**Ventilation**
Product Catalogue

COVIDIEN

# Contents

# Puritan Bennett 840 ventilation systems

| Puritan Bennett 840<br>Customizable Ventilator<br>Available options | Upgrades Kits | Puritan Bennett 840+<br>High acuity Ventilator<br>All features included |
|---|---|---|
| Trends | The 840 ventilator system is a fully upgradable platform Your system can be equipped with all current and future software and hardware Upgrade Kits to transform it into a Puritan Bennett 840+ ventilator | PAV™*+ |
| RM* | | Trends |
| VV+* | | RM |
| Bi-Level | | VV+ |
| TC* | | Bi-Level |
| NeoMode | | TC |

\* RM = Respiratory Mechanics
  VV = Volume Ventilation
  TC = Tube Compensation

# Puritan Bennett 840 Ventilator System

Innovative technology, breathtaking performance

The Puritan Bennett 840 Ventilator System offers you tailored solutions from the Puritan Bennett 840 ventilator to the Puritan Bennett 840 Plus, which includes the latest advance in ventilation modes, PAV+ software. Sharing the same pneumatic platform, the Puritan Bennett 840 and 840 Plus ventilator systems are highly responsive and offer superior comfort, delivering sensitive, precise breaths to critically ill neonatal through adult patients.

Covidien offers one of the most comprehensive field service programs in the ventilator industry, providing the highest quality service to customers.

## Technological Sophistication

The Puritan Bennett 840 ventilator system offers high-performance pneumatics, dual microprocessor electronics and DuaIView™ touchscreens.

## Upgradable

The Puritan Bennett 840 ventilator system can be upgraded and customized to meet your clinical needs, today and in the future.

## Low Cost of Ownership

The Puritan Bennett 840 ventilator system is designed with rugged and reliable components. Its modular design provides easy serviceability.

## Proportional Assist Ventilation (PAV+) software

The revolutionary PAV+ software gives clinicians a new method of tackling the issue of patient-ventilator synchrony and work of breathing for patients being weaned from ventilation.

# Puritan Bennett 840+ Platform

| Puritan Bennett 840+<br>High acuity Ventilator |
|:---:|
| NIV |
| PAV+ |
| Trends |
| RM |
| VV+ |
| Bi-Level |
| TC |

# Puritan Bennett 840+ Ventilation With A Plus

The Puritan Bennett 840+ ventilator is an advanced full featured ventilator, including the revolutionary spontaneous mode Proportional Assist Ventilation Plus.

Compact and lightweight, it delivers sensitive, precise breaths to critically ill infant, paediatric and adult patients in invasive or non invasive modes. With its high-performance pneumatics and dual-microprocessor electronics, the Puritan Bennett 840 platform will accommodate technology updates well into the 21st century.

The Puritan Bennett 840+ ventilator system offers a new and comprehensive ventilation and monitoring package with emphasis on patient comfort and safety as well as caregiver peace of mind.
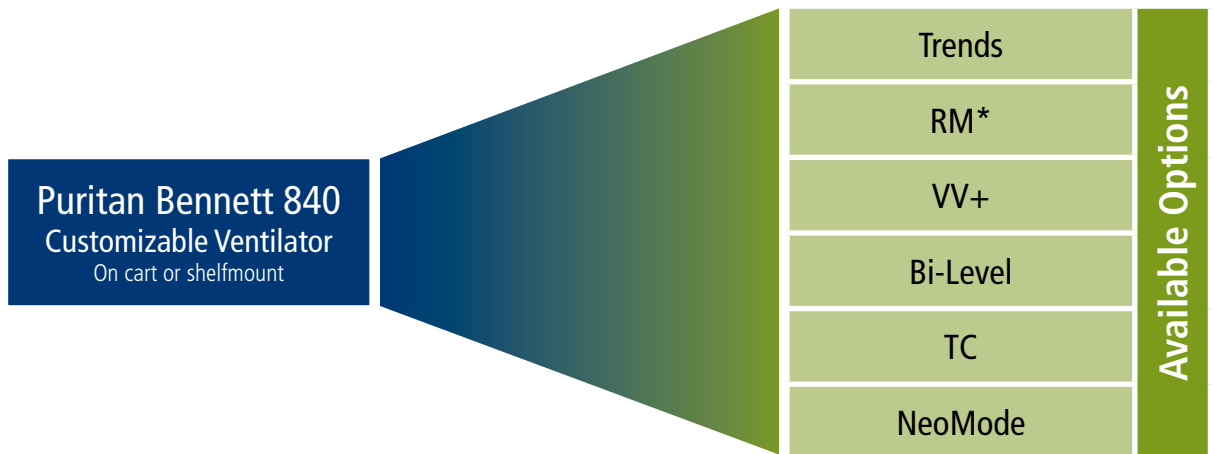
## The 840+ uniquely features PAV+ software:

Proportional Assist Ventilation Plus is an innovative, advanced ventilation mode. PAV+ automatically amplifies the patient's own spontaneous effort to breathe by increasing airway pressure during inspiration proportionally to a set amplification factor. A sophisticated software algorithm continuously and automatically adjusts the pressure, based on measurements (including automated assessment of compliance and resistance) taken throughout the inspiratory cycle to maintain an appropriate degree of support. The PAV+ monitor screen displays the automated real-time calculations of patient work, airway resistance and lung compliance.This information can assist clinicians in assessing the best treatment approach for their patients at any given time. PAV+ promotes patient-ventilator sychrony[1] and increases the probability of remaining on spontaneous breathing compares with PSV[1], and may decrease the need for sedation and potentially accelerates weaning time.

