

**alsa®**  
bologna

# EXCELL NHP/T

ELECTROSURGICAL UNITS FOR  
MONOPOLAR AND BIPOLAR USE



A NEW STEP AHEAD  
TO THE FUTURE



The units EXCELL NHP/T series are provided with all the technical features, and the monopolar and bipolar currents needed to perform the most advanced electrosurgery

**All models are provided with 10 currents for the monopolar cutting**

Pure Cut	Pure cut without coagulating effect. For open or laparoscopic surgery and for under liquid endoscopy (TURP, TURV).
Blend Cut 1	Cut blended with a medium coagulating effect. For open or laparoscopic surgery and for under liquid endoscopy (TURP, TURV).
Blend Cut 2	Cut blended with a very high coagulating effect. For open or laparoscopic surgery.
Pure Cut Pulsed	Pulsed pure cut without coagulating effect. For open or laparoscopic surgery.
Blend Cut Pulsed	Pulsed cut blended with a medium coagulating effect. For open or laparoscopic surgery.
Auto Pure Cut Micro	"Constant voltage" delicate pure cut without coagulating effect. For open or laparoscopic surgery and for under liquid endoscopy (TURP, TURV).
Auto Blend Cut Micro	"Constant voltage" delicate cut blended with a medium coagulating effect. For open or laparoscopic surgery and for under liquid endoscopy (TURP, TURV).
Auto Papillo Pure Cut	"Constant voltage" pure cut, without coagulating effect, for flexible endoscopy. With four modes of delivery: continuous and pulsed (slow, medium, fast).
Auto Polipo Blend Cut	"Constant voltage" cut, blended with a medium coagulating effect, for flexible endoscopy. With four modes of delivery: continuous and pulsed (slow, medium, fast).
Auto EndoCut	"Constant voltage" cut with alternating phases of cutting and blended cut, for flexible endoscopy. With four modes of delivery: 90% Coagulation and 10% Cut, 80% Coagulation and 20% Cut, 75% Coagulation and 25% Cut, 50% Coagulation and 50% Cut.

**All models are provided with 5 currents for the monopolar coagulation**

Fulg Forced Coag	High voltage, contact free coagulation. For open or laparoscopic surgery, for under liquid endoscopy (TURP, TURV) and for flexible endoscopy.
Spray Coag	Very high voltage, contact free coagulation. For open or laparoscopic surgery, for under liquid endoscopy (TURP, TURV) and for flexible endoscopy.
Pulsed Spray Coag	Identical to the <b>Spray coag</b> current, but pulsed and more delicate.
Pin Point Contact Coag	Medium voltage, contact coagulation. For open or laparoscopic surgery, for under liquid endoscopy (TURP, TURV) and for flexible endoscopy.
Soft Micro Coag	Delicate, low voltage coagulation. For open or laparoscopic surgery.

**The models NHP/TA-400 and NHP/TA-200 are provided with 2 currents for the Argon coagulation**

Standard	Very fast and efficacious coagulation ( <b>Spray Coag</b> current enhanced by the Argon gas). For open or laparoscopic surgery and for flexible endoscopy.
Pulsed	Identical to the <b>Standard</b> current, but more delicate. ( <b>Pulsed Spray Coag</b> current enhanced by the Argon gas).

**All models are provided with 4 currents for the bipolar cutting**

Standard Bicut	Cut for open or laparoscopic surgery.
Blend Bicut	Cut blended with a very high coagulating effect (Coagulation = 95%) for open or laparoscopic surgery.
Saline Uro-Gyn Cut	Cut for endoscopy in saline (TURPis, TURVis) with two modes of delivery: continuous and pulsed. For urology and gynaecology. The continuous delivery is suitable to perform the vaporization.
Saline Arthro Cut	Cut for arthroscopy in saline with two modes of delivery: continuous and pulsed. For arthroscopy. The continuous delivery is suitable to perform the vaporization.

