

AMENDMENT NO.5 Dated 27.03.2020

Ref No: HLL/SD/RBD/2019-20/TENDER/15 Dt: 05.03.2020

Title: Supply, installation and Commissioning of Ventilators- Specifications & Quantity

The following amendment has been incorporated to the bid document for the above tender;

1. Following products has been included;

Sr. No.	Item	Total tentative Quantity required	UoM
26	Ventilators	20000	Nos

Technical Specifications for Ventilator

1. The ventilator should be microprocessor based with active exhalation valve.
2. Should work on hospital external high pressure line. The compressor should be stand alone and from the same manufacturer with price quoted separately.
3. Suitable for use in ICU for Adult, Pediatric and Infant patients.
4. Should undergo automatic calibration system on start-up.
5. In the event of central Air line failure the compressor should activate automatically.
6. It should have in-built programmable ultrasonic nebulizer producing less than 3 micronmeter particle size
7. It should be easy to use having a color in-built touch screen at least 12 inch or more in size with screen lock, intuitive menu structure, Mode preset capability, Pressure bar graph/breath indicator and prioritized alarms.
8. Should have the following Ventilation Modes:
 - a. Volume Controlled ventilation (Assisted / Control) VCV
 - b. Pressure Controlled ventilation (Assisted / Control) PCV
 - c. Synchronized intermittent mandatory Ventilation V-SIMV AND P-SIMV
 - d. Pressure support ventilation (Spont, CPAP, PEEP) PSV
 - e. Non invasive ventilation VCV, PCV, SIMV, PSV
 - f. Airway pressure release ventilation APRV/ BI-PHASIC VENTILATION/ Pressure regulated volume control PRVC/ Volume assured pressure support VAPS
9. Should have the following Ventilation Settings and Ranges:
 - a) Tidal Volume 20 ml to 1500 ml or more
 - b) I:E ratio 1:4 to 4:1
 - c) Inspiratory Peak Flow 150 LPM or more (Compensated)
 - d) Maximum Inspiratory Peak Flow 200 l/min or more
 - e) Respiratory Rate 5 - 100 BPM
 - f) Pressure support 0-40 cm H₂O
 - g) Inspiratory Pressure: 0-80 cm H₂O
 - h) FiO₂ 21% to 100%

- i) T_i 0.1-5 sec or more
- j) PEEP/CPAP 0-50 cm H₂O
- k) Inspiratory pause, Expiratory Pause, sustained exhalation, Programmable/ adjustable SIGH
- l) Inspiratory Trigger (pressure- 0.1-15 mbar/ flow trigger- 0.1- 10 L/ min or more)

10. Should monitor the following parameters:

- Respiratory Phase & Type, Respiratory Rate, Exhaled Tidal Volume, Exhaled Min. Volume Total, % leak, Leak min. vol., Spont. Min. volume, I : E Ratio, Peak Inspiratory Pressure, Mean Airway Pressure, Plateau Pressure, End Expiratory Pressure, Auto/Intrinsic PEEP, % Oxygen Delivered, Frequency/ Tidal Volume (RSBI)

11. Should measure following Respiratory Mechanics/ Maneuvers:

- Static Compliance and Resistance, Low Inflection point (LIP) and upper inflection point (UIP), Maximum Inspiratory Pressure, Work of Breathing, Lung recruitment maneuver & Monitoring.

12. Should have a Graphics Mode with simultaneous display of all curves and loops:

a) Scalars

- Flow vs. Time
- Pressure vs. Time
- Volume vs Time

b) Loops

- Flow / Volume
- Pressure / Volume
- Pressure/flow

c) Facility for Freeze Screen

- Individual Analysis of Each Curve
- Loop Save and Overlay Function
- Individual Analysis of Each Loop

d) Calculated Values

- Inspiratory pause, Expiratory Pause

13. Scope of supply:

- Ventilator 1 No
- Patient Tubing (adult): 2 Nos/unit
- Patient Tubing (paed-infant): 2 Nos/unit
- Nebuliser kit 10Nos/ Ventilator.
- NIV Mask with harness (Reusable) 5 No for adult and Pediatric each/ Ventilator
- Bacteriological filters 10 Nos/ Ventilator.
- Humidifier-Automatic servo controlled with all accessories: 1 No/ Ventilator.
- Test lung 1 no. each for paediatric and adult
- Air & Oxygen hose : each 1 no.
- Support arm to hold pt. circuit - 1 no.
- Auto-clavable exhalation system with flow sensor- 2 no. , with 5 yrs. Warranty.

In case of Sensor going faulty, the firm should replace it free of cost basis during warranty as well as during CMC.

14. Should have audio-visual alarms along with appropriate message for:

- Inspiratory pressure, FiO₂ (High/Low), Resp. Rate, Tidal volume, minute ventilation, PEEP, O₂/Air fail, circuit leak-disconnection, Apnea

15. Alarm History of ≥ 1000 alarms.

16. Should have battery backup of atleast 30 minutes for ventilator

17. Should have Automatic Tube Compensation.

18. Displayed Trends Values for 48-72 hours atleast for above parameters.

19. The company should provide Five years comprehensive warranty (including labour and spares) and five years CMC, rates to be quoted separately. Prices of essential/spare items accessories also to be quoted separately.

20. The unit shall be capable of operating continuously in ambient temperature of 10 -50 deg C and relative humidity of 15-90%.

21. The unit shall be capable of being stored continuously in ambient temperature of 0 -50 deg C and relative humidity of 15-90%.

22. Power input to be 220-240VAC, Current: 2 Amps, 50Hz.

23. Should be US FDA or European CE/ ISO approved

24. Company should have service centre in Delhi/ NCR and should provide service 24x7.
25. Demonstration is a must.
26. Certified for meeting IEC 60601-1-4 Medical electrical equipment - Part 1-4: General requirements for safety - Collateral Standard: Programmable electrical medical systems
27. 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. Must submit user list and performance report within last 5 years from major Central Govt./State Govt./reputed private hospitals
29. List of important spare parts and accessories with their part number and costing.
30. Compliance Report to be submitted in a tabulated and point wise manner clearly mentioning the page/para number of original catalogue/data sheet. Any point, if not substantiated with authenticated catalogue/manual, will not be considered.
31. All equipment should be from the same manufacturer or OEM (original equipment manufacturer)

It may be noted that we have placed order for 10000 Ventilators with a delivery schedule of one month. If any manufacturer / supplier has a ventilator model with different specification, than the one indicated above and has similar large quantities to offer within a short time period may get the model evaluated and approved by a technical committee constituted by DGHS, Ministry of Health & Welfare, Govt. of India.

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