Difficult Airway Algorithm

Plan A
Initial endotracheal intubation plan

Plan B
Secondary endotracheal intubation plan

Plan C
Maintenance of oxygenation, ventilation, awakening, awake intubation technique, postponement of surgery

Plan D
Rescue techniques for the "cannot intubate – cannot oxygenate" situation
# Table of Contents

**Laryngeal Tube**
- Laryngeal Tube LTS-D
- Intubating Laryngeal Tube iLTS-D

**Cuff Pressure Gauges**
- General Information
- Cuff Controller
- Cuff Manometer

**Stylets, Introducers and Tube Exchangers**
- General Information
- S-Guide
- METTS, Stylet, Pocket Introducer, i-Bougie
- METTI, Tube Exchanger

**Cricothyrotomy Devices**
- ScalpelCric
- Quicktrach I, II
- Surgicric II, III
- Manujet III / Jet-Ventilation Catheters

**Airway Devices for Endoscopy**
- Endoscopy Mask, Bronchoscope Airway
- Gastro-Laryngeal Tube G-LT

**Masks, Oropharyngeal Airways and Resuscitation Bags**
- Face Masks
- Guedel Airways
- Resuscitation Bags

**Airway Management Simulators**
- BILL, Transparent Head
- Crico-Trainer

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The VBM homepage includes information of the complete VBM medical device portfolio. Whether a medical device is available in your region must be inquired. Please contact your VBM customer service.

Find our full range of products on [www.vbm-medical.com](http://www.vbm-medical.com).

Here you will find our media centre with additional information such as application videos, brochures, flyers etc.

The medical devices in this catalog are manufactured without the use of natural rubber latex, unless otherwise specified.
The medical devices in this catalog do not contain phthalates which require labelling according to CLP Regulation (EC) 1272/2008.
The LTS-D complies with international guidelines and recognised industry algorithms. The NAP4, one of the most important international anaesthesia reports, recommends using 2nd generation supraglottic airway devices that prevent the risk of aspiration by incorporating a built-in drain tube. All LTS-D’s come with this feature as standard.

The Laryngeal Tube also stands out for its unique high volume, low pressure cuffs. The extremely thin wall is atraumatic to the pharyngeal mucosa and seals the hypopharynx reliably at low cuff pressures (< 60 cmH₂O). Soft material and rounded edges additionally enhance patient comfort and safety.

The LTS-D is designed to be easy to use with minimal training. The colour coded system has proven invaluable in emergencies as the syringe indicates the recommended maximum inflation volume. The Laryngeal Tube allows correct ventilation - even in situations with limited space.

References


Drain Tube

The LTS-D offers the largest suction possibility with easy access – up to 18 Fr.

The NAP4 report recommends “that all hospitals have 2nd generation supraglottic airway devices available for both routine use and rescue airway management.”

Also recommended by the European Resuscitation Council (ERC).

Order information

Laryngeal Tube LTS-D
For single use, sterile

<table>
<thead>
<tr>
<th>Size</th>
<th>Patient</th>
<th>Weight / Height</th>
<th>Colour</th>
<th>Single Set</th>
<th>Set of 10</th>
<th>Emergency Set</th>
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<tbody>
<tr>
<td></td>
<td></td>
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<td>With colour coded syringe</td>
<td></td>
<td>With colour coded syringe</td>
</tr>
<tr>
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<td>Newborn</td>
<td>&lt; 5 kg</td>
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<td>Yellow</td>
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<td>Red</td>
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<td>REF 32-06-004-1</td>
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<td>Purple</td>
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</table>

Application video: LTS-D

Laryngeal Tube LTS-D in emergency medicine
Laryngeal Tube
intubating Laryngeal Tube iLTS-D
VBM’s 3rd generation supraglottic airway device

Up to 20% of all emergency intubations are estimated to be difficult to manage. Having the right system available is the cornerstone of effective airway management in an emergency. Airway algorithms recommend the usage of supraglottic airway devices (SAD) as options to overcome difficult scenarios.

In order to prevent aspiration, the NAP4 report prescribes the use of devices with gastric access. SAD with intubating capability provide a way to reach a definitive airway (ET Tube placement).

As VBM’s 3rd generation SAD the iLTS-D compiles all essential features required to achieve and protect an airway:

**Ventilation** – wide airway section to optimise gas flow and low pressure cuffs to maximise sealing performance (< 60 cmH₂O)

**Drain Tube** – allows the insertion of a gastric tube or suction catheter

**Intubation** – special design of ventilation lumen to enable fiberoptic insertion of an ET Tube


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**Features**

**Efficient sizing**

The iLTS-D is the ideal solution to save space in emergency bags and crash carts. Only two sizes match all patients ≥ 125 cm.

# 2.5/3: 125 – 155 cm
# 4/5: ≥ 155 cm
Laryngeal Tube

Ventilation

The design of the ventilation section optimises gas flow and prevents airway obstruction from a downfolded epiglottis. Thin walled cuffs guarantee a maximum airway leak pressure at low cuff pressure (< 60 cmH₂O).

Drain Tube

The drain tube can accommodate a large gastric tube or suction catheter:

- # 2.5/3: max. 16 Fr
- # 4/5: max. 18 Fr

Intubation

The iLTS-D secures the airway in emergency and enables fiberoptic placement of an ET Tube without compromising patency of supraglottic ventilation.

