



# SIMEX Subglottic Aspiration System

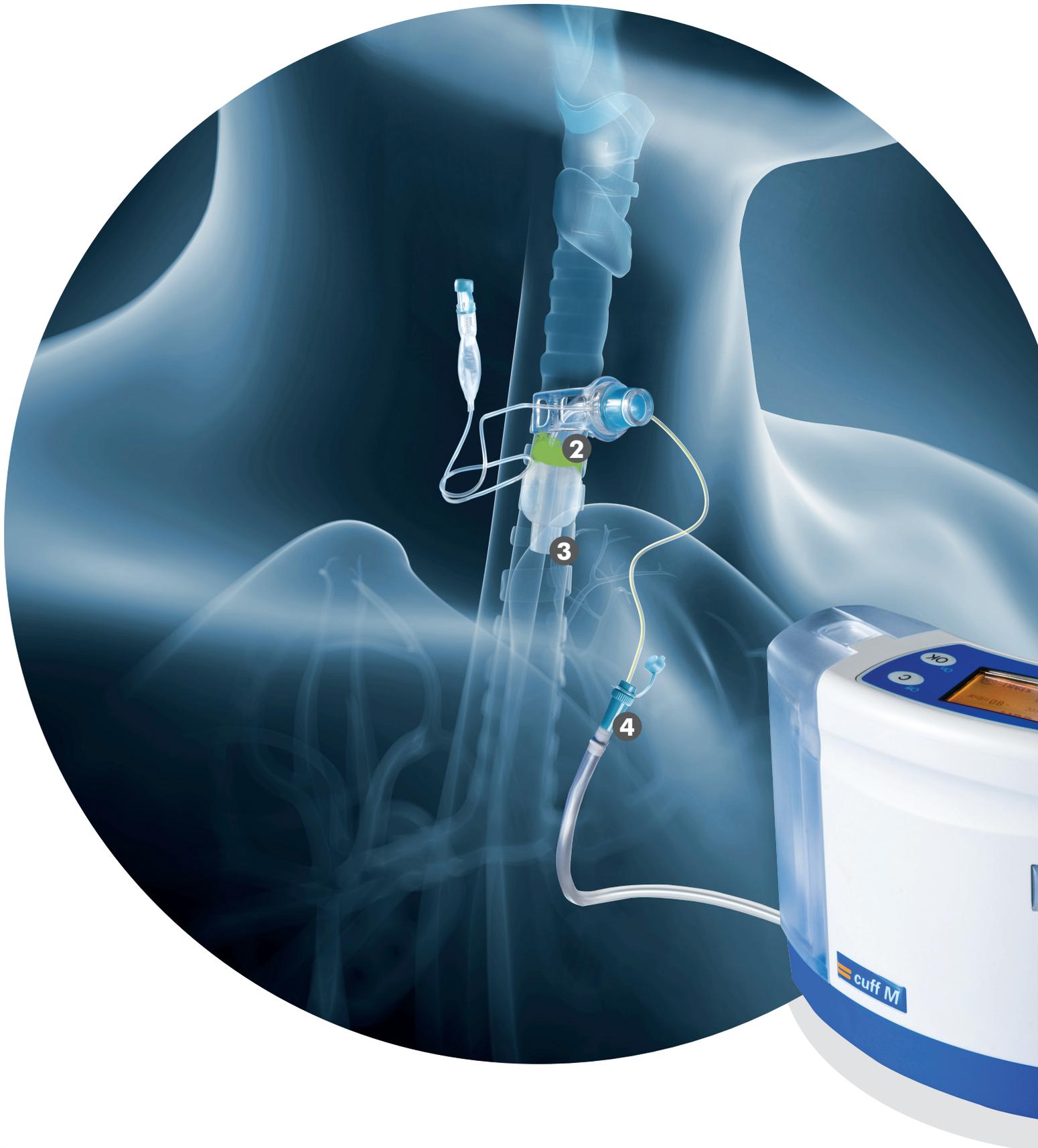
A new direction for subglottic secretion management



**SIMEX**<sub>cuff S</sub>

**SIMEX**<sub>cuff M</sub>

## SIMEX Subglottic Aspiration System





- 1 Endotracheal tube with special suction lumen
- 2 Subglottic secretion
- 3 Tracheal tube with special suction lumen
- 4 Subglottic secretion is removed via the SIMEX cuff S or cuff M pump with the convenience of highly customized intermittent settings



The SIMEX Subglottic Aspiration System, cuff S and cuff M are the most advanced solution for the aspiration of subglottic secretion, featuring all new state-of-the-art "Intermittent" mode of therapy

## SIMEX cuff S

The **SIMEX cuff S** is designed for subglottic extraction in order to help to prevent ventilator-associated pneumonia (VAP).

