EXCELL
MCDSe System

ELETTROBISTURI ED ELETTROBISTURI CON GAS ARGON PER ALTA CHIRURGIA
DIATHERMY UNITS AND ARGON GAS ENHANCED DIATHERMY UNITS FOR MAJOR SURGERY
BISTOURIS ET BISTOURIS AVEC GAS ARGON POUR LA HAUTE CHIRURGIE
ELECTROBISTURÍES Y ELECTROBISTURÍES CON GAS ARGON PARA ALTA CIRUGÍA

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THE ELECTROSURGICAL UNITS EXCELL *MCDSe System*

The equipments of the series Excell *MCDSe* System are electrosurgical units for major surgery, suitable for all operations where the monopolar and the bipolar techniques are used, as well as the monopolar mode with the Argon gas flow. The units are available in 5 different models.
The models 400 *MCDSe*, 350 *MCDSe*, 250 *MCDSe*, and 200 *MCDSe* are indicated for electrosurgery, but they can be also connected to an external module for the Argon gas. By the contrary, the model 400/A *MCDSe* is suitable both for electrosurgery and electrosurgery with Argon gas. It is equipped with all the necessary functions for this type of application, and so it is easier to use.

AUTO-CHECK AND SELF-REGULATION OF OUTPUT POWERS MCDSE SYSTEM

A new system with double microprocessor *Master Sleeve System* ensures a wide range of functions and performances at a very high level.
Auto-Check: complete auto-control of the functioning, through:
- *Main Auto-Check*, main auto-diagnosis procedure at the switching-on and *Standard Auto-Check*, continuous auto-diagnosis during the functioning.
- *General Error Control and Output Error Control:* the auto-check systems interrupt the functioning and inform the operators through specific *Error Codes* in case of damages or errors in the functioning/switching on, or in case of problems that could provoke a sudden delivery of power, which is higher than the selected one.

ADC System-constant power e Starting Impulse Control.
All the currents are automatically and dynamically self-regulated, according to a continuous feed-back between the unit and the tissues on which the operator intervenes, and according to the electrode used and its rapidity of sliding on the tissues themselves.
All the cutting currents are characterized by a starting pulse, which is controlled and automatically optimized to obtain the maximum efficacy.
These two systems guarantee the best results in all the operating fields, by using the minimum possible power (the interventions under liquid included).

10 PROGRAMMABLE MEMORIES

The *MCDSe* models have the possibility to memorize 10 functioning programs that are selectable through a simple button. In this way, the different performances can be personalized and then reproduced.

HIGH FREQUENCY LEAKAGE CURRENTS CONTROL CIRCUIT

A specific circuit verifies that the HF leakage currents to hearth always remain within the safety limits, in order to avoid all risks of burns, even in dangerous situations like the contact between the patient and a small part of the operating table.

SAFETY CIRCUIT OF THE NEUTRAL ELECTRODE NPCC SYSTEM

The safety circuit of the neutral electrode guarantees its complete control.
With the *twin section electrodes Split* type, it fully checks the connection and the quality of the contact between the electrode and the patients' tissues.
If the contact is not optimum (approx. 80% of a standard electrode for adults), it gives the first luminous indication. If the contact decreases to approx. 50% of a standard electrode for adults, it gives another luminous indication, and automatically reduces the power at a safety level of 200 W. If the contact is dangerous or the electrode cable is broken / not connected at all, it interrupts the delivery of the power, through a luminous and acoustic alarm.
With the *one single section electrodes Non Split* type, it only controls if the cable is integral and correctly connected.

PRACTICALNESS AND EASINESS

On the front panel, which is completely smooth and easily washable, there are all the control devices with selection buttons for the functions and adjustable buttons for the powers; there are also luminous activation signals or alarm signals, as well as the powers control displays. The outputs are characterized by luminous indications that light up according to the usage modes that have been selected, in order to favour the connection and the activation of the accessories.

GREAT RELIABILITY, TECHNICAL ASSISTANCE AND TECHNOLOGICAL EVOLUTION

The Excell *MCDSe* models have been designed with interchangeable boards, and they are equipped with a new generator *RF Mosfet Powered Damped Oscillator* with alimentation device *switching* that does not cause any problem of heating; the test procedures also include a "stress test" of 100 hours of functioning at max. power.
The Auto-Check systems memorize the last 32 *Error Codes* for the future controls, while the functioning and the auto-check softwares can be easily updated, through a serial port for a connection to a PC.

WIDE RANGE OF CURRENTS AND PERFORMANCES

All the Excell models are equipped with 13 currents to satisfy all possible operating needs; these currents become 14 into the model 400/A *MCDSe*.

Four for the monopolar cut, with sinusoidal wave, which can be used even with the Argon gas flow into the model 400/A *MCDSe* in order to reduce the smokes and the smells. They ensure the maximum rapidity and precision in all the operating fields, the procedure under liquid included.
- **Pure:** Pure cut without any coagulating effect.
- **Blend 1:** Coagulating cut with normal haemostatic effect.

The two currents are characterized by special self-regulation softwares, which are particularly useful for the TUR interventions, the vaporisation, etc.
- **Blend 2:** Coagulating cut, with strong haemostatic effect, *spray* type.
- **Endo:** Coagulating cut, with cut phases alternated to coagulation phases and a special self-regulation software for its usage in flexible endoscopy.

