The Plus in the Name
VentStar Helix heated (N) plus – a ventilation hose system for the high-frequency ventilation of preterm babies and neonates

Hemel Hempstead – Although high-frequency ventilation is usually the last option for treatment of babies and neonates with critical lung disease, many do respond well to this mode of ventilation. However it is vital that the technology used is specially designed for the application. The VentStar Helix heated (N) plus from Dräger is aligned to the specific requirements for the ventilation of preterm¹ babies and neonates. The “Plus” designation in the name refers to the products specific design for high-frequency ventilation.

The air that we breathe in every spontaneous breath is heated and humidified by the mucous membrane in the upper airway and reaches our lungs in this condition. Whilst a healthy body performs this independently, a ventilated person relies on technology. Heated ventilation hose systems play a key role in this respect. They supply the patient with heated and humidified breathing gas so that the patient remains optimally hydrated².

The ventilation of preterm babies and neonates places special demands on the material and technology used for the ventilation hose system. An example is high-frequency ventilation³, and many preterm babies and neonates with critical lung diseases respond positively to this form of ventilation; although it is often the last option for treating these seriously ill babies. However, it can only be used if the ventilator and ventilation hose system are both designed for high-frequency ventilation.

VentStar Helix heated (N) plus has been specifically developed for this ventilation mode and for interaction with ventilators that have a high-frequency ventilation function (e.g. Dräger Babylog VN500).

Low compliance for small tidal volumes
Ventilation hose system material for preterm babies and neonates must also meet specific requirements. VentStar Helix heated (N) plus uses hoses that only...
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expand slightly so that the ventilation pressure in the system is maintained, and even the smallest volume of breathing gas passes through the ventilation hose to the patient. This is necessary because the tidal volume of neonatal patients is smaller than for adults, and lies within the range of four to 100 ml per breath, compared to 500 to 800 ml per breath for an adult. This necessitates a low compliance – a low elasticity – of the ventilation hose.

Even heat distribution, minimised condensate
A helical heating wire, which winds around the hose system as a double-helix for the VentStar Helix heated (N) plus evenly heats the breathing gas from the outside, ensuring a virtually free gas flow. This means that the inside of the hose is free of heating wires. The benefit of this is that the breathing gas can quickly flow through the hose into the neonatal patient’s airway with low resistance. This minimises condensate because the disposable ventilation hose constantly heats the breathing gas over its entire length. Condensate normally forms at colder spots.

Heated ventilation hoses for every patient category
With the launch of the VentStar Helix heated (N) plus, Dräger’s portfolio of heated ventilation hoses – VentStar Helix heated – now includes a system solution for every patient category – neonates, children and adults. All components can be connected and aligned to one another.

Find out more at www.draeger.com/accessories-consumables.

The VentStar Helix heated (N) plus is manufactured by Drägerwerk AG & Co. KGaA.

¹ 15 million babies are born prematurely every year (cf. WHO: “Born to soon. The Global Action Report on Preterm Birth”, 2012). A baby is considered preterm if it is born before the end of the 37th gestational week – the trend is on the rise. A preterm birth may be associated with complications – such as lung immaturity. Ventilation hoses specifically for preterm babies and neonates can support the treatment of neonatal patients.

² The mucociliary clearance continues to be ensured so that secretion can be transported away. This reduces the risk of infection.

³ High-frequency ventilation “… has now emerged into a comprehensive ventilatory strategy applied throughout the world as both an a priori and rescue ventilatory modality. Distinguishing characteristics of contemporary HFOV include:
1. a frequency range from 3-20 Hz (180 to 1200 breaths/minute);
2. active inspiratory and expiratory phases;
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