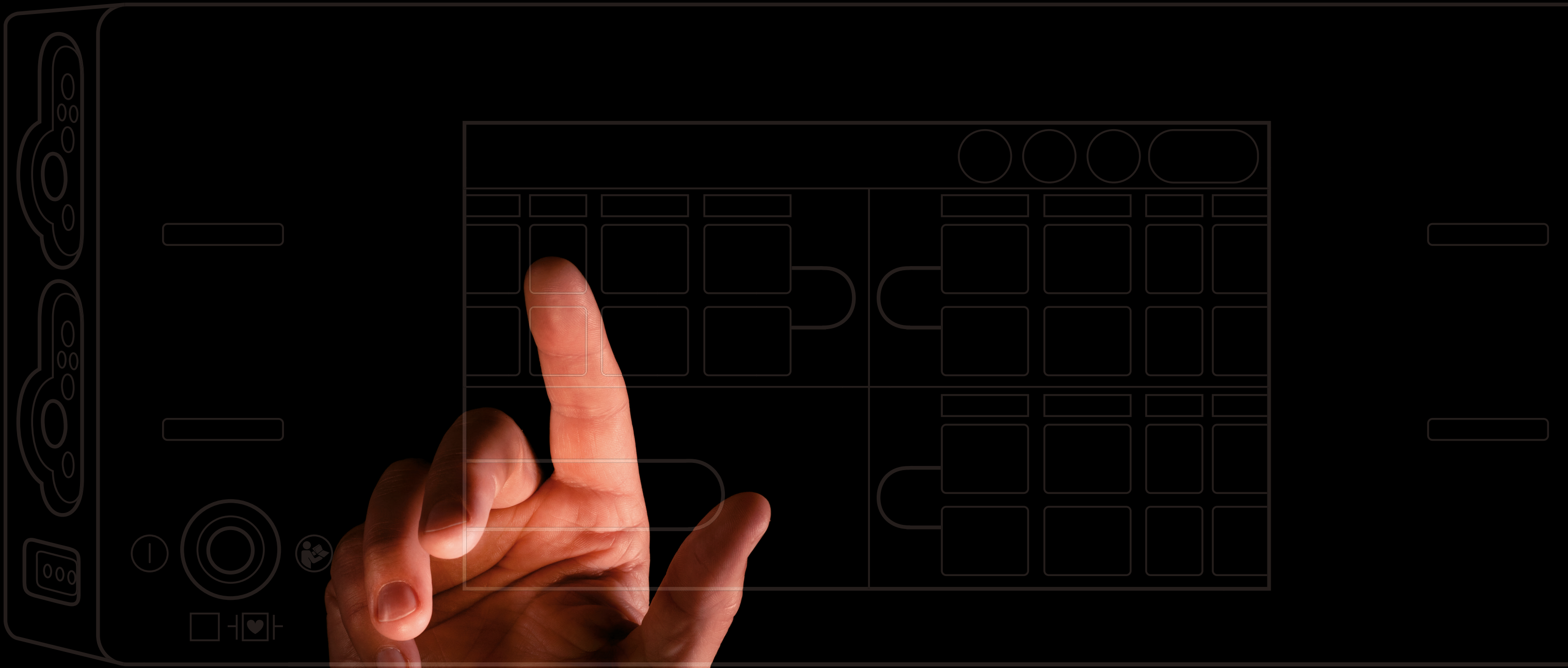


ARC 400  
ELECTROSURGICAL DEVICE  
PERFORMANCE – AT YOUR FINGERTIPS



**BOWA**  
**ARC**  
**400**

Heart and soul for the OR

The best is never good enough, for beyond it lie new discoveries and new solutions. It is our shared passion for a field in which we both excel, each in our own way. And it is this same passion that gives

each of us the ability to achieve outstanding accomplishments. Discover the new generation of electrosurgical units with the ARC 400. Discover real passion and maximum performance in your OR.

# Our passion. Your performance.

BOWA ARC 400 – the new generation of electrosurgical devices for monopolar and bipolar electrosurgery with sealing technology. It supports every surgical team thanks to its indication-related set-up options for specific surgical fields.

## Ideal applications for the ARC 400 in HF surgery:

- General, visceral, thoracic and paediatric surgery
- Gynaecology
- Gastroenterology
- Urology
- ENT
- Plastic and aesthetic surgery
- Orthopaedic and trauma surgery
- Oral and maxillofacial surgery
- Neurosurgery
- Cardiac surgery



ARC 400 has been awarded:



## Personalised configuration

Every field has specific requirements, every team works differently and every procedure is individual. This is why the ARC 400's interactive touchpad allows you to freely configure the user interface

according to your requirements. Select the pre-configured indication-orientated standard values or create your own individual preferred settings for your field and work style.

## Intuitive handling

Attain real performance by working intuitively. The interactive fingertip operation of the touchscreen and clear relationship between the controller and instrument give users a complete overview – in

every situation. The Plug'n Cut function recognises instruments and Plug'n Cut COMFORT also automatically preselects the right basic settings for whichever COMFORT instruments are connected.

## Efficient operation

Its ease of use and safe operation, its special LIGATION function and the ability to connect up to 5 instruments to the ARC 400 simultaneously save valuable OR time.

The ARC 400 communicates rapidly with other system components and software is updated simply via USB and several standard connections, ensuring that you can also work efficiently in the future.



## Intuitive handling Smart touchpad technology

### Touchpad technology allows enhanced intuition in the OR

With the ARC 400 you have fingertip control of all device functions via the interactive touchpad, using clearly designed symbols. Effects, favourites, and individualised settings can be easily and clearly selected. Menu depth is generally limited to only two levels, because you want to be working, not searching.

### A logically-constructed user interface

The large, high-definition display is divided into four quadrants that correspond to the four sockets on the sides: if you attach an instrument to the upper right bipolar socket, for example, the upper right quadrant of the display is activated and you immediately know where you need to make your adjustments.

### What You See Is What You Get

The icons behave according to the WYSIWYG (What You See Is What You Get) principle. These clear graphic symbols have a preview mode. If you adjust the desired effect to your individual requirements, the preview changes.

### Always work with the correct socket

The touch pad provides outstanding operating convenience with its underlying functions and the display's innovative user logic. When adjustments are made to the display, the corresponding instrument socket flashes, offering just the right support in the darkened environment in the OR.

### More than an interface: videos on the display

Simply use the touchpad display to brief and train new employees. Insert the USB drive with the introductory video, and a presenter begins demonstrating the functions of the ARC 400.

