

UNIQUE HYBRID
TECHNOLOGY

THUNDERBEAT OPEN EXTENDED JAW

**Versatility, Speed, and Precision –
Advanced Energy Solutions for Open Surgery**



THUNDERBEAT DESIGN RATIONALE

Philosophy

Contemporary surgical instruments must be multifunctional. When the THUNDERBEAT Tissue Management System for laparoscopic surgery was introduced, the clear goal was to develop a multipurpose instrument in order to reduce instrument exchanges, surgical time, and blood loss.

This was achieved by creating an instrument that not only allows tissue cutting that is the fastest in its class as well as secure 7 mm vessel sealing but also functions as a true laparoscopic instrument – allowing the surgeon to grasp, manipulate, and bluntly dissect tissue.

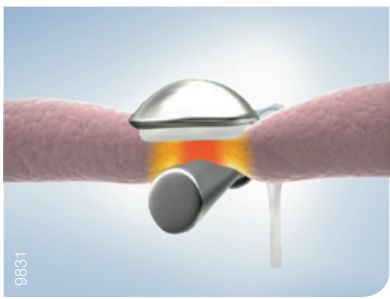
Three Design Criteria Make This Possible:

1. Integration of Two Forms of Energy

- Only the THUNDERBEAT system delivers two well-established types of energy to the tissue simultaneously:
- Ultrasonic energy, which is widely accepted for its fast tissue-cutting capability.
 - Bipolar energy, which provides fast and secure hemostasis to vessels up to and including 7 mm in diameter.

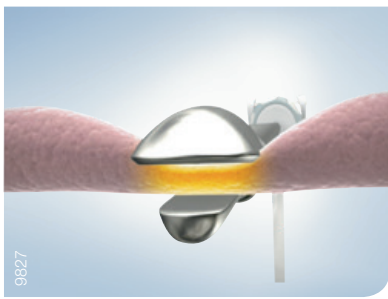
The combination of both forms of energy is delivered through the unique **SEAL & CUT** mode that only the THUNDERBEAT system offers. Tissue bundles and vessels are safely sealed and rapidly cut, allowing the surgeon to reduce tissue-dissection time.

Ultrasonic Energy Only



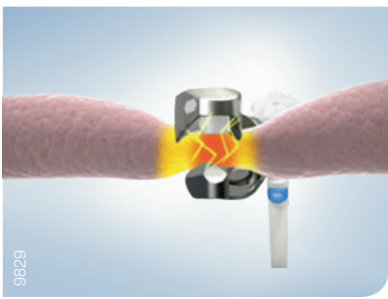
Rapid tissue cutting

Bipolar Energy Only



Reliable vessel sealing

THUNDERBEAT



Rapid tissue cutting **AND** reliable vessel sealing

2. Secondary Hemostasis and Spot Coagulation with Advanced Bipolar Energy

Advanced bipolar energy can be applied independently of ultrasonic energy with the THUNDERBEAT **SEAL** mode. This allows the surgeon to achieve secondary hemostasis and spot coagulation without the cutting effects of ultrasonic energy. This can help reduce instrument exchanges, which may streamline the surgical process further.

