



# Christina

The efficient neonatology ventilation system

- + Effective and variable
- + Perfect monitoring with 10,4" TFT monitor
- + Integrated breathing gas humidifying
- + Heated patient tube system
- + High-frequency oscillation (optional)



## Christina The efficient neonatology ventilation system

Right from the start, F. Stephan GmbH specialized in ventilation and respiration therapy particularly for pediatric use. Many years of research and trusting cooperation with physicians and hospitals have brought our company immense know-how and first-rate technical expertise in this field. Engineers and technicians at F. Stephan GmbH are well aware of all the problems and requirements involved in sensitive ventilation of newborn and preterm infants. Together they have developed efficient, professional solutions which take account of the indispensable high quality standards demanded in pediatric applications. The best example for this is the neonatology ventilation system CHRISTINA.



### Ventilation forms

CHRISTINA is an excellent solution for fulfilling all the criteria indispensable to effective, safe ventilation of preterm infants. The unit is easy to use and clearly organised, with outstanding respiration function monitoring while offering all conventional forms of ventilation, such as IMV, SIMV and back-up ventilation. It goes without saying that spontaneous respiration (SV/CPAP) is possible with absolutely reliable apnea monitoring and fast changeover to manual ventilation with PEEP and plateau.

On request from the customer, CHRISTINA can also be combined with the super high-frequency oscillator SHF 3000. This permits effective, safe high-frequency ventilation to improve intra-pulmonary gas exchange. CHRISTINA can also be equipped with a micro vaporizer for application of medication aerosols as an optional feature.

## Pediatrics



### Outstanding respiration gas conditioning

The integrated respiration air humidifying system vaporizes on a molecular basis for outstanding conditioning of the respiration gas. An intelligent sensor prevents condensation in the heated patient tubes bringing the temperature-monitored respiration gas to the patient. That means no external units are needed for conditioning the respiration gas. Another positive aspect is that this system prevents both frequent changes in patient tubes and condensation. The patient component can be replaced quickly and easily, and is suitable for autoclaving at a temperature of up to 134°C.

### TFT color screen for optimum diagnostics

Perfect registration and visualization of all relevant parameters on the 10,4" TFT color screen permits optimum diagnosis of the respiration mechanism. The visualization forms (numerical/graphical) can be selected in a menu. Detailed visualization is possible of the ventilation pressure curve, in-/expiratory flow and tidal volume in curves and ventilation loops. Reliable alarm functions and plain text error messages permit rapid reactions in critical situations. Exact documentation of the patient data is also indispensable: this is provided for by analog data outputs and a serial port.



Clinical Experience  
 Technical Competence

# Christina

## Technical Specifications

General specifications	
MPG <sup>1</sup> class	II b
Dimensions	340* x 280 x 245 mm (WxHxD) * plus 80 mm patient section
Weight	13 kg
Power supply	
Mains	100-230 V AC, 50-60 Hz 100 VA
Battery	24 V DC Ca. 5 min
Gas supply	
AIR	3-6 bar + 0,5 bar
O <sub>2</sub>	3-6 bar + 0,5 bar
Operating modes	
Volume-controlled, constant flow	
Pressure-limited	
Ventilation modes	
IMV	
SIMV	
Assisted/controlled	
CPAP with apnea monitoring	
CPAP with apnea monitoring	
Test	
Parameters	
Operating unit	
Flow	0 ... 20 l/min
FiO <sub>2</sub>	21 ... 100 %
Inspiration time	0,1 ... 2 s
Expiration time	0,1 ... 58 s
Trigger	0,2 ... 2 l/min
	0,2 ... 2 mbar
Temperature	30 ... 40 °C
Humidification	
Jet depression	
Patient section	
PEEP	0 ... 30 mbar
PLATEAU	15 ... 60 mbar

Monitoring	
Display	10,4" colour TFT
Pressure	Pmax, Pmean, PEEP
Volume	MV, VT <sub>e</sub> , VT <sub>i</sub> , Vleak
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
	Trend visualization
	Pmax Pmean MV
Monitoring	
Alarms	Visual, acoustic Plain text message
	Pressure
Volume	Pmax, Pmean, Peep MV, VT <sub>e</sub>
FiO <sub>2</sub>	
Respiration gas temperatur	
Apnea	
Data outputs	
RS232	
Printer connection	
Analog signal outputs	
1 ventilation pressure	
2 respiratory flow	
3 optionally configurable	
Sensors	
Flow/volume	Pneumotachograph Type B to 10 l/min Type C to 22 l/min
	FiO <sub>2</sub>
	Temperature
El. chem. oxygen cell	
Temperature sensors	

<sup>1</sup>MPG = German abbreviation for Medical Devices Law