Driving ESD innovation with unique forward-thinking concepts and proven reliability, only OLYMPUS can offer you a total solution.

Treatment with gastrointestinal endoscopy has evolved rapidly over the past few years. From polypectomy to EMR, and now to ESD, treatment has become both more effective and less invasive. With the remarkable ability to enable en-bloc resection of larger lesions, ESD clearly marks a major milestone in this evolution, offering an ideal substitute for open surgery. Everything you need to take advantage of this impressive new treatment modality is available from OLYMPUS. Incorporating the ideas and observations of pioneering ESD physicians, we have created a unique array of ESD devices. We are now expanding the lineup to bring the power of ESD to even more types of lesions found in a range of areas in the GI tract.
**ITknife 2™**

**Unique electrode design on the proximal side of the tip minimises invasiveness whilst maximising cutting versatility**

Ceramic tip for increased assurance
The ceramic tip at the distal end of the device is insulated to provide you with the support to perform incisions and dissections more effectively.

Innovative electrode design
The electrode incorporated on the proximal side of the ceramic tip features a unique new design that provides exceptional cutting performance.

Easy scope manoeuvring
This unique electrode design makes it possible to perform lateral cutting from a vertical approach, allowing the endoscope to be manoeuvred easily.

Fast, efficient cutting performance
Unlike other knives, the ITknife 2’s insulated tip enables you to take advantage of unique new cutting techniques using 4 mm of knife length. This allows much faster and more efficient incision and dissection.

**What is the difference between the ITknife™ and ITknife2™?**

The addition of an electrode to the proximal side of the ceramic tip makes incision possible even when the cutting blade cannot be pressed against the tissue horizontally.

**CLINICAL CASE**

1. Upper GI
2. Upper GI
3. Upper GI
4. Upper GI
5. Upper GI
6. Upper GI

**HookKnife™**

**Distal L-shaped hook and rotation function for incision and dissection in longitudinal and lateral directions**

L-shaped hook at the distal end
The knife is used to hook tissue and draw it away from the mucosa. Diathermy is applied to cut. This drawing method minimises the risk of perforation as cutting always takes place away from the intestinal wall.

Turn and lock design
Simply turn the handle to point the tip of the hook in the direction you want, then lock it in position.

Choice of working lengths
Choose the working length appropriate for the technique you plan to use and the location — whether it is in the upper or lower gastrointestinal tract.

Optional distal attachment
To further minimise invasion while maintaining an open view field, an optional distal attachment is available for use with the HookKnife.

**CLINICAL CASE**

1. Upper GI
2. Upper GI
3. Upper GI

**How to use the HookKnife™**

1. Pull the slider gently to draw the knife tip back slightly.
2. While holding the sheath, turn the handle slowly and align the direction of the hook.
3. Extend the knife tip and lock it.
Surprisingly pliable design enables smooth incision and dissection in all directions

Smart sheath design
Combining a slim sheath with flexible stranded wire makes the knife pliable enough to enable incision and dissection in all directions.

Loop-design cutting section
The looped cutting section at the tip of the knife contacts a larger area of the mucosal surface, enabling you to achieve the correct cutting speed quickly and easily.

Buffer collar
The collar of the knife functions as a cushion and stopper, helping to prevent perforation by allowing precise control of the cutting depth.

Adjustable length
The knife length can be adjusted to different lengths suitable for marking, incision or dissection.

Extruded lengths of the FlexKnife™

CLINICAL CASE
Upper GI

1
2
3
4
5
6

CLINICAL CASE
Upper GI

1
2
3

CLINICAL CASE
Lower GI

1
2
3

Knife length can be fixed at either of two positions — retracted or extended — for reliable, confident cutting

Two-step knife length adjustment
Easy two-step knife extrusion length adjustment with no need for confirmation under endoscopic view.

Knob-shaped needle knife tip
The 0.3 mm needle tip is shaped like a doorknob. This design makes the needle less likely to slip, simplifies marking and haemostasis, and increases scope manoeuvrability, thereby facilitating a wide variety of cutting techniques.