### Smart – and hygienic – display

The ARC 400 display is made of flat, wipe-resistant, shatter- and scratch-proof safety glass. The benefit of this is that the touchpad technology eliminates joints and grooves, thereby ensuring fast, hygienic cleaning in the OR.



Clarity: Every connected socket – in this photo the upper left and lower right – is clearly assigned to one quadrant of the display

Help: The introductory film can be played directly on the device

## 100% intuition

Operation of the ARC 400 is intuitive and fast with the touchpad. Each instrument socket is related to the display quadrant directly adjacent. Activated

parameters are framed in green and the socket for the corresponding instrument begins to flash, thereby providing security and ease of use.



## Dr. Dongle® – Your perfect settings in every OR

Would you like to work with your own personal device settings on every ARC 400, in every OR, in every clinic? It's easy with Dr. Dongle. You can have

your individual device settings available in your pocket at all times. Simply store your perfect settings and use them with every ARC 400.

Dr. Dongle® was awarded:



# The COMFORT SYSTEM – process reliability, quality assurance and monitoring

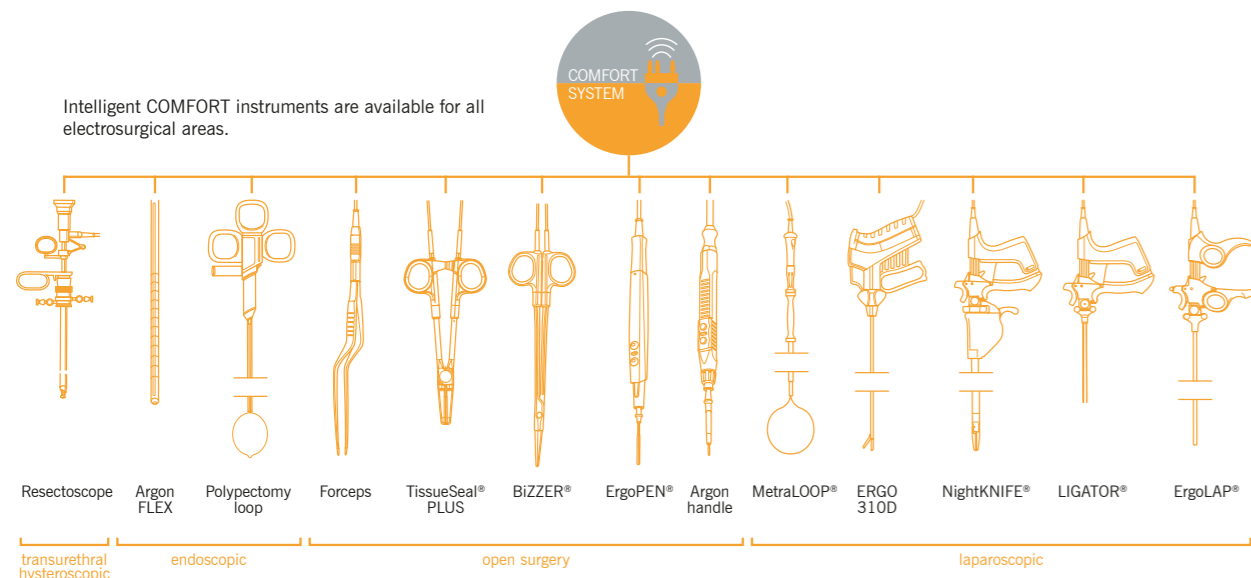
Our COMFORT SYSTEM relies on smart RFID technology – and thus on the new standard for electro-surgical accessories. The COMFORT SYSTEM is the first and optimum system world-wide for process optimisation in the OR – across all electro-surgical applications. Every ARC 400 is equipped with the COMFORT SYSTEM and thus with the standard of the future. Take advantage of intelligent COMFORT instruments and secure for yourself decisive benefits for your workflow in the OR.

**Lean processes – more time for what's important**  
The COMFORT SYSTEM documents the use in the instrument itself.

The ARC 400 or the COMFORT BOX reads the information and you can see at a glance how many procedures the instrument has already completed and how often it may still be used, thereby preventing the number of uses being exceeded. By displaying ordering information, the system simplifies the repeat ordering process.

### Maximum safety and simultaneous reduction of OR time

The Plug'n Cut functionality of the COMFORT SYSTEM enables the generator to automatically identify the instrument, checks it and selects the correct device settings. The Plug'n Cut COMFORT function thereby avoids incorrect settings.



# Personalised configuration – Your experience is the best standard

### Choose your favourites

Nothing can replace experience – especially in surgery. This is why, in addition to its many indication-related pre-settings, the ARC 400 offers the possibility of optimising standard values according to your own personal experience. You can store up unlimited personal favourite settings and call them up with a tap of your finger in the favourites menu.

If you want your favourites to travel with you everywhere, we recommend our Dr. Dongle storage drive, which can be easily inserted into any ARC 400 unit. Alternatively you can store up to 300 device settings.

### Directly to your specific application

To help the OR team operate without losing time, the ARC 400 offers a wide range of electro-surgical standard or indication-orientated power formats.

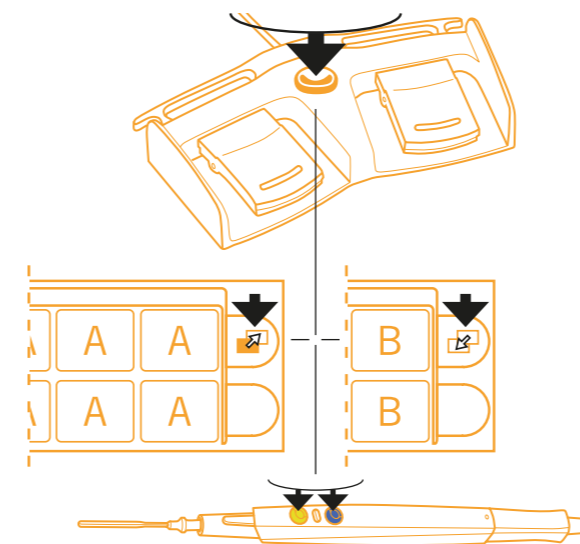
Select a power profile with a tap of your finger, and refine it if necessary using the effect settings.

### Freedom of choice

Effects and foot switches can be freely assigned; no symbols are shown for unused sockets.

### ZAP mode – Change programs using hand or foot

Increase performance in the operating theatre using ZAP mode! Simple operation of the foot switch or using the buttons on the electrode handle lets the operating surgeon choose between two preset programs during the operation, without requiring non-sterile personnel.



### The best connection to the KARL STORZ OR1™ operating system

The ARC 400 can be incorporated perfectly in the integrated KARL STORZ OR1™ operating theatre.

