

## Balanced bag-in-bottle

Atlantamed introduces the balanced bag-in-bottle ventilator. It is a pneumatically driven, electronically controlled system and it can use oxygen or air as drive gas. When compressing the internal bag with drive gas the breathing gas is pushed towards the patient's lungs using a positive pressure. Exhalation is a completely passive process, which allows the patient to exhale spontaneously. Atlantamed balanced bag-in-bottle ventilator provides a very natural approach of lung ventilation.



## Global performance



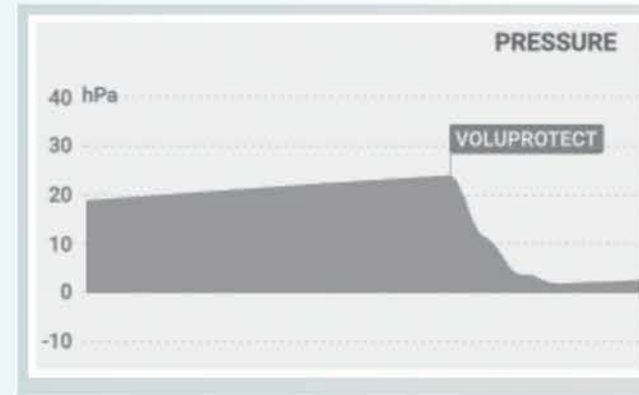
Anaesthesiologists from the four corners of the world have grown to love the simplicity of this performant machine, even in the most demanding environments. Whether it's in a rural, urban or academic hospital, whether it's in an induction room or operating theatre, **DIORA** has a proven track record. The reason for its success can be found in its unique combination of affordability and reliability. That's why today **DIORA** is ventilating patients in over tens of countries worldwide.

## Emergency performance

In case of emergency **DIORA** can easily continue ventilating. The backup battery guarantees a minimum of 4 hours. In case of complete power and battery failure **DIORA** still supports manual ventilation with administration of anaesthetic agent. Even without power the ORC and nitrous oxide cut-off maintain full functionality. Backup gas cylinders (option) for oxygen and nitrous oxide can be fitted onto the trolley for continued ventilation. When power is restored it takes only 5 seconds to restart **DIORA**.

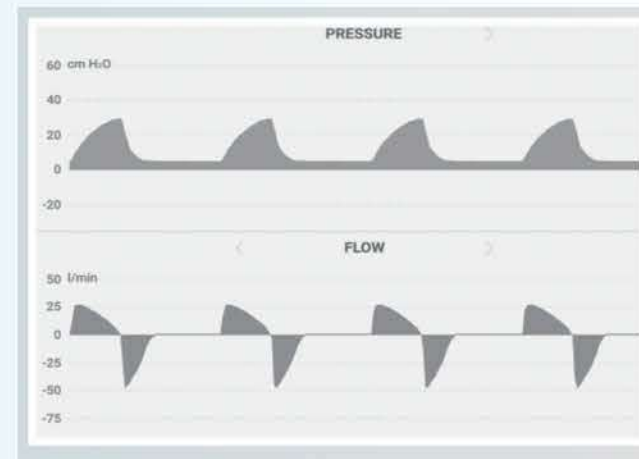


**VoluProtect** reduces the risk of ventilator-induced lung injury during manual or spontaneous ventilation. Clinical research has shown that sustained lung pressure at a critically high level can cause irreversible damage to lung tissue. *VoluProtect*® is designed to prevent this and to improve patient outcome. It effectively prevents volutrauma by reducing the lung pressure automatically in case of an inadvertently closed APL valve.



**BaroProtect** reduces the risk of ventilator-induced lung injury during volume-controlled ventilation. It effectively prevents barotrauma by limiting unexpected pressure spikes (e.g. due to changing lung compliance). At the same time, a full breathing cycle is completed without any risk of barotrauma. *BaroProtect* assesses each individual patient's respiratory functionality to determine the pressure level at which it is activated automatically.

**D<sup>FLOW</sup>** provides a decelerating flow pattern in volume-controlled ventilation. A decelerating flow provides a more desirable result in volume control. It reduces the risk of barotrauma at the end of inhalation. It improves patient-ventilator synchrony for patients requiring a high flow at the start of inhalation. And it allows for a more efficient oxygenation by delivering a larger part of the volume at an earlier stage of the inspiratory phase. In short, *D<sup>FLOW</sup>* makes volume-controlled ventilation a safer option.



User Friendly  
Lung protection  
neo to adult

Address: Unit 2, Kingsmill Business Park, Kingston, London, United Kingdom

Tell: +44 20 3417 9600

Email: [info@atlantamed.co.uk](mailto:info@atlantamed.co.uk)

The Art of Breathing

[www.atlantamed.co.uk](http://www.atlantamed.co.uk)