Four for the monopolar coagulation, which allow to obtain different coagulation effects.
- **Soft:** Very delicate, with soft superficial effect and strong deep action.
- **Fulg Forced:** With strong superficial and deep effect.
- **Pin Point Contact:** Similar to the previous one, but softer.
- **Spray:** Without any contact and with a very strong superficial effect.

One for the Argon gas coagulation, into the model 400/A *MCDSe*
This current consists of a special coagulation without any contact, which can be obtained by combining the spray coagulation with an Argon gas flow through specific electrodes that guarantee a very rapid superficial effect, a very small deep action (3mm max.), an absolute absence of the sticking effect of the electrode on the tissues, and a minimum risk of perforation.

Two for the bipolar cut, which allow to use this technique with scissors, hooks for laparoscopy, etc.
- **Pure:** Pure cut with minimum coagulating effect.
- **Blend:** Coagulating cut with strong coagulating effect.

Three for the bipolar coagulation.
- **Micro:** Very delicate, *Micro Precise* type, with a minimum sticking effect of the tissues on the tips of the forceps.
- **Micro Auto:** The same as Micro, but with *Impedance Sensing* automatic *Auto Start / Auto Stop* device.
- **Macro:** *Standard* type, which is very rapid and efficacious, ideal for forceps with bigger section (i.e. laparoscopy).

TWO MONOPOLAR AND ONE BIPOLAR OUTPUTS

The two monopolar outputs, which can be used at the same time by two different operators, can be activated by three modes:
- Both of them by the hand-switch electrodes holder handles, both of them by the double pedal foot-switch or one by the hand-switchs and one by the double pedal foot-switch.

Into the model 400/A *MCDSe*, when also the functioning with Argon gas is selected, the outputs are activated alternatively:
- Both of them by the hand-switch electrodes holder handles or both of them by the double pedal foot-switch, one for the norma electrosurgery and one for the Argon gas enhanced electrosurgery.

The bipolar output, which can be used independently and at the same time as the monopolar ones, can be activated by two modes:
- For the cut or the coagulation, by the double pedal foot-switch.
- For the coagulation, by selecting the current *Micro Auto* with *Impedance Sensing* automatic *Auto Start / Auto Stop* device with *Start Delay* adjustable from 0 to 5sec. This represents a very useful system, which allows obtaining coagulation by the hand-switch activation without using any special forceps.

THE PEDAL FOOT-SWITCHES

The Excell units can be used by one double foot-switch pedal for the activation of the monopolar or bipolar functions and by two double foot-switch pedals, one for the monopolar functions and the other for the bipolar functions.

ELIMINATION AND FILTERING OF THE ELECTROSURGICAL SMOKES

In order to eliminate the bacterial/viral contamination, the Excell units can be used together with electrosurgical smoke evacuators, which are equipped with suction functions expressly studied for the laparoscopic procedures and for solving the problem of a perfect visual field while operating.

EXCELL 400/A MCDSe

H 23/SE

H 10/AB

H 25

CARATTERISTICHE TECNICHE

Generatore elettronico conforme a Norme: IEC 601-1 e IEC 60601-2-2.
Classificazione 93/42 CEE: IIB - **Certificazione 93/42 CEE:** 187/MDD - IMQ 0051.
Compatibilità elettromagnetica: Conforme a IEC 60601-1-2,
Test report IMQ nr.80SF00709/1, 80SF00709/2.
Classificazione e tipo IEC 601-1: Classe I, tipo CF.
Correnti tipiche di dispersione BF nel paziente: 4 µA= 0,004mA,
nell'involucro: 1 µA= 0,001mA, verso terra: 30 µA= 0,3mA.
Circuito d'uscita in base a IEC 601-2-2:
"Floating" Isolato alle alte e basse frequenza, protetto contro l'uso del defibrillatore.
Correnti tipiche di dispersione in alta frequenza: 100 mA.
Sistema di qualità ALSA: Certificato ISO 9001:2000 e ISO 13485:2003.
Frequenza di lavoro monopolare e bipolare: 440kHz.

Sistema di autocontrollo a doppio microprocessore *Master Sleeve System* con:

Auto-Check, completo autocontrollo del funzionamento con:
- *Main Auto-Check:* procedura principale di autodiagnosi all'accensione.
- *Standard Auto-Check:* continua autodiagnosi durante il funzionamento.
- *General Error Control e Output Error Control:* I sistemi di auto-check bloccano il funzionamento e informano gli operatori mediante Error Codes nel caso di errori di attivazione, di guasti di funzionamento o di guasti che possano causare un'erogazione di potenza superiore a quella selezionata.

ADC System-constant power e Starting Impulse Control

Autoregolazione automatica di tutte le correnti in base ad un continuo feed-back in tempo reale (7000 controlli/sec) fra l'apparecchio e i tessuti su cui si interviene, al tipo di elettrodo usato ed alla sua velocità di scorrimento sui tessuti.
L'impulso iniziale delle correnti di taglio è ottimizzato automaticamente per ottenere la massima efficacia.
Memorizzazione funzionamento: 10 programmi.
Controllo delle correnti di dispersione di alta frequenza verso terra: specifico circuito con segnale di allarme e diminuzione automatica delle potenze erogate.

Uscite, attivazioni e comandi a pedale

Due uscite monopolari usabili contemporaneamente da due operatori:
- Entrambe con comandi manuali, entrambe con comando a doppio pedale, una con comandi manuali ed una con comando a doppio pedale.

Nel modello 400/A, quando si seleziona il funzionamento con il gas argon:
- Entrambe con comandi manuali o con comando a doppio pedale, una per la normale elettrochirurgia ed una per elettrochirurgia con gas argon.