| Ref | Language | Description |
| --- | --- | --- |
| 840+220NISC-EN | English | Puritan Bennett 840 Plus ventilator, EU plug, NIST air and 02 fittings |
| 840+220NISB-EN | English | Puritan Bennett 840 Plus ventilator, UK plug, NIST air and 02 fittings |
| 840+220DRAC-EN | English | Puritan Bennett 840 Plus ventilator, EU plug, Dräger air and 02 fittings |
| 840+220DISS-EN | English | Puritan Bennett 840 Plus ventilator, Swiss plug, DISS air and 02 fittings |
| 840+220DIPP-EN | English | Puritan Bennett 840 Plus ventilator, S-A plug, DISS air and 02 fittings |
| 840+220AIQC-EN | English | Puritan Bennett 840 Plus ventilator, Israel plug, DISS air and 02 fittings |
| 840+220DIEC-EN | English | Puritan Bennett 840 Plus ventilator, EU plug, DISS air and 02 fittings |
| 840+220DIJI-EN | English | Puritan Bennett 840 Plus ventilator, EU plug, Air Liquide air and 02 fittings |
| 840+220DRAC-GR | German | Puritan Bennett 840 Plus ventilator, EU plug, Dräger air and 02 fittings |
| 840+220AIQC-FR | French | Puritan Bennett 840 Plus ventilator, EU plug, Air Liquide air and 02 fittings |
| 840+220DIEC-IT | Italian | Puritan Bennett 840 Plus ventilator, EU plug, DISS,air and 02 fittings |
| 840+220DIEC-SP | Spanish | Puritan Bennett 840 Plus ventilator, EU plug, DISSair and 02 fittings |
| 840+220DIPC-PR | Portuguese | Puritan Bennett 840 Plus ventilator, EU plug, DISS air and 02 fittings |
| 840+220DIPC-PL | Polish | Puritan Bennett 840 Plus ventilator, EU plug, DISS air and 02 fittings |
| 840+220DIEC-RS | Russian | Puritan Bennett 840 Plus ventilator, EU plug, DISS EU air and 02 fittings |

1 Georgopoulos D. et al, Proportional Assist Ventilation with load-adjustable gain factors in critically ill patients: comparison with pressure support.
  Intensive Care Medicine, Vol 34, Issue 11, pp 2026-2034, 11/2008

# Puritan Bennett 840 ventilator system

| Puritan Bennett 840<br>Customizable Ventilator<br>On cart or shelfmount | Available Options |
|---|---|
| | Trends |
| | RM* |
| | VV+ |
| | Bi-Level |
| | TC |
| | NeoMode |

# Platform examples

| Puritan Bennett 840<br>Standard | Puritan Bennett 840<br>Advanced | Puritan Bennett 840<br>Neonatal |
|---|---|---|
| NIV | NIV | NIV |
| Bi-Level | Bi-Level | Bi-Level |
| VV+ | VV+ | VV+ |
| | TC | TC |
| | RM | Trends |
| | Trends | NeoMode |

# Customizable and upgradable 840 ventilator

Sharing the same pneumatic platform, performance and user interface with the Puritan Bennett 840+, from a basic configuration, to advanced features, the Puritan Bennett 840 ventilator system allows you to tailor the ventilator to your clinical needs.

Optional upgrade kits, will help you build the platform you need and upgrade it at a later stage if needed.

The optional kits includes Tube Compensation upgrade kit, Bi-Level upgrade kit, Volume Ventilation Plus upgrade kit, Respiratory Mechanics upgrade kit, Trends upgrade kit and the NeoMode upgrade kit.

| Ref | Language | Description |
| --- | --- | --- |
| 4-840220NISB-EN | English | Puritan Bennett 840 ventilator, UK plug, NIST air and 02 fittings |
| 4-840220DIPP-EN | English | Puritan Bennett 840 ventilator, EU plug, Air Liquide air and 02 fittings |
| 4-840220DISS-EN | English | Puritan Bennett 840 ventilator, Swiss plug, DISS air and 02 fittings |
| 4-840220AIQC-EN | English | Puritan Bennett 840 ventilator, Israel plug, DISS air and 02 fittings |
| 4-840220DRAC-EN | English | Puritan Bennett 840 ventilator, EU plug, Dräger air and 02 fittings |
| 4-840220DIEC-EN | English | Puritan Bennett 840 ventilator, EU plug, DISS air and 02 fittings |
| 4-840220NISC-EN | English | Puritan Bennett 840 ventilator, EU plug, NIST air and 02 fittings |
| 4-840220DIJI-EN | English | Puritan Bennett 840 ventilator, S-A plug, DISS air and 02 fittings |
| 4-840220DRAC-GR | German | Puritan Bennett 840 ventilator, EU plug, Dräger air and 02 fittings |
| 4-840220AIQC-FR | French | Puritan Bennett 840 ventilator, EU plug, Air Liquide air and 02 fittings |
| 4-840220DIEC-IT | Italian | Puritan Bennett 840 ventilator, EU plug, DISS,air and 02 fittings |
| 4-840220DIEC-SP | Spanish | Puritan Bennett 840 ventilator, EU plug, DISSair and 02 fittings |
| 4-840220DIPC-PR | Portuguese | Puritan Bennett 840 ventilator, EU plug, DISS air and 02 fittings |
| 4-840220DIPC-PL | Polish | Puritan Bennett 840 ventilator, EU plug, DISS air and 02 fittings |
| 4-840220DIEC-RS | Russian | Puritan Bennett 840 ventilator, EU plug, DISS EU air and 02 fittings |

# Proportional Assist Ventilation Plus Upgrade Kit



## Description

Proportional Assist Ventilation Plus software is an innovative, advanced software option from Puritan Bennett. PAV+ software amplifies the patient's own spontaneous effort to breathe by increasing airway pressure during inspiration. A sophisticated software algorithm continuously and automatically adjusts the pressure based on measurements taken throughout the inspiratory cycle to maintain an appropriate degree of support.

