Quick Start Guide

CORVENT™ MEDICAL

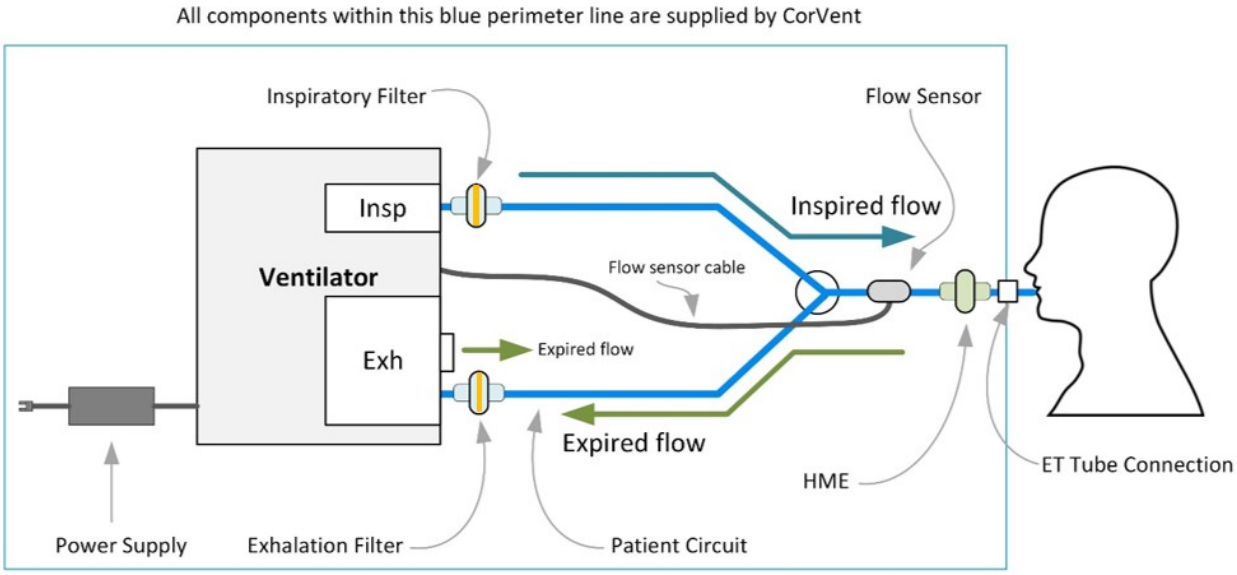
REF 3461-03-9001

1 Overview

The CorVent RESPOND 19 Ventilator comes out-of-the-box with all the required components to connect to patients 15mm ETT and begin ventilation.

These components are:

1. CorVent RESPOND 19 Ventilator
2. RESPOND 19 Patient Circuit (Filters, HME, Flow Sensor, Patient Tubing)
3. Flow Sensor Cable
4. 24V Universal Power Supply
5. Operator's Manual



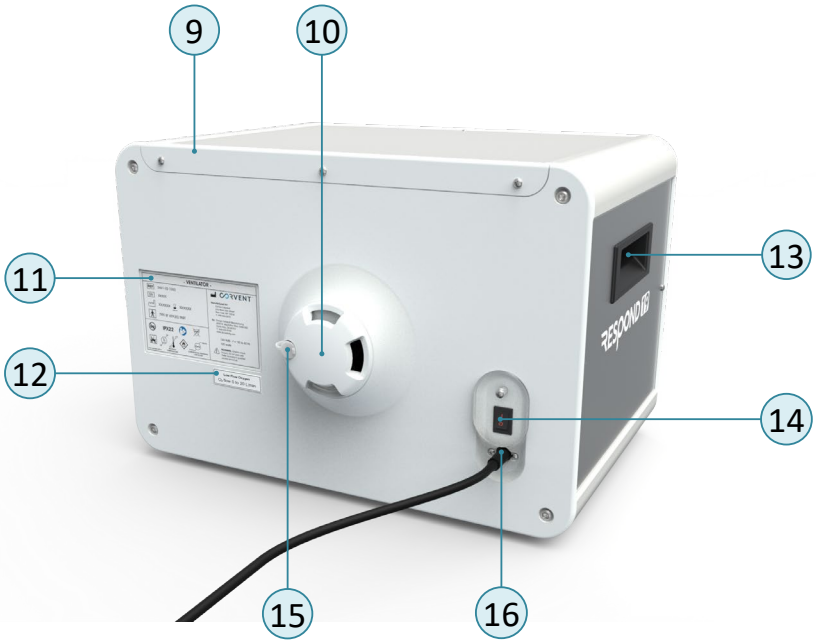
Refer to Operators Manual for proper patient delivered oxygen prescription setup

*Only use the provided components for patient support. If replacement required, consult the Operator's Manual for compatible respiratory circuit components.

