

Lung ventilator «Body Breathe VT1»

Specialists of the company «**Body-Forming**» began the development and manufacture of a prototype of a mobile artificial lung ventilation device.

ISO 13485 certification

Safety complies with Directive 93/42 EEC



Purpose

To organize production in Ukraine, mainly using own production capacities and contractors of Ukrainian enterprises (at least 70%) in an inexpensive price segment of combined mobile/stationary Lung ventilators, belonging to the group of professional devices, with the possibility of use in an ambulance or at the patient's home (managed by a professional employee) using, inter alia, for the treatment of patients with a diagnosis of COVID-19;

The main characteristics of the equipment (at the “prototype” stage)

- microprocessor control smart-device;
- seven ventilation modes (are planned VCV; PCV; PSV; SIMV; CPAP; VAC; PAC);
- built-in turbine air supply drive, allowing without supply of compressed gases carry out ventilation;
- channels of inhalation and exhalation with a replaceable exhalation valve with the characteristics of professional Lung ventilators;
- from seven sensors: an ultrasonic oxygen sensor FiO_2 (not requiring calibration and replacement), sensors of inspiratory and expiratory flows, inspiratory pressure sensors, expiratory pressure sensors, proximal and atmospheric control sensors;
- from five temperature sensors to control the temperature inside the apparatus, power transformer, turbine, internal voltage stabilizer, built-in battery;

The main characteristics of the equipment (at the “prototype” stage)

- 7-8-inch color LCD display with graphs of pressure and flow waveforms and spending as a function of time;
- three power sources:
 - from a 220V network with a fireproof classic transformer power supply;
 - from the built-in Li-ion battery;
 - from an external Li-ion Power Bank or car acid battery.
- the ability to supply oxygen from a cylinder, concentrator, pipeline.

Price Comparisons

Planned cost of sales of ventilators “Body Breathe VT1”, 7 ventilation modes 140 000 - 180 000 UAH.; eq. (\$ 5,000 - \$ 7,000)

- expert-class ventilators in Kiev are assembled/manufactured by the Ukrainian company “UTAS”, the sales price segment (up to COVID-19) is 450,000 - 600,000 UAH. (\$17,000 - \$25,000)

- imported ventilators with similar characteristics (up to COVID-19) :

- “Drager Carina”, 5 ventilation modes, cost - \$22 000;

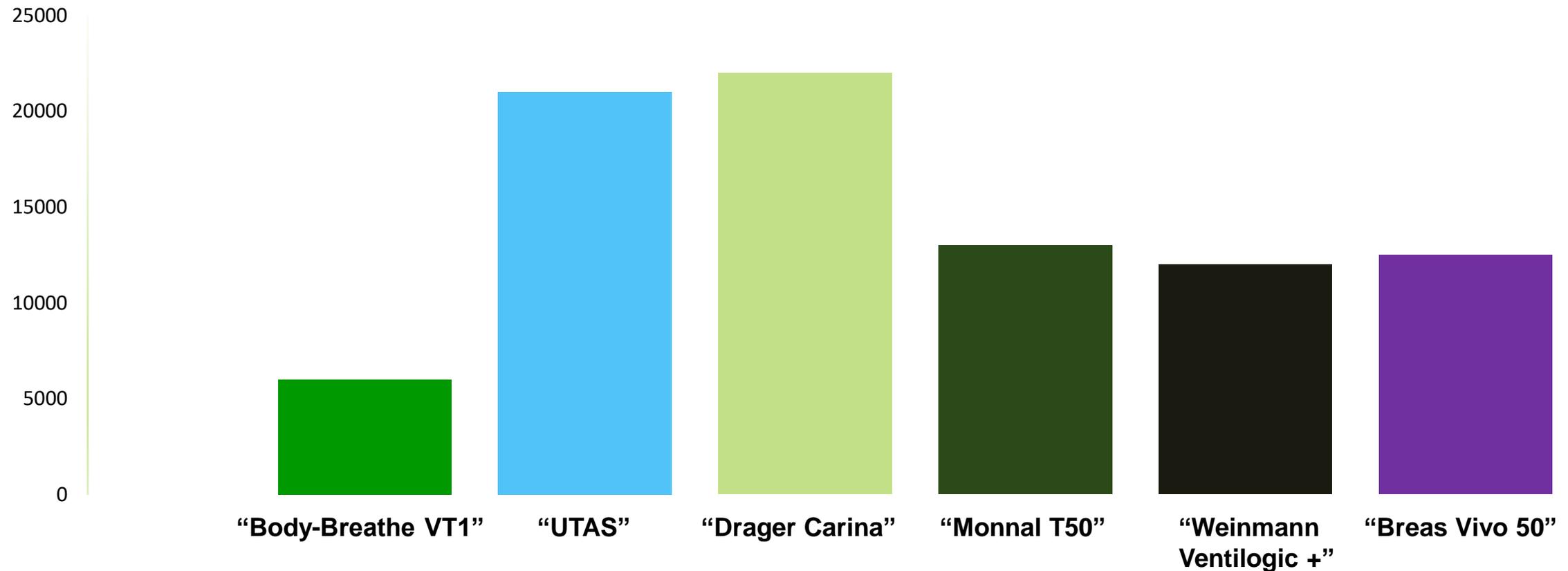
- “Monnal T50”, 4 ventilation modes, cost - \$13 000;

