

ENERGY
MINIMALLY INVASIVE SURGICAL
ENERGY PLATFORM
PLATFORM

World-class surgical innovation for humanity.



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SURGSCI MEDICAL LTD.

SurgSci focuses on core technologies and innovative applications in minimally invasive surgery. The company has established three major technology platforms: medical-grade metal materials, polymer materials, and artificial intelligence algorithms. These platforms support two primary product lines—surgical instruments and surgical consumables.

SurgSci has successfully overcome key technical challenges in high-performance medical titanium alloys, advanced piezoelectric ceramic materials, and AI-driven intelligent ultrasonic high-frequency surgical systems. As a result, the company has launched an intelligent ultrasonic high-frequency surgical system along with a range of innovative implantable and interventional surgical consumables.

Currently, SurgSci leads one national key R&D program under China’s Ministry of Science and Technology, one major project supported by the Ministry of Industry and Information Technology, and one key technical breakthrough initiative in Shenzhen. The company has published multiple high-impact academic papers internationally and filed over 160 domestic and international patent applications.

Guided by the mission of “improving human health and quality of life,” SurgSci remains committed to clinical needs, empowering physicians and benefiting patients. The company strives to become a globally accessible, world-class platform for surgical innovation.



Mission

Improving Human Health and Quality of Life



Vision

World-class surgical innovation for humanity.



Quality Policy

Quality First, Talent-Led, Innovation-Powered, Excellence Pursued

Minimally Invasive Surgical Energy Platform

ULTRASONIC SCALPEL SYSTEM

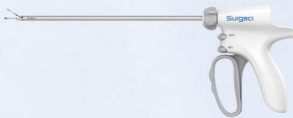


01

GENERATOR
(ENERGY PLATFORM)



ULTRASONIC SHEAR
(GUN-TYPE)



03

ULTRASONIC SHEAR
(SCISSOR-TYPE)



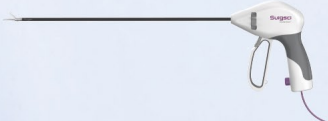
05

HANDPIECE
(TRANSDUCER)



07

DISPOSABLE BIPOLAR
VESSEL SEALING DEVICE
(GUN-TYPE SHEAR)



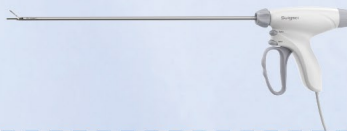
09

DISPOSABLE BIPOLAR
VESSEL SEALING DEVICE
(SCISSOR-TYPE)



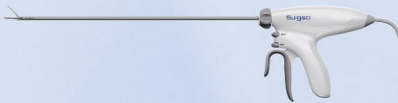
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USHERING IN A NEW ERA OF INTELLIGENT SURGERY

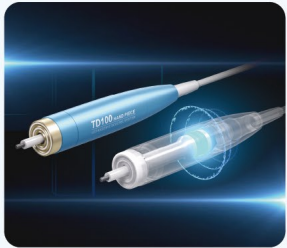
Product Overview

Based on the research outcomes of the Ministry of Science and Technology's National Key R&D Program and Shenzhen's Key Technology Research Projects, combined with Surgsci's years of technological expertise, a new generation of AI-powered ultrasonic surgical systems has been developed. The system's core unit is equipped with a high-performance NPU (Neural Processing Unit) processor, capable of achieving up to 36 trillion operations per second (TOPs) for floating-point calculations and data collection, rivaling the performance of a compact AI workstation. The system incorporates up to five AI control algorithms, ensuring surgical safety and precision while significantly enhancing operational efficiency, providing healthcare professionals with a more seamless and efficient surgical experience.

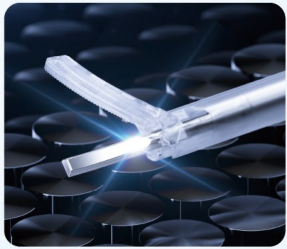
Product Highlights



It integrates advanced AI control algorithms, self-developed software and hardware, and supports almost all scalpel heads and handles.



Third-Generation Rare Earth-Doped Piezoelectric Crystal: Precision Power Core.Unique polarization ensures stable long-term performance.

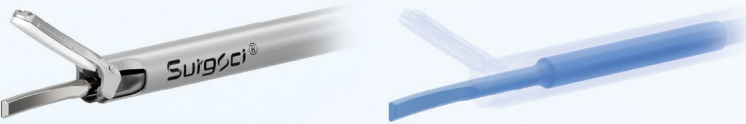


Intelligent energy control minimizes heat diffusion and lateral thermal damage, ensuring faster cutting and recovery.

