Effective one lung ventilation (OLV) with the Fuji Systems product range

- Isolate the lungs
- Ventilate effectively
- Deliver positive patient outcomes
Uniblocker™: an easy-to-direct torque control blocker for full lung or selective lobar blockade during OLV

Unlike other bronchial blockers, the shaft of Uniblocker™ is made from wire mesh coated with polyurethane, ensuring that any manipulation is translated to the tip of the blocker in a 1:1 ratio.

Together with its fixed distal curve, the unique design of Uniblocker™ maximises control during insertion and facilitates blockade of the left or right bronchus through a standard single-lumen endotracheal tube.

Uniblocker™ is designed to:

- Enable both full lung or selective lobar blockade during OLV\(^1\).\(^2\)
- Enable lung isolation even in patients with difficult airways or tracheostomies\(^3\)
- Facilitate easy removal without disconnection from the anaesthesia circuit\(^1\)

**Swivel connector**
Swivel connector enables rotation of the circuit if the patient is moved and facilitates FOB insertion.

**Quick release for easy removal**
Uniblocker™ is easily removed without disconnecting the swivel connector from the anaesthesia circuit using the quick release connector.

**Torque control blocker (TCB)**
The Uniblocker™ shaft incorporates a metallic mesh which gives torque control enabling smooth manipulation and ease of placement.

**High volume gas barrier (GB) cuff**
Soft high volume cuff made of silicone with GB properties to reduce diffusion of gas into or out of the cuff.
Uniblocker™ is an effective bronchial blocker that is particularly beneficial in establishing selective lobar blockade.

- Selective lobar blockade avoids total lung collapse improving oxygenation, and avoiding difficulties associated with re-collapse of the lung²
- Uniblocker™ can be inserted during surgery to initiate OLV and can be removed at the end of the procedure leaving the ETT in place if postoperative ventilatory support is required⁴
- Bronchial blockers remain the ‘technique of choice’ in paediatric patients who are too small for double-lumen tubes⁵

“[The Fuji Uniblocker]™ with stylet, which allows flexible high torque control and good controllability of the catheter tip, can be easily directed to block a selective lobar bronchus. The stylet can be removed, and a 1.4mm lumen can be used as a suction port for rapid deflation of lobes or for oxygen insufflation to apply continuous positive airway pressure to deflated lobes.”

Ichikawa J. et al., 2011

Consider using Uniblocker™ for:
- Already intubated patients requiring lung isolation⁶
- Difficult airways⁶
- Patients with limited mouth opening⁶
- Nasotracheal intubation⁶
- Awake orotracheal intubation⁶
- Tracheostomy patients requiring lung isolation⁶
- Selective lobar blockade⁶
Univent™: a versatile single-lumen ETT with an easy-to-direct TCB, for full lung or selective lobar blockade

Univent™ is a single-lumen endotracheal tube with a small separate lumen containing a hollow non-latex bronchial blocker that can extend about 8-10cm beyond the tip. Univent™ is designed to:

- Block either the left or right lung to enable OLV or can be used for selective lobar blockade
- Enable lung isolation even in patients with difficult airways or tracheostomies
- Enable the tube to remain in place without the need for tube exchange in patients who require airway management after thoracic surgery

Flexible blocker shaft
Malleable shaft with high torque control for smooth intubation into the target bronchus.

Small, non-latex blocker
Hollow non-latex blocker with a soft, flexible tip for patient comfort.

High volume, low pressure tracheal cuff
Tracheal cuff is coloured blue to help visualise the cuff during positioning.
In patients with a recognized and/or unrecognized difficult airway, placement of a DLT with direct laryngoscopy can be extremely difficult and at times, impossible.

In this situation, placement of a single-lumen ETT is easier and often necessary, requiring the need for a bronchial blocker for subsequent lung isolation.