- # 2.5/3: ET Tube max. 6.5 mm I.D.
- # 4/5: ET Tube max. 8.0 mm I.D.

Order information

Intubating Laryngeal Tube iLTS-D
For single use, sterile

<table>
<thead>
<tr>
<th>Size</th>
<th>Patient</th>
<th>Single Set</th>
<th>Set of 10</th>
<th>Intubation Set</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>1x iLTS-D</td>
<td>1x Syringe</td>
<td>1x iLTS-D</td>
</tr>
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<td>REF 32-08-023-1</td>
<td>REF 32-08-309-1</td>
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<td>4/5</td>
<td>≥ 155 cm</td>
<td>REF 32-08-145-1</td>
<td>REF 32-08-045-1</td>
<td>REF 32-08-209-1</td>
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</table>

ET Tube with Stabilizer
Armored, for single use, sterile

<table>
<thead>
<tr>
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<th>For iLTS-D</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
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<td>31-40-055-1</td>
<td>10</td>
</tr>
<tr>
<td>7.5 mm I.D.</td>
<td>4/5</td>
<td>31-40-075-1</td>
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</table>

Application video: iLTS-D
Cuff Pressure Gauges

General Information

Cuff pressure gauges have been established as a standard device in many clinical institutions. More and more societies of anaesthesiology and intensive care throughout the world are endorsing the systematic control of cuff pressure in the recommendation of their guidelines. Ventilator-associated pneumonia (VAP) is the leading nosocomial cause of mortality in the Intensive Care Unit and has significant impact on hospital costs and length of stay. A leading cause of VAP is micro-aspiration of potentially infectious secretions through microchannels formed from infolding of redundant cuff material after inflation. Cuff pressure management can contribute to reduce tracheal ischemia and subsequent complications. Availability of the device and precision of the measurement are fundamental to the success of treatments.

As the inventor of the cuff manometer, VBM is committed to drive the development of cuff pressure measuring in hospitals. In developing new cuff pressure gauges VBM follows three main principles: Reliability, accuracy and ease of use.

VBM offers the largest choice of systems, covering analog and automatic devices, pediatric and adult for OR, pre-hospital and ICU environment.

Cuff Pressure Gauges

Cuff Controller – Automatic Cuff Pressure Gauge

Clinical studies have proven the positive effects of a continuous control of cuff pressure in order to prevent ventilator-associated pneumonia (VAP).

VBM Cuff Controller is an electronic device that has been developed for the continuous control and monitoring of cuff pressure. It has proven showing effectiveness in maintaining cuff pressure in recommended range in ICU patients.

Features

Front Side
- Large LCD display
- Intuitive cuff pressure adjustment
- Adjustable range: 0 – 60 cmH2O
- Integrated alarms for over pressure or leakage

Back Side
Universal clamp for fixation to standard rail

Order information

Cuff Controller
Pre-adjusted to 25 cmH2O
With battery, universal clamp and connecting tube (200 cm)

REF 55-13-500
Cuff Pressure Gauges
Cuff Manometer – Analog Cuff Pressure Gauge

The use of VBM Cuff Pressure Gauges in combination with High Volume Low Pressure Cuffs can reduce micro-aspiration and prevent VAP from occurring in the first place.

The devices reduce the risk of pressure necrosis and mucosal ischemia. They help preventing the risk of aspiration which can lead to the possibility of pneumonia.

The analog system with no dependence on any energy source makes the VBM cuff pressure gauges highly reliable under any circumstances (outdoor, transport, OR). The accuracy of the display as well as the pre-defined pressure ranges help users to maintain the correct pressure with any kind of airway devices.

Green Range
The green ranges on the scale mark the ideal ranges for either tracheal tubes or laryngeal tubes.

Luer Connection
For connection to the tracheal tube allowing pressure measuring and regulation.

Release Valve & Hook
- Pressure increase due to the diffusion of anesthetic gases can be adjusted with the red release valve
- Hook fits into standard rail

Vacuum Valve
For connection to the tracheal tube allowing a complete deflation of the cuff by squeezing the inflation bulb.
Cuff Pressure Gauges

Order information

Analog Cuff Pressure Gauge, complete with connecting tube (100 cm)

Universal
Ø 68 mm scale
With hook
Scala with two green ranges
- For tracheal tubes (22 – 32 cmH₂O)
- For Laryngeal Tubes
  and Laryngeal Masks (32 – 60 cmH₂O)
REF 54-07-000

Monitor
Ø 68 mm scale
With hook
REF 54-05-000

Pocket
Ø 50 mm scale
With hook
REF 54-04-000

Sensitive
Ø 50 mm scale
With hook
REF 54-03-001

Pediatric
Ø 50 mm scale
Pressure range: 0 – 60 cmH₂O
With hook
REF 54-02-001

Accessories

Connecting Tube
For single use, Material: PVC

<table>
<thead>
<tr>
<th>Length</th>
<th>REF</th>
<th>Box</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>200 cm</td>
<td>54-05-113</td>
<td>10</td>
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</table>

References


Stylets, Introducers and Tube Exchangers

General Information

Up to 3% of surgical patients have a so-called difficult airway, making laryngoscopic intubation problematic and sometimes impossible. Given that direct laryngoscopic visualisation of the glottis may not be possible, especially in a timely manner during emergency situations, intubating guides, stylets and introducers have been developed and have proved to be effective, safe and simple approaches. VBM offers a wide range of devices covering all techniques relying on the use of an intubating guide.

