



**emep**

confidence in performance

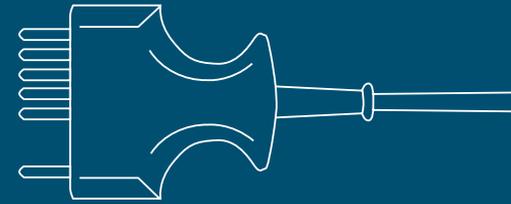
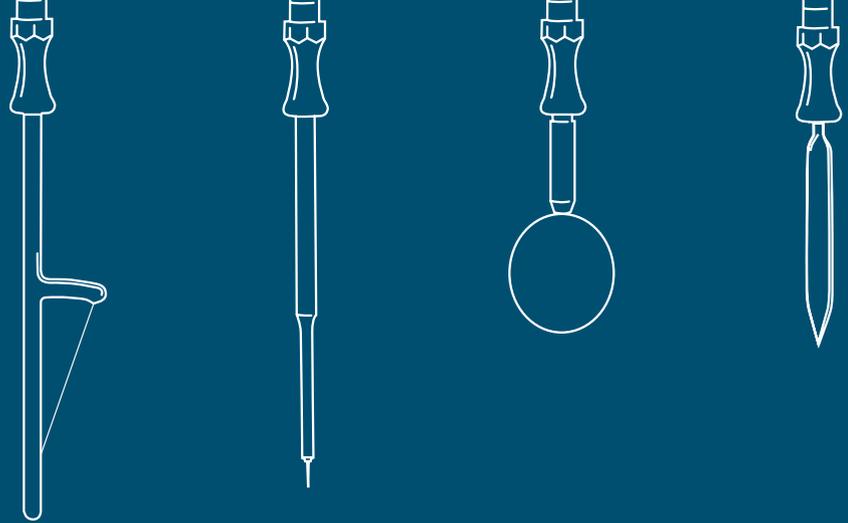
# atom

create your performance

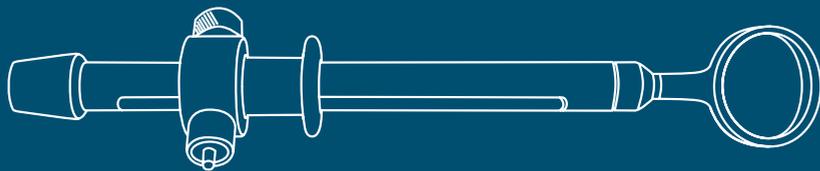
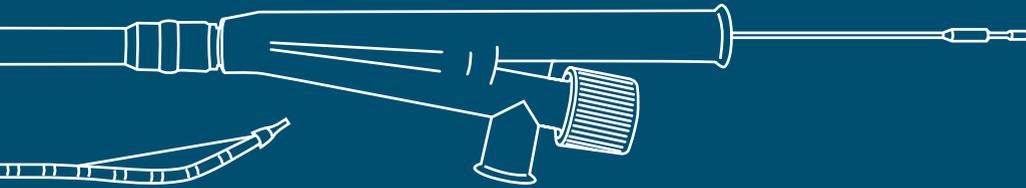


**emep**

confidence in performance



create your performance



# atom create your performance

**Electrosurgery** is a constantly developing discipline of medical technology. It has been applied for dozens of years and is still looking for novel approaches as well as more effective and safer solutions. With an enhanced range of electrosurgical applications in a number of different specializations, electrosurgical systems have become more complex and complicated, while the scope of available functionalities and operational modalities has not necessarily matched the actual needs and requirements of their users.



For 20 years now **EMED** has been involved in the manufacture of top-quality electrosurgical systems. Our considerable experience and continually evolving technology have enabled us to set new trends in electrosurgery.

Our aim is to deliver devices as simple to operate as possible. This would make it possible to take a full advantage of the opportunities offered by advanced electrosurgical methods in medical procedures.

**Atom** is the first electrosurgical system which combines perfectly well a small size and a wide spectrum of applications.

# atom create your performance

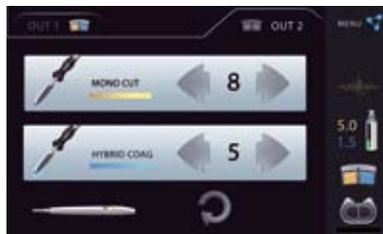


Atom is a compact device which offers possibilities which have so far been provided by large and complicated electrocautery systems only.

## Create your electrocautery system

Atom is a system which easily adapts to the user. Since it is possible to configure in any way the available operating modes, each user can set up an electrocautery system that accurately meets the actual needs and requirements. Based on the configuration options for each operating mode, the electrocautery system can be freely adjusted to the specialist's needs and requirements.

With an innovative user interface as well as a large and easy-to-read touchscreen, the operation of the system is simple and intuitive.



# atom SmartDevice System

**Atom** does not require any complicated pre-procedure configuration - you simply need to connect the instrument. The system will automatically detect it and adjust the appropriate settings.

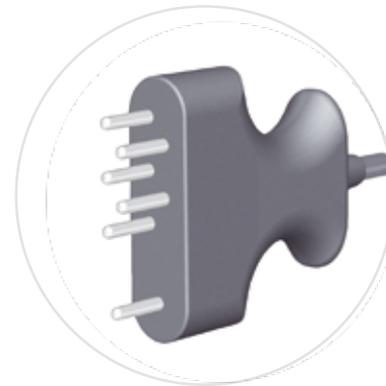
The device is equipped with **SmartDevice** (SDS) sockets.

The **SDS** system detects and identifies the connected instrument. **Atom** automatically adjusts the operating mode and output settings, thus ensuring greater comfort and safety of work.

If the settings are changed during the procedure, the device will store them in memory, and automatically recall them when the instrument is connected for the next procedure.

**SDSA** argon socket with integrated argon connection makes plugging the argon cables very convenient and user-friendly.

Connect the instrument and start work.



SDS plug



SDSA plug with integrated argon connection



# atom create your performance

- monopolar and bipolar modes
- highly-specialized operating modes, e.g. bipolar resection, an endoscopic cutting procedure and ThermoStapler®
- argon plasma coagulation in standard and pulse mode
- automatic regulation of working parameters on the basis of real-time measurements
- instantaneous and average power monitor that enables the operator to control the device's working parameters
- colour touch screen and system for recognition of connected instruments, SDS
- integrated argon connection - SDSA
- control system for the neutral electrode, NEM, and the EMED SAFE electrode that guarantees safety of the procedure
- innovative user interface as well as a large and easy-to-read touch-screen
- dedicated trolley with case for argon cylinder and handy basket for accessories and cables ensure comfort and ergonomic conditions in the surgery theatre



# atom safety of performance

## Safety of the patient

Correct application of a neutral electrode (passive plate) is a very important part of every electrosurgical procedure. In monopolar operation, neutral electrode collects the high frequency current and discharges it, closing the electrical circuit.

The ring around the EmedSafe electrode dissipates the HF-current over the entire surface of the neutral electrode. It means that the HF-current dispersion is the same regardless of the direction of the electrode.

