OLYMPUS

THUNDERBEAT

UNIQUE HYBRID TECHNOLOGY

DOUBLE YOUR ENERGY

THUNDERBEAT Type S – Next Generation of Safety and Speed

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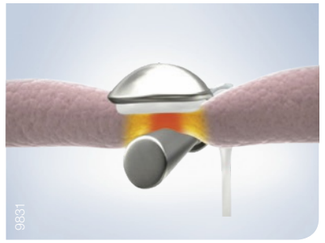
UNIQUE HYBRID TECHNOLOGY

Philosophy
Olympus aims to provide innovative energy solutions delivering surgical safety and instrument versatility for efficient and streamlined operations with optimal patient outcomes. This is why Olympus developed the unique hybrid technology THUNDERBEAT for open and laparoscopic surgery.

THUNDERBEAT is the world's first and only advanced energy system that delivers two well-established forms of energy to a tissue simultaneously:
· **Ultrasonic energy** for superior dissection and fast tissue-cutting capability
· **Advanced bipolar energy** for fast and secure hemostasis for vessels up to and including 7 mm in diameter

The combination doubles your energy – and sets new standards in the application of advanced energy in the operating room.

Ultrasonic Energy Only



Rapid tissue cutting

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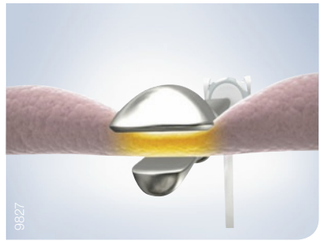
Bipolar Energy Only



Reliable vessel sealing

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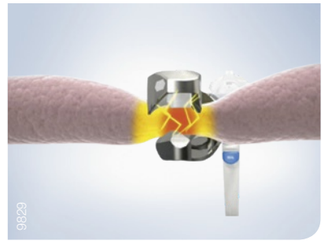
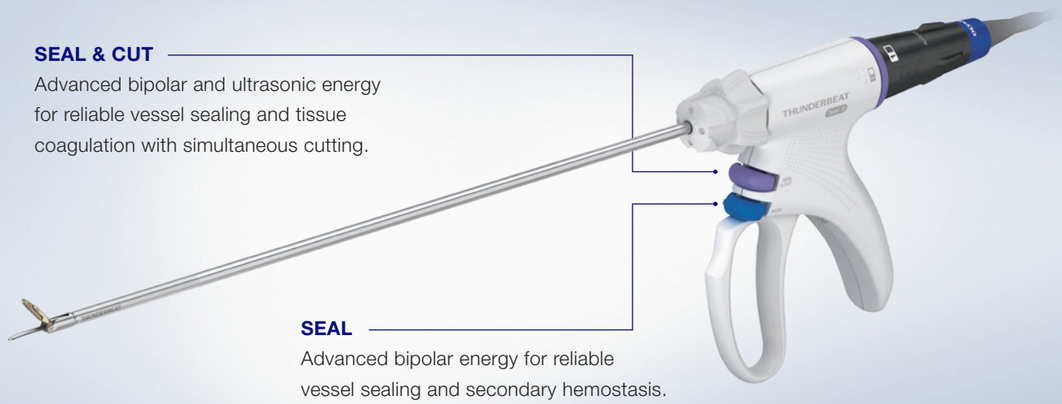
THUNDERBEAT



Rapid tissue cutting and reliable vessel sealing

The THUNDERBEAT Modes

SEAL & CUT
Advanced bipolar and ultrasonic energy for reliable vessel sealing and tissue coagulation with simultaneous cutting.



SEAL
Advanced bipolar energy for reliable vessel sealing and secondary hemostasis.

