

NICO₂[®]

The world's only integrated
Respiratory Profile Monitor.



Breathing In BalanceSM
through Total Ventilation SolutionsSM

Ventilation management

Now with the NICO₂[®] Respiratory Management System, you can:

- Optimize ventilation with patient monitoring.
- Quickly identify when a patient is retaining CO₂ through breath-by-breath volumetric CO₂ measurement.
- Monitor effective cardiopulmonary performance.
- Take the guesswork out of fluid management by accurate measurement of cardiac output with the NICO₂ Cardiac Output Optional Upgrade.

Until now, ventilation management has been educated guesswork

The NICO₂ System offers a different approach using physiologic feedback from your patient:

- Allows quick ventilator setup.
- Quickly identifies patient responses to ventilator changes.
- Helps optimize ventilator settings to accelerate the weaning process and reduce hospital costs.

With the NICO₂ Monitor, guesswork, extra costs, and patient risk are all reduced. That's why the NICO₂ Respiratory Profile Monitor is fast becoming the standard of care in the ICU today.



Ventilation without compromising cardiac performance

- Mechanical ventilation can compromise cardiac performance by increasing intrathoracic pressure.
- The optional NICO₂ CO package measures Cardiac Output, Stroke Volume, and SVR, allowing ICU professionals to know when a patient's heart is under stress.
- The NICO₂ Monitor allows optimization of ventilation without compromising cardiac performance.

NICO₂® System takes the guesswork out of ventilation management

Why do clinicians need the NICO₂ Respiratory Profile Monitor?
Because true ventilation management is about patient response to ventilator settings.

Many ventilators monitor the machine side of the breathing circuit. NICO₂ monitors the patient side.

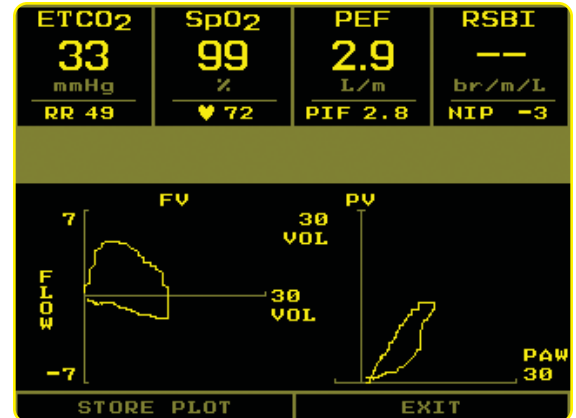
Breath-by-breath Volumetric CO₂, a revolutionary breakthrough in ventilation management.

The NICO₂ Monitor goes beyond conventional capnography to measure breath-by-breath volumetric CO₂, a revolutionary breakthrough in ventilator management. It provides you with faster patient feedback when it really counts.

From setup to weaning.

The NICO₂ System is a valuable tool during the entire ventilation process:

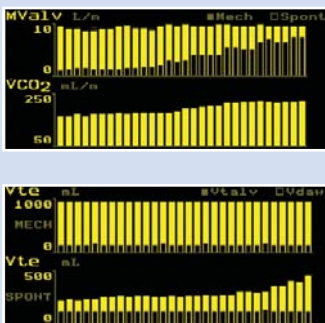
- Setup
- Monitoring
- Weaning



SETUP. Quick verification of appropriate ventilator settings.

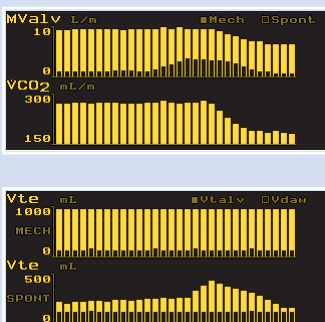


Successful Weaning Trial

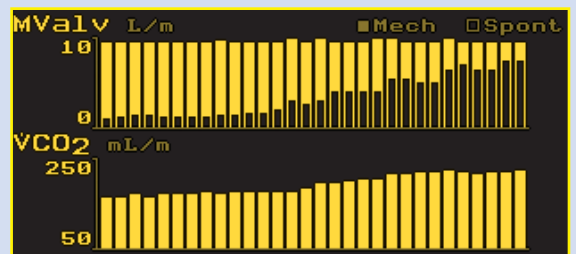


This patient is weaning well as evidenced by: stable CO₂ elimination ($\dot{V}CO_2$), increasing spontaneous exhaled Tidal Volume (V_{te}), and stable Alveolar Minute Ventilation (MV_{alv}). As ventilator support is decreased during the weaning process, the patient's cost of breathing can increase, resulting in an increase of $\dot{V}CO_2$.

