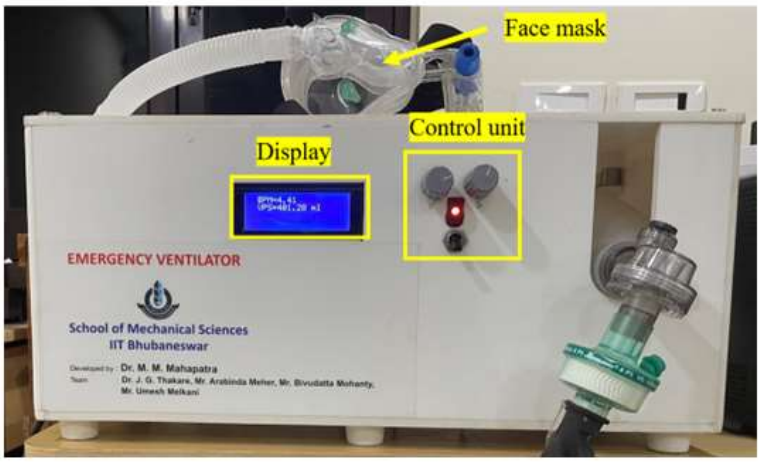
Portable Emergency Ventilator (Battery/AC operated)

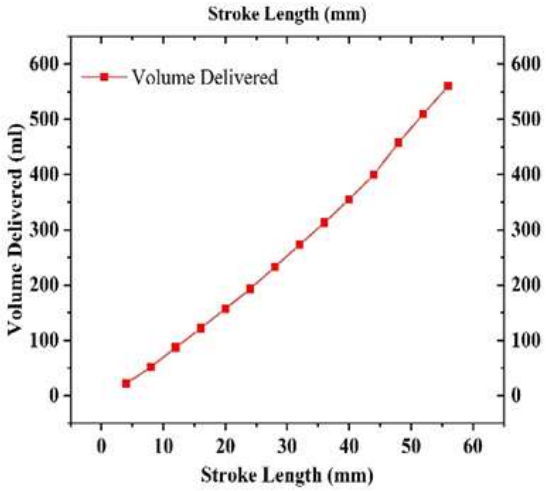
Place of origin: School of Mechanical Sciences, IIT Bhubaneshwar, Bhubaneshwar.
By Prof. M. M. Mahapatra and team (Dr. J. G. Thakare, Dr. Arabinda Meher, Mr. Bivudatta Mohanty, Mr. Umesh Melkani).

About Portable Ventilator

A low-cost portable ventilator is developed to provide assisted air/oxygen supply to the patient of all ages in emergency. The portable ventilator is fabricated using an artificial manual breathing unit (AMBU) bag, whose oxygen/air delivery mechanism is controlled through a programable stepper motor. The artificial manual breathing unit (AMBU) bag is manually operated in emergency by trained medical technicians which is cumbersome to operate for prolonged time. Programmed, precise and automated use of such unit is important in assisting the patient. This ventilator can be used during transferring the patient from primary care centre to the intensive care unit as it is battery operated. The programable stepper motor drives lead screw-based mechanism for smooth compression of the AMBU bag and, for delivery of the required amount of volume. The picture below shows the portable ventilator and the graph between the stroke length and the volume of air delivered by the ventilator. The device is portable with smooth delivery of air/oxygen and can run on battery up to five hours.

Product description





Health problems Addressed

Patients suffering from chronic obstruction pulmonary disease (COPD), which require assistance in normal breathing. The system can be used as an emergency ventilator for Covid-19 infected patients. The machine can also function as a continuous airway machine forcing the pressurized air to keep the airway of the user free from obstruction.

Prof. Manas. M. Mahapatra
Professor, School of Mechanical Sciences, IIT Bhubaneshwar.
Email. Id: manasfme@gmail.com, mmmahapatra@iitbbs.ac.in
Ph. No: +91 9456786550