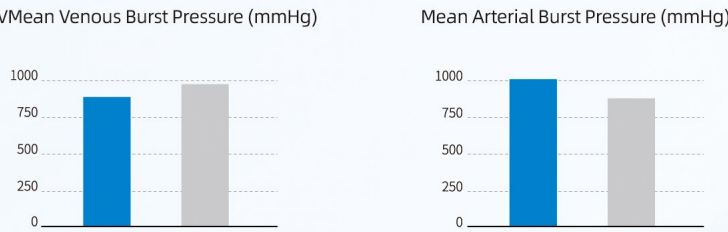


Massive clinical big data training 4 modes, meeting different surgical needs.

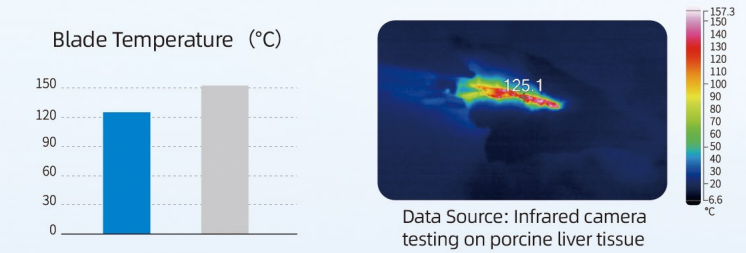
High-Performance Aerospace-Grade Titanium Alloy



Vascular Burst Pressure Test Comparison



Blade Tip Temperature Test Comparison



Robust Artificial Intelligence Algorithm



NPU 3.6 TOPs
RAM 16 Gb
FLASH 512 Mb



FOUR INTELLIGENT OUTPUT MODES

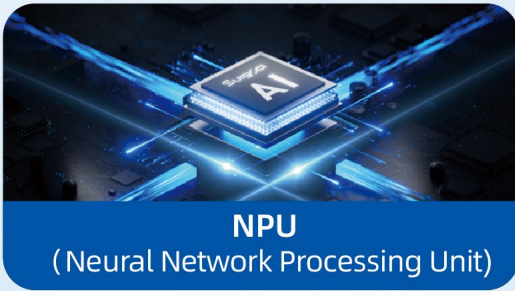


AI-Powered Ultrasonic Scalpel: A New Era in Clinical Applications

The application of Standard (Quick Coagulation), Comforta (Low-Fog Coagulation Cutting), Sport (Quick Cutting), and Turbo (Super Quick Cutting) modes has not only fully optimized the surgical operation process but also introduced a new generation of clinical application models for ultrasonic scalpels under AI algorithm support. It has significantly improved surgical safety and efficiency. AI algorithms provide robust support for doctors, making surgical procedures more intuitive, controllable, efficient, and safe.

GENERATOR
(Energy Platform)

EU-MDR ISO IEC Certified by IEC62366
International Usability Standard



NPU
(Neural Network Processing Unit)

