

# CentriMag™ Acute Circulatory Support System

## PEDIMAG™ BLOOD PUMP OVERVIEW<sup>1,2</sup>

The PediMag™ Blood Pump is operated by the CentriMag™ Acute Circulatory Support System. There are two parameters monitored: pump speed, measured in revolutions per minute (RPM), and flow, measured in liters per minute (LPM) via an ultrasonic flow probe. Pressure monitoring is available.



### SPECIFICATIONS

- Fully magnetically levitated rotor; no bearings or seals
- Utilized for right, left, biventricular and cardiopulmonary support
- Made of polycarbonate housing
- Maximum flow: 1.5 LPM
- Centrifugal pump
- 1/4" barbed inlet/outlet
- Disposable
- Maximum pressure: 540 mmHg
- Priming volume: 14 mL

### SPEED

- Fixed speed range is 0–5,500 RPM
- RPM steps can be made in 50 or 100 RPM increments
- Speed can be changed using either the monitor or console speed toggle button
- Monitor and console display the pump speed in RPM
- Optimize speed based on patient's needs
- Minor speed changes may have impact on flow

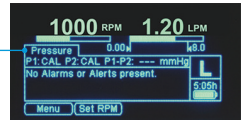
### FLOW

- Flow is measured in LPM via the flow probe
  - Typical flow is 0.5–1.5 LPM
- Reposition the flow probe per hospital guidelines
- Increase pump speed to increase flow
- Contribution from the native heart may impact flow
- Minimum and maximum flow alerts should be set per hospital guidelines



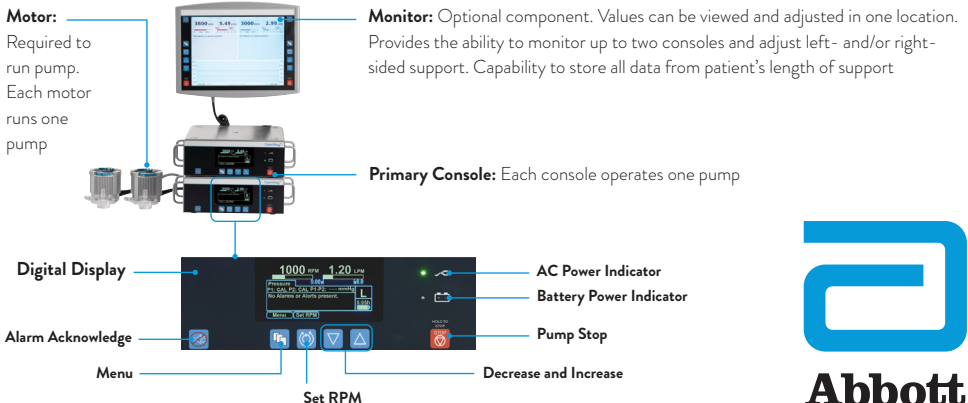
### PRESSURE MONITORING

- CentriMag™ Acute Circulatory Support System has the ability to support two pressure sensors: P1 and P2
- Pressure transducers can be connected to the primary console
- When the cables are connected to the primary console, the screen will automatically configure to display pressure measurements from the transducer
- Parameters are adjustable
- Pressure ranges from -150–900 mmHg
- Pressures can be zeroed at any time during support



Pressure

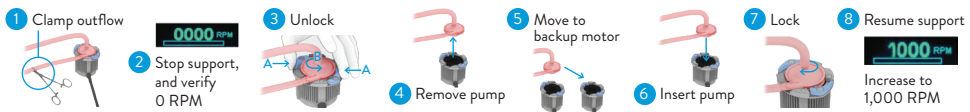
### SYSTEM COMPONENTS | Motor, console, flow probe and optional monitor



# CLINICAL CONSIDERATIONS

CONTINUOUS-FLOW PUMP	HEMODYNAMICS	ASSESSMENT
<ul style="list-style-type: none"> <li>Continuously provides support to the patient</li> <li>Plug the console into a protected power outlet</li> <li>Battery: 180 minutes</li> <li>Recharge time: 5 hours</li> <li>In the event of an emergency, clamp the outflow and switch to the backup console</li> </ul>	<p><b>Hemodynamics</b></p> <ul style="list-style-type: none"> <li>Afterload sensitive pump</li> <li>Monitor the filling pressure because the PediMag™ Blood Pump is preload dependent                             <ul style="list-style-type: none"> <li>If utilizing for BiVAD, RVAD flow should be less than LVAD flow</li> </ul> </li> </ul>	<p><b>Assess all cannulas, tubing and connectors</b></p> <ul style="list-style-type: none"> <li>Allow for complete visibility of the circuit. Ensure the motor remains uncovered and two clamps are available at the bedside. Continually assess for clot formation and tubing kinks</li> <li>Any change in parameters should be evaluated with all clinical considerations taken into account</li> </ul>

