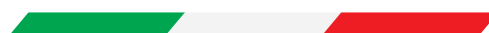


# HF SURGICAL UNITS

**alsa<sup>®</sup>**

**bologna**



MADE IN ITALY



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Manufacturer of medical devices since 1932



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# ALSATOM SU-MPC



ALSATOM SU 140/D-MPC



Electrosurgical unit for monopolar and bipolar surgery with direct, pulsed and timed currents

**ALSATOM SU-MPC** are intuitive high-performing electrocautery units. They have both traditional currents and currents with pulsed delivery, which minimises thermal effects in tissues and reduces the harmful smokes generated by the use of electrocautery units. By selecting them, operators can make fine cuts similar to those obtained with radiofrequency devices, and delicate coagulations that would otherwise be difficult to achieve. They are also equipped with a current for Micro-Coagulation that allows the delivery of single pulses varying from 0.1 sec to 1 sec.

They are available in 5 models:

- **ALSATOM SU 50-MPC, ALSATOM SU 100-MPC, ALSATOM SU 140-MPC, ALSATOM SU 140/D-MPC** for Monopolar, Bipolar, Monopolar use under liquid with miniresectors and 5Fr needles
- **ALSATOM SU 140/BD-MPC** for Bipolar use only in cutting and coagulation, as well as cutting, coagulation, saline vaporisation with miniresectors, 5Fr needles and arthroscopy instruments



# CURRENTS

## ALSATOM SU 50-MPC, SU 100-MPC, SU 140-MPC, SU 140/D-MPC

### MONOPOLAR CURRENTS

<b>PURE</b>	Pure Cut, suitable also for use in under liquid surgery in case of minor hysteroscopy procedures
<b>P PULSED</b>	Pure Pulsed Cut, suitable for very fine cuts, with minimum thermal effect (i.e. for conization of cervix or blepharoplasty) and to control surgical smoke
<b>BLEND</b>	Coagulating Cut
<b>B PULSED 1</b>	Coagulating Pulsed Cut. Similar to BLEND, but suitable to reduce the thermal effect and surgical smoke
<b>B PULSED 2</b>	Slow Coagulating Pulsed Cut. Similar to BLEND, but with slow pulses (i.e. for polypectomies)
<b>MICRO</b>	Delicate Coagulation, with low sparking effect
<b>M PULSED</b>	Delicate Micro-Coagulation, with single pulses, which are adjustable from 0.1 sec to 1 sec. It is indicated for all micro-coagulations
<b>FULG</b>	Macro-Coagulation "Fulguration" with strong sparks. It is indicated to coagulate all tissues, even in under liquid surgery, and to perform high-coagulating cuts
<b>F PULSED</b>	Macro-Coagulation "Fulguration", with fast pulses. Similar to FULG, but more delicate. It is indicated to reduce surgical smoke

### BIPOLAR CURRENTS

<b>BIPOLAR</b>	Bipolar Coagulation, to be used with forceps, scissors, double-needle electrodes and laparoscopic instruments
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# CURRENTS

## ALSATOM SU 140/BD-MPC

<b>PURE</b>	Cut for use in Open Surgery or Laparoscopy
<b>P PULSED</b>	Pulsed Fast Cut, suitable to achieve detailed results, minimum thermal effect and reduction of surgical smoke
<b>BLEND</b>	Coagulating Cut, with greater thermal effect
<b>MACRO</b>	Coagulation, to be used with forceps, scissors, double-needle electrodes and laparoscopic instruments
<b>M PULSED</b>	Pulsed Coagulation. Similar to MACRO, but more delicate and useful to reduce surgical smoke
<b>MICRO</b>	Micro-Coagulation, to be used with forceps, scissors, double-needle electrodes and laparoscopic instruments



# TECHNICAL FEATURES

HF generator compliant with	IEC 60601-1 and IEC 60601-2-2
CE Classification	IIb
IEC 60601-1 classification and type	I CF
IEC 60601-2-2 output circuit	Floating - protected for the use of a defibrillator (HF dispersion <150 mA)
Monopolar and bipolar working frequency	450 kHz
Operation check	Complete self-diagnosis using microprocessor, and possible operation lock with alarm by means of specific <b>Error Codes</b> in the event of problems relating to: - general operation or activation errors (General Error Control) - output power (Output Error Control)
Power self-adjustment	By microprocessor with: <b>ADC System</b> - Constant power: self-adjusts power, controlling voltage and current, based on real-time feedback (7000 checks/sec) between device and patient's tissue
Outputs	1 Monopolar and 1 Bipolar (for ALSATOM SU 140/BD-MPC 1 Bipolar only)
Foot-operated controls	Single or double pneumatic control (for ALSATOM SU 140/D-MPC and ALSATOM SU 140/BD-MPC only)
Micro/macro power adjustment	0-30 W = 1 W, over 30 W = 2 W
Panel	Smooth, with digital displays and keys
Neutral electrode safety circuit NPCC System	Control of the connection of the neutral electrode - and of the quality of the contact using double section/split electrodes - with alarm signal and possible lock of delivered power
Power supply	230 or 115 V - 50/60 Hz
Power consumption at 230 V	370 VA
Cooling	Convection, without fan
Size (LxDxH) and weight	25x24x12 cm – 4.5 Kg

# OUTPUT POWERS

Monopolar currents	ALSATOM SU 50-MPC	ALSATOM SU 100-MPC	ALSATOM SU 140-MPC	ALSATOM SU 140/D-MPC
PURE	80 W - 500 Ω 980 Vpp - CF 1.5 M: no - D: 100%	100 W - 500 Ω 1000 Vpp - CF 1.5 M: no - D: 100%	140 W - 500 Ω 1000 Vpp - CF 1.5 M: no - D: 100%	160 W - 500 Ω 990 Vpp - CF 1.5 M: no - D: 100%
P PULSED	40 W - 500 Ω 1350 Vpp - CF 3 M: 50% - D: 100%	50 W - 500 Ω 1360 Vpp - CF 3 M: 50% - D: 100%	70 W - 500 Ω 1380 Vpp - CF 3 M: 50% - D: 100%	80 W - 500 Ω 1380 Vpp - CF 3 M: 50% - D: 100%
BLEND	80 W - 500 Ω 1400 Vpp - CF 2.3 M: no - D: 80%	100 W - 500 Ω 1400 Vpp - CF 2.3 M: no - D: 80%	120 W - 500 Ω 1400 Vpp - CF 2.3 M: no - D: 80%	140 W - 500 Ω 1410 Vpp - CF 2.3 M: no - D: 80%
B PULSED 1	40 W - 500 Ω 1550 Vpp - CF 3.5 M: 50% - D: 80%	50 W - 500 Ω 1550 Vpp - CF 3.5 M: 50% - D: 80%	60 W - 500 Ω 1550 Vpp - CF 3.5 M: 50% - D: 80%	70 W - 500 Ω 1600 Vpp - CF 3.5 M: 50% - D: 80%
B PULSED 2	35 W - 500 Ω 1580 Vpp - CF 3.6 M: 50% - D: 80%	38 W - 500 Ω 1580 Vpp - CF 3.6 M: 50% - D: 80%	38 W - 500 Ω 1580 Vpp - CF 3.6 M: 50% - D: 80%	38 W - 500 Ω 1630 Vpp - CF 3.6 M: 50% - D: 80%
MICRO	80 W - 500 Ω 1530 Vpp - CF 3.4 M: no - D: 50%	80 W - 500 Ω 1530 Vpp - CF 3.4 M: no - D: 50%	80 W - 500 Ω 1530 Vpp - CF 3.4 M: no - D: 50%	100 W - 500 Ω 1530 Vpp - CF 3.4 M: no - D: 50%
M PULSED	80 W - 500 Ω 1530 Vpp - CF 3.4 M: no - D: 50%	80 W - 500 Ω 1530 Vpp - CF 3.4 M: no - D: 50%	80 W - 500 Ω 1530 Vpp - CF 3.4 M: no - D: 50%	100 W - 500 Ω 1530 Vpp - CF 3.4 M: no - D: 50%
FULG	80 W - 750 Ω 2250 Vpp - CF 3.5 M: no - D: 50%	100 W - 750 Ω 2300 Vpp - CF 3.5 M: no - D: 50%	120 W - 750 Ω 2300 Vpp - CF 3.5 M: no - D: 50%	120 W - 750 Ω 2280 Vpp - CF 3.5 M: no - D: 50%
F PULSED	40 W - 750 Ω 2300 Vpp - CF 5 M: 50% - D: 50%	48 W - 750 Ω 2300 Vpp - CF 5 M: 50% - D: 50%	60 W - 750 Ω 2300 Vpp - CF 5 M: 50% - D: 50%	60 W - 750 Ω 2270 Vpp - CF 5 M: 50% - D: 50%
Bipolar currents	<b>SU 50-MPC</b>	<b>SU 100-MPC</b>	<b>SU 140-MPC</b>	<b>SU 140/D-MPC</b>
BIPOLAR	80 W - 100 Ω 500 Vpp - CF 2.8 M: no - D: 100%	100 W - 100 Ω 500 Vpp - CF 2.8 M: no - D: 100%	100 W - 100 Ω 500 Vpp - CF 2.8 M: no - D: 100%	100 W - 100 Ω 500 Vpp - CF 2.8 M: no - D: 100%

Bipolar currents	ALSATOM SU 140/BD MPC
PURE	120 W - 400 Ω 975 Vpp - CF 2.75 M: no - D: 100%
P PULSED	60 W - 400 Ω 990 Vpp - CF 3.98 M: 50% - D: 100%
BLEND	100 W - 400 Ω 975 Vpp - CF 2.8 M: no - D: 80%
MACRO	100 W - 100 Ω 640 Vpp - CF 3.6 M: no - D: 80%
M PULSED	50 W - 100 Ω 640 Vpp - CF 5 M: no - D: 50%
MICRO	100 W - 100 Ω 600 Vpp - CF 3.4 M: no - D: 50%

## KEY

**W:** DELIVERED POWER

**Ω:** NOMINAL LOADS

**Vpp:** PEAK/NO-LOAD PEAK VOLTAGES

**CF:** CREST FACTORS

**M:** MODULATION

**D:** DUTY CYCLE

# DEVICES AND STANDARD ACCESSORIES

**ALSATOM SU 140-MPC**, without accessories

**ALSATOM SU 100-MPC**, without accessories

**ALSATOM SU 50-MPC**, without accessories

**B700/A** STANDARD ACCESSORIES SERIES including:

1 STOP/PN Single pedal control, pneumatic, waterproof, explosion-proof

1 EIP/9 Stainless steel neutral electrode, 2.5 m cable

1 FFE Fixing belt for electrodes

1 MPE/F Sterilisable electrode holder handle, 2.5 m cable

1 SEL/VI Series of 6 active electrodes (2 E1 - Straight blade electrode, 1 E5 - Thick needle electrode, 1 E7 - Fine needle electrode, 1 E12 - Straight ball electrode Ø 2.5 mm, 1 E14 - Straight ball electrode Ø 4 mm)

