

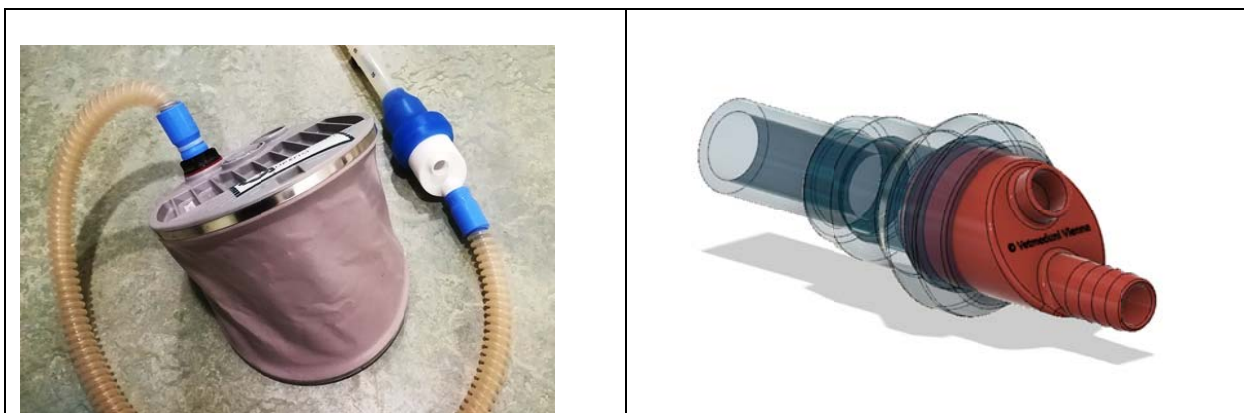
Step Vent

©Vetmeduni Vienna, all rights reserved Email: johannes.schramel@vetmeduni.ac.at

Abstract

Emergency ventilation device for large animals, horses and wild life animals. Hence manual ventilation by thorax compression does not work in large animals it is desirable to have a low cost emergency ventilator in case of anaesthesia accidents in the field. The principle is to use a standard foot pump connected to an endotracheal tube via an adapter piece. The adapter has an orifice that can be closed by the thumb to allow inspiration. The proper tidal volume is achieved by one to three compressions of the foot pump. Exhalation is evoked by removing the thumb from the orifice.

Pictures:



Description:

File: stepvent.stl

Technology: FDM. Material: ABS, PLA etc.

Ingredients:

Foot pump: 5 Liter model (Bravo 7 or similar)

Tube: (optional) Silicone reusable breathing tube 19mm (for 22mm) Note: These tubes have a straight inner surface despite their spiral and flexible construction.

3D printed adapter: Tube to Cook Silicone endotracheal tube for horses

References:

von Ritgen, S; Auer, U; Schramel, J; Moens, Y (2013): A commercial foot pump for emergency ventilation of horses, proof-of-principle during equine field anaesthesia. Equine Vet Educ (25), 11 581-584.

Note: This paper describes the working principle. Further development lead to a more simple and robust realization.