



## Article Side

Vital Components of Cardiopulmonary Bypass Machine by [James Redfern](#)

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The Cardiopulmonary Bypass machine (CPB), often known as heart-lung machine or pump, is used to take over the function of heart during surgery. A cardiopulmonary bypass machine plays a vital role when the heart is stopped temporarily while surgery. Any minor malfunction that occurs in the cardiopulmonary bypass machine can put the patient's life in threat. Therefore, it is important to perform bypass services on regular basis to keep the cardiopulmonary bypass machine in good working condition.

The cardiopulmonary bypass machine is used for a wide range of surgical procedures such as coronary artery bypass surgery, Cardiac valve repair and/or replacement, heart transplantation, lung transplantation and repair of congenital heart defects. So, it is important to maintain the cardiopulmonary bypass machine at its best.

Since critical care machines like the cardiopulmonary bypass machine, infusion pump, intraaortic balloon pump and ventilators are used continuously for patients undergoing critical surgeries, it is important to ensure the effective performance of this equipment. Improper maintenance can make these critical care machines prone to failures. When looking for cardiovascular services, you need to make sure that all the components of the cardiopulmonary bypass machine are inspected and preventive maintenance is carried out effectively.

Some important components of the cardiopulmonary bypass machine are listed below:

### Oxygenator:

The oxygenator is an important component of the cardiopulmonary bypass machine which removes the carbon dioxide and enriches the blood with oxygen. The oxygenator is mostly used by a perfusion technologist in cardiac surgery where a heart-lung machine is utilized. During open heart surgery, the oxygenator acts as a lung and performs the functions of the lung in an effective way. The oxygenator consists of a membrane which is permeable to gas but impermeable to blood. When blood passes through this membrane and comes in contact with fine surfaces of the devices, gas containing oxygen and medical air is delivered to the interface between the blood and device where blood cells absorb the oxygen.

### Centrifugal pump:

It is used to control the blood flow during open heart surgery. Usually, blood flow is produced by centrifugal force which is in turn produced by altering the speed of revolution of the pump head. The centrifugal pumps are used more often than roller pumps since centrifugal pumps are considered to create less blood damage.

### Cardioplegia:

The cardiopulmonary bypass machine consists of a separate circuit for infusing a solution into the heart itself to produce Cardioplegia which stops the heart from beating.

### Cannulae:

Cannulae are tubes which are sewn into different parts of the body to remove oxygen deprived blood, infuse oxygen-rich blood and to deliver the Cardioplegia solution.

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a [Cardiovascular services](#) must be carried out on a regular basis to prevent critical care equipment failure during surgeries. The author is an expert in the Cardiopulmonary bypass arena and has written many articles regarding a [perfusion equipment maintenance](#) and bypass maintenance in the past.

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