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No. F-8( )RMSC/EPM/M-7/2020-21/NIB-545/ 818

Dated: 24/06/21

**CLARIFICATION/CORRIGENDUM/ADDENDUM**

**Subject: Revised Technical Specification and revised bid schedule of item "Ventilator Basic and Ventilator Advance" No. F-8() RMSC/EPM/M-7/NIB-545/2020-21/ 171 date: 02.11.2020**

In reference to subject cited above NIB-545, various representation received from the firms and issues raised by the bidder are examined by the competent authorities and technical committee. The following clarification/corrigendum/addendum is issued for inclusion in bid document of items as below:-

**Revised Technical Specification of Ventilator Basic and Ventilator Advance -**

**Revised Technical Specifications of Basic Ventilator**

1. It should have microprocessor based technology for adult and pediatric application.
2. It should have user friendly touch screen pop-up menu or rotary encoder knob or both.
3. It should have simultaneous display of waveforms & loops on screen, screen size should be 12 inch or more.
4. It should have apnea backup ventilation.
5. It should have about 24 hour trend display.
6. It should have manual/auto nebulizer.
7. It should have standard ventilator modes:
  - a. CMV-V (Assist) and CMV-P (Pressure Support)
  - b. SIMV / V and SIMV / P
  - c. Bi-level Ventilation or equivalent.
  - d. CPAP and PEEP.
  - e. Facility for Non-Invasive ventilation
  - f. One optional advance ventilation mode: Any upgradable advance ventilation mode like ASV or MMV or PAV or equivalent.
8. It should have settings of:

a. Tidal volume:	20ml - 1500ml.
b. Inspiratory pressure:	5 - 70 cmH <sub>2</sub> O.
c. Pressure support:	0 - 30 cmH <sub>2</sub> O
d. Respiratory rate:	2-80 bpm.
e. Inspiratory time:	0.2-10 sec.
f. PEEP:	0 - 30 cmH <sub>2</sub> O.
g. O <sub>2</sub> delivery:	21-100%
9. Alarms should be user friendly, audio and visual with text message, system

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alarm should be for:

- a. Pressure changes (high/low).
- b. Tidal volume changes
- c. Minute volume changes
- d. High PEEP
- e. High/Low O<sub>2</sub> Concentration
- f. Power failure & Low Battery
- g. Patient disconnection
- h. Apnea

10. Monitoring data:

- a. Flow vs Time, Pressure vs Time and Volume vs Time graphs.
- b. Parameters: Rate, PIP, leakage, tidal volume, minute volume and Delivered O<sub>2</sub>%
- c. Display of set and measured parameters

11. Should have inbuilt/integrated Air source of same make.

12. It should be compatible with central gas supply of air & O<sub>2</sub> in ICU setup if applicable.

13. Battery backup for ventilator (excluding air source) should be minimum 2 Hours.

**System Configuration Accessories, spares and consumables:**

14. Mounting Trolley/ cart mounting for easy transportation and Hinged Support Arm - 1 no. All of same make.

15. Adult and Pediatric reusable silicone patient breathing circuits - 02 nos. each complete set.

16. Hose for Oxygen and compressed Air with connector to outlet in the respective hospital's site- 01 no. each

17. Reusable Masks (Large & Medium) with each machine - 01 set each

18. HME Filter 20.

**Standards, Safety and Training:**

19. Quoted model should have USFDA approval / CE certificate issued by a notified body registered in European commission. Relevant documents shall submit along with technical bid.

20. Demonstration of quoted equipment model is must for final technical approval.

21. Firm should have service engineer network in Rajasthan. 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.

22. **Guarantee:** for three years from the date of installation, including Oxygen Sensor.

23. **CMC:** CMC shall be given @ 4% of net rate (excluding GST as applicable) and yearly escalation of 5% on last year's CMC price. The CMC may be awarded for

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five years (on yearly basis) after Guarantee period of three years.

