

Option Volume Ventilation

Infinity® Acute Care System™ – Dräger Babylog® VN500: Combining the benefits of Volume Guarantee ventilation (VG) with the enhanced safety of Mandatory Minute Ventilation (PC-MMV), the Volume Ventilation option for the Babylog® VN500 ventilation unit is the most advanced volume ventilation tool for neonatal respiratory care Dräger has ever developed.



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NEW VOLUME GUARANTEE FUNCTIONALITY

- Volume Guarantee ventilation is used as an adjunct to the Pressure Control (PC-) CMV, SIMV, A/C and PSV modes, providing accurate tidal volume control for these pressure-controlled modes.
- Our highly advanced PC-MMV/VG mode functions much like PC-SIMV with Volume Guarantee continuously regulates the rate of mandatory cycles to maintain a minimum set minute volume.
- Volume Guarantee can also be used in conjunction with the High Frequency Oscillation (PC-HFO/VG) option to automatically regulate the pressure amplitude required to maintain the set tidal volume during high-frequency ventilation.
- Our new Spontaneous CPAP mode with Volume Support (SPN-CPAP/VS) regulates Pressure Support to maintain tidal volumes during spontaneous breathing.

VOLUME GUARANTEE – THE GOLD STANDARD IN NEONATAL VENTILATION

Respiratory regulation in premature neonates can sometimes be erratic. These babies frequently demonstrate substantial

variation in respiratory drive and other parameters, often on a breath-to-breath basis. Surfactant therapy can have a rapid and profound impact on compliance values.¹ Assuring the accurate delivery of tidal volumes during changes in compliance, resistance and leak volumes is a technically challenging prospect, but one that's well worth the effort. Scientific documentation have shown that strategies utilizing Volume Guarantee can significantly lower mean airway pressures and avoid potential risks such as overdistension, barotrauma and hypocarbia.² The goal is not just to provide guaranteed tidal volumes, but to ventilate in harmony with the baby. So Dräger has now combined the tidal volume-based advantages of Volume Guarantee (VG) with a new minute volume based mode – Mandatory Minute Ventilation (PC-MMV). The result is enhanced synchrony, a reduction of mean airway pressures and a more comfortable infant.³

THE FOREFRONT OF VOLUME GUARANTEE TECHNOLOGY – MMV

The Dräger Mandatory Minute Volume (PC-MMV) mode is based on conventional pressure-controlled synchronized intermittent mandatory ventilation. By continuously analyzing volume and flow



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The Babylog® VN500 with Infinity® Medical Cockpit™ C500

rates including changes in resistance and compliance, this mode maintains a minimum set minute volume by adjusting the mandatory cycle frequency. This mode includes integrated apnea ventilation, and Pressure Support can be provided to help support spontaneous breathing efforts between mandatory cycles. In neonates with erratic respiratory drive and regulation, this sophisticated Volume Guarantee solution results in improved synchrony and more stable blood gas concentrations. Excessive inflation is rapidly recognized and corrected, helping to avoid complications such as pneumothorax. When combined, scientific evidence suggest that these benefits can significantly reduce ventilation related time.³

HIGH FREQUENCY OSCILLATION OPTION USING VOLUME GUARANTEE

This unique feature, available in conjunction with the High Frequency Oscillation option for the Babylog VN500, maintains stable minute volumes in the HFO mode. By continuously regulating the oscillation amplitude, PC-HFO/VG compensates for dynamic changes in both the lung and the breathing circuit. Blood gases are again less subject to variation and complications associated with uncontrolled hyperventilation, such as periventricular leucomalacia (PVL), can be avoided.⁴

CPAP WITH VOLUME SUPPORT (SPN-CPAP/VS)

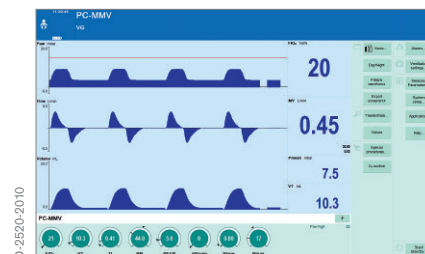
The Babylog VN500 Volume Ventilation option also allows you the ability to regulate Pressure Support in infants breathing spontaneously to achieve target tidal volumes.

Volume Guarantee has been integrated into protocols around the world. Benefits are documented not only on a scientific level but from patient and practitioner feedback responsible for delivering care. It's those experiences that drive us to provide even the smallest patients with innovative tools and relevant technology.

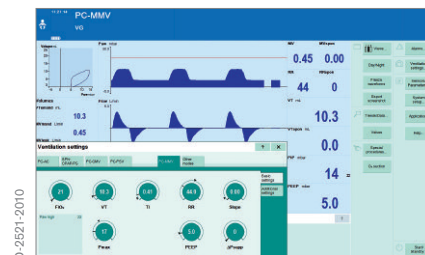
References

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2. High-Frequency Oscillatory Ventilation versus conventional mechanical ventilation for very-low-birth-weight-infants, Sherry Courtney, M.D., et al. New England Journal of Medicine, Volume 347, No 9, 2002.
3. Computer-controlled minute ventilation in preterm infants undergoing mechanical ventilation, Claire N, Gerhardt T, Hummler H, Everett R, Bancalari E: Journal of pediatrics, Volume 131, Number 6, 1997.

4. A Crossover analysis of mandatory minute ventilation compared to synchronized intermittent mandatory ventilation in neonates, Guthrie SO, Lynn C, LaFleur BJ, Donn SM, Walsh WF: Journal of Perinatology, 2005 25:643-646.



Volume Guarantee allows tidal volume control in pressure limited ventilation.



During PC-MMV a minimum minute ventilation can be set.

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The quality management system at Dräger Medical GmbH is certified according to ISO 13485, ISO 9001 and Annex II.3 of Directive 93/42/EEC (Medical devices).