Un uscita bipolare, usabile indipendentemente e contemporaneamente:
- Per taglio o coagulazione con comando a doppio pedale.
- Per coagulazione, usando la corrente *MicroAuto* con *AutoStart/AutoStop* automatico *Impedance Sensing* e Start Delay regolabile da 0 a 5 sec.

Gli Excell sono dotabili di:
- Un comando a doppio pedale selezionabile per le funzioni monopolari o bipolari.
- Due comandi a doppio pedale, uno per le funzioni monopolari ed uno per quelle bipolari.

I pedali sono conformi a IEC 60601-2-2, stagni all'immersione (IPX7) con alimentazione a bassa tensione di sicurezza medicale 12VDC.

Regolazione micro/macro delle potenze a tasti con variazione lenta e veloce e passi:
Monopolari: 0/30W=1W, 30/100W= 2W, 100/200W=5W, da 200W=10W.
Bipolari: 0/10W=0,5W, 10/30W=1W, 30/100=2W, da 100 W=5W.
Controllo potenze: mediante displays.

Circuito di sicurezza dell'elettrodo neutro *NPCC System*

Controllo del collegamento/contatto degli elettrodi neutri sia del tipo *Split* a doppia sezione che *Non Split* a sezione unica.
Con elettrodi Split controlla il collegamento ed il buon contatto dell'elettrodo. Se è ben attaccato solo l' 80% della superficie di un elettrodo standard per adulti da una primo allarme luminoso. Se il contatto scende al 50% da una ulteriore allarme luminoso e riduce automaticamente la potenza erogata a 200 W max. Se il contatto è pericoloso o il cavo è rotto/scollegato blocca l'erogazione della potenza con allarme luminoso (rosso, continuo) ed acustico (forte, intermittente, non regolabile).
Con elettrodi *non Split* controlla solo, come sopra, se il cavo è rotto/scollegato.

Segnali acustici e luminosi conformi a IEC 60601-2-2

Attivazione taglio (luce gialla/tono grave), Attivazione coagulazione (luce blu/tono acuto).
Allarme elettrodo neutro (luce rossa/tono forte ed intermittente, non regolabile).

Alimentazione: 230/115V± 10% ~ 50/60Hz.
Assorbimento di rete a 230V: Max potenza 3,6A=828VA, Stand-by 0,4A= 92VA.
Involucro: protetto contro l'ingresso di liquidi secondo IEC 60601-2.
Raffreddamento: per convezione, senza ventilatore.
Collegamento equipotenziale: spinotto standard DIN 42801.
Dimensioni e peso (LxPxA): 400/A *MCDSe*: cm 38x38x16 – Kg 16
400 *MCDSe*, 350 *MCDSe*, 250 *MCDSe*, 200 *MCDSe*: cm 38x35x16 – Kg 15.

Predisposizione per l'uso con un modulo esterno per il gas argon
Tutti i modelli 400 *MCDSe*, 350 *MCDSe*, 250 *MCDSe*, 200 *MCDSe*.

Sezione gas argon (solo nel modello Excell 400/A *MCDSe*)

Alimentazione: sia con 1 o 2 bombole da 5 lt che con sistema centralizzato.
Max flusso e pressione gas: 15lt/min - In ingresso 2,5 atm, di lavoro 1 atm.
Controllo del flusso con *Constant flow System*: da 1 a 15 lt/min mediante sensore elettronico con pulsanti di regolazione, controllo visivo su bar-led, e autocompensazione automatica in base al tipo di elettrodo usato ed allarme nel caso di assenza gas.
Controllo della pressione nel circuito *Safety gas System*: Riduttore di pressione sulla bombola, Riduttore di pressione interno con valvola di sicurezza, Sensore di pressione collegato al sistema elettronico di controllo con Auto-Check quando si accende la sezione gas.
Protezione del flusso di gas erogato: l'uscita del gas è dotata di filtro antibatterico.

TECHNICAL FEATURES

Electronic generator, compliant with: IEC 601-1 and IEC 60601-2-2 Standards.
Classification 93/42 EEC: IIB **- Approval 93/42 EEC:** 187 MDD - IMQ 0051.
Electromagnetic compatibility: Unit is compliant with IEC 60601-1-2,
Test report IMQ nr.80SF00709/1, 80SF00709/2.
Classification and type IEC 601-1: Class I, Type CF.
Typical LF leakage currents: on the patient: 4 µA= 0,004mA,
into the enclosure: 1 µA= 0,001mA, to earth: 30 µA= 0,3mA.
Output circuit according to IEC 60601-2-2:
"Floating"Insulated at low and high frequencies, protected against the use of the defibrillator.
Typical high frequency leakage currents : 100 mA.
ALSA quality system: Approved ISO 9001:2000 and ISO 13485:2003.
Monopolar and bipolar working frequency: 440kHz.

Self-Regulation System with double micro-processor *Master Sleeve System*:

Auto-Check, complete auto-control of the functioning, through:
- *Main Auto-Check:* main auto-diagnosis procedure at the switching-on;
- *Standard Auto-Check:* continuous auto-diagnosis during the functioning;
- *General Error Control and Output Error Control:* the auto-check systems interrupt the functioning and inform the operators through specific Error Codes in case of errors in the activation, damages in the functioning or in case of problems that could provoke a delivery of power, which is higher than the selected one.