Ultrasonic Scalpel:
Ushering in the Era of AI Compatibility

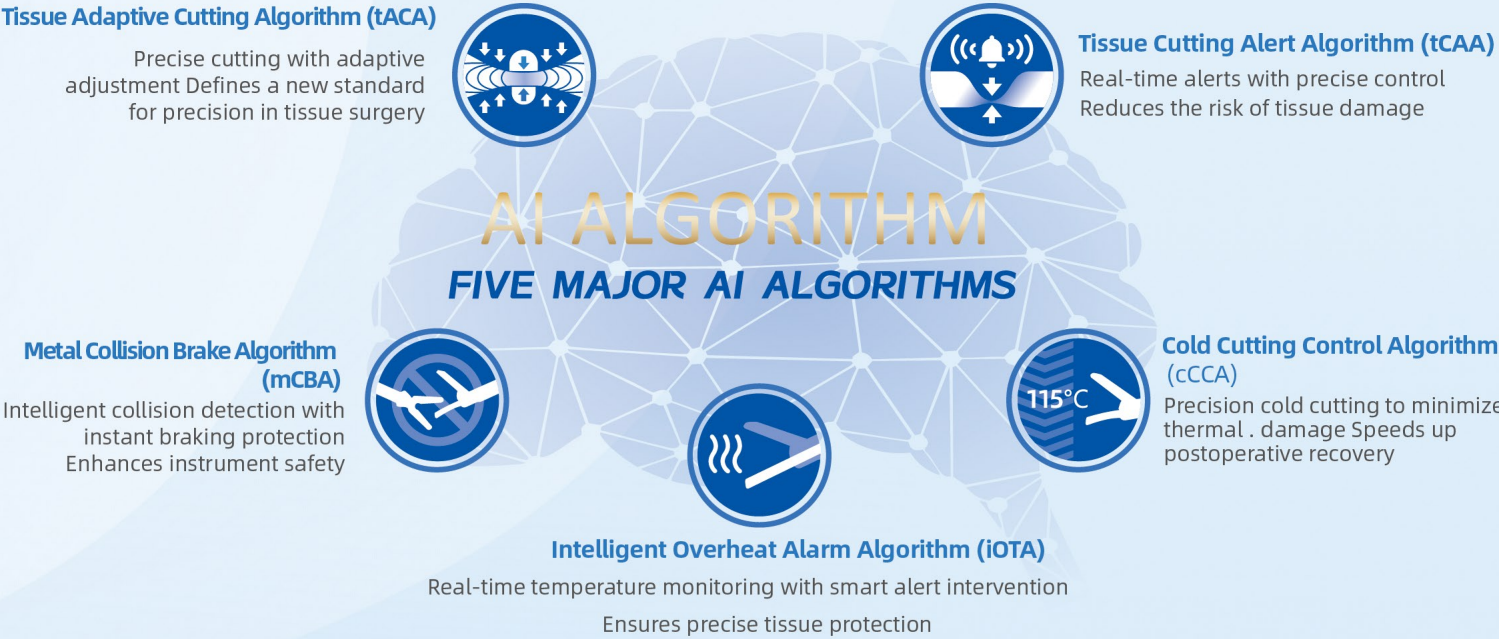
With over 1 million data samples and 100,000 cutting feedbacks per second, it delivers AI workstation-grade processing. It integrates advanced AI control algorithms, self-developed software and hardware, and supports almost all scalpel heads and handles, ensuring high efficiency and wide compatibility.



Seamless Human-Machine
Collaboration Workflow

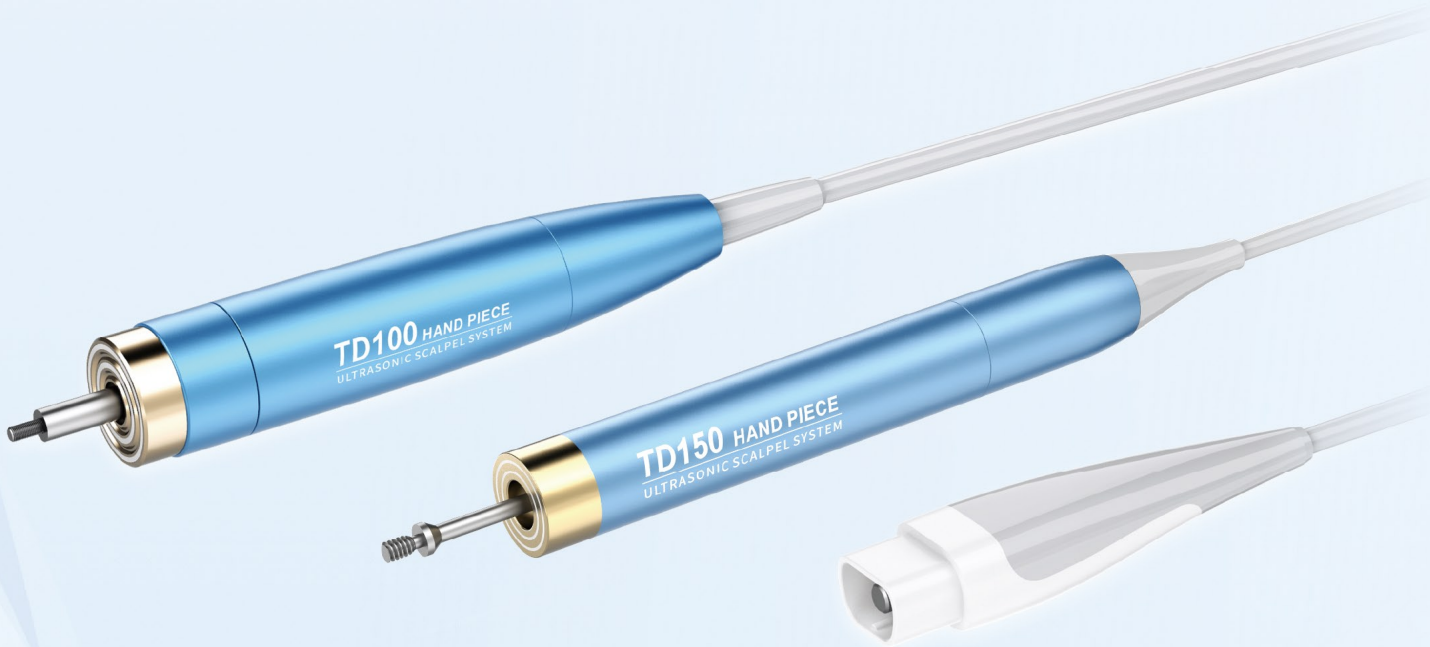
Smart Interaction:
A Breakthrough in Surgical Experience

Featuring a user-friendly interface and custom AI algorithms, it ensures stable operation and optimized human-machine interaction. Compliant with IEC62366 usability standards, it enhances safety, comfort, and efficiency in surgeries.