**B700/B** STANDARD ACCESSORIES SERIES identical to B700/A, but with NP/GP flexible conductive rubber neutral electrode

**B700/D** As above, but for dental use, without EIP/9 and SEL/VI replaced, respectively, by EIP/S

- Manual neutral electrode, 2.5 m cable and SEL/D - set of 8 dental electrode



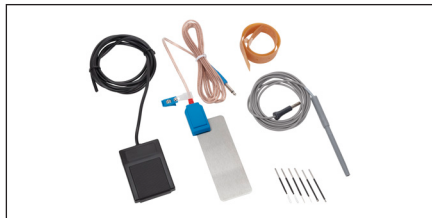
ALSATOM SU 140-MPC



ALSATOM SU 100-MPC



ALSATOM SU 50-MPC



B700/A



B700/B

**ALSATOM SU 140/D-MPC**, without accessories

**B730/A** STANDARD ACCESSORIES SERIES including:

1 D-STOP/P Double pedal control, pneumatic, waterproof, explosion-proof

1 EIP/9 Stainless steel neutral electrode, 2.5 m cable

1 FFE Fixing belt for electrodes

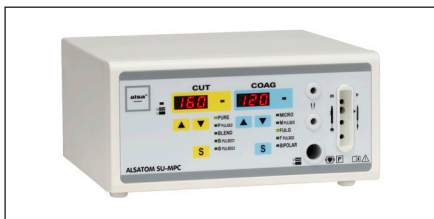
1 MPE/F Sterilisable electrode holder handle, 2.5 m cable

1 SEL/VI Series of 6 active electrodes (2 E1 - Straight blade electrode, 1 E5 - Thick needle electrode, 1 E7 - Fine needle electrode, 1 E12 - Straight ball electrode Ø 2.5 mm, 1 E14 - Straight ball electrode Ø 4 mm)

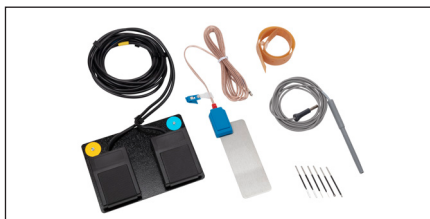
**B730/B** STANDARD ACCESSORIES SERIES identical to B730/A, but with NP/GP flexible conductive rubber neutral electrode

**B730/D** As above, but for dental use, without EIP/9 and SEL/VI replaced, respectively, by EIP/S

- Manual neutral electrode, 2.5 m cable and SEL/D - set of 8 dental electrodes



ALSATOM SU 140/D-MPC

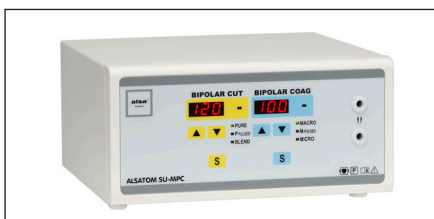


B730/A



B730/B

**ALSATOM SU 140/BD-MPC**, with D-STOP/P double pedal control



ALSATOM SU 140/BD-MPC

# EXCELL MCDSe



EXCELL 400/A MCDSe



## Electrosurgical unit for monopolar and bipolar surgery

**EXCELL MCDSe** are electrocautery units for advanced surgery, indicated for all monopolar, bipolar and monopolar techniques with Argon gas flow.

**They are available in 5 models:**

- **EXCELL 400 MCDSe, EXCELL 350 MCDSe, EXCELL 250 MCDSe, EXCELL 200 MCDSe** for electrocautery
- **EXCELL 400/A MCDSe** both for electrocautery and for electrocautery with Argon gas, being equipped with an integrated Argon module



# CURRENTS

## MONOPOLAR CURRENTS

<b>PURE</b>	Pure cut without any coagulating effect
<b>BLEND 1</b>	Coagulating cut with medium haemostatic effect
<b>BLEND 2</b>	Coagulating cut with strong haemostatic effect, spray type
<b>ENDO</b>	Coagulating cut with cut phases alternated to coagulation phases, for flexible endoscopy

<b>FULG FORCED</b>	Coagulation with strong superficial and deep effect
<b>PINPOINT CONTACT</b>	Coagulation similar to the previous one, but softer
<b>SOFT</b>	Very delicate coagulation, with soft superficial effect and strong deep action
<b>SPRAY</b>	Coagulation without any contact and a very strong superficial effect

## BIPOLAR CURRENTS

<b>PURE</b>	Pure cut with minimum coagulating effect
<b>BLEND</b>	Coagulating cut with strong coagulating effect
<b>MICRO</b>	Very delicate coagulation, Micro Precise type, with minimum sticking effect of tissue on the tips of the forceps
<b>MICRO AUTO</b>	Coagulation identical to Micro, but with Impedance Sensing automatic Auto Start/Auto Stop
<b>MACRO</b>	Coagulation Standard type, very rapid and efficacious, ideal for forceps with bigger section (for example, for laparoscopy)





## TECHNICAL FEATURES

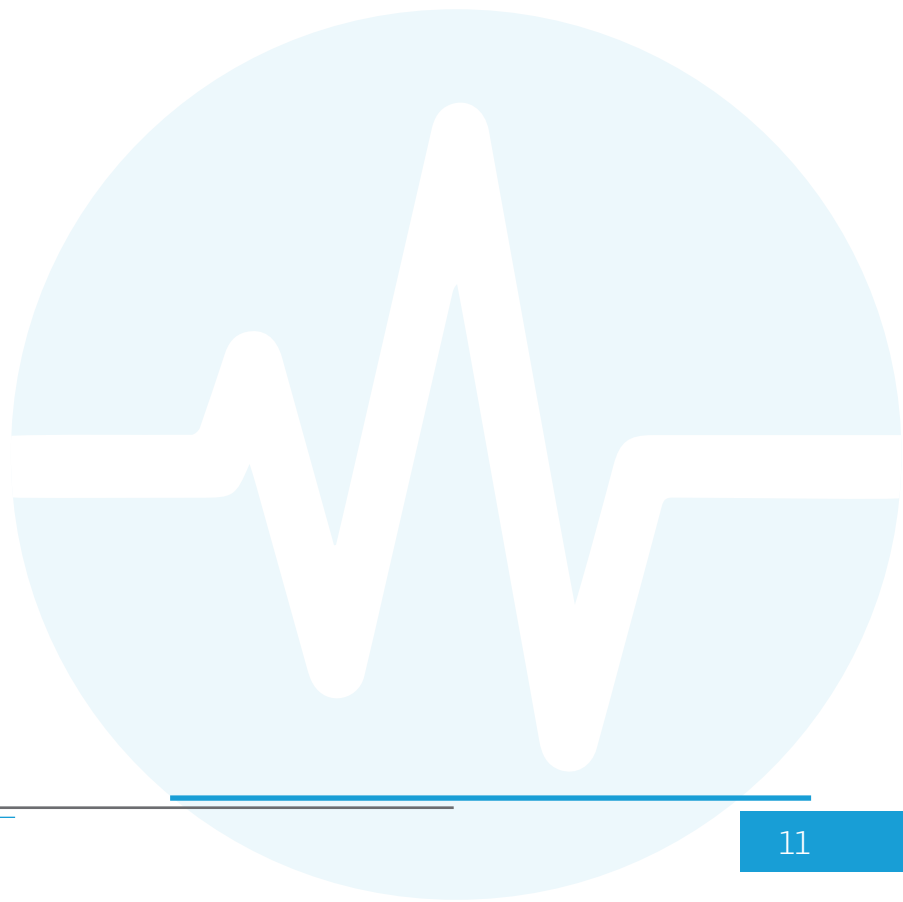
<b>HF generator compliant with</b>	IEC 60601-1 and IEC 60601-2-2
<b>CE Classification</b>	IIb
<b>IEC 60601-1 classification and type</b>	I CF
<b>IEC 60601-2-2 output circuit</b>	Floating - protected for the use of a defibrillator (HF dispersion <150 mA)
<b>Monopolar and bipolar working frequency</b>	440 kHz
<b>Operation check</b>	Complete self-diagnosis by means of a double microprocessor which performs: <ul style="list-style-type: none"> <li>- <b>Main Self-check</b> when turned on</li> <li>- <b>Standard Self-check</b> during operation and, if any, operation lock (within 100 milliseconds), with alarm signalling to operators through specific <b>Error Codes</b>, in the event of problems concerning: <ul style="list-style-type: none"> <li>- general operation or activation errors (General Error Control)</li> <li>- output power (Output Error Control)</li> </ul> </li> <li>- <b>HF Leakage Control</b>: continuous verification, by means of a specific circuit, of any HF current dispersion to earth and possible automatic power reduction by means of an alarm signal</li> <li>- Storage of the last 32 Error Codes</li> </ul>
<b>Power self-adjustment</b>	By microprocessor with: <ul style="list-style-type: none"> <li>- <b>ADC System</b> - Constant power: self-adjusts power, controlling voltage and current, based on real-time feedback (7000 checks/sec) between device and patient's tissue</li> </ul>
<b>Operation memorisation</b>	10 programs
<b>Outputs</b>	2 Monopolar and 1 Bipolar
<b>Foot-operated controls</b>	The EXCELL MCDSe can be equipped with: <ul style="list-style-type: none"> <li>• A double pedal control selectable for monopolar or bipolar functions.</li> <li>• Two double pedal controls, one for monopolar and one for bipolar functions.</li> </ul> The pedals are compliant with IEC 60601-2-2, waterproof (IP67), electric with 12 VDC low voltage power supply.
<b>Micro/macro power adjustment</b>	Monopolar: 0-30 W = 1 W, 30-100 W = 2 W, 100-200 W = 5 W, over 200 W = 10 W Bipolar: 0-10 W = 0.5 W, 10-30 W = 1 W, 30-100 W = 2 W, over 100 W = 5 W
<b>Panel</b>	Smooth, with digital displays and keys
<b>Neutral electrode safety circuit NPCC System</b>	Control of the connection of the neutral electrode - and of the quality of the contact using double section/split electrodes - with alarm signal and possible lock of delivered power.
<b>Power supply</b>	230 or 115 V - 50/60 Hz
<b>Power consumption at 230 V</b>	Max power 3.6 A = 828 VA, Stand-by 0.4 A = 92 VA
<b>Cooling</b>	Convection, without fan
<b>Equipotential bonding</b>	Standard DIN 42801 plug
<b>Size (LxDxH) and weight</b>	EXCELL 400/A MCDSe: 38x38x16 cm – 16 Kg EXCELL 400 MCDSe, EXCELL 350 MCDSe, EXCELL 250 MCDSe, EXCELL 200 MCDSe: 38x35x16 cm – 15 Kg
<b>Argon gas section (only in the EXCELL 400/A MCDSe model)</b>	
<b>Supply</b>	One 5 litre cylinder or with centralised system
<b>Flow</b>	Max 15 l/min
<b>Pressure</b>	Inlet 2.5 atm / Outlet 1 atm
<b>Flow check with Constant flow System</b>	From 1 to 15 l/min by means of an electronic sensor with adjustment buttons and visual control on the LED bar. Automatic self-compensation based on the type of electrode used. Alarm if gas is absent.
<b>Pressure check in the Safety gas System circuit</b>	Two-stage pressure reducer (on the cylinder and inside, with safety valve). Pressure sensor connected to the electronic control system, with Auto-Check when the gas section is switched on.
<b>Protection of the supplied gas flow</b>	Gas outlet equipped with antibacterial filter.