The PAV+ monitor screen displays real-time calculations of patient work, airway resistance and lung compliance. This information can assist clinicians in assessing the best treatment approach for their patients at any given time.

## Product Features

- PAV+ software adjusts ventilation support level based on patient demand: support increases as demand increases
- By amplifying the patient's effort to breathe, PAV+ software helps lower the work of breathing
- Ventilator support dynamically adapts to changes in resistance and compliance; improves respiratory load compensation
- The unique Work of Breathing bar provides clinicians with an easy-to-read assessment of patient and total work of inspiration, and reflects the impact of each new support level as it adjusts
- The real-time graphic display helps clinicians determine appropriate support level and treatment approach

Available exclusively from Puritan Bennett for its flagship 840+ ventilator or as an upgrade kit for existing ventilators, the PAV+ software option is intended for use on any spontaneously breathing patient weighing more than 25kg.

| Ref | Language | Description |
| --- | --- | --- |
| 4-078204-00 | English | Proportional Assist Ventilation Plus upgrade kit |
| 4-078207-00 | German | Proportional Assist Ventilation Plus upgrade kit |
| 4-078206-00 | French | Proportional Assist Ventilation Plus upgrade kit |
| 4-078208-00 | Italian | Proportional Assist Ventilation Plus upgrade kit |
| 4-078205-00 | Spanish | Proportional Assist Ventilation Plus upgrade kit |
| 4-078210-00 | Portuguese | Proportional Assist Ventilation Plus upgrade kit |
| 4-078211-00 | Polish | Proportional Assist Ventilation Plus upgrade kit |
| 4-078212-00 | Russian | Proportional Assist Ventilation Plus upgrade kit |

# Respiratory Mechanics Software Option Upgrade Kit

## Description

The Respiratory Mechanics (RM) software provides coached respiratory maneuvers, such as negative inspiratory force (NIF) and vital capacity (VC), to allow clinicians to assess lung status and performance to help determine if a patient is ready to be weaned. The software features an easy-to-read GUI information panel where the last three values for negative inspiratory force (NIF), occlusion pressure (P0.1) and vital capacity (VC) are displayed in tabular form for historical data collection.

## Product Features

- RM software provides noninvasive, continuous, breath-by-breath monitoring.
- Maneuver time is set by the operator to ensure a good effort.
- During a NIF maneuver, circuit pressure is shown on the waveforms screen and the current maneuver produces a real-time display.
- Displayed indicators such as $C_{DYN}$, $R_{DYN}$, PEF, EEF and PSF provide a more complete picture of patient status.
- RM software provides insight into patient changes over time; allowing clinicians to trend a patient's condition and evaluate treatment progress.

| Ref | Language | Description |
|---|---|---|
| 10019217 | English | Respiratory Mechanics upgrade kit |
| 10020265 | German | Respiratory Mechanics upgrade kit |
| 10020264 | French | Respiratory Mechanics upgrade kit |
| 10020266 | Italian | Respiratory Mechanics upgrade kit |
| 10020263 | Spanish | Respiratory Mechanics upgrade kit |
| 10020269 | Portuguese | Respiratory Mechanics upgrade kit |
| 10020268 | Polish | Respiratory Mechanics upgrade kit |
| 10020270 | Russian | Respiratory Mechanics upgrade kit |

# Trending Software Option Upgrade Kit
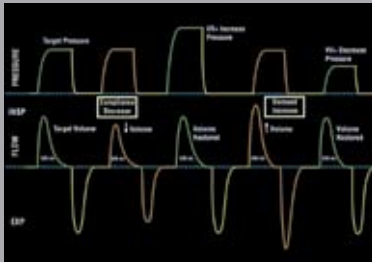


## Description

The Trending software option provides clinicians with time-stamped displays of ventilator settings, monitored patient data and specific events for intervals of up to 72 hours. The displays, available in both graphical and tabular form, allow clinicians to assess the effectiveness of current therapy and assist in determining the course of treatment.