AI Algorithm Intelligent Navigation: A New Benchmark in Precision and Efficiency

Real-time monitoring of surgical instrument operation status, intelligent collision risk avoidance, precise maintenance of optimal blade temperature, and efficient energy output. For different tissue types, the system intelligently adjusts energy output, continuously monitors, and accurately predicts the optimal timing for tissue cutting. These advanced intelligent algorithms not only significantly enhance the efficiency of cutting and hemostasis but also greatly reduce thermal damage, elevating the safety and reliability of surgeries to a new level.



HANDPIECE (Transducer)



High Conversion Efficiency

Patented piezoelectric ceramics reduce heat loss and enhance surgical precision.



Multi-Frequency Resonance

Adapts to different tissues, integrating cutting and coagulation.



Nano Precision Manufacturing

Ensures stable amplitude for precise tissue separation.



Low Hysteresis Design

Minimizes heat generation, extending operation time.



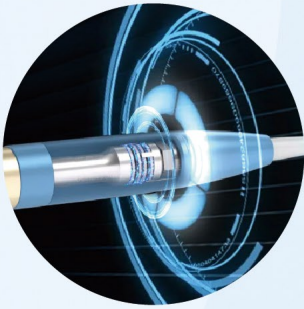
Next-Generation Ultrasonic Transducer: Core Technology for Precise Energy Transmission

Using aviation-grade titanium alloy and high-performance piezoelectric ceramics, this transducer achieves precise energy transfer. Its multi-frequency resonance structure improves energy conversion by 40%, while vibration stability stays within $\pm 3\mu\text{m}$. An innovative cooling system keeps temperatures low, extending its lifespan, with precision design minimizing signal loss.



Third-Generation Rare Earth-Doped Piezoelectric Crystal: Precision Power Core

The advanced piezoelectric ceramic features high conversion efficiency and precise control. Its nano-composite structure ensures stable, accurate vibration, while special heat treatments reduce temperature rise and increase durability. Unique polarization ensures stable long-term performance.



Precision Manufacturing: Crafting Excellence in Transducer Performance

Patented assembly techniques optimize mechanical coupling, enhancing efficiency by 25%. Ultrasonic welding provides seamless encapsulation and IP68-level water and dust resistance. Rigorous testing ensures consistent performance with less than 2% deviation.

TD100



Compatible with gun-type
ultrasonic scalpel



TD150



Compatible with scissor-type
ultrasonic scalpel





ULTRASONIC SHEARS

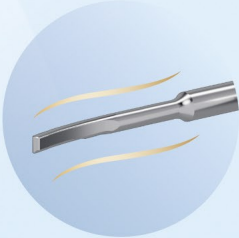
(gun-type)

5mm



Precision and Efficiency

Fine blade jaws ensure precise cutting and stable clamping, reducing tissue damage and enhancing surgical safety and efficiency for minimally invasive procedures.



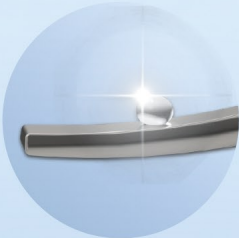
Advanced Titanium Technology

TC4 titanium alloy surpasses imported materials, breaking technological monopolies and providing high-performance support for ultrasonic scalpels.



Intelligent Fog Control

AI algorithms and structural optimization minimize mist formation, ensuring a clear surgical field and enhancing precision and safety.

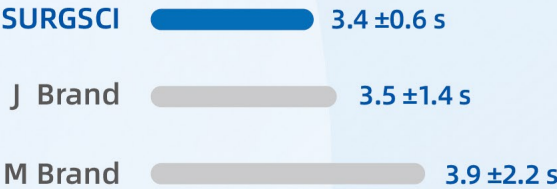


Coating-Free Durability

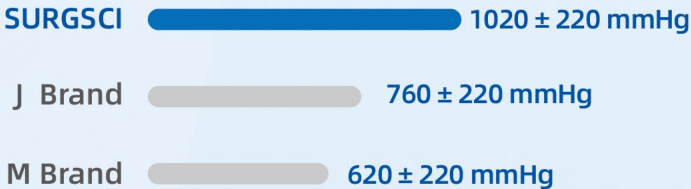
Innovative titanium alloy surface resists tissue adhesion without coatings, ensuring durability under high temperatures and ultrasonic vibrations.