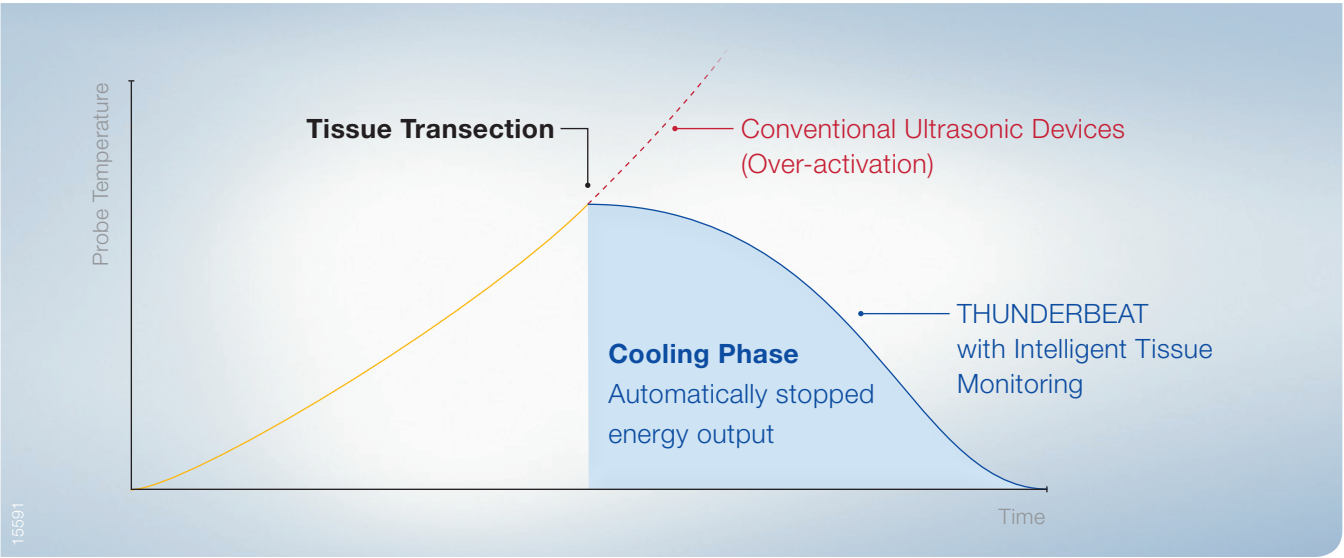
3. Superior Dissection with Optimal Temperature Control

The THUNDERBEAT instrument tip is an essential feature of the instrument. Alongside the delivery of two different types of energy, it is designed to act as a fully functional grasping and dissecting instrument. This is achieved through atraumatic serrations of the edges of the upper jaw, the even compression-force distribution across tissue, and the high tip-opening forces that enable blunt tissue dissection.

For safe and streamlined operations, Olympus developed 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 new technology, called Intelligent Tissue Monitoring (ITM), decreases the residual temperature of the instrument and consequently reduces the risk of accidental tissue damage.

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



The ability to combine the proven advantages of ultrasonic and bipolar energy and the ability to provide finest possible tissue dissection makes the THUNDERBEAT one of the most versatile instruments on the market. This technology is now available for open surgery.

The THUNDERBEAT Technology in Open Surgery

Advanced energy devices in open surgery go beyond standard monopolar and bipolar applications. They allow for shorter procedure time, reduced use of hemostatic clips, sutures, or ligation ties, thus saving time and materials costs.

The THUNDERBEAT Open Extended Jaw* maintains the general philosophy behind the THUNDERBEAT technology, and the instrument design has been adapted and improved to make it highly suitable for the requirements of open surgical procedures. The result is a highly ergonomic instrument that cuts tissue fast, seals vessels safely and securely, and allows for extremely fine tissue dissection.