S-Guide – Malleable intubating guide for Difficult Airway Management

In cooperation with PD Dr. Patrick Schoettker from the University Hospital of Lausanne / Switzerland VBM has developed a new malleable intubating guide – the S-Guide.

Very versatile in its indications, the S-Guide can be used during conventional as well as video laryngoscopy. It works especially well with the non-channelled video laryngoscope blades.

The design of the S-Guide unifies all the essential specifications that are usually split between introducers and stylets. This makes it the ideal tool to overcome a difficult airway scenario.
Stylets, Introducers and Tube Exchangers

Features

3 benefits in 1 design

1. Oxygenation
The apnoea can be prolonged through oxygen flow via the O₂ Connector. The 23 cm of flexible segment eases connection to the oxygen source without impacting placement of the S-Guide.

2. Directional
The malleable segment allows the S-Guide to be adjusted to any required geometry starting after the orange tip and up to 42 cm. The hockey stick shape at the distal end and the right angle at the level of the tracheal tube connector can be easily achieved without compromising oxygenation.

3. Multifunctional tip
Preformed, soft and coloured distal tip enhances patient safety. 3 outlets for O₂ administration provide oxygen flow to prevent hypoxia.

The orotracheal tube dance
The use of malleable stylets or bougies to assist orotracheal intubation is an integral part of difficult airway algorithms. Their use in routine intubation might also be on the rise with the recent development of video laryngoscopy.

The special stiffness of the S-Guide qualifies it for the technique of the orotracheal tube dance.

The S-Guide should be lubricated and shaped “straight-to-cuff” with a bend angle at the black marks approaching 35°. Its withdrawal will move the tip of the tube anteriorly while tube rotation will lead to extremity “dancing”.

Order information

S-Guide
Acc. to Schoettker with O₂ Connector
For single use, sterile

REF 33-90-650-1  Box 5

Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Size</th>
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<tbody>
<tr>
<td>Size</td>
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<td>≥ 6.0 mm I.D.</td>
</tr>
<tr>
<td>Length</td>
<td>65 cm</td>
<td></td>
</tr>
</tbody>
</table>

Application video: S-Guide
S-Guide with portable videolaryngoscope
METTS (Muallem ET Tube Stylet)

Malleable intubation stylet
- Core made of metal, malleable (maintains curvature)
- Flexible preformed tip
- Centimetre marking
- For single use, sterile

<table>
<thead>
<tr>
<th>Size</th>
<th>Length</th>
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<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
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<td>5</td>
</tr>
<tr>
<td>14 Fr</td>
<td>65 cm</td>
<td>≥ 6.0 mm</td>
<td>33-14-650-1</td>
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</tbody>
</table>

Stylet
To perform the tracheal tube
- Soft, atraumatic tip
- With and without moveable silicone connector
- Reusable

<table>
<thead>
<tr>
<th>Size</th>
<th>Length</th>
<th>For tracheal tube</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
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<td>medium</td>
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<td>REF 90-10-222</td>
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<td>5.0 – 6.5 mm</td>
<td>REF 90-10-333</td>
<td>25</td>
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<tr>
<td>large</td>
<td>45 cm</td>
<td>7.0 – 11.0 mm</td>
<td>REF 90-10-444</td>
<td>25</td>
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</tbody>
</table>

Pocket Introducer
Ideal space solution for emergency bags and vehicles, helicopters, lab coat pockets, crash carts, etc.
- Folded to 20 cm, unfolds to 65 cm
- Ready for use within seconds
- Preformed tip
- Centimetre marking
- For single use, sterile

<table>
<thead>
<tr>
<th>Size</th>
<th>Length</th>
<th>For tracheal tube</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
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<td>65 cm</td>
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</table>

In robust plastic cartridge

<table>
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<tr>
<th>Size</th>
<th>Length</th>
<th>For tracheal tube</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
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<td>65 cm</td>
<td>≥ 6.0 mm</td>
<td>33-81-650-1</td>
<td>1</td>
</tr>
</tbody>
</table>
**METTI (Muallem ET Tube Introducer)**

**To facilitate orotracheal intubation**

- Core made of plastic, semi-rigid (flexible)
- Flexible, preformed tip
- Centimetre marking
- For single use, sterile

<table>
<thead>
<tr>
<th>Size</th>
<th>Length</th>
<th>For tracheal tube</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
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<td>80 cm</td>
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<td>33-14-800-1</td>
<td>5</td>
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</table>

**Tube Exchanger**

**For extubation and exchange of tracheal tubes**

- Oxygenate, O₂ Connector included
- Centimetre marking
- For single use, sterile

<table>
<thead>
<tr>
<th>Size</th>
<th>Length</th>
<th>For tracheal tube</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
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<tr>
<td>11 Fr</td>
<td>80 cm</td>
<td>≥ 4.0 mm</td>
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<td>5</td>
</tr>
<tr>
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<td>80 cm</td>
<td>≥ 5.0 mm</td>
<td>33-46-800-1</td>
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</tr>
<tr>
<td>19 Fr</td>
<td>80 cm</td>
<td>≥ 7.0 mm</td>
<td>33-47-800-1</td>
<td>5</td>
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</tbody>
</table>

