Notice Inviting e-Tender

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Supply and Commissioning of different types of Medical Equipment for the Department of Anesthesia at Burdwan Medical College & Hospital

(Submission of Bid through *online*)

Bid Reference No.: WBMSCL/NIT-544/2025	**Dated-24.06.2025**

AMENDMENT-I

Schedule-II

REVISED Technical Specification of Anaesthesia Workstation

1. Should be advance, reliable, compact and mobile with integrated ventilator.
2. Should be based on microprocessor and suitable for low flow as well as minimal flow anaesthesia for adults, pediatric and neonatal use.
3. Machine should be suitable for neonates, pediatric and adults
4. Should have a facility to connect to the central supply (Oxygen, Nitrous oxide and air) pin index cylinder one each of oxygen and nitrous oxide with on screen digital display of pressure gauges for central supply and cylinder.
5. Machine should have working surface and illumination with the storage space for keeping the accessories. Should have central brake to lock the machine.
6. Should have electronic gas mixing with Fio2 & total flow setting along with virtual flow meter displays
7. Should have integrated safety feature like electronic hypoxic guard, N2O cut off incase of O2 low pressure/failure, alarm and O2 flush etc.
8. Should have onscreen virtual flow meter display of O2, N2O and air
9. Should have compact autoclavable breathing system and soda lime chamber maximum capacity of 1.5L . The soda lime canister should be compatible with the device.

10. Should have electronically controlled and electrically/pneumatically driven (Medical grade Air compressor from third party/ reputed manufacturer should be supplied for driving gas in case of pneumatically driven) anesthesia ventilator.
11. The machine should be suitable for low & minimal flow Anesthesia application
12. Should able to log all alarms, self tests, message and other events.
13. Should have integrated user customizable touch screen colour display & rotary knob with minimum 15" screen size.
14. The machine should have automatic calculations and presetting of patient specific ventilation settings via ideal body weight, age and height
15. The machine should calculate agents consumption by patient on a case by case basis
16. **Anesthesia ventilator should have the following settings:**
    a. Automatic breathing circuit leak & Compliance compensation.
    b. Spont Breathing
    c. Manual Ventilation
    d. Volume controlled mode
    e. Pressure controlled ventilation
    f. SIMV in VCV & PCV
    g. Pressure Support, PS with CPAP, PS with SIMV in VCV/PCV
    h. Should be upgradeable to Autoflow or PCV-VG or similar mode - delivering set tidal volume at minimum airway pressure and in combination with SIMV
    i. Tidal volume adjustment range 10 ml (in VCV) to 1500ml
    j. Adjustable PEEP: Off, 3 to 30 hPa (or cmH_2O); and CPAP: 3 to 30 mbar
    k. Resp frequency from 3 to 100 per min.
    l. I:E : max 4:1 - 1: 8
17. Should have fresh gas decoupling valve/compensation technology.
18. Should have external fresh gas outlet for connecting the open circuits.
19. Integrated breathing system warmer (Heated} for breathing gas conditioning and avoidance of condensation.
20. Should have dual flow sensing technology with flow sensor at inspiratory and expiratory side.
21. Should have simultaneous display of 3 or 4 real time wave forms for concentration of CO2, O2, and anaesthetic agents, airway pressure, inspiratory and expiratory flows and loops for P-V and F-V loops.
22. Anesthesia machine should monitor and display the measure value of minute volume, tidal volume, peak airway pressure, mean pressure, plateau, PEEP, dynamic compliance and resistance.
23. Should have pause mode for short term interruptions of ventilation.
24. Should have alarms for high/low volume for expired tidal volume, minute volume frequency and airway pressure
25. Should be supplied with Sevoflurane and Desflurane Vapouriser; All the vapourisers should be manufactured from same company as anaesthesia machine.
26. Should have dual detection of anesthetic agent in case of change of anesthetic agent.
27. Should have RS232 port to interface monitor to transfer the expired parameters on monitor and in-built data output port / USB for data retrieval
28. Should have battery back up to at least 60-90 minute including that for ventilator.
29. System should have backup ventilation option thru vaporizer in case of complete power and battery failure.
30. Should have auxiliary Oxygen supply system.

31. Should have anytime facility for manual ventilation possible at least with fresh gas O_2 delivery and dosage of volatile agents with airway pressure monitoring in case of system failure/power failure.
32. Should have the Indicator or decision support-tool to show required fresh gas flow of fresh gas setting based on metabolic consumption while used in Low flow and minimal flow.
33. Machine should be with integrated anesthesia gas monitoring with automatic identification of anesthetic agent (MAC and end tidal concentration) as well as O_2, N_2O, FiO_2 and ET CO_2
34. Should have sample gas return into the breathing system for better gas efficiency in low flow and minimal flow usage.
35. Should have heated breathing system for optimized minimal flow anaesthesia usage and ventilation quality.
36. Should be possible to deliver oxygen and anaesthetic agents in Man/spontaneous mode even when the machine is in system failure/power failure mode as an emergency back up
37. The machine should have adjustable alarm limits for all the parameters with auto set alarm function.
    a. The machine should have automatic display of MAC values
    b. Should have automatic activation of low agent alarm
    c. Should have alarm logbook for displaying and saving alarm history
    d. System leak and fresh-gas deficiency alarm
    e. Should have cardiac bypass mode
38. Should have fully automated self-test including calibration of all sensors without any user action necessary after start to test.
39. Should have backup manual mode to allow the direct change to manual ventilation while maintaining gas and ventilation monitoring; O_2 and anaesthetic agents from the vaporisers can be continuously delivered.
40. Should have facility for data storage on USB storage device like self-test results, alarm history, screen shots, trends and machine configurations
41. Should have integrated active AGS system.
42. **Standard and safety:** The bidder/ OEM should have valid CDSCO Certificate/Registration/License for both the manufacturer(s) and importer(s) as applicable