ADC System-constant power e Starting Impulse Control

All the currents are automatically self-regulated, according to a continuous feed-back in real time (7,000 checks / sec) between the unit and the tissues on which the operator intervenes, and according to the electrode used and its rapidity of sliding on the tissues themselves.
The initial pulse of the cut currents is optimized automatically in order to obtain the maximum efficacy.
Functioning memorization: 10 programs.
Control of high frequency leakage currents: by a specific circuit with alarm signal and automatic decrease of output powers.

Outputs, activations, and pedal foot-switches

There are two monopolar outputs that can be used at the same time by two operators:
- Both of them by the hand-switches, both of them by the double foot-switch pedal or one by the hand-switches and one by the double foot-switch pedal.

Into the model *MCDSe* 400/A, when also the functioning with Argon gas is selected:
- Both of them by the hand-switches or by the double foot-switch pedal, one for the normal electrosurgery and the other for the electrosurgery with Argon gas.

There is one bipolar output, which can be used independently and at the same time as the monopolar ones:
- For the cut or the coagulation, by the double foot-switch pedal.
- For the coagulation, by selecting the current *Micro Auto* with *Impedance Sensing* automatic *Auto Start / Auto Stop* device with *Start Delay* adjustable from 0 to 5sec.

The Excell units can be equipped with:
- One double foot-switch pedal for the activation of the monopolar or bipolar functions.
- Two double foot-switch pedals (one for the monopolar functions and the other for the bipolar functions).

The pedals are compliant with the Standard IEC 60601-2-2, they are waterproof (IPX7) with low voltage 12VDC supply for medical safety.

Micro/macro adjusting powers by push-buttons with low/fast changing and steps:
Monopolar: 0/30W=1W, 30/100W= 2W, 100/200W=5W, da 200W=10W.
Bipolar: 0/10W=0,5W, 10/30W=1W, 30/100=2W, da 100 W=5W.
Powers control: by displays.

Safety circuit of the neutral electrode *NPCC System*

Control of the connection/contact of the neutral electrodes *Split* - twin section type, as well as of the electrodes *Non Split* - one single section type.
With the Split type, it fully checks the connection and the good contact of the electrode. If the contact is not optimum (approx. 80% of the surface of a standard electrode for adults), it gives the first luminous indication. If the contact decreases to approx. 50%, it gives another luminous indication, and automatically reduces the output power at max. 200W. If the contact is dangerous or the electrode cable is broken / not connected at all, it interrupts the delivery of the power and gives a luminous (red) and acoustic (loud, intermittent, not adjustable) alarm.
With the *Non Split* type, it only controls if the cable is integral and correctly connected.

The acoustic and luminous signals are compliant with IEC 60601-2-2

Activation of the Cut (yellow light - loud sound); Activation of the Coagulation (blue light - acute sound); Neutral Electrode (red light - loud, intermittent and not adjustable sound).

Mains: 230/115V± 10% ~ 50/60Hz.
Absorption at 230V: Max power 3,6A=828VA, Stand-by 0,4A= 92VA.
Enclosure: protected against the penetration of liquids, according to IEC 60601-2.
Cooling: by convection, without fan.
Equipotential Connection: standard plug DIN 42801.
Dimensions and Weight (LxDxH): 400/A *MCDSe*: 38x38x16cm. – 16kgs.
400 *MCDSe*, 350 *MCDSe*, 250 *MCDSe*, 200 *MCDSe*: 38x35x16cm. – 15kgs.

Facility to use an external module for Argon gas
All the models: 400 *MCDSe*, 350 *MCDSe*, 250 *MCDSe*, 200 *MCDSe*.

Argon gas section (only into the model Excell 400/A *MCDSe*)

Supply: Both with 1 or 2 cylinders of 5lt. and with centralized system.
Max. Flow and Gas Pressure: 15lt/min. At the entrance: 2.5atm; during the functioning: 1atm.
Control of the flow through *Constant Flow System*: from 1 to 15lt/min, through an electronic sensor with adjusting buttons, visual check on the bar-led, automatic auto-compensation according to the used electrode, and alarm just in case of absence of gas.
Control of the pressure into the circuit *Safety Gas System*: Reducer of the pressure on the cylinder; internal reducer of the pressure with safety valve; pressure sensor connected to the electronic control system with Auto-Check when the gas section is switched on.
Protection of the delivered gas flow: The gas output is equipped with antibacterial filter.