**i-Bougie**

**To facilitate orotracheal intubation**

- Oxygenate, 2 types of O₂ Connectors included
- Rounded, atraumatic distal tip with lateral openings
- Centimetre marking from 5 to 40 cm
- Unique material:
  - Low friction surface
  - Allows shaping of the i-Bougie
- For single use, sterile

<table>
<thead>
<tr>
<th>Size</th>
<th>Length</th>
<th>For tracheal tube</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
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<td>70 cm</td>
<td>≥ 6.0 mm I.D.</td>
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</table>

**References**


Cricoathyrotomy Devices

**ScalpelCric**

The ScalpelCric from VBM is a surgical set for cricothyrotomy according to the scalpel technique. The set has been developed to match the latest recommendations from the DAS (Difficult Airway Society) 2015 Guidelines. Based on the simple description of 'stab, twist, bougie, tube', the ScalpelCric is meant to facilitate the execution of the scalpel technique.

Each component is designed to enhance the safety and efficacy of the technique. The set is packed in a specific sterile pouch with each component organised in the order of use. This reduces the risk of confusion at the critical time of the procedure.

Scalpel #10, 14 Fr bougie (40 cm) with angled and rounded tip, 6.0 mm cuffed tube with smooth tip, extension tubing with suction capability, syringe for cuff inflation and necktape for tube fixation.

**Use**

1. Stab
2. Twist
3. Bougie
4. Tube

**Order information**

**ScalpelCric**

1. Scalpel #10
2. 14 Fr bougie (40 cm)
3. 6.0 mm cuffed tube
4. Extension tubing
5. Syringe 10 ml
6. Necktape

**ScalpelCric training set**

For single use, sterile

REF 30-08-447-1 Box 1

**ScalpelCric training set**

Non sterile

REF 30-08-447 Box 1

Application video: ScalpelCric
Cricothyrotomy Devices

Quicktrach I, II

Quicktrach I and Quicktrach II (with cuffs) are two sets of percutaneous cricothyrotomy according to the catheter over the needle technique. A quick airway access is made possible via a one-step procedure. An incision by scalpel isn’t necessary. The sterile sets are pre-assembled and immediately ready for use.

Order information

Quicktrach I in blister packaging
For single use, sterile

<table>
<thead>
<tr>
<th>Patient</th>
<th>I.D.</th>
<th>Quicktrach I</th>
<th>Box</th>
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<tbody>
<tr>
<td>Child</td>
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<tr>
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Quicktrach II in blister packaging
For single use, sterile

<table>
<thead>
<tr>
<th>Patient</th>
<th>I.D.</th>
<th>Quicktrach II with Cuff</th>
<th>Box</th>
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</thead>
<tbody>
<tr>
<td>Adult</td>
<td>4.0 mm</td>
<td>REF 30-10-004-1</td>
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</table>

Quicktrach II in plastic tube
For single use, sterile

<table>
<thead>
<tr>
<th>Patient</th>
<th>I.D.</th>
<th>Quicktrach II with Cuff</th>
<th>Box</th>
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<tbody>
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<td>REF 30-10-904-1</td>
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Application video: Quicktrach II
Cricothyrotomy Devices
Surgicric II, III

The Surgicric is a cricothyrotomy set to maintain ventilation in case of obstruction of the upper airway.

Surgicric II is applied to the classical surgical technique and Surgicric III allows a cricothyrotomy according to the Seldinger technique.

The unique instrument packing system provides the following advantages to the user:

▸ Clear overview of all components
▸ Sterile application in any environment
▸ Small pack size, making it ideal for emergency bags

The main feature of Surgicric is the special combination of tube and dilator. The locking mechanism and the soft tip maximise patient safety and reduce the risk of injury.

Pack size: 24 cm (L) x 13 cm (W) x 4 cm (H)
Unfolded size / sterile area: 56 cm (L) x 39 cm (W)
Cricothyrotomy Devices

Features

Atraumatic
Soft dilator tip, thus avoiding injury to the posterior tracheal wall. Smooth transition from dilator to the tracheal tube.

Position check
Checking the position of the tracheal tube thanks to aspiration through dilator.

Patient Safety
The thin-walled, low pressure cuff guarantees a perfect seal, allows efficient ventilation and protects against aspiration.

Locking mechanism
The unique locking mechanism prevents accidental dislocation of the dilator from the tracheal tube during insertion.

Individually adjustable
The specially designed tracheal tube is longer than a standard tracheostomy tube and with the adjustable flange allows individual adaptation to the anatomical conditions of the patient.
Cricothyrotomy Devices

Surgicric II – Classic surgical technique

1 Scalpel # 11
2 Syringe 10 ml
3 6.0 mm cuffed tube with dilator
4 Necktape
5 Extension tubing
6 Tracheal hook
7 Blunt scissors
8 Speculum

Surgicric II
For single use, sterile

REF 30-08-117-1 Box 1

Surgicric III – Seldinger technique

1 Scalpel # 11
2 Syringe 10 ml
3 6.0 mm cuffed tube with dilator
4 Necktape for tube
5 Extension tubing
6 Necktape for introducer needle
7 Introducer needle
8 Guidewire

Surgicric III
For single use, sterile

REF 30-08-227-1 Box 1
Cricothyrotomy Devices
Manujet III / Jet-Ventilation Catheters

The Manujet III with Jet-Ventilation Catheters is recommended for emergency rooms, crash carts, ambulances and operating rooms as it guarantees a quick and efficient oxygenation of a patient.

