



CARESCAPE™ R860 Ventilator

Quick Reference Guide





Notice

The materials contained in this document are intended for educational purposes only. This document does not establish specifications, operating procedures or maintenance methods for any of the products referenced. Always refer to the official written materials (labeling) provided with the product for specifications, operating procedures and maintenance requirements.

Contents

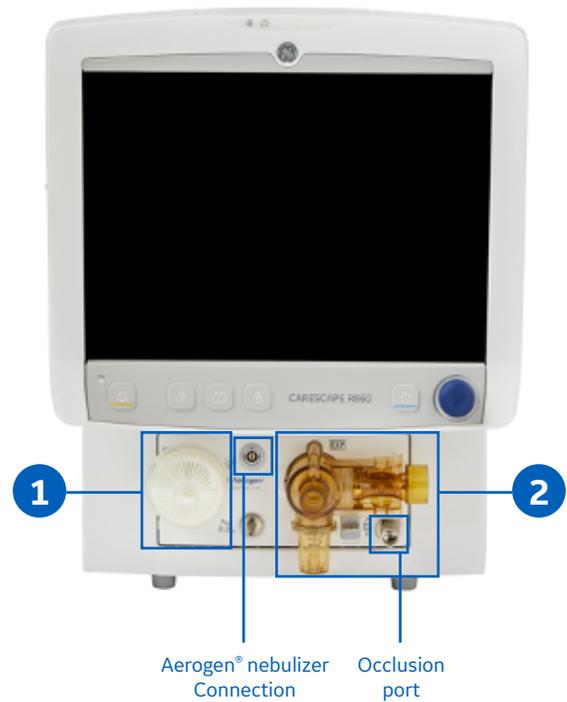
- Before Powering the System On..... 4
- Powering the System On 4
- Patient Setup 5
- System Check..... 6
- Setting a Ventilation and Backup Mode..... 7
- Starting Patient Ventilation 8
- Making Ventilator Changes When in an Active Mode..... 8
- Alarm Management..... 8
- Nebulizer 10
- Procedures..... 12
- Navigation 13
- To Review Patient Data..... 13
- To Review Patient Trends..... 14
- Pausing Ventilation..... 14
- Powering the System Off..... 15



Note! Always refer to the User Reference Manual before use. Refer to the User Reference Manual for information on all warnings and precautions.

Before Powering the System On

1. Connect the Inspiratory Safety Guard (ISG) to the inspiratory port.
2. Connect the Exhalation Valve Assembly (EVA) to the exhalation port.
3. Familiarize yourself with the hard keys on the display.
 - a. 2-minute audio pause
 - b. Increase O₂
 - c. Snapshot
 - d. Lock/Unlock
 - e. Home
 - f. Trim Knob
4. Attach the breathing circuit and all accessories that will be used to ventilate the patient.



Hard keys on the CARESCAPE R860 Ventilator display



Powering the System On

1. Connect the air and oxygen supply hoses to the gas supply source.
2. Plug power cord into an approved electrical outlet.
3. Press the power switch to turn on the ventilator.

Note:

- Wait 30 seconds to allow the system to power on.
- Listen for 2 distinctly different audio tones to make sure the primary speaker and backup buzzer are working properly.
- Watch and verify that the alarm light on the top of the display cycles through blue, yellow and red.



Patient Setup

1. Select **NEW PATIENT**.

2. Select **Adult**, **Pediatric** or **Neonatal** patient type.

Note: When selecting neonatal, a neonatal flow sensor is recommended for improved tidal volume delivery and monitoring.

3. Select **Patient ID** (Identification), if necessary, and enter 10 characters and select **Confirm**.

Note: Only English alpha-numeric characters may be entered.