Cutting Speed



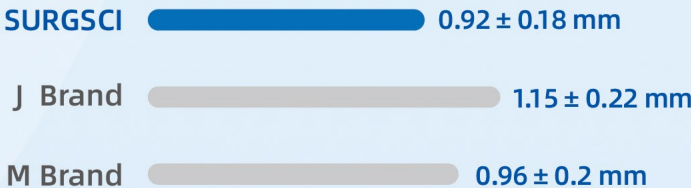
Vessel Burst Pressure



Blade Temperature



Lateral Heat Diffusion



※ Derived from laboratory animal tissue testing. The data is for reference only, and final interpretation rights are reserved by Suigsci Medical.

Lenght: 140mm		Model: HK1405NCA
Lenght: 230mm		Model: HK2305NCA
Lenght: 360mm		Model: HK3605NCA
Lenght: 450mm		Model: HK4505NCA

The pipe diameter is uniformly 5.5 mm

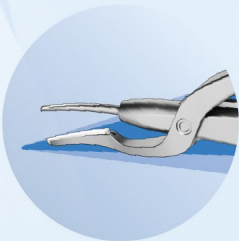
Used in conjunction with the TD100 handpiece (transducer)



ULTRASONIC SHEARS

(scissor-type)

5mm



Precision and Efficiency

Fine blade jaws ensure accurate cutting, stable clamping, and reduced tissue damage, supporting minimally invasive surgeries.



Enhanced Safety

AI temperature monitoring provides real-time alerts and regulates energy output, preventing overheating and protecting tissues.



Low-Temperature Operation

Intelligent energy control minimizes heat diffusion and lateral thermal damage, ensuring faster cutting and recovery.



Durable and Anti-Adhesion

Innovative titanium alloy resists tissue adhesion without coatings, offering long-lasting efficiency under high temperatures.



Cutting Speed

SURGSCI 3.6 ±0.8 s

J Brand 4.2 ±1.6 s



Vessel Burst Pressure

SURGSCI 960 ± 190 mmHg

J Brand 650 ± 220 mmHg



Blade Temperature

SURGSCI 190 ±15°C

J Brand 220 ±16°C



Lateral Heat Diffusion

SURGSCI 0.96 ± 0.23 mm

J Brand 1.16 ± 0.35 mm

※ Derived from laboratory animal tissue testing. The data is for reference only, and final interpretation rights are reserved by Surgsci Medical.

Lenght: 90mm



Model: HK0905NC

Lenght: 170mm



Model: HK1705NC

SUPPORTS DUAL ENERGY OUTPUT
ULTRASONIC AND RADIOFREQUENCY



2 IN 1
GENERATOR



Ultrasonic Shears:
Gun-Type & Scissor-Type



Bipolar Vessel
Sealing Device

Port

- ① Footswitch Socket
- ② Equipotential Ground Connection
- ③ USB-B&A Receptacle
Ethernet Receptacle
(Covered. For Service Only.)
- ④ Power Inlet