**All models are provided with 3 currents for the bipolar coagulation and 2 currents for the bipolar vessel sealing**

Soft Micro Bicoag	Very precise and delicate coagulation. For open or laparoscopic surgery, for endoscopy in saline (TURPis, TURVis) and for flexible endoscopy.
Forced Macro Bicoag	Fast coagulation. For open or laparoscopic surgery.
Auto Soft Micro Bicoag	Identical to the <b>Soft Micro Bicoag</b> , but with <b>Impedance sensing</b> automatic activation/deactivation. It is not suitable for the endoscopy in saline. Activation with delay adjustable from 0 to 5 seconds and deactivation with bitonal, grave, acoustic signal.
Sealing	Current to coagulate/seal vessels up to 8 mm in open and laparoscopic surgery. Activation with pedal and automatic <b>Impedance sensing</b> deactivation with bitonal, acute, acoustic signal.
Auto Sealing	Identical to the <b>Sealing</b> , but with <b>Impedance sensing</b> automatic activation/deactivation. It is not suitable for the endoscopy in saline. Activation with delay adjustable from 0 to 5 seconds and deactivation with bitonal, grave, acoustic signal.

## Technical features of all models

HF generator	Meets IEC 60601-1 and IEC 60601-2-2 (Latest editions). Supply section "switching" type.
EMC compatibility	Meets IEC 60601-1-2 (Latest edition).
EC Classification and approval	Class IIB according to 93/42/CEE (and its revised version) – Certificate nr. 187/MDD (IMQ 0051).
ALSA quality system	Meets ISO 9001 and ISO 13485 (Latest editions). Certificates 9120.ALSA and 9124.ALS2 (IMQ 0051).
Classification according to IEC 60601-1	Class I, CF type with the following typical low frequency leakage currents (all cables tied together): On the patient: $4\mu\text{A} = 0,004\text{mA}$ / Into the enclosure: $1\mu\text{A} = 0,001\text{mA}$ / To earth: $30\mu\text{A} = 0,03\text{mA}$ .
Output circuit according to IEC 60601-2-2	<b>FLOATING</b> (Isolated at high and low frequencies) and protected against the use of the defibrillator. Typical HF leakage currents measured at the unit: Monopolar currents = 90mA, Bipolar currents = 60mA.
Working frequency	Monopolar and bipolar currents: $440\text{kHz} \pm 5\%$ .
Functioning control	<b>Computerized MASTER/SLAVE SYSTEM</b> • It performs a <i>Main Auto-check</i> at the switching ON (repeated every 30 minutes of operation) and the continuous <i>Standard Auto-check</i> during use. • It stops the power activation in case of hardware/software failures, mistakes of use, an anomalous power delivery, and it signals them by acoustic and visual <i>Error Codes</i> . • It memorizes all <i>Error Codes</i> to help the check and the technical assistance.
Self-adjusting of output powers	Computerized self-adjustment with PER (Power Efficiency Rating $> 98\%$ ) according to the impedances of tissues (Feed-back in real time - 7000 times/sec) by two different systems: • <b>ADC System – Dynamic self-adjustment with constant power</b> The powers have a progressive setting (Micro and Macro setting with steps from 0,1 to 10W). Monopolar currents (from 1 to 10W), Bipolar currents (from 0,1W to 5W). • <b>APC System - Fully automatic control</b> The powers have a setting with 10 effects (the unit shows, for each effect, the maximum delivered power).
Control of the HF leakage currents	By a specific computerized circuit with alarms.
Memorization of programs	100 programs identifiable by number and text (Surgical use or Name of the surgeon).
Usable pencils or instruments	<b>All models allow the following use of the monopolar and bipolar accessories:</b> • One/two either hand-switched or foot-switched monopolar pencils or instruments. Two monopolar pencils can be used simultaneously according to IEC 60601-2-2. • One/two bipolar instruments by foot-switch activation (When selecting the <b>Auto Soft Micro Bicoag</b> or the <b>Auto Sealing</b> currents, an instrument is usable by the <b>Impedance sensing</b> automatic activation/deactivation). <b>The models TA-400 and TA-200 allow, when the Argon section is ON, the use also of the following:</b> • One hand-switched or foot-switched pencil/instrument for the Argon enhanced electro-surgery.