4. Select **Gender** (male or female).

5. Select **Height**.

6. Select **Weight**.

7. Select **Tube Type** (Endotrach, Trach, or ---).

8. Select **Tube Diameter**.

9. Verify and confirm settings by pressing **Confirm**.



System Check

Circuit Setup

1. Select **CIRCUIT SETUP**.

2. Select check box for the **HME or Humidifier**.

Note: Settings are confirmed when the setting is changed.

3. Select **X** to close the menu.

Note: Use Circuit Setup to select settings that must be compensated for in the patient circuit measurements.



Running a System Check

1. From Standby, select **SYSTEM CHECK**.

Note: The Run System Check menu shows.

2. Attach the breathing circuit and all accessories that will be used to ventilate the patient.

Note: Complete the system check using the appropriate flow sensor per patient type. Use the neonatal flow sensor when completing a system check for a neonatal patient.

3. Occlude the patient wye using the occlusion port.

Note: The occlusion port sits below the exhalation valve assembly (EVA).

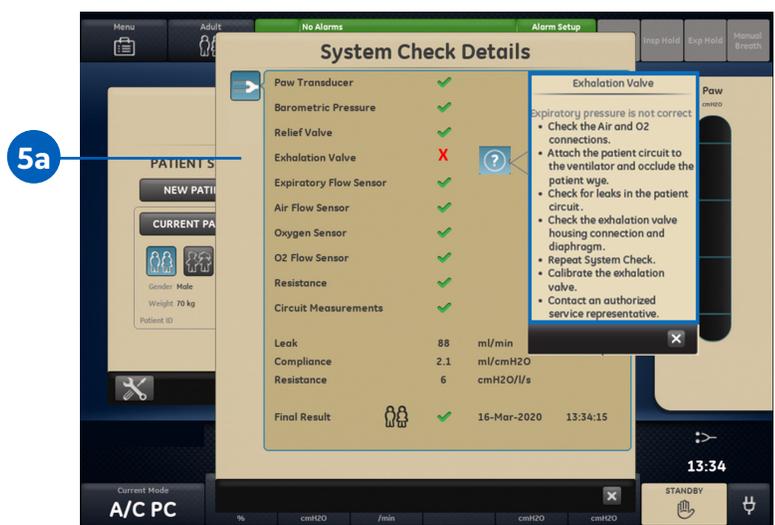
4. Select **Start**.

Note: When performing the resistance check, the wye-piece and the breathing accessories (D-lite+™ or Pedi-lite™ Sensor and HME) should remain on the occlusion port.

5. Select the information icon to see the System Check Details menu.

a. As the system check is running, the results of each check will be displayed.

Note: Follow all on-screen system check instructions. A green check mark will display if the check passes. If the check fails, a red X is shown, and a Help icon displays next to the failed check to provide possible causes and help for troubleshooting.



Setting a Ventilation and Backup Mode

1. Select **Current Mode**.
2. Select the desired ventilation mode.
 - a. Depending on the facility default setup for ventilation modes, the Mode Settings menu may contain 2 icons, a partial list and a full list.
3. Select **Assist Control**, **Leak Comp** or **Trigger Comp**, if desired.

Note: Assist Control is only available in the following ventilation modes: A/C VC, A/C PC, A/C PRVC.

4. Set the desired settings for the ventilation mode and confirm.

Note: When the ventilator settings are confirmed, the Mode Settings menu closes, and the selected ventilation modes show in Current Mode.

5. To set a Backup Mode, select **Current Mode**.
6. Select **Backup Settings**.
 - a. Set the desired settings for the backup mode and confirm.
7. Confirm all ventilation mode settings by pressing **Confirm Backup**.



Starting Patient Ventilation

1. From Standby, select **Start Ventilation**.
2. After ventilation has started, connect the breathing circuit to the patient.

Note:

- It is recommended that a system check is completed prior to starting ventilation.
- If the Start Ventilation button is yellow, the Complete System Check warning alert will display the following:
 - Select Continue to bypass System Checkout and start ventilation. Select Cancel to remain in Standby.



