RESPINA-P1 Quick Reference

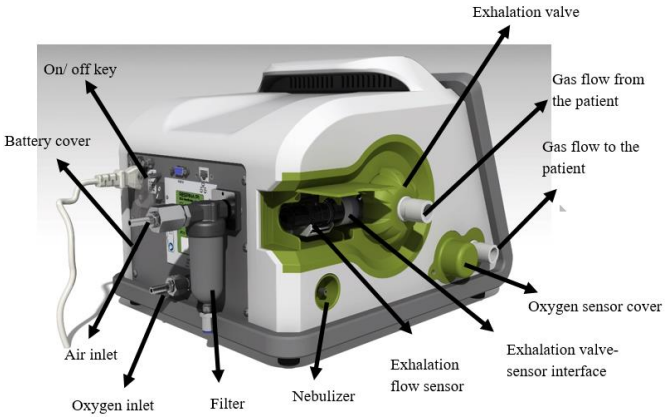
This is a quick reference from the device manual. It is necessary to read the manual of the device completely.

This document is only for professional users of the device who have already read the manual.

This device is intended for use for pediatrics and adults and is not designed for ventilating neonates.

Air and oxygen inlet connection

Connect the Air and Oxygen supply hoses to the corresponding inlets on the back of the device as shown.
If the hospital is equipped with central air, connect the central outlet to the compressor and the compressor outlet to the ventilator and turn on the compressor.
therefore, the compressor acts as an alternative source and will only enter the path if the central pressure drops.



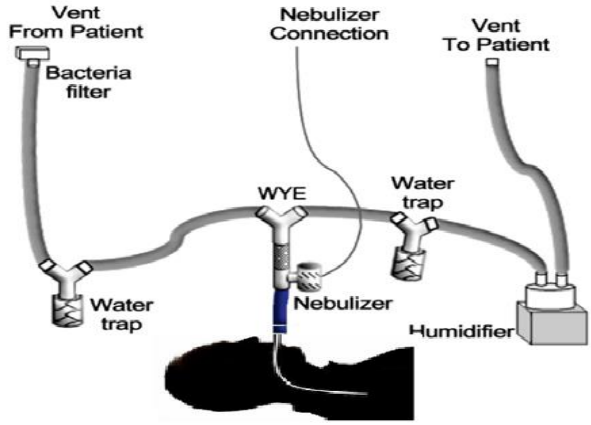
The main components of Respina-P1 ventilator

Installation of breathing tubes

Connect the breathing circuit to the patient and the device as shown.

If necessary, connect the humidifier and nebulizer correctly as shown.

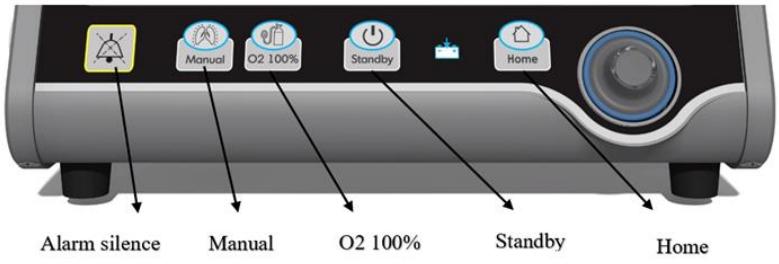
Using a nebulizer or humidifier can increase the resistance of airway filters. The user should check the airway filters constantly.



Patient breathing circuit

Front panel keys

Standby: If you want to stop ventilation, press the Standby button on the front panel and select the Standby option when the relevant window opens.



Front panel keys

O2 100%: Ventilation will be done with 100% oxygen and current settings for about 2 minutes.
Manual: Delivers one breath to patient in the current settings.
Alarm Silence: The alarm sounds off for 2 minutes, unless a new alarm triggers the alarm again during these 2 minutes.
Home: The menu that opens on the device closes.

Set up the device

Self-Test: Wait for the device to complete the Self-Test after turning on. If there is a problem at this stage, contact the company's after sales service.

Calibration

Before ventilating the patient, on the first page, by selecting the Calibration option opens a window in which the following tests can be used to calibrate the device. **Note that the patient must be disconnected from the device during calibration.**

In any of the following cases, if the device is still not calibrated by following the tips, contact the company's after sales service office.

- **SYSTEM TEST:** This test is performed to measure the possible leakage in the system and the compliance of the airways and should always be done before using the ventilator or after changing the patient's airway. If the fail message is observed, according to the type of message, the problem should be investigated and the device should not be connected to the patient until the problem is solved.
- **Exh Flow Sensor:** This test should be performed before using the ventilator each time the expiratory flow sensor is replaced or if the wrong expiratory volume is read by the sensor. If the test is not successful, the flow sensor must be replaced.
- **O2 Sensor Cal:** Oxygen sensor calibration should be done weekly before using the ventilator, after replacing the oxygen sensor, or after changing or changing the oxygen source concentration. A high-pressure source of oxygen is required to perform this calibration. If the test is not successful, the oxygen sensor must be replaced.

