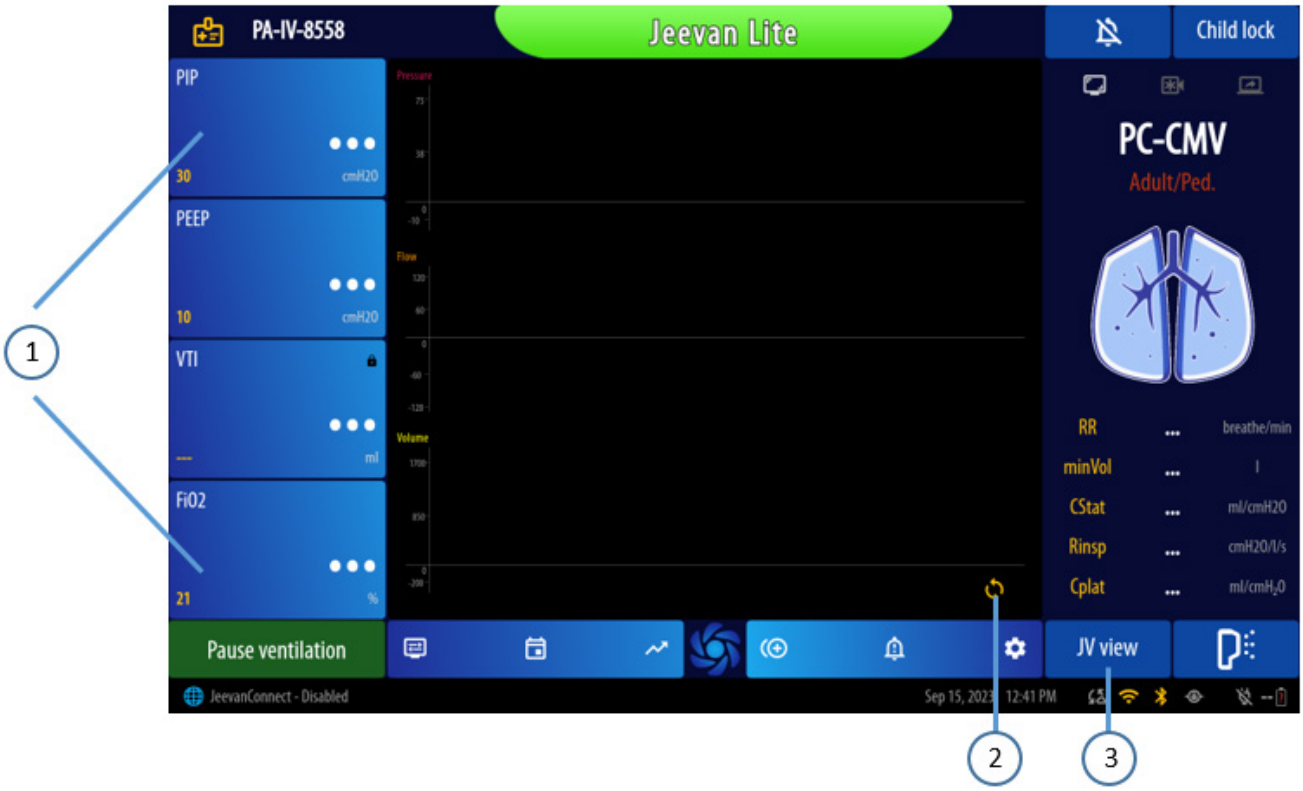
1. Touch the Alarms button in the navigation bar or touch the message bar on the top to open the alert parameter window
2. Adjust alarm limits as appropriate
3. Touch accept

Adjust alarm limits at any time during ventilation. For details about alarm settings, see the ventilator Operator's manual.

Note: Ventilator will automatically adjust the alert parameters with default intervals whenever the parameter is changed in the Control settings. See the ventilator Operator's manual for more details.