Dome-shaped ceramic sheath tip
The insulated ceramic tip ensures that it is safe even when the tip is brought in to contact with tissue. It also improves approach capability in a tangential direction.

Slim sheath with just the right degree of rigidity
The narrower sheath enhances suction capability, while sheath rigidity has been increased to make it easier to hook the needle on tissue.

Extruded lengths of the FlexKnife™

KD-630L

KD-630L/KD-650Q/KD-650U

How to use the DualKnife™

KD-650L/KD-650Q/U

Upper GI

1
2
3

Lower GI

1
2
3

KD-650L
KD-650Q/U
**Single-Use Electrosurgical Knife**

**TriangleTipKnife.**

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<th>KD-640L</th>
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**Unique triangular tip design**
A specially designed tip with a unique triangular shape enables you to snag and hook tissue more easily. Once you’ve hooked the tissue, electric current can be applied. The efficiency of this design prevents thermal damage to the tissue.

**Cutting while coagulating**
The triangular conductive tip generates electrical resistance that facilitates cutting of the tissue by applying coagulation to the site.

**No need to rotate the knife**
Thanks to the triangular tip design, there’s no need to rotate the knife and it is easy to cut in the direction you want.

**Versatile application**
This knife can be used at any step of the ESD procedure, from marking and precutting to incision and dissection. It can even be used for haemostasis of minor bleeding.

**Optional distal attachment**
For best results, an optional distal attachment is available to keep the view field clear.

**Single-Use Electrosurgical Hemostatic Forceps**

**Coagrasper.**

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<th>FD-410LR &amp; FD-411QR/UR</th>
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**Unique forceps construction provides more reliable, effective haemostasis no matter where the site is located**

**Unique way to achieve haemostasis**
By grasping and lifting up the bleeding point or blood vessel, the Coagrasper enables effective and reliable haemostasis during or after dissection.

**Two types of forceps cup shapes and opening widths**
The Coagrasper is available in two versions specifically designed for haemostasis. The shape and opening width of each forceps has been optimised for its application — one model is designed for the upper GI tract and the other for the lower GI tract.

**Rotation function**
Precise approach and targeting is possible with the Coagrasper’s rotatable design.

**Anti-slip construction**
The forcep cups of the Coagrasper boast a unique anti-slip construction that allows you to grasp bleeding points securely for faster and more reliable haemostasis.

**TriangleTip Knife™** can be used at any step of the ESD procedure

**CLINICAL CASE**

<table>
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<th>Upper GI</th>
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Marking > Incision > Dissection

**Optional distal attachment**
For best results, an optional distal attachment is available to keep the view field clear.

**Coagrasper™’s rotatable design for easy targeting**

**CLINICAL CASE**

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Marking > Incision > Dissection

**Optional distal attachment**
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**CLINICAL CASE**

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Marking > Incision > Dissection

**Optional distal attachment**
For best results, an optional distal attachment is available to keep the view field clear.
**HotBite**

**Biopsy-style operation makes it easy to cut introduction holes for mucosal incision**

**Perfectly sized access ports**
Specifically designed to go with the ITknife2, HotBite lets you create perfectly sized access ports to reach the submucosa.

**Reduced risk of perforation**
Based on ITknife2, it can cut perpendicularly to the mucosa. This may result in reducing the risk of perforation.

**Excellent cutting capability**
Featuring “stepped cups,” the HotBite boasts excellent cutting capability, even on flat mucosa.

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**CLINICAL CASE**

1. Upper GI
2. 
3. 

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**Distal Attachment**

**Maintains the optimal field of view**
By maintaining the appropriate distance between the endoscope tip and observation site, the distal attachment helps maintain the optimal field of view. The addition of a convenient side hole on the sleeve of the 4 mm working distance models ensures that any fluid inside can be drained at all times.

**Rounded edge is easy on tissue**
The edge of the distal attachment has a round shape to reduce damage to tissue.

**Versatile lineup for OLYMPUS GI endoscopes**
Ten different distal attachments are available, ensuring that you can find one to match the outer diameter of your OLYMPUS upper or lower endoscope.