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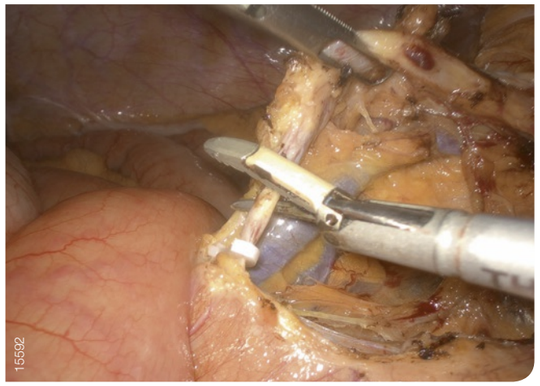
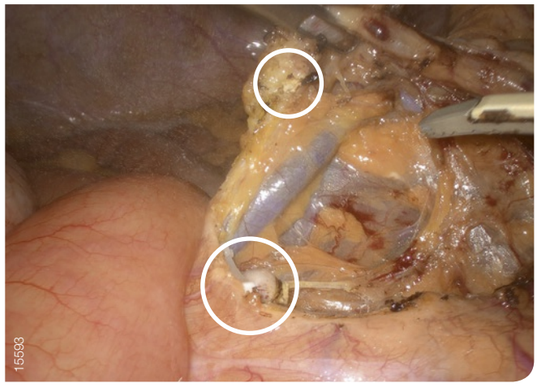
ADVANCED HEMOSTASIS

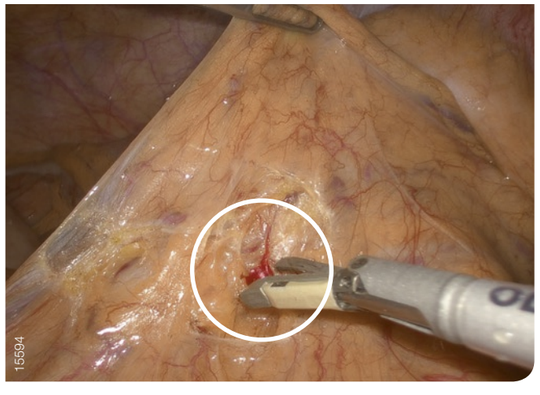
Reduced blood loss and optimal visibility on anatomic structures by superior primary and secondary hemostasis through advanced bipolar technology.

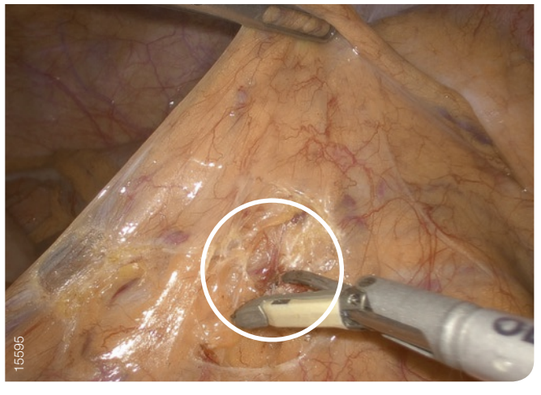
Primary Hemostasis and Secure 7 mm Vessel Sealing
Using the combined energy types of the THUNDERBEAT SEAL & CUT mode simultaneously allows for safe coagulation and fast tissue transection. Fewer vessel-ligation steps are required due to the ability of pre-coagulation as well as due to the secure cutting and sealing of 7 mm vessels.[1]





Secondary Hemostasis
The THUNDERBEAT SEAL mode without simultaneous cutting allows for:
· Immediate sealing of secondary bleeders,
· Control of oozing bleeding by spot coagulation,
· Pre-sealing of vessels through the precise application of advanced bipolar energy.

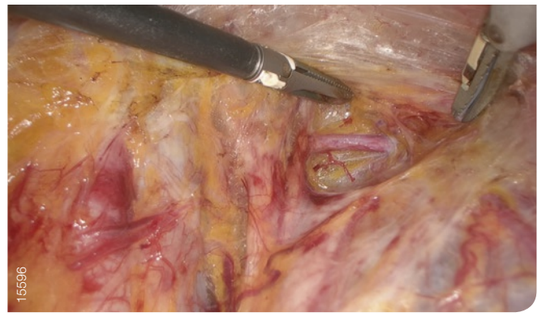




[1] Data on file, Olympus Corporation

SUPERIOR DISSECTION WITH OPTIMAL TEMPERATURE CONTROL

The precision of ultrasonic technology enables accurate preparation of the correct anatomic layers with the protection of vital structures.



Ultraprecise Tissue Dissection

THUNDERBEAT allows for sharp and blunt tissue dissection even in hard-to-reach places, such as deep pelvic areas. This is achieved through the wide reach of the tip, the high tip-opening force, and the slim tip design to enter planes most accurately.