7. Monitoring the patient

7.1 Reviewing patient data



1 **Main monitoring parameters**. Main monitoring parameters (Not configurable)

2 **Graphic Display Toggle**. Toggles the graphic display between live (Pressure, Flow, Volume) graphs and loop (Pressure vs Volume, Volume vs Flow) graphs

3 **JV View**. Displays all derived and monitoring parameters

The main display provides an at-a-glance overview of the patient's data.

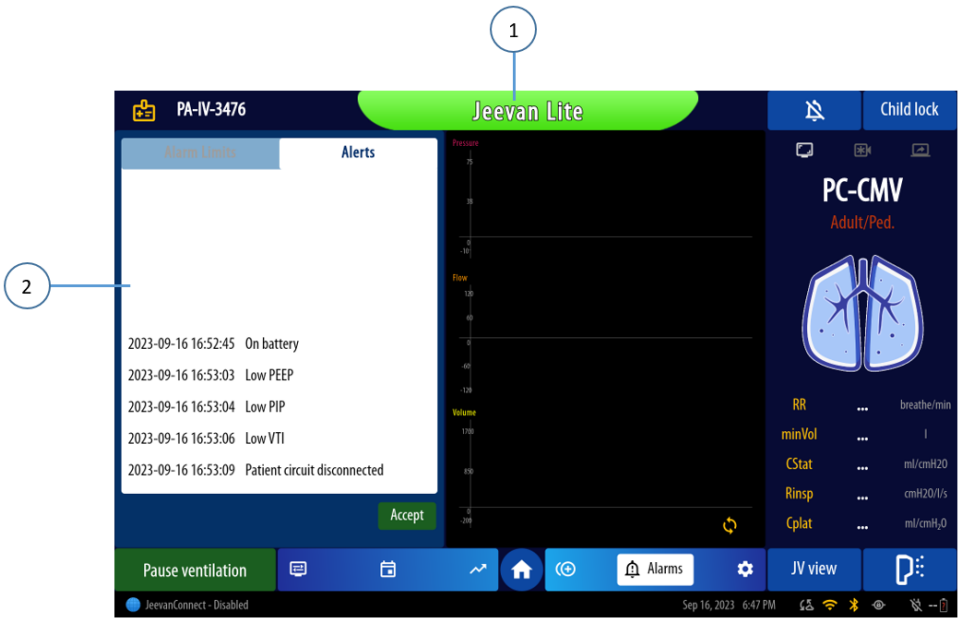
Main monitoring parameters

Graphic display – One or more waveforms, Dynamic lung (Opens JV View on click), Loops, Trend (Click the trend button in the navigation bar) and capture and record[5] ventilation screen using the Media bar.

Click on the patient ID to view patient's Ideal Body Weight and Ideal Tidal Volume. Long press the patient ID to view the patient case history.

[5] Recording feature is available only in selected models

7.2 Reviewing alarms



1 **Alarms Banner.** Displays alert label

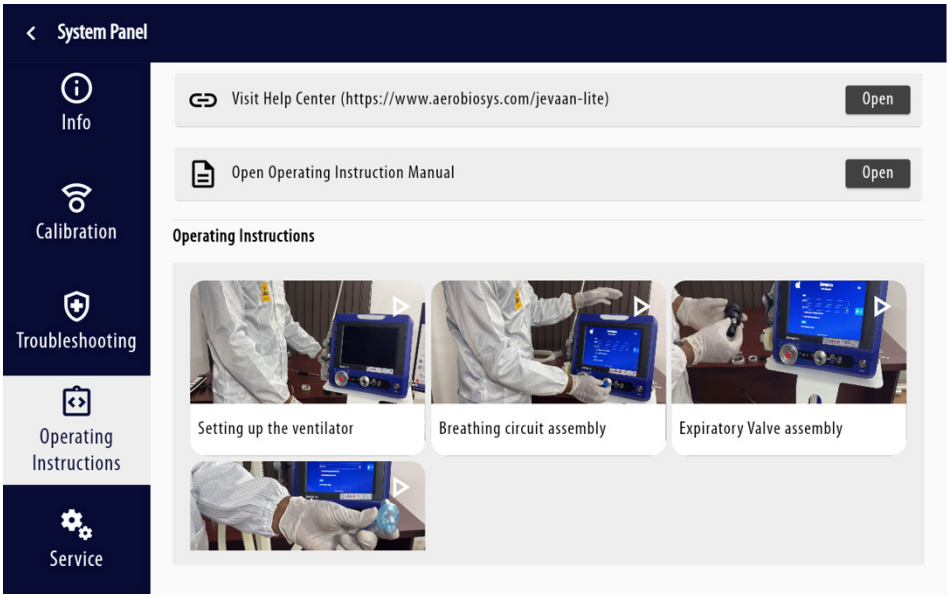
2 **Alerts History**. List of all alerts