**Neutral Electrode Monitor (NEM)** system continuously verifies if the neutral electrode keeps accurate contact with patient's body during the procedure. In case the contact has been detected to be not sufficient and therefore not safe, the unit stops operation and warns the user.

Two different types of disposable split neutral electrode can be selected by the operator: version for adults and version for infants.



EmedSafe neutral electrode  
for adults and children



EmedSafe neutral electrode  
for infants

# atom setting performance

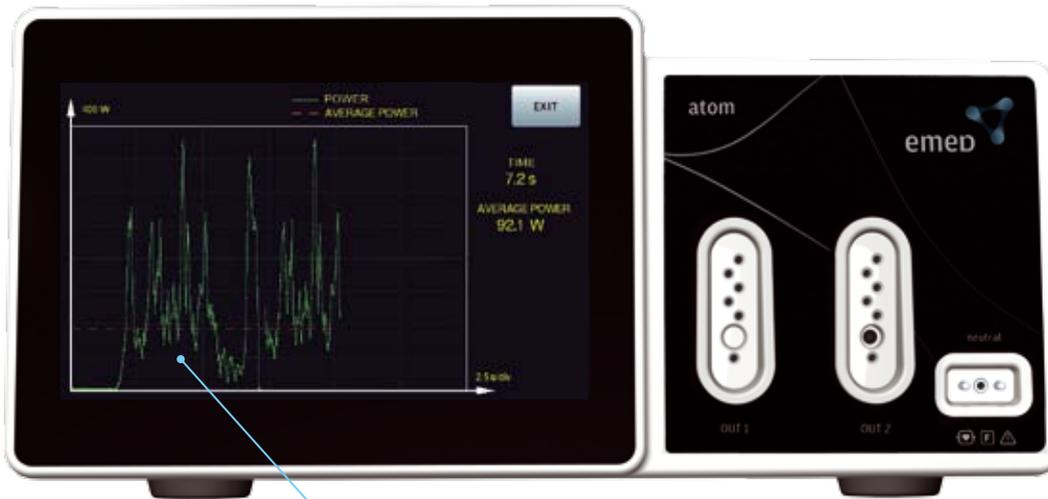
## Power monitor

A modern operating room is focused on effects rather than power settings. The operator chooses the desired coagulation or cutting effect. It is not necessary to focus on analyzing and selecting the appropriate power level, which would allow to achieve the required effect.

Atom is fitted out with an advanced measuring system which automatically adjusts in real-time the output power to the changing conditions within the operating field based on measurements of the output parameters. Due to continuous monitoring of all parameters, the user always obtains the best

result regardless of the working conditions during the procedure.

Power monitor shows the diagram of instantaneous output power and the average power value after the cutting or coagulation process is completed.



Measuring parameters in real time

# atom footswitch

## Wireless footswitch operation

This innovative solution eliminates the additional cables from the operating theatre or procedure room. The **atom** footswitch communicates with the device using wireless data transfer.

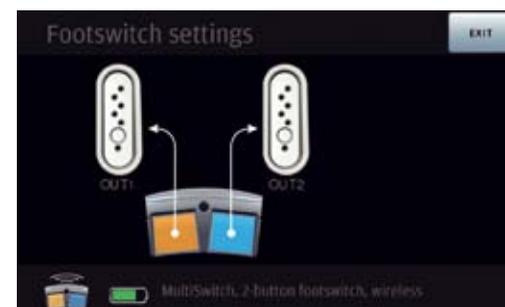
The state-of-the-art technology used in the wireless module guarantees data transfer without undue delay and without interference in functions of other equipment in the operating theatre.

## Footswitch options:

- recognition of connected footswitch (type, serial number, etc.)
- different options of assigning of the buttons to the outputs
- constant monitoring of battery level
- low battery level alert



MultiSwitch, 2-button footswitch, wireless



Footswitch settings menu

# atom applications

## Versatility of applications

Atom features monopolar and bipolar techniques in a variety of cutting and coagulation modes. The generator features highly-specialized operating modes, e.g. bipolar resection, an endoscopic cutting procedure and **ThermoStapler®** - a system for sealing large blood vessels. An integrated argon module brings the benefits from argon plasma coagulation and cutting.



Monopolar and bipolar resection



Argon cutting and coagulation



Vessel sealing system

## Monopolar and bipolar resection



**URO BI-CUT** and **URO BI-COAG** Bipolar cutting and coagulation for urological procedures. This mode is used in a wet environment.



**URO CUT** and **URO COAG** Monopolar cutting and coagulation for urological procedures. The mode is used in the environment of non-conductive liquids.



# atom applications

## Argon cut and coagulation



**ARGON COAG** Argon-enhanced monopolar coagulation. This mode is used for non-contact coagulation of bleeding tissue surfaces. It eliminates smoke and smell. It ensures a very shallow and gentle coagulation. Instrument: rigid argon electrodes for coagulation.



**ENDO ARGON** Argon-enhanced monopolar coagulation for endoscopic procedures. It ensures a very shallow and gentle coagulation. It is necessary when there is a risk of perforation. The elimination of smoke ensures a perfect visibility of the operating field. Instrument: flexible argon probes.



**PULSE ARGON** Argon-enhanced pulse monopolar coagulation. It is used in gastroenterology for bleeding control. It enables precise dosing exactly at the bleeding site. Instrument: flexible argon probes.



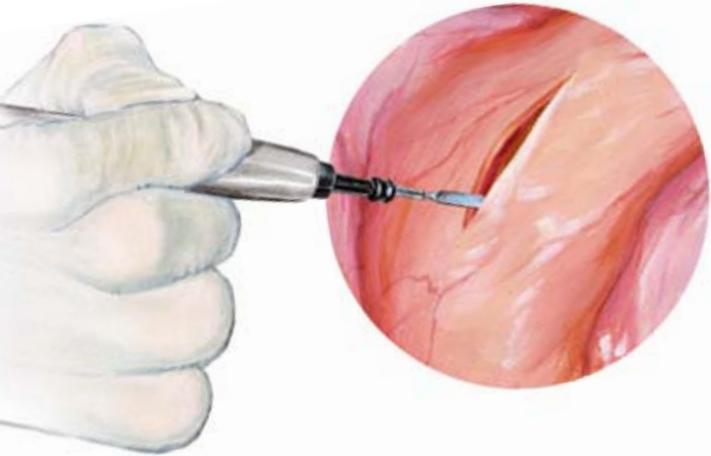
**ARGON CUT** Argon-enhanced monopolar cutting. The argon shield reduces the amount of generated smoke and smell. The thermal damage to tissues is reduced and bleeding control is improved. This function is particularly desirable during procedures that require intensive use of the device. Instrument: needle- or lancet-type argon electrodes.

## ThermoStapler®



**ThermoStapler®** the mode for sealing large blood vessels is used for vessels with a diameter of not more than 7mm (clamps for open surgery) and for preparing tissues, e.g., before their mechanical cutting.





