

**Amendment-II**

Ref.: Tender No. HSCC/SJH/Med.Eqpt./2015/17 dt. 10.5.2016.

Sub.: Procurement of Medical Equipment for New Emergency Block & Super-Specialty Block at Safderjung Hospital, New Delhi.

The amended specification of Item No. 8 ICU Ventilator are as follows:

**Universal Advanced ICU Ventilator Specification**

1. State of the are ventilator for use in intensive care , critical care intermediate care and emergency care
2. Device must be driven by a high performance built in turbine or an intergrated compressor of the same make as that of ventilator & to be shipped with ventilator the ventilator should switch over to wall air supply automatically in case of a problem & vise versa in case of integrated compressor.
3. Air source should be supplied along with ventilator the compressed air source compressor should be from the same manufacturer price should be separately quoted.
4. Must have US FDA & IEC 610101-3<sup>rd</sup> edition certification from a reputed EU agency.
5. Life supporting ventilation of adult pediatric infant neonate patient.
6. Should be able to operate on dual limb circuits (only on single –limb circuits not acceptable) should be silicon.
7. Invasive and Non invasive (NIV) Ventilation with automatic leak compensation in NIV
8. Mandatory & spontaneous flow  $\geq 180$  l/min or more
9. In built Li Ion battery backup o minimum 4 hours.
10. Colour touch screen fifteen inch or more.
11. USB & RS 232 Connections.
12. In built Aeroneb Nebulizer System.
13. Ethernet for connection to hospital network.
14. Automatic barometric compensation.
15. Complete automatic self check upon startup.
16. Animated lung and ventilation summery would be preferred.
- 17. Ventilator Modes.**
18. Pressure Controlled /assisted /SIMV Ventilation.
19. Volume controlled /assisted/ SIMV Ventilation.
20. CPAP/PEEP
21. PRVC or VTPC or similar. VS in PSV Mode
22. BPRV /Bivent /Bi-level or similar mode
23. APRV
24. Synchrony tools: Auto Rise time, Auto Exp. Threshold.
25. Advanced intelligent ventilation mode such as ASV intelligent or samrtcare with PPS or PAV + OR NAVA or similar for intelligent ventilation and weaning .
26. Non Invasive Ventilation with automatic leakage compensation  $\geq 100$  L/min Auto mode spontaneous breathing trial.
27. Facility of monitoring pleural pressure esophageal pressure diaphragmatic activity desirable and process be quoted separately.
28. Inspiratory and expiratory hold.
29. O2 flush customizable from 50 % to 100% O2 for 2 min.
30. ATC automatic tube compensation (fully configurable tube type, diameter compensation level % compensation phase.

31. Open lung tool like PV tool with facility to trace lower & upper inflection point.
32. In built upgradability to ET<sub>CO2</sub> with main stream technology, price to be quoted separately.
33. In built upgradability to SPO<sub>2</sub> monitoring, price to be quoted separately.
- 34. Control Setting**
35. Quick set up for automatically initial setting according to selected patient type & height based ideal body weight.
36. FIO<sub>2</sub> 21.....100%O<sub>2</sub>  
TIDAL Volume 02 .....2500 ML
37. PC 0.....100 mbar(CmH<sub>2</sub>O)  
PS 0.....80mbar (cmH<sub>2</sub>O)
38. PEEP 0.....50 mabr(cmH<sub>2</sub>O)
39. Respiratory rate Insp. Time 1.....100bpm, 0.1 to 10 seC
40. Flow trigger sensitivity 0.1 .....20L/Min
41. Pressure Trigger Sensitivity 0.1 .....15 mbar
42. Inspiratory pause
43. Insp. hold & exp hold.
44. Vol control flow waveform –Square Decelerating & 50 % decelerating

**Patient Monitoring**

45. User interface should be fully configurable by the user (doctor, nurse)
46. Simultaneous display of up to 8 curves or loops.
47. Curves Pressure  
Flow  
Volume  
Co<sub>2</sub>  
Pulse
48. Loops Pressure / Volume  
Volume/flow  
Pressure /flow

Reference loop & loop overlap, freeze facility with cursor.

49. Screen allows free configuration of curves and monitoring parameters
50. Patient proximal flow measurement for neonate infant categories preferred with reusable flow sensor.
51. Exhalation monitoring: Tidal volume, minute volume, for Mand & Spont Breaths.
52. Time Monitoring : Rate, insp, time , exp, time ,I:E,
53. Pressure monitoring : Peak, plateau, mean PEEP
54. Lung Mechanics: Compliance(static and dynamic) , Resistance(insp,and exp) Lung over-distention Parameter
55. NIV and spontaneous monitoring : % spontaneous breaths spontaneous inspiration time spontaneous exp. Volume , RSBI
56. Maneuver –related monitoring : AUTO PEEP ,PO.1 NIF, negative inspiratory force PEEP I volume
57. Capnography Volumetric etco<sub>2</sub> mainstream / sidestream, same sensor be interchangeable with in the machines in built realtime co<sub>2</sub> curve.
58. Pulse oximetry in built pulse Spo<sub>2</sub> and pulse curve.
59. Wave form freeze and cursor measurement.
60. Trending of all monitored parameters for a minimum of 72 hrs or more.
61. Export of trending data to computer Export of trending data and real time curves to computer.
- Alarm;**
62. Auto matic & manual setting should be possible.

63. Should be able to deactivate alarms for VtExp and MVExp in non invasive ventilation.
64. Connection to central alarming system
65. Alarm history  $\geq 2000$  alarms
66. Change of ventilation setting will automatically adjust directly related alarms.
67. EtCO2 High /low ,inCO2 high
68. Pulse high /low Spo2 low

**Accessories:**

69. Trolley with circuit support arm from the same manufacturer.
70. Compressor of the same make as ventilator to be shipped along with ventilator.
71. Circuit reusable
72. O2 Supply hose
73. Test lung: Neonatal, pediatric, adult from the same manufacturer to be quoted separately.
74. Etco2 main stream sensor & spo2 sensor(price to be offered separately)
75. Demonstration must be mandatory.
76. Must submit user list & performance report within last 5 years from major hospital.
77. Back to back warranty to be taken by the supplier from the principal to supply spares for minimum 10 years.
78. Comprehensive warranty for 5 years
79. Comprehensive maintenance contract for 5 years

All other tender terms and conditions remain unchanged.

Amendment to be issued will be uploaded on websites [www.tenderwizard.com/HSCC](http://www.tenderwizard.com/HSCC) & [www.hscltd.com](http://www.hscltd.com).

**Medical Superintendent  
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