ULTRASONIC



RADIOFREQUENCY

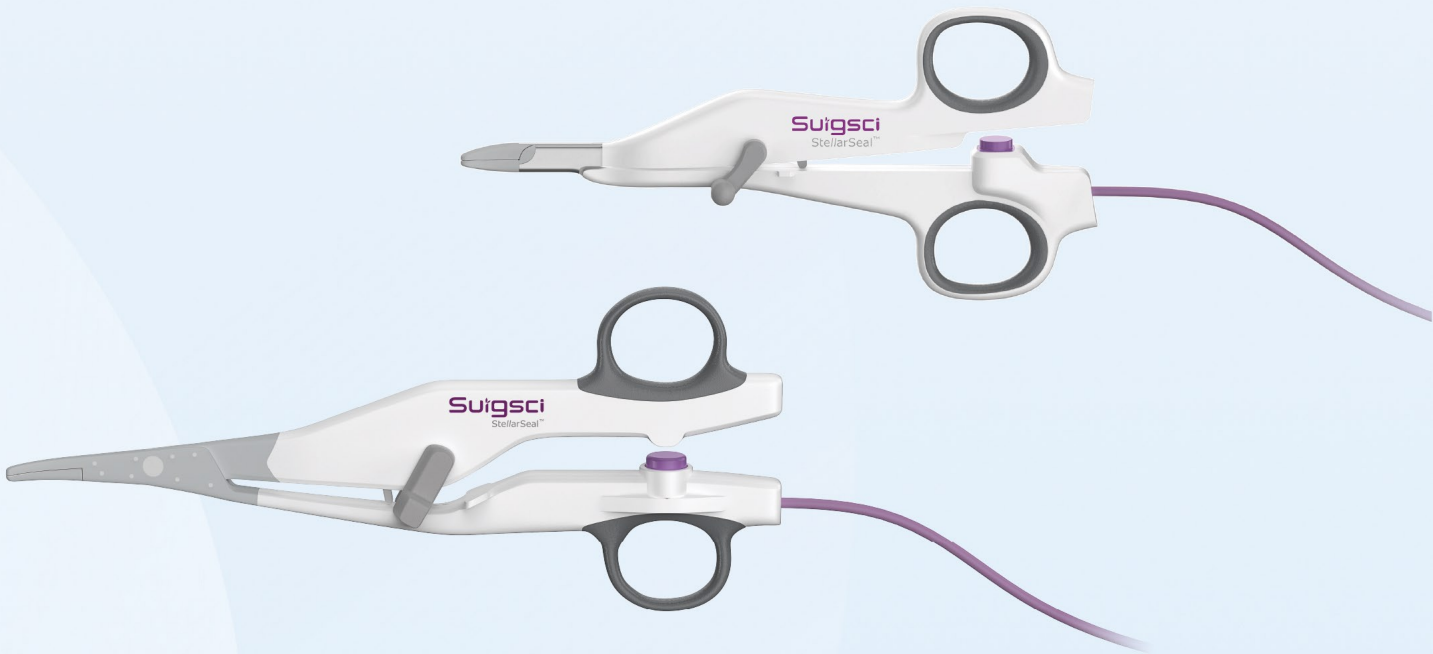




Gun-Type

Disposable Bipolar Vessel Sealing Device

7mm



Scissor-Type

Disposable Bipolar Vessel Sealing Device

7mm



Maryland Jaws

Combines dissection, grasping, and cold cutting in one tool. Tip-first closure ensures even tissue compression, improving precision and reducing tearing during dissection.



Blunt Jaws

Designed for gentle tissue separation through compression and sweeping motions, this jaw minimizes penetrating injury, reduces bleeding, and helps preserve tissue integrity—especially in procedures near nerves or other critical structures.



Integrated, Streamlined Operation

Optimized blade design lowers voltage and increases contact area for efficient energy delivery. The system auto-stops with a signal upon ideal coagulation. Built-in blade enables one-step sealing and cutting without tool change.



Vessel Sealing and Cutting Instrument for Open Surgery

Seals vessels up to 7mm with low external temperatures to protect nearby tissue and nerves. Cold cutting activates after sealing in one step. The 20° curved jaw improves access and enables precise dissection.