### Features

- low noise and little vibration (35 dB(A))
- simple operation, very safe to use
- choice of batteries or mains power
- DFS® - double filter system protects the inside of the device against contamination
- can be used with a disposable secretion container system and has various accessories



### Technical Data SIMEX cuff S

Overall aspiration capacity	max 8 liters/min
Pressure	-20 mbar to -300 mbar (in steps of 10 mbar)
Containers	Disposable secretion container system, 1000 ml
Nominal mains voltage (mains-powered)	100 – 240V AC primary / 12V DC secondary
Maximum current	1.25 A
Mains frequency (mains-powered)	50 / 60 Hz
Rating	15 W (charging and operation) / 10 W (charging only)
Current drawn	1.25 A at 12 V
Rechargeable battery	7.4 V, 4.4 Ah – lithium ion
Dimensions (H x W x D) in mm	290 x 259 + 100 (container) x 130 mm
Weight (basic device)	Approx. 2.2 kg
Running time	
· Mains	continuous operation
· Battery	approx. 18 hours when the vacuum pump is at full capacity
Operating mode	Intermittent Aspiration
Degree of protection acc. IEC 60601-1	Type BF
Protection class acc. IEC 60601-1	II
Noise emission	35 dB (A)
Ref #	100679
CE identification	CE0483

## SIMEX cuff M

The **SIMEX cuff M** is designed for subglottic extraction in order to help to prevent ventilator-associated pneumonia (VAP).

### Features

- ☞ low noise and little vibration (35 dB(A))
- ☞ simple operation, very safe to use
- ☞ lightweight
- ☞ choice of batteries or mains power
- ☞ integrated bacterial filter with overflow detector and odour prevention
- ☞ disposable secretion container with integrated gelling agent



Technical Data SIMEX cuff M	
Overall aspiration capacity	max 8 liters/min
Pressure	-20 mbar to -300 mbar (in steps of 10 mbar)
Containers	Disposable secretion container, 250 ml
Nominal mains voltage (mains-powered)	100 – 240V AC primary / 12V DC secondary
Maximum current	1.25 A
Mains frequency (mains-powered)	50 / 60 Hz
Rating	15 W (charging and operation) / 10 W (charging only)
Current drawn	1.25 A at 12 V
Rechargeable battery	7.4 V, 4.4 Ah – lithium ion
Dimensions (H x W x D) in mm	165 x 220 x 90 mm
Weight (basic device)	Approx. 1.2 kg
Running time	
· Mains	continuous operation
· Battery	approx. 18 hours when the vacuum pump is at full capacity
Operating mode	Intermittent Aspiration
Degree of protection acc. IEC 60601-1	Type BF
Protection class acc. IEC 60601-1	II
Noise emission	35 dB (A)
Ref #	100678
CE identification	CE0483

# SIMEX Subglottic Aspiration System models cuff S and cuff M

**SIMEX** brings together advanced engineering and the latest scientific research to provide the most advanced technology available for the effective management of subglottic secretions.

Featuring simple to use, fully customizable intermittent suction that will change the way you manage subglottic aspiration in the ICU and acute care settings.