Making Ventilator Changes When in an Active Mode

1. Select the parameter to change using the ventilator quick keys.
2. Turn the **Trim Knob** to adjust the setting.
3. Press the **Trim Knob** or select the quick key to activate the change.

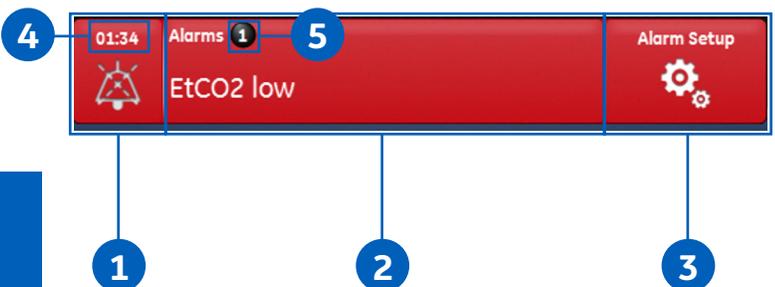


Alarm Management

Alarm Bar

Gives visual indication of parameter and technical alarms.

- If there are no current active alarms, the alarm status shows no alarms and the alarm bar is green.
- If there are active alarms, the alarm status shows the alarm message for the most recent alarm with the highest priority. The alarm bar color shows the priority of the alarm. The alarm list contains all of the active alarms, as well as previous alarms requiring user acknowledgment.
- If the alarm bar is grey, there are no active alarms, but a previous alarm requires user acknowledgment.



1. Audio Pause
2. Alarm Status
3. Alarm Setup
4. Audio Pause Timer
5. Active Alarm Count

Alarm Priority

Audio and visual indicators tell the priority of the alarm.

| Priority | Color | Light | Tone |
|---------------|--------|----------------|----------------------------|
| High | Red | Flashes red | Series of five tones twice |
| Medium | Yellow | Flashes yellow | Series of three tones |
| Informational | Blue | Solid blue | Single tone |

Alarm Setup

- Apnea Time:** Set apnea time up to 60 seconds.
- Alarm Light Brightness:** Set the brightness level of the alarm light. The range is 1 (Low) to 5 (High).
- Alarm Volume:** Set the alarm volume of the alarm tone. The range is 1 (Low) to 5 (High).
- High Alert Audio:** Set the delay time in which a high-priority alarm must be resolved before the audio tone pitch and volume increases to the maximum level. The range is 0 to 30 seconds or Off. A general message shows when High Alert Audio is set to Off.
- Alarm Limits:** Select the check box to show alarm limits adjacent to the measured data in the patient data workspace. The alarm limit always shows when an alarm occurs for the measured data, even if it is set to Off.
- Auto Limits:** Select to set auto alarm limits based on current measured data for:
 - MVexp-Low and High
 - VTexp-Low and High
 - Rate-Low and High
 - EtCO₂-Low and High
 - PEEPe-Low and High



To Adjust the Alarm Settings:

- Select either the Low or High alarm limit, and then use the **Trim Knob** to adjust the setting.
OR
- Select within the border of the active alarm on the measured data screen to open the Alarm Setup menu. If necessary, use the **Trim Knob** to adjust the setting for the alarm limit.

Note:

- Alarm setting changes that are not confirmed prior to the end of a timeout period are cancelled.
- Alarm Limits for EtCO₂, EtO₂ and PEEPi are only available when an airway module with these measurement capabilities is installed. If the patient type is Neonatal, these alarm limits are not shown.

Nebulizer

Warning

- Do not use a filter, heat-moisture exchanger or heat-moisture exchanger filter between the nebulizer and the patient airway.
- Use of a heat-moisture exchanger or nebulizer in the breathing circuit can substantially increase flow resistance when a nebulizer is active. Monitor the breathing system filter frequently for increased resistance and blockage.
- Use of an external pneumatic nebulizer may significantly impact volume delivery and monitoring, decrease trigger sensitivity, and cause alarms if external flow is introduced and Pneumatic Nebulizer Flow Compensation is not used.