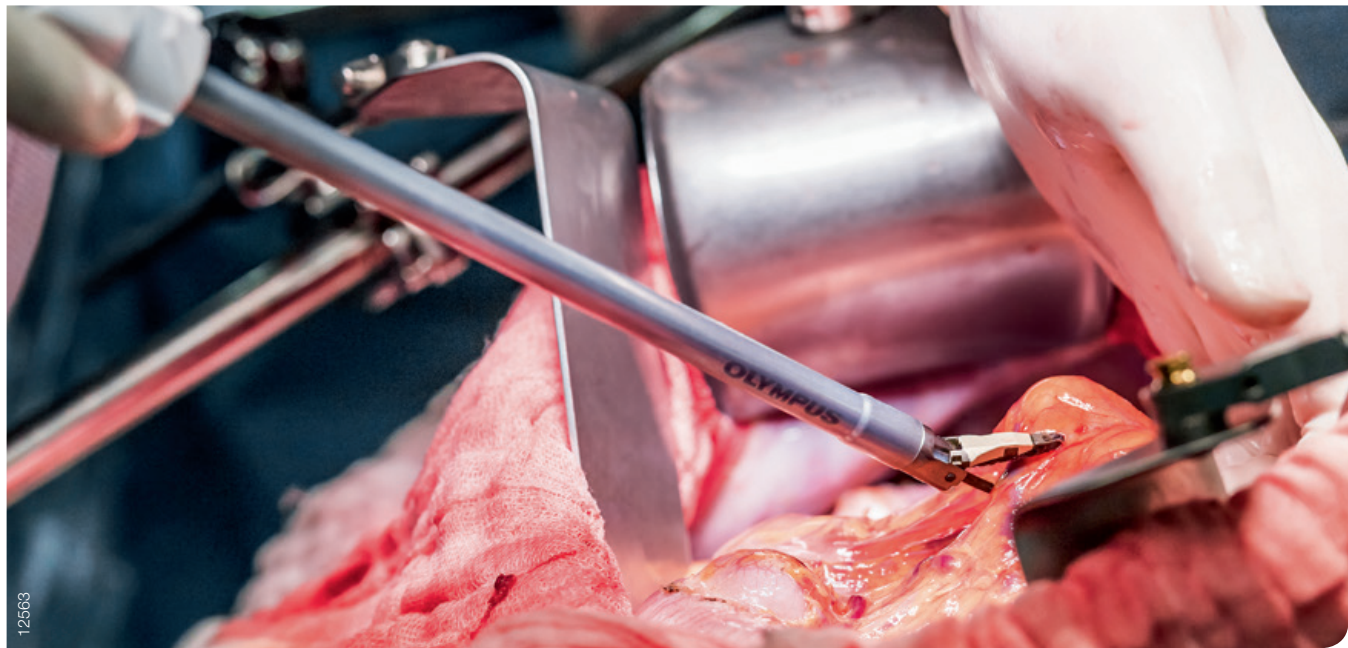
* THUNDERBEAT Open Extended Jaw, reddit design award winner 2015



BENEFITS OF THUNDERBEAT IN OPEN SURGERY

Ultra-Precise Tissue Dissection

Precise and fine tissue dissection even in hard-to-reach places, such as deep pelvic areas, achieved through the extended reach of the tip, the fine tip design, and the opening force of the jaw.

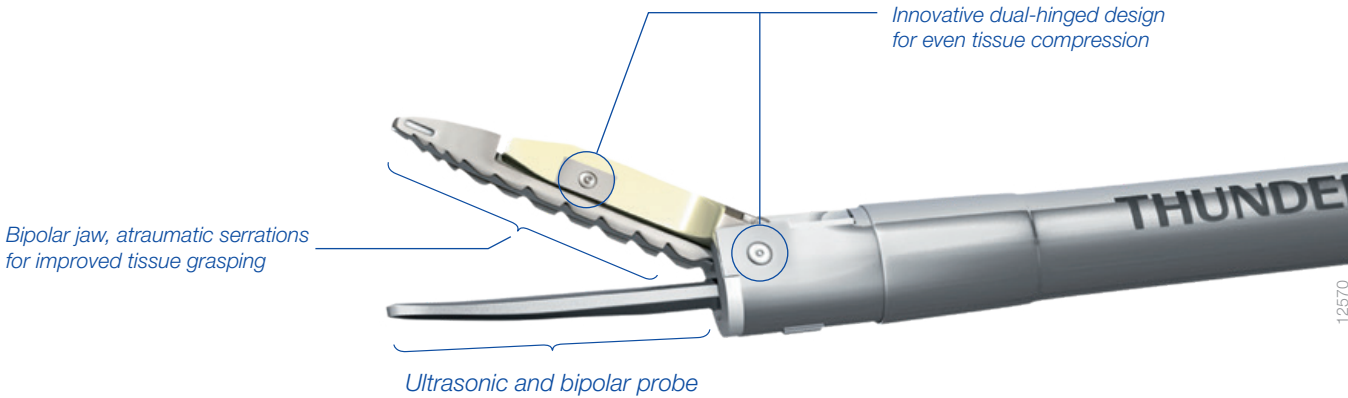


Fastest in Class Tissue Cutting Speed

Reduced time for dissecting and cutting through tissue achieved by combining ultrasonic energy and bipolar energy.