Emergency use
As a life saving manoeuvre in the “cannot intubate – cannot oxygenate” situation for oxygenation to avoid a severe desaturation of the patient.

For pre-hospital use if there is an obstruction of the upper airway. Trans Tracheal Jet-Ventilation (TTJV) is faster and simpler than surgical cricothyrotomy in emergencies with fewer complications.

Elective use
- Microlaryngoscopy
- Rigid bronchoscopy
- To assist a difficult fiberoptic intubation
- Predicted difficult extubation

Order information

Manujet III
With 4 m pressure hose, Jet-Ventilation Catheters acc. to Ravussin (13 G, 14 G, 16 G) and 100 cm connecting tube

REF 30-01-003

Manujet III
Ditto but with NIST plug and without pressure hose

REF 30-01-003NIST

Jet-Ventilation Catheters acc. to Ravussin
For single use, sterile

<table>
<thead>
<tr>
<th>Size</th>
<th>Emergency Set with syringe</th>
<th>Box</th>
<th>Anaesthesia Set without syringe</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 G</td>
<td>REF 30-02-918-1</td>
<td>1</td>
<td>REF 30-02-018-1</td>
<td>5</td>
</tr>
<tr>
<td>14 G</td>
<td>REF 30-02-914-1</td>
<td>1</td>
<td>REF 30-02-014-1</td>
<td>5</td>
</tr>
<tr>
<td>13 G</td>
<td>REF 30-02-913-1</td>
<td>1</td>
<td>REF 30-02-013-1</td>
<td>5</td>
</tr>
</tbody>
</table>
The Endoscopy Mask allows a safe combination of FOB intubation and ventilation. The design is made to prevent airway leak at any step of the procedure, providing excellent seals on patient’s face and during insertion of tracheal tube via fiberscope. It is especially beneficiary to patient comfort and working quality of the anesthesiologist during awake procedure.

### Application
- Fiberoptic Intubation
- Bronchoscopy
- Gastroenterology
- Transesophageal Echocardiography

### Airway Devices for Endoscopy

**Endoscopy Mask**

For single use, Material: PVC

<table>
<thead>
<tr>
<th>Size</th>
<th>Patient</th>
<th>Membrane</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Newborn</td>
<td>2.0 mm</td>
<td>30-40-000</td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td>Infant</td>
<td>2.0 mm</td>
<td>30-40-111</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Child</td>
<td>3.0 mm</td>
<td>30-40-333</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Child</td>
<td>5.0 mm</td>
<td>30-40-335</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>Adult</td>
<td>5.0 mm</td>
<td>30-40-555</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>Adult</td>
<td>10.0 mm</td>
<td>30-40-777</td>
<td>6</td>
</tr>
</tbody>
</table>

**Bronchoscope Airway**

For single use, sterile, Material: EVA

The lumen is large enough to guide the fiberscope and tracheal tube. The length is designed to form a path leading to the glottis. The device has a breakaway quality for easy removal after intubation. The external biteblock protects the fiberscope.

<table>
<thead>
<tr>
<th>Size</th>
<th>Length</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>36 mm</td>
<td>30-40-400-1</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>65 mm</td>
<td>30-40-420-1</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>85 mm</td>
<td>30-40-440-1</td>
<td>10</td>
</tr>
</tbody>
</table>

**Hook ring, Ø 32 mm**

Fits for Endoscopy Masks
For single use, Material: PA

REF 30-40-266 Box 10

**Fixation tape**

For single use, Material: Isoprene

<table>
<thead>
<tr>
<th>Patient</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td>35-30-255</td>
<td>10</td>
</tr>
</tbody>
</table>

**Fixation tape**

Reusable, Material: Silicone

<table>
<thead>
<tr>
<th>Patient</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child</td>
<td>35-70-155</td>
<td>10</td>
</tr>
<tr>
<td>Adult</td>
<td>35-70-255</td>
<td>10</td>
</tr>
</tbody>
</table>
Airway Devices for Endoscopy

Gastro-Laryngeal Tube G-LT

The Gastro-Laryngeal Tube G-LT is designed for obtaining and maintaining control of airway patency during medium to long-term complex gastrointestinal endoscopic procedures performed on adults under deep sedation or general anaesthesia while maintaining spontaneous or assisted ventilation.

Application

▸ Diagnostic and therapeutic ERCP (Endoscopic Retrograde Cholangiopancreatography)
▸ Enteroscopy
▸ Percutaneous Endoscopic Gastrostomy (PEG), particularly in neurologic patients

Advantages

▸ Prevention and control of hypoventilation and desaturation
▸ Faster endoscopic procedures
▸ Ease insertion of duodenoscopes
▸ No direct laryngoscopy or muscle relaxation required
▸ Enables capnometry and capnography
▸ Less use of anesthetic drugs
▸ Protects the airways from gastro-oesophageal reflux and inhalation of gastric content

Patient Size

| Patient: Adult | Size > 155 cm | REF 32-90-004 | Box 1 |

References


VBM proposes a very large range of face masks with several types of materials and shapes either with inflatable cushion or with silicone lip. It covers all patient’s size from newborn to adult. There are two main product groups with reusable and single use masks.

