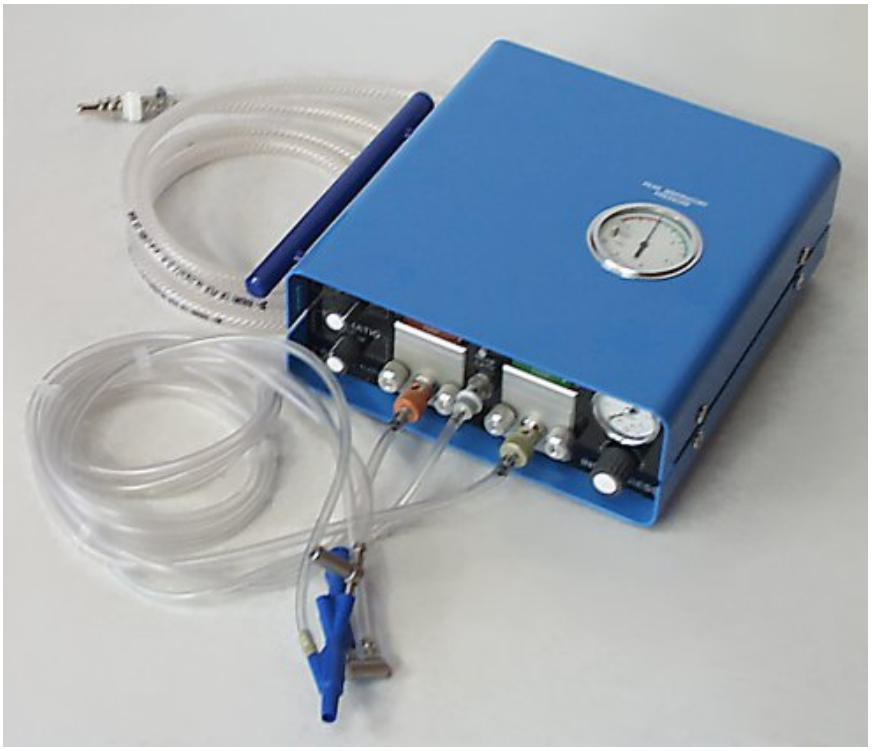
OB1

Respiratory Care Companion

(Open, Bi-Directional, 1 of a kind – the OB1)



UNIQUE TECHNOLOGY OF LUNGS VENTILATION

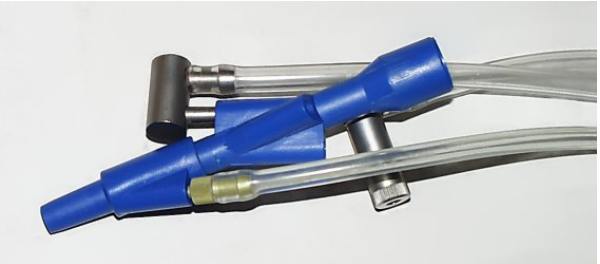
- ✓ Active impulsion and expulsion modes (lungs cleaning)
- ✓ Ventilate full spectrum of patients on a single device
- ✓ Non-invasive as well as invasive applications
- ✓ Long distance ventilation
- ✓ Transportation HFJV
- ✓ Bronchoscopy
- ✓ ... and more

CE 1014

Introducing the new
OB1 ParaVent
Respiratory Care Companion

- A specialty respiratory care device, designed for short term clinical use
- Supports a range of clinical situations with its unique features and properties
- Based on the scientific principles and physical properties of the patented **Multi-Nozzle Jet Injector (MNJI)** which generates the constant pressure and creates the jet stream

The Patented Multi-Nozzle Jet Injector



Patient Care and Safety

The OB1 ParaVent's MNJI has a central **O**pen channel, eliminating the risk of hyperinflation or barotrauma. Flow through the MNJI is actively **B**i-directional. The active expiratory support enables the unique Expulsion effects of the OB1, allowing for the removal of foreign matter (solids or liquids, such as meconium, secretions, aspirate, blood particles, contrast media). And because of the Open central channel, there is no risk of lung collapse.