## Product Features

- A Presets feature quickly configures graphs and tables with pre-defined sets of parameters for common clinical scenarios such as COPD and ARDS, as well as specific mode selections.
- Automatic and manually placed Event Markers identify the time at which specific events or clinical interventions took place.
- The Trending software displays up to three graphic trends or six tabular trends at one time.
- A fast scrolling cursor option makes it easy to navigate across large time scales.
- The upper and lower GUI screen displays can be printed for trending documentation.
- Trending software enables clinicians to monitor up to 53 trended parameters provided VV+, PAV+ and Bi-Level software options are installed.

| Ref | Language | Description |
| --- | --- | --- |
| 10020407 | English | Trending upgrade kit |
| 10020410 | German | Trending upgrade kit |
| 10020409 | French | Trending upgrade kit |
| 10020411 | Italian | Trending upgrade kit |
| 10020419 | Spanish | Trending upgrade kit |
| 10020414 | Portuguese | Trending upgrade kit |
| 10020413 | Polish | Trending upgrade kit |
| 10020415 | Russian | Trending upgrade kit |

# Volume Ventilation Plus Software Option Upgrade Kit



## Description

The Volume Ventilation Plus (VV+) software option is an enhancement to volume ventilation. It's an additional tool designed to improve patient-ventilator synchrony, thereby improving patient comfort. VV+ combines the advantages of a preset volume target, a variable flow and a variable pattern as seen with pressure-control ventilation. It offers an easy and seamless transition from the approach of volume ventilation by setting similar parameters. Clinicians simply set a mode (A/C, SIMV), rate and tidal volume. A pressure-based breath is delivered and the VV+ option continuously adjusts the pressure level up or down to ensure the preset target volume is delivered to the patient. This allows patients to breathe at lower airway pressures. The active exhalation valve allows unrestricted breathing during both inspiratory and expiratory phases of the breath cycle, which promotes patient-ventilator synchrony and potentially decreases the need for sedation.

## Product Features

- Patient-ventilator synchrony: Volume and pressure are combined to deliver more precise synchrony between the patient and ventilator. Matching patient demand and adapting to changes in the patient condition could result in patients weaning off the ventilator sooner.
- Simplicity and ease of use: VV+ offers the assurance of a volume guarantee during pressure ventilation.
- Avoids excessive volume delivery: VV+ adjusts and reduces pressure as patient compliance improves.

| Ref | Language | Description |
|---|---|---|
| 4-078128-00 | English | Volume Ventilation Plus upgrade kit |
| 4-078132-00 | German | Volume Ventilation Plus upgrade kit |
| 4-078130-00 | French | Volume Ventilation Plus upgrade kit |
| 4-078136-00 | Italian | Volume Ventilation Plus upgrade kit |
| 4-078134-00 | Spanish | Volume Ventilation Plus upgrade kit |
| 4-078138-00 | Portuguese | Volume Ventilation Plus upgrade kit |
| 4-078155-00 | Polish | Volume Ventilation Plus upgrade kit |
| 4-078190-00 | Russian | Volume Ventilation Plus upgrade kit |

# Bi-Level Software Option Upgrade Kit
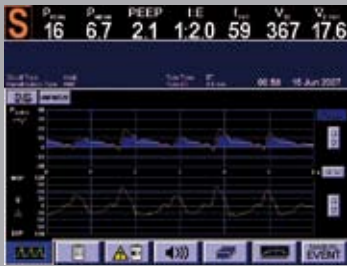


## Description

The Bi-Level software option represents the next generation of pressure control. It allows patients to breathe spontaneously at two levels of PEEP at any I:E ratio. The Bi-Level software option works by offering a form of augmented pressure ventilation that allows for unrestricted, spontaneous breathing at any moment of the ventilatory cycle, thereby promoting patient-ventilator synchrony. While its pressure waveform resembles pressure-controlled ventilation, the Bi-Level software option differs in its ability to allow spontaneous breathing at both the upper and lower pressure levels. It ensures consistent support to patients, which could lead to improvement in oxygenation.

## Product Features

- Increased patient comfort, potentially decreased need for sedation: Since PEEP level transitions and spontaneous breathing are supported, patient comfort and synchrony may improve. Improved synchrony between the patient and machine also may reduce the need for sedation.
- Potentially decreased need for paralysis: Inverse ratio pressure control with the use of the Bi-Level software option allows the patient free breathing, regardless of the ratio, and may reduce the need for paralysis.
- Improved patient monitoring: The Bi-Level software option offers detailed monitoring of information such as mandatory and spontaneous tidal volumes and minute volumes. With this information, clinicians may have a clearer understanding of how much of a patient's spontaneous breath contributes to total ventilation, enabling clinicians to make better informed clinical decisions.
- Simplicity and ease of use: By combining three clinical strategies in one mode, the Bi-Level software option may be appropriate for the entire course of a patient's condition.

| Ref | Language | Description |
| --- | --- | --- |
| 4-076270-00 | English | Bi-Level upgrade kit |
| 4-076273-00 | German | Bi-Level upgrade kit |
| 4-076272-00 | French | Bi-Level upgrade kit |
| 4-076274-00 | Italian | Bi-Level upgrade kit |
| 4-076271-00 | Spanish | Bi-Level upgrade kit |
| 4-076275-00 | Portuguese | Bi-Level upgrade kit |
| 4-078149-00 | Polish | Bi-Level upgrade kit |
| 4-078184-00 | Russian | Bi-Level upgrade kit |

# Tube Compensation Plus Software Option Upgrade Kit

## Description

The Tube Compensation software option helps clinicians make more informed decisions about when to extubate patients. It offers a spontaneous breath type that helps a patient avoid the resistive work caused by breathing through an artificial airway, thereby reducing the work of breathing. Tube Compensation software is a hybrid of pressure support that automatically compensates for the flow-dependent pressure drop across the endotracheal or tracheal tube and controls the patient's carinal pressure to a constant PEEP value. Tube Compensation software provides this support by assisting the patient's spontaneous breaths with positive pressure that is proportional to the inspired flow and the internal diameter of the artificial airway.