EMERGENCY CARE	EQUIPMENT	SAFETY INSPECTION
<ul style="list-style-type: none"> <li>Defibrillation or cardioversion is allowed, if necessary</li> <li>There may be risks associated with performing chest compressions. Use clinical judgment</li> </ul>	<ul style="list-style-type: none"> <li>The console should be plugged into AC power when not transporting</li> <li>Battery life is 180 minutes under nominal operating conditions</li> <li>A backup system must be accessible at all times</li> </ul>	<ul style="list-style-type: none"> <li>Ensure the pump is fully secured to the motor</li> <li>Report any areas of weak connection; ensure tiebands are in place</li> <li>Do not twist, kink or sharply bend the tubing</li> <li>Ensure minimum and maximum flow alerts are set</li> </ul>



ANTICOAGULATION	REVIEW AND DOCUMENTATION
<ul style="list-style-type: none"> <li>Use AC per hospital policy</li> <li>Higher AC may be considered with low flow or weaning</li> </ul>	<p><b>Document:</b> Flow, speed, P1/P2 pressures (if applicable), minimum/maximum flows set and flow probe repositioning (every 8 hours)</p> <p><b>Alarms:</b> To clear or silence an alarm, depress Alarm Acknowledge button, and decide on next steps</p>

ADDITIONAL CONSIDERATIONS	WARNINGS
<ul style="list-style-type: none"> <li>Assess clinical considerations</li> <li>Perform battery maintenance every 6 months</li> <li>Change the battery every 2 years</li> </ul>	<ul style="list-style-type: none"> <li>Assess for signs of hemolysis, including lab work</li> <li>Ensure the console is plugged into the AC power outlet</li> <li>No magnetic resonance imaging</li> <li>Do not cover the motor, console, or cannulas with blankets/drapes; ensure the console fan remains unblocked</li> </ul>

AC = anticoagulation  
 BiVAD = biventricular assist device  
 LVAD = left ventricular assist device  
 RVAD = right ventricular assist device

- Abbott. CentriMag™ Circulatory Support System, Clinical Reference Manual. ARTEN600254981, rev B. 2024.
- Abbott. CentriMag™ Circulatory Support System Operating Manual. ARTEN600254997, rev B. 2024.

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**Rx Only**

**Brief Summary:** Prior to using these devices, please review the Instructions for Use for a complete listing of indications, contraindications, warnings, precautions, potential adverse events and directions for use.

**CentriMag™ Circulatory Support System Indications [510(k) Clearance; 6-hour use]:** The CentriMag Extracorporeal Blood Pumping System is a non-roller-type cardiopulmonary and circulatory bypass blood pump used to pump a patient's blood through an extracorporeal circuit for periods lasting less than

6 hours for the purpose of providing either:

- Full or partial cardiopulmonary bypass (i.e., circuit includes an oxygenator) during open surgical procedures on the heart or great vessels; or
- Temporary circulatory bypass for diversion of flow around a planned disruption of the circulatory pathway necessary for open surgical procedures on the aorta or vena cava

**CentriMag™ Circulatory Support System Contraindications [510(k) Clearance; 6-hour use]:** The CentriMag Circulatory Support System is contraindicated for use as a cardiotomy suction device. The system is also contraindicated for patients who are unable or unwilling to be treated with an appropriate anticoagulant such as Heparin or a comparable alternative.

**PediMag™ Blood Pump Indications for Use [510(k) Clearance; 6-hour use]:** The PediMag Blood Pump is indicated for use with the CentriMag™ Console and Motor. It is a non-roller-type cardiopulmonary and circulatory bypass blood pump used to pump a patient's blood through an extracorporeal circuit for periods lasting less than 6 hours for the purpose of providing either:

- Full or partial cardiopulmonary bypass (i.e., circuit includes an oxygenator) during open surgical

procedures on the heart or great vessels; or

- Temporary circulatory bypass for diversion of flow around a planned disruption of the circulatory pathway necessary for open surgical procedures on the aorta or vena cava

**PediMag™ Blood Pump Contraindications [510(k) Clearance; 6-hour use]:** The PediMag Blood Pump is contraindicated for use as a cardiotomy suction device. The CentriMag Circulatory Support System is contraindicated for use as a cardiotomy suction device. The system is also contraindicated for patients who are unable or unwilling to be treated with an appropriate anticoagulant such as Heparin or a comparable alternative.

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