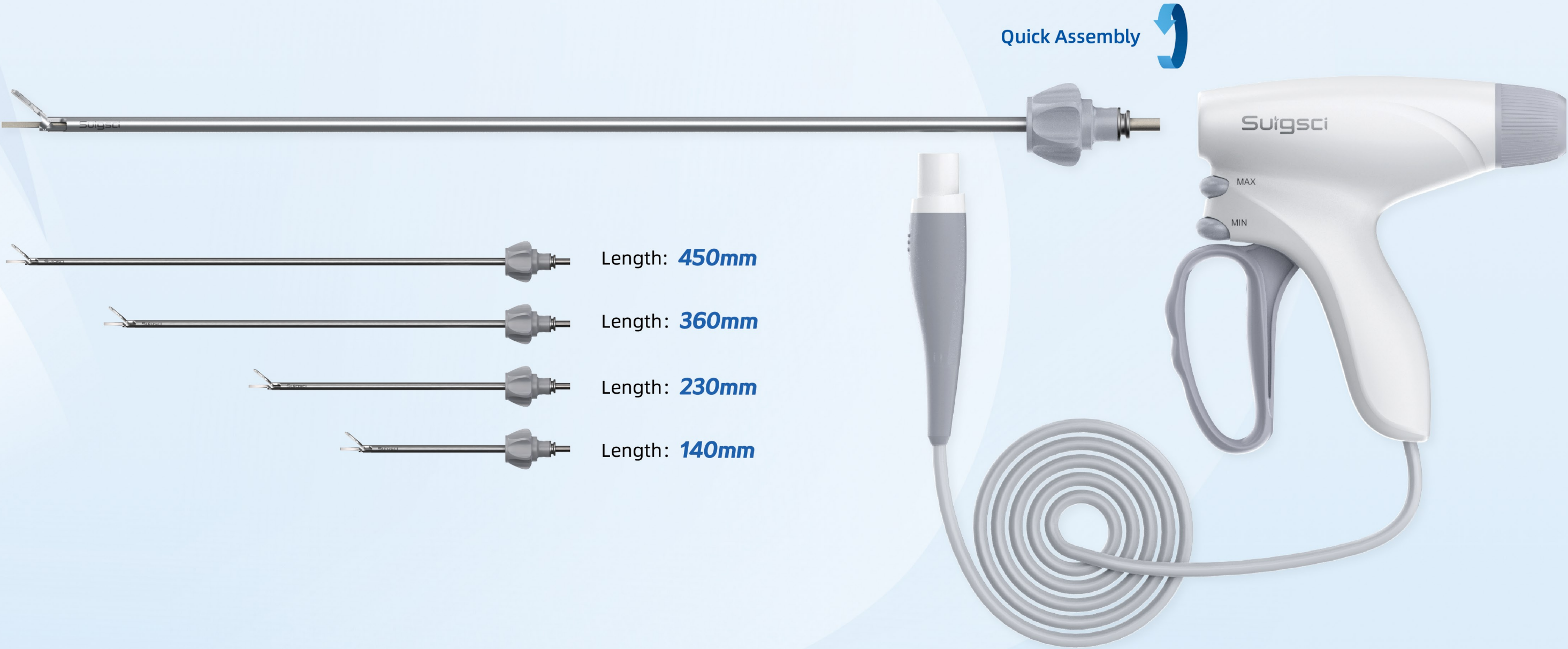
RADIOFREQUENCY DEVICE

Picture	Model	Lenght	Type
	HK3605SCA	370mm	Maryland Jaws
	HK3605SCB	370mm	Blunt Jaws
	HK0905SC	120mm	Scissor Shear
	HK1705SC	170mm	Scissor Shear

DETACHABLE SCALPEL

SONOBEE 7mm

The shaft is replaceable, and the handle is reusable.
Ensuring both safety and sustainability in repeated procedures



Replaceable
Shaft



Reusable
Handle



Cost-Efficient
Build



Quick
Assembly



Reusable Handle

Designed For Multiple Sterilization Cycles



Sterilization Method



- ✓ Ethylene Oxide Sterilization
- ✓ Steam Sterilization / Moist Heat Sterilization
- ✓ Low-Temperature Hydrogen Peroxide Plasma Sterilization



Reusable Handpiece Sealed, durable design supports multiple sterilization methods and repeated use.

Reusable Handpiece Design – Multi-Sterilization Compatible The integrated handpiece features a sealed, durable structure for repeated use. Supports multiple standard sterilization methods, reducing cost and improving value.



Independently developed high-performance piezoelectric ceramic material

Advanced assembly process, stable and reliable performance, no howling in working state, dustproof and waterproof structural design.

Embedded-in Transducer



High Conversion Efficiency



Multi-Frequency Resonance



Nano Precision Manufacturing

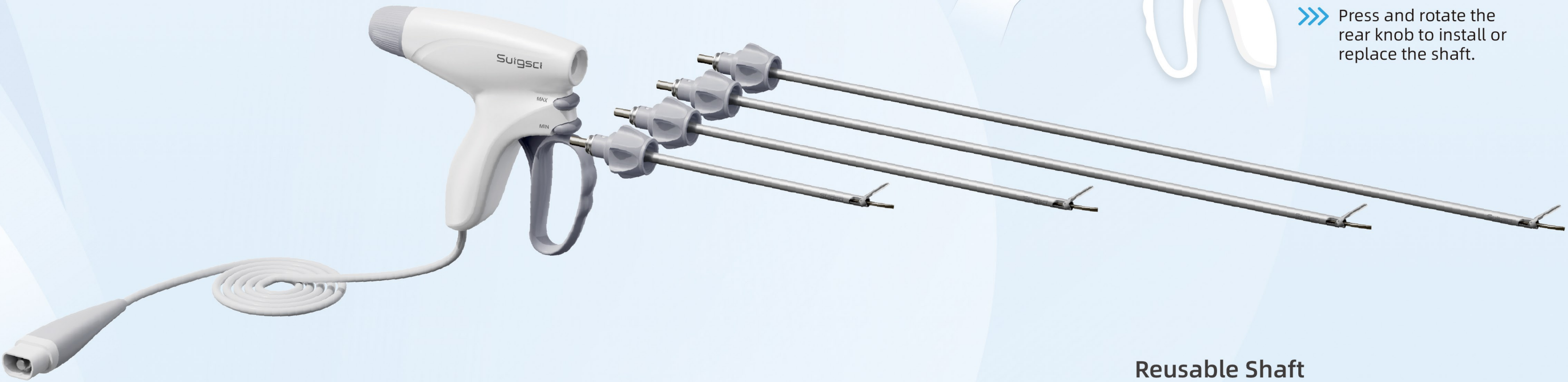


Low Hysteresis Design



Replaceable shaft design

Four shaft specifications available for selection.