## Product Features

- Ease of use: Clinicians can simply tell the Puritan Bennett 840 ventilator what size ET or tracheostomy tube is in place, and the software allows the ventilator to automatically calculate the correct support.
- Patient comfort: For patients with poorly functioning respiratory systems, Tube Compensation may help patients breathe easier.
- Adjusts to patient needs: Tube Compensation software varies pressure considerably to compensate for any demand flow within the ventilator's inspiratory flow range.

| Ref | Language | Description |
|---|---|---|
| 4-076370-00 | English | Tube Compensation upgrade kit |
| 4-076372-00 | German | Tube Compensation upgrade kit |
| 4-076373-00 | French | Tube Compensation upgrade kit |
| 4-076374-00 | Italian | Tube Compensation upgrade kit |
| 4-076376-00 | Spanish | Tube Compensation upgrade kit |
| 4-076377-00 | Portuguese | Tube Compensation upgrade kit |
| 4-078153-00 | Polish | Tube Compensation upgrade kit |
| 4-078186-00 | Russian | Tube Compensation upgrade kit |

# Neomode Software Option Upgrade Kit



## Description

The NeoMode software option transforms the Puritan Bennett 840 ventilator into a highly effective neonatal ventilator system that is truly in tune with neonatal physiology. It allows you to deliver sensitive ventilation tailored to your critically ill neonatal patients, including micro-preemies.

The noninvasive ventilation (NIV) feature of the Puritan Bennett 840 Ventilator has been enhanced, making the NeoMode software option more compatible with neonatal nasal CPAP prongs when used with the upgraded 840 units.

## Product Features

· Intended to provide respiratory support to neonatal patients with ideal body weights as low as 0.5kg
· Features Volume and Pressure orientated modes including Volume Ventilation + and Bi-Level (require installation of VV+ and Bi-Level option/upgrade)
· Flow sensitivity from 0.1l/min to 10l/min allows responsive breath
· Enhanced Neonatal Nasal CPAP Prong Compatibility
· Triggering and the ability to compensate for large leaks in neonatal circuits.
· Rise to pressure adjustable from least to most aggressive with peak flow as low as 1l/min available in volume ventilation.
· Selectable expiratory sensitivity offers excellent synchrony at high respiratory rates..

| Ref | Language | Description |
| --- | --- | --- |
| 4-076440-00 | English | NeoMode upgrade kit |
| 4-076442-00 | German | NeoMode upgrade kit |
| 4-076443-00 | French | NeoMode upgrade kit |
| 4-076444-00 | Italian | NeoMode upgrade kit |
| 4-076446-00 | Spanish | NeoMode upgrade kit |
| 4-076447-00 | Portuguese | NeoMode upgrade kit |
| 4-078151-00 | Polish | NeoMode upgrade kit |
| 4-078188-00 | Russian | NeoMode upgrade kit (includes software upgrade kit, disposable neonatal filter/water trap, and mounting plate) |
| 4-076405-00 | | NeoMode expiratory filter mounting plate |
| 4-076408-00 | | Expiratory bacteria filter, neonatal, disposable, (case of 12) |

# Accessories
## For The Puritan Bennett 840 Ventilator System

### Standard accessories

| Ref | Description |
| --- | --- |
| 4-032006-00 | Flex arm assembly |
| 4-074601-00 | - Inspiratory bacteria filter<br>Disposable filter (D/Flex™, carton of 12) |
| 4-076887-00 | - Expiratory bacteria filter and collector vial<br>Disposable filter (D/X800™, carton of 12) |
| 4-018506-00 | Test hose |
| 4-000612-00 | Test lung |
| 4-070520-SP | 802 backup power source (BPS) |
| ** | Oxygen hose assembly |
| 4-078108-SP | Power cord (European) |
| 4-078144-00 | Power cord (UK) |
| 4-070088-00 | Operator's and technical reference manual - International English |

### Optional accessories

| Ref | Description |
| --- | --- |
| 4-074600-00 | - Inspiratory bacteria filter<br>Reusable filter (Re/Flex™, each) |
| ** | Covidien provides a whole range of disposable inspiratory filters |
| 351/5856 | Sterivent™ mechanical filter |
| 4-076408-00 | - NeoMode filter and adapter<br>NeoMode disposable filter (carton of 12) |
| 4-076405-00 | NeoMode filter adapter |
| 4-070305-00 | - Expiratory bacteria filter and collector vial<br>Reusable filter (Re/X800™, each) |
| 4-074647-00 | Reusable collector vial (Re/X800™, each) |
| 4-048491-00 | Drain bag, disposable (package of 25) |
| 4-048493-00 | Drain bag tubing, disposable (package of 10) |
| 4-048492-00 | Clamp, reusable (package of 5) |
| 4-070311-00 | Drain cap |
| 4-074613-00 | Seal, expiratory filter |
| 4-070496-00 | - Maintenance<br>Service manual, English |
| 4-072214-00 | Oxygen sensor* |
| 4-070523-SP | Battery replacement kit |
| 4-078179-00 | 10,000-hour preventive maintenance kit*, BDU/GUI |
| ** | 10,000-hour preventive maintenance kit*, compressor |
| 4-074374-00 | Filter, compressor inlet |
| 4-076371-00 | Wall air water trap kit |