Thus the user can change and use the required programs and settings from the sterile area.

# Work efficiently – on a high-tech basis

### Passion is nothing – without the right technology

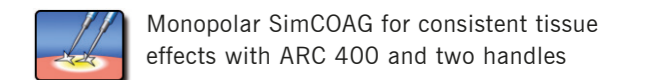
Excellent results depend on the right technology. In addition to the innovative socket design that allows up to two monopolar and three bipolar instruments to be attached simultaneously and is compatible with all popular standard connections, there are numerous hardware and software components that can also directly affect performance in the OR.

- ARC control arc regulation for reproducible monopolar and bipolar cutting results
- Up to 9 effects per mode
- EASY neutral electrode monitoring with contact monitor, baby mode with automatic power limitation
- Current leakage monitoring
- Short circuit detection
- ISSys permanent system self-testing
- CCS permanent initial cutting support
- Configurable socket design
- Information area for device messages
- Operating instructions available directly on the device
- CUT modes: e.g. Standard, Dry, Cardiac, GastroCut, Loop and Knife, MetraLOOP, Laparoscopy
- Micro-regulations and power forms for Plastic and Neurosurgery down to 0.1 W
- COAG Modes: Moderate, Forced, Spray, Cardiac
- Autostart function

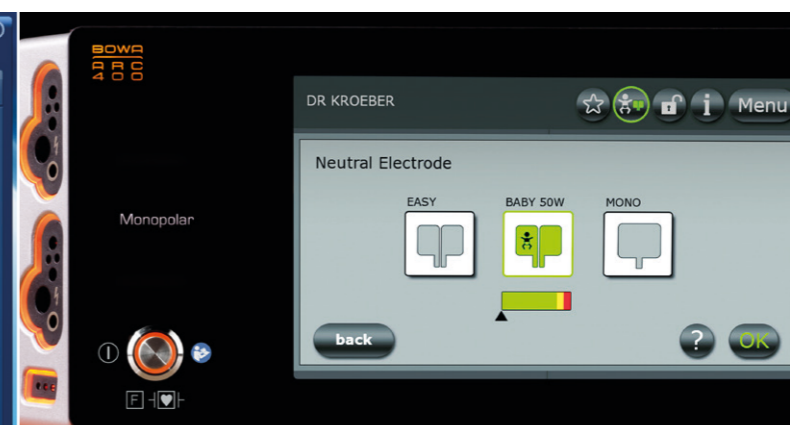
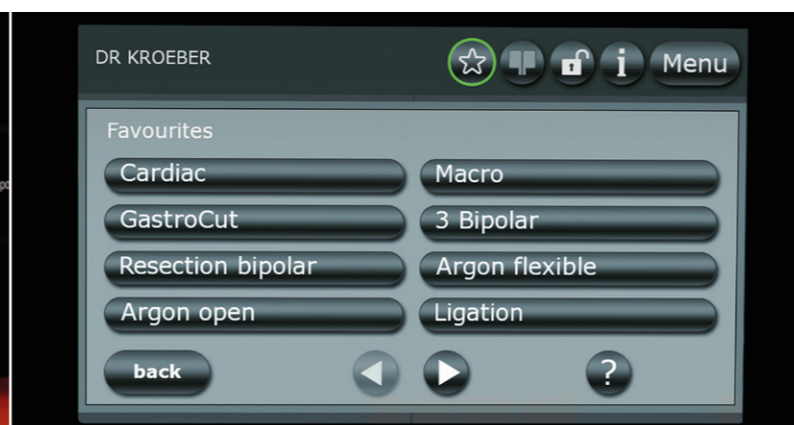
### Monopolar simultaneous coagulation

permits the simultaneous COAG activation of two monopolar handles. This mode is particularly ideal for coagulation and preparation, with the selected power setting being available for both handles.

Applications include mastectomies in gynaecology, bypasses in cardiac surgery or multiple traumas in surgery.



Monopolar SimCOAG for consistent tissue effects with ARC 400 and two handles



Plug'n Cut COMFORT: The COMFORT SYSTEM automatically recognises the COMFORT instrument, indicates how many times it may still be used and selects the correct parameters for the procedure

Plug'n Cut: The ARC 400 automatically detects that a standard instrument is connected

With a tap of your finger: quickly create and call up favourites

Professionals working together: Set the power, type of current and the activation type through the KARL STORZ OR1™

Everything in the green? Neutral electrode monitoring, shown here in the setting for babies (max. 50 watts), provides continuous status information

Efficient: The lower right bipolar connection socket can be extended to connect two standard plugs – this makes three bipolar connections available



## A join that conserves resources – LIGATION\* with the ARC 400

Rely on an established technique for permanent vessel and tissue sealing: LIGATION. Alongside the advantage of preventing the introduction of foreign bodies into the patient, this method also saves OR

time, suture materials and clips. Autoclavable BOWA LIGATION instruments are the first choice for use with the ARC 400.


\*Option

## Costs and benefits – close the gap

### ARC 400: the vessel sealing specialist

With the ARC 400 and BOWA LIGATION instruments, such as TissueSeal PLUS for open surgery applications and NightKNIFE also for laparoscopic applications, large-bore veins, arteries and tissue bundles with diameters of up to 7 mm can be sealed permanently and securely by bonding elastin and collagen to each other. The LIGATION sealing technique guarantees procedures free from residues and foreign bodies with sealing reliability of up to 700 mmHg.

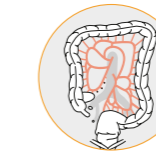
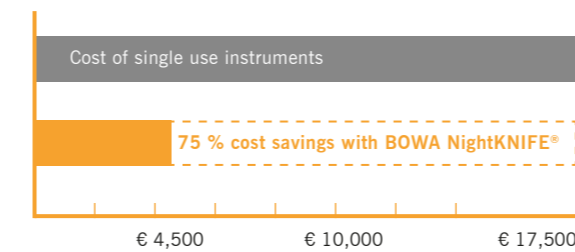
Optimum procedural results, thanks to outstanding ergonomics and tactility, are a further bonus for surgical artists. The massive potential for time-saving in the OR, as well as savings in terms of suturing materials and clips and instrument re-usability, are all key features to convince even the strictest cost controller.

 LIGATION is a fully automatic mode for the sealing of tissue with BOWA LIGATION instruments

### Two hundred times instead of once

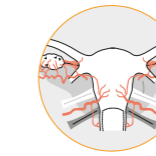
BOWA LIGATION instruments can be reused up to two hundred times. As shown in the graph, there are massive cost benefits over single use instruments, even after only 50 procedures.

