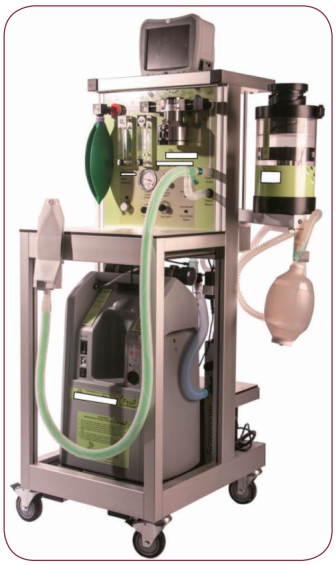
Low pressure anaesthetic machine with pneumatic ventilator

Country of origin | United Kingdom



Health problem addressed

Two billion people globally have no access to emergency or surgical care and conditions treatable by surgery account for 11% of the global burden of disease. In remote or rural locations and low-income countries anaesthesia machines may be non-existent, unreliable or unaffordable, preventing essential surgery. Anaesthesia is vital for surgical treatment of traumas, hernias, tumours, burns, infections, congenital deformities, and for life saving emergency obstetric care such as Caesarean sections.

Product description

This complete anesthesia machine has been specifically designed to provide reliable inhalational anesthesia in difficult environments. It is easy to operate, economical to run and needs minimal maintenance. It can continue to function, without interruption, if either the oxygen or electricity supply fails. It consists of a versatile breathing system; a pneumatically driven ventilator; an oxygen concentrator (that supplies oxygen & air to the patient and to drive the ventilator); and an uninterruptible power supply for voltage stabilization and battery backup. It can be used in the operating theatre for anesthesia or in intensive care as a ventilator or as a source of pre and postoperative oxygen. The machine is suitable for both pediatrics and adults.

Developer's claims of products benefits

Conventional anesthetic machines are designed for use in well-equipped hospitals in wealthy countries. Hospitals in many parts of the world have limited resources, no oxygen, electricity or technical support. In these circumstances, sophisticated anesthetic machines are unable to function. This machine has been designed to overcome all these problems and deliver safe, affordable anesthesia in the difficult conditions of low-resource settings. No expensive consumables of compressed gases are needed.

Suitability for low-resource settings

The machine is designed to function in the most challenging low-resource settings including where supplies of electricity and compressed gases are unreliable or absent, there is no skilled technical support, environmental conditions are hostile (eg temperature, humidity, dust) and infrastructure is limited. The design incorporates many specific features to overcome all these problems. This machine is based upon an established anesthesia system that is known and respected worldwide as a safe and reliable machine for low-resource settings and which has proved itself by more than ten years of service in some of the most difficult locations around the world. Numerous publications refer to the successful application of this machine in low resource settings.

Operating steps

Utilizing medical gases from the inbuilt oxygen concentrator, the patient can be anaesthetized and ventilated using the simple set up instructions. It is suitable for nurse anesthetists or anesthetic clinical officers.

Regulatory status

Produced in an ISO 13485 certified factory. The product is tested to ISO 60601 -1 and is in the process of conformity assesments and CE marking.

Future work and challenges

The technology will be demonstrated at forthcoming conferences in Africa, Asia and Europe. We will be co-authoring papers for publication in peer-reviewed journals.

Use and maintenance

User: physician, nurse, anaesthetic clinical officer

Training: Machine comes with manual and training DVD films providing full instructions for operation and maintenance

Maintenance: Minimal maintenance required, can be performed on-site by technician or trained personnel

Environment of use

Setting: Designed for use in rural, or urban, indoors settings and suited to use in primary, secondary and teriary levels of health care facilities.

Energy requirements: The machine options based on resources available. It can run off batteries, which require a 160-290 V power supply for recharging or continuous power supply of 110-290 V.

Product specifications

Weight (kg): 98 kg

Dimensions: 420mm x 660mm x 1450mm

Consumables: Anaesthetic agent only. Can be used with isoflurane and halothane, or sevoflurane

Lifetime: 10 years

Shelf life: 5 years

Retail price (USD): 24 650

Price of consumables (USD): Based on chosen anaesthesia agent.

Other features: mobile

Currently sold in: more than 60 countries worldwide

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