# OUTPUT POWERS

Monopolar currents	EXCELL 400 MCDSe	EXCELL 350 MCDSe	EXCELL 250 MCDSe	EXCELL 200 MCDSe	EXCELL 400/A MCDSe
PURE	400 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – D: no	350 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – D: no	280 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – D: no	200 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – D: no	400 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – D: no
BLEND 1	300 W – 350 Ω 3600 Vpp – CF: 2.3 M: 29 kHz – D: 65%	300 W – 350 Ω 3600 Vpp – CF: 2.3 M: 29 kHz – D: 65%	280 W – 350 Ω 3540 Vpp – CF: 2.3 M: 29 kHz – D: 65%	200 W – 350 Ω 3500 Vpp – CF: 2.3 M: 29 kHz – D: 65%	300 W – 350 Ω 3600 Vpp – CF: 2.3 M: 29 kHz – D: 65%
BLEND 2	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%
ENDO	250 W – 350 Ω 1880 Vpp – CF: 2.2 50% Pure / 50% Coag	220 W – 350 Ω 1880 Vpp – CF: 2.2 50% Pure / 50% Coag	220 W – 350 Ω 1880 Vpp – CF: 2.2 50% Pure / 50% Coag	200 W – 350 Ω 1880 Vpp – CF: 2.2 50% Pure / 50% Coag	250 W – 350 Ω 1880 Vpp – CF: 2.2 50% Pure / 50% Coag
FULG FORCED	150 W – 350 Ω 4700 Vpp – CF: 4.5 M: 78 kHz – D: 35%	150 W – 350 Ω 4700 Vpp – CF: 4.5 M: 78 kHz – D: 35%	150 W – 350 Ω 4700 Vpp – CF: 4.5 M: 78 kHz – D: 35%	150 W – 350 Ω 4700 Vpp – CF: 4.5 M: 78 kHz – D: 35%	150 W – 350 Ω 4700 Vpp – CF: 4.5 M: 78 kHz – D: 35%
PINPOINT CONTACT	250 W – 250 Ω 3460 Vpp – CF: 2.6 M: 29 kHz – D: 56%	250 W – 250 Ω 3460 Vpp – CF: 2.6 M: 29 kHz – D: 56%	250 W – 250 Ω 3460 Vpp – CF: 2.6 M: 29 kHz – D: 56%	200 W – 250 Ω 3400 Vpp – CF: 2.6 M: 29 kHz – D: 56%	250 W – 250 Ω 3460 Vpp – CF: 2.6 M: 29 kHz – D: 56%
SOFT	280 W – 250 Ω 3440 Vpp – CF: 2.5 M: 29 kHz – D: 56%	280 W – 250 Ω 3440 Vpp – CF: 2.5 M: 29 kHz – D: 56%	280 W – 250 Ω 3440 Vpp – CF: 2.5 M: 29 kHz – D: 56%	200 W – 250 Ω 3020 Vpp – CF: 2,5 M: 29 kHz – D: 56%	280 W – 250 Ω 3440 Vpp – CF: 2.5 M: 29 kHz – D: 56%
SPRAY	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%
Argon Coag					SPRAY + ARGON GAS
Bipolar currents	EXCELL 400 MCDSe	EXCELL 350 MCDSe	EXCELL 250 MCDSe	EXCELL 200 MCDSe	EXCELL 400/A MCDSe
PURE	140 W – 300 Ω 790 Vpp – CF: 1.5 M: no – D: no	140 W – 300 Ω 790 Vpp – CF: 1.5 M: no – D: no	140 W – 300 Ω 790 Vpp – CF: 1.5 M: no – D: no	140 W – 300 Ω 790 Vpp – CF: 1.5 M: no – D: no	140 W – 300 Ω 790 Vpp – CF: 1.5 M: no – D: no
BLEND	120 W – 300 Ω 980 Vpp – CF: 1.8 M: 29 kHz – D: 75%	120 W – 300 Ω 980 Vpp – CF: 1.8 M: 29 kHz – D: 75%	120 W – 300 Ω 980 Vpp – CF: 1.8 M: 29 kHz – D: 75%	120 W – 300 Ω 980 Vpp – CF: 1.8 M: 29 kHz – D: 75%	120 W – 300 Ω 980 Vpp – CF: 1.8 M: 29 kHz – D: 75%
MICRO	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no
MICRO AUTO	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no
MACRO	120 W – 100 Ω 760 Vpp – CF: 1.7 M: no – D: no	120 W – 100 Ω 760 Vpp – CF: 1.7 M: no – D: no	120 W – 100 Ω 760 Vpp – CF: 1.7 M: no – D: no	120 W – 100 Ω 760 Vpp – CF: 1.7 M: no – D: no	120 W – 100 Ω 760 Vpp – CF: 1.7 M: no – D: no

## KEY

- W:** DELIVERED POWER
- Ω:** NOMINAL LOADS
- Vpp:** PEAK/NO-LOAD PEAK VOLTAGES
- CF:** CREST FACTORS
- M:** MODULATION
- D:** DUTY CYCLE



# DEVICES AND STANDARD ACCESSORIES

**EXCELL 400 MCDSe**, without accessories

**EXCELL 350 MCDSe**, without accessories

**EXCELL 250 MCDSe**, without accessories

**EXCELL 200 MCDSe**, without accessories

**EXCELL 400/A MCDSe**, without accessories

**B610/A** STANDARD ACCESSORIES SERIES including:

1 DS/E Double pedal control, electric, waterproof

1 NP/A Stainless steel neutral electrode, 2.5 m cable

1 FGE Fixing belt for electrodes

2 MPE/E Sterilisable electrode holder, 3.5 m cable

1 SEL/E Series of 8 active electrodes (2 E1 - Straight blade electrode, 2 E5 – Thick needle electrode, 1 E7 - Fine needle electrode, 1 E12 - Straight ball electrode Ø 2.5 mm, 2 E14 - Straight ball electrode Ø 4 mm)

**B610/B** STANDARD ACCESSORIES SERIES identical to B610/A, but with NP/GA flexible conductive rubber neutral electrode for adults

**B610/P** As above, with neutral paediatric electrode NP/GP



EXCELL 400 MCDSe



EXCELL 350 MCDSe



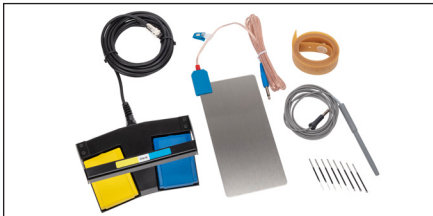
EXCELL 250 MCDSe



EXCELL 200 MCDSe



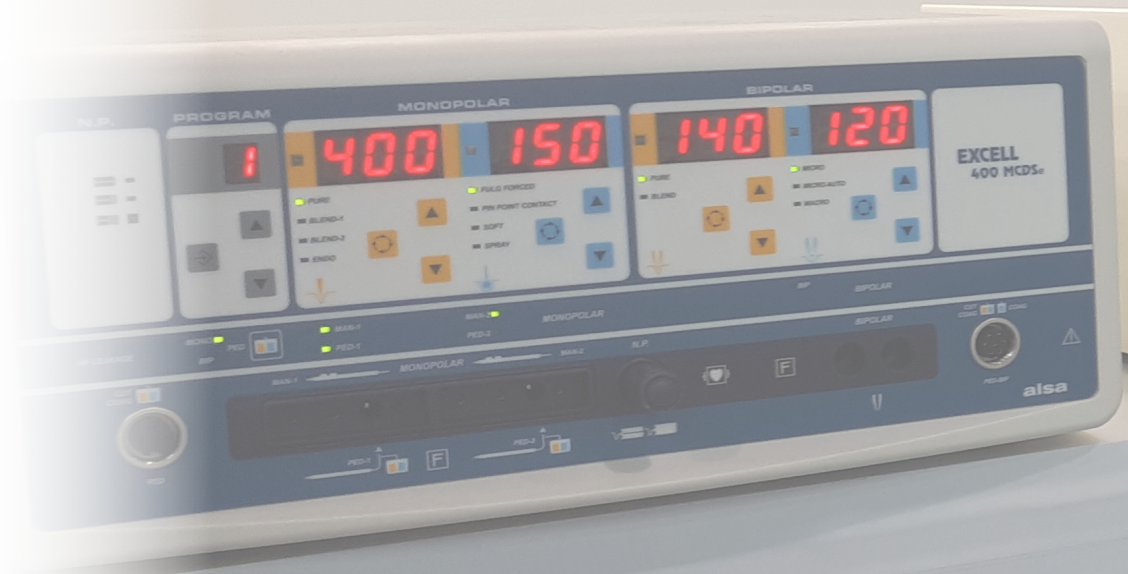
EXCELL 400/A MCDSe



B610/A



B610/B





# EXCELL NHP



EXCELL NHP 400/D



## Electrosurgical unit for monopolar and bipolar surgery

**EXCELL NHP** are electrocautery units for advanced surgery, indicated for all monopolar, bipolar and monopolar techniques with Argon gas flow.