Patient Option

On the first page of the ventilator, by selecting the Patient Option, the patient characteristics can be adjusted. If you are using the device for a new patient, select the "New" and select the patient's height, gender and age group. In this case, IBW is displayed automatically. If the proposed IBW is not suitable, the user can change it manually.

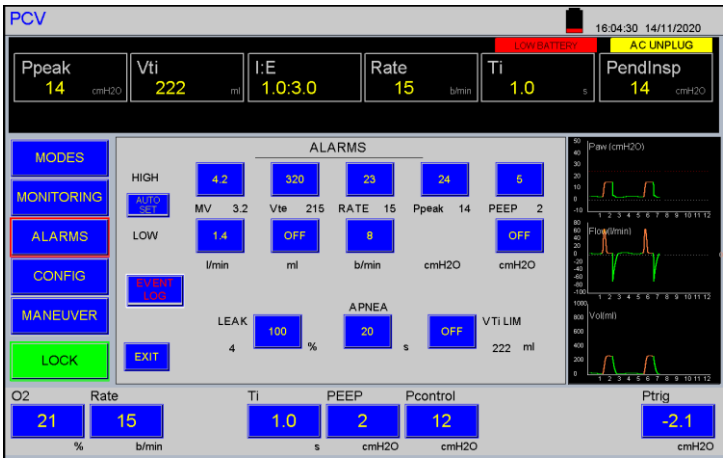
If you select the "PREVIOUS", the device will be set up with the previous settings.

Select respiratory mode and adjust setting parameters

Select the desired breathing mode from the Modes window, adjust the parameters of that window and click the Accept button at the end.

Adjusting the device alrms

Use the ALARMS menu to adjust the alarm ranges and save them after each change.



Alarm menu

By selecting a new patient, alarm ranges will be set as default.

Note that in Stanbd by mode, the sound of active alarms is deactivated and only visual alarms (alarm message and LED) are displayed.

The upper limit of the Ppeak alarm can only be adjusted manually.

Improper selection of the Ppeak and VTi Lim alarm range can interfere with the ventilation. To prevent this, the range of these two alarms should be adjusted according to the patient's condition and device settings.

The lower limits of PEEP and Vte alarms can be turned off.

The lower limit of MV alarm can only be turned off in non-invasive (NIV) breathing mode.

In case of some conditions, a number of alarms will be deactivated, the full description of which is given in the table below.

Situation	Deactivated alarm
Until 60 seconds after the start of inspiration and after the occurrence of 3 respiratory cycles	High PEEP
	Low PEEP
	High MV
	Low MV
	High Vte
	Low Vte
	High Rate
	Low Rate
	High Oxygen
	Low Oxygen
	High Leak
Until 45 secods after Inh/ Exh hold and suction maneuvers	Low PEEP
	Low MV
	Low Vte
	Low Rate
Until 15 seconds after increasing PEEP value by the user	Disconnection
During suction maneuver	Low PEEP
	Low MV
	Low Vte
	Low Rate
	Disconnection
	Apnea
During O2 100% maneuver and 60 seconds after that	High Oxygen
In case of failure, absence or inactivity of the exhalation flow sensor	High MV
	Low MV
	High Vte
	Low Vte
	High Leak
During disconnection alarm	Low PEEP
	Low MV
	Low Vte
	High Rate
	Low Rate
	High Leak
During occlusion alarm	Disconnection

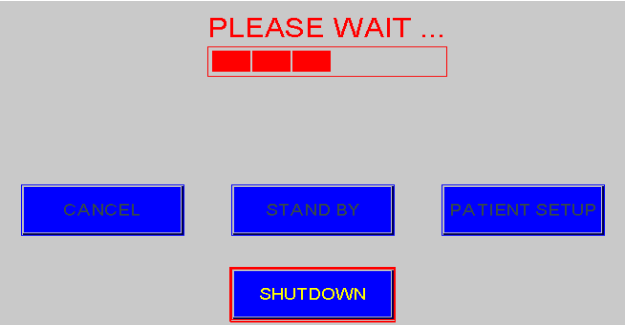
Maneuvers

To use the Suction Support, P0.1 / NIF, Insp.Hold, and Exp.Hold maneuvers while the system is running, tap MANEUVER and then select any of the maneuvers. You can also enable the Nebulizer from the Clinical setup in the Config menu.

Turning off the device

Select the Standby mode. Select the SHUTDOWN key on the Standby screen.

In this case, the message Pleas wait… is displayed and then the ventilator is turned off.



