Anaesthesia machine

Country of origin | United States of America

Primary function | Treatment

Health problem addressed

Nearly 5 billions people, almost entirely in low- and middle-income countries, lack access to adequate surgical and anesthesia care. At 16.9 million deaths per year, more people die from surgically treatable conditions than HIV/AIDS, malaria and tuberculosis combined. One major factor inhibiting access to surgical care is inadequate infrastructure to support anesthesia delivery in health facilities across the developing world.

Disease addressed

The technology does not address a specific disease, it supports surgery.

Technical descriptions

This anaesthesia machine combines draw-over and continuous-flow technologies, allowing it to function with or without electricity and compressed medical gases. While it has always been intended for use in low-income countries, the device bears the CE marking, thus showing its compliance with the highest international standards. To this day, this anaesthesia machine is the only hybrid device having obtained the CE mark.

Developer's claims of products benefits

Hospitals in developing countries experience an average of 18 power outages per month and regular shortages of compressed medical gases, either of which will disable a conventional anesthesia machine. Conventional devices (even of the highest quality) will inevitably fail, break, remain unused or become unsafe in this setting. This anaesthesia machine combines draw-over and continuous-flow technologies, allowing it to function with or without electricity and compressed medical gases.

Operating steps

The machine functions in a variety of modes. When there is electricity, it generates its own oxygen with an integrated oxygen concentrator that produces 95% pure oxygen. If power is unavailable, the machine seamlessly transitions to using oxygen from an external source. If an external source is unavailable, it will automatically draw in ambient air from the air inlet. The machine has an electrically-driven automatic ventilator that also comes with 6 hours of backup battery.

Regulatory status and standards compliance

European Community (CE-mark). ISO 9001.

Use and maintenance

User: Technician, nurse, general physician, specialised physician (anaesthetist).

Training: Upon purchase of the machine, a two-day on-site training for clinical and technical staff is offered. The training is led by a local physician anaesthetist and a local biomedical engineer or technician. This includes a didactic session, a session in the operating theater and a suite of instructional materials for regular use.

Maintenance/Calibration required: Yes

Environment of use

Setting: Rural settings, urban settings, indoors, primary level (health centre), secondary level (general hospital), tertiary level (specialists hospital), any facility that offers surgery.

Product specifications

Weight (kg): 130

Dimensions: 146mm x 53mm x 69mm

Consumables: Volatile agent, breathing tubes, oxygen masks, laryngoscopes

Lifetime: 5-10 years

In UN catalog: Yes

Commercial information

Reference price (USD): $22'400.00

Year of commercialization: 2011

Number of units distributed: 101-1 000

Model: Universal Anaesthesia Machine

Other features: Reusable (assuming appropriate decontamination and/or other reprocessing between uses)

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