Simplicity Defined - Automatically

Setting up the OB1 ParaVent couldn't be easier. There are 8 different sizes of MNJI's, corresponding to ET tube sizes 3 through 10. Simply choose the same size MNJI as the patient's ET tube, and that's it – all ventilator parameters are now predefined and calibrated by the selection of the right MNJI with its unique physical shape and properties. Each MNJI is equipped with three inspiration nozzles and one expiration nozzle as well as an P_{aw} connector. Ventilator performance can be adjusted in the range of ±50% simply by changing the inspiration nozzle (I, II, III). For intubated and non-intubated patients, from 600g to 140kg, there is only ever **1** ventilator you need.

Programmable Impulsion and Expulsion Effects

The **Impulsion (1:2)** and **Expulsion (2:1) modes** create active impulsion and expulsion effects. Whilst continuing to ventilate your patient, you can now use the OB1 ParaVent for Lung cleaning, more effective application of pharmaceutical solutions (e.g. surfactant, mukolytics, therapeutic Aerosols, local anaesthetics, catecholamines, etc…) and programmable movement/extraction of foreign objects or obstructions in the airways (solid, semi-solid, liquid) such as including meconium, aspirate, excessive secretions, blood, particles, and contrast media.

NIMV with Acute Respiratory Failure & COPD patients

NIMV is an increasingly popular choice of therapy in acute respiratory failure and exacerbation of COPD patients. It is generally accepted that for positive outcomes the following prerequisites are required:

- ✓ Patient is able to cooperate
- ✓ Patient can control airway and secretions
- ✓ Adequate cough reflex
- ✓ Patient is able to co-ordinate breathing with ventilator

ref: Sharma, www.theiaforum.org, January 2004(1)

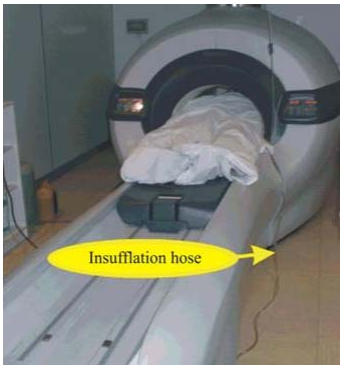
The **OB1 ParaVent** overcomes ALL of these limitations – it can produce artificial coughs, even in non-cooperative patients. The open circuit design allows spontaneous breathing, so patients do not have to co-ordinate with the ventilator. The unique Expulsion effect of the **OB1 ParaVent** can deal with excessive secretions whilst continuing to ventilate the patient. And best of all, improved pulmonary mechanics and oxygenation occurs in a fraction of the time it takes with conventional NIMV devices.

Transport of Neo-Natal and Paediatric Patients on HFOV

Critically ill patients on HFOV often react poorly to transport situations, due to the fact that transport ventilators only offer conventional modes of ventilator support - until now. The **OB1 ParaVent** offers high-frequency ventilation, up to 180 bpm, and its small size and weight (4.5 kg) and battery life (up to 8 hours on 4 AA batteries) make it an ideal choice for transport of patients on HFOV.

MRI of the ventilated patient – powerful yet safe

The **OB1 ParaVent** is powerful enough to ventilate through 10m long non-metallic catheters, and due to the open channel it is also safe for your patients, making it an elegant solution for use in the MRI. When used with high frequency ventilation mode, it also minimises chest wall movement, another advantage during MRI. And you can use the same **OB1 ParaVent** to transport the patient to and from the MRI – it operates effectively in both conventional and high frequency modes, with the same extended battery life noted above.