### Cost benefits of BOWA NightKNIFE® compared to single use instruments after 50 procedures



### Surgical applications:

- Colectomy
- Gastrectomy
- Liver resection
- Thyroidectomy
- Lobectomy



### Gynaecological applications:

- Hysterectomy – open and vaginal laparoscopic-assisted vaginal hysterectomy
- TLH: Total laparoscopic hysterectomy
- LASH: Laparoscopic supracervical hysterectomy
- Mastectomy

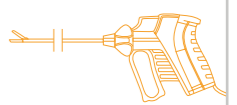


### Urological applications:

- Prostatectomy
- Cystectomy
- Nephrectomy

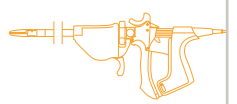
### ERGO 310D

- 340mm
- Ø 5 mm
- Disposable, sterile
- Packing unit of 5 pieces
- Integrated blade
- Plug'n Cut COMFORT



### NightKNIFE®

- 360 and 200mm
- Ø 10 mm
- Autoclavable
- Replaceable knife
- Plug'n Cut COMFORT



### LIGATOR®

- 360 and 110mm
- Ø 5 mm
- Autoclavable
- Maryland and straight model
- Plug'n Cut COMFORT



### TissueSeal® PLUS

- 160, 190, 230 and 280 mm
- Autoclavable
- Plug'n Cut COMFORT



### Literature:

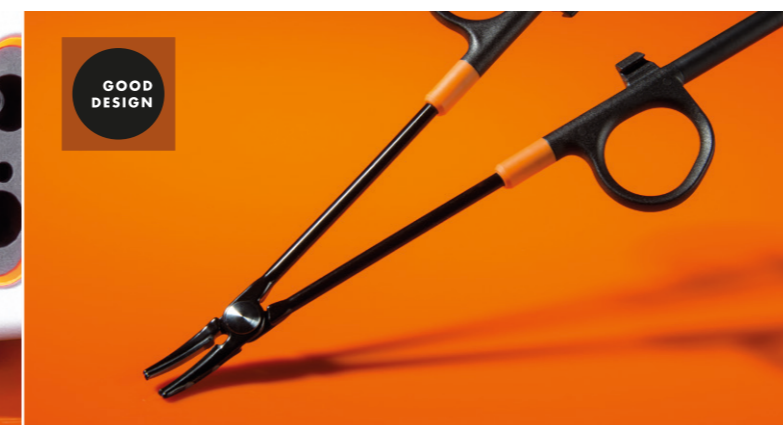
Schuld J, Laschke MW, Rupertus K, Richter S, Menger MD, Schilling MK: Evaluationsstudie: BOWA NightKNIFE® vs. Ligasure Atlas™. BOWA, Gomaringen 2008

Schuld J, Richter S, Laschke MW, Sperling J, Menger MD, Schilling MK, Surgical Association for OR and Instrument Technology of the German Association for General and Visceral Surgery: Evaluationsstudie: BOWA TissueSeal® vs. Valleylab Ligasure™. BOWA, Gomaringen 2008

Schuld MD, Sperling MD, Kollmar MD, Menger MD, Schilling MD, Richter MD, Laschke MD: The NightKNIFE: Evaluation of Efficiency and Quality of Bipolar Vessel Sealing JOURNAL OF LAPAROENDOSCOPIC & ADVANCED SURGICAL TECHNIQUES 2011



New: The LIGATION choice opens up new potential procedures and all settings are entered automatically



TissueSeal® PLUS 160 mm: re-usable sealing instrument with minimal thermal spread due to its sandwich structure



TissueSeal® PLUS – 190, 230 and 280 mm



Efficient: no instrument change thanks to NightKNIFE® Seal'n Cut



## ARC PLUS – the ground-breaking addition with argon support

### Contact-free. Reliable. Fast.

An electrical bridge is created between the instrument and the tissue in argon-assisted electro-surgery, with the aid of the ionisation of argon gas. The argon beam produced with ARC PLUS can be administered particularly well and can be used for contact-free haemostasis. Take advantage of enhanced clinical effectiveness for fast contact-free coagulation with maximum perforation safety and simple administration.

### Technical features

- Automatic detection of argon instruments and parameter preselection by Plug'n Cut
- Documentation of uses in the BOWA COMFORT instrument
- Automatic control by the ARC 400
- Electronic level indicator and pre-warning
- Flow rates of from 0.1 to 10 l/min, max 2 bar outlet pressure
- Large coverage with 2 argon bottles
- Foot and manual operation
- Simple, space-saving docking of the ARC electro-surgical unit
- 2.0 to 4.5 bar input pressure
- Flow testing and pressure monitoring
- Extensive range of accessories

### Argon COAG and CUT

for argon-assisted cutting and coagulation with open and laparoscopic applications in surgery and gynaecology:

- Abdominal surgery
- Laparoscopy
- Liver surgery
- Mamma surgery
- Visceral surgery



### Advantages of argon-assisted electro-surgery in surgery and gynaecology

- Contact-free coagulation without adherence or sticking in parenchymal tissues, such as the liver
- Fast coagulation of large surfaces
- Carbonisation-free
- Flexible coagulation zone
- Clear vision due to smoke-free coagulation
- Ultra-simple to operate with large ignition gap of >10 mm and easy ignition

### Applications (excerpts)

- Argon rigid**
- General surgery
  - Liver surgery
  - Abdominal plastic
  - Transplant surgery
  - ENT
  - Nephrectomy



### Argon FLEX

for internal medical applications with flexible probes



### Argon PULSED

with fine regulation across several effect stages



### Advantages of argon-assisted electro-surgery in internal medicine

- Safe dosage with power and pulse sequence minimises the risk of perforation
- Particularly fine coagulation is possible from 1 W in gastroenterology
- Clear vision due to smoke-free coagulation
- Low-odour due to reduced smoke gases
- Carbonisation-free
- Flexible coagulation zone
- Ultra-simple to operate with large ignition gap of >10 mm
- Minimal argon flow rates of 0.4 l/min
- Limited penetration depth

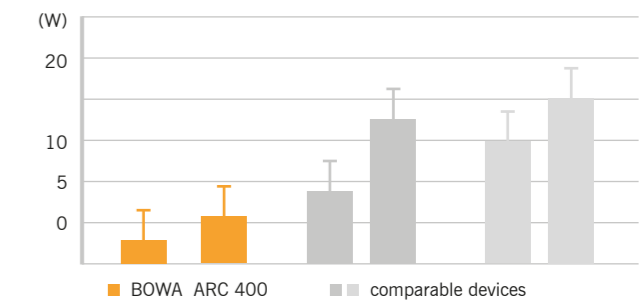
### Applications (excerpts)