# atom applications

## STANDARD MONOPOLAR MODES

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**MONO CUT** Monopolar cutting with different hemostasis effects. Effect 1 is used to cut the tissues when additional bleeding control is not needed. This cutting mode is the least damaging for tissues. Other effects include enhanced hemostasis levels. They are used when there is a need for more intensive bleeding control already in the course of cutting. The higher hemostasis levels control bleeding better, but exert a stronger thermal effect on the tissues. Instrument: monopolar electrodes, e.g. knife, loop or needle.



**MIXED CUT** Monopolar drying cutting. Alternating cutting and soft coagulation enables the cutting of tissues with severe bleeding, while minimising blood loss. Instrument: monopolar electrodes, e.g. knife, loop or needle.



**PRECISE CUT** Precise monopolar cutting. Used when cutting small and precise structures. Weaker current ensures enhanced cutting precision. Instrument: monopolar electrodes, e.g. knife, loop or needle.

# atom applications



**FORCED COAG** The traditional type of coagulation which enables quick and efficient coagulation of local bleeding. Instrument: monopolar electrodes, e.g. ball, spatula or lancet.



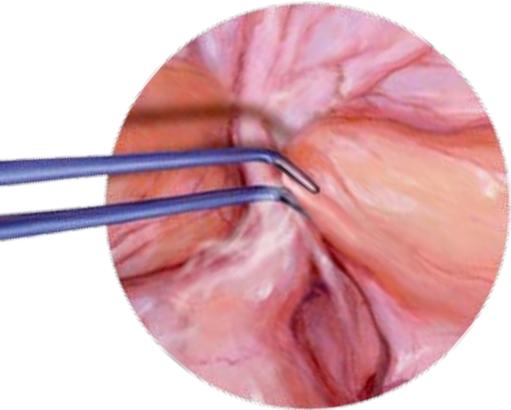
**SOFT COAG** Low-voltage monopolar contact coagulation. This mode enables deep coagulation, reaching deeper than the other types. Instrument: monopolar electrodes, e.g. ball, spatula or lancet.



**SPRAY COAG** Non-contact monopolar coagulation with high voltage. It enables quick and effective coagulation of larger areas. It prevents tissue adherence to the instrument. Instrument: monopolar electrodes, e.g. ball, spatula or lancet.



**HYBRID COAG** Monopolar coagulation for contact and non-contact applications with high voltage. Instrument: monopolar electrodes, e.g. ball, spatula or lancet.



# atom applications

## STANDARD BIPOLAR MODES

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**BI-CUT** Bipolar cutting with different hemostasis effects. Special bipolar instruments are used for this mode. This mode is particularly useful for procedures performed in neonates and patients with a heart pacemaker.



**SOFT BI-COAG** Low-voltage bipolar contact coagulation. In this mode, the current flows between the electrode tips and no passive electrode is required. Typically used for closing individual medium-sized blood vessels. Instruments: bipolar forceps, bipolar needle electrodes, bipolar laparoscopic instruments.

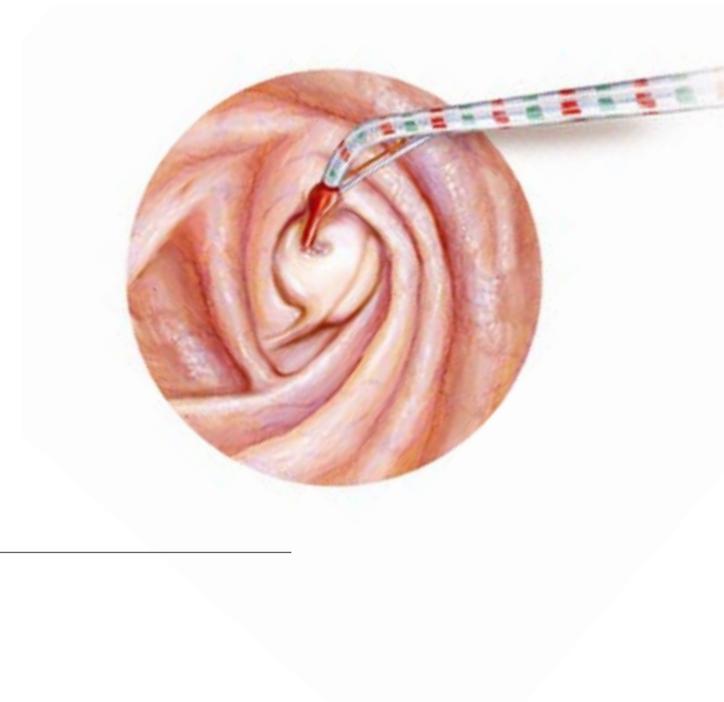


**SCISS BI-COAG** Universal soft bipolar coagulation for cutting with bipolar scissors. Instruments: bipolar SDS scissors.



**FORCED BI-COAG** High-voltage bipolar coagulation. In this mode, the current flows between the electrode tips and no passive electrode is required. Typically used for closing medium-sized blood vessels. Instruments: bipolar forceps.

# atom applications



## GASTROENTEROLOGY

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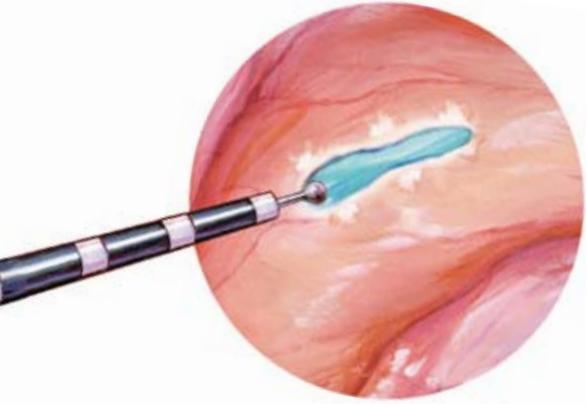
**POLIPO CUT** Monopolar cutting for endoscopic procedures. Necessary for polyp removal. Alternating cutting and coagulation ensures optimum coagulation and reduces the risk of bleeding. Instrument: loops for polypectomy.



**PAPILLO CUT** Monopolar cutting for endoscopic procedures. Used for cutting Vater's papilla during a papillotomy procedure. It ensures safe cutting with the optimum hemostatic effect. Instrument: papillotome.



**MUCO CUT** Monopolar cutting for mucosectomy procedures. A specialized endoscopic cutting mode for mucosectomy procedures. Pulsed cutting current and precise pulse duration enable safe and fast cutting in endoscopic submucosal dissection (ESD) and endoscopic mucosal resection (EMR) procedures. Instrument: endoscopic mucosectomy knife, loops for polypectomy.



# atom applications

## GASTROENTEROLOGY

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**ENDO COAG** Monopolar endoscopic coagulation.  
It is used for additional hemostasis in polypectomy and marking the lesions.  
Instrument: a polypectomy snare.



**ENDO SPRAY** Monopolar endoscopic coagulation .  
It is used for rapid hemostasis of local hemorrhages.  
Instrument: polypectomy snare.



**ENDO BI-COAG** Bipolar coagulation for endoscopic procedures.  
Soft hemostasis without carbonisation of the tissue.  
Instrument: a bipolar probe and a SDS adaptor  
for bipolar endoscopic hemostasis probe.