LE CORRENTI / THE CURRENTS / LES COURANTS / LAS CORRIENTES

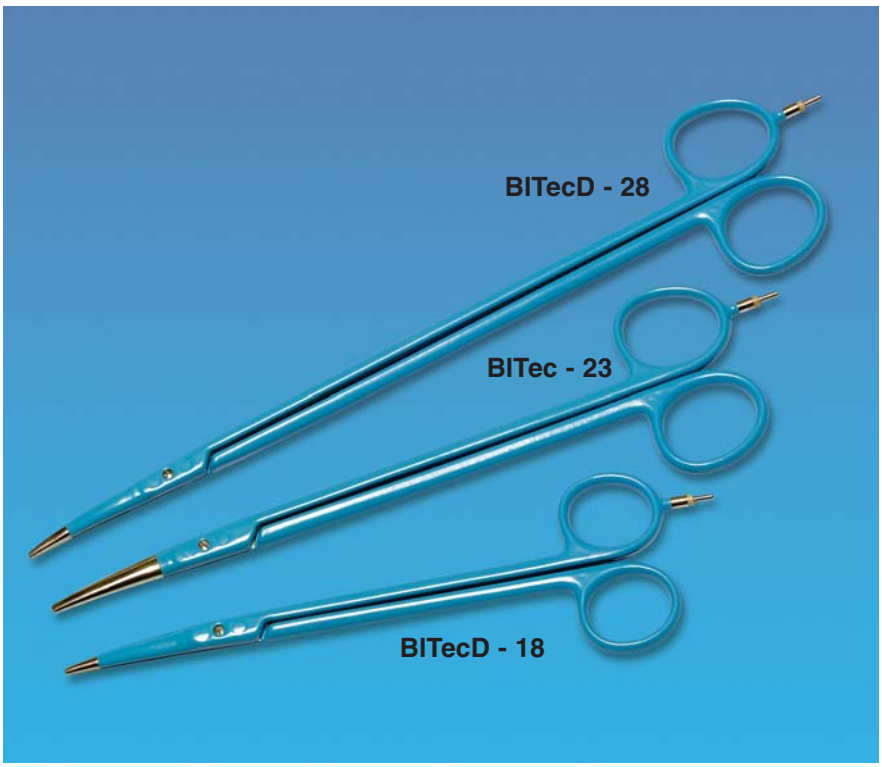
POTENZE EROGATE – W, CARICHI NOMINALI – Ω, TENSIONI PICCO/ PICCO A VUOTO – Vpp
FATTORI DI CRESTA – CF, MODULAZIONI – M, DUTY CYCLE – DC

OUTPUT POWERS – W, NOMINAL LOADS – Ω, OPEN CIRCUIT PEAK TO PEAK VOLTAGES – Vpp,
CREST FACTORS – CF, MODULATIONS – M, DUTY CYCLE – DC

PUISSANCES EMISES – W, CHARGES NOMINALES – Ω, TENSIONS PIC A PIC A VIDE – Vpp,
FACTEURS DE CRETE – CF, MODULATIONS – M, DUTY CYCLE – DC

POTENCIAS EMITIDAS –W, CARGAS NOMINALES – Ω, VOLTAGES PICO PICO DE VACIO – Vpp,
FACTORES DE CRESTA – CF, MODULACIONES – M, DUTY CYCLE – DC

Correnti monopolari / Monopolar currents Courants monopolaires / Corrientes monopolares	**Excell 400 *MCDSe***	**Excell 350 *MCDSe***	**Excell 250 *MCDSe***	**Excell 200 *MCDSe***	**Excell 400/A *MCDSe***
PURE – Taglio / Cut / Coupe / Corte	400 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – DT: no	350 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – DT: no	280 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – DT: no	200 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – DT: no	400 W – 350 Ω 3450 Vpp – CF: 1.6 M: no – DT: no
BLEND 1 – Taglio coagulante / Blend cut Coupe coagulante / Corte coagulante	300 W – 350 Ω 3600 Vpp – CF: 2.3 M: 29 kHz – DT: 65%o	300 W – 350 Ω 3600 Vpp – CF: 2.3 M: 29 kHz – DT: 65%o	280 W – 350 Ω 3540 Vpp – CF: 2.3 M: 29 kHz – DT: 65%o	200 W – 350 Ω 3500 Vpp – CF: 2.3 M: 29 kHz – DT: 65%o	300 W – 350 Ω 3600 Vpp – CF: 2.3 M: 29 kHz – DT: 65%o
BLEND 2 – Taglio coagulante / Blend cut Coupe coagulante / Corte coagulante	140 W – 600 Ω 7600 Vpp – CF: 8,1 M: 19 kHz – DT: 9%	140 W – 600 Ω 7600 Vpp – CF: 8,1 M: 19 kHz – DT: 9%	140 W – 600 Ω 7600 Vpp – CF: 8,1 M: 19 kHz – DT: 9%	140 W – 600 Ω 7600 Vpp – CF: 8,1 M: 19 kHz – DT: 9%	140 W – 600 Ω 7600 Vpp – CF: 8,1 M: 19 kHz – DT: 9%
ENDO – Taglio coagulante / Blend Cut Coupe coagulante / Corte coagulante	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 – Coag Fulguration	150 W – 350 Ω 4700 Vpp – CF: 4.5 M: 78 kHz – DT: 35%	150 W – 350 Ω 4700 Vpp – CF: 4.5 M: 78 kHz – DT: 35%	150 W – 350 Ω 4700 Vpp – CF: 4.5 M: 78 kHz – DT: 35%	150 W – 350 Ω 4700 Vpp – CF: 4.5 M: 78 kHz – DT: 35%	150 W – 350 Ω 4700 Vpp – CF: 4.5 M: 78 kHz – DT: 35%
PIN POINT CONTACT – Coag contact	250 W – 250 Ω 3460 Vpp – CF: 2.6 M: 29 kHz – DT: 56%	250 W – 250 Ω 3460 Vpp – CF: 2.6 M: 29 kHz – DT: 56%	250 W – 250 Ω 3460 Vpp – CF: 2.6 M: 29 kHz – DT: 56%	200 W – 250 Ω 3400 Vpp – CF: 2.6 M: 29 kHz – DT: 56%	250 W – 250 Ω 3460 Vpp – CF: 2.6 M: 29 kHz – DT: 56%
SOFT – Coag soft	280 W – 250 Ω 3440 Vpp – CF: 2.5 M: 29 kHz – DT: 56%	280 W – 250 Ω 3440 Vpp – CF: 2.5 M: 29 kHz – DT: 56%	280 W – 250 Ω 3440 Vpp – CF: 2.5 M: 29 kHz – DT: 56%	200 W – 250 Ω 3020 Vpp – CF: 2,5 M: 29 kHz – DT: 56%	280 W – 250 Ω 3440 Vpp – CF: 2.5 M: 29 kHz – DT: 56%
SPRAY – Coag spray	140 W – 600 Ω 7600 Vpp – CF: 8,1 M: 19 kHz – DT: 9%	140 W – 600 Ω 7600 Vpp – CF: 8,1 M: 19 kHz – DT: 9%	140 W – 600 Ω 7600 Vpp – CF: 8,1 M: 19 kHz – DT: 9%	140 W – 600 Ω 7600 Vpp – CF: 8,1 M: 19 kHz – DT: 9%	140 W – 600 Ω 7600 Vpp – CF: 8,1 M: 19 kHz – DT: 9%
Argon Coag					SPRAY+ ARGON GAS
Correnti bipolari / Bipolar Currents Courants bipolaires / Corrientes bipolares	**Excell 400 *MCDSe***	**Excell 350 *MCDSe***	**Excell 250 *MCDSe***	**Excell 200 *MCDSe***	**Excell 400/A *MCDSe***
Pure – Taglio / Coupe / Tomie / Corte	140 W – 300 Ω 790 Vpp – CF: 1.5 M: no – DT: no	140 W – 300 Ω 790 Vpp – CF: 1.5 M: no – DT: no	140 W – 300 Ω 790 Vpp – CF: 1.5 M: no – DT: no	140 W – 300 Ω 790 Vpp – CF: 1.5 M: no – DT: no	140 W – 300 Ω 790 Vpp – CF: 1.5 M: no – DT: no
BLEND – Taglio coagulante / Blend Cut Coupe coagulante / Corte coagulante	120 W – 300 Ω 980 Vpp – CF: 1.8 M: 29 kHz – DT:75%	120 W – 300 Ω 980 Vpp – CF: 1.8 M: 29 kHz – DT:75%	120 W – 300 Ω 980 Vpp – CF: 1.8 M: 29 kHz – DT:75%	120 W – 300 Ω 980 Vpp – CF: 1.8 M: 29 kHz – DT:75%	120 W – 300 Ω 980 Vpp – CF: 1.8 M: 29 kHz – DT:75%
MICRO – Coag micro precise	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – DT: no%	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – DT: no%	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – DT: no%	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – DT: no%	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – DT: no%
MICRO AUTO – Coag micro precise Automatic Start/Stop	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – DT: no%	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – DT: no%	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – DT: no%	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – DT: no%	120 W – 100 Ω 450 Vpp – CF: 1.7 M: no – DT: no%
MACRO – Coag standard macro	120 W – 100 Ω 760 Vpp – CF: 1.7 M: no – DT: no%	120 W – 100 Ω 760 Vpp – CF: 1.7 M: no – DT: no%	120 W – 100 Ω 760 Vpp – CF: 1.7 M: no – DT: no%	120 W – 100 Ω 760 Vpp – CF: 1.7 M: no – DT: no%	120 W – 100 Ω 760 Vpp – CF: 1.7 M: no – DT: no%