When a double-lumen device isn’t indicated, Univent™ can deliver the following benefits:

- Simple initial insertion
- Nasotracheal placement
- Isolation and selective inflation or deflation of either right or left lung and selective lobar blockade
- Continuous positive airway pressure (CPAP) if needed due to the hollow blocker
- High-frequency jet ventilation in certain procedures
- Postoperative ventilation without the need for a tube change at the conclusion of surgery, reducing the risk of airway loss

Consider using Univent™ for:

- Upper airway abnormalities/tracheostomy patients requiring lung isolation – the smaller sized Univent™ devices can be passed through the narrowed upper airway or tracheostomy of these patients
- Selective lobar blockade
- Nasotracheal intubation
- Peripheral bronchopleural fistula in a stable patient
- Non-pulmonary thoracic surgery
- Bronchial surgery

“When patients with a recognized and/or unrecognized difficult airway, placement of a DLT with direct laryngoscopy can be extremely difficult and at times, impossible.”

“When in this situation, placement of a single-lumen ETT is easier and often necessary, requiring the need for a bronchial blocker for subsequent lung isolation.”

Miller H.J., 2003
Silbroncho™: a silicone double-lumen endotracheal tube (ETT) for OLV, designed with patient comfort in mind

Silbroncho™ is a 100% silicone, double-lumen ETT with a soft, flexible, wire-reinforced tip and narrow bronchial cuff.

Silbroncho™ is designed to:

- Deliver the flexibility required to overcome difficulties associated with endobronchial intubation of acutely-angled left-stem bronchi\textsuperscript{10}
- Achieve a depth of placement that can reduce the risk of displacement vs equivalent sized PVC tubes\textsuperscript{11,12}
- Reduce the risk of trauma during intubation with its soft silicone tip

100% silicone

Designed to maximise patient comfort.

Wire-reinforced bronchial tip

Wire-reinforcement to prevent bronchial lumen compression when the patient is in the lateral position\textsuperscript{13}, to reduce the incidence of kinking and to assist X-ray verification.

Resistant cuff

Silicone cuff designed to resist puncture and tearing by teeth.

Soft, flexible tip

Facilitates endobronchial intubation and reduces the risk of trauma during intubation.

Narrow bronchial cuff

Narrow bronchial cuff to reduce the chance of upper-lobe obstruction.\textsuperscript{13}
Silbroncho™ is intended for the airway management of surgical patients to perform one-lung ventilation:

- Double-lumen endotracheal tubes remain the gold-standard for most OLV procedures.  
- Selective collapse of the operated lung can improve operative conditions and thus reduce the duration of surgery.
- Only a double-lumen tube can be used to control the distribution of ventilation to either or both lungs during a surgical procedure.
- Unlike PVC tubes, the silicone Silbroncho™ offers greater flexibility for improved access to acutely-angled left-stem bronchi.

Consider Silbroncho™ for use in:

- Elective pulmonary resection, right-sided
- Video-assisted thoracoscopic surgery (VATS)
- Lobectomy
- Thoracoscopy
- Left pneumonectomy
- Pulmonary haemorrhage
- Large central bronchopleural fistula / urgent situations (awake intubation with FOB)
- Unilateral lung lavage
- Independent lung ventilation

“The D-shaped wire-reinforced lumen maintains the tip at a 45-degree angle. The reinforced wall tends to prevent obstruction or kinking of the bronchial lumen, yet at the same time maintains flexibility. It is especially useful if the left main stem bronchus is angled at 90 degrees from the trachea, making it almost impossible to position a PVC DLT.”

Barash P.G. et al., 2005

“For one-lung ventilation in many surgical cases, double-lumen endotracheal tubes are the first-line choice for airway management.”

Yaney L.L., 2007
Fuji WRETT: a long wire-reinforced endotracheal/endobronchial tube designed to seal either the trachea or mainstem bronchus

The Fuji WRETT is 40 cm in length – 8 cm longer than a standard WRETT – and is designed to seal either the trachea or the mainstem bronchus during tracheal or bronchial resection.