Cart and compressor

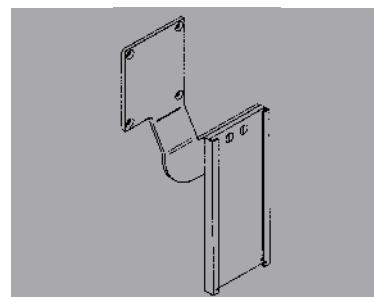| Ref | Description |
|---|---|
| AG-AP6000-IN or AG-AP6000-UK | - Nebuliser<br>Aeroneb Pro Nebulizer (Specify UK/International) |
| AG-AS3000-IN or AG-AS3000-UK | Aeroneb Solo Nebulizer Starter Kit (Specify UK/International) |
| 200001 | - Active Humidification<br>Aerodyne 2000™ (UK) active humidifier |
| 200006 | Aerodyne 2000 (International) active humidifier |
| 58531 | Mounting kit for Aerodyne 2000 active humidifier |
| ** | F&P MR 410 humidifier |
| ** | F&P MR 850 humidifier |
| 4-075313-00 | Mounting kit for Fisher & Paykel 410/480/730/850 humidifiers |
| ** | - Passive Humidification<br>Covidien provides a whole range of HME and HME/filter combined |
| 354/5876 | Dar Hygroster™ FHME |
| 352/5877 | Dar Hygrobac S™ FHME |
| 352/5805 | Dar Hygrobac™ FHME |
| 354S19028 | Dar Hygroster™ Mini FHME |
| ** | - Patient breathing circuits and accessories<br>Covidien provides a whole range of single use and reusable circuits compatible with passive and active humidification (with and without heated wire), accessories as catheter mounts, filters, HMEF, Y pieces,connectors, closed suction systems and a complete range of endotracheal and tracheostomy tubes. |
| ** | Covidien can also help you in your efforts to prevent Ventilator Associated Pneumonia with a complete solution |

*   Oxygen sensor to be replaced every 2 years or as necessary by a qualified service technician.
    Preventive maintenance kits must be installed by a qualified service technician.
**  For specific part numbers, contact your local Covidien Puritan Bennett sales representative.



Aerodyne 2000



Hygrobac S



Hygroster



Mounting bracket for Aerodyne 2000

# Nebulization System
## Aeroneb Professional nebulizer system

An exceptional aerosol delivery option for clinicians that saves time, lowers costs and provides flexibility for respiratory therapy throughout the hospital.

The Aeroneb Pro provides effective dose delivery of physician-prescribed inhalation solutions for infants through adults requiring positive pressure breathing assistance, including mechanical ventilation, as well as hand-held nebulizer therapy. Utilizing Aerogen™*'s unique aerosol generator, the Aeroneb Pro produces a fine particle, low velocity aerosol without environmentally unfriendly propellants, inefficient compressors or costly ultrasonic elements.

The Aeroneb Pro overcomes the issue of poor aerosol delivery during mechanical ventilation, depositing up to four times more medication through an endotracheal tube (in vitro) during mechanical ventilation than small volume nebulizers (SVNs). SVNs have been reported to deliver between 1–3%[1] of the nominal dose to the lungs during mechanical ventilation, compared to 2–18%[2] in nonintubated patients.

## Performance characteristics table[3]

| | MMAD[4] | GSD[5] | FPF[6] (<5µm) | Residual Volume (ml)[7] | Adult % Dose Deposited[8] |
|---|---|---|---|---|---|
| Aeroneb Pro Nebulizer System | 2.1 | 2.2 | 83% | 0.3ml | 13% |

1  CJ Harvey et al, European Respiratory Journal, 1997; 10: 905-909;
2  GC Smaldone et al, Journal of Aerosol Medicine,Volume 11, Number 2, 1998: pp. 113-125;
3  Nebulization, 3 ml of 0.083% albuterol;
4  MMAD: Mass Median Aerodynamic Diameter (micrometers);
5  GSD: Geometric Standard Deviation;
6  FPF: Fine Particle Fraction;
7  Data on file at Aerogen, Ltd.;
8  Dose deposited in vitro at endotracheal tube; Source: Fink JB, Schmidt D, Power J. Comparison of a nebulizer using a novel aerosol generator with a standard ultrasonic nebulizer designed for use during mechanical ventilation, ATS 2001.

## Aeroneb Pro Systems

| Ref | Language | Description | Case quantity |
|---|---|---|---|
| | | Aeroneb Pro Systems contains: 1 – control module with cable<br>1 – nebulizer unit with filler cap<br>1 – adult T-piece with silicone plug<br>1 – universal mounting bracket<br>1 – equipment mount adapter<br>1 – AC/DC adapter<br>1 – instructions manual | |
| AG-AP6000-IN | International English | Aeroneb Pro nebulizer system | 1 |
| AG-AP6000-UK | English | Aeroneb Pro nebulizer system | 1 |
| AG-AP6000-GE | German | Aeroneb Pro nebulizer system | 1 |
| AG-AP6000-FR | French | Aeroneb Pro nebulizer system | 1 |
| AG-AP6000-IT | Italian | Aeroneb Pro nebulizer system | 1 |
| AG-AP6000-SP | Spanish | Aeroneb Pro nebulizer system | 1 |
| AG-AP6000-PT | Portuguese | Aeroneb Pro nebulizer system | 1 |
| AG-AP6000-NL | Dutch | Aeroneb Pro nebulizer system | 1 |
| AG-AP6000-GR | Greek | Aeroneb Pro nebulizer system | 1 |
| AG-AP6000-DK | Danish | Aeroneb Pro nebulizer system | 1 |
| AG-AP6000-NO | Norwegian | Aeroneb Pro nebulizer system | 1 |
| AG-AP6000-SW | Swedish | Aeroneb Pro nebulizer system | 1 |

