Chirana

Medical & Dental Company

Chirana AURA V®

Chirana AURA V represents pneumatic ventilation system with above-standard ventilation modes and functions that give priority to the efforts of patient and eliminates stress breathing. It is intended for neonatal, pediatric, and adult patients. It is based on the respiratory system that is able to automatically compensate the dead space of breathing circuit. Colour 15" touch screen and intuitive user interface allows easy adjustment of basic modes and their modifications, as well as optimization system of ventilation parameters, Auto-Start and multi-level ventilation (variable volume, pressure, and time). Automatic check-in tests and self-assistant calibration are integrated to the device.

Ventilation modes:

CMV, SCMV, PCV, SPCV, SIMV, SIMV+PS, SIMVp, SIMVp+PS, PS, PS-CMV, CPAP, nCPAP, HFM-CPAP, HFloNV, 2-level, 2-level+PS, APRV, APMV, PMLV, CFvS, SIGH, NIV, PS-VG, PC-VG, SIMV-VG, 2-level-VG, PMLV-VG, UVM

Backup system for the gas and power supply

- During failure of central gas supply, there is opportunity of backup system by medical compressor
- Mobile undercarriage for ease moving of the device and mounting of medical compressor
- Minimum of 3 hours for ventilation on internal battery, protection against power fluctuations

Higher ventilation options

- Non-invasive ventilation (NIV) is active for all ventilation modes and oxygen therapy
- The option of integrating mainstream and sidestream gas analysis method
- The option of ultrasonic or pneumatic nebulizer selection
- Functions such as simple Recruit manoeuvre and Weaning processing
- Function AutoStart represents system of ventilation start and recommendations of ventilation basic parameters; its key task is multi-level ventilation mode setting. This function allows very quick and nearly automatic setting of the device what is valuable in stress and critical situations
    - The option of multi-level ventilation of apnea patients (difficult ARDS, viral pneumonia, another non-homogenous lung spread)
    - High frequency modulated CPAC intended for patients under 5 kg
    - UVM represents computer-aided system with semi-automatic adjustment of parameters when patient is being disconnected from ventilator after operation
    - Mechanical parameters of lung of patients PAi, PAe, PEEPi, PEEP, PAmin, Cst, Cdyn, Paw, Risys, Resys, Taui, Taue, f, Ti%, VT, MV, Vd/Vt
    - Complex metabolic analysis of a patient, including energy consumption by organism – indirect calorimetry
    - Self-adaptive system expire AAE
    - Proportional control of minute ventilation APMV in all modes controlled by pressure
    - Compensation endotracheal tube
    - Graphic display of curves, loops, and trends
    - The option of patient identification card and export of the trends into PC with the option of its next adaptation
    - The option of connection to central information system by LAN interface

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TECHNICAL PARAMETERS

· Power supply

- O2 supply pressure	2,8 kPax100 to 6 kPax100, 120l.min-1
- AIR supply pressure	2,8 kPax100 to 6 kPax100, 120l.min-1
- security class of the device	class I
- type of applied part	B
- feeding rated electric voltage	TN-S 110 - 240 V, 50/60 Hz
- own source of electric energy	12 V/ 8 Ah Pb
- running time on own resource at default parameters	more than 2 hours
- max. input	300VA device + accessories

