



## **Notice Inviting e-Tender**

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**Supply and Commissioning of 01 ( o n e ) unit of Heart Lung Machine for  
the Department of Cardiothoracic and Vascular Surgery, Medical College,  
Kolkata**

(Submission of Bid through *online*)

**Bid Reference No.: WBMSCL/NIT-078/2025**

**Dated-24.01.2025**

### **AMENDMENT-I**

## **Revised Technical Specifications** **Heart lung Machine and Temperature Control Unit with** **Standard Accessories**

1. Heart Lung Machine is an apparatus, through which blood is temporarily diverted, during heart surgery, to oxygenate it and pump it throughout the body, thus maintaining circulation until the heart and lungs are able to return to normal functioning.
2. Central control Monitors: All roller pumps, safety control (pressure, levels, timers and temperature) and monitoring should be controlled through one touch screen colour monitor
3. Central Control Monitor should provide 12 different customize perfusion screens
4. System should have the following features: 2 large roller pumps (Flow range 0-10 LPM) and 2 small single roller pumps (Flow range 0-4 LPM)
5. Roller pumps should be controlled through central control monitor and manually (Single operation will not be accepted)
6. HLM base should support 8 pumps (6 should be controlled through Monitor and 2 can be controlled manually)
7. Pump raceway should be rotatable and lock at every 15 degree
8. System should have master follower feature
9. Should be provided with: 2 pressure monitoring
10. Should be provided with the level detector with holder

11. Should have 1 bubble detector (3/8)
12. Roller pump should be able to deliver pulsatile flow.
13. Should have electronic venous occluder controlled by the central monitor (No manual venous occluder will be accepted)
14. Self adjusting tubing insertors should be provided with all the pumps (Should not need to change tubing Insertors for different size of tubings)
15. Cardioplegia pump should have display of total volume of each infusion along with delivery time. It should have the master and follower control with different CPG delivery concentration (1:1, 1:2, 1:4, 1:8, 1:16)
16. The unit should be supplied with a Battery backup for all pumps for a minimum of 60 minutes **or more**. Switch over from main power to battery backup should be automatic and immediate. The battery unit should be built in to the pump base and it should be recharged automatically when the system is operating with main power supply.
17. Individual roller pump heads should have Horse shoe Roller pumps with universal tubing inserter in which all types of tubings can be fitted.
18. Individual pump heads should have display in digital -The total infusion volume in liters and delivery time, the flow rates in LPM and in
19. Each Pump should have easy mechanism for occlusion setting for different thickness of tubes available in the market. Occlusion should be done with the running roller pump, occlusion setting should be 0.010
20. Should have Unidirectional hand crank facility as a critical safety feature hand crank loading should be from top for faster access.
21. Roller pump should have a self diagnostic circuit with provision to detect and display critical alarm conditions. Optional Pulsatile module which can be mounted on any of the blood pump.

#### **TEMPERATURE CONTROL MODULE:**

22. Delivery of water to arterial, cardioplegia heat exchangers and to thermal blankets should be available.
23. To work with power supply of 220±20 V 50 Hz.
24. Pressure regulated blanket ports maintaining the temperature of the arterial port.
25. Temperature display range of 3° - 42° Celsius.
26. Water outlet temperature of heat exchanger and blanket range 3-42°C.
27. Temperature probe module for the operating ranges of 3-42°C.

#### **Air-Oxygen Blender:**

28. Mechanical Air- Oxygen Blender with hoses and Flow meter
29. The bidder should submit valid CDSCO Certificate/Registration/License for both the manufacturer(s) and importer(s) as applicables.