Caution

- It is strongly recommended to use an expiratory filter when a nebulizer is used to help protect the expiratory flow sensor.

Nebulizer Treatment

The ventilator supports the Aerogen® Pro In-line Nebulizer and Aerogen® Solo Disposable In-line Nebulizer. The nebulizer time can be set for specific duration delivery times or for the volume of medication that will be delivered to the patient. A general message shows the nebulizer treatment time remaining.

1. Select **Menu**.
2. Select **Nebulizer**.
3. Select **Aerogen**.
4. Select **Time** or **Continuous**.

Note: Time and approximate volume of nebulized medication are shown in the table.

5. Select **Start**.

Note: To end nebulizer treatment before the set time, select **Stop**.

| Time (min) | 7 | 8 | 11 | 16 | 21 | 26 | 32 |
|-------------|-----|-----|-----|-----|-----|------|------|
| Volume (ml) | 2.5 | 3.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.0 |



Warning

- Do not use a filter, heat-moisture exchanger or heat-moisture exchanger filter between the nebulizer and the patient airway.
- Use of a heat-moisture exchanger or nebulizer in the breathing circuit can substantially increase flow resistance when a nebulizer is active. Monitor the breathing system filter frequently for increased resistance and blockage.
- Use of an external pneumatic nebulizer may significantly impact volume delivery and monitoring, decrease trigger sensitivity, and cause alarms if external flow is introduced and Pneumatic Nebulizer Flow Compensation is not used.

Pneumatic Nebulizer

The ventilator can compensate for additional flow introduced by a pneumatic nebulizer into the patient circuit.

WARNING! Use of an external pneumatic nebulizer may significantly modify the mixture of gas that is delivered to the patient.

- Using external pneumatic nebulization may significantly impact volume delivery and monitoring, decrease trigger sensitivity and cause alarms if external flow is introduced and Pneumatic Nebulizer Flow Compensation is not used.
- When the Pneumatic Nebulizer Flow Compensation is On, flow and volume accuracy may be decreased.
- Leaks and flow sensor alarms may not be identified by the ventilator when Pneumatic Nebulizer Flow Compensation is On.

1. Select **Menu**.
2. Select **Nebulizer**.
3. Select **Pneumatic**.
4. Select **Flow value**.

Note: Set the flow to match the amount of flow that will be introduced to the circuit.

5. Select **Start**.

Note: A general message shows when Nebulizer Flow Compensation is On. To end the nebulizer treatment, turn the pneumatic nebulizer flow source off, then select **Stop**.

6. Introduce the pneumatic nebulizer into the patient circuit.

Note: For best results, introduce the pneumatic nebulizer into the circuit within approximately 15 seconds after selecting **Start**.



Procedures

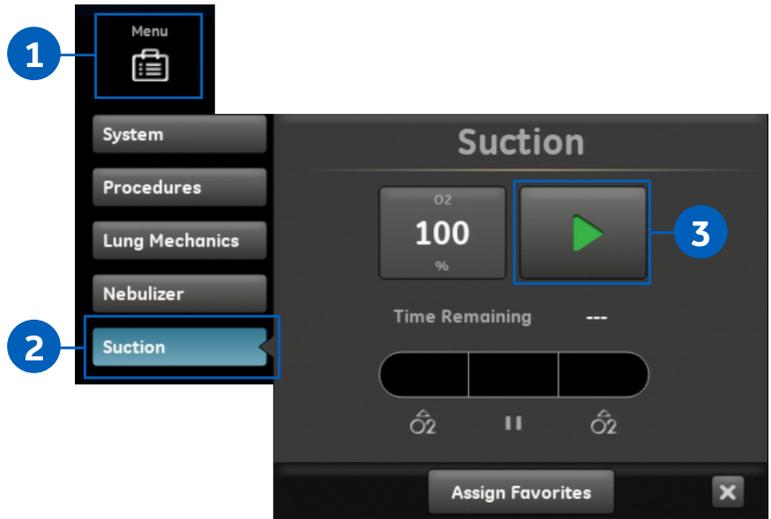
Suction

Any ventilation mode may be used with a closed suction catheter. Patient disconnected, RR low, MVexp low, Vtexp low, Apnea and other alarms may occur during use of a closed suction catheter.

