

BREATH SAVE: Safety Valve avoiding derecruitment lung alveolus



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The Invention



The “**BREATHing Safety Valve (BREATH SAVE)**” is a safety valve for use in patients with respiratory diseases characterized by severe levels of hypoxemia, with artificial airways in mechanical ventilation. In case of programmed or accidental disconnection from the circuit, prevents the "fall" of the Positive End-Expiratory Pressure (PEEP), necessary for the recruitment of alveolar areas for gas (O₂; CO₂) exchange.

The main general features of the patented device are:

- Economy;
- Ergonomics;
- Lightness (plastic material);
- Single patient, disposable;
- Automatic sealing of the artificial aerial route in case of disconnection;
- Possibility of manual use by the operator, if necessary, with a special open/close system;
- Suitability for the passage of suction or fibroscope probes;
- Guarantee, in case of accidental "stretching" of the circuit, of the disconnection on the fan side but not on the side of the artificial aerial route (tracheal tube or tracheostomic cannula);
- Presence of an overpressure safety valve set at 40 cmH₂O to prevent airway over-distension in case of cough, singult etc...
- Led color code (Red-Green) as system status indicator (Active-Off);
- Minimizes the additional "dead space" of ventilation, that is, the volume of air inhaled that does not reach the alveoli but remains in the airways of conduction;
- Plastic, transparent or semi-transparent material able to allow the summary evaluation of the integrity of the system and any organic residues (secretions, condensation) inside it.

The Inventors



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Industrial Applicability



The patented invention is applied with regard to all patients hospitalized in Intensive Care or in Intensive Settings where mechanical ventilation is applied, and therefore in any case of patients with artificial airways such as (ETT EndoTracheal Tube or Tracheostomic Cannula) connected to a positive pressure mechanical ventilation circuit.

The invention has several possible advantages, among which:

- Maintain alveolar recruitment in case of detachment from the ventilation circuit, preventing hypoxemia;
- Limit the need for recruitment maneuvers;
- Avoid the use of mechanical "self-made" systems (clamping by ETT clamp) in programmed detachments (transport, change circuit etc.).

Possible Evolutions



The patent is available for exclusive and non-exclusive license. Licenses are available for the remaining duration of the patent titles.

The Research Group is available for new collaborative and third-party research activities, technical insights, scientific advice, also aimed at raising the TRL of technology.

The TRL of the invention is 3/4.

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