- Argon FLEX / Argon FLEX 90°**
- **Gastroenterology**
    - Superficial and smaller vascular bleeds
    - Tumour reductions
    - Tumour bleeds
    - Devitalisation and coagulation, also in the right colon
    - Stent ingrowth/overgrowth
    - Radiation proctitis
  - **Interventional bronchology**
    - Superficial and smaller vascular bleeds
    - Tumour reduction
    - Tumour bleeding
    - Recanalisation
    - Granulation
    - Fistula conditioning
    - Stent ingrowth/overgrowth
  - **Rectoscopy**



### Safety advantages and perforation safety with low power setting

Energy setting (W) for effective ignition or therapeutic effect



**Literature:**  
Endo today 2007;  
Prospektive, randomisierte Evaluation der Niedrig-Energie-Argonplasma-koagulation bei der endoskopischen Blutstillung am Gastrointestinaltrakt (GIT)  
M. Raithe, J. Hänsler, A. Stegmaier, F. Boxberger, J. Maiss, W. Müller, E.G. Hahn  
Med. Clinic I University of Erlangen-Nuremberg, Gastroenterology, Endoscopy, Funct. of Tissue Diagnostics; Conference Paper

## ARC 400 and ARC PLUS – the premium high-performance combination

Argon-assisted electro-surgery offers a major benefit: contact-free work on large surfaces with diffuse bleeding and fine dosage on sensitive structures. ARC 400 combined with ARC PLUS is the premium workstation for surgery and

endoscopy, permitting ultra-simple application thanks to reliable ignition and, at the same time, offering excellent perforation safety with low power settings.



The clearly laid out user interface allows the straightforward and fast adjustment of the most diverse argon parameters



A number of probes are available for the various argon-assisted applications

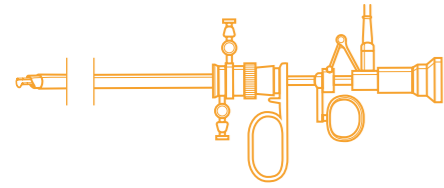


Activation of argon modes is also visualised on the ARC PLUS



The green display signals pre-flushing of the connected instruments with argon

## Special applications – just four of many



### Bipolar resection\* for urology

Bipolar resection with the ARC 400 stands out on account of its extremely reliable initial cutting and high resection speed.

Reduced irritation of the obturator nerve and bipolar technology hugely increase operating safety in this field. Using saline solution as a medium prevents the danger of TUR syndrome.

In addition, monopolar transurethral resection of the prostate (TUR-P), surgical treatment of bladder tumours (TUR-BT) and vaporisation of the prostate tissue (TUR-VAP) can also be carried out with the ARC 400.



Resection CUT



Resection COAG

\*Option



### Quadruple specialities:

#### functions for cardiac surgery

Four highly specialised functions for effective work are available for use in the field of cardiac surgery:



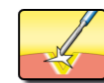
Monopolar SimCOAG for simultaneous coagulation and preparation with two monopolar handles



Cardiac thorax for forced coagulation when opening the thorax



Cardiac mammaia for forced coagulation in the area of the mammaies



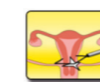
Dry cutting for strong haemostasis



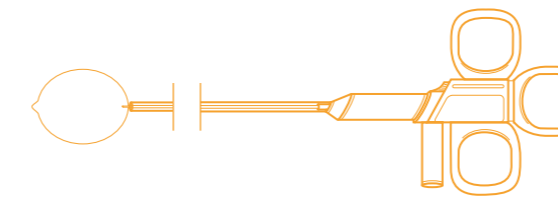
### For gynaecology: faster removal

In addition to the modes for vessel sealing and monopolar and bipolar resection, a special function is available in gynaecology for laparoscopic supracervical removal of the uterus (LSH).

This mode – combined with the BOWA MetraLOOP instrument – offers more rapid cutting of the loop for uterus removal. Work can be accomplished safely, rapidly and precisely, even with large loops.



MetraLOOP

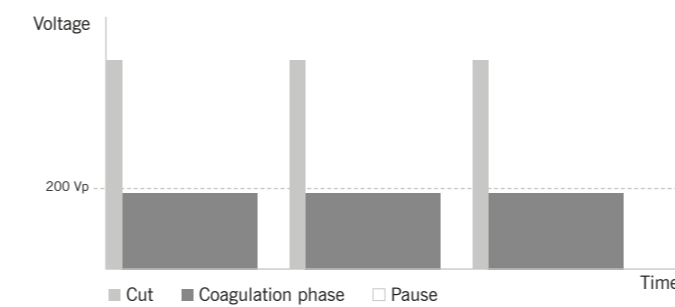


### GastroCut for gastroenterology

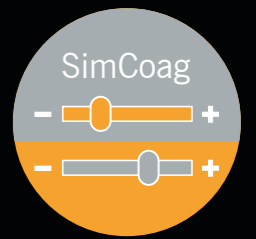
With the ARC 400's GastroCut modes, gastroenterologists can achieve the best results with polypectomy and papillotomy and endoscopic resections with loops or knife electrodes. Gastroenterologists can adjust the haemostasis level of cutting and coagulation power to three speeds "slow", "medium" and "fast" as required to meet their needs.

The cut is optimised, the surgeon controls the cut's coagulation effect through the effect in nine steps. This allows the surgeon to work cautiously to avoid complications, as well as proceeding rapidly when the situation allows it.