The Fuji WRETT is designed to:

- Maximise patient comfort: the tube is made from medical grade silicone rubber and stainless steel with a smooth tip to minimise the risk of tracheal damage
- Maximise stability with its wire-reinforced flexible tube. This can be important when moving a patient or during head and neck surgery
- Enable the tube to be advanced into the bronchus and withdrawn into the trachea as needed during surgery under fiberoptic bronchoscopic guidance

Silicone for patient comfort

Medical grade silicone rubber and stainless steel utilised to maximise patient comfort.

Long length (40cm), wire-reinforced tube

Wire reinforcement is designed to reduce the risk of kinking or compression under manipulation or warmth.

Short cuff without a Murphy eye

The short cuff of the tube can be inflated to provide a seal in either the trachea or mainstem bronchus.
The ideal endotracheal tube for tracheal reconstruction has been described as a long, flexible, reinforced tube with a short, low-pressure, high-volume cuff and a short segment beyond the cuff to allow the ventilation of both lungs through a short, tracheal stump without encroachment on the operative site.

Slinger P.D., 2011.

Some surgeons prefer single-lumen endobronchial tubes to DLTs for procedures involving the carina since they are more flexible, permitting better mobilization and exposure.


The Fuji WRETT is a viable option when the flexibility to seal either the trachea or the mainstem bronchus is required.

- 8cm longer than standard wire-reinforced ETT tubes to achieve adequate depth of placement
- Easily inserted and placed using the flexible polyurethane stylet
- Short, narrow cuff placed right at the tip of the device to enable ventilation of both lungs while not advancing on the operative site during tracheal resection
- Can be advanced into the bronchus and withdrawn into the trachea as required under fiberoptic bronchoscopic guidance

Consider using the Fuji WRETT for:
- Tracheal and bronchial resections
- Head and neck surgery
- Sleeve pneumonectomy
- Endobronchial placement during life-saving manoeuvres (airway haemorrhage, acute contralateral tension pneumothorax) where the lung must be isolated immediately.
# Fuji Systems product usage guide

<table>
<thead>
<tr>
<th>Feature</th>
<th>Uniblocker™</th>
<th>Univent™</th>
<th>Silbroncho™</th>
<th>Fuji WRETT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paediatrics</td>
<td>✔</td>
<td>✔</td>
<td>✘</td>
<td>✔</td>
</tr>
<tr>
<td>Difficult airways</td>
<td>✔</td>
<td>✔</td>
<td>✘</td>
<td>✔</td>
</tr>
<tr>
<td>Tracheostomy patients</td>
<td>✔</td>
<td>✔</td>
<td>✘</td>
<td>✔</td>
</tr>
<tr>
<td>Selective lobar blockade</td>
<td>✔</td>
<td>✔</td>
<td>✘</td>
<td>✘</td>
</tr>
<tr>
<td>High-torque control blocker</td>
<td>✔</td>
<td>✔</td>
<td>✘</td>
<td>✘</td>
</tr>
<tr>
<td>Facilitates postoperative ventilatory support without tube change</td>
<td>✔</td>
<td>✔</td>
<td>✘</td>
<td>✔</td>
</tr>
<tr>
<td>Intranasal placement</td>
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<td>✔</td>
<td>✘</td>
<td>✘</td>
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<tr>
<td>Suitable for use with standard single-lumen ET tubes</td>
<td>✔</td>
<td>✘</td>
<td>✘</td>
<td>✔</td>
</tr>
<tr>
<td>Silicone for patient comfort</td>
<td>✘</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Gold standard, double-lumen device</td>
<td>✘</td>
<td>✘</td>
<td>✔</td>
<td>✘</td>
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<tr>
<td>Ability to control the distribution of ventilation to either or both lungs during surgery</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✘</td>
</tr>
<tr>
<td>Independent suctioning of lungs possible</td>
<td>✘</td>
<td>✘</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Rapid lung deflation</td>
<td>✘</td>
<td>✘</td>
<td>✔</td>
<td>✘</td>
</tr>
</tbody>
</table>
# Fuji Systems product specifications