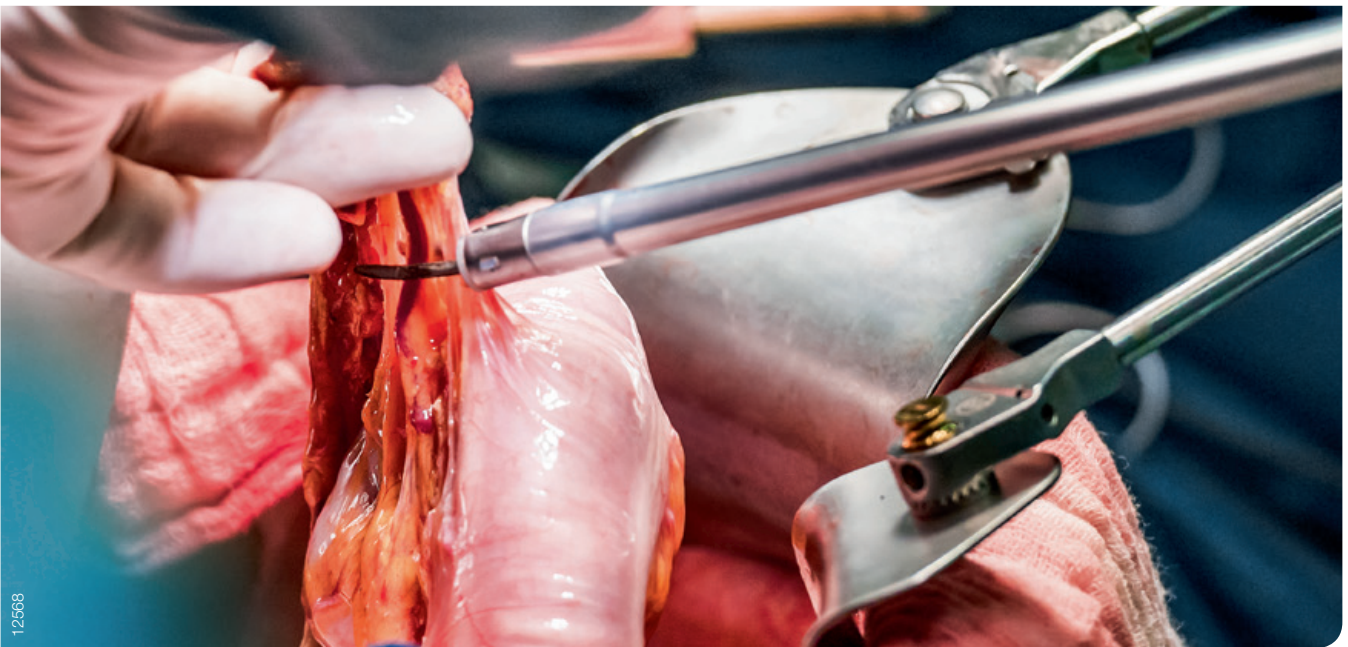


Innovative Tip Design for Fine Dissection and Reduced Mist



Secure 7mm Vessel Sealing

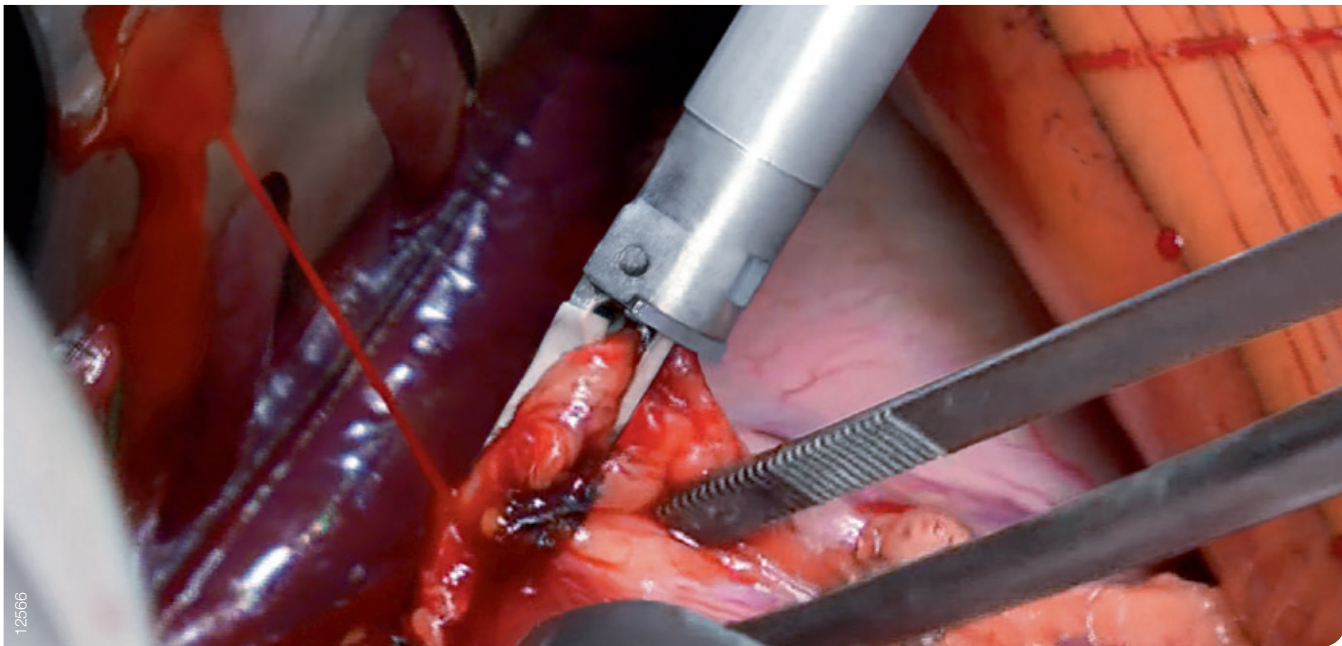
Fewer vessel-ligation steps due to the ability to securely cut and seal vessels up to and including 7 mm, simultaneously using the combined energies of the THUNDERBEAT SEAL & CUT mode.



BENEFITS OF THUNDERBEAT IN OPEN SURGERY

Secondary Hemostasis with Advanced Bipolar Energy

Ability to immediately seal secondary bleeders through the precise application of advanced bipolar energy independent of the tissue cutting ultrasonic energy.