# atom applications



## ARTHROSCOPY

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**ARTRO CUT** Monopolar cutting for arthroscopic procedures.  
This mode is used in wet environment.  
It requires the use of nonconductive fluids, e.g. distilled water or glycine.  
Instrument: monopolar arthroscopic electrodes.



**ARTRO COAG** Arthroscopic monopolar coagulation  
in non-conductive liquids, e.g. purisol or glucose.  
Instrument: monopolar arthroscopic electrodes.



**ARTRO BI-CUT** Bipolar cutting for arthroscopic procedures.  
This mode is used in a wet environment.  
It requires the use of conductive fluids, e.g. normal saline.  
Instrument: bipolar arthroscopic electrodes.



**ARTRO BI-COAG** Arthroscopic bipolar coagulation  
in conductive liquids, e.g. saline solution.  
Instruments: bipolar arthroscopic electrodes.

# atom efficiency oriented performance



Argon cutting and coagulation

## Argon cutting and coagulation

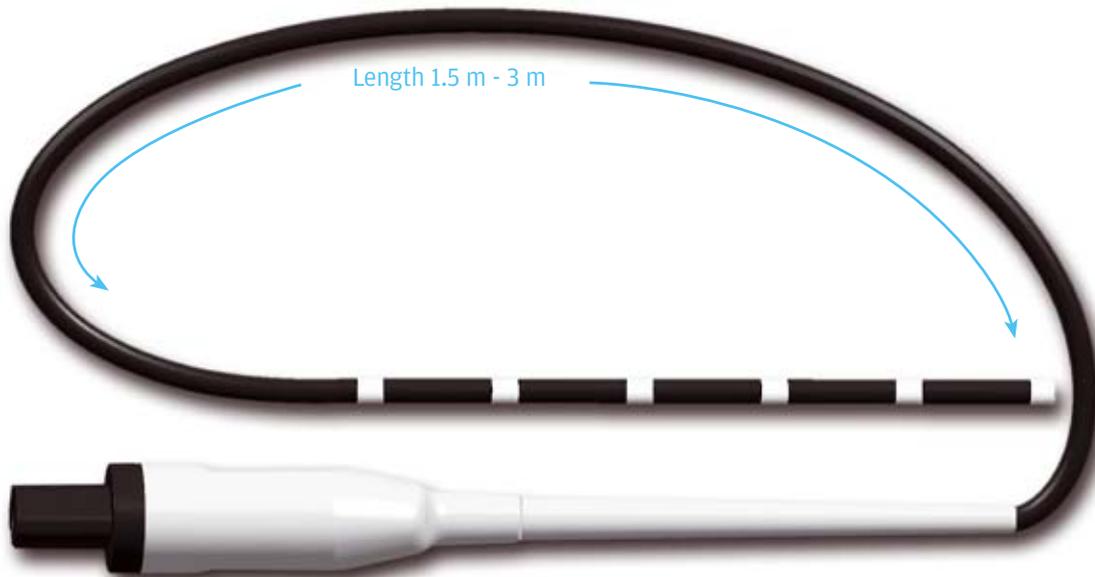
Atom has a built-in argon module, which brings the benefits of argon plasma coagulation and cutting into the open, laparoscopic and endoscopic surgical procedures.

Argon coagulation uses the phenomenon of good

conduction of high frequency current by ionised argon. Argon is a chemically inert gas, devoid of physiological effects and non combustible. Under the effect of current, it becomes ionised and forms a plasma cloud in which electric arcs are formed.

## Efficiency enhancing features of argon plasma coagulation:

- immediate hemostasis helps efficiently coagulate large areas of bleeding surface
- penetration depth limited to approximately 3 mm minimizes risk of perforation
- tissue carbonization is minimal compared to standard electrocoagulation
- no tissue vaporization minimizes the risk of perforation
- no contact between the applicator and tissue means no tissue adhesion
- less surgical smoke gives good visibility of operating area
- reduced smoke eliminates unpleasant odors
- precise application of thermal energy results in reducing procedure time



Rigid argon electrode tip



Flexible argon electrode tip

# atom time oriented performance

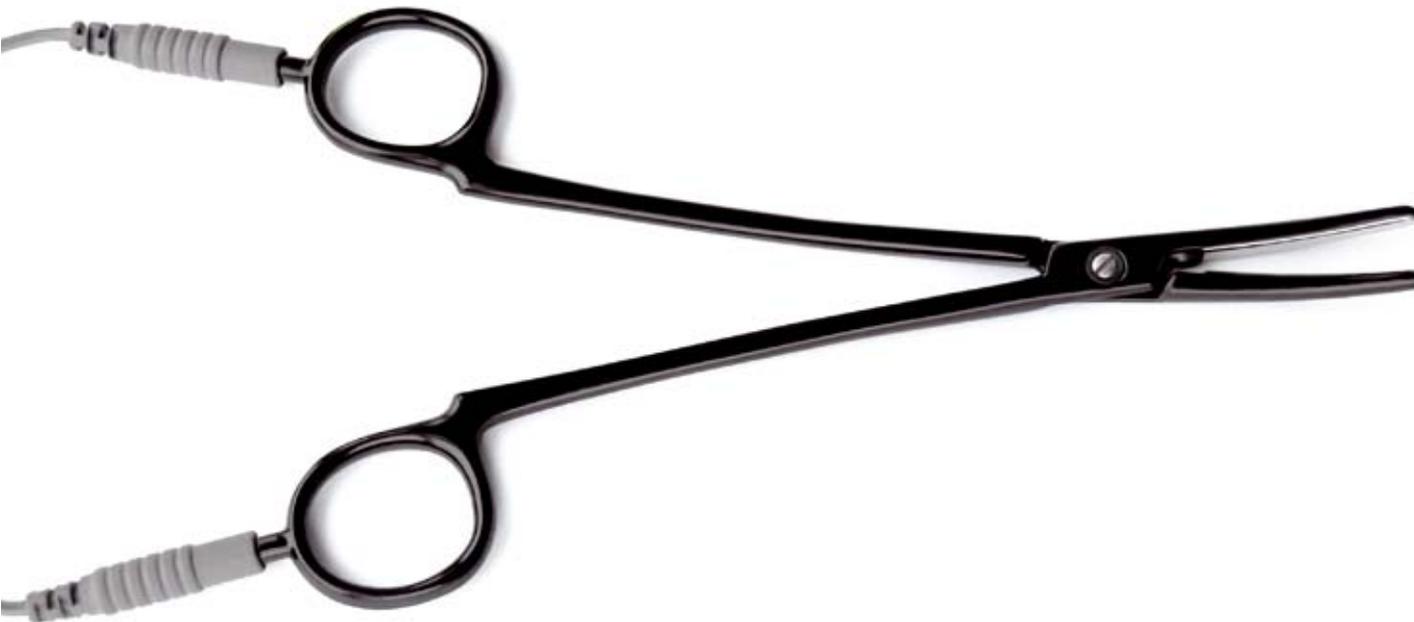


Laparoscopic and open surgery vessel sealing

## ThermoStapler®

Time and cost reducing features of the ThermoStapler® system:

- enables fast and effective of blood vessels, arteries or tissue bundles
- time of operation is significantly reduced
- blood loss is significantly reduced, the system allows to economize on sutures and staplers
- natural sealing of vessels
- no foreign body remains in the patient's body
- no risk of adhesion or infection



Straight clamps



Angled clamps

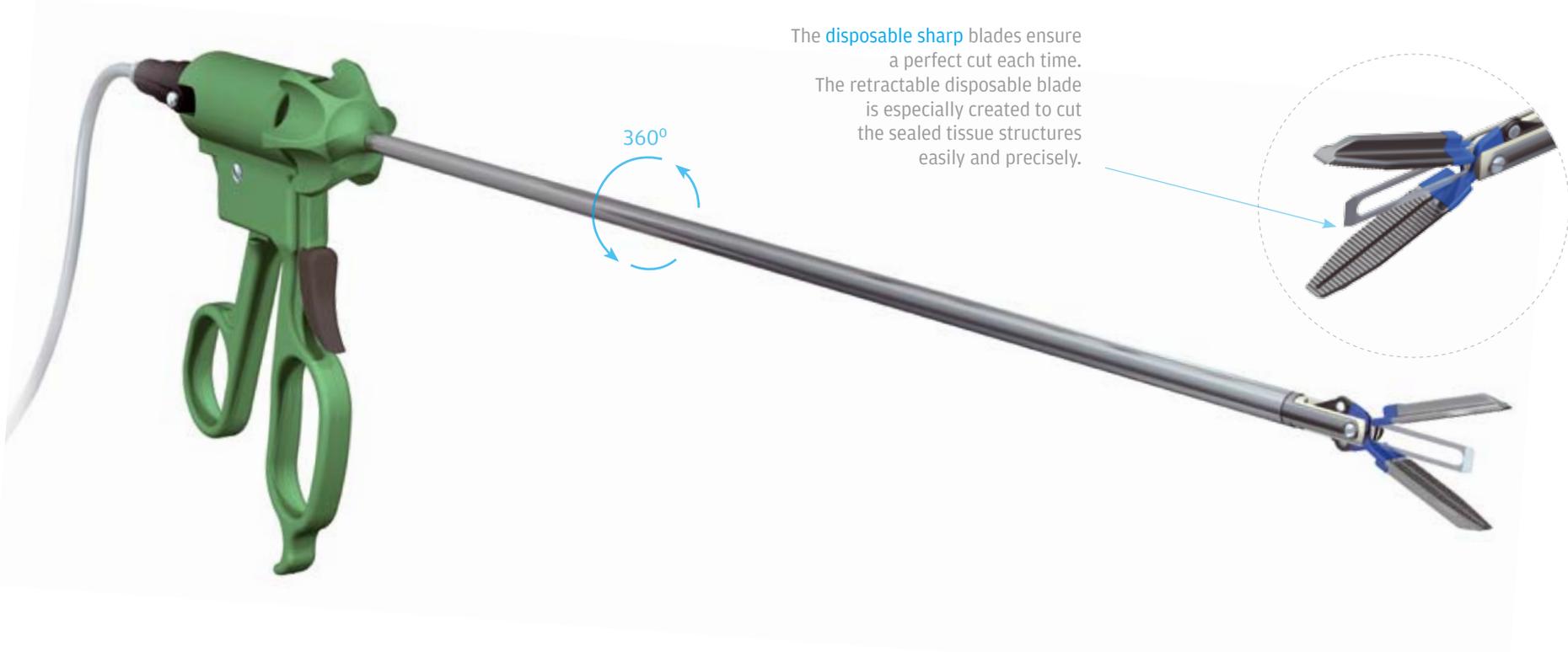
# atom time oriented performance

## ThermoStaplerEdge®

This instrument is created for use in a minimally invasive surgery, particularly in laparoscopy field. It enables permanent sealing of blood vessels, arteries or tissue bundles and cutting without instrument changing.

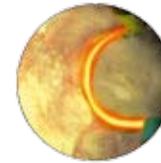
ThermoStaplerEdge® instrument with fixed cable uses SDS system technology. The SDS system in EMED electrosurgical units detects and identifies the connected instrument and automatically adjusts the operating mode and output settings,

thus ensuring greater comfort and safety of work. Sealing and cutting without changing instrument reduces the time of a surgical procedure.



The **disposable sharp** blades ensure a perfect cut each time. The retractable disposable blade is especially created to cut the sealed tissue structures easily and precisely.

# atom create your TUR standard



Bipolar resection  
in saline



Bipolar coagulation  
with loop electrode



Bipolar coagulation  
with ball electrode

## Universal resectoscope

Along with the EMED resectoscope, the **atom** system is a multipurpose set which is always ready for use, whatever operating technique is chosen. The **EMED resectoscope** is a multifunctional instrument, which enables both monopolar and bipolar operations without changing the working elements. It is fitted out with a rotary sheath with the conti-

nuous flow function. Benefits of continuous flow function:

- helps to quickly remove tissue fragments and replace the irrigation solution,
- reduces the temperature of the irrigation solution when it is heated up by the energy generated by the electrosurgical unit,
- ensures a clean operating field.

To ensure the comfort of use, the working element is available in two versions: active or passive, according to the operator's preferences and habits.



Loop electrode wide PI-CUT



Ball electrode 5mm, angled

# atom safety and ergonomics at work

## AUTOTEST

Each time the power is switched on, the system conducts an internal test of all the device components and any instruments and auxiliary devices that may be connected. The result of the AUTOTEST is displayed on the screen as a message.

## MENU

Atom provides additional adjustment options of such parameters as: activation signal volume, screen brightness and language selection.

## FOOTSWITCH

Atom automatically identifies the type of footswitch connected to the device.



## SUPPLEMENTAL DEVICES

Connected endoscopic irrigation pump

## POWER MONITOR

Endo unit automatically adjusts the output power to achieve desired effect on tissue, analyzing conditions of operating area. Power monitor shows current power output during cutting.

## ARGON RATE

Shows the status of argony argon cylinder.

## NEM SYSTEM

The atom device is equipped with the NEM system which controls the adhesion quality of the neutral divided EMED SAFE electrode. Application of the electrode is monitored throughout the whole procedure. In combination with the EMED SAFE electrodes, the NEM system maximises safety during the procedure.

# atom software update

## Always up-to-date

Atom unit features state-of-the-art software that enables quick and convenient updating, whenever new functionalities and modes have been

developed. Software update is performed automatically by the unit after simply plugging in the USB flash memory to the device.