- “Weinmann Ventilologic +”, 6 ventilation modes, cost - \$12 000;

- “Breas Vivo 50”, 7 ventilation modes, cost - \$12 500;

Comparative price chart

Comparison of prices for ventilators of different manufacturers



Descriptive part

The “**Body Breathe VT1**” ventilator is designed for long-term and short-term respiratory support in adults and children.

A high-performance turbine is built into the “**Body Breathe VT1**” apparatus, which allows for respiratory support of the patient without the supply of compressed gases and ventilation with ambient air. The device is adapted to work with any available source of high-pressure oxygen - a centralized wiring, cylinder, or low-pressure sources - a bedside oxygen concentrator.

Monitoring oxygen content using an ultrasonic sensor, does not require calibration, replacement and additional costs throughout the life of the apparatus.





The ventilator “**Body Breathe VT1**” is equipped with a universal bracket with the possibility of mounting on a wheeled cart, wall or pendant console.

The “**Body Breathe VT1**” device allows you to save monitoring data in non-volatile memory. The event log displays all changes in ventilation parameters and alarms that have occurred. Built-in network interface with the ability to transfer data to the central station via wired or wireless communications. Convenient menus make the setup process simple and intuitive.

Built-in flow generator - the turbine allows you to work stably in the absence of compressed gas at the inlet, as well as work from high- and low-pressure oxygen sources;

Additionally, a high-contrast LED display with a diagonal of 20 cm is integrated;

Handle for carrying the device;

Autonomous work from the built-in battery 3 hours;

Built-in ultrasonic oxygen sensor that does not require calibration and regular replacement;

Automatic switching between available power sources;

Work from oxygen sources of high or low pressure;

Automatic self-testing after switching on, as well as during lung ventilation in order to timely detect deviations in the operation of all elements and systems of the device;

Stable monitoring of oxygen concentration using an ultrasonic sensor that does not require recalibration and replacement throughout the life of the apparatus;

Non-volatile memory with preservation of all information and current settings after turning off the device;

Built-in battery pack for battery life;

Multilevel system of audiovisual and text alarms for timely informing medical staff.



Visualization of the device

All requirements of the ISO 13485 standard
and the directive 93/42 EEC are met



Optional accessories

User workstation equipment (rack and devices for fixing and storing materials and tools)

Quality and reliability. ITD products meet all modern requirements in accordance with ISO 13485. It is distinguished by high quality and reliability.

Development of an individual configuration, taking into account all the requirements for functionality and design.

Options are as comfortable as possible for daily work.

Safety - complies with Directive 93/42 EEC and is manufactured using high quality materials

Maximum system capacity: 50 kg. Maximum shelf / rack capacity: 10 kg

Color: 901 = RAL 5021 aquamarine; 902 = RAL 5013 cobalt blue; 903 = RAL 7035 light gray



Summary

An inexpensive price characteristics, compact design and long-term autonomous operation of the “Body Breathe VT1” ventilator, a wide range of functional capabilities and ease of operation are the optimal combination of using the device in intensive care, in the field or in operating units.

Enhanced network digital-capabilities allow you to integrate the “Body Breathe VT1” ventilator into a hospital information network, into a medical staff alert system or an automated computerized workstation of an anesthetist-resuscitator using wireless technology.

The multimedia interfaces of the “Body Breathe VT1” ventilator provide the ability to work with a connected external monitor, as well as the ability to transfer and store data on external media - USB, MicroSD.