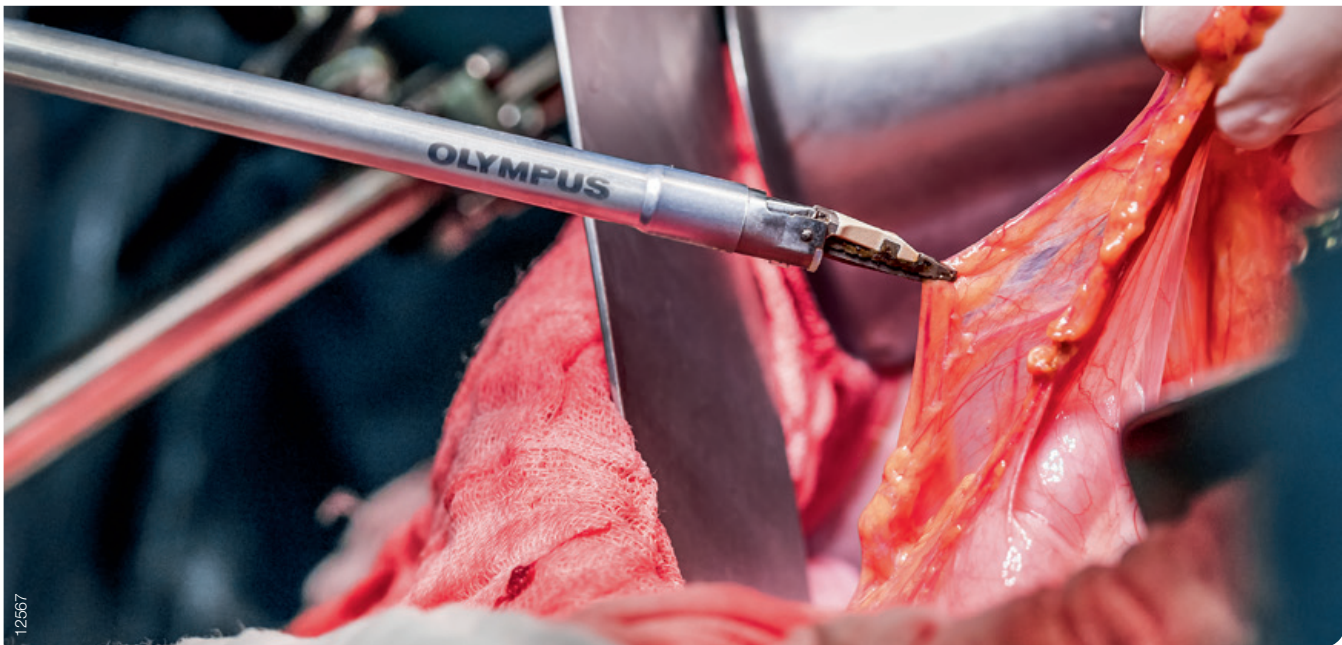
Ergonomic Handle Design

No hand fatigue due to ergonomic handle design and its angle adjustments.

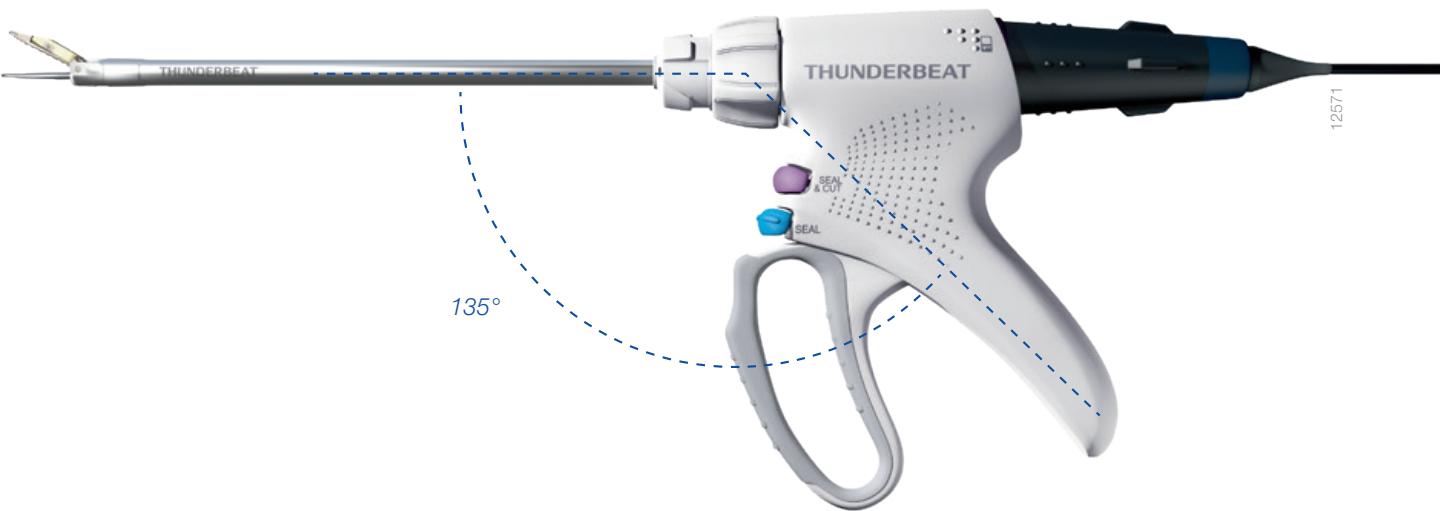


Enhanced Tissue Grasping Capability

Securely grasps and holds tissue without traumatizing it due to the Innovative jaw design with atraumatic serrations and uniform tissue compression.



Optimized Handle Ergonomics; Comfortable for Various Surgical Situations



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.