Automatic update after USB flash memory connection

# atom

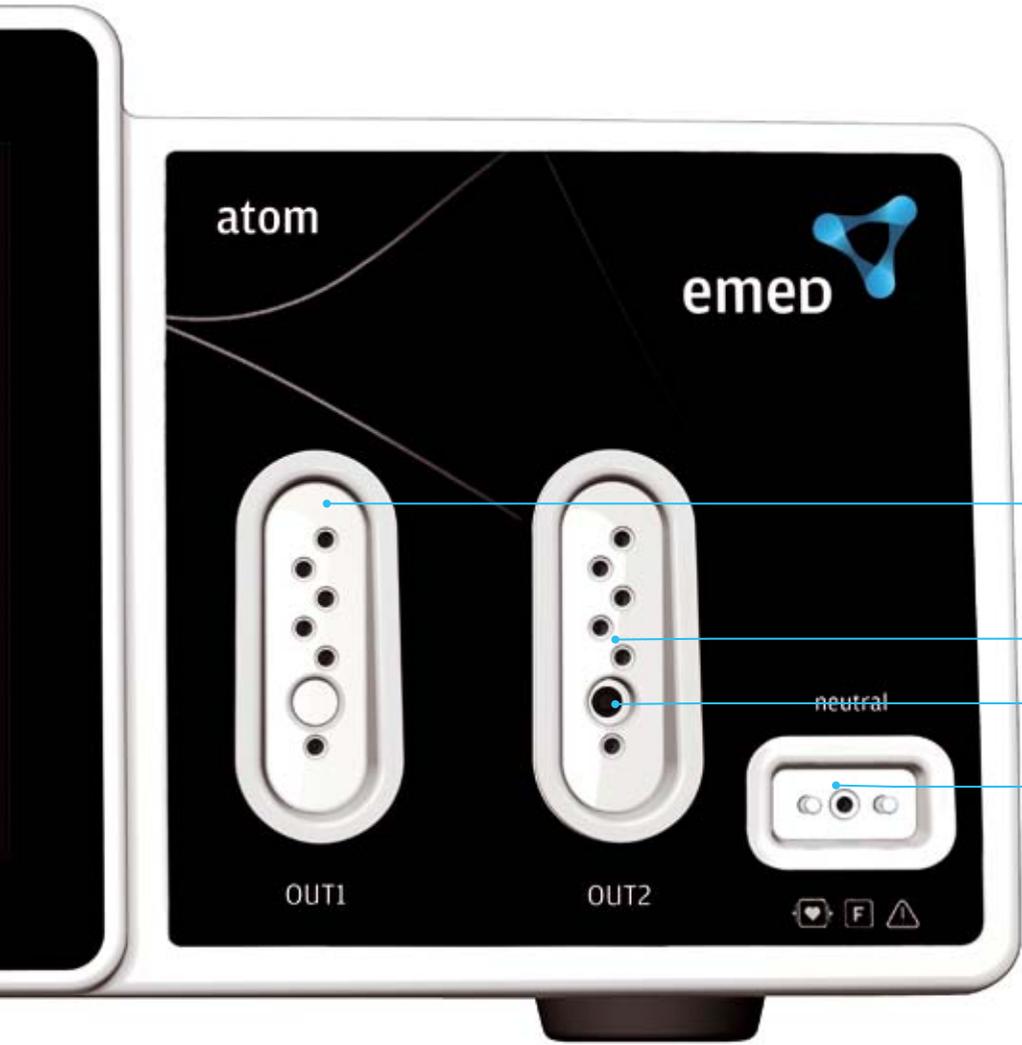
2 work panels:  
OUT1, OUT2

selected working mode icon

settings values icon

sidebar:  
MENU  
POWER MONITOR  
ARGON indicator  
FOOTSWITCH icon  
NEUTRAL ELECTRODE indicator





**OUT1** connection  
- detecting monopolar and bipolar instruments

**OUT2** connection  
- detecting instruments for the argon plasma modes

**ARGON** connection

**NEUTRAL ELECTRODE** connection

atom 1:1 scale

# waterfall

## endoscopic irrigation pump

Good visibility and clean operating site are of prime importance in all types of surgery.

In endoscopic procedures, the operation site may be contaminated with chime or blood residue in the gastrointestinal tract.

The possibility of irrigating the operating site is a very important element of any endoscopic procedure. The **WATERFALL** endoscopic irrigation pump was designed to ensure full comfort and safety during surgeries.

The pump makes it possible to quickly rinse the gastrointestinal tract using physiological saline directly through the endoscope's rinsing opening or by using endoscopic instruments.

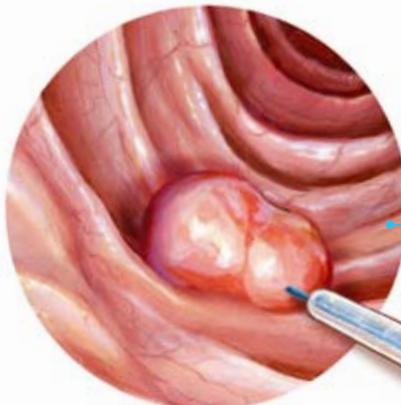


### Advantages of the WATERFALL endoscopic pump:

- good visibility and clean operating site
- less tissue adhesion on endoscopic instruments
- irrigation using physiological saline increases tissue conductivity - faster electrosurgical effects
- possibility of adjusting the saline flow
- possibility of activation using the footswitch or from the control panel
- low-noise, does not cause nuisance in the procedure room
- small size and possibility of mounting of the device on the endo trolley, which gives access to the pump during the procedure



**WATERFALL** enables quick and easy cleaning of blood and chime residue from the surgery site.



**WATERFALL**, connected to an endoscopic needle, facilitates elevating of flat lesions before resection.



# atom accessories



100-620 Electrosurgical system atom



020-100 WATERFALL endoscopy irrigation pump, set of drains



100-302 2-button footswitch, 6-pin plug, cable 5m



100-313 MultiSwitch, two-pedal footswitch, wireless

# atom accessories



080-060 TinyLine trolley, with case for argon cylinder (5L/10L), basket



100-051 Argon Cylinder 5L (empty cylinder - with no gas, DIN 477/6)  
100-151 Argon Cylinder 10L (empty cylinder - with no gas, DIN 477/6)



5501640 Argon regulator P300-P40EMED, DIN 477/6 (Europe)  
5501565 Argon regulator P300-P40EMED, DIN 477/6 (Europe) with pressure sensor

# atom accessories



Ø 1.5 mm

932-148 Flexible argon probe, reusable, TBS, dia. 1,5mm, 1,5m long



Ø 2.3 mm

932-149 Flexible argon probe, reusable, GIT, dia. 2,3mm, 2,2m long



Ø 3.2 mm

932-150 Flexible argon probe, reusable, GIT, dia. 3,2mm, 2,2m long

932-151 Flexible argon probe, reusable, TBS, dia. 1,5mm, 3m long

932-152 Flexible argon probe, reusable, GIT, dia. 2,3mm, 3m long



Integrated argon socket for atom units

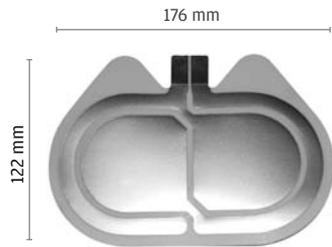
932-14A Argon electrode handle, large, 2 switches, cable 3.5m, SDSA plug



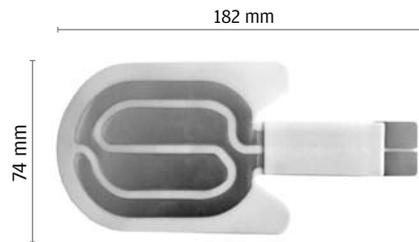
432-46A Monopolar cable for argon flexible electrode, flat connector, cable 3.5m, SDSA plug



# atom accessories



812-80H



812-83H

812-80H

Disposable neutral electrode with safety ring EMED SAFE, hydrogel, split, for adults and children, 176x122 mm, 110cm<sup>2</sup>, 10x5 pcs.