To review alarms:

Do either of the following

1. Click the alarm banner on the top
2. Click Alarms in the navigation bar and go to Alerts in the Alarms window.

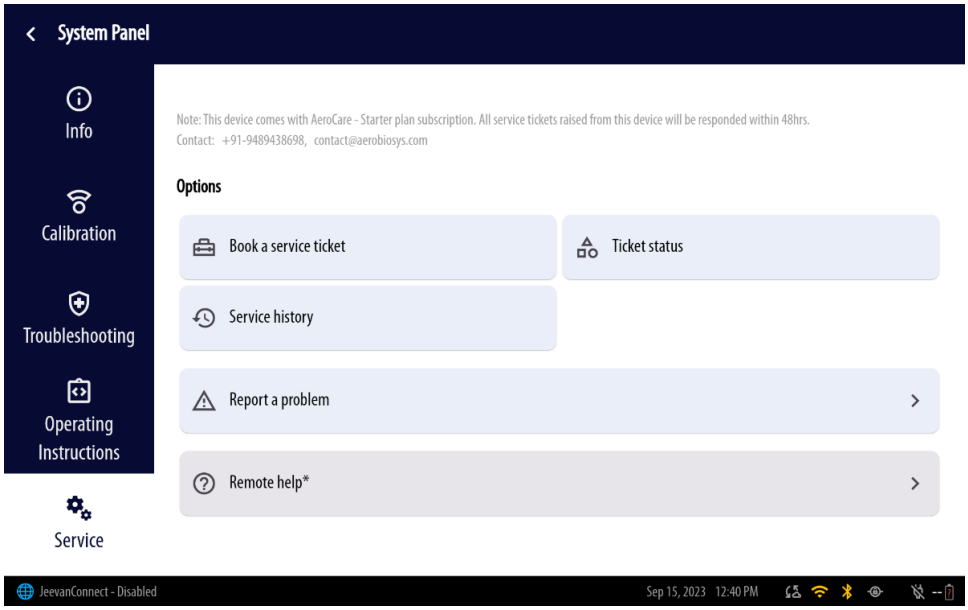
8. Operating instructions



For Operator's manual and Video tutorials, open Control panel > Operating instructions window.

9. Service requests

All service tickets raised from the devices will be responded with 48hrs.



All service related requests are handled in the ventilator's service page.

To book a service ticket,

1. Connect the ventilator to a Wi-Fi
2. Click on the Book a service ticket[6] button in Control Panel > Service window

Your ticket will be booked and you will receive a confirmation mail for the same. To view your current ticket status, touch Ticket status and to view your service history, click on Service History.