**They are available in 5 models:**

- **EXCELL NHP 400/D, EXCELL NHP 350/D and EXCELL NHP 250/D** for electrocautery
- **EXCELL NHP 400/DA and EXCELL NHP 250/DA** both for electrocautery and for electrocautery with Argon gas, being equipped with an integrated Argon module



# CURRENTS

## MONOPOLAR CURRENTS

<b>PURE</b>	Non-modulated sinusoidal current for cutting without any coagulating effect
<b>BLEND 1</b>	Modulated and pulsed sinusoidal current for cutting with moderate coagulating effect
<b>BLEND 2</b>	Modulated and pulsed current for cutting with strong coagulating effect, Spray type, for surgery or laparoscopy
<b>AUTO PURE</b>	Non-modulated sinusoidal current for cutting without any coagulating effect
<b>AUTO BLEND</b>	Modulated and pulsed sinusoidal current for cutting with moderate coagulating effect
<b>AUTO ENDO</b>	Current with alternating cut and coagulation phases for flexible endoscopy
<b>FULG FORCED</b>	Modulated high-voltage current with optimum superficial and deep efficacy, suitable both for direct use with an active small section electrode and indirect use through insulated coagulation forceps
<b>PINPOINT CONTACT</b>	Modulated medium-voltage current, very similar to the previous one, but with a more delicate effect
<b>SOFT</b>	Modulated low-voltage current with strong deep effect, and no superficial carbonisation. It is perfect for direct use with coagulation electrodes, or for indirect use through insulated coagulation forceps
<b>SPRAY</b>	Modulated and pulsed very-high voltage current, with a very strong superficial effect and low penetration in the tissue. It is perfect for direct use without any contact, with small section electrodes

## BIPOLAR CURRENTS

<b>PURE</b>	Non-modulated sinusoidal pulsed current for cut
<b>BLEND</b>	Modulated and pulsed sinusoidal current for cut with coagulating effect
<b>MICRO CV</b>	Non-modulated low voltage current for very delicate coagulations with Soft / Micro Precise effect, minimum superficial carbonisation, and no sticking on tissue
<b>MICRO HC</b>	Current with Standard Forced effect in order to rapidly coagulate vascularised sites and bleeding during procedures with saline solution, or to use instruments with large tips
<b>MICRO AUTO</b>	Identical to Micro CV, but with Impedance Sensing Auto Start / Auto Stop and Start Delay adjustable from 0 to 5 sec. It is perfect for the use with manual activation, and no need of special forceps with switch device
<b>MACRO</b>	Modulated and pulsed current with stronger effect than the Micro HC current
<b>SEAL HC</b>	Pulsed current to coagulate and close big vessels with minimum superficial carbonization and no sticking of tissues. It can be activated through a pedal foot-switch, and thanks to the Auto Stop Impedance Sensing system it is very effective and easy to use, for laparoscopy procedures as well

## TECHNICAL FEATURES

<b>HF generator compliant with</b>	IEC 60601-1 and IEC 60601-2-2
<b>CE Classification</b>	IIb
<b>IEC 60601-1 classification and type</b>	I CF
<b>IEC 60601-2-2 output circuit</b>	Floating - protected for the use of a defibrillator (HF dispersion <150 mA)
<b>Monopolar and bipolar working frequency</b>	440 kHz
<b>Operation check</b>	Complete self-diagnosis by means of a double microprocessor which performs: <ul style="list-style-type: none"> <li>- <b>Main Self-check</b> when turned on</li> <li>- <b>Standard Self-check</b> during operation and, if any, operation lock (within 100 milliseconds), with alarm signalling to operators through specific <b>Error Codes</b>, in the event of problems concerning: <ul style="list-style-type: none"> <li>- general operation or activation errors (General Error Control)</li> <li>- power supply (Output Error Control)</li> </ul> </li> <li>- <b>HF Leakage Control</b>: continuous verification, by means of a specific circuit, of any HF current dispersion to earth and possible automatic power reduction by means of an alarm signal</li> <li>- Storage of the last 32 Error Codes</li> </ul>
<b>Power self-adjustment</b>	By means of a microprocessor with two different systems: <ul style="list-style-type: none"> <li>- <b>ADC System</b> - Constant power: self-adjusts the power, controlling voltage and current, based on real-time feedback (7000 checks/sec) between device and patient's tissue</li> <li>- <b>APC System</b> - Constant voltage: self-adjusts the power, keeping the voltage constant, based on a real-time feedback (7000 checks/sec) between device and patient's tissue</li> </ul>
<b>Operation memorisation</b>	100 programs
<b>Outputs</b>	2 Monopolar and 2 Bipolar
<b>Foot-operated controls</b>	EXCELL NHP units can be fitted with: <ul style="list-style-type: none"> <li>• A double pedal control selectable for monopolar or bipolar functions.</li> <li>• Two double pedal controls, one for monopolar and one for bipolar functions.</li> </ul> The pedals are compliant with IEC 60601-2-2, waterproof (IP67), electric with 12 VDC low voltage power supply.
<b>Micro/macro power adjustment</b>	Monopolar: 0-30 W = 1 W, 30-100 W = 2 W, 100-200 W = 5 W, over 200 W = 10 W Bipolar: 0-10 W = 0.5 W, 10-30 W = 1 W, 30-100 W = 2 W, over 100 W = 5 W
<b>Panel</b>	Smooth, with digital displays and keys
<b>Neutral electrode safety circuit NPCC System</b>	Control of the connection of the neutral electrode - and of the quality of the contact using double section/split electrodes - with alarm signal and possible lock of delivered power.
<b>Power supply</b>	230 or 115 V - 50/60 Hz
<b>Power consumption at 230 V</b>	Max power 3.6 A = 828 VA, Stand-by 0.4 A = 92 VA
<b>Cooling</b>	Convection, without fan
<b>Equipotential bonding</b>	Standard DIN 42801 plug
<b>Size (LxDxH) and weight</b>	EXCELL NHP 400/DA and EXCELL NHP 250/DA: 38x38x16 cm – 16 Kg EXCELL NHP 400/D, EXCELL NHP 350/D and EXCELL NHP 250/D: 38x35x16 cm – 15 Kg
<b>Argon gas section (only in EXCELL NHP 400/DA and EXCELL NHP 250/DA models)</b>	
<b>Supply</b>	One 5 litre cylinder or with centralised system
<b>Flow</b>	Max 15 l/min
<b>Pressure</b>	Inlet 2.5 atm / Outlet 1 atm
<b>Flow check with Constant flow System</b>	From 1 to 15 l/min by means of an electronic sensor with adjustment buttons and visual control on the LED bar. Automatic self-compensation based on the type of electrode used. Alarm if gas is absent.
<b>Pressure check in the Safety gas System circuit</b>	Two-stage pressure reducer (on the cylinder and inside, with safety valve). Pressure sensor connected to the electronic control system, with Auto-Check when the gas section is switched on.
<b>Protection of the supplied gas flow</b>	Gas outlet equipped with antibacterial filter.

# OUTPUT POWERS

Current self-adjustment

Monopolar currents	EXCELL NHP 400/D	EXCELL NHP 350/D	EXCELL NHP 250/D	EXCELL NHP 400/DA	EXCELL NHP 250/DA	ADC	APC
PURE	400 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – D: no	350 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – D: no	280 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – D: no	400 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – D: no	280 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – D: no	X	
BLEND 1	300 W – 350 Ω 3600 Vpp – CF: 2.3 M: 29 kHz – D: 65%	300 W – 350 Ω 3600 Vpp – CF: 2.3 M: 29 kHz – D: 65%	280 W – 350 Ω 3540 Vpp – CF: 2.3 M: 29 kHz – D: 65%	300 W – 350 Ω 3600 Vpp – CF: 2.3 M: 29 kHz – D: 65%	280 W – 350 Ω 3540 Vpp – CF: 2.3 M: 29 kHz – D: 65%	X	
BLEND 2	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	X	
AUTO PURE	400 W – 350 Ω 1470 Vpp – CF: 1.6 M: no – D: no	350 W – 350 Ω 1350 Vpp – CF: 1.6 M: no – D: no	280 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – D: no	400 W – 350 Ω 1470 Vpp – CF: 1.6 M: no – D: no	280 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – D: no		X
AUTO BLEND	300 W – 350 Ω 1930 Vpp – CF: 2.3 M: 29 kHz – D: 65%	300 W – 350 Ω 1930 Vpp – CF: 2.3 M: 29 kHz – D: 65%	280 W – 350 Ω 3540 Vpp – CF: 2.3 M: 29 kHz – D: 65%	300 W – 350 Ω 1930 Vpp – CF: 2.3 M: 29 kHz – D: 65%	280 W – 350 Ω 3540 Vpp – CF: 2.3 M: 29 kHz – D: 65%		X
AUTO ENDO	250 W – 350 Ω 1890 Vpp – CF: 2.2 50% Pure / 50% Coag	220 W – 350 Ω 1710 Vpp – CF: 2.2 50% Pure / 50% Coag	220 W – 350 Ω 1880 Vpp – CF: 2.2 50% Pure / 50% Coag	250 W – 350 Ω 1890 Vpp – CF: 2.2 50% Pure / 50% Coag	220 W – 350 Ω 1880 Vpp – CF: 2.2 50% Pure / 50% Coag		X
FULG FORCED	150 W – 350 Ω 4700 Vpp – CF: 4.5 M: 78 kHz – D: 35%	150 W – 350 Ω 4700 Vpp – CF: 4.5 M: 78 kHz – D: 35%	150 W – 350 Ω 4700 Vpp – CF: 4.5 M: 78 kHz – D: 35%	150 W – 350 Ω 4700 Vpp – CF: 4.5 M: 78 kHz – D: 35%	150 W – 350 Ω 4700 Vpp – CF: 4.5 M: 78 kHz – D: 35%	X	
PINPOINT CONTACT	250 W – 250 Ω 3460 Vpp – CF: 2.6 M: 29 kHz – D: 50%	250 W – 250 Ω 3460 Vpp – CF: 2.6 M: 29 kHz – D: 50%	250 W – 250 Ω 3460 Vpp – CF: 2.6 M: 29 kHz – D: 50%	250 W – 250 Ω 3460 Vpp – CF: 2.6 M: 29 kHz – D: 50%	250 W – 250 Ω 3460 Vpp – CF: 2.6 M: 29 kHz – D: 50%	X	
SOFT	280 W – 250 Ω 3440 Vpp – CF: 2.5 M: 29 kHz – D: 56%	280 W – 250 Ω 3440 Vpp – CF: 2.5 M: 29 kHz – D: 56%	280 W – 250 Ω 3440 Vpp – CF: 2.5 M: 29 kHz – D: 56%	280 W – 250 Ω 3440 Vpp – CF: 2.5 M: 29 kHz – D: 56%	280 W – 250 Ω 3440 Vpp – CF: 2.5 M: 29 kHz – D: 56%	X	
SPRAY	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	140 W – 600 Ω 7600 Vpp – CF: 8.1 M: 19 kHz – D: 9%	X	
Argon Coag				SPRAY + ARGON GAS	SPRAY + ARGON GAS	X	