## Features

- ☞ Allows effective removal of secretions from the subglottic region
- ☞ Used in conjunction with specially designed subglottic endotracheal and tracheal tubes with special suction lumens which have been proven effective in the management of subglottic secretion
- ☞ Vacuum pressure and ON/OFF time settings customizable to patient needs
- ☞ Vacuum pressure range can be digitally set from -20 to -300 mbar (10 mbar increments)
- ☞ Customizable ON/OFF times o Intermittent aspiration (ON) time can be set from 1-60 seconds o Intermittent aspiration (OFF) time can be set from 1-60 minutes
- ☞ AARC recommended pressure guidelines for intermittent aspiration for adult population are between -106 to -200 mbar (-80 to -150 mmHg)<sup>15</sup>, the same pressure guidelines are recommended by endotracheal and tracheal tube manufacturers and the same pressures for adult population are recommended for use with cuff S and cuff M
- ☞ Safety alarm features for full canister and for low or fully discharged battery
- ☞ Simple, safe and easy to use
- ☞ Virtually silent operation (35dBA)
- ☞ Simple and uncomplicated menu control (color coded display)
- ☞ Disposable secretion container with integrated bacterial filter and gelling agent

The **SIMEX cuff S and cuff M** are special suction pumps designed and indicated for intermittent aspiration of subglottic secretions.

Generally, the **SIMEX Subglottic Aspiration System** is intended for removing subglottic secretions from the patient's airway above the endotracheal or tracheal cuff using intermittent suction when used in ICU and acute care settings.

## Benefits

- ☞ Intermittent aspiration reduces the risk of injury due to drying of mucous membrane<sup>6-7</sup>
- ☞ Fully customizable to each patient's needs
- ☞ Increased patient comfort during aspiration process<sup>20</sup>
- ☞ Minimized maceration of surrounding tissue due to reduction of secretion leakage<sup>20</sup>
- ☞ Decreased need for frequent tracheal dressing changes due to reduction of secretion leakage<sup>20</sup>
- ☞ Self-contained collection canisters help prevent crosscontamination and minimize incidence of infection

## Why use the cuff S or the cuff M pumps?

- ☞ The cuff S and cuff M are special subglottic aspiration systems designed and indicated for intermittent aspiration of subglottic secretions.
- ☞ The cuff S and cuff M are special suction pumps indicated for use with specially designed endotracheal or tracheal tubes with a separate dorsal suction lumen that opens directly above the ballooned cuff of the tube.
- ☞ Predominance of new research indicates that continuous aspiration of subglottic fluids can greatly reduce the incidence of ventilator-associated pneumonia (VAP) but that intermittent aspiration is more successful and reduces the risk of injury due to drying of the mucous membranes.<sup>1,6-7</sup> The benefits of reducing incidence of VAP in acute care settings is known, but long term incidence of VAP or reduction of mortality is not known at this time.
- ☞ New clinical experience in Europe has demonstrated the efficacy of of intermittent subglottic aspiration with the cuff M and cuff S.<sup>20</sup>

## VAP Facts

Ventilator-associated pneumonia (VAP) is the second most common nosocomial infection in the United States and results in both negative patient outcomes and increased healthcare costs<sup>1</sup>

- ☞ VAP is estimated to occur in 9-25% of all ICU patients alone<sup>2-4</sup>
- ☞ VAP is a costly complication of hospitalization that lengthens ICU and hospital stay and increases morbidity and mortality<sup>5</sup>
- ☞ Mortality that is directly attributable to VAP is estimated to be as high as 27%<sup>10, 13-14</sup>
- ☞ VAP is associated with more than \$40,000 in increased hospital costs per patient and may be higher in certain types of patient care units<sup>5</sup>
- ☞ Current commonly used modalities of treatment involve recumbent positioning, oral hygiene, and some form of aspiration typically performed by nurses through use of a simple syringe and in some facilities by nurses attaching the patient's tracheal or endotracheal tube suction port to either wall suction regulators or portable (multipurpose) suction devices<sup>6-11</sup>
- ☞ Emerging research indicates that aspiration of subglottic secretions and specifically the intermittent aspiration of subglottic secretions is extremely helpful in the reduction of the incidence of VAP<sup>6-7,10,12,16-19</sup>

*„In our hospital in Hamburg Germany, we have had great success in the ICU using endotracheal tubes with a special suction lumen, along with the SIMEX cuff S subglottic aspiration system. During the past 21 months, over 250 patients have been treated successfully with no complications. In fact based on results of the past 21 months, this modality has become a standard of care for all patients admitted to our medical ICU and helped to decrease the average length of stay of patients on long term mechanical ventilation.“*