CorVent RESPOND 19 Device Features

Front Panel Device Key

1. User Interface
2. Run/Standby Button
3. Display LCD
4. Flow Sensor Connection
5. Patient and Technical Alarms
6. Exhalation Port
7. From Patient Inlet Port
8. To Patient Outlet Port



Rear Panel Device Key

9. Ventilator Enclosure
10. Ventilator Air Inlet Port
11. Ventilator Label
12. Oxygen Flow Rate Label
13. Carrying Handles
14. Power On/Off Switch
15. Oxygen Inlet connection
16. Power Supply

2 Circuit Set-up

Patient Circuit Connection Steps

1. Connect **Proximal Patient Circuit Connections** (22mm Yellow Labeled Filters) into **"To Patient Port"** and the **"From Patient Port"**
2. Connect **Distal Patient Circuit Connection** (Blue Label HME) to **Patient 15mm ETT**
3. Connect **Flow Sensor Cable** into **Flow Sensor Connection Port**
4. Connect **Flow Sensor Cable** to **Flow Sensor** on Patient Circuit

Before Patient Circuit Connection **Properly Setup Patient Circuit Connection**

Firmly Press Patient Circuit into Ventilator Port Connections until Fully Seated

Firmly Press Flow Sensor Clip-On Connection until Auditory Click Heard

Before Flow Sensor Connections **Properly Setup Flow Sensor Connections**

3 Prescription Set-up

Before operating the CorVent RESPOND 19 Ventilator, refer to operator's manual for explanation of all breath types, settings, alarms, warnings, definitions and to ensure that the provided patient circuit is properly configured.

Device Setup

1. Plug the 24V Universal Power Supply into a UPS that is plugged into the uninterruptible backup hospital power system (orange plugs, non-switched).
2. Flip the Power Switch on the rear of the Ventilator from the O position to I.
3. The system will automatically default to Invasive Pressure Control Ventilation. In PCV, the user is displayed the following settings and monitored parameters. The user may manually scroll between screens with the left and right arrow keys at any time.

P	R	E	S	S	U	R	E		C	O	N	T	R	O	L			
P	I		X	X			P	E	E	P		X	X		c	m	H	2	0
T	I		X	.	X		s	e	c										
B	P	M		X	X				T	S		X	X		L	/	m	i	n

M	V	:	X	X	.	X	L	/	m	i	n		B	P	M	:	X	X
V	i	/	V	e	:		X	X	X	/	X	X	X		m	L		P	P
:	X	X		P	E	E	P	:	X	.	X		M	A	P	:	X	.	X
P	F	:	X	X		L	/	m			I	:	E		X	:	X	.	X

Displayed Settings and Monitored Values in Pressure Control Ventilation. *Definitions:* ***PI****= Inspiratory Pressure Target,* ***TI*** *= Inspiratory Time,* ***TS*** *= Trigger Sensitivity,* ***MV*** *= Minute Ventilation,* ***BPM*** *= Respiratory Rate,* ***Vi/Ve*** *= Inspired/Expired Volume,* ***PP*** *= Peak Pressure,* ***PEEP*** *= Positive End Expiratory Pressure,* ***MAP*** *= Mean Airway Pressure,* ***PF*** *= Peak Flow,* ***I:E*** *= Inspiratory/Expiratory Ratio*

4. Use setting keys to edit desired settings (Green LEDs illuminated to indicate those applicable in the current breath type). The settings will update upon user confirmation with the Enter (SEL) key or be reverted to previous with Cancel (X) key.
    I. Each setting when pressed will show a setting page with critical information
    II. The Up (+) and Down (-) arrow keys can be used to adjust the desired setting
    III. Each setting is updated upon confirmation (SEL key) and can be changed at anytime
5. If needed, alarm thresholds can be adjusted from their presets by pressing "Alarm Limits" and adjusting Up/Down (High Pressure, Low Inspiratory Pressure, Disconnect Limit, High Respiratory Rate Limit, Apnea, High/Low Exhaled Tidal Volume Limit, High/Low PEEP)
6. Depress Run/Standby Button for two seconds. This button will illuminate green when the system is in Run Mode and Ventilating the Patient.
7. To end Ventilation, depress the Run/Standby button for two seconds. The Request Ventilation Stop Alarm will annunciate while the Ventilator will continue to support the patient in Run Mode. Press the Alarm Pause key twice in quick succession to confirm ventilation shut down. This will place the Ventilator into the Standby Mode.

4 Troubleshooting

If the unit stalls for any reason, push the power button to restart the system.

Each alarm state will show a screen with possible solutions, create an auditory indication, and flash the alarm LED with a color corresponding to its priority. The Audio Pause and Alarm Reset keys are provided to temporarily mute or silence the audible & visual alarm.

H	I	G	H		P	R	E	S	S	U	R	E		A	L	A	R	M	
C	h	e	c	k		f	o	r		k	i	n	k	i	n	g			
I	n	c	r	e	a	s	e		I	n	s	p		T	i	m	e		
R	e	d	u	c	e		T	i	d	a	l		V	o	l	u	m	e	

Example: LCD Displayed Alarm Screen for High Pressure Alarm

Refer to Operators manual for complete troubleshooting instructions and alarm details.