10. Navigation shortcuts & Icon states

Icons	Action
	Navigate back
	Wi-Fi
	BLE
	Device power/battery indication
	Device secure connection indication
	Jeevan Connect Connected/Disconnected with server

[6] Login is required to access all service features

11. Ventilation modes

Mode	Description
Volume-targeted modes	
VC-CMV	Volume controlled mandatory ventilation. Breaths are mandatory, volume controlled, variable flow, and time cycled.
VC-SIMV	Volume-controlled synchronized intermittent mandatory ventilation. Volume-targeted mandatory breaths can be alternated with pressure-supported spontaneous breaths.
Pressure-controlled and Pressure-support modes	
PC-CMV	Pressure controlled mandatory ventilation. Breaths are mandatory, pressure controlled, and time cycled.
PC-SIMV	Pressure-controlled synchronized intermittent mandatory ventilation. Mandatory breaths are pressure controlled. Mandatory breaths can be alternated with pressure-supported spontaneous breaths.
APRV	Airway pressure release ventilation. Spontaneous breaths can be continuously triggered. The pressure release between the levels contributes to ventilation. T high and T low settings determine the Rate.
PSV	Pressure support ventilation. Every breath is spontaneous and pressure-supported as long as the patient is breathing the trigger window. A backup rate can be set for mandatory breaths.
Non-invasive modes	
CPAP	Continuous Positive Airway Pressure ventilation. Every breath is spontaneous as long as the patient is breathing the trigger window. A backup rate can be set for mandatory breaths.
BiPAP	Bi-level Positive Airway Pressure ventilation. Mandatory breaths are pressure controlled. Spontaneous breaths can be triggered at both pressure levels. Rate and inspiratory time are set.
SPONT	Spontaneous mode. Every breath is spontaneous, with or without pressure-supported spontaneous breaths.

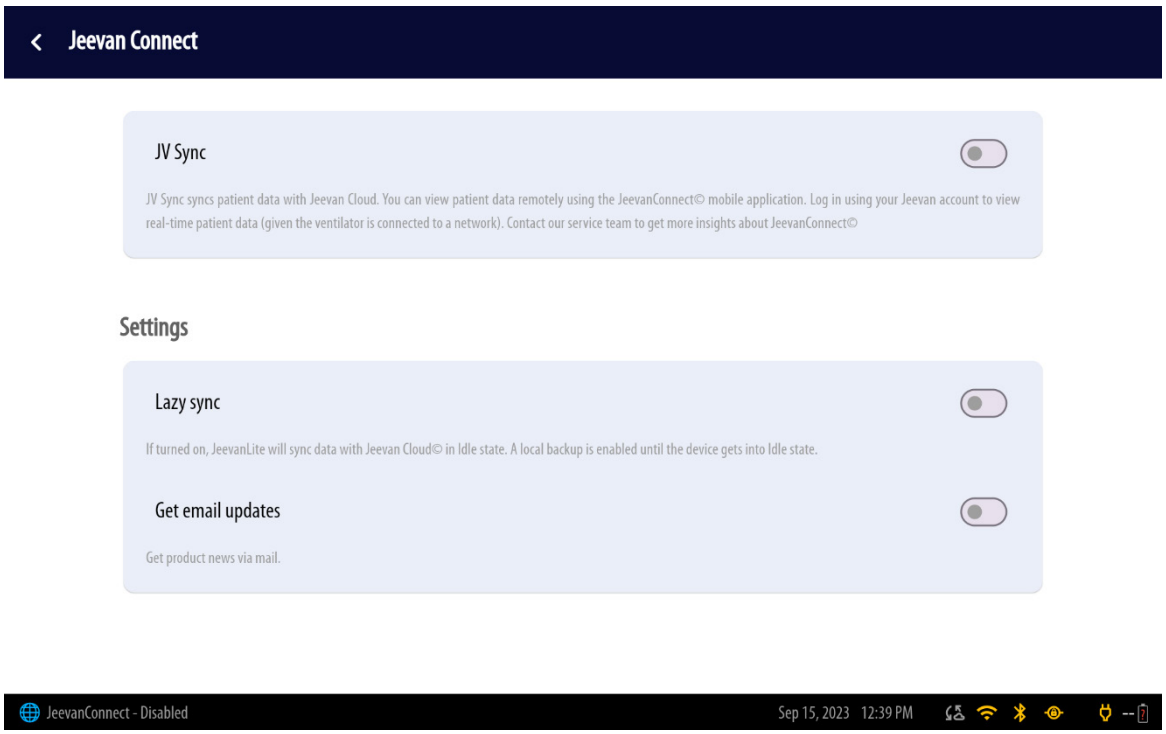
Additional information is available in ventilator Operator's manual