Shutting down the ventilator

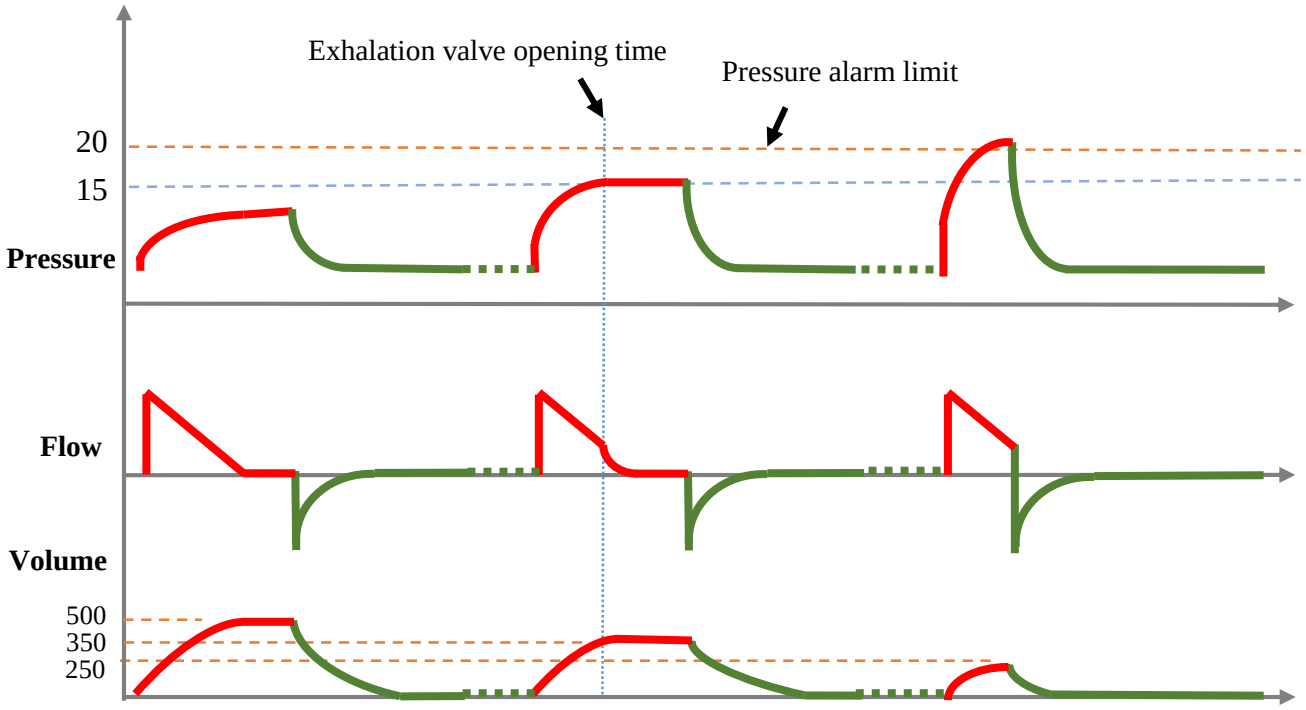
Cleaning, disinfecting and sterilizing the device

Follow the table below to clean, disinfect and sterilize the device.

Ventilator part	Single use	Cleaning	Disinfection	Sterilization
Display screen	-	Using water and soap	Using ethanol	-
Exterior surfaces, trolley and tubes holder	-		Using isopropyl alcohol	-
Air compressor				
Hoses and the components behind the ventilator	-		-	-
Exhalation valve	-		-	Using autoclave (at 121°C for 20 minutes)
Exhalation valve- flow sensor interface				
Exhalation flow sensor	-	According to manufacturer instructions		
Exhalation membrane	✓	-	-	-
Tubing system	✓	-	-	-
NIV mask	-	According to manufacturer instructions		
HME	✓	-	-	-
Nebulizer	✓	-	-	-
Humidifier	-	According to manufacturer instructions		
Humidifier temperature probe				
Humidifier chamber	✓	-	-	-
Exhalation filter	✓	-	-	-

Plim Reached Alarm

In volume based modes, if the airway pressure approaches the pressure alarm limit in three consecutive breath cycles but does not pass, the Plim Reached alarm will be activated.



Pressure, flow and volume curves in VCV mode

Example: In the figure above, the VCV mode is set to decelerating flow pattern, volume of Vt = 500 mL and pressure alarm limit of Palarm = 20 cmH2O. If the airway pressure approaches the alarm limit, the device will prevent the pressure from increasing, but the inhalation phase will continue. However, if the airway pressure exceeds the alarm limit for any reason, the inhalation phase ends immediately and enters the exhalation phase.

⚠ Note that if this alarm is activated, less volume may be delivered to the patient.

☞ Note: Airway pressure depends on factors like device settings, airway resistance and lung capacity.

⚠ Continued Plim alarm due to reduced delivery volume may cause harm to the patient.

Alarm troubleshooting	
Plim Reached	• Check the patient's condition and airway for occlusion. • Check the device settings and change the settings if necessary. • Check the pressure alarm limit and increase it if necessary.