**Models dedicated to magnification endoscopes**
Three of the distal attachment models are specifically designed for use with magnification endoscopes, making it easier to keep an image in focus and achieve correct depth of field.

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**CLINICAL CASE**

1. 
2. 
3. 

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**Distal Attachment helps keep the field of view clear throughout the procedure**

**How to mount the distal attachment**

1. Position the distal attachment so that the side hole is aligned with the endoscope’s objective lens.
2. Pass the endoscope tip into the distal attachment as far as the alignment line on the distal attachment.

**How to drain fluid**

When fluid pooled in the distal attachment blocks the endoscopic field of view, bring the side hole of the attachment in contact with tissue. This enables fluid to be expelled.

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**Claw-shaped tongs and rotation function for more efficient incision and dissection**

**Claws at the tip**
Mucosal tissue can be grasped more securely with the claws at the tip.

**Rotation function**
Rotatable tip enables you to approach or cut from any direction.

**Minimal invasion of deeper parts**
Since the mucosal tissue is grasped and lifted before incision, invasion of deeper parts can be kept to a minimum.

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**CLINICAL CASE**

1. Upper GI
2. 
3. 

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**How to mount the distal attachment**

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2. Pass the endoscope tip into the distal attachment as far as the alignment line on the distal attachment.

**How to drain fluid**

When fluid pooled in the distal attachment blocks the endoscopic field of view, bring the side hole of the attachment in contact with tissue. This enables fluid to be expelled.
**ESG-100**

**Suitable for ESD**
Reliable and easy-to-use, the new OLYMPUS ESG-100 electrosurgical generator’s smart versatile design and expanded performance offers procedural solutions that are suitable for state-of-the-art endoscopies such as ESD.

**120 watt output and a variety of modes**
With output power of up to 120 watts and a variety of monopolar and bipolar modes for cutting and coagulation, the ESG-100 supports all electrosurgical procedures in flexible endoscopy.

**Rapid Spark Technology**
Features High Power Cut Support (HPCS) to achieve immediate spark ignition and Fast Spark Monitor (FSM) to optimise cutting procedures in various tissue structures. This technology helps reduce leakage currents, ensures reproducible tissue effects, and provides enhanced protection for EndoTherapy Instruments.

**Versatile Coagulation Technology**
Enables fast and effective desiccation as well as soft and deep tissue coagulation in monopolar and bipolar modes to ensure controlled haemostasis and effective coagulation.

**Compact design**
Fits perfectly onto an endoscopic workstation.

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**PERISTALTIC PUMP**

**AFU-100**
Penstaltic pump helps to maintain a clear view

When the optional AFU-100 is connected to the ESG-100, the generator’s foot pedal can also be used to activate the pump. With flow of up to 600 ml/min, the treatment site can be thoroughly rinsed, ensuring a clear view is maintained.

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**Endoscopic CO₂ Regulation Unit**

**UCR**

**Fast absorption to minimise distension**
Carbon dioxide’s rapid absorption properties keep abdominal distention and related pain to a minimum during the procedure and speed up recovery afterwards.

**Easy operation**
Easy, reliable one-button start/stop operation, pressure display, and timer function to automate CO₂ insufflation shut-off.

**Selectable flow rate**
Flow rates can be controlled by using the appropriate optional tubing. Three settings are available.

**Compact design**
Allows the UCR to fit easily onto an endoscopic workstation.

**Rapid absorption of CO₂ gas**
Carbon dioxide is absorbed by human tissue about 150 times faster than conventional air.

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**CLINICAL CASE**

Different Cutting Modes to Meet All of Your Needs

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**Note:** Sample image demonstrates absorption rate following CO₂ insufflation. Individual results may vary.
Cautions on use of the knives and supporting devices for ESD

**Warning**
Before use, thoroughly review the manual and use the instruments as instructed. These instruments have been designed for use by physicians or medical personnel under the supervision of a physician.

In certain cases the use of these instruments could lead to perforation or haemorrhages and may require surgical intervention as an emergency measure. Only use this product if you have received appropriate training in order to develop an understanding of the clinical application and the proper use of this product.

For information on training and other material, please contact OLYMPUS.