

SPECIFICATIONS OF VENTILATOR (ADULT, PAEDIATRIC AND NEONATAL)

Operational Requirements:

1. It should be microprocessor Controlled ventilator with integrated facility for Ventilation monitoring suitable for Neonatal to adult ventilation.
2. The unit should be external compressor based for precise gas delivery (not a turbine / piston/ blower based).
3. Demonstration of the equipment is a must.

Technical Specifications:

4. Hinged arm holder for holding the circuit
5. Should have integrated Colored Touch screen, 12 Inch or more
6. It should have inbuilt facility to measure and display for all patient category (Adult to neonatal)
 - a) 3 waves- Pressure and Time, Volume and Time and Flow and Time.
 - b) 3 loops- P-V, F-V, P-F with facility of saving of Loops for reference.
 - c) Status indicator for Ventilator mode, Battery life, patient data, alarm settings, clock etc.
 - d) Simultaneous display of set and exhaled parameter, 2 waveform and 2 loops and Alarm
7. should have Trending facility for 24 hours or more
8. should have Automatic compliance & Leakage compensation for circuit
9. Should have following settings for all age groups.
 - a) Tidal Volume 5 ml to 1500 ml
 - b) Pressure (insp) 2- 80 cmH₂O
 - c) Pressure Ramp / Flow patterns
 - d) Respiratory Rate 1 to 150 bpm, Insp. Time 0.1 to 3 sec, I : E Ratio 5:1 to 1:5
 - e) CPAP/PEEP 0-40 cmH₂O
 - f) Pressure support 2-80 cm H₂O
 - g) FIO₂ 21 to 100%
 - h) Pause Time 0 to 2 sec
 - i) Flow Trigger 0.2 to 15 lpm
10. Should have ,monitoring of the following parameters:-
 - a) Airway Pressure (Peak & Mean)
 - b) Tidal volume (Inspired & Expired)
 - c) Minute volume (Expired)
 - d) Spontaneous Minute Volume
 - e) Total Frequency
 - f) FIO₂
 - g) Intrinsic PEEP
 - h) Plateau Pressure
 - i) Resistance & Compliance
 - j) Use selector Alarms for all measured & monitored parameters
11. Should have following modes or equitant modes of ventilation
 - a) Volume controlled
 - b) Pressure Controlled
 - d) SIMV (Pressure Control and volume control) with pressure support

23

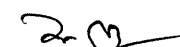
- e) CPAP/PEEP, PSV + assured tidal volume / guarantee
- g) Any advance mode like pressure controlled volume guaranteed / PRVC / AUTOFLOW or equivalent
- h) TCPL with continuous flow for neonates
- i) Non Invasive ventilation including Nasal CPAP for neonates.
- 12. should have Apnea /backup ventilation
- 13. Expiratory block should be autoclaveable and no routine calibration required
- 14. Should have ,monitoring of the following parameters
 - a. Occlusion Pressure(P0.1), Max Inspiratory pressure (Pi max)
 - b. RSBI , Imposed work of Breathing (WOBi)
- 15. should have integrated (in-built) nebuliser or synchronized ultrasonic nebuliser with capability to deliver fine particle On line"
- 16. should have integrated Battery backup for minimum 2 hour for main unit

System Configuration Accessories, spares and consumables:

- 17. ICU Ventilator mounted on trolley
- 18. Adult , Paediatric, Neonatal autoclavable silicone patient breathing circuits -02 each
- 19. Reusable and autoclavable Flow sensor and exhalation valve/ expiratory cassette - 4 nos each. The expiratory flow sensor and valve should have 5 years complete replacement (free of cost)
- 20. Hinged Support Arm - 1no
- 21. Air and Oxygen Hose - each 1 no
- 22. Medical Air Compressor , with CE mark
- 23. Reusable Masks (Small, Medium, Large) with each machine.- 01 set each
- 24. Humidifier -Servo controlled with digital monitoring of inspired gas temperature -01 . All accessories required like temp. probe , heating wire , draw, chamber etc - each 1 no.

Standards, Safety and Training:

- 25. Should be USFDA/European CE approved product. The supplier must be ISO certified company.
- 26. Demonstration of quoted equipment model is a must.
- 27. Should have local service facility .The service provider should have the necessary equipments recommended by the manufacturer to carry out preventive maintenance test as per guidelines provided in the service/maintenance manual.
- 28. Should have Three year guarantee and provision for next five year Comprehensive Annual Maintenance Charges.
- 29. CMC: CMC shall be given @ 4 % of net rate (inclusive of Excise Duty & exclusive of VAT/CST etc.) plus service tax (as applicable) and yearly escalation of 5 % on last year's CMC price. The CMC may be awarded for five years (on yearly basis) after Guarantee period of three years.



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