## Aeroneb Nebulizer Kit

| Ref | Description | | Case quantity |
|---|---|---|---|
| AG-AP1000 | Aeroneb Pro nebulizer assembly with filler cap | | - |
| AG-AP1100 | Adult nebulizer kit contains: | 2 – nebulizer units with filler cap<br>2 – adult T-pieces with silicone plug | - |
| AG-AP1200 | Neonate/paediatric nebulizer kit contains: | 2 – nebulizer units with filler cap<br>2 – paediatric T-pieces with silicone plug<br>2 – neonate adapter kits<br>(for use with paediatric T-piece) | - |

## Aeroneb Pro Control Modules

| Ref | Description | Case quantity |
|---|---|---|
| AG-AP1050-IN | INTL control module | - |

## Aeroneb Pro Control Module Kits

| Ref | Description | | Case quantity |
|---|---|---|---|
| AG-AP1500-IN | INTL Aeroneb Pro Control Module Kit contains: | 1 – control module with cable<br>1 – AC/DC adapter<br>1 – universal mounting bracket<br>1 – equipment mount adapter<br>1 – instruction manual | 1 |

## Aeroneb Pro Spares

| Ref | Description | Case quantity |
| --- | --- | --- |
| AG-AP1005 | Silicone plug | 5 |
| AG-AP1010 | Adult T-piece with silicone plug | 5 |
| AG-AP1055 | Paediatric T-piece with silicone plug | 5 |
| AG-AP1025 | Neonate adapter kit | 5 |
| AG-AP1030 | Aeroneb Pro filler cap | 5 |
| AG-AP1020 | Vented elbow | 5 |

## Aeroneb Pro Mask Kits

| Ref | Description | Case quantity |
| --- | --- | --- |
| AG-AP1065 | INTL mask kit | 1 |

## Aeroneb Pro Brackets

| Ref | Description | Case quantity |
| --- | --- | --- |
| AG-AP1060 | Aeroneb Pro universal IV mounting bracket | 1 |
| AG-AP1070 | Aeroneb Pro equipment mounting bracket | 1 |

## Aeroneb Pro AC Adapters

| Ref | Description | Case quantity |
| --- | --- | --- |
| AG-AP1040-UK | UK AC/DC adapter | 1 |
| AG-AP1040-EU | EU AC/DC adapter | 1 |

## Aeroneb Pro Instruction Manuals

| Ref | Language | Description | Case quantity |
| --- | --- | --- | --- |
| AG-AP1080-UK | English | Aeroneb Pro instruction manual | 1 |
| AG-AP1080-GE | German | Aeroneb Pro instruction manual | 1 |
| AG-AP1080-FR | French | Aeroneb Pro instruction manual | 1 |
| AG-AP1080-IT | Italian | Aeroneb Pro instruction manual | 1 |
| AG-AP1080-SP | Spanish | Aeroneb Pro instruction manual | 1 |
| AG-AP1080-PO | Portuguese | Aeroneb Pro instruction manual | 1 |
| AG-AP1080-NL | Dutch | Aeroneb Pro instruction manual | 1 |
| AG-AP1080-GR | Greek | Aeroneb Pro instruction manual | 1 |
| AG-AP1080-DK | Danish | Aeroneb Pro instruction manual | 1 |
| AG-AP1080-NO | Norwegian | Aeroneb Pro instruction manual | 1 |
| AG-AP1080-SW | Swedish | Aeroneb Pro instruction manual | 1 |

# Aeroneb Solo Micropump Nebulizer

The Aeroneb Solo micropump nebulizer represents a new standard in critical care nebulization for mechanically ventilated patients. Featuring the proven OnQ™* nebulization technology employed in the Aeroneb Pro nebulizer, the Aeroneb Solo is a compact, single patient use nebulizer that offers the care giver the added convenience and flexibility of continuous and/or intermittent nebulization. It can be powered by either the Aeroneb Pro or the Aeroneb Pro-X controller. Continuous nebulization is only available when the nebulizer is used in conjunction with the Aeroneb Pro-Xcontroller.

The Aeroneb Solo provides effective dose delivery of physicians-prescribed inhalation solutions for infants through adults requiring mechanical ventilation. It produces a fine particle, low velocity aerosol optimized for deep lung deposition.

The Aeroneb Solo operates without changing patient ventilator parameters and can be refilled without interrupting ventilation. Continuous nebulization is enabled by connecting a mediation reservoir via a standard Luer connector.

## Performance characteristics table[1]

|  | MMAD[2] | GSD[3] | Residual Volume (ml)[7] | Calculated Respirable Dose |
|---|---|---|---|---|
| Aeroneb Solo Nebulizer | 3.4µm | 2.4 | Average <0.1ml for 3ml dose | 15.5% |

Performance may vary depending upon type of drug used.