Abbreviated Troubleshooting Table:

Indication	Meaning	Corrective Action
Ventilator does not operate – no patient ventilation	Missing or insufficient driving power supply	Check power source at plug
	Patient Circuit Disconnection	Reconnect Patient circuit
	Internal Malfunction	Notify CorVent Customer Service
Lower minute volume than desired	Leak in the Patient Circuit or Expiratory Valve	Replace patient circuit
	Obstruction of gas output	Check or replace patient circuit
	Use in hyperbaric condition	Ventilator should not be used in hyperbaric conditions
	Tidal volume control out of calibration	Notify CorVent Customer Service
	Internal malfunction	Notify CorVent Customer Service
Tidal volume inaccurate	Leak in the patient ET-Tube, breathing circuit, or expiratory valve	Check patient interface. Replace patient circuit if at fault
	Ventilator is operating at an altitude different then calibration	Tidal Volume should be measured by an external spirometer
	Tidal volume control out of calibration	Notify CorVent Customer Service
Respiratory Rate control inaccurate	Respiratory Rate control out of calibration	Notify CorVent Customer Service
Patient pressure too high	Tidal Volume set too high	Decrease Tidal Volume or Peak pressure setting
	Patient Response	ET-Tube may be occluded or patient may be biting tube
	Expiratory valve malfunctioning	Replace patient circuit
	Internal Malfunction	Notify CorVent Customer Service
Can't get the desired PEEP	Expiratory valve malfunctioning	Replace patient circuit
	Using a circuit not supplied by CorVent	Replace patient circuit
	Internal malfunction	Notify CorVent Customer Service
Ventilator using too much gas	Leak at Oxygen Source	Check hoses and tank regulator for leaks
	Internal leaks	Notify CorVent Customer Service
Alarm activated	High Inspiratory Pressure Alarm	Check patient circuit for occlusions, adjust peak pressure
	Low Inspiratory Pressure Alarm (Disconnect, Apnea)	Check oxygen supply and pressure/tidal volume settings. Check for leaks
	Total Loss of Power Alarm	Check power source at plug

5 Warnings

Device Usage
The CorVent Respond 19 Ventilator is intended to be used in institutional/hospital applications for invasive and noninvasive mechanical ventilation support. It requires a robust external monitoring system be in place inclusive of functionality and alarms required for monitoring critically ill and mechanically ventilated patients.

The RESPOND 19 Ventilator is NOT intended for multiplexing (supporting more than one patient at one time).

DO NOT use the ventilator at an altitude above 3000m or outside a temperature of 10 Deg C to 30 Deg C. Using the ventilator outside of this temperature range or above this altitude can compromise the ventilator performance which consequently can result in degradation of the health of the patient. The Ventilator has only been tested at sea level and degradations in performance may occur at higher altitudes.

Loss of Power
Upon loss of power the device will alarm and stop working. The Total Loss of Power alarm will annunciate for greater than two minutes or until the device is properly powered back on. There is NO internal backup battery. There should be continuous monitoring by qualified personnel and an alternative means of ventilation is recommended whenever the ventilator is in use. A UPS is required for use to provide up to 30 mins of backup power upon total loss of mains power supply.

When a UPS is connected, the Ventilator will NOT indicate when the UPS has switched from mains supply to backup battery supply. The user must rely upon the UPS alarms to understand the status of their mains supply and backup battery life using the audio and visual cues from the UPS. When the UPS battery is completely depleted, the Ventilator Total Loss of Power alarm will annunciate for >2 minutes.

Patient monitoring
Prior to placing a patient on the ventilator, a clinical assessment should be performed to determine:

- Needed alternative ventilation equipment
- Additional external monitors to be used (oximeter (SpO2), blood pressure).
- Recommended external monitors (Capnography)

CorVent recommends that all patients receive external monitoring and use the recommended external Oxygen monitor to enhance safety and efficacy of care.

Alternative Ventilation
For ventilator dependent patients, always have alternate ventilation equipment, such as a back-up ventilator, manual resuscitator, or similar device available. Ventilator dependent patients should be continuously monitored by qualified personnel. These personnel should be prepared to provide alternate therapy in the event of ventilator failure or inoperative equipment.

Oxygen

When using supplemental oxygen with this system, turn the device on before turning on the oxygen. Turn the oxygen off before turning the device off. This will prevent oxygen accumulation in the device. Explanation of the Warning: When the device is not in operation and the oxygen flow is left on, oxygen delivered into the tubing may accumulate within the device's enclosure. Oxygen accumulated in the device enclosure will create a risk of fire.

Read Before Using
CorVent RESPOND 19 Ventilator Operator's Manual

Viral bacteria filter
The device comes with a proprietary patient circuit, HME and viral bacterial filters – only replace with CorVent supplied parts. Operating this device with incompatible products could lead to fatal or other serious injury due to incompatibility.

The system MUST use both the inhalation and exhalation filters at all times to prevent contamination of the environment and the unit.

Alarm indicators
The high priority and medium priority alarms have the same auditory indication. These two alarm priorities are differentiated by visual indications. Red signals a high priority alarm and yellow signals a medium priority alarm. Please refer to the operators' manual for additional alarm information.

Humidification
An HME is provided in the patient circuit to provide for humidification. This may need to be replaced throughout patient support, refer to the User manual for compatible HME's.

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