Forbici bipolari isolate: **BITec** con lame standard - **BITecD** con lame delicate (tutte isolate eccetto le punte).

Insulated bipolar scissors: **BITec** with standard blades - **BITecD** with delicate blades (all insulated except the tips)

Ciseaux bipolaires isolées: **BITec** avec lames standard - **BITecD** avec lames délicates (isolées sauf les pointes)

Tijeras bipolares aisladas: **BITec** con hojas estándard - **BITecD** con hojas delicadas (todas aisladas excepto las puntas).

Pinze bipolari isolate: **PMC - PBC** standard, **PMC/L - PBC/L** con irrigazione, **PMC/ns - PBC/ns** con punte no-stick.

Insulated bipolar forceps: **PMC - PBC** standard, **PMC/L - PBC/L** with irrigation, **PMC/ns - PBC/ns** with no-stick tips.

Pinces bipolaires isolées: **PMC - PBC** standard, **PMC/L - PBC/L** avec irrigation, **PMC/ns - PBC/ns** avec pointes no-stick.

Pinzas bipolares aisladas: **PMC - PBC** estándard, **PMC/L - PBC/L** con irrigación, **PMC/ns - PBC/ns** con puntas no-stick.

THE UNITS AND THE ACCESSORIES

UNITS AND STANDARD SETS OF ACCESSORIES

B900	**EXCELL 400 *MCDSe***, without accessories
B910	**EXCELL 350 *MCDSe***, without accessories
B920	**EXCELL 250 *MCDSe***, without accessories
B930	**EXCELL 200 *MCDSe***, without accessories
B940	**EXCELL 400/A *MCDSe***, without accessories
B610/A	**SET OF STANDARD ACCESSORIES** as follows:
1 DS/E	Double waterproof foot-switch pedal
1 NP/A	Stainless steel neutral electrode for adult - cable 2.5mt. long
2 MPE/E	Sterilizable electrodes-holder handle, cable 3.5mt. long
1 SEL/E	**Composed by: 2 E1 -** Straight knife (blade) electrode, **2 E5 -** Thick needle electrode, **1 E7 -** Thin needle electrode, **1 E12 -** Straight ball electrode Ø 2.5 mm, **2 E14 -** Straight ball electrode Ø 4mm
B610/B	**SET OF STANDARD ACCESSORIES** same as B610/A but with flexible neutral electrode made of conductive rubber for adult NP/GA
B610/P	Ditto, but with paediatric neutral electrode NP/GP