Dr. med. Markus Wolf. Senior Physician Weaning Station, Department of Pneumology and Intensive Care. Asklepios Klinik Barmbek, Hamburg, Germany

*“In our facility in Nuremberg Germany, our standard of care to remove subglottic secretion was using a simple syringe or just a suction catheter. Four years ago we started evaluating a new aspiration device, the SIMEX cuff S and cuff M, used in conjunction with tracheal tubes with a special suction port. The results of this evaluation was so successful that the use of the cuff S or cuff M along with these specialized tracheal tubes is now a standard of care in our institution.“*

Helmut Fendler. “Innovator of original concept for cuff S/M” Stoma Therapist, Certified RN, Gesundheits Manager GmbH, Nuremberg, Germany

## References

- 1 Scherzer R, Subglottic secretion aspiration in the prevention of ventilator-associated pneumonia: a review of the literature. *Jefferson Hospital Staff Papers and Presentations*. 2010; paper No.11.
- 2 Ibrahim EH, et al., The occurrence of ventilator-associated pneumonia in a community hospital: risk factors and clinical outcomes. *Chest*. 2001;120:555-561.
- 3 Craven DE, Steger KA. Nosocomial pneumonia in mechanically ventilated adult patients: epidemiology and prevention in 1996. *Semin Respir Infect*. 1996; 11(1):32-53.
- 4 Rello J, et al., Epidemiology and outcomes of ventilator-associated pneumonia in a large US database. *Chest*. 2002;122:2115-2121.
- 5 Sedwick M, et al., Using Evidence-Based Practice to Prevent Ventilator-Associated Pneumonia, *Critical Care Nurse*. 2012;32:41-51.
- 6 Lacherade JC, et al., Intermittent subglottic secretion drainage and ventilator-associated pneumonia: a multicenter trial. *Am J Respir Crit Care Med* 2010; 182:910-917.
- 7 Leonardo Lorente, et al., “Influence of an Endotracheal Tube with Polyurethane Cuff and Subglottic Secretion Drainage on Pneumonia”. *Am J Respir Crit Care Med*, 2007;176: 1079-1083.
- 8 Kaye K, et al., Suction Regulators: A potential Vector for Hospital Acquired Pathogens – *Infectious Control and Hospital Epidemiology*. 2010: 31:772-774.
- 9 Sole ML, et al., Pulmonary critical care, “Oropharyngeal secretion volume in intubated patients: The importance of oral suctioning”, *American Journal of Critical Care*, 2011;20:e141-e145.
- 10 Dezfulian C, et al., Subglottic secretion drainage for preventing ventilator-associated pneumonia: A meta-analysis. *The American Journal of Medicine*. 2005;118:11-18.
- 11 Mahul P, et al., Prevention of nosocomial pneumonia in intubated patients: respective role of mechanical subglottic secretions drainage and stress ulcer prophylaxis. *Intensive Care Med*. 1992;18:20-25.
- 12 Smulders K, et al., A randomized clinical trial of intermittent subglottic secretion drainage in patients receiving mechanical ventilation. *Chest*. 2002;121:858-862.
- 13 Fagon JY, et al., Nosocomial pneumonia in ventilated patients: A cohort study evaluating attributable mortality and hospital stay. *The American Journal of Medicine*. 1993;94:281-288.
- 14 Heyland DK, et al., The attributable morbidity and mortality of ventilator-associated pneumonia in the critically ill patient. The Canadian Critical Trials Group. *Am J Respir Crit Care Med*. 1999;159:1249 –1256.
- 15 AARC Clinical Practice Guidelines – *Respiratory Care*. 2010; 55:758-762.
- 16 “The Mallinckrodt™ TaperGuard™ Evac Endotracheal Tube”, *Covidien Brochure*. 2009; Ref # 09-AW-6540 AW17209.
- 17 “Better Access. Best Practice”, *Teleflex ISIS® HVT™ Brochure*. 2011;0330 v1.
- 18 “Have You Helped Zap VAP today?” *Mallinckrodt Brochure*. 2004; Ref# AW07804.
- 19 “Bringing Technology to Life”, VAP – A Nurses Guide, *Smiths Medical Brochure*. 2007; Ref # LIT/AM2764.
- 20 Data on file

# SIMEX Subglottic Aspiration System

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