## Uniblocker™

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>O.D. (mm)</th>
<th>Length (mm)</th>
<th>Effective Length* (mm)</th>
<th>Maximum Cuff Volume (ml)</th>
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</thead>
<tbody>
<tr>
<td>1203104</td>
<td>Uniblocker™, small</td>
<td>1.7 (5.0 Fr)</td>
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<td>Uniblocker™, adult</td>
<td>3.0 (9.0 Fr)</td>
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<td>510</td>
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## Univent™

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>I.D. (mm)</th>
<th>O.D. (mm)</th>
<th>Maximum Inflation Volume (Main Cuff) (ml)</th>
<th>Maximum Inflation Volume (Blocker Cuff) (ml)</th>
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</thead>
<tbody>
<tr>
<td>1202716</td>
<td>Univent™, paediatric without cuff</td>
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<td>7.5/8.0</td>
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<td>Univent™, paediatric with cuff</td>
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<td>8.5/9.0</td>
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<td>3</td>
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<tr>
<td>1202627</td>
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<td>6.0</td>
<td>9.7/11.5</td>
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<td>6</td>
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<tr>
<td>1202628</td>
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<td>10.2/12.0</td>
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<td>6</td>
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<tr>
<td>1202630</td>
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<td>10.7/12.5</td>
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<tr>
<td>1202631</td>
<td>Univent™, adult sizes</td>
<td>7.5</td>
<td>11.2/13.0</td>
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<td>6</td>
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<tr>
<td>1202633</td>
<td></td>
<td>8.0</td>
<td>11.7/13.5</td>
<td>50</td>
<td>6</td>
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<tr>
<td>1202635</td>
<td></td>
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<td>50</td>
<td>6</td>
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<tr>
<td>1202636</td>
<td></td>
<td>9.0</td>
<td>12.7/14.5</td>
<td>50</td>
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## Silbroncho™

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Size</th>
<th>I.D. (mm)</th>
<th>O.D. (mm)</th>
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</thead>
<tbody>
<tr>
<td>1203533</td>
<td>33 Fr, left</td>
<td>4.1/6.5</td>
<td>9.5/12.3</td>
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<tr>
<td>1203535</td>
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<td>4.5/7.0</td>
<td>10.0/13.3</td>
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<td>4.9/7.5</td>
<td>10.5/14.3</td>
</tr>
<tr>
<td>1203539</td>
<td>39 Fr, left</td>
<td>5.3/8.0</td>
<td>11.0/15.3</td>
</tr>
</tbody>
</table>

## Fuji Long WRETT

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Size</th>
<th>I.D. (mm)</th>
<th>O.D. (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200824</td>
<td>24 Fr</td>
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<td>8.0</td>
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<td>1200828</td>
<td>28 Fr</td>
<td>6.5</td>
<td>9.4</td>
</tr>
<tr>
<td>1200831</td>
<td>31 Fr</td>
<td>7.5</td>
<td>10.4</td>
</tr>
</tbody>
</table>

*The effective length is the longest value from the tip to the airway joint with the swivel connector.*
Find out more about the Fuji Systems range

For the latest clinical evidence on the Fuji Systems product range, register for free at www.doctorevidence.com/lma

For the latest digital case reports, educational videos and clinician testimonials on the LMA product range, visit www.youtube.com/user/LaryngealMaskAirway

For the latest news from LMA, like us on www.facebook.com/LMAInternational

For product information and access to product instructions for use, visit www.lmaco.com

References:

1. Fuji Uniblocker™ Instructions For Use, March 2012.
   URL: http://dx.doi.org/10.4172/2155-6148.1000150.
7. Fuji Univent™ Instructions For Use, October 2011.
   URL: http://www.anesthesia.org/winterlude/wi97/W_LungIsolation.html
15. Fuji Silbroncho™ Instructions For Use, October 2011.