GENERAL LIST OF ACCESSORIES

HANDLES FOR USE BY FOOT-SWITCH PEDALS

MPE/E	Handle, cable 3.5mt. long, sterilizable
MPE/E5	Ditto, cable 5mt. long

HAND-SWITCH HANDLES

MPE/CMS	Double push-button handle with knife electrode, cable mt.3 (100 times sterilizable)
MPE/CMS5	Ditto, cable mt.5
MP/CM	Ditto, disposable type, cable mt. 3 (*)

ACTIVE ELECTRODES, *made of stainless steel, insulated stem Ø 2.3÷2.4mm. sterilizable*

SHORT TYPE, STEM 70 mm. LONG

E1	Straight knife (blade) electrode
E1/I	Totally insulated except final 5 mm. straight knife (blade) electrode
E3	Angled knife (blade) electrode
E1/L	Straight lancet electrode
E3/L	Ditto, angled
E5	Straight thick needle electrode
E6	Ditto, angled
E7	Straight thin needle electrode
E7/I	Totally insulated except final 5 mm straight thin needle electrode
E8	Angled thin needle electrode
E10	Very fine needle electrode, Ø 0.40 mm.
E12	Straight ball electrode Ø 2.5 mm.
E13	Ditto, angled
E14	Straight ball electrode Ø 4 mm.
E15	Ditto, angled
E16	Straight ball electrode Ø 6 mm.
E17	Ditto, angled
E18	Wire diamond loop electrode, 5x10 mm.
E19	Ditto, 10x10mm
E21	Round wire loop electrode Ø 5 mm.
E23	Ditto, Ø 10mm.
E25	Ditto, Ø 15mm.
E23/N	Round ribbon loop electrode Ø 10 mm.
E25/N	Ditto, Ø 15mm.
E26	Plate electrode
EXT/15	Extension, long 15cm. for all the electrodes with stems Ø2.3÷2.4 mm.

LONG TYPE, FLEXIBLE STEM 130 mm. LONG

E40	Straight knife (blade) electrode
E40/I	Totally insulated except final 5 mm. straight knife (blade) electrode
E41	Straight thick needle electrode
E42	Straight thin needle electrode
E42/I	Totally insulated except final 5 mm straight thin needle electrode
E43	Round wire loop electrode Ø 5 mm.
E44	Ditto, Ø 10 mm.
E45	Ditto, Ø 15 mm.
E46	Straight ball electrode Ø 2.5 mm.
E47	Straight ball electrode Ø 4 mm.
E47/6	Straight ball electrode Ø 6 mm.

ELECTRODES FOR MICROSURGERY, STERILIZABLE

MID	Reducer for needles (for all the electrode holders)
SAD	Series of 12 needles Ø 0.10 mm.
SAD/1	Ditto, Ø 0.15 mm.
SAD/2	Ditto, Ø 0.20 mm.
SAD/3	Ditto, Ø 0.40 mm.

RE-USABLE NEUTRAL ELECTRODES

NP/A	Stainless steel electrode for adult (cm. 25x13), cable 2.5 mt. long
NP/GA	Electrode for adults (25x12cm.), flexible conductive rubber, cable 2.5 mt.
NP/GA5	Ditto, cable 5mt. long
NP/GP	Ditto, pediatric type (18x8 cm.), cable 2.5 mt. long
NP/GP5	Ditto, cable 5mt. long
FGE	Fixing belt for electrodes with 2 buttons (*)

DISPOSABLE, ADHESIVE, NEUTRAL ELECTRODES

CMS/E	Re-usable connection cable 2.5 mt. long
CMS/E5	Ditto, cable 5 mt. long
EIP/DA	Adhesive, no-Split single section, adult type (25pcs, each pack.) (*)
EIP/SA	Ditto, paediatric type (25pcs. each pack.) (*)
EIP/DP	Adhesive, Split double section, adult type (25pcs, each pack.) (*)
EIP/SP	Ditto, paediatric type (25pcs. each pack.) (*)

INSULATED MONOPOLAR FORCEPS FOR COAGULATION, WHITHOUT CONNECTING CABLES TO THE UNIT, STERILIZABLE

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

INSULATED MONOPOLAR FORCEPS FOR COAGULATION, WITH CONNECTING CABLES TO THE UNIT, STERILIZABLE

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

HAND-SWITCH INSULATED MONOPOLAR FORCEPS FOR COAGULATION, WITH CONNECTING CABLE TO THE UNIT, STERILIZABLE

PMI/BJ21	Bayonet forceps, cable 3.5mt. long ("grasping" tips 2mm. - L. 21cm.)
PMI/PJ21	Straight forceps, cable 3,5mt long ("grasping" tips 2mm. - L. 21cm.)
PMI/PJ24	Ditto ("grasping" tips 2mm. - L. 24cm.)

Monopolar accessories for laparoscopy, please ask for specific detail.

CONNECTING CABLES FOR INSTRUMENTS FOR LAPAROSCOPY

CPE	Connecting cable for instruments with male / female connector Ø 4 mm, mt. 3,5
CPE/5	Ditto, L. mt. 5

Bipolar scissors for surgery with their cables, please ask for specific detail.