1   Nebulization, 3 ml of 0.083% albuterol
2   MMAD: Mass Median Aerodynamic Diameter (micrometers)
3   GSD: Geometric Standard Deviation

## Aeroneb Solo Starter Kit

| Ref | Description | Case quantity |
| --- | --- | --- |
| | Aeroneb Solo Starter Kit contains: Control module, 2 Aeroneb Solo nebulizers with filler caps, adult T-pieces with silicone plug, universal mounting bracket, AC/DC adapter and instructions manual | |
| AG-AS3000-UK | Aeroneb Solo starter kit - UK | - |
| AG-AS3000-IN | Aeroneb Solo starter kit - International | - |
| AG-AS3000-NE | Aeroneb Solo starter kit - Northern Europe (French, German, Dutch, Italian) | - |
| AG-AS3000-SE | Aeroneb Solo starter kit - Southern Europe (Spanish, Italian, Portugese, Greek, Turkish) | - |
| AG-AS3000-SC | Aeroneb Solo starter kit - Scandinavia (Swedish, Norwegian, Finnish, Danish) | - |

## Aeroneb Solo Nebulizers

| Ref | Description | Case quantity |
| --- | --- | --- |
| AG-AS3100 | Aeroneb Solo nebulizers | 5 |
| AG-AS3200 | Aeroneb Solo nebulizers | 10 |

## Aeroneb Solo Convenience Pack

| Ref | Description | Case quantity |
| --- | --- | --- |
| | Aeroneb Solo Convenience Pack contains : adult nebs, adult T-pieces, T-piece plugs, Luer connector | |
| AG-AS3300 | Aeroneb Solo convenience pack | 5 |
| AG-AS3350 | Aeroneb Solo convenience pack | 10 |

## Aeroneb Pro-X Control Modules

| Ref | Description | Case quantity |
| --- | --- | --- |
| AG-PX1050-IN | INT Aeroneb Pro-X module | - |

## Aeroneb Solo Disposable

| Ref | Description | Case quantity |
| --- | --- | --- |
| AG-AS3010 | Aeroneb Solo disposable adult T-piece (22mm F-22mm M elbow-22mm F) | 10 |
| AG-AS3020 | Aeroneb Solo disposable paediatric T-piece (22mm F-22mm elbow-15mm F) | 10 |
| AG-AS3025 | Aeroneb Solo disposable paediatric T-piece + neonatal adapter kit | 10 |
| AG-AS3035 | Aeroneb Solo neonatal T-piece (12mm M / 12mm F) | 10 |
| AG-AS3400 | Disposable Luer connectors for continuous nebulization | 10 |
| AG-AS3450 | Silicone plugs (for use with AG-AS3010, AG-AS3020, AGAS3025) | 10 |

## Aeroneb Solo Starter Kit Instruction Manuals

| Ref | Description | Case quantity |
| --- | --- | --- |
| AG-AS3050-EN | Aeroneb Solo starter kit instruction manual - English | - |
| AG-AS3050-NE | Aeroneb Solo starter kit instruction manual - Northern Europe | - |
| AG-AS3050-SE | Aeroneb Solo starter kit instruction manual - Southern Europe | - |
| AG-AS3050-SC | Aeroneb Solo starter kit instruction manual - Scandinavia | - |
| AG-AS3060 | Aeroneb Solo nebulizer instruction manual | - |

## AC/DC Adapters

| Ref | Description | Case quantity |
| --- | --- | --- |
| AG-AP1040-UK | UK AC/DC adapter | - |
| AG-AP1040-EU | EU AC/DC adapter | - |

## Control Module Cable

| Ref | Description | Case quantity |
| --- | --- | --- |
| AG-AP1085 | Control Module Cable | - |

## Universal Mounting Bracket

| Ref | Description | Case quantity |
| --- | --- | --- |
| AG-AP1060 | Universal Mounting Bracket | - |

## Equipment Mount Adapter

| Ref | Description | Case quantity |
| --- | --- | --- |
| AG-AP1070 | Equipment Mount Adapter | - |

# Easy Cap II/Pedi-Cap CO$_2$ Detectors

## Description

For years, hospital and emergency medical services clinicians have relied on Nellcor Easy Cap II and Pedi-Cap CO$_2$ Detectors to help verify proper ET tube placement. These CO$_2$ detectors help you determine that your patient is intubated properly right from the start – and remains that way during transport.

It's easy to see why Easy Cap II detectors lead the industry. The Easy Cap II detector with its familiar purple-to-yellow color scheme, has become synonymous with colorimetric CO$_2$ detection. Nellcor Easy Cap II and Pedi-Cap CO$_2$ Detectors give you an easy, economical way to assess exhaled CO$_2$ during airway management. Whether you're intubating patients in the ER, the ICU or the field, choose reliable technology from a name you trust.

## Product Features

· Attach directly to ET tube to indicate exhaled CO$_2$ levels during intubation for up to 2 hours.

· Respond quickly to exhaled CO$_2$ with a simple color change from purple to yellow.

· Feature an easy-to-see display window that provides constant visual feedback with breath-to-breath response.

· Aid assessment of CPR effectiveness.

| Ref | Recommended patient size : weight (kg) | Internal volume (cc) | Resistance to flow | Detector weight (g) | Connector ports | | Usage time | Case quantity |
|---|---|---|---|---|---|---|---|---|
| | | | | | Patient end (mm) | Circuit end (mm) | | |
| EASYCAPII EASYCAPII6 | Over 15 | 25 | 3.0cm H2O ± 1.0cm 60l/min flow | Less than 20g | 22 OD/15 ID | 15 OD/13 ID | Up to 2 hours | 24 |
| PEDICAP PEDICAP6 | 1 to 15 | 3 | 2.5cm H2O ± 0.5cm 10l/min flow | Less than 5g | 18 OD/15 ID | 15 OD/ 5 ID | Up to 2 hours | 6 |

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