To perform a suctioning without nuisance alarms, an open suction procedure is provided by the ventilator:

1. Select **Menu**.
2. Select **Suction**.
3. Select **Start**.
4. Wait for the pre-oxygenation phase, and then disconnect the patient at the wye. An audible tone sounds to indicate the patient is disconnected and ventilation is paused.
5. Suction the patient.
6. Reconnect the patient to resume ventilation.

Note: The suction procedure will end after the oxygenation phase completes if **Stop** is selected.



Performing an Increase O₂ Procedure

1. Select **Menu**.
2. Select **Procedures**.
3. Select **Increase O₂** or press the **Increase O₂** hard key.
4. Use the factory default setting for the Increase O₂% (note: factory default setting for neonatal is +25% and +100% for adults and pediatric patients) or adjust the O₂% to the desired concentration and confirm the setting.
5. Select **Start**.

Note: The oxygen general message shows along with the progress bar and a 2-minute countdown timer. The procedure will end when a.) the time has elapsed or b.) when **Stop** is selected or c.) when the **Increase O₂** favorite is selected or d.) when the **Increase O₂** hard key is pressed.



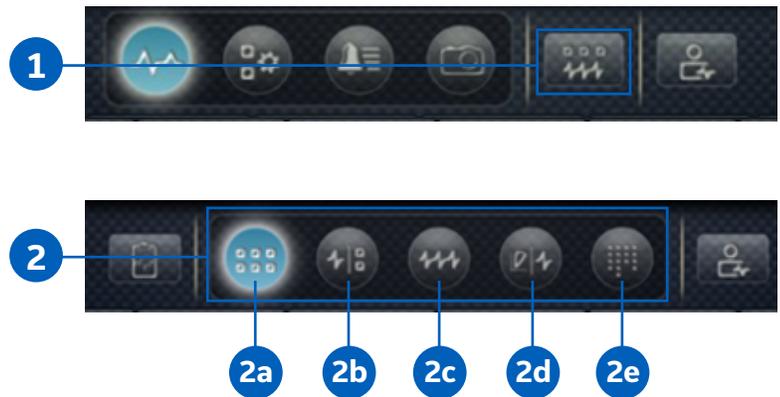
Navigation

1. Past/Historical Trends Workspace.
2. Present/Patient Status Workspace.
3. Future/Clinical Decision Support Workspace.



To Review Patient Data:

1. Touch the icon to display the Present/Patient Status Workspace or swipe to the right or left to move from the Past and Future workspaces.
2. From the Present/Patient Status Workspace, choose any option below:
 - a. **Basic View:** Use this view to see measured data in a large format that can be easily viewed from a distance.
 - b. **Basic Waveform View:** Use this view to see patient waveforms and measured data.
 - c. **Advanced Waveform View:** Use this view to see additional measured data associated with the patient waveforms.
 - d. **Splitscreen View:** Use this view to see spirometry, measured data, and waveforms. Select the upper right corner of the spirometry waveform to change settings.
 - e. **Charting View:** Use this view to see a complete list of patient data.



