Intra Aortic Balloon Pump

KIHT Technical Compendium

KIHT
विज्ञानेन जातानि जीवन्ति

INTRA AORTIC BALLOON PUMP

KIHT Technical Compendium

Version 1.0

Acknowledgment:

We acknowledge efforts of all the technical staff of KIHT for their constant support and help rendered in preparing this technical compendium.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

AC	Alternative current
AP	Arterial Pressure
AVF	Augmented Vector Foot
AVL	Augmented Vector Left
AVR	Augmented Vector Right
ABG	Arterial Blood Gas
BSA	Body surface area
BUR	Blow-Up-Ratio
BPM	Beats per Minute
CAGR	Compound Annual Growth Rate
CS	Cardiogenic Shock
CDRA	Centre for Devices and Radiological Health
DSP	Digital Signal Processing
DC	Direct Current
DPTI	Diastolic Pressure Time Index
ECG	Electro Cardio Gram
EVR	Endocardial Viability Ratio
FDA	Food and Drug Administration
HS	Harmonized System
IAB	Intra-Aortic Balloon
IABP	Intra-Aortic Balloon Pump
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
LSCA	Left Subclavian Artery
LV	Left Ventricular
LVEDP	Left Ventricular End-diastolic Pressure
PTCA	Percutaneous Transluminal Coronary Angioplasty
SI	Shock index
TTI	Tension Time Index
US	United States
USD	United State Dollar

EXECUTIVE SUMMARY

The Intra-Aortic Balloon Pump (IABP) is an electromechanical device that provides cardiac assist therapy. It provides temporary support to patients with impaired left ventricular function through the therapeutic method referred to as counterpulsation. It is an externally actuated and intermittently inflatable balloon placed into the descending aorta that, on activation during diastole, augments blood pressure and organ perfusion by its pulsatile thrust: then, on deflation, decreases the cardiac work with each systole by reducing cardiac afterload· It improves the ventricular performance of the failing heart by facilitating an increase in myocardial oxygen supply and a decrease in myocardial oxygen demand. Intra-aortic balloon catheters are used to reduce the burden on a still-beating human heart, by forcing blood to flow to the coronary arteries, which are not receiving an adequate blood supply.

The global intra-aortic balloon pump market is estimated to grow from nearly US$ 361 Mn in 2017 to nearly US$ 472 Mn by 2027 end. This represents a CAGR of 2.7% over the forecast period of 2017–2027.

The main objective of this technical compendium is to cover the entire spectrum pertaining to a medical equipment called Hemodialysis machine. This report explains the clinical aspects, requirements, and principles to understand the working of the equipment. The detailed technical aspects shed light on the criticality of the product at a component level and provide information about relevant standards and regulations. In addition, the report is also briefly touching upon the export & import analysis.