Current self-adjustment

Bipolar currents	EXCELL NHP 400/D	EXCELL NHP 350/D	EXCELL NHP 250/D	EXCELL NHP 400/DA	EXCELL NHP 250/DA	ADC	APC
PURE	160 W – 300 Ω 850 Vpp – CF: 1.5 M: no – D: no	160 W – 300 Ω 850 Vpp – CF: 1.5 M: no – D: no	160 W – 300 Ω 850 Vpp – CF: 1.5 M: no – D: no	160 W – 300 Ω 850 Vpp – CF: 1.5 M: no – D: no	160 W – 300 Ω 850 Vpp – CF: 1.5 M: no – D: no	X	
BLEND	130 W – 300 Ω 1000 Vpp – CF: 1.8 M: 29 kHz – D: 75%	130 W – 300 Ω 1000 Vpp – CF: 1.8 M: 29 kHz – D: 75%	130 W – 300 Ω 1000 Vpp – CF: 1.8 M: 29 kHz – D: 75%	130 W – 300 Ω 1000 Vpp – CF: 1.8 M: 29 kHz – D: 75%	130 W – 300 Ω 1000 Vpp – CF: 1.8 M: 29 kHz – D: 75%	X	
MICRO CV	130 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no		X
MICRO HC	130 W – 100 Ω 760 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 760 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 760 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 760 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 760 Vpp – CF: 1.7 M: no – D: no	X	
MICRO AUTO	130 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 450 Vpp – CF: 1.7 M: no – D: no		X
MACRO	130 W – 100 Ω 760 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 760 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 760 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 760 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 760 Vpp – CF: 1.7 M: no – D: no	X	
SEAL HC	130 W – 100 Ω 710 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 710 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 710 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 710 Vpp – CF: 1.7 M: no – D: no	130 W – 100 Ω 710 Vpp – CF: 1.7 M: no – D: no	X	

## KEY

**W:** DELIVERED POWER

**Ω:** NOMINAL LOADS

**Vpp:** PEAK/NO-LOAD PEAK VOLTAGES

**CF:** CREST FACTORS

**M:** MODULATION

**D:** DUTY CYCLE

**ADC:** CONSTANT POWER

**ADC:** CONSTANT VOLTAGE



# DEVICES AND STANDARD ACCESSORIES

**EXCELL NHP 400/D**, without accessories

**EXCELL NHP 350/D**, without accessories

**EXCELL NHP 250/D**, without accessories

**EXCELL NHP 400/DA**, without accessories

**EXCELL NHP 250/DA**, without accessories

**B610/A** STANDARD ACCESSORIES SERIES including:

1 DS/E Double pedal control, electric, waterproof

1 NP/A Stainless steel neutral electrode, 2.5 m cable

1 FGE Fixing belt for electrodes

2 MPE/E Sterilisable electrode holder, 3.5 m cable

1 SEL/E Series of 8 active electrodes (2 E1 - Straight blade electrode, 2 E5 - Thick needle electrode, 1 E7 - Fine needle electrode, 1 E12 - Straight ball electrode  $\varnothing$  2.5 mm, 2 E14 - Straight ball electrode  $\varnothing$  4 mm)

**B610/B** STANDARD ACCESSORIES SERIES identical to B610/A, but with NP/GA flexible conductive rubber neutral electrode for adults

**B610/P** As above, with neutral paediatric electrode NP/GP



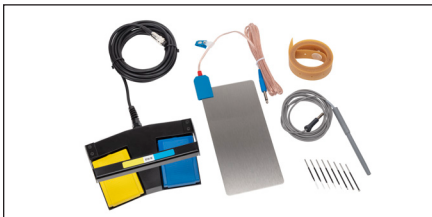
EXCELL NHP 400/D



EXCELL NHP 350/D



EXCELL NHP 250/D



B610/A



B610/B







# EXCELL NHP ENDOMED



EXCELL NHP ENDOMED



## Electrosurgical unit for monopolar and bipolar surgery

**EXCELL NHP ENDOMED** is a complete technologically advanced electrocautery unit suitable for any type of monopolar and bipolar technique. It is also equipped with a special

bipolar cutting current in liquid, particularly suitable for the new bipolar endoscopic procedures in urology and gynaecology in saline solution.

# CURRENTS

## MONOPOLAR CURRENTS

<b>PURE</b>	Non-modulated sinusoidal current for pure cut without coagulating effect
<b>BLEND 1</b>	Sinusoidal modulated current for coagulating cut
<b>BLEND 2</b>	Modulated current for cut with strong coagulating effect, Spray type, for surgery and laparoscopy
<b>AUTO PURE</b>	Non-modulated sinusoidal current for cut without coagulating effect
<b>AUTO BLEND</b>	Sinusoidal modulated current for coagulating cut
<b>AUTO ENDO</b>	Current with alternating cut and coagulation phases for flexible endoscopy

<b>FULG FORCED</b>	Modulated high voltage current with strong coagulating superficial and deep effect
<b>PINPOINT</b>	Modulated medium voltage current with medium coagulating superficial and deep effect
<b>SOFT</b>	Modulated low voltage current with delicate coagulating effect without superficial carbonisation
<b>SPRAY</b>	Modulated very high voltage current for very strong superficial coagulation with a low tissue penetration, even without any contact of the active electrode

## BIPOLAR CURRENTS

<b>STANDARD</b>	Pulsed current for cut
<b>SALINE</b>	Pulsed current for endoscopic cut in saline solution
<b>MICRO</b>	Pulsed current for coagulation Soft / Micro Precise type and for coagulation in saline solution
<b>MACRO</b>	Pulsed current for coagulation Standard / Forced type in laparoscopy
<b>SEAL</b>	Pulsed current with automatic stop for sealing of big vessels up to 7 mm diameter



## TECHNICAL FEATURES

HF generator compliant with	IEC 60601-1 and IEC 60601-2-2
CE Classification	IIb
IEC 60601-1 classification and type	I CF
IEC 60601-2-2 output circuit	Floating - protected for the use of a defibrillator (HF dispersion <150 mA)
Monopolar and bipolar working frequency	440 kHz
Operation check	Complete self-diagnosis by means of a double microprocessor which performs: <ul style="list-style-type: none"> <li>- <b>Main Self-check</b> when turned on</li> <li>- <b>Standard Self-check</b> during operation and, if any, operation lock (within 100 milliseconds), with alarm signalling to operators through specific <b>Error Codes</b>, in the event of problems concerning: <ul style="list-style-type: none"> <li>- general operation or activation errors (General Error Control)</li> <li>- output power (Output Error Control)</li> </ul> </li> <li>- <b>HF Leakage Control</b>: continuous verification, by means of a specific circuit, of any HF current dispersion to earth and possible automatic power reduction by means of an alarm signal</li> <li>- Storage of the last 32 Error Codes</li> </ul>
Power self-adjustment	By means of a microprocessor with two different systems: <ul style="list-style-type: none"> <li>- <b>ADC System</b> - Constant power: self-adjusts the power, controlling voltage and current, based on real-time feedback (7000 checks/sec) between device and patient's tissue</li> <li>- <b>APC System</b> - Constant voltage: self-adjusts the power, keeping the voltage constant, based on a real-time feedback (7000 checks/sec) between device and patient's tissue</li> </ul>
Operation memorisation	100 programs
Outputs	2 Monopolar and 1 Bipolar
Foot-operated control	EXCELL NHP ENDOMED can be equipped with a double pedal control that can be selected for monopolar or bipolar functions. The pedal is compliant with IEC 60601-2-2, waterproof (IP67), electric with 12 VDC low voltage power supply.
Micro/macro power adjustment	Monopolar: 0-30 W = 1 W, 30-100 W = 2 W, 100-200 W = 5 W, over 200 W = 10 W Bipolar: 0-10 W = 0.5 W, 10-30 W = 1 W, 30-100 W = 2 W, over 100 W = 5 W
Panel	Smooth, with digital displays and keys
Neutral electrode safety circuit NPCC System	Control of the connection of the neutral electrode - and of the quality of the contact using double section/split electrodes - with alarm signal and possible lock of delivered power.
Power supply	230 or 115 V - 50/60 Hz
Power consumption at 230 V	Max power 3.6 A = 828 VA, Stand-by 0.4 A = 92 VA
Cooling	Convection, without fan
Equipotential bonding	Standard DIN 42801 plug
Size (LxDxH) and weight	38x35x16 cm – 15 Kg



# OUTPUT POWERS

Monopolar currents	EXCELL NHP ENDOMED
PURE	350 W - 350 Ω 3450 Vpp - CF: 1.6 M: no - D: no
BLEND 1	300 W - 350 Ω 3600 Vpp - CF: 2.3 M: 29 kHz - D: 65%
BLEND 2	140 W - 600 Ω 7600 Vpp - CF: 8.1 M: 19 kHz - D: 9%
AUTO PURE	350 W - 350 Ω 1350 Vpp - CF: 1.6 M: no - D: no
AUTO BLEND	300 W - 350 Ω 1930 Vpp - CF: 2.3 M: 29 kHz - D: 65%
AUTO ENDO	220 W - 350 Ω 1710 Vpp - CF: 2.2 50% Pure 50% Blend I
FULG FORCED	150 W - 350 Ω 4700 Vpp - CF: 4.5 M: 78 kHz - D: 3,5%
PINPOINT	250 W - 250 Ω 3460 Vpp - CF: 2.6 M: 29 kHz - D: 50%
SOFT	280 W - 250 Ω 3440 Vpp - CF: 2.5 M: 29 kHz - D: 56%
SPRAY	140 W - 600 Ω 7600 Vpp - CF: 8.1 M: 19 kHz - D: 9%

## Current self-adjustment

ADC	APC
X	
X	
X	
	X
	X
	X
X	
X	
X	
X	



Bipolar currents	EXCELL NHP ENDOMED
STANDARD	180 W - 350 Ω 1200 Vpp - CF: 1.5 M: no - D: no
SALINE	320 W - 50 Ω 1200 Vpp - CF: 1.5 M: no - D: no
MICRO	130 W - 100 Ω 420 Vpp - CF: 1.7 M: no - D: no
MACRO	130 W - 200 Ω 1050 Vpp - CF: 1.7 M: no - D: no
SEAL	130 W (200 W) - 100 Ω 420 Vpp - CF: 1.7 M: no - D: no