### **Revised Technical Specifications of Advanced Ventilator**

#### **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 of same make for precise gas delivery.

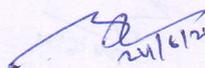
#### **Technical Specifications:**

3. Should have integrated Colored Touch screen 12 inch or more
4. It should have inbuilt facility to measure and display for all patient category (Adult to neonatal)
  - a) Should have End Tidal CO<sub>2</sub> detection by Volumetric Capnography
  - b) 3 waves - Pressure and Time, Volume and Time and Flow and Time.
  - c) 3 loops - P-V, F-V, P-F with facility of saving of Loops for reference.
  - d) Status indicator for Ventilator mode, Battery life, patient data, alarm settings, clock etc.
  - e) Simultaneous display of set and exhaled parameter, waveforms and loops.
5. Should have Trending facility for 24 hours or more
6. Should have Automatic compliance & Leakage compensation for circuit
7. Should have following settings for all age groups.
  - a) Tidal Volume: 2 ml to 2500 ml
  - b) Pressure (insp): 2 - 80 cmH<sub>2</sub>O
  - c) Pressure Ramp / Flow patterns
  - d) Respiratory Rate: 1 to 150 bpm,
  - e) Insp. Time: 0.1 to 3 sec,
  - f) I: E Ratio: 5:1 to 1:5
  - g) CPAP/PEEP: 0-40 cmH<sub>2</sub>O
  - h) Pressure support: 2-80 cm H<sub>2</sub>O
  - i) FiO<sub>2</sub>: 21 to 100%
  - j) Pause Time: 0 to 2 sec
  - k) Flow Trigger: 0.2 to 15 lpm
8. 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) FiO<sub>2</sub>
  - g) Intrinsic PEEP
  - h) Plateau Pressure
  - i) Resistance & Compliance
  - j) Use selector Alarms for all measured & monitored parameters.

  
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9. Should have following modes or equivalent modes of ventilation
    - a) Volume controlled
    - b) Pressure Controlled
    - c) SIMV (Pressure Control and volume control) with pressure support
    - d) CPAP/PEEP, PSV + assured tidal volume / guarantee
    - e) PRVC
    - f) Non Invasive ventilation including Nasal CPAP for neonates.
    - g) Spontaneous breathing trial
    - h) Any automated weaning mode like smartcare/NAVA/ASV/AVA.
  10. Should have Apnea / backup ventilation
  11. Expiratory block: not requiring routine calibration and could be sterilized.
  12. Should have monitoring of the following parameters
    - a. Occlusion Pressure (P0.1), Max Inspiratory pressure (Pi max)
    - b. RSBI, Imposed work of Breathing (WOBi)
  13. Should have integrated (in-built) nebulizer or synchronized ultrasonic nebulizer with capability to deliver fine particle on line.
  14. Should have integrated Battery backup for minimum 1 hour for main unit
- System Configuration Accessories, spares and consumables:**
15. Mounting Trolley/ cart mounting for easy transportation and Hinged Support Arm - 1 no. All of same make.
  16. Adult, Pediatrics, Neonatal autoclavable silicone patient breathing circuits - 02 nos. each complete set.
  17. Reusable and autoclavable Flow sensor and exhalation valve / expiratory cassette - 02 nos. each. The expiratory flow sensor and valve should have 5 years complete replacement (free of cost)
  18. Hose for Oxygen and compressed Air with connector to outlet in the respective hospital's site- 01 no. each
  19. Reusable Masks (Small, Medium, Large) with each machine - 01 set each
  20. HME Filter 20.
- Standards, Safety and Training:**
21. Quoted model should have USFDA approval / CE certificate issued by a notified body registered in European commission. Relevant documents shall submit along with technical bid.
  22. Demonstration of quoted equipment model is must for final technical approval.
  23. Firm should have service engineer network in Rajasthan. 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.
  24. **Guarantee:** for three years from the date of installation, including Oxygen Sensor.
  25. **CMC:** CMC shall be given @ 4% of net rate (excluding GST 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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**Revised bid schedule:-**

- E-bids are invited as per following revised time schedule:-

Last date & time for sale of bid form	Existing Dates		Extended Dates		
	Last date & time of receipt of bid form	Date & time of opening of technical bid	Last date & time for sale of bid form	Last date & time of receipt of bid form	Date & time of opening of technical bid
28.06.2021 6:00 p.m.	28.06.2021 6:00 p.m.	29.06.2021 03:00 p.m.	01.07.2021 6:00 p.m.	01.07.2021 6:00 p.m.	02.07.2021 03:00 p.m.

It is also clarified that information of award of contract shall be communicated to all participating bidders on the website [www.rmssc.nic.in](http://www.rmssc.nic.in) and [sppp.raj.nic.in](http://sppp.raj.nic.in). Please note that individual bidder will not be intimated.”

**Note:-** Please note that all above amendments/corrigendum in technical specifications/bid conditions is the integral part of (Section-V, Schedule of Supply, and Point no. 3) and the bid document. This corrigendum/ addendum should be signed and annexed with bid document. All other terms & conditions remains the same.

Executive Director (EPM)  
RMSCL, Jaipur