

**AMENDMENT-V**

**Ref: IFB No. HSCC/SJH/Medical Equipment/2016/30 Dated 29.04.2017**

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

The amended specification has been received for Item No. 3 Heart Lung Machine and Item No. 4. Sternal Saw It is proposed to the bid submission date extend from 20.06.2017 to 27.06.2017 for item no. Item No. 3 Heart Lung Machine and Item No. 4. Sternal Saw. The details of amended specification are given below:-

**Item No. 4**

**AMENDED SPECIFICATION OF STERNAL SAW**

1. The Sternal Saw should be light weight and provide clear line of sight.
2. The Sternal Saw should operate through a flexible drive cable by an electric Motor/Pneumatic Powered.
3. It should be able to ETO Sterilized /autoclaved.
4. The blade holding mechanism should be chuck type assembly for quickly replacing the blades.
5. The reciprocating blade should have a 5-7 mm stroke length.
6. The saw should have a blade protector on it and blade protector should be easily replaceable.
7. Foot switch should permit variable saw speeds /Trigger controlled saw speed.
8. The system operates on 220V/250V, 50Hz, single phase/ Pneumatic Power.
9. It should be European CE or US FDA approved.
10. Warranty for 5 years and CMC for 5 years.
11. Demonstration of the apparatus is must.

**Item No. 3**

**AMENDED SPECIFICATION OF HEART LUNG MACHINE**

1. DESCRIPTION :

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. Technical Specifications:

- a) The unit should have 5 pumps and can be used as arterial, two suction, vent and cardioplegia with separate power supply and control modules. Should have easy access connectors for interchanging the pump.
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- b) The design of pump must be horse shoe or U shaped race way design and the pumps should have direct drive system and maintenance free. All the pumps should have pulsatile mode in built. Each module should work its own.
- c) Each head should be controlled individually and rotatable in different direction with master- slave control.
- d) Should have a spill proof base.
- e) The quoted model should be of latest generation.
- f) The unit should be supplied with a battery back up of minimum of 90 minutes for all the pumps. 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 automatic and immediate.
- g) Should have unidirectional /bidirectional hand crank facility as a critical safety feature hand crank loading should be from top for faster access.
- h) Accuracy: pump head raceway accuracy should be 0.03mm, occlusion accuracy should be- 0.03mm, occlusion rollers accuracy should be-0.015mm & maximum flow upto 16.2 LPM should be there.
- i) Occlusion: should have Thump wheel locking Mechanism. Or any other mechanism.
- j) Monitors: Pressure monitor (2), Timers (3), Temperature Monitor (4) and all the monitors should be touch screen or manual.
- k) Pressure Sensor should have 2 modes – Stop Mode & Control Mode.
- l) Cardioplegia module should have both Manual as well as Automatic operation.
- m) Should be provided with mechanical gas blender.
- n) Should be provided with Level Sensor and air Bubble sensor.
- o) Bubble Sensor should have different bubble detection thresholds and should also have micro- bubble detection function.
- p) Level sensor should be with 2 modes – Normal & Control Mode.
- q) Must have Master UPS – shows all the details like Battery time, Load time & Remaining time.
- r) The machine should start within 5 seconds.
- s) Should be provided with venous line clamp and it should be of light weight design and can be placed near venous reservoir without any support.
- t) Pumps should run on medically Safe voltage (24 V DC)

2.1) Roller pump should have a self diagnostic circuit with provision to detect and display the following alarm conditions:-

- a.)Over speed
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- b) Pump jam
- c) Belt slip
- d) Over occlusion
- e) Pump drive system with double v-grooved belt system
- f) Point deleted**
- g) Flow rate display should be calculated on the basis of pump shaft speed.

2.2) Should have a flexible lamp to monitor the level of blood in oxygenator/reservoir.

### 3. HEATER COOLER MACHINE

- a) The unit shall be capable of operating continuously in ambient temperature of 2 - 40.5 degree Celsius.
- b) The unit should have 2/3 independent tanks and 2/3 separate circuits and these circuits should be able to control patients' temperature and also heating and cooling of cardioplegia and should work simultaneously.
- c) The accuracy should be 0.1-3 C. Settings should be adjustable to 0.1-3C.
- d) The heater cooler unit should also be compatible to get integrated into the heart lung machine and can be controlled from heart lung machine apart from remote control.

Both the heart lung machine & heater cooler machine should be supplied by same principal company.

Both the heart lung machine & heater cooler machine should be US FDA & European CE approved.

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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).

All other tender terms and conditions remain unchanged.

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Medical Superintendent  
VMMC& Safdarjung Hospital