### Silicone Face Masks

#### Reusable

**Bi-Mask with silicone lip**
Silicone mask with internal plastic shell (PSU)

<table>
<thead>
<tr>
<th>Size</th>
<th>Patient</th>
<th>Connection</th>
<th>Colour code</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Child</td>
<td>22 mm I.D.</td>
<td>Green</td>
<td>35-65-222</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Adult, small</td>
<td>22 mm I.D.</td>
<td>Yellow</td>
<td>35-65-223</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Adult, medium</td>
<td>22 mm I.D.</td>
<td>Red</td>
<td>35-65-224</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Adult, large</td>
<td>22 mm I.D.</td>
<td>Purple</td>
<td>35-65-225</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Adult, extra large</td>
<td>22 mm I.D.</td>
<td>Blue</td>
<td>35-65-226</td>
<td>1</td>
</tr>
</tbody>
</table>

**Bi-Mask with inflatable cushion**
Silicone mask with internal plastic shell (PSU)

<table>
<thead>
<tr>
<th>Size</th>
<th>Patient</th>
<th>Connection</th>
<th>Colour code</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Adult, small</td>
<td>22 mm I.D.</td>
<td>Yellow</td>
<td>35-75-223</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Adult, medium</td>
<td>22 mm I.D.</td>
<td>Red</td>
<td>35-75-224</td>
<td>1</td>
</tr>
<tr>
<td>5/6</td>
<td>Adult, large</td>
<td>22 mm I.D.</td>
<td>Purple</td>
<td>35-75-225</td>
<td>1</td>
</tr>
</tbody>
</table>
Masks, Oropharyngeal Airways and Resuscitation Bags

**Mask with plastic dome and inflatable cushion**

<table>
<thead>
<tr>
<th>Size</th>
<th>Patient</th>
<th>Connection</th>
<th>Colour code</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Child</td>
<td>22 mm I.D.</td>
<td>Green</td>
<td>35-70-222</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Adult, small</td>
<td>22 mm I.D.</td>
<td>Yellow</td>
<td>35-70-223</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Adult, medium</td>
<td>22 mm I.D.</td>
<td>Red</td>
<td>35-70-224</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Adult, large</td>
<td>22 mm I.D.</td>
<td>Purple</td>
<td>35-70-225</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Adult, extra large</td>
<td>22 mm I.D.</td>
<td>Blue</td>
<td>35-70-226</td>
<td>1</td>
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</tbody>
</table>

**Rendell Baker Mask**

<table>
<thead>
<tr>
<th>Size</th>
<th>Patient</th>
<th>Connection</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Newborn</td>
<td>22 mm I.D.</td>
<td>35-60-000</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>Infant</td>
<td>22 mm I.D.</td>
<td>35-60-001</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Child, small</td>
<td>22 mm I.D.</td>
<td>35-60-002</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Child</td>
<td>22 mm I.D.</td>
<td>35-60-003</td>
<td>10</td>
</tr>
</tbody>
</table>

**Pediatric Mask, round**

<table>
<thead>
<tr>
<th>Size</th>
<th>Patient</th>
<th>Connection</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Newborn</td>
<td>15 mm O.D.</td>
<td>80-11-000</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>Infant</td>
<td>15 mm O.D.</td>
<td>80-11-001</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Child</td>
<td>22 mm I.D.</td>
<td>80-11-002</td>
<td>10</td>
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</tbody>
</table>

**Order information**

**PVC Face Masks**

For single use

**Mask with inflatable cushion**

<table>
<thead>
<tr>
<th>Size</th>
<th>Patient</th>
<th>Connection</th>
<th>Colour code</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Newborn</td>
<td>15 mm O.D.</td>
<td>-</td>
<td>REF 35-40-201</td>
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<tr>
<td>2</td>
<td>Infant</td>
<td>15 mm O.D.</td>
<td>-</td>
<td>REF 35-40-202</td>
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</tr>
<tr>
<td>3</td>
<td>Child</td>
<td>22 mm I.D.</td>
<td>Yellow</td>
<td>REF 35-40-203</td>
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</tr>
<tr>
<td>4</td>
<td>Adult, small</td>
<td>22 mm I.D.</td>
<td>Red</td>
<td>REF 35-40-204</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>Adult, medium</td>
<td>22 mm I.D.</td>
<td>Purple</td>
<td>REF 35-40-205</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>Adult, large</td>
<td>22 mm I.D.</td>
<td>Blue</td>
<td>REF 35-40-206</td>
<td>10</td>
</tr>
</tbody>
</table>
Fixation tape
For single use, Material: Isoprene

<table>
<thead>
<tr>
<th>Patient</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td>35-30-255</td>
<td>10</td>
</tr>
</tbody>
</table>

Fixation tape
Reusable, Material: Silicone

<table>
<thead>
<tr>
<th>Patient</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child</td>
<td>35-70-155</td>
<td>10</td>
</tr>
<tr>
<td>Adult</td>
<td>35-70-255</td>
<td>10</td>
</tr>
</tbody>
</table>

Oropharyngeal Airways

Guedel Airway

**Benefits and Features**
- Atraumatic device made of soft material with efficient bite block
- Tracheal tube guidance and fixation thanks to the open flange and lateral clamp
- Tube-guiding channel with same lumen from proximal to distal end to allow largest possible suction catheters
- Open side with smooth inner surface facilitates suctioning