## Current self-adjustment

ADC	APC
X	
X	
	X
X	
	X

### KEY

- W:** DELIVERED POWER
- (W):** STARTING IMPULSE
- Ω:** NOMINAL LOADS
- Vpp:** PEAK/NO-LOAD PEAK VOLTAGES
- CF:** CREST FACTORS
- M:** MODULATION
- D:** DUTY CYCLE
- ADC:** CONSTANT POWER
- ADC:** CONSTANT VOLTAGE



# DEVICE AND STANDARD ACCESSORIES

**EXCELL NHP ENDOMED**, without accessories

**B610/A** STANDARD ACCESSORIES SERIES including:

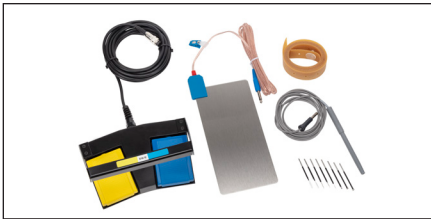
- 1 DS/E Double pedal control, electric, waterproof
- 1 NP/A Stainless steel neutral electrode, 2.5 m cable
- 1 FGE Fixing belt for electrodes
- 2 MPE/E Sterilisable electrode holder, 3.5 m cable
- 1 SEL/E Series of 8 active electrodes (2 E1 - Straight blade electrode, 2 E5 - Thick needle electrode, 1 E7 - Fine needle electrode, 1 E12 - Straight ball electrode  $\varnothing$  2.5 mm, 2 E14 - Straight ball electrode  $\varnothing$  4 mm)

**B610/B** STANDARD ACCESSORIES SERIES identical to B610/A, but with NP/GA flexible neutral conductive rubber electrode for adults

**B610/P** As above, with neutral paediatric electrode NP/GP



EXCELL NHP ENDOMED

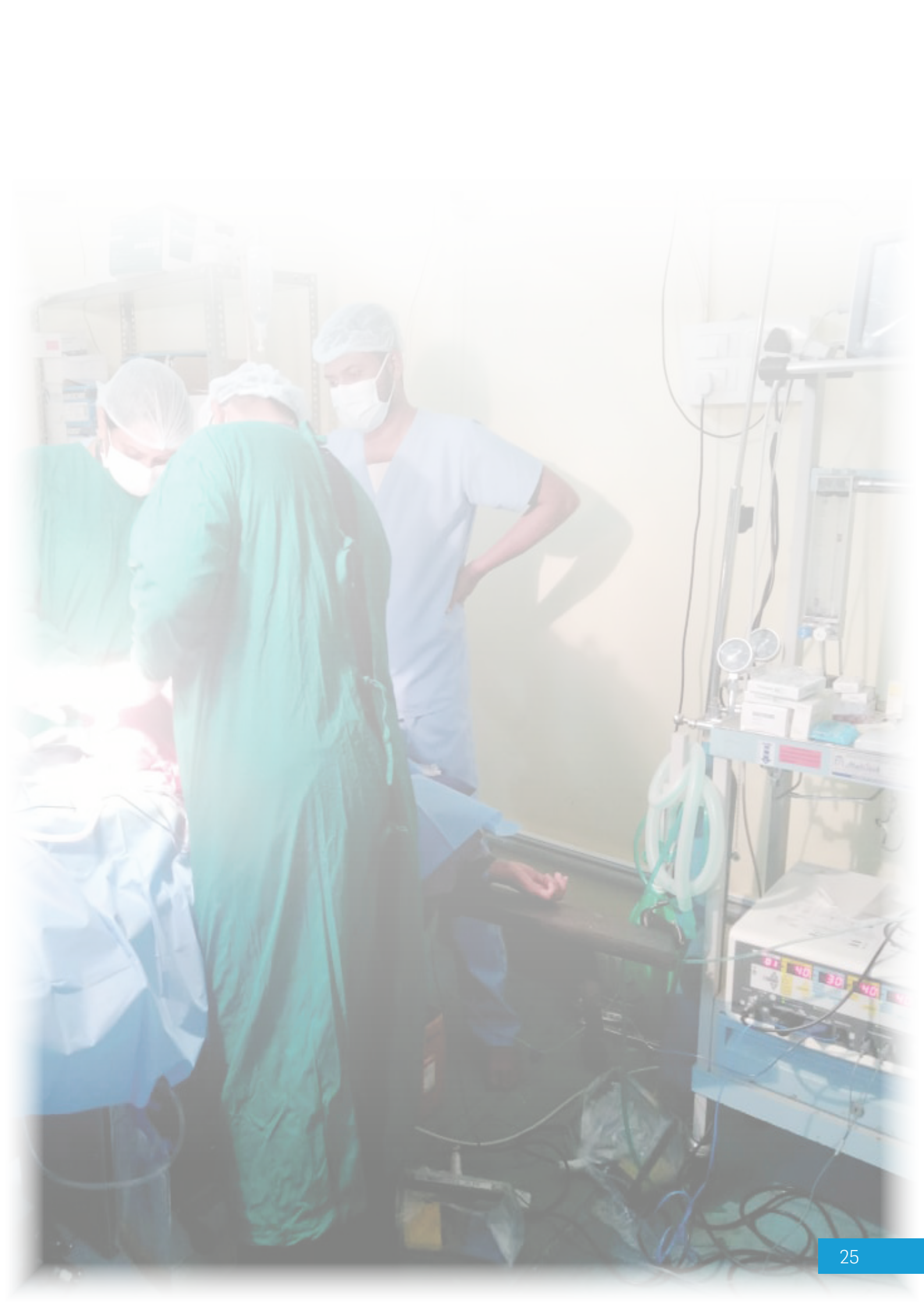


B610/A



B610/B





# EXCELL NHP/T



EXCELL NHP/TA-400



Electrosurgical unit for monopolar and bipolar surgery with 7" touch screen display

**EXCELL NHP/T** are electrocautery units for advanced surgery, indicated for all monopolar, bipolar and monopolar techniques with Argon gas flow.

**They are available in 4 models:**

- **EXCELL NHP/T-400** and **EXCELL NHP/T-200** for electrocautery
- **EXCELL NHP/TA-400** and **EXCELL NHP/TA-200** both for electrocautery and for electrocautery with Argon gas, being equipped with the integrated Argon module

# CURRENTS

## MONOPOLAR CURRENTS

<b>PURE CUT</b>	Pure cut without coagulating effect. For open or laparoscopic surgery and for under liquid endoscopy (TURP and TURV procedures)
<b>BLEND CUT 1</b>	Blended cut with medium coagulating effect. For open or laparoscopic surgery and for under liquid endoscopy (TURP and TURV procedures)
<b>BLEND CUT 2</b>	Blended cut with very high coagulating effect. For open or laparoscopic surgery
<b>PURE CUT PULSED</b>	Pure pulsed cut without coagulating effect. For open or laparoscopic surgery (suitable to reduce surgical smoke)
<b>BLEND CUT PULSED</b>	Blended pulsed cut with medium coagulating effect. For open or laparoscopic surgery (suitable to reduce surgical smoke)
<b>AUTO PURE CUT MICRO</b>	"Constant voltage", delicate, pure cut without coagulating effect. For open or laparoscopic surgery and for under liquid endoscopy (TURP and TURV procedures)
<b>AUTO BLEND CUT MICRO</b>	"Constant voltage", delicate cut blended with a medium coagulating effect. For open or laparoscopic surgery and for under liquid endoscopy (TURP and TURV procedures)
<b>AUTO PAPILO PURE CUT</b>	"Constant voltage" pure cut, without coagulating effect, for flexible endoscopy. With four modes of delivery: continuous and pulsed (slow, medium, fast)
<b>AUTO POLIPO BLEND CUT</b>	"Constant voltage" cut, blended with a medium coagulating effect, for flexible endoscopy. With four modes of delivery: continuous and pulsed (slow, medium, fast)
<b>AUTO ENDOCUT</b>	"Constant voltage" cut with alternating phases of BLEND and CUT, for flexible endoscopy. With four modes of delivery: 90% BLEND and 10% CUT, 80% BLEND and 20% CUT, 60% BLEND and 40% CUT, 50% BLEND and 50% CUT

<b>FULG FORCED COAG</b>	High-voltage, contact free coagulation. For open or laparoscopic surgery, under liquid endoscopy (TURP and TURV procedures), and for flexible endoscopy
<b>SPRAY COAG</b>	Very high voltage, contact-free coagulation. For open or laparoscopic surgery, under liquid endoscopy (TURP and TURV procedures), and for flexible endoscopy
<b>PULSED SPRAY COAG</b>	Identical to the SPRAY COAG current, but pulsed and more delicate
<b>PINPOINT CONTACT COAG</b>	Medium voltage, contact coagulation. For open or laparoscopic surgery, under liquid endoscopy (TURP and TURV procedures), and for flexible endoscopy
<b>SOFT MICRO COAG</b>	Delicate, low voltage coagulation. For open or laparoscopic surgery

## BIPOLAR CURRENTS

<b>STANDARD BICUT</b>	Cut for open or laparoscopic surgery
<b>BLEND BICUT</b>	Blended cut with very high coagulating effect (Coagulation 95%) for open or laparoscopic surgery
<b>SALINE URO-GYN CUT</b>	Cut in saline with two modes of delivery: continuous and pulsed. For under liquid endoscopy (TURPis and TURVis procedures). The continuous delivery is suitable for vaporization
<b>SALINE ARTHRO CUT</b>	Cut in saline with two modes of delivery: continuous and pulsed. For arthroscopy. The continuous delivery is suitable for vaporization
<b>SOFT MICRO BICOAG</b>	Very precise and delicate coagulation. For open or laparoscopic surgery, under liquid endoscopy (TURPis and TURVis procedures) and flexible endoscopy
<b>FORCED MACRO BICOAG</b>	Fast coagulation. For open or laparoscopic surgery
<b>AUTO SOFT MICRO BICOAG</b>	Identical to SOFT MICRO BICOAG, but with Impedance Sensing automatic activation/deactivation. It is not suitable for endoscopy in saline. Activation with delay adjustable from 0 to 5 seconds and deactivation with two-tone, grave, acoustic signal
<b>SEALING</b>	Current to coagulate/seal vessels up to 7 mm in open and laparoscopic surgery. Activation with pedal and automatic Impedance Sensing deactivation with two-tone, acute, acoustic signal
<b>AUTO SEALING</b>	Identical to SEALING, but with Impedance Sensing automatic activation/deactivation. It is not suitable for endoscopy in saline. Activation with delay adjustable from 0 to 5 seconds and deactivation with two-tone, grave, acoustic signal



