Annexure-A

Re-Tender Notice No:- RIMS/PUR/PAED-VEN-14 Imphal, the 21st Jan 2015

A. Specifications of Advanced neonatal intensive care ventilator:- (US FDA approved/CE certified)

1. Advanced technology dedicated neonatal ventilator (not universal use ventilator) – for neonates with possibility to upgrade with additional features.
2. Continuous flow, pressure limited, time cycled ventilator design.
3. Multi microprocessor controlled integrated system with individual selection of various ventilation parameters.
4. Ventilation modes –

   i. Volume control or volume guarantee modes or equivalent
   ii. Pressure control
   iii. Pressure support with back – up ventilation
   iv. CPAP (including non invasive ventilation)
   v. SIMV (volume control or volume guarantee mode or equivalent) + Pressure support
   vi. SIMV (pressure control) + pressure support
   vii. Apnoea back up ventilation

High frequency oscillatory ventilation (oscillating diaphragm based) with measurable parameters such as – DCO2, V tHF,MVim and Vtim

7. Specification –

a) Tidal volume ---------- 2 - 150 ml
b) CMV Frequency ---------- 1 - 300/min
c) SIMV frequency ---------- 1 - 40/min
d) Inspiration time ---------- 0.1 - 2 sec
e) Expiration time ---------- 0.1 - 60 sec
f) Pmax ---------- 5 - 60 cm H_2O
g) PEEP ---------- 0 - 30 cm H_2O
h) PEEP/CPAP ---------- 0 - 25 mbar
i) Trigger sensitivity ---
   Flow ---------- 0.2 - 3 L/min
   Pressure ---------- 0.2 - 3 cm H_2O
j) I : E ratio ---------- 1:0 - 1: 10
k) Fio2 ---------- 21 - 100% with integrated blender)
l) Inspiratory flow ---------- 1 - 30 L/min

m) High frequency ventilation capable --- CPAP + HFV , IMV + HFV
Frequency : 5 - 20 Hz (range)
Inspiration : 33 - 50%
MAP : 0 - 30 cm H_2O

8. Audio - visual alarms -
   a) Airway pressure - high/low
   b) High continuous pressure - high/low
   c) Tidal volume -high/low
   d) Expired minute volume -high/low
   e) Apnoea
   f) End expiratory pressure -high/low
   g) Respiratory failure
   h) Gas failure

9. Trend display for 24 hours (upto at least 20 parameters) with built-in log book

10. Suction support with pre - & post – oxygenation timings

11. Integrated nebulization facility (ultrasonic nebulizer which can deliver particle size < 3 micron & to be used off and on line with ventilator)

12. Monitoring of flow : at the Y piece with facility to activate or deactivate it

13. Display screen –

    a. Adequate (minimum 12") size colour single device user interface touch screen facility for real time display of scalar (pressure, flow and volume against time) and loop (pressure-volume ,volume- flow and pressure flow),with ability to display at least 3 types of waveforms & loops for each breath (flow, pressure, volume flow-volume loop, pressure volume loop etc.) with facility to freeze the same.
    b. 24 hr (day & night) visibility
    c. Access both rotary dial (manual) & touch screen
    d. Digital display of FiO2,peak pressure , MAP , CPAP/PEEP, expiratory tidal volume, expiratory minute volume, total frequency, spontaneous frequency , lung function monitoring - compliance, resistance, lung distension coefficient , lung time constant etc.

14. Oxygen mixer loss - Zero
15. Breathing gas tempt. 20 – 40 °C
16. Automatic compensation for leakage and should monitor display leakages.
17. Inbuilt good quality medical air compressor.
18. Power supply 100 - 240 V AC, 50 - 60 Hz, 210 VA, 24 V DC (opt.)

19. Battery (internal rechargeable , integrated with back up time of minimum 45 mins. both for ventilator and compressor)

20. Gas supply –

AIR 2.7 – 6.5 bar

O_2 2.7 – 6.5 bar

21. Others essential features---

a. Ventilator on trolley with wheels and brake facility
b. Integral medical air compressor
c. Auoclasveable expiratory unit
d. Humidifier (servo controlled heated wire humidifier) with reusable breathing unit autoclaveable (USFDA/European CE approved)
e. Circuit support arm
f. Each ventilator to have – 2 hose sets for conventional neonatal ventilator circuit , 4 hose sets of disposable conventional neonatal ventilator circuit, 1 hose set for HF ventilation.
g. Bacterial filters
h. Flow sensor - re usable (20 with each ventilator)
i. Oxygen cell
j. Oxygen connecting hose
k. Air connecting hose
l. Test lung
m. Heater wire (3 each)
n. Temperature probe (3 each)
o. Upgradation facility with EtCO2

22. Ventilator should have following options –

a. Adaptable ports for data trsnsfer and software compatible with Windows
b. Communication interface with laptop
c. PC software for archiving and analysis

23. Ventilator should be of latest design with guarantee for availability of spares for at least 5 years after warranty periods.

24. Instruction manual, training CD/DVD to be provided.

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