



# Sophie

The innovative ventilator system  
for neonatology

- + Intuitive, user-friendly operation concept
- + Perfect monitoring
- + Integrated respiratory gas humidifier
- + Ergonomic, futuristic design
- + High-frequency oscillation
- + Patient parts, hoses and sensors identical with STEPHANIE



## 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. This includes not only conventional ventilation strategies but also the use of high-frequency oscillation. The innovative design permits uncompromising hospital use and leaves nothing to be desired thanks to its versatility.



### Ventilation forms

SOPHIE offers all established conventional pressure-controlled ventilation forms. Convenient undelayed change between various ventilation situations is possible simply by menu selection. This permits swift reaction to changes and ensures the best possible therapy.

F. Stephan GmbH's proven volume limitation feature is naturally also a component of SOPHIE. When the expiratory volume reaches the limit, the pressure of the subsequent inspiration is limited. Excessive tidal volume is quickly and reliably prevented or applied for the lowest possible ventilation pressure.

### High-frequency oscillation

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 integrated 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. An intelligent sensor system prevents any condensation in the heated, temperature-monitored patient tubes. SOPHIE thus needs absolutely no additional equipment to condition the respiratory gas.

### **Innovative design/Hygienic safety**

SOPHIE's futuristic design combines top quality aluminum and glass surfaces to produce an aesthetic whole. All buttons are behind glass. The top quality, precisely fitted aluminum surfaces leave no edges or corners for bacteria or germs to settle.

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.

# Sophie

## Technical Specifications

General specifications	
MPG class	II b
Dimensions	395* x 330 x 350 mm (WxHxD) * plus patient part 75 mm
Weight	23 kg
Power supply	
Mains	90-264 V AC, 50-60 Hz, 150 VA
Battery	24 V DC, min. 30 min
Gas supply	
AIR	3-6 bar + 0.5 bar
O <sub>2</sub>	3-6 bar + 0.5 bar
Operating mode	
Pressure-controlled	linear, sinus, rectangle volume limitation
Ventilation modes	
CPAP	with/without backup HFO (optional)
SIMV	IT'T (PSV)
assist controlled	IT'T (PSV)
IMV	HFO (optional)
Parameters	
Operating unit	
Pmax	5 ... 60 mbar
PEEP	0 ... 30 mbar
Temperature	30 ... 40 °C
Inspiration time	0.1 ... 2 s
Expiration time	0.2 ... 60 s
FiO <sub>2</sub>	21 ... 100 %
Trigger Flow	0.1 ... 2.9 l/min
Pressure	0.1 ... 2.9 mbar
High-frequency oscillation (optional)	
Inspiration portion	33 ... 50 %
Frequency	5 ... 15 Hz (300 ... 900/min)
Amplitude	0 ... 100 %
Patient section	
Humidification bottle	350 ml
Preoxygenation	21 ... 100 % O <sub>2</sub> (max. 7 min)
Insp. Hold	1 ... 7 s

Monitoring	
Display	10,4" color TFT
Pressure	Pmax, Pmean, Peep Posz (optional)
Volume	MV, VT <sub>e</sub> , VT <sub>i</sub> , Vleak Vo, MVo (optional)
Respiration frequency	
Inspiration portion	
FiO <sub>2</sub>	
Respiration gas temperature	
Resistance	
Compliance	
Graph Display	P(t), V(t), V'(t) V(P), V'(V), V'(P) Scaling Measurement function
Monitoring	
Alarms	visual, acoustic plain text message
Pressure	Pmax, Pmean, Peep Posz (optional)
Volume	MV, VT <sub>e</sub> MVo (optional)
FiO <sub>2</sub>	
Respiration gas temperature	
Apnoesis	
Battery control	
Data output	
RS232	
Sensors	
Flow/Volume	Pneumotachograph Typ B to 10 l/min Typ C to 22 l/min
FiO <sub>2</sub>	El. chem. oxygen cell
Temperature	Temperature sensor proximal distal