**Order information**

<table>
<thead>
<tr>
<th>Size</th>
<th>Colour code</th>
<th>Length</th>
<th>Max. tracheal tube</th>
<th>Guedel Airway</th>
<th>Guedel Airway with elastic necktape</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>000</td>
<td>Light blue</td>
<td>3.5 cm</td>
<td>3.0 mm I.D.</td>
<td>REF 40-20-007-1</td>
<td>-</td>
<td>30</td>
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<tr>
<td>00</td>
<td>Dark blue</td>
<td>5.0 cm</td>
<td>4.0 mm I.D.</td>
<td>REF 40-20-008-1</td>
<td>-</td>
<td>30</td>
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<tr>
<td>0</td>
<td>Black</td>
<td>6.0 cm</td>
<td>4.5 mm I.D.</td>
<td>REF 40-20-009-1</td>
<td>REF 40-26-009-1*</td>
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<tr>
<td>1</td>
<td>White</td>
<td>7.0 cm</td>
<td>6.0 mm I.D.</td>
<td>REF 40-20-010-1</td>
<td>REF 40-26-010-1</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>Green</td>
<td>8.5 cm</td>
<td>7.0 mm I.D.</td>
<td>REF 40-20-020-1</td>
<td>REF 40-26-020-1</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>Yellow</td>
<td>9.0 cm</td>
<td>8.0 mm I.D.</td>
<td>REF 40-20-030-1</td>
<td>REF 40-26-030-1</td>
<td>30</td>
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<tr>
<td>4</td>
<td>Red</td>
<td>10.0 cm</td>
<td>9.0 mm I.D.</td>
<td>REF 40-20-040-1</td>
<td>REF 40-26-040-1</td>
<td>30</td>
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<tr>
<td>5</td>
<td>Purple</td>
<td>11.0 cm</td>
<td>9.5 mm I.D.</td>
<td>REF 40-20-050-1</td>
<td>REF 40-26-050-1</td>
<td>30</td>
</tr>
</tbody>
</table>

*Contains or presence of natural rubber latex.*
Masks, Oropharyngeal Airways and Resuscitation Bags

**Resuscitation Bags**

**Silicone Resuscitation Bags**
Reusable, with barcode and serial number, intake valve with built-in reservoir valve

**Order information**

<table>
<thead>
<tr>
<th>Resuscitation Bag</th>
<th>Infant 250 ml</th>
<th>Child 500 ml</th>
<th>Adult 2000 ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 cm H2O pressure relief</td>
<td>REF 80-10-300</td>
<td>REF 80-10-200</td>
<td>REF 82-10-100</td>
</tr>
<tr>
<td>20 cm H2O pressure relief</td>
<td>REF 80-10-306</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Without pressure relief</td>
<td>REF 80-10-301</td>
<td>REF 80-10-201</td>
<td>REF 82-10-101</td>
</tr>
</tbody>
</table>

**Silicone Resuscitator Set**
Supplied in a rigid transparent carrying case

**Infant**
Resuscitation Bag 250 ml
Pediatric Mask, round # 1
Reservoir Bag 600 ml
O2-Tubing 200 cm
REF 80-10-390

**Child**
Resuscitation Bag 500 ml
Mask with inflatable cushion # 3
Reservoir Bag 1800 ml
O2-Tubing 200 cm
REF 82-10-290

**Adult**
Resuscitation Bag 2000 ml
Mask with inflatable cushion # 5
Reservoir Bag 2600 ml
O2-Tubing 200 cm
REF 82-10-190
Masks, Oropharyngeal Airways and Resuscitation Bags

PVC Resuscitation Bags
For single use

PVC Resuscitator Set consisting of:
- PVC-Resuscitation Bag (40 cmH₂O pressure relief)
- Face Mask
- Reservoir Bag
- O₂-Tubing 200 cm
- PEEP-Adapter (30 mm O.D.)

Infant
Consisting of Resuscitation Bag 280 ml and face mask # 1

Child
Consisting of Resuscitation Bag 450 ml and face mask # 3

Adult
Consisting of Resuscitation Bag 1500 ml and face mask # 5

Order information

Reservoir Bag
For single use

Size | REF  | Box |
---  | ---  | --- |
600 ml | 80-12-020 | 5 |
1800 ml | 80-12-015 | 5 |
2600 ml | 80-12-010 | 5 |

PEEP-Valve

<table>
<thead>
<tr>
<th>Pressure Range</th>
<th>Connection</th>
<th>Colour</th>
<th>PEEP-Valve Reusable, Material: PSU</th>
<th>PEEP-Valve For single use, Material: PC</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 10 cmH₂O</td>
<td>22 mm O.D.</td>
<td>Green</td>
<td>REF 80-13-001</td>
<td>REF 85-13-001</td>
<td>1</td>
</tr>
<tr>
<td>0 – 10 cmH₂O</td>
<td>30 mm I.D.</td>
<td>Green</td>
<td>REF 80-13-004</td>
<td>REF 85-13-004</td>
<td>1</td>
</tr>
<tr>
<td>0 – 20 cmH₂O</td>
<td>22 mm O.D.</td>
<td>Blue</td>
<td>REF 80-13-005</td>
<td>REF 85-13-005</td>
<td>1</td>
</tr>
<tr>
<td>0 – 20 cmH₂O</td>
<td>30 mm I.D.</td>
<td>Blue</td>
<td>REF 80-13-002</td>
<td>REF 85-13-002</td>
<td>1</td>
</tr>
</tbody>
</table>

O₂-Tubing
For single use, Material: PVC

<table>
<thead>
<tr>
<th>Length</th>
<th>REF</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 cm</td>
<td>85-17-000</td>
<td>10</td>
</tr>
</tbody>
</table>

Accessories

PEEP-Adapter
22 mm I.D. – 30 mm O.D.
Reusable, Material: PSU
REF 80-13-003 | Box 1
Airway Management Simulators

Simulation is the ideal method for replicating clinical situation and contributes to improve patient care by enhancing proficiency of practitioners. VBM has developed a wide range of skill-trainers and mannequins with the highest possible fidelity to train all airway procedures.