12. Monitoring Parameters

Parameter	Description
PIP	Peak Inspiratory Pressure. The highest pressure during the previous breath cycle. It is influenced by airway resistance and compliance. PIP may differ noticeably from alveolar pressure if airway resistance is high.
PEEP	Monitored PEEP/CPAP_ The airway pressure at the end of exhalation. Measured PEEP/CPAP may differ slightly from the set value, especially in spontaneously breathing patients.
Pplat	Plateau pressure. The pressure measured at the end of inspiration when flow is at or close to zero. Used as a rough representation of alveolar pressure.
MAP	Mean airway pressure. The absolute pressure, averaged over the breath cycle.
VTI	Inspiratory tidal volume, the volume delivered to the patient, determined from the flow sensor measurement
VTE	Expiratory tidal volume, the volume exhaled by the patient. If there is a gas leak on the patient side, the displayed VTE may be less than the tidal volume the patient actually receives.
Rinsp	Resistance to inspiratory flow caused by the endotracheal tube and the patients airway during inspiration.
Cstat	Static compliance of the respiratory system, including lung and chest wall compliances, calculated using the LSF method- Cstat can help diagnose changes in elastic characteristics of the patients lungs.
Cplat	Dynamic compliance of the respiratory system, calculated for every breath of the patient
RR	Breath frequency
I:E	Inspiratory:expiratory ratio. Ratio of the patient's inspiratory time to expiratory time for every breath cycle. This includes both mandatory and spontaneous breaths. I:E may differ from the set I:E ratio if the patient breathes spontaneously.
Ti	Inspiratory time. In mandatory breaths, Ti is measured from the start of breath delivery until the set time has elapsed for the switch to exhalation. In spontaneous breaths, Ti is measured from the patient trigger until the flow falls to the Trigger setting for the switch to exhalation. TI may differ from the set inspiratory time if the patient breathes spontaneously.
Te	Expiratory time. In mandatory breaths, Te is measured from the start of exhalation until the set time has elapsed for the switch to inspiration. In spontaneous breaths, Te is measured from the start of exhalation, as dictated by the Trigger setting, until the patient triggers the next inspiration. Te may differ from the set expiratory time if the patient breathes spontaneously.
minVol	Expiratory minute volume. The moving average of the monitored expiratory volume per minute over the last 8 breaths.
PIF	Peak inspiratory flow, spontaneous or mandatory. Measured every breath.
PEF	Peak expiratory flow

13. Jeevan Connect ©

Jeevan Connect[6] is the remote monitoring service for Jeevan series ventilators. Jeevan Connect provides live ventilation data from different devices. With a Jeevan account, you can access all cloud features and services of Jeevan series ventilators.



To enable Jeevan Connect,

1. Go to Jeevan Connect window, Control Panel > Info > Jeevan Connect
2. Enable JV Sync to sync ventilator with the Jeevan Cloud.

You can enable Lazy sync, which will sync device only when the device is Idle.

To use Jeevan Connect,

1. Download the Jeevan Connect application from our website: Aerobiosys-Website.
2. Create a Jeevan account. You will be given the default credentials along with the device. If not, please contact the distributor or service provider.
3. Login with your Jeevan account in the ventilator and enable JV Sync
4. Jeevan Connect will sync ventilator data and enable remote monitoring.

[6] Jeevan Connect is available on selective models. Contact our support team to get more details

Notes

Aerobiosys Innovations

Changing the way you receive healthcare.

Design & Manufactured by:

Aerobiosys Innovations Private Limited

No-619, C- Block, IIT Hyderabad, Kandi,

Medak, Telangana 502285

+919489438698

contact@aerobiosys.com

www.aerobiosys.com