To Review Patient Trends:

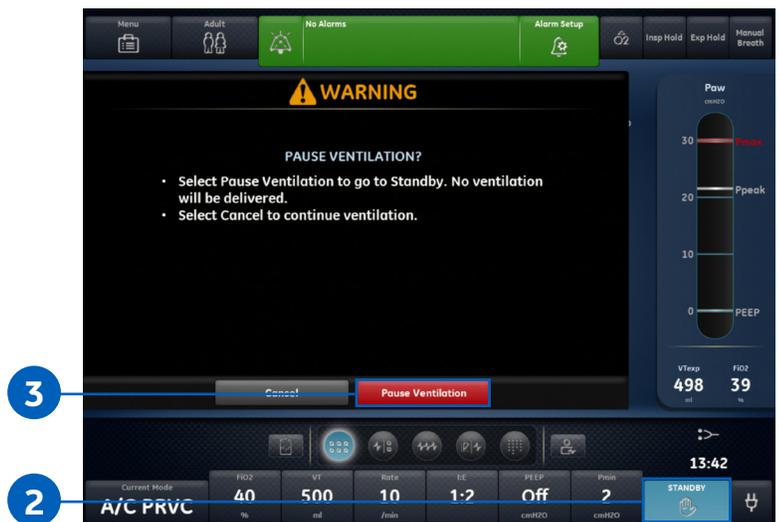
1. Touch the icon to display the Past/Historical Trends Workspace or swipe to the right to move from the Present/Patient Status Workspace.
2. From the Past/Historical Trends Workspace, choose any option below:
 - a. **Graphical Trends View:** Use this view to review historical waveforms and patient trends.
 - b. **Numerical Trends View:** Use this view to review patient ventilation modes and setting, measured data, and alarm settings.
 - c. **Trends Log View:** Use this view to review patient alarms and settings, and events that have occurred during ventilation.
 - d. **Snapshot Trends View:** Use this view to save patient data.



Pausing Ventilation

1. Disconnect the patient from the breathing circuit.
2. Select **Standby**.
3. Select **Pause Ventilation**.

Note: Select **Pause Ventilation** to go into Standby. Ventilation and monitoring will be stopped. Select **Cancel** to continue ventilation if a warning message is displayed.



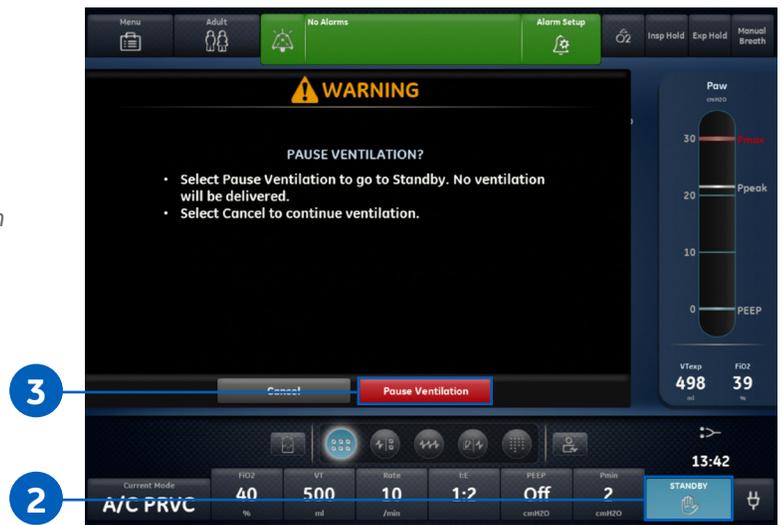
Powering the System Off

1. Disconnect the patient from the breathing circuit.
2. Select **Standby**.
3. Select **Pause Ventilation**.

Note: Select **Pause Ventilation** to go into Standby. Ventilation and monitoring will be stopped. Select **Cancel** to continue ventilation if a warning message is displayed.

4. Press the power switch on the back of the ventilator to the Off position.

Note: If the ventilator is turned off during ventilation, an alarm sounds, and ventilation and monitoring continue. This ensures the ventilator cannot be accidentally shut off during ventilation.





Product may not be available in all countries and regions. Full product technical specifications are available upon request. Contact a GE Healthcare Representative for more information. Please visit www.gehealthcare.com.

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