Twin foot-switches	The unit can be used by either one or two waterproof (IPN8) twin foot-switches. • Only with one twin foot-switch (DS/Esw or DS/Eswl, large model for the use in endoscopy) with a Foot-selector to activate either the monopolar or the bipolar currents. • Only with one twin foot-switch (DS/B) to activate the bipolar currents only. • With both twin foot-switches, one to activate the monopolar currents and one to activate the bipolar ones.
Control circuit of the neutral electrode	<b>NPCC System with double circuit: Contact quality monitor and Continuity monitor with four progressive alarm lights and stop of the power delivery. The circuit operates as follows:</b> • It checks all kinds of neutral electrode, both "split" double area and "non split" single area. • It has two modes of use: Large electrodes for adults and Small electrodes for paediatrics and new-born. • It allows the use of cables with both European "Ø 6,35mm" and USA "2 pins" connectors.
Luminous and acoustic signals of activation and alarm	They meet IEC 60601-2-2 (Latest edition). Lights: Cutting = yellow, Coagulation = blue, Alarms and Error codes = red Activation sounds: Continuous (acute for the cut and grave for the coagulation, with level adjustable from 45 to 65dB), including a bitonal sound to indicate the power deactivation when using the currents: Auto Soft Micro Bicoag, Sealing and Auto Sealing. Alarm sound: Intermittent (High $> 65\text{dB}$ and not adjustable).
Mains supply and consumption, Mains switch, Fuses and Standby	100 / 230V $\pm 10\%$ ~ 50/60Hz (Consumption: Max. 3,6A = 828VA, Standby 0,4A = 92VA). Bipolar switch (green), Two fuses 8A, Standby mode selectable on the touch-screen.
Equipotential connection	Standard DIN 42801 plug.
Enclosure, Cooling	Metal painted case, protected against the spilling of liquids according to IEC 60601-2-2. Cooling by convection (No fan).
Software updating and calibration	Updating by a serial port connected to a PC, calibration on-site.
Dimensions and weight (LxWxH)	NHP/T-400 and T-200: 38x35x19cm - 10Kg – NHP/TA-400 and TA-200: 38x38x19cm - 10,5Kg.
<b>Technical features of the Argon gas section (Models TA-400 and TA-200 only)</b>	
Gas (Supply)	By 1 or 2 cylinders (5lt) or by centralized supply with max pressure of 4,5 atm.
Gas (Antibacterial protection)	Antibacterial filter on the gas output.
Gas (Working pressure and Flow)	Pressure: 2 atm. Flow: Max 15lt/min, adjustable from 1 to 15 lt/min and self-adjusted.
Gas (Pressure, Consumption)	By the main Auto-check system of the unit and Pressure Safety System. It blocks the usability of the Argon section either if the gas is absent/not sufficient or its pressure is too high, by informing the users through alarms and Error Codes. The system includes a pressure reducer and a safety valve.

# EXCELL NHP/T-400 and EXCELL NHP/TA-400 – THE CURRENTS

## MONOPOLAR CUTTING

	Pure Cut	Blend Cut 1	Blend Cut 2	Pure Cut Pulsed	Blend Cut Pulsed	Auto Pure Cut Micro	Auto Blend Cut Micro	Auto Papillo Pure Cut	Auto Polipo Blend Cut	Auto Endocut
<b>Max Output Power</b>	400 W	300 W	250 W	400 W	250 W	300 W	300 W	300 W	300 W	300 W
<b>Rated load</b>	400 Ω	400 Ω	400 Ω	400 Ω	400 Ω	300 Ω	300 Ω	300 Ω	300 Ω	300 Ω
<b>Vpp</b>	2550	3390	3330	2640	3330	1137	1500	1140	1490	1670
<b>Crest factor</b>	1,46	1,94	2,29	2	3,2	1,5	1,98	1,5	1,98	
<b>Modulation</b>	0	17 kHz	17 kHz	3 Hz	50 Hz	0	17 kHz	0	17 kHz	-
<b>Duty Cycle</b>	100%	95%	65%	50%	50%	100%	90%	100%	95%	
<b>Power setting</b>	Progressive with steps from 1 to 10 W					10 Effects				
<b>Power control</b>	<i>ADC System</i> - Dynamic self-adjusting with constant power					<i>APC System</i> - Totally self-adjusting with constant voltage				

