

PVMS OF MEDICAL EQUIPMENT	
Clinical Specialty	Cardiac Surgery
Generic Name	<b>Heart and Lung Machine</b>
Clinical Purpose	Cardiopulmonary bypass (CPB) is a technique that temporarily takes over the function of the heart and lungs during surgery, maintaining the circulation of blood and the oxygen content of the body. The CPB pump itself is often referred to as a heart-lung machine "the pump".
TECHNICAL SPECIFICATIONS	
<ul style="list-style-type: none"> <li>• 05 Pump Complete Modular Pumps console with all Modular Parameter</li> <li>• 04 Single roller pump+1 Twin Pump or Two Small roller Pump</li> <li>• Dual Pressure module</li> <li>• Temperature module</li> <li>• Monitor interface module</li> <li>• Power supply module</li> <li>• Battery backup minimum 90min.</li> <li>• Level sensor</li> <li>• Ultrasonic Bubble detector</li> <li>• Flexible Led Lamp</li> <li>• Mechanical /Electronic Gas blender</li> <li>• Cardioplegia Monitoring Unit</li> <li>• System Control Panel</li> <li>• Venous occluding clamp</li> </ul> <p><b>05- Pump Console:</b></p> <ul style="list-style-type: none"> <li>• Heart Lung machine should have modular system.</li> <li>• The Console should have 05 pump attachment.</li> <li>• Smooth stainless steel, painted metal and aluminum.</li> <li>• Entire system should operate on battery system for a minimum of 90 Minutes For arterial pump battery backup should be 180 minute or more.</li> <li>• Switch over from main power to battery backup should be automatic and immediate.</li> <li>• Battery Unit should be built in to the pump base.</li> <li>• It should recharge automatically when the system is operating with main power supply.</li> <li>• Pump-console should have single cable connection from external power supply.</li> <li>• Provision for a connection to PC.</li> <li>• 24Volt operated socket for all pumps to avoid risk.</li> <li>• Should have hand crank facility as a safety feature with each pump</li> </ul>	

APPROVED PVMS

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- All the pump should have facility of pulsatile mode

**System Control Monitor: Should display follow below components.**

- Pulsatile operation display.
- Pressure monitoring display.
- Temperature monitoring display.
- Timer system display.
- Battery voltage display.
- Safety buttons
- Alarm for shut down for any pump

**Cardioplegia monitoring unit:**

- It should display Volume ratio, timer, temperature, and pressure of full control of independent cardioplegia line.
- Master follower function and pump to stop

**Single Roller Pump:**

- The unit should have 5-pump compactly arranged with Universal connection
- Monitoring flow rates in LPM & RPM should be digitally display on the pump or equivalent
- Modules pump should have easy access connection for interchanging the pump with console.
- Pump should be peristaltic for durability and convince of handling.
- Roller pump should have a self-diagnostic circuit with provision to detect and display critical alarm conditions
- Each individual roller pump should be capable of running independently.
- Each Pump should operate onto 24 Volt.
- Roller Pump Range: 0-250 RPM
- Display of all pump condition on pump.
- Calibrations preset for ¼, 3/8 & ½ tubing.
- It should have Reverse flow capability.

**PRESSURE MONITOR: (Four pressure module)**

- Facility to monitor pressures.
- Along with necessary pressure transducers Kit, cables and domes reusable, with accurate digital display and alarm facilities audio and visual.
- It should have trend indicator and trend readout.
- Pole mounts for transducer Kit.

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