Reusable Handle

Model: HP100	Other
	The Handle Supports Three Sterilization Methods: Ethylene Oxide (EO) High-Pressure Steam (Autoclaving) Low-Temperature Plasma Sterilization 200 Times For Use

Reusable Shaft

Replaceable Shaft	Model	Length
	KM140NC	140mm
	KM230NC	230mm
	KM360NC	360mm
	KM450NC	450mm

INTEGRATED SHEAR

7mm

Integrated transducer provides consistent performance and simplified setup.
More precise dissection and access to tissue planes



More precise tissue dissection



CURVED TAPERED TIP

More tapered jaw designed to enable more precise access to tissue planes



UNIQUE BLADE DESIGN

Longer ultrasonic blade to capture large vessels and tissue bundles



Embedded-in Transducer



Features & Benefits



Disposable Transducer Enclosed housing prevents contamination, eliminates reprocessing, and enhances safety.

Single-Use Transducer - Safer and Cleaner The disposable transducer handpiece eliminates reprocessing. Its enclosed housing prevents internal contamination, ensuring hygienic operation and reducing infection risk.



Integrated Blade-Transducer Pre-assembled design streamlines setup and improves surgical efficiency.

Integrated Blade-Transducer - Fast and Efficient Pre-assembled blade and transducer design requires no installation. Simplifies preparation and improves surgical efficiency.



Low temperature, high efficiency, reduced risk of thermal damage

Through algorithm optimization, a lower working temperature was achieved, reducing the risk of thermal damage. It protected the surrounding tissues, improved surgical accuracy, and was safer and more efficient.



- ✓ MORE PRECISE DISSECTION CAPABILITIES
- ✓ FASTER TRANSECTION SPEEDS
- ✓ LOWER MAXIMUM BLADE TEMPERATURE.



Seals vessels $\leq 7\text{mm}$ with slender jaw and blade for better access. Provides stable vessel sealing $\leq 7\text{mm}$ with low operating temperature and minimal thermal damage.



AI algorithms and structural optimization minimize mist formation, ensuring a clear. surgical field and enhancing precision and safety.

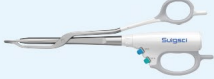
Model	Lenght	Gun-Type Shear
HU07SNC、HU07SSC	140mm	
HU07MNC、HU07MSC	230mm	
HU07LNC、HU07LSC	360mm	
HU07XNC、HU07XSC	450mm	

The pipe diameter is uniformly 5.5 mm

ULTRASONIC SCALPEL SYSTEM
SPECIFICATIONS

Model	Parameter	Generator
G600	Screen: 7inch、 Resolution: 1280*800px Size: 360mm*370mm*130mm、 Weight: 8.5kg Input Voltage: 100-120V~/220-240V~ Output: Ultrasonic & Radiofrequency	

Model	Lenght	Gun-Type Shear
HK1405NCA	140mm	
HK2305NCA	230mm	
HK3605NCA	360mm	
HK4505NCA	450mm	

Model	Lenght	Scissor Shear
HK0905NC	90mm	
HK1705NC	170mm	

Model	Lenght	Hand Piece
Compatible with gun-type ultrasonic scalpel	TD100	
Compatible with scissor-type ultrasonic scalpel	TD150	

MORE PRODUCTS...

Minimally Invasive Surgical Consumables



Disposable Laparoscopic Trocar Kits



Absorbable Surgical Suture



Disposable Laparoscopic Specimen Retrieval Bag



Disposable Suction Irrigator



Disposable Ligating Clip



Disposable Endoscopic Cutter Stapler
Powered/Manual Models







Comprehensive Urological Surgery Solutions



Ureteral Stent System



Ureteral Covered Stent System



Disposable Ureteral Access Sheath



Disposable Minimally Invasive Dilatation Drainage Kits



Electronic Endoscope Image Processor



Single-use Digital Flexible Ureteroscope



Disposable Ureteral Stent Kits



Disposable Urological Guidewire

For more product information, please contact us.
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