# TECHNICAL FEATURES

<b>HF generator compliant with</b>	IEC 60601-1 and IEC 60601-2-2
<b>CE Classification</b>	IIb
<b>IEC 60601-1 classification and type</b>	I CF
<b>IEC 60601-2-2 output circuit</b>	Floating - protected for the use of a defibrillator (HF dispersion <150 mA)
<b>Monopolar and bipolar working frequency</b>	440 kHz
<b>Operation check</b>	Complete self-diagnosis by means of a double microprocessor which performs: <ul style="list-style-type: none"> <li>- <b>Main Self-check</b> when turned on</li> <li>- <b>Standard Self-check</b> during operation and, if any, operation lock (within 100 milliseconds), with alarm signalling to operators through specific <b>Error Codes</b>, in the event of problems concerning: <ul style="list-style-type: none"> <li>- general operation or activation errors (General Error Control)</li> <li>- output power (Output Error Control)</li> </ul> </li> <li>- <b>HF Leakage Control</b>: continuous verification, by means of a specific circuit, of any HF current dispersion to earth and possible automatic power reduction by means of an alarm signal</li> <li>- Storage of the last 32 Error Codes</li> </ul>
<b>Power self-adjustment</b>	By means of a microprocessor with two different systems: <ul style="list-style-type: none"> <li>- <b>ADC System</b> - Constant power: self-adjusts the power, controlling voltage and current, based on real-time feedback (7000 checks/sec) between device and patient's tissue. The powers are equipped with Micro and Macro progressive regulation with steps from 0.1 W to 10 W. Monopolar (from 1 W to 10 W), Bipolar (from 0.1 W to 5 W).</li> <li>- <b>APC System</b> - Constant voltage: self-adjusts the power, keeping the voltage constant, based on a real-time feedback (7000 checks/sec) between device and patient's tissue. The powers are equipped with regulation with 10 effects (for each one the maximum power delivered in W is indicated).</li> </ul>
<b>Operation memorisation</b>	100 programs
<b>Outputs</b>	2 Monopolar and 2 Bipolar
<b>Foot-operated controls</b>	EXCELL NHP/T can be fitted with: <ul style="list-style-type: none"> <li>• A double pedal control with push button selector for monopolar or bipolar functions.</li> <li>• Two double pedal controls, one for monopolar and one for bipolar functions.</li> </ul> The pedals are compliant with IEC 60601-2-2, waterproof (IP67), electric with 12 VDC low voltage power supply.
<b>Panel</b>	7" touch screen LCD display
<b>Neutral electrode safety circuit NPCC System</b>	Control of the connection of the neutral electrode - and of the quality of the contact using double section/split electrodes - with alarm signal and possible lock of delivered power. It can be used in two different ways: Large electrodes for adults, Small electrodes for paediatric patients/newborns. It allows using cables with both European "Ø 6.35 mm" and US "2 pins" connectors.
<b>Power supply</b>	100-230 V - 50/60 Hz – Automatic switching supply.
<b>Power consumption at 230V</b>	Max power 3.6 A = 828 VA, Stand-by 0.4 A = 92 VA
<b>Cooling</b>	Convection, without fan
<b>Equipotential bonding</b>	Standard DIN 42801 plug
<b>Software upgrade, calibration</b>	Upgrade via serial port connected to a PC, on-site calibration.
<b>Size (LxDxH) and weight</b>	EXCELL NHP/T-400 and EXCELL NHP/T-200: 38x38x20 cm – 10 Kg EXCELL NHP/TA-400 and EXCELL NHP/TA-200: 38x38x20 cm – 10.5 Kg
<b>Argon gas section (only in EXCELL NHP/TA-400 and EXCELL NHP/TA-200 models)</b>	
<b>Supply</b>	One 5 litre cylinder or with centralised system
<b>Flow</b>	Max 15 l/min
<b>Pressure</b>	Inlet 2.5 atm / Outlet 1 atm
<b>Flow check with Constant flow System</b>	From 1 to 15 l/min by electronic sensor with adjustment buttons and numerical control on the display. Automatic self-compensation based on the type of electrode used. Alarm if gas is absent.
<b>Pressure check in the Safety gas System circuit</b>	Two-stage pressure reducer (on the cylinder and inside, with safety valve). Pressure sensor connected to the electronic control system, with Auto-Check when the gas section is switched on.
<b>Protection of the supplied gas flow</b>	Gas outlet equipped with antibacterial filter.





# DEVICES AND STANDARD ACCESSORIES

**EXCELL NHP/T-400**, without accessories

**EXCELL NHP/T-200**, without accessories

**EXCELL NHP/TA-400**, without accessories

**EXCELL NHP/TA-200**, without accessories

**B610/Asw** STANDARD ACCESSORIES SERIES including:

1 DS/Esw Double pedal control, electric, waterproof

1 NP/A Stainless steel neutral electrode, 2.5 m cable

1 FGE Fixing belt for electrodes

2 MPE/E Sterilisable electrode holder, 3.5 m cable

1 SEL/E Series of 8 active electrodes (2 E1 - Straight blade electrode, 2 E5 - Thick needle electrode, 1 E7 - Fine needle electrode, 1 E12 - Straight ball electrode  $\varnothing$  2.5 mm, 2 E14 - Straight ball electrode  $\varnothing$  4 mm)

**B610/Bsw** STANDARD ACCESSORIES SERIES identical to B610/Asw, but with flexible conductive rubber neutral electrode NP/GA for adults

**B610/Psw** As above, with neutral paediatric electrode NP/GP



EXCELL NHP/T-400



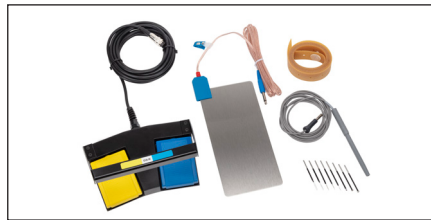
EXCELL NHP/T-200



EXCELL NHP/TA-400



EXCELL NHP/TA-200



B610/Asw



B610/Bsw



# alsa

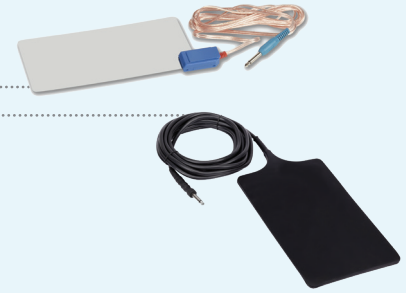
bologna



# GENERAL LIST OF ACCESSORIES

## REUSABLE NEUTRAL ELECTRODES

- EIP/9** Stainless steel electrode (16x6 cm), 3 m cable
- NP/A** Stainless steel electrode (25x12 cm), 3 m cable
- NP/GA** Conductive flexible rubber electrode (25x15 cm), 4.5 m cable
- NP/GP** Conductive flexible rubber electrode (15x8 cm), 4.5 m cable
- EIP/S** Manual neutral electrode, 2 m cable
- FFE** Elastic belt for fixing electrodes, with double button, L. 50 cm (\*)
- FGE** Elastic belt for fixing electrodes, with double button, L. 150 cm (\*)



## DISPOSABLE ADHESIVE NEUTRAL ELECTRODES

- CMS/E** Reusable connection cable, 3 m
- CMS/E5** As above, 5 m
- EIP/DA** Single section non Split adhesive electrode for adults (25-pc pack) (\*)
- EIP/SA** As above, Split type with double section (25-pc pack) (\*)
- EIP/DP** Single section non Split paediatric adhesive electrode (25-pc pack) (\*)
- EIP/SP** As above, Split type with double section (25-pc pack) (\*)

## HANDLES FOR USE WITH FOOT CONTROLS

- MPE/F** Autoclavable handle, 2.5 m cable
- MPE/E** Sterilisable electrode holder handle, 3.5 m cable
- MPE/E5** As above, 5 m cable
- MLD/F** Needle holder microsurgery handpiece, autoclavable, 2 m cable

## HANDLES WITH DOUBLE BUTTON MANUAL CONTROLS

- MPE/CMS** Electrode holder handle with blade electrode, 3 m cable (100 times sterilisable)
- MPE/CMS5** As above, 5 m cable

## ACTIVE ELECTRODES stainless steel, insulated stem $\varnothing$ 2.3 ÷ 2.4 mm, sterilisable

- SHORT TYPE, L. 70 mm**
- E1** Blade electrode, straight
  - E1/I** Blade electrode, straight, all insulated except the last 5 mm
  - E3** Blade electrode, angled
  - E1/L** Lancet electrode, straight
  - E3/L** As above, angled
  - E5** Thick needle electrode, straight
  - E6** As above, angled
  - E7** Thin needle electrode, straight
  - E7/I** Thin needle electrode, straight, all insulated except the last 5 mm
  - E8** Thin needle electrode, angled
  - E10** Ultra-thin needle electrode, 0.40 mm diam.
  - E12** Ball electrode, straight,  $\varnothing$  2.5 mm
  - E13** As above, angled
  - E14** Ball electrode, straight,  $\varnothing$  4 mm
  - E15** As above, angled
  - E16** Ball electrode, straight,  $\varnothing$  6 mm
  - E17** As above, angled
  - E18** Loop electrode (diamond-shaped 5x10 mm)
  - E19** As above, diamond-shaped 10x10 mm
  - E21** Loop electrode (wire, round  $\varnothing$  5 mm)
  - E23** As above,  $\varnothing$  10 mm
  - E25** As above,  $\varnothing$  15 mm
  - E23/N** Loop electrode (ribbon, round  $\varnothing$  10 mm)
  - E25/N** As above,  $\varnothing$  15 mm
  - E26** Plate electrode
- EXT/15** Extension l. 15 cm for all electrodes with stem  $\varnothing$  2.3 ÷ 2.4 mm
- LONG TYPE, L. 130 mm**
- E40** Blade electrode, straight
  - E40/I** Blade electrode, straight, all insulated except the last 5 mm
  - E41** Thick needle electrode, straight
  - E42** Thin needle electrode, straight
  - E42/I** Thin needle electrode, straight, all insulated except the last 5 mm
  - E43** Loop electrode, straight (wire, round  $\varnothing$  5 mm)
  - E44** As above,  $\varnothing$  10 mm
  - E45** As above,  $\varnothing$  15 mm
  - E46** Ball electrode, straight,  $\varnothing$  2.5 mm
  - E47** As above,  $\varnothing$  4 mm
  - E47/6** As above,  $\varnothing$  6 mm





■ **ELECTRODES FOR GYNECOLOGY L. 130 mm**

- E48 Round loop electrode, 20x15 mm
- E49 As above, 10x7 mm
- E50 As above, 10x10 mm
- E51 As above, 15x12 mm
- E52 As above, 15x10 mm
- E53 As above, 20x8 mm
- E54 As above, 20x10 mm
- E55 As above, 20x20 mm
- E56 Square loop electrode, 10x5 mm
- E57 As above, 10x8 mm
- E58 As above, 10x10 mm
- E59 As above, 5x5 mm