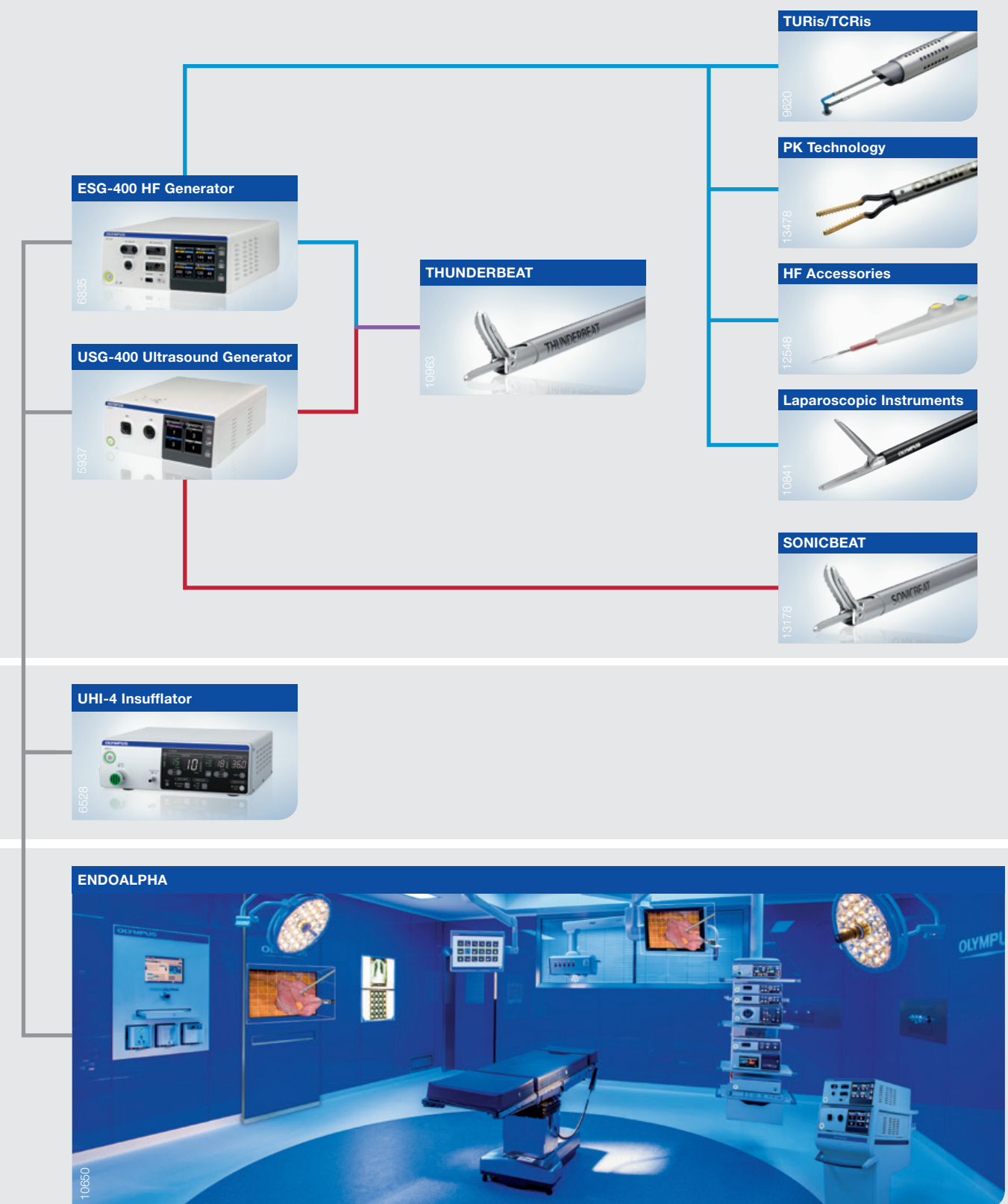
■ Visibility

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 a centralized one-touch control for all sterile and/or nonsterile 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.





www.olympus.eu/thunderbeat



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Specifications, design, and accessories are subject to change without any notice or obligation on the part of the manufacturer.

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