#### GastroCut power type



## A WORLD'S FIRST: Bipolar SimCoag

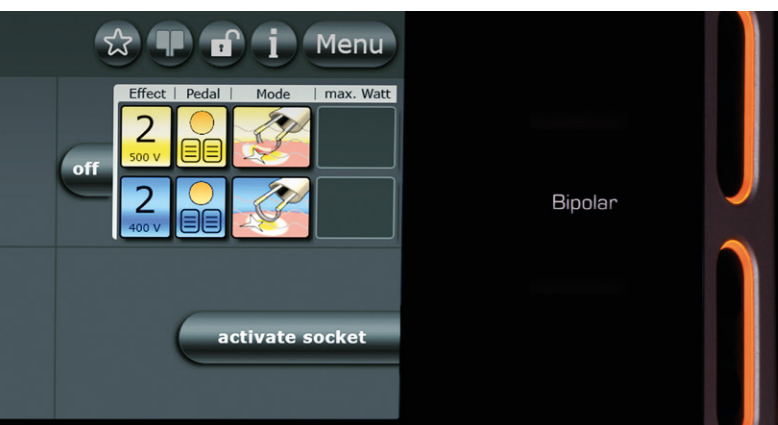


## The new bipolar SimCoag\* – the simultaneous application of two bipolar instruments opens up new perspectives

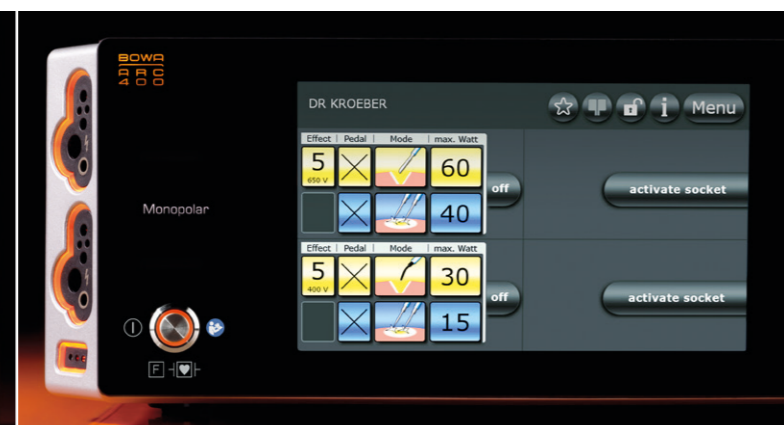
The new and patent-protected SimCoag function of ARC 400 ensures twice the performance during operations. As two surgeons can operate on the same patient at the same time, but separately from each other. Each bipolar instrument remains exactly in the selected and desired performance

range at all times. Because with SimCoag 1+1 really does equal 2, as each power output is completely separate. You can now work safely and reliably with constant tissue effects within a team and open up brand new fields for your HF surgery skills.

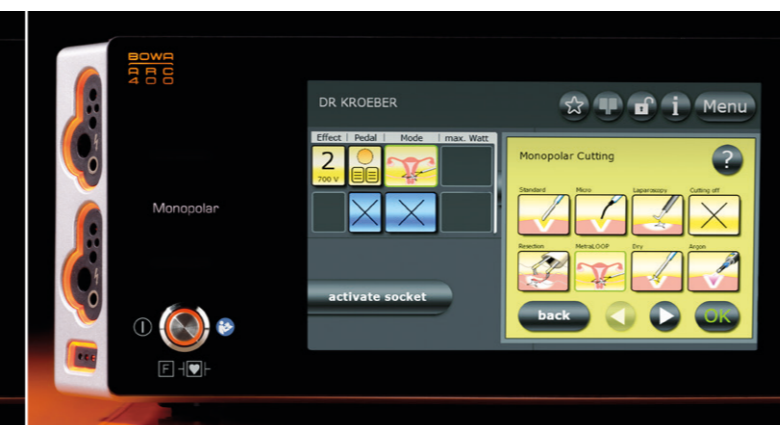
\*Option



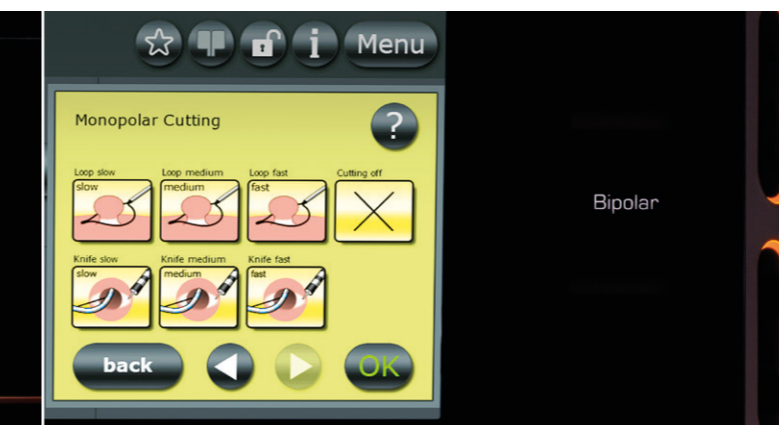
Innovation: Bipolar resection in urology with ultra-high resection speed



Practical with bypasses: simultaneous activation

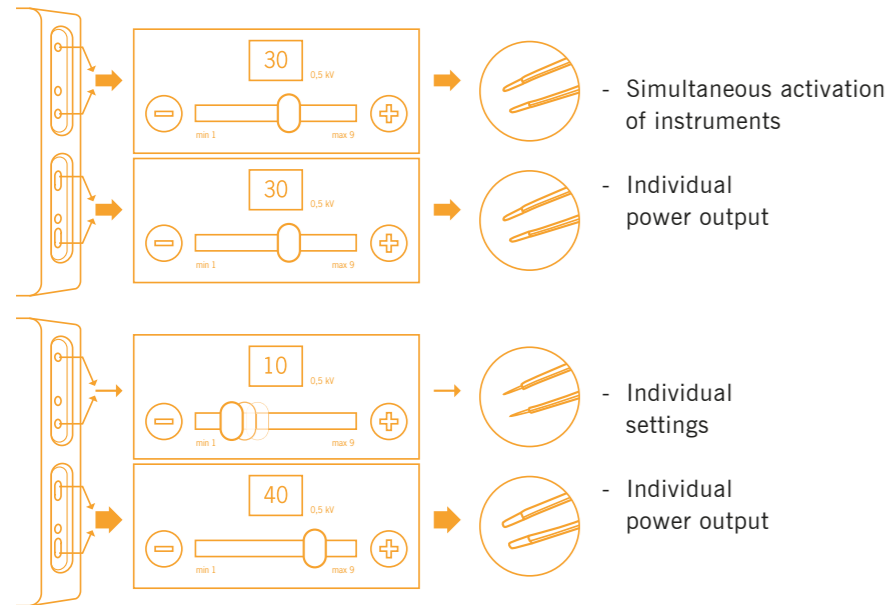


Special effect for gynaecology: extremely fast and safe removal of the uterus using the MetraLOOP function



Highly flexible: GastroCut permits 6 cutting types with loops or knife electrodes for up to 5 effects

