

Option: High Frequency Oscillation

Infinity® Acute Care System™ – Dräger Babylog® VN500:
By adding the High Frequency Oscillation (HFO) option to your Babylog® VN500 ventilation unit, you can greatly expand your spectrum of respiratory resources without changing ventilators.



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A POWERFUL TOOL FOR ANY NICU

There are some neonates who cannot be adequately ventilated, even with sophisticated conventional mechanical ventilation. Therefore respiratory insufficiency remains one of the major causes of neonatal mortality.^{1,4,5} Intensification of conventional ventilation with higher rates and airway pressures leads to an increased incidence of volutrauma. Especially the high shearing forces resulting from large pressure amplitudes damage lung tissue.^{1,3} High Frequency Oscillatory (HFO) ventilation may resolve these situations. Ventilation with high-frequency pressure oscillations enables gas to be exchanged in the lungs despite very small tidal volumes (often in the dead space volume range). While pressure amplitudes may be considerable in the breathing circuit, only small fluctuations occur around the mean pressure in the lungs. The efficacy of HFO is primarily due to improvement in pulmonary gas exchange. Yet it can also have favorable influence on respiratory mechanics and hemodynamics.^{1,2}

Most NICU specialists agree that High Frequency Oscillation can play an important role in neonatal respiratory

treatment. Protecting immature lungs from the consequences of ventilator-induced lung injury is one of the main goals of this advanced form of ventilation.³ Until now, providing powerful High Frequency Oscillation for the entire range of NICU patients has often meant exchanging one ventilator for another which includes logistical challenges and patient risks. Working with multiple ventilators not only increases the complexity of caring for your patients, it's also less economical and can increase the possibility of user error.

INTRODUCING HIGH FREQUENCY OSCILLATION FOR THE BABYLOG VN500

To help you solve these challenges, Dräger has developed the HFO option for the new Babylog VN500. It enables you to turn your Babylog VN500 ventilator into a powerful high frequency oscillator at the touch of a button. The option not only provides powerful and consistent High Frequency Oscillation delivery but also other useful tools, such as combining High Frequency Oscillation with Volume Guarantee (HFO-VG) and High Frequency Oscillation integrating Sigh functionality (HFO-Sigh).



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The Babylog® VN500 with Infinity® Medical Cockpit™ C500

VOLUME GUARANTEE (HFO-VG)

This unique feature maintains stable minute volumes. By continuously regulating the oscillation amplitude HFO-VG compensates for dynamic changes in both the lung and the breathing circuit. Blood gases become less susceptible to potentially hazardous variation, and complications associated with uncontrolled hyperventilation, such as periventricular leucomalacia (PVL), can be avoided.

PRECISE MONITORING FOR ENHANCED SAFETY

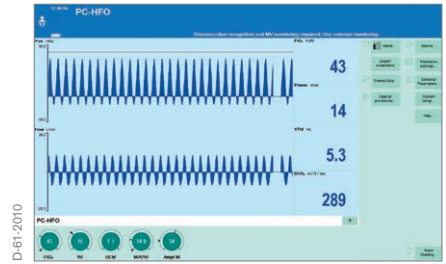
To ensure ventilation is truly effective the High Frequency Oscillation option accurately monitors both tidal and minute volumes, not only pressure. This means you can rapidly detect and treat airway obstruction that may occur. An easy to read screen displays all relevant HFO parameters and trends that are configurable to suit your particular needs.

THE BIRTH OF A NEW ERA

The High Frequency Oscillation option turns your Babylog VN500 into a powerful high frequency oscillator at the touch of a button. Enter the new era of neonatal ventilation and experience the sophisticated tools designed to manage your tiniest patients.

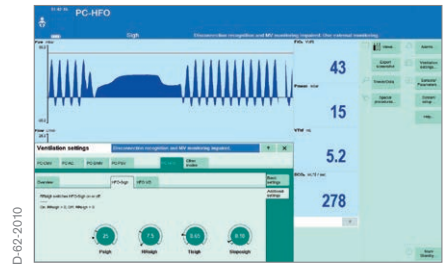
References:

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2. IFU, VN500- PC-HFO description, 9038982 1st edition June 2009
3. High Frequency Ventilation in Neonates, W Wong, TF Fox, PC Ng, KL Cheung, HK Paediatric (new series) 2003; 8:113-120.
4. High-Frequency oscillatory ventilation in children: a single-center experience of 53 cases, Fieke YAM Slee-Wijffels a.o.
5. Perinatal and pediatric Respiratory Care, third edition; B Walsh, M. Czerwinske, R. DiBlasi, 2010. Neonatal and Pediatric High Frequency Ventilation, chapter 20; 353-372.



True oscillation

The oscillation generated by the HFO option is sinusoidal; expiration is supported by active expiration to prevent air trapping. The result is smooth, precise and gentle oscillation.



High Frequency Sigh (HFO-Sigh)

HFO-Sigh helps avoid atelectasis and can be triggered at preset intervals or performed manually as required, following suctioning maneuvers for example.

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