Unsuccessful Weaning Trial



This patient showed an initial increase in spontaneous V_{te} . However, he was soon fatigued and MV_{alv} , $\dot{V}CO_2$ and spontaneous V_{te} all decreased. In this 30-minute trend graph, each yellow bar represents a one minute average of the data. Therefore, within minutes the clinician is alerted to the patient's inability to assume the work of breathing.



MONITORING. Patient responses to ventilator changes.

The NICO₂ Monitor provides:

$\dot{V}CO_2$: Measurement of CO₂ elimination breath-by-breath

V_d/V_t : Pulmonary deadspace measurement

MV_{alv} : Alveolar ventilation

NICO₂[®] System – an invaluable tool in the OR

Why do OR professionals need the NICO₂ System? Because the NICO₂ Respiratory Profile Monitor is an invaluable tool in the OR for virtually all procedures – from a simple appendectomy to the most complex heart transplant. With the NICO₂ System, you can monitor over forty variables for cardiorespiratory assessment, including:

- Cardiac output
- Cardiac index
- Stroke volume
- Pulmonary capillary blood flow (PCBF)

Until now, you've been unable to measure cardiac performance in most of your surgical patients because of the hazards and risks of PA catheters.

Because the NICO₂ Monitor is noninvasive and easy-to-use, you can monitor cardiac performance and diagnose hemodynamic instability in your patients.



NICO₂ and the Fick Principle.

The NICO₂ System uses partial CO₂ rebreathing, based on the well-known and accepted Fick Principle.

With this method, the cardiac output is based on breath-by-breath measurements of CO₂ elimination using our proprietary NICO Sensor.

By measuring PCBF, the NICO₂ Monitor measures “effective cardiac output.”

By monitoring PCBF through respiratory gas analysis, the NICO₂ Monitor measures how effectively the heart and lungs are functioning together.

This measurement can be considered “effective cardiac output” and it can be a valuable asset in the OR.

You don't have to fly blind managing refractory hypotension.

How do you differentiate loss of vascular tone from volume depletion when diagnosing hypotension? Are you flying blind deciding between vasoconstrictors and volume replacement to treat hypotension?

Making the wrong choice can have serious consequences. But now you don't have to guess. Thanks to the NICO₂ Respiratory Profile Monitor, you have the hard data you need to make the right decision.

The more you know the flow, the more peace of mind you'll have.

Standard of Care

The NICO₂ System is a revolutionary product that replaces guesswork with comprehensive and accurate information about a patient's cardiorespiratory condition.

Esprit[®] and NICO₂[®] – a powerful combination

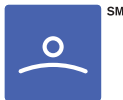
By combining the Esprit Critical Care Ventilator with the NICO₂ Respiratory Profile Monitor, you get a complete, noninvasive cardiorespiratory care package. Now you can eliminate guesswork by quickly identifying patient responses to ventilator changes.

With Esprit and NICO₂, mechanical ventilation time and costs may be reduced and patient outcomes may be improved, making NICO₂ and Esprit your cardiorespiratory solution.

By combining the unique monitoring capabilities of the NICO₂ System with the performance and simplicity of the Esprit Ventilator, cardiorespiratory care can become less invasive and more precise than ever before.



Respironics offers a wide range of Power Programs™ for Managing Diseases to help patients take control of their lives.



SLEEP
MANAGEMENT



CHRONIC RESPIRATORY
MANAGEMENT



TOTAL VENTILATION
SOLUTIONS



RESPIRATORY
DRUG DELIVERY



NEONATAL &
INFANT CARE

Respironics, Inc. and the Respironics Critical Care

Respironics is a leading global developer, manufacturer and distributor of innovative products and programs that serve the sleep and respiratory markets. We are dedicated to enhancing outcomes for patients, clinicians and providers. With customers in more than 125 countries, we provide healthcare professionals everywhere with access to the solutions they need to help improve outcomes and quality of life at all points of care.

Respironics Critical Care is dedicated to enhancing respiratory care in pre-hospital, hospital, long term acute care (LTAC) and home settings. From invasive and noninvasive ventilators, patient interface products and monitors to clinical protocol pathways, training programs and technical support – we represent a comprehensive resource with applications across the entire care continuum. Ultimately, our goal is to optimize ventilation management and accelerate the recovery process for shortened hospital stays. That's why our Breathing In Balance approach helps facilitate:

- Enhanced outcomes;
- Greater patient comfort;
- Increased quality of clinician data;
- Reduced risks; and
- Lower costs.



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CAUTION: U.S. Federal law restricts these devices to sale by or on the order of a physician.