CONNECTING CABLES FOR BIPOLAR FORCEPS/ELECTRODES AND FOR BIPOLAR HOOKS, FORCEPS, SCISSORS FOR LAPAROSCOPY, STERILIZABLEI

CPB/E	Connecting cables, 3mt
CPB/E5	Ditto, L. mt. 5

INSULATED BIPOLAR FORCEPS AND RIGID ELECTRODES, STERILIZABLE

Standard forceps for bipolar coagulation

PMC/JR	Straight forceps (Jeweler) (straight tips 0.5mm. - L. 11.5/12 cm.)
PMC/JC	Ditto, angled tips
PMC/RS	Straight forceps (Cushing/Potts-Smith) (straight tips 0.7mm. - L. 15.5/16 cm.)
PMC/CS	Ditto, angled tips
PMC/R	Straight forceps (Cushing/Potts-Smith) (straight tips 1mm. - L. 20cm.)
PMC/C	Ditto, angled tips
PBC/R	Straight forceps (Cushing/Potts-Smith) (straight tips 2mm. - L. 20cm.)
PBC/C	Ditto, angled tips
PMC/R25	Straight forceps (Cushing/Potts-Smith) (straight tips 1mm. - L. 25cm.)
PMC/C25	Ditto, angled tips
PBC/R25	Straight forceps (Cushing/Potts-Smith) (straight tips 2mm. - L. 25cm.)
PBC/C25	Ditto, angled tips
PMC/RSB	Bayonet forceps (Jensen/Yasargil) (straight tips 0.7mm. - L. 16.5/17cm.)
PMC/B	Bayonet forceps (Jensen/Yasargil) (straight tips 1mm. - L. 20cm.)
PMC/BCD	Ditto, angled tips down
PMC/BCU	Ditto, angled tips up
PBC/B	Bayonet forceps (Jensen/Yasargil) (straight tips 1mm. - L. 20cm.)
PBC/BCD	Ditto, angled tips down
PBC/BCU	Ditto, angled tips up
PMC/B25	Bayonet forceps (Jensen/Yasargil) (straight tips 1mm. - L. 25cm.)
PBC/B25	Bayonet forceps (Jensen/Yasargil) (straight tips 2mm. - L. 25cm.)

Forceps with irrigation for bipolar coagulation, please ask for specific detail.
Forceps with no-stick tips for bipolar coagulation, please ask for specific detail.
Rigid electrodes for bipolar coagulation of turbinal or larynx, please ask for specific detail.
Bipolar hooks, forceps and scissors for laparoscopy, please ask for specific detail.
Accessories and cables for flexible endoscopy, please ask for specific detail.

ADAPTORS FOR USING CABLES WITH NON ALSA STANDARD PLUG

RD5	For monopolar cables with plug Ø from 2 to 8 mm or Martin standard.
RD/BF	For bipolar cables with double plug Ø 4 mm (international standard) or with plug Valleylab /Conmed standard.
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, FOOT-SWITCH PEDALS, BOXES FOR ACCESSORIES

H23/SE	Trolley angled with compartment for accessories, Dimensions: 45x45x74 cm. antistatic wheels, 2 with brakes
H10/AB	Economic trolley with 2 shelves 40x40cm. antistatic wheels, 2 with brakes
H25	Trolley for electrosurgical unit and smoke evacuator. 3 shelves for units and foot-switch pedals, compartment for accessories. Dimensions: 50x60X100 cm. antistatic wheels, 2 with brakes
H26	Ditto, with compartment for gas cylinders (for mod. Excell 400/A only)
DS/E	Double foot-switch pedal, water-proof (IPX7)
DS/B	Ditto, for bipolar activation only
BOX-TE	Stainless steel round box for electrodes
BOX-RA	Stainless steel rectangular box for accessories, 21x10x5 cm.

ACCESSORIES FOR ARGON GAS SURGERY
For model 400/A MCDSe only

HAND-SWITCH HANDLE AND ELECTRODES FOR SURGERY / LAPAROSCOPY

AC/HANDLE	Double push-button electrode-holder, sterilizable, cable 3.5mt.
AC/E25-C	Rigid electrode for coagulation, 25mm. long, sterilizable
AC/E100-C	Ditto, 100mm. long
AC/E320-C	Ditto, 320mm. long (for laparoscopy only)
AC/E 320-H	L Hook rigid electrode, mm. 320 long, sterilizable (for laparoscopy only)
AC/E40-A	Rigid needle electrode, 40mm. long, sterilizable
AC/E100-A	Idem, 100mm. long
AC/E40-L	Rigid knife electrode, 40mm. long, sterilizable
AC/E100-L	Ditto, 100mm. long

CABLE AND FLEXIBLE ELECTRODES / PROBES FOR FLEXIBLE ENDOSCOPY

AC/CABLE Connecting cable for flexible electrodes/probes, sterilizable, 3.5mt. long

ELECTRODES / FLEXIBLE PROBES: please ask for specific detail.

TROLLEY, GAS CYLINDER, PRESSURE REDUCER, BACTERIAL FILTER

H26	See above
B5	Argon gas cylinder, capacity 5lt (**RD/P** - Pressure reducer for cylinder)
ESU/TG	Tube for gas input with quick-action coupling (for B5)
ESU/F	Bacterial filter for gas output (**ESU/FC** - Metallic connector for filter)

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MCDSe/REV B - Edizione 03-2008

- È fatta riserva di apportare tutte le varianti a miglioria che si riterranno opportune, senza preavviso.
- The manufacturer has the right to change the specifications to improve the quality of the products without notice.
- La maison constructrice se reserve le droit d'apporter toutes les modifications nécessaries pour améliorer ses produits, sans préavis.
- El productor se reserva el derecho de aportar las modificaciones necesarias sin aviso.

(*) Possono non essere certificati CE0051.