**BILL**
- ET Intubation
- Supraglottic airway insertion
- Mask ventilation
- Fiberoptic bronchoscopy (if bronchial tree is connected)
- Fiberoptic intubation
- Video laryngoscopy
- Inflatable tongue for Difficult Airway simulation

Complete with base, carina with bayonet lock and carrying bag

REF 30-29-000

**Bronchial tree acc. to Dr. Nakhosteen**
For connection to simulator “BILL”

REF 30-19-400

**Transparent Head**
Cross section with upper airways
For demonstration and positioning of Laryngeal Tube LTS-D # 3, 4 and iLTS-D # 4/5, in carrying bag

REF 30-16-300
Airway Management Simulators

Crico-Trainer

Crico-Trainer “Adelaide”
For cricothyrotyomy. The special concept of skin with 2 layers is simulating the subcutaneous tissue and the cricot hyroid membrane. It is designed to replicate difficult scenario thanks to the moveable chin. Complete with 5 skins.

REF 30-14-700

Crico-Trainer “Pig”
For fixation of a real animal trachea. Complete with 10 skins.

REF 30-14-500

Crico-Trainer “Frova”
For cricothyrotyomy and percutaneous tracheostomy, complete with 10 skins and 10 tracheas.

REF 30-14-000

Crico-Trainer “Pediatric”
Complete with 10 skins.

REF 30-14-900

Accessories

Skin
For Crico-Trainer “Frova” and “Pig”
REF 30-14-222 | Box 10

Skin
For Crico-Trainer “Adelaide”
REF 30-14-722 | Box 5

Skin
For Crico-Trainer “Pediatric”
REF 30-14-922 | Box 10

Larynx
For Crico-Trainer “Frova” and “Adelaide”
REF 30-14-111 | Box 1

Trachea
For Crico-Trainer “Frova”
REF 30-14-444 | Box 10
Alphabetical index

A
Adelaide – Crico-Trainer 29
Airway Management Simulator "BILL" 28

B
BILL – Airway Management Simulator 28
Bi-Masks 23
Bronchoscope Airway 21

C
Connecting Tube 10
Cricothyrotomy 15
Crico-Trainer 29
Cuff Controller 8
Cuff Manometer 9
Cuff Pressure Gauges 8
Cuff Pressure Measurement 8

D
Endoscopy Mask 21

E
Face Masks 23
Fixation tape 21 | 25
Frova – Crico-Trainer 29

F
Gastro-Laryngeal Tube G-LT 22
Guedel Airway 25

H
Hook ring for Endoscopy Mask 21
Hook ring for Face Mask 25

I
Intubating Laryngeal Tube iLTS-D 6
i-Bougie 14

J
Jet-Ventilation Catheters acc. to Ravussin 20

L
Laryngeal Tubes 4
Laryngeal Tube G-LT 22
Laryngeal Tube iLTS-D 6
Laryngeal Tube LTS-D 4
LTS-D 4

M
Manometer – Cuff Manometer 9
Manujet III 20
Masks 23
METTI 14
METTS 13
Monitor – Cuff Pressure Gauge 10

O
O2-Tubing 27
Ororharyngeal Airways 25

P
Pediatric – Crico-Trainer 29
Pediatric – Cuff Pressure Gauge 8
Pediatric Masks 24
PEEP-Valve 27
PEEP-Adapter 27
Pig – Crico-Trainer 29
Pocket – Cuff Pressure Gauge 10
Pocket Introducer 13
PVC Face Masks 24
PVC Resuscitation Bags 27

Q
Quicktrach I 16
Quicktrach II with Cuff 16

R
Rendell Baker Masks 24
Reservoir Bag 27
Resuscitation Bags 26 | 27

S
Sensitive – Cuff Pressure Gauge 10
ScalpelCric 15
S-Guide 11
Silicone Face Masks 23
Silicone Resuscitation Bags 26
Simulators (Airway Management) 28
Stylets 13
Surgicric II, III 17

T
Transparent Head 28
Tube Exchanger 14

U
Universal – Cuff Pressure Gauge 10
VBM Medizintechnik GmbH is a family owned business operating worldwide. We develop and produce innovative products in the area of airway management, accessories for anesthesia and intensive care medicine as well as tourniquets for surgical procedures in the bloodless field.

Our company was founded 1981 by Volker Bertram and our headquarters are located in Sulz am Neckar, Germany. Around 200 employees are working in our departments like Research and Development, Production, Quality Management, Distribution, Service and Marketing.

Our excellent service can be measured in our longtime and personal cooperation with our customers. The close contact to our suppliers and users of our products is the basis of our claim to the continual improvement of our products and the development of new solutions for your tasks. We are aware of the responsibility towards patients and users alike and we focus on the high quality of our products in our everyday work.