Optimal Temperature Control

THUNDERBEAT Type S with Intelligent Tissue Monitoring (ITM) offers precise dissection close to vital structures thanks to minimal thermal spread and an accurately targeted application of energy to the tissue.[2] ITM is the world's first and only safety assist system for ultrasonic-driven technologies that automatically stops the energy output when the tissue transection is complete. This leads to a decrease in the residual probe temperature by 26.9%, which consequently reduces the risk of accidental tissue damage.[3] The result is a safer and more streamlined operation.

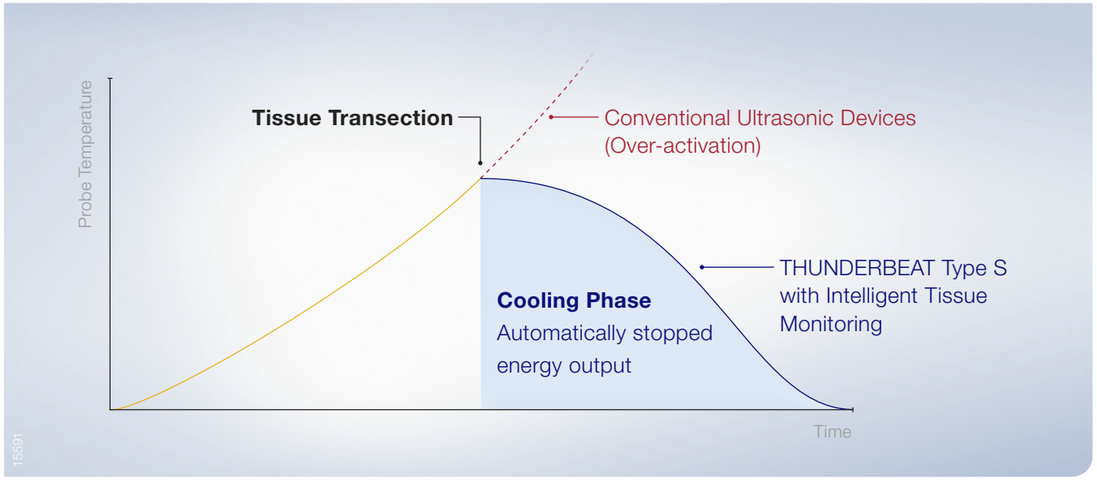
How Intelligent Tissue Monitoring Works

1. Detection of sudden pressure change on probe

2. Transmission of the information to the generator

3. Immediate stop of energy supply with audible feedback

4. Start of cooling phase



[2,3] Data on file, Olympus Corporation

HIGH OPERATING SPEED

The fast tissue transection with less interrupting instrument exchanges leads to a reduced operating time and allows surgeons to concentrate more on surgery over the whole length of the procedure.

Fastest-in-Class Tissue Cutting

The unique hybrid technology causes a synergy effect that leads to unprecedented fast tissue transection.

All-in-One Versatility

In addition to these benefits of the hybrid technology, the innovative tip and ergonomic handle design make THUNDERBEAT a true multifunctional instrument for laparoscopic and open surgery:

- Enhanced atraumatic tissue grasping and uniform tissue compression due to the innovative wiper-jaw technology,
- High tip-opening forces facilitate blunt tissue dissection and manipulation,
- Fast and reliable hemostasis even under challenging conditions,
- Reduced mist generation for improved visibility due to proprietary tip design.

The resulting potential saving of material and time makes THUNDERBEAT one of the most efficient advanced energy instruments on the market.[4]

THUNDERBEAT Type S

[4] Fagotti et al., Randomized study comparing use of THUNDERBEAT technology vs standard electrosurgery during laparoscopic radical hysterectomy and pelvic lymphadenectomy for gynecologic cancer, J Minim Invasive Gynecol. 2014 May-Jun;21(3):447-53

OLYMPUS ENERGY SOLUTIONS

Olympus Energy Solutions Work Together to Provide:

Electrosurgery

ESG-400 – A Fully Equipped, Latest-Generation HF Generator

Optimizing your state-of-the-art electrosurgery in all surgical disciplines for monopolar, bipolar, and advanced bipolar modes for open, laparoscopic, and endoscopic applications, as well as transurethral or transcervical resection (TURis/TCRis).