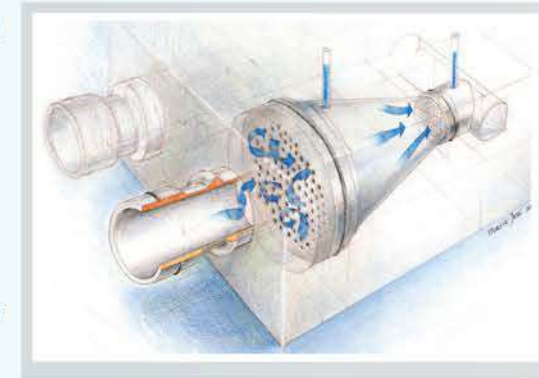


## Technical Specifications

Operational characteristics	
Weight	103 kg, basic equipment
Dimensions (HxWxD)	144 (56.7") x 65 (25.6") x 72 (28.4") cm
Display type	Monochrome LCD display
Diagonal size	15 cm (6")
Writing shelf (WxD)	25 cm (9.8") x 30 cm (11.8") (option)
Number of drawers	2
Mains power	100 - 240 V, AC 50 - 60 Hz
Battery time	≥ 240 minutes, typically 360 minutes (new, fully charged battery)
Environment	
Temperature	10 - 40°C (50 - 104°F)
Atmospheric pressure	570 - 1060 hPa (427 - 795 mmHg)
Humidity	10 - 95% (non-condensing)
Fresh gas delivery	
Fresh gas flow	0.1 - 37 l/min
Delivery type	Non-decoupled
O <sub>2</sub> flush	Approx. 35 l/min
Backup O <sub>2</sub> flow	0 - 15 l/min
ORC	≥ 25% O <sub>2</sub> in N <sub>2</sub> O
Aux. O <sub>2</sub> flow meter	0 - 15 l/min (option)
Common Gas Outlet (CGO) (for semi-open breathing system)	
Connection fresh gas outlet	22 mm OD, 15 mm ID
Ventilator (pneumatically driven, electronically controlled)	
Ventilation modes	MAN, SPONT, VCV, SIMV-VC, PCV, SIMV-PC,
Flow pattern in VC	Decelerating flow
Patient type	Neonates, Pediatrics, Adults
Tidal volume	10 - 1600 ml
Peak pressure	6 - 70 cmH <sub>2</sub> O / mbar / hPa
Pressure limitation	7 - 99 cmH <sub>2</sub> O / mbar / hPa
PEEP	Off, 1 - 20 cmH <sub>2</sub> O / mbar / hPa
Respiratory rate	4 - 80 /min
Backup rate in PS	Off, 2 - 60 /min
Backup pressure in PS	4 - 70 cmH <sub>2</sub> O / mbar / hPa
I:E ratio	4:1 - 1:6
Inspiratory pause in VC	0 - 50 %
Trigger	Off, -2 to -20 cmH <sub>2</sub> O
External connections	
Serial ports	1x 9 pole D-sub connector (RS232)

## Durable flow sensor

Atlantamed durable flow sensor measures the differential pressure (Fleisch principle). A laminar plate transforms turbulent flow into laminar flow to obtain a more precise measurement. The flow sensors can be autoclaved (134°C) as part of the Patient Breathing Unit (PBU) and can be reused during the entire life cycle of the unit. A 10-year warranty on the flow sensor guarantees an unequalled cost-efficiency. Atlantamed's flow sensor can reduce the cost of ownership of an anaesthesia ventilator by up to 30%.



## Service-friendly



The DIORA platform is very accessible for technical interventions. All crucial components are positioned in such a way that they can be accessed without any major disassembly. Opening just two screws allows the whole ventilator casing to tilt downwards. To further improve the service-friendliness an interactive calibration screen allows the service engineer to assess the status of internal components. DIORA is designed to minimise downtime.

## Preventive maintenance

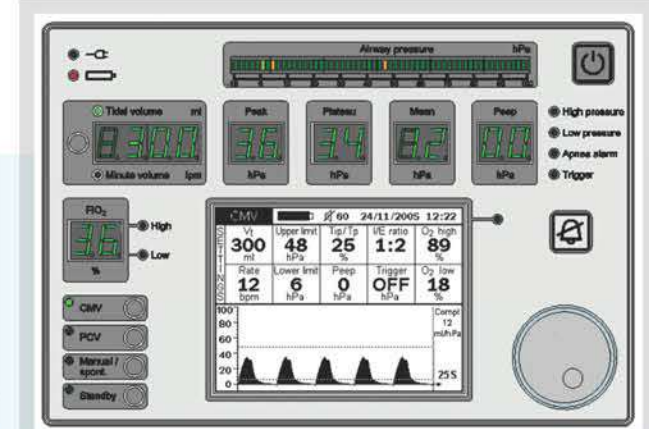
DIORA is a pneumatically driven ventilator, meaning it doesn't contain any electromotor or turbine. This drastically reduces the overall maintenance cost per unit. DIORA requires preventive maintenance every twelve months. To allow for efficient preventive maintenance predefined service sets are available. This allows the service engineer to perform the annual preventive maintenance in a time-efficient way. DIORA offers optimal performance in return for a minimum of service.



## User-friendly

### Intelligent simplicity

The 6 inch (15 cm) monochrome display shows the pressure waveform and the selected parameters. The surrounding LED displays show the measured parameters, the oxygen concentration and the pressure barograph per breath. Easy access to the keyboard controls and rotary knob make for a straightforward anaesthesia ventilator. Ventilation parameters can be preselected in the setup menu to adapt DIORA to your individual approach. To easily monitor the remaining volume of backup oxygen and/or nitrous oxide two pressure gauges are ergonomically located directly above the ventilator controls.



### Ventilation modes

- CMV  = VCV\*, SIMV-VC\*
- PCV  = PCV, SIMV-PC
- Manual / spont.  = MAN, SPONT
- Standby

DIORA is the most compact anaesthesia ventilator, but at the same time it is completely equipped to handle even the most demanding anaesthetic procedures. It offers a wide range of ventilation modes: MAN, SPONT, VCV, SIMV-VC, PCV and SIMV-PC. Thanks to its balanced bag-in-bottle ventilator DIORA can provide a decelerating flow pattern in volume-controlled ventilation to approach a more natural way of lung ventilation.

### Ergonomic design

Its slim design makes it an ideal solution for even the smallest of operating theatres. With its reduced footprint space allocation is no longer an issue. A writing shelf (option) can be installed to extend the working surface. Neptunemed also has a top shelf to accommodate the vital signs monitor. At the backside of the unit two gas cylinders can be fit onto the trolley with separate pressure regulators (option) or with pin-index yokes (option). DIORA comes with an integrated airway suction system, which operates on a medical vacuum system.