· Ventilation parameters

- breathing volume Vt	for CMV from 4 to 2000 ml, for PCV from 2 ml
- minute ventilation MV	0,1 to 35 l.min-1
- inspiration flow Q	0 to 240 l.min-1
- support inspiration flow Finsp	0 – 60 l.min-1
- max. inspiration pressure pmax	1 to 10 kPa
- inspiration pressure at PCV ppc	0,5 to 7 kPa – setting over PEEP
- inspiration pressure at PS pps	0 to 7 kPa – setting over PEEP
- breathing frequency f	1 to 180 c.min-1
- breathing frequency of mandatory breaths at SIMV fSIMV	1 to 60 c.min-1, step 0,5 c.min-1
- inspiration time Ti %	10% to 90% from Tc
- inspiration pause Tp	0 to 75% (recommended value from 10%)
- extension of insprium / inspiration hold	6 s
- time ratio	1 : 299 to 9 : 1
- PEEP	0 to 5 kPa
- ramp – angle of the start-up curve pressure/flow	OFF,20 to 100 l.min-1, step 10 l.min-1
- concentration of O2 in the inspiration flow	21 to 100 %
- concentration of CO2 in the inspiration/expiration flow	0 to 10 %
- deep breath	OFF,10 to 100th adjustable up to 10
- volume/pressure of the deep breath Sigh	1,25 x Vt / 1,25 x ppc / 1,25 x pps
- frequency of the upper ventilation pressure level fpeeph	1 to 20 c.min-1
- duration of upper pressure level PEEPH Tih %	20to80% z Th-total time = 60/fpeeph
- upper pressure level PEEPH	OFF,0,5 to 2 kPa – pressure increase to the level PEEP
- frequency of high frequency oscillation fhf	500 to 1000 c.min-1
- amplitude of high frequency oscillation PhF	OFF to 20 cmH2O
- bias flow – basic flow	OFF, 1 to 30 l.min-1
- sensitivity of assistor - flow	0,5 to 20 l.min-1, OFF – adult 0,1 to 20 l.min-1, OFF – pedi
- pressure	0,1 to 1,5 kPa, OFF
- Leakage	OFF, 20 to 70 % step 1%
- inspiratory and expiratory resistance	< 600 Pa at 60 l.min-1 (D-lite sensor) < 600 Pa at 5 l.min-1 (Pedi-Lite sensor)
- Internal volume of the complete breathing system	1,2 l without humidifier
- Compliance	12 ml.kPa-1
- Medium level of acoustic pressure	< 47 dBA in distance 1 m
Medium level of acoustic operation	< 57 dBA

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· Controlled and displayed parameters, alarm parameters

· Ventilation parameters

- alphanumeric evaluated parameters	Paw, Vt, MV, Pmin = PEEP, Pmean, %O2, %CO2, f, T/M
- graphically displayed data – pressure	pressure curve, P/V curve
- flow	flow curve, Q/V curve
- volume	volume curve, P/V curve, Q/V curve
- CO2	CO2 curve
- parameters of lung mechanics	PAi, PAe, PEEPi, PEEP, PAmin, Cst, Cdyn, Paw, Risys, Resys, Taui, Taue, f, Ti%, VT, MV

· Alarms

- technical alarms	supply pressure of O2, AIR, electric supply, failures in the system, mistakes during the test
- ventilation alarms – pressure	pmax, pmin, PEEPmax
- volume	MVmax, MVmin, Vtmin, Vtmax- O2
- inspiration concentration	FiO2min, FiO2max
- CO2	CO2min, max
- frequency	fmin
- level of acoustic alarm pressure	(55 to 75) dBA from 1 m

· Screen

- Display	15" TFT-LCD

· Pneumatic nebulizer

- Supply pressure	400 kPa ± 50 kPa
- O2 consumption	3 l.min-1
- Aerosol quantity	20 ± 8 g.h-1

· Ultrasonic nebulizer

- Aerosol Output rate	0.24 ml/min
- Aerosol Output	1.08 ml emitted of 2.0 ml dose
- Residual Volume	< 0.1 ml for 3 ml dose

· Disposable filter

Filtration efficiency- Bacterial (%)	> 99,98
- Virus (%)	> 99,9
Respiratory space	60 ml
Pressure decrease	at 30 l.min-1 max. 40 Pa at 60 l.min-1 max. 80 Pa

· Dimensions, weight

- Width x depth x height	610 x 560 x 1100 mm, height with the control panel 1500 mm
- Design	table, stand
- Weight	65 kg ± 10%