Ultrasonic Surgery

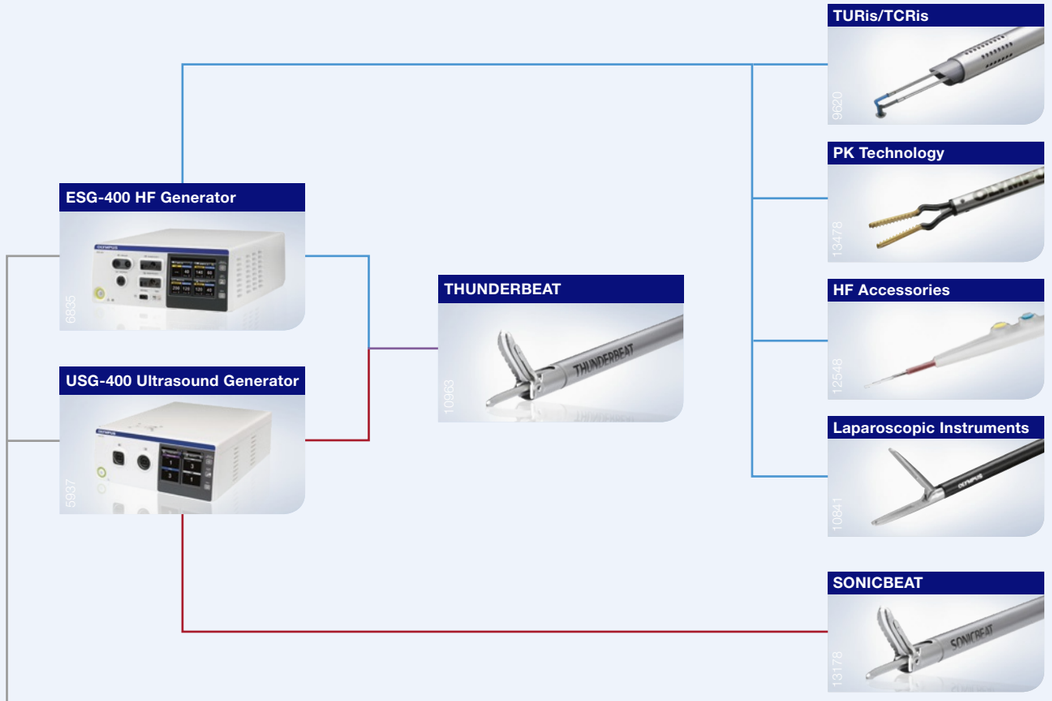
USG-400 – Ultrasonic Energy for Advanced Tissue Management

The USG-400 Generator provides ultrasonic energy for the SONICBEAT Ultrasonic Dissector.

Combined Energy Surgery

Surgical Tissue Management System (THUNDERBEAT Platform)

Both surgical energy generators combined provide a unique platform that delivers the most widely used energy requirements to the surgical suite, eliminating the need for multiple devices in the operating room.



Visibility

The Olympus Surgical Tissue Management System communicates intelligently with the Olympus insufflators (UHI-3 and UHI-4) in order to evacuate any smoke and mist whenever required during laparoscopic surgery. Coupled with the reduced mist production of the THUNDERBEAT laparoscopic instruments and Olympus imaging equipment, the surgeon enjoys the best possible visualization.

Utility

Olympus energy devices can be seamlessly integrated into the Olympus ENDOALPHA OR solutions. This enables clinical staff to easily select the desired function of THUNDERBEAT directly from the HomeScreen user interface of UCES-3. It also allows for intuitive navigation through the device using the touch screen or voice control.
UCES-3 offers centralized one-touch control for all sterile and/or non-sterile medical devices – for example, electrosurgical generators, surgical cameras, or surgical lights and tables, providing greater efficiency and improved ergonomics during procedures. Finally, the Scene Selection function, an intelligent combination of user- and procedure-specific actions operated using one-touch control:

- Helps to standardize procedures,
- Decreases turnaround time,
- Enhances quality and overall workflow.

DOUBLE YOUR ENERGY

www.olympus.eu/thunderbeat

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OLYMPUS

OLYMPUS EUROPA SE & CO. KG
Postbox 10 49 08, 20034 Hamburg, Germany
Wendenstrasse 20, 20097 Hamburg, Germany
Phone: +49 40 23773-0, Fax: +49 40 233765
www.olympus-europa.com