Sophie

The innovative ventilator system for neonatology

+ Innovation „external trigger“ for deadspace free ventilation synchronization
+ Smoother non-invasive ventilation modes
+ Integrated respiratory gas humidifier
+ Ergonomic design
+ High frequency oscillation
Sophie  The innovative neonatology ventilator system

In intensive cooperation with renowned physicians, F. Stephan GmbH has succeeded in developing SOPHIE as a neonatology ventilator system based on the proven cutting-edge technology of STEPHANIE while at the same time setting new standards in terms of efficiency, design and operability. With its flexibility and performance, SOPHIE can be adapted easily and reliably to the required ventilator situation for premature and newborn infants. In addition to conventional and high frequency ventilation strategies it also allows non-invasive ventilation. In combination with the innovative patient interface „EasyFlow“ and its masks and binausal prongs the system sets new standards in non-invasive ventilation of premature and newborn infants.

Ventilation modes
SOPHIE offers all established conventional pressure controlled ventilation forms. Convenient undelayed change between various ventilation situations is possible simple by menu selection.
F. Stephan GmbH’s proven volume limitation feature is naturally also a component of SOPHIE. If the expiratory volume reaches the set volume limit, the pressure of the following inspiration is restricted thus quickly and reliably preventing excessive tidal volumes respectively applies the lowest possible ventilation pressure.

High Frequency Ventilation
SOPHIE is a ventilator that combines high-frequency oscillation and conventional ventilation strategies in one machine. The HFOV, which is available by pressing a button, can be carried out without any delay or need to change the patient tubes. The integration of the heated humidifier avoids any additional compressible volumes that would reduce the HFOV performance.

Optimum respiratory gas conditioning
The integrated respiratory gas humidifier provides the patient simply and safely with ideally heated and humidified respiratory gas through molecular humidification. The intelligent control system prevents any condensation in the heated, temperature-monitored patient tubes. SOPHIE thus needs absolutely no additional equipment to condition the respiratory gas.
Non-invasive Ventilation (NIV)
The beneficial results of non-invasive ventilation of prematures are generally known and very well accepted. Without sufficient synchronization with the patient, however, the risk of ventilator induced lung injury such as pneumothoraces also increases. Because of the special patient interfaces in NIV, the use of conventional sensors for synchronization is either impossible or accompanied by major difficulties.
The F. Stephan GmbH therefore developed a system, which detects the abdominal movements of the patient by means of a pressure capsule. This produces a reliable fast acting (<30ms) and stable external trigger signal. This external trigger signal enables the application of all conventional ventilation modes in non-invasive ventilation, synchronized with the patient.

Innovative design/Hygienic safety
SOPHIE’s innovative design combines top quality aluminum and glass surfaces to produce an aesthetic whole.
SOPHIE’s compatibility with STEPHANIE is another advantage: patient parts, tubes and sensors are identical and can be exchanged between the two machines without any problems.

Intuitive operation concept
All settings can be adjusted with just one single knob. The user is guided systematically through the ventilation menu, with the display only showing the relevant parameters for the chosen ventilation form. The parameters can be adapted easily to the patient’s needs even before starting ventilation. Efficient monitoring permits safe control at all times. Clearly allocated buttons make it much easier to separately adapt the relevant parameters during ventilation.