Additional Clinical Applications

- Induce **Artificial coughs**, even in non-cooperative patients
- Use with a **Mask** for Non-Invasive applications; allows spontaneous breathing during ventilation, even with a mask
- **Bronchoscopy**; the open central channel of the MNJI can accommodate a bronchoscope, reducing the need for paresthesia during these procedures
- Critical care management of **Upper Airways Critical Obstructions**
- **Bi-bronchial** or selective synchronous lungs ventilation

The **OB1 Paravent** is the third generation product from Kalas Medical. Kalas Medical is an **IEC** approved manufacturer, and the **OB1 ParaVent** has the **CE Mark** certification. The MNJI is a patented design. Created to Military specification, the **OB1 ParaVent** is a very rugged and reliable companion to your existing critical care ventilators. With over 3000 units in clinical use today, you can trust its reliable and proven technology.

Technical specifications

Control units	insufflation pressure P_{IN} ventilation frequency F time ratio: TI: TE manual inspiration button (for the cases drop-on all power source)
Alarms	exceeding pressure limits low level of back-up reserve of el. energy
Supply pressure	400 kPa ± 100 kPa
Flow from pressure source	min. 50 l/min.
Power supply	1)12V DC (external adapter for 220 V AC / 12 V DC) 2) back-up reserve – 4x NiMH battery size AA (ensures 8 working hours when fully charged) 3) reserve source – pneumatic
Frequency	adjustable: 20 c/min ± 5 % 40 c/min ± 5 % 120 c/min ± 5 % 180 c/min ± 5 %
Time ratio T_i : T_e	adjustable: 1:2 ± 5 % (inpulsion mode) 1:1 ± 5 % 2:1 ± 5 % (expulsion mode – expiration jet is turned on when 120 or 180 c/min active)
Change of insuflation pressure	0 – 300 kPa min. monitored by pressure gauge on the front panel
Max. ventilation power	according to insuflation pressure for insuflation pressure is 160 kPa: - nozzle No. I max. 2,5 kPa - nozzle No. I I max. 4,5 kPa - nozzle No. I II max. 7,0 kPa - expiration nozzle max. 4,0 kPa at zero flow
Pressure limit	fixed: 5 kPa ± 5 % (static), reaction time max. 120 ms
Minute Volume / Tidal Volume	Based on frequency and other parameters – use Brychta's Ventilation Equation and refer to Paravent User's manual/Quick Reference Guide
Ventilation application	1) intubational – endotracheal, transtracheal 2) by mask – non-invasive ventilation

Pressure gauge of ventilation	- whole course of breathing cycle (Paw) for frequency of 20 and 40 c/min - peak pressure at the end of inspiration (PIP) for frequency of 120 and 180 c/min
Dimensions W, H, L	235 x 100 x 250 mm
Weight	4,3 kg
Noise	max. 74 dB
Working conditions	Temperature: –10 to + 40 °C Humidity: max. 80 %
Classification	1. Type of protection against electricity accident: a) external adapter 230V AC / 12V DC (SZ 12/2/100 from the company Enco) is of **the class II** b) when mains feeding by external adapter 230V AC / 12V DC (SZ 12/2/100 from the company Enco) the whole machine is of **the class II B** as per ČSN EN60601-1 c) when using NiMH batteries as a reserve power supply, the machine is using **internal power supply** 2. Level of protection against electricity accident: **machine is of the type B** as per ČSN EN 60601-1 3. Level of protection against harmful penetration of water: external adapter 230V AC / 12V DC (SZ 12/2/100 from the company Enco) and the machine itself are **protected against leaking water (IPX1)** as per ČSN EN 60601-1 4. Working mode: Machine can be used in **permanent operation** 5. Protection against the danger of inflammation of flammable anaesthetic mixtures: **The device must not be used in environment where flammable anaesthetic mixtures are present** as per ČSN EN 60601-1.
For the ventilation in the field or during the transportation, pressure cylinder (with the capacity 2, 5, 10 l) equipped with the cylinder pressure regulator with the quick coupler set up to outlet overpressure 400 kPa ± 100 kPa is used as a source of compressed oxygen.	

Contact us!

Please do not hesitate to contact us with any of your questions or if you need a quote.
We are looking forward to hearing from you!

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