812-83H

Disposable neutral electrode with safety ring EMED SAFE, hydrogel, split, for infants, 182x74 mm, 37cm<sup>2</sup>, 10x5 pcs.



380-030

Cable for disposable neutral electrode, falt plug, length 3 m

380-050

Cable for disposable neutral electrode, falt plug, length 5 m



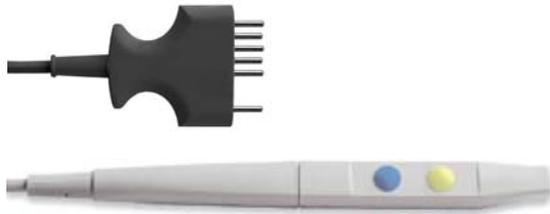
Ø 3 mm

281-035

Monopolar endoscopic cable, length 3 m, 3mm female, SDS plug



# atom accessories



322-14S Electrode handle 2.4 mm, large, 2 switches, SDS plug cable 4 m

327-14S Electrode handle 2.4 mm, large, 2 switches, SDS plug cable 4 m



215-23S Electrode handle 4 mm, small, 2 switches, SDS plug cable 3 m

215-25S Electrode handle 4 mm, small, 2 switches, SDS plug cable 5 m

218-23S Electrode handle 2.4 mm, small, 2 switches, SDS plug cable 3 m

218-25S Electrode handle 2.4 mm, small, 2 switches, SDS plug cable 5 m

# atom accessories

 Ø 4 mm

**280-03S** Monopolar laparoscopic cable, length 3 m, 4 mm female

**280-05S** Monopolar laparoscopic cable, length 5 m, 4 mm female

 Ø 3 mm

**281-03S** Monopolar laparoscopic cable, length 3 m, 3 mm female

 Ø 2 mm

**405-04S** Monopolar cable for TONTARRA resectoscope, length 4.5 m, 2 mm male

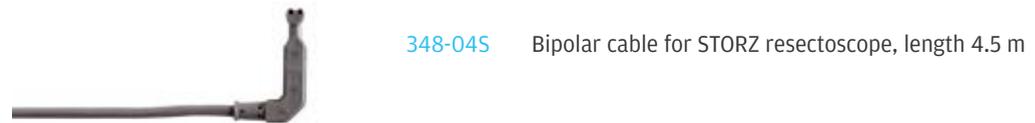
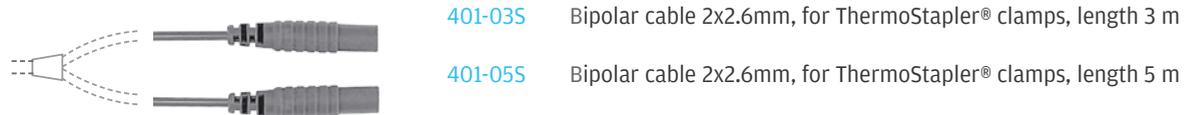
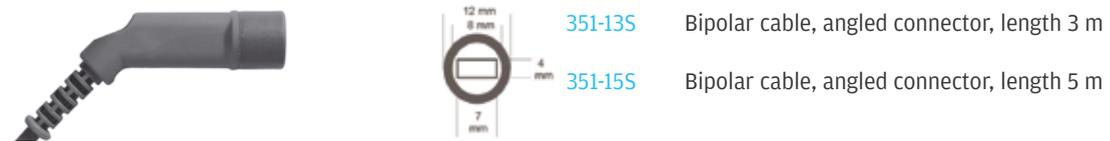


**408-14S** Monopolar cable for STORZ resectoscope, length 4.5 m, angled connector

 Ø 3 mm

**409-04S** Monopolar cable for OLYMPUS resectoscope, length 4.5 m, 3 mm male

# atom accessories



# atom accessories



349-04S Bipolar cable for OLYMPUS resectoscope, length 4.5 m



359-03S Bipolar cable for STORZ laparoscopy, length 3 m

359-05S Bipolar cable for STORZ laparoscopy, length 5 m



352-03S Bipolar cable for WOLF laparoscopy, length 3 m



358-03S Bipolar cable for BiTech scissors, length 3 m

# atom accessories



instrument with fixed cable



824-135

Handle for bipolar laparoscopic instrument, reusable  
cable 3 m, SDS plug



instrument with fixed cable

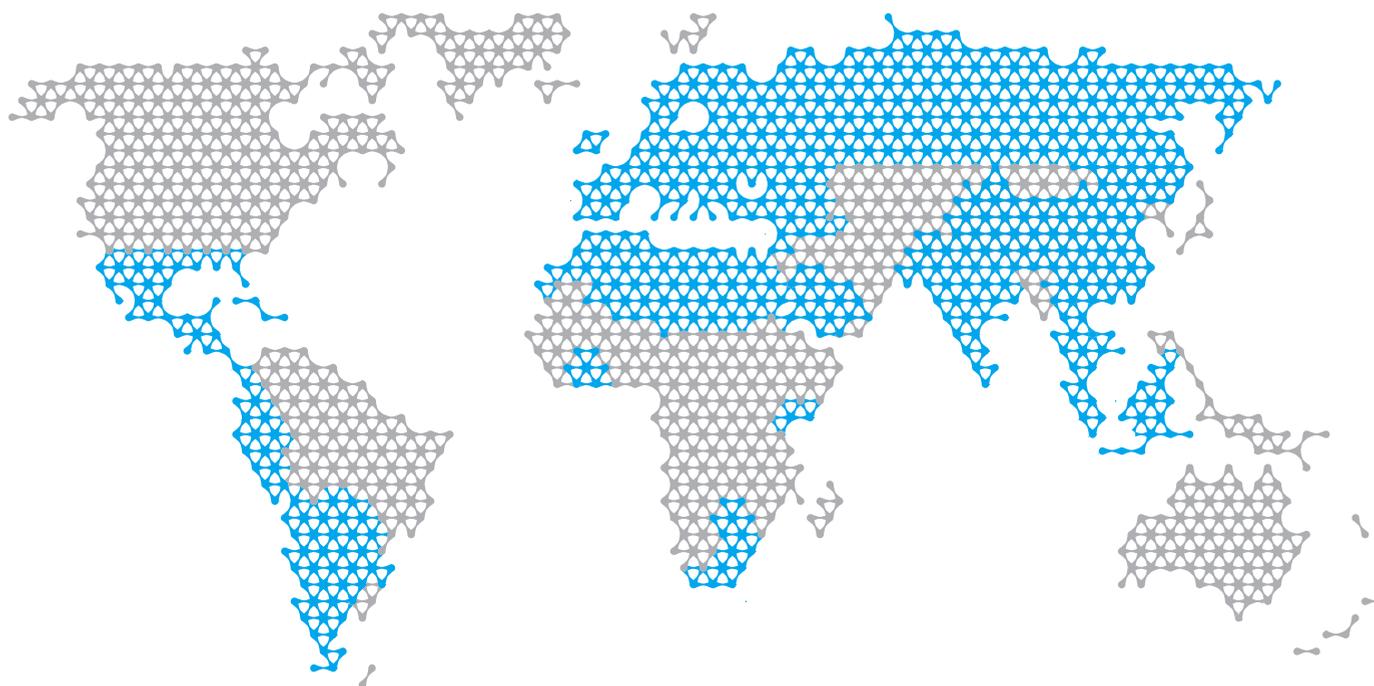


827-135

Handle, reusable, for ThermoStaplerEdge® 5mm  
bipolar laparoscopic sealing and cutting instrument,  
cable 3m, SDS plug