■ **ELECTRODES FOR MICROSURGERY, STERILISABLE**

- MID Needle reducer (for all electrode handles)
- SAD Series of 10 needles, Ø 0.10 mm
- SAD/1 As above, Ø 0.15 mm
- SAD/2 As above, Ø 0.20 mm
- SAD/3 As above, Ø 0.40 mm

■ **INSULATED MONOPOLAR FORCEPS FOR COAGULATION, WITHOUT CONNECTION CABLES TO THE EQUIPMENT, STERILISABLE**

- PIC/1 Straight forceps (Cushing/Potts-Smith) ("grasping" tips 1 mm - L. 18 cm)
- PIC/1-25 As above, L. 25 cm
- PIC/2 Straight forceps (Cushing/Potts-Smith) ("grasping" tips 2 mm - L. 25 cm)

■ **INSULATED MONOPOLAR FORCEPS FOR COAGULATION, WITH CONNECTION CABLES TO THE EQUIPMENT, STERILISABLE**

- CPI Connection cable for PMI, L. 3.5 m
- CPI/5 As above, L. 5 m
- PMI/1 Straight forceps (Cushing/Potts-Smith) ("grasping" tips 1 mm - L. 18 cm)
- PMI/1-20 As above, L. 20 cm
- PMI/1-25 As above, L. 25 cm
- PMI/2 Straight forceps (Cushing/Potts-Smith) ("grasping" tips 2 mm - L. 25 cm)
- PMI/B Bayonet forceps (Jansen/Yasargil) ("grasping" tips 2 mm - L. cm. 20 cm)

■ **MONOPOLAR ACCESSORIES FOR LAPAROSCOPY, request specific details.**

■ **CONNECTION CABLES FOR MONOPOLAR INSTRUMENTS FOR LAPAROSCOPY**

- CPE Connection cable for instruments with male or female connector Ø 4 mm, L. 3.5 m
- CPE/5 As above, L. 5 m

■ **CABLES FOR FLEXIBLE ENDOSCOPY, request specific details.**

■ **CONNECTION CABLES FOR BIPOLAR FORCEPS OR ELECTRODES AND FOR HOOKS, FORCEPS AND BIPOLAR SCISSORS FOR LAPAROSCOPY, STERILISABLE**

- CPB/E Connection cable, 3 m
- CPB/E5 As above, L. 5 m

■ **RIGID BIPOLAR INSULATED CLAMPS AND ELECTRODES, STERILISABLE**

**Standard forceps for bipolar coagulation**

- PMC/JR Straight forceps (Jeweler) (straight tips 0.5 mm - L. 11.5/12 cm)
- PMC/JC As above, angled tips
- PMC/RS Straight forceps (Cushing/Potts-Smith) (straight tips 0.7 mm - L. 15.5 / 16 cm)
- PMC/CS As above, angled tips
- PMC/R Straight forceps (Cushing/Potts-Smith) (straight tips 1 mm - L. 20 cm)
- PMC/C As above, angled tips
- PBC/R Straight forceps (Cushing/Potts-Smith) (straight tips 2 mm - L. 20 cm)
- PBC/C As above, angled tips
- PMC/R25 Straight forceps (Cushing/Potts-Smith) (straight tips 1 mm - L. 25 cm)
- PMC/C25 As above, angled tips
- PBC/R25 Straight forceps (Cushing/Potts-Smith) (straight tips 2 mm - L. 25 cm)
- PBC/C25 As above, angled tips
- PMC/RSB Bayonet forceps (Jensen/Yasargil) (straight tips 0.7 mm - L. 16.5 / 17 cm)
- PMC/B Bayonet forceps (Jensen/Yasargil) (straight tips 1 mm - L. 20 cm)
- PMC/BCD As above, angled tips pointing down
- PMC/BCU As above, angled tips pointing up
- PBC/B Bayonet forceps (Jensen/Yasargil) (straight tips 2 mm - L. 20 cm)
- PBC/BCD As above, angled tips pointing down
- PBC/BCU As above, angled tips pointing up

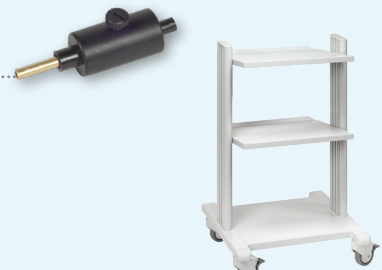


**PMC/B25** Bayonet forceps (Jensen/Yasargil) (straight tips 1 mm - L. 25 cm)  
**PBC/B25** Bayonet forceps (Jensen/Yasargil) (straight tips 2 mm - L. 25 cm)

- **FORCEPS WITH IRRIGATION FOR BIPOLAR COAGULATION**, request specific details.
- **FORCEPS WITH NON-STICK TIPS FOR BIPOLAR COAGULATION**, request specific details.
- **RIGID ELECTRODES FOR BIPOLAR COAGULATION OF TURBINATES OR LARYNX**, request specific details.
- **HOOKS, FORCEPS AND BIPOLAR SCISSORS FOR LAPAROSCOPY**, request specific details.
- **BIPOLAR FORCEPS FOR COAGULATION/SEALING OF LARGE VESSELS FOR SURGERY AND LAPAROSCOPY WITH RELATIVE CABLES**, request specific details.

■ **ADAPTERS FOR USE OF NON-STANDARD ALSA CABLES**

**RD/5** For monopolar cables with plugs with Ø from 2 to 8 mm, or Martin standard. ....  
**RD/BF** For bipolar cables with double plug Ø 4 mm (International standard) or with Valleylab/Conmed standard plug.  
**RD/BF1** For bipolar cables with coaxial plug Ø 12.5 mm (Erbe/Storz standard)  
**RD/BF2** For bipolar cables with coaxial plug Ø 8 mm (Martin/Bertchold standard)



■ **TROLLEYS**

**H23/SE** Trolley with 3 shelves. Size: 50x50x80 cm, antistatic wheels, 2 with brakes .....  
**H26** Trolley with 2 shelves and seat for Argon cylinder. Size: 52x55x90 cm, antistatic wheels, 2 with brakes

■ **FOOT CONTROLS**

**STOP/PN** Foot control, pneumatic, waterproof, explosion-proof (single) (ALSATOM SU 50-MPC, ALSATOM SU 100-MPC, ALSATOM SU 140-MPC)  
**D-STOP/P** Foot control, pneumatic, waterproof, explosion-proof (double) (ALSATOM SU 140/D-MPC, ALSATOM SU 140/BD-MPC)  
**DS/E** Double pedal electric control, waterproof (IP67) (EXCELL MCDS<sub>e</sub>, EXCELL NHP)  
**DS/Esw** Double pedal electric control, waterproof (IP67) (EXCELL NHP/T) .....  
**DS/B** Double pedal electric control, waterproof (IP67), for bipolar operation only (EXCELL MCDS<sub>e</sub>, EXCELL NHP, EXCELL NHP/T)



■ **ACCESSORIES HOLDER BOXES**

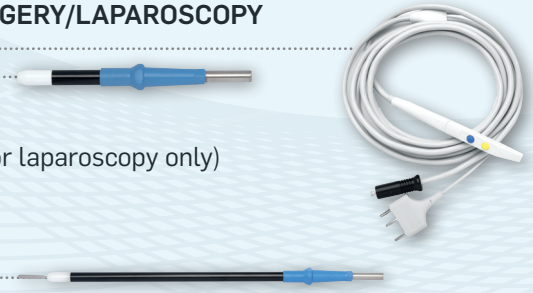
**BOX/TE** Stainless steel round box for electrodes  
**BOX/RA-2** Stainless steel rectangular box for accessories, 30x20x6 cm

**ACCESSORIES FOR SURGERY WITH ARGON GAS**

(with EXCELL 400/A MCDS<sub>e</sub>, EXCELL NHP 250/DA, EXCELL NHP 400/DA, EXCELL NHP/TA-200, EXCELL NHP/TA-400)

■ **HANDLE WITH MANUAL CONTROLS AND ELECTRODES FOR SURGERY/LAPAROSCOPY**

**AC/HANDLE** Double button handle, sterilisable, 3.5 m cable .....  
**AC/E25-C** Rigid electrode for coagulation, l. 25 mm, sterilisable .....  
**AC/E100-C** As above, l. 100 mm  
**AC/E320-C** As above, l. 320 mm (for laparoscopy only)  
**AC/E320-H** Rigid hook L-shaped electrode, l. 320 mm, sterilisable (for laparoscopy only)  
**AC/E40-A** Rigid needle electrode, l. 40 mm, sterilisable  
**AC/E100-A** As above, l. 100 mm  
**AC/E40-L** Rigid blade electrode, l. 40 mm, sterilisable  
**AC/E100-L** As above, l. 100 mm .....



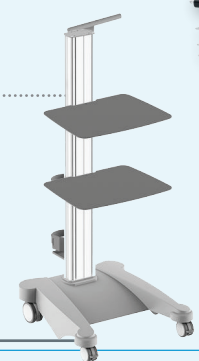
■ **CABLE AND ELECTRODES/PROBES FOR FLEXIBLE ENDOSCOPY**

**AC/CABLE+** Connection cable for electrodes/probes, sterilisable, l. 3.5 m .....  
**AC/FP1+** Flexible electrode for endoscopy d. 1.5 mm, l. 1.5 m  
**AC/FP2+** As above, d. 2.3 mm, l. 1.0 m .....  
**AC/FP3+** As above, d. 2.3 mm, l. 2.2 m  
**AC/FP4+** As above, d. 3.2 mm, l. 2.2 m  
**AC/FP3+s** As above, d. 2.3 mm, l. 2.2 m, with side opening




■ **TROLLEY, CYLINDERS, PRESSURE REDUCER, ANTIBACTERIAL FILTER**

**H26** Trolley with 2 shelves and seat for Argon cylinder.  
 Size: 52x55x90 cm, antistatic wheels, 2 with brakes .....  
**B5** 5 l argon gas cylinder  
**RD/P** Pressure reducer for B5 cylinder  
**ESU/TG** Gas supply pipe with quick connector (for B5)  
**ESU/F** Antibacterial filter for argon gas outlet  
**ESU/FC** Metal connector for filter



(\*) items not CE0051 certified



## Notes

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**alsa**<sup>®</sup>

**bologna**

PRODUCTS DESIGNED AND MANUFACTURED BY:

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ISO 9001  
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IT - 1231



ISO 13485  
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CE 0051