

Portable ventilator

Country of origin | United States of America

Health problem addressed

Patient groups most likely to benefit include those with COPD, Cardiogenic Pulmonary Edema, Immunocompromised patients (e.g. HIV), and COPD patients weaning from mechanical ventilation. COPD is one of the fastest growing causes for death today worldwide. Over the next 20-30 years, it is poised to become the 3rd or even 2nd leading causes of death.



Product description

The device is a small size, portable, versatility and can run on batteries.

Product functionality

The device's primary innovation is owed to its use of micro-blower technology and unique gas control algorithms. In combination the device is able to meet the needs of a wide variety of ventilatory demands, including high leaks seen in noninvasive ventilation while still maintaining patient-ventilator synchrony.

Developer's claims of product benefits

By costing a third of other ICU ventilators and offering both invasive and noninvasive capabilities, the device is ideally suited for patients in respiratory distress, no matter what their location or severity.

Operating steps

The device employs a micro-blower to generate airflow and connects directly to oxygen supplies to provide between 21-100% oxygen enriched, pressurized gas. Pressure and flow sensors provide signals to a very sophisticated controls algorithm to precisely meter pressure, flow and volume even in leak prone, noninvasive applications.

Development stage

The device was market released July 2010 and is sold worldwide. Several investigators have compared the device's performance to other ventilators, in various patient populations, and under different clinical conditions such as leak-prone noninvasive applications. The results of such studies show the relative superiority of the device's design elements and precise gas delivery. One bench study demonstrates the unique ability of the device to maintain accurate volume control mode delivery even while using cheap and simple intentional leak breathing circuits.

Future work and challenges

None

User and environment

User: Nurse, physician, technician

Training: Interactive CD-ROM (self paced), User's Manual (reference material), various slide presentations.

Maintenance: Technician, engineer, manufacturer

Environment of use

Settings: Ambulatory, secondary, and tertiary health care facilities.

Requirements: Basic electrical power 100 - 240 VAC, 50/60 Hz, 2.1 A, 5-40C temperature range and high pressure oxygen source (40-87 psi) via compressed gas tanks or wall outlets. Optional: available equipment to disinfect breathing circuits if reusable circuits are preferred.

Product specifications

Dimensions (mm): 21.3 x 28.5 x 23.5

Weight (kg): 5.6 (including batteries)

Consumables: Breathing circuit and patient interface (artificial airway or facemask)

Life time: Several years

Retail Price (USD): 11,500

List price (USD): 11,500

List price of consumables (USD): 80 (Std. Adult reusable circuit), 14 (disposable circuit)

Other features: Portable and reusable. Runs on batteries, uses software and is compatible with telemedicine systems.

Year of commercialization: 2010

Currently sold in: US, Eastern and Western Europe, all Scandinavia, most countries in Asia/Pacific, India, Africa, Japan, Latin America and Middle East.