## Makes you a real team player in the field of HF surgery



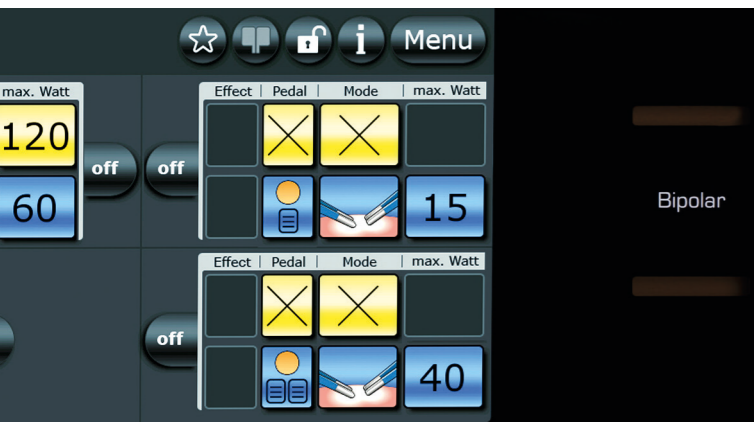
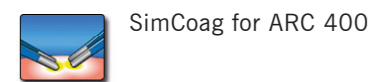
### Simultaneous operating

In contrast to common generators, this brand new function now allows you to activate two bipolar instruments simultaneously:

- Uninterruptible
- Individual parameters
- Precise and safe

### Ideal application areas for the new SimCoag function are:

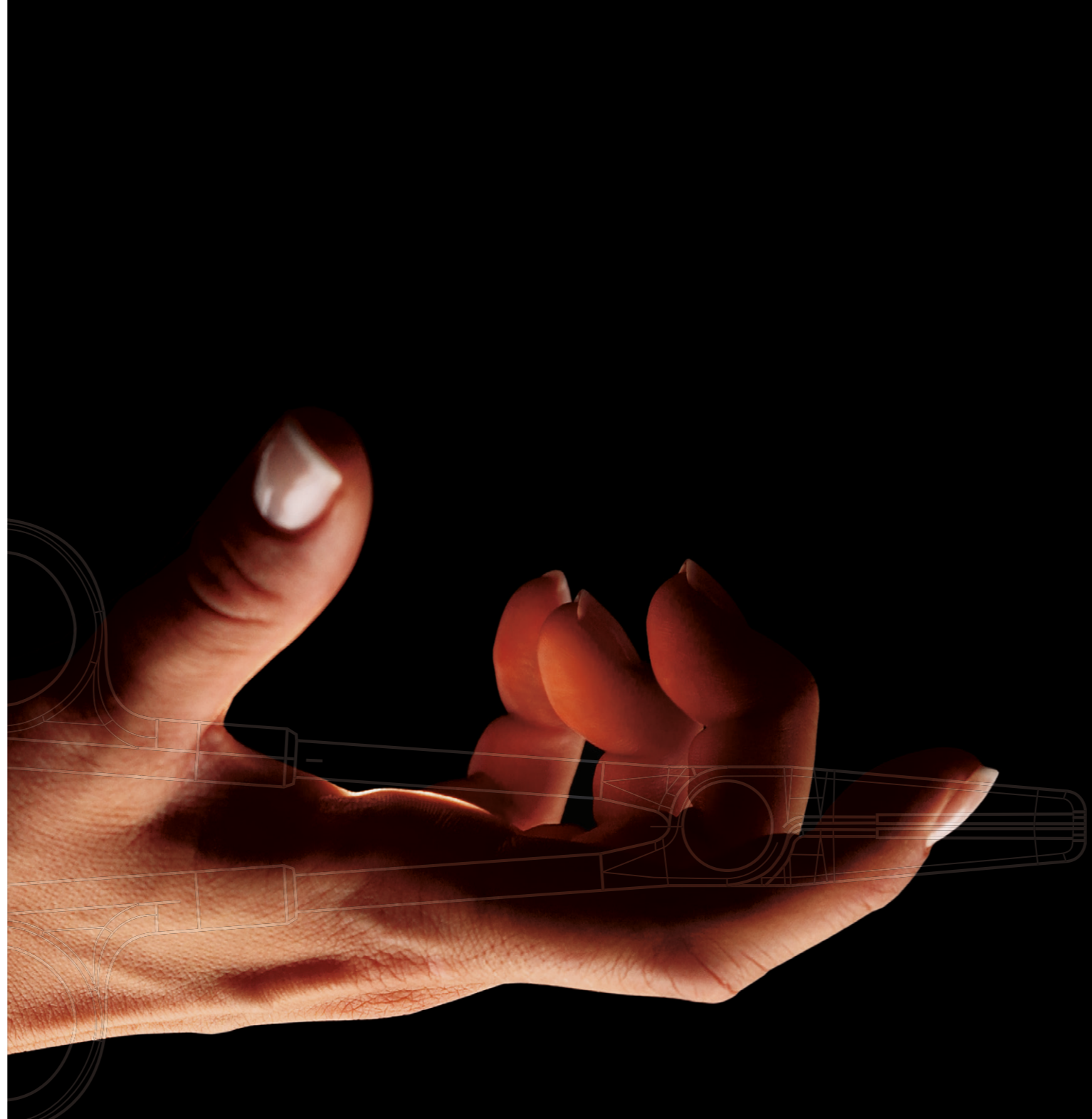
- Orthopedics and Traumatology
- Neuro Surgery
- General Surgery
- Plastic and Aesthetic Surgery



Precise: Individual power and effect settings



Time saving: Uninterruptible performance for two surgeons



## Accessories – more than the sum of their parts

The ARC 400 is the new generation of electro-surgical units, offering maximum performance for all standard instrument families. When used in

conjunction with BOWA accessories, the ARC 400 becomes a closed system with outstanding properties – medical as well as economical.

## ARC CART – greater mobility

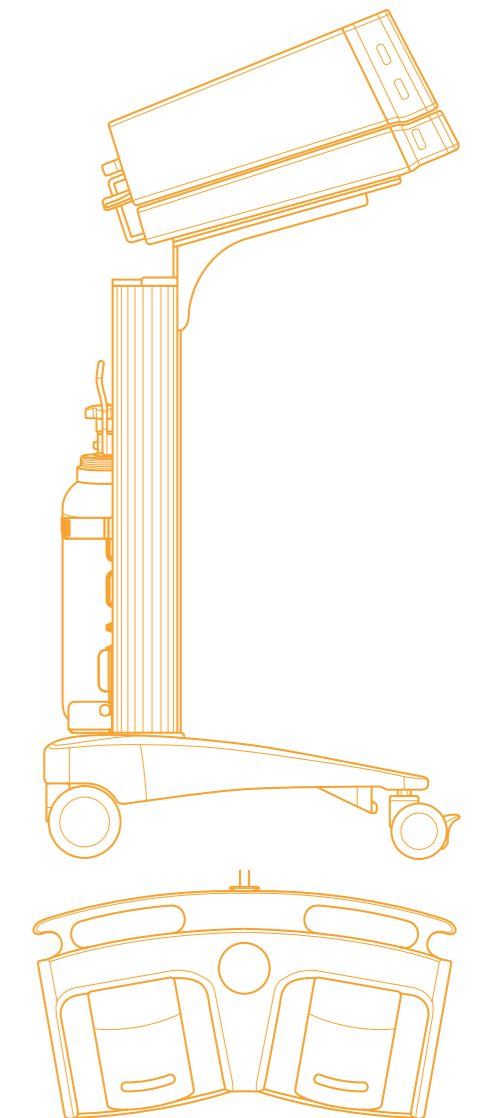
### One unit – many options

The ARC 400, ARC PLUS and the ARC CART form a high-performance unit that can be quickly manoeuvred to wherever it is needed in the OR.