# contact

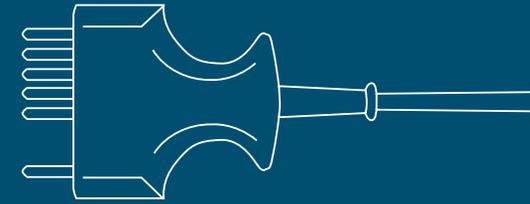


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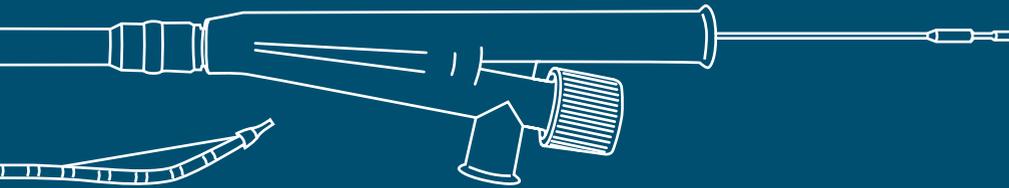
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[www.emed.pl](http://www.emed.pl)

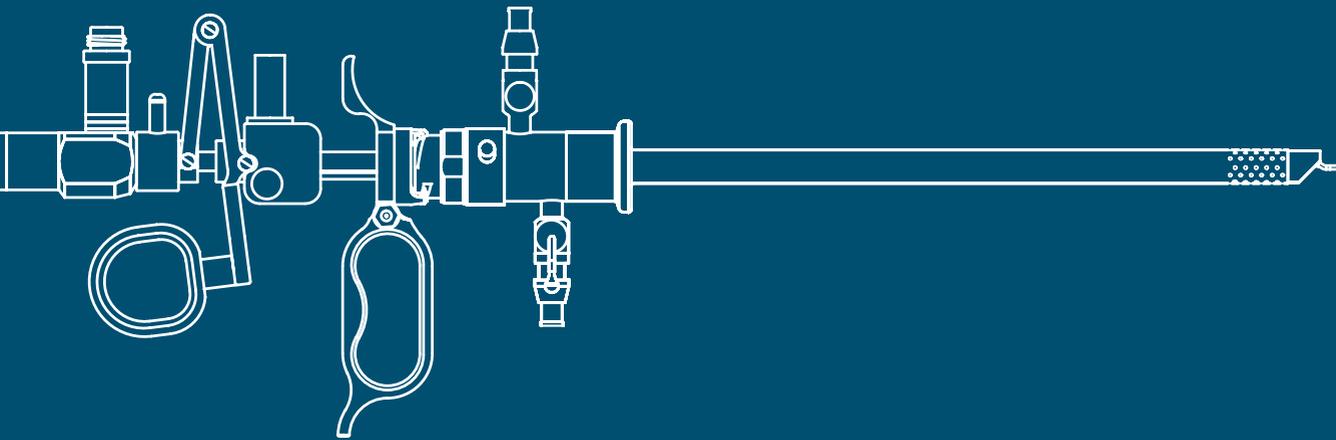
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confidence in performance

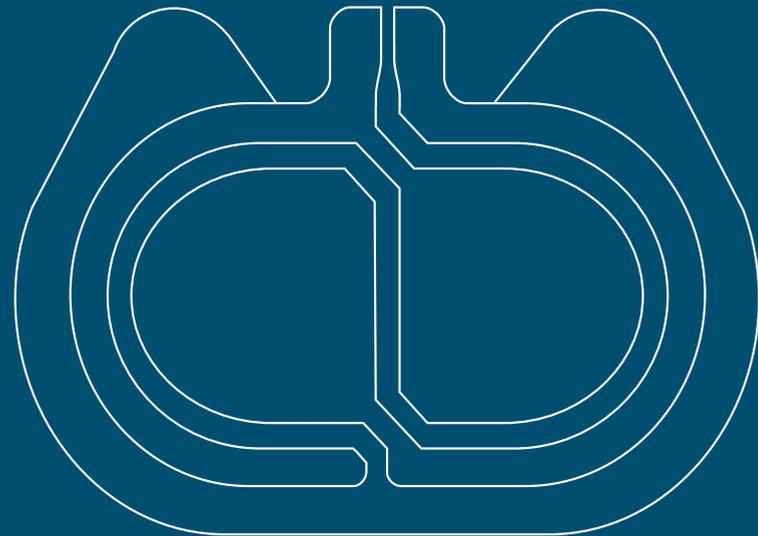
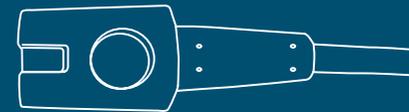
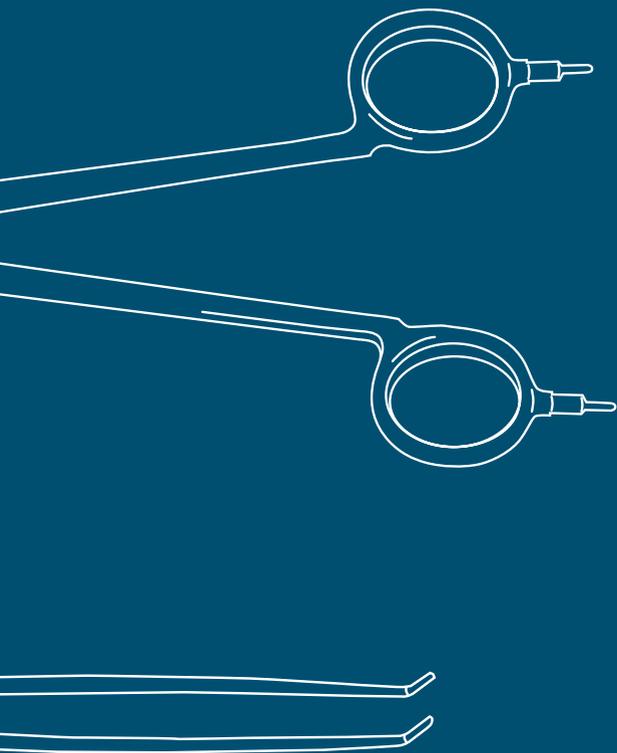


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