Everything is in the right place and can be individually configured in the ARC CART. The basic ARC CART offers four steerable rollers with brakes, cable conduit, power cable detachment prevention device, handle, foot switch holder and a cable holder. The storage shelf is optimised for the ARC generator.

Also available as accessories are shelves, for SHE SHA smoke evacuation systems, drawers, gas bottle holders, equipotential bonding connectors or baskets. The result is much greater mobility.

The foot switches are waterproof (IPX8) and explosion-protected. Pedals are ergonomically arranged to allow for fatigue-free operation over long periods of time.



Optimum: Vision and operation



Flexible: Freely assignable foot pedals



Space-saving: Streamlined



# Made by BOWA accessories – simply safe

"Simply safe" is more than just a promise. For us it is the commitment to always think beyond the current standards. This approach leads us to solutions that open up new perspectives and support you as best as possible in your work.

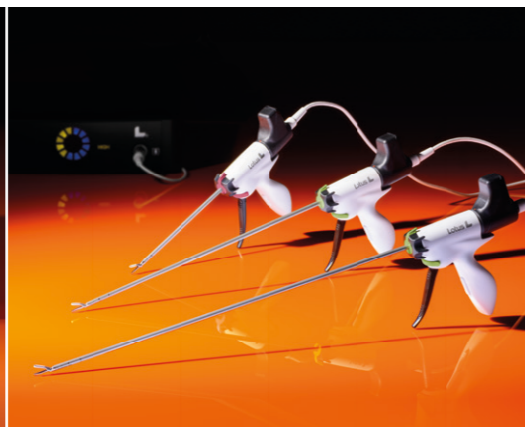
As a specialist HF surgical company, we offer you complete systems as well as complementary individual products.

For a comprehensive overview of our product range, visit us at [www.bowa-medical.com](http://www.bowa-medical.com).

ARC system and accessories



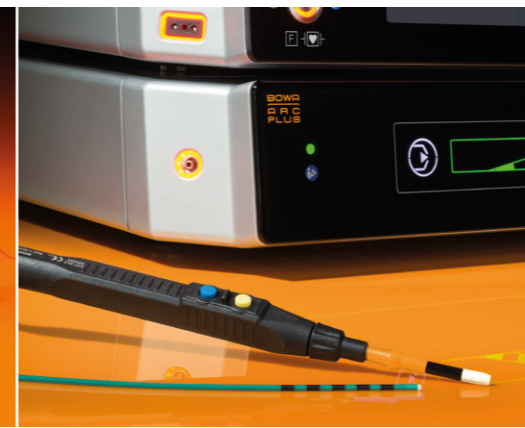
LOTUS



LIGATION – vessel sealing



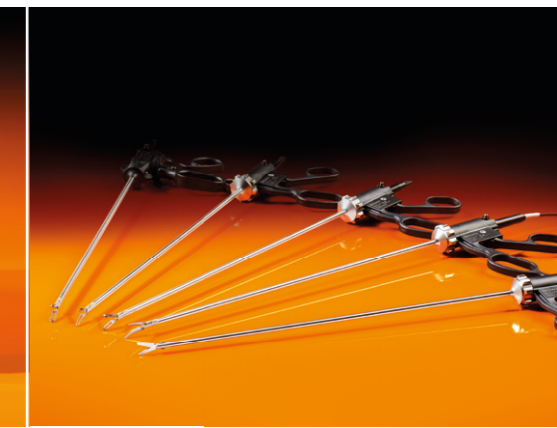
Argon-assisted electrosurgery



SHE SHA smoke evacuation



Instruments for laparoscopy



BiZZER® – bipolar scissors



Forceps



Handles and electrodes



Cables and adapters



Neutral electrodes



Sets



## Made in Germany – technical information

BOWA ARC 400 is designed for use in almost all areas of electrosurgery. ARC generators can be placed on ceiling supply units or on the ARC CART for unrestricted mobility. The device has two monopolar and three bipolar outputs. Hospital

technicians can perform simple maintenance work, such as reading off unit information or running software updates that are supplied on a USB stick. Should you wish to connect third-party accessories, this is also possible using a range of different sockets.

Technical data at a glance	ARC 400	ARC PLUS
Mains voltage	100 – 127 V / 220 – 240 V	100 – 240 V
Mains frequency	50 / 60 Hz	50 / 60 Hz
Mains power	Max. 5 A @ 230 V Max. 8 A @ 127 V Max. 10 A @ 100 V	Max. 0.6 A
Mains fuse	2 x T 5 AH 250 V / 2 x T 10 AH 250 V	2 x T 1 A
Power consumption min.	3 W / 40 VA	1 W / 20 VA
Power consumption max.	700 W / 1150 VA	32 W / 65 VA
Width x Height x Depth	430 x 180 x 475 mm	433 x 97 x 489 mm
Weight	12.5 kg	7.7 kg
Classification under EC Directive 93/42/EEC	II b	II a
Protection class according to EN 60601-1	I	I
Type according to EN 60601-1	CF	–
CE marking	CE0123	CE0123
Item no.	900-400	900-001
Bipolar resection option	900-395	–
LIGATION option	900-396	–
Bipolar SimCOAG option	900-399	–
Max. MONOPOLAR power	400 W (at 200 Ω)	–
Max. BIPOLAR power	400 W (at 75 Ω)	–
Output frequency	350 kHz / 1 MHz	–

### An innovative socket system for all connections and up to five instruments:

**monopolar:** 2 x 3-pin & Bovie  
or 2 x 3-pin & Erbe

**bipolar:** 2 X 2-pin or 1 x 2-pin & 2 x Erbe



## Update service – simply by USB

Take advantage of the latest developments of the future. The ARC 400 is ready and waiting. Our update service lets you update your ARC 400's software simply using a pen drive. The many

standard sockets guarantee the future-proofing of your unit and its automated integration into your system landscape – even in the future.



Clear design: compact design, ideal to meet the exacting hygiene conditions in your OR



Communicative interfaces: with USB and network socket – designed for today and tomorrow

**BOWA**  
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