## MONOPOLAR COAGULATION

	Fulg Forced Coag	Spray Coag	Pin Point Contact Coag	Pulsed Spray Coag	Soft Micro Coag
<b>Max Output Power</b>	150 W	200 W	300 W	200 W	280 W
<b>Rated load</b>	300 Ω	700 Ω	400 Ω	700 Ω	300 Ω
<b>Vpp</b>	4500	7750	3700	7850	3300
<b>Crest factor</b>	6,45	7,75	2,2	11,54	2,16
<b>Modulation</b>	60 kHz	30 kHz	17 kHz	3 Hz	17 kHz
<b>Duty Cycle</b>	18%	7%	85%	50%	75%
<b>Power setting</b>	Progressive with steps from 1 to 10 W			10 Effects	
<b>Power control</b>	<i>ADC System</i> - Dynamic self-adjusting with constant power			<i>APC System</i> - Totally self-adjusting with constant voltage	

## ARGON PLASMA COAGULATION (Model NHP/TA-400 only)

	Spray Coag + Gas Argon			Pulsed Spray Coag + Gas Argon
<b>Max Output Power</b>	200 W			200 W
<b>Rated load</b>	700 Ω			700 Ω
<b>Vpp</b>	7750			7850
<b>Crest factor</b>	7,75			11,54
<b>Modulation</b>	30 kHz			3 Hz
<b>Duty Cycle</b>	7%			50%
<b>Power setting</b>	Progressive with steps from 1 to 10 W			
<b>Gas setting</b>	From 1 to 15 Lt/min			
<b>Power control</b>	<i>ADC System</i> – Dynamic self-adjusting with constant power			

## BIPOLAR CUTTING

	Saline Uro-Gyn Cut	Saline Arthro Cut	Standard Bicut	Blend Bicut
<b>Max Output Power</b>	350 W	230 W	200 W	160 W
<b>Rated load</b>	350 Ω	350 Ω	300 Ω	200 Ω
<b>Vpp</b>	1070	1070	1070	740
<b>Crest factor</b>	1,5	1,5	1,5	1,57
<b>Modulation</b>	0	0	0	17 kHz
<b>Duty Cycle</b>	100%	100%	100%	95%
<b>Power setting</b>	10 Effects			Progressive with steps from 0,1 to 5 W
<b>Power control</b>	<i>ADC System</i> - Dynamic self-adjusting with constant power			

## BIPOLAR COAGULATION AND VESSEL SEALING

	Soft Micro Bicoag	Auto Soft Micro Bicoag	Sealing	Auto Sealing	Forced Macro Bicoag
<b>Max Output Power</b>	140 W	140 W	320 W	320 W	200 W
<b>Rated load</b>	100 Ω	100 Ω	50 Ω	50 Ω	100 Ω
<b>Vpp</b>	460	460	780	780	550
<b>Crest factor</b>	1,56	1,56	2,47	2,47	1,6
<b>Modulation</b>	0	0	0	0	0
<b>Duty Cycle</b>	100%	100%	100%	100%	100%
<b>Power setting</b>	Progressive with steps from 0,1 to 5 W			Progressive with steps from 0,1 to 5 W	
<b>Power control</b>	<i>APC System</i> - Totally self-adjusting with constant voltage				<i>ADC System</i> - Dynamic self-adjusting with constant power

# EXCELL NHP/T-200 and EXCELL NHP/TA-200 – THE CURRENTS

## MONOPOLAR CUTTING

	Pure Cut	Blend Cut 1	Blend Cut 2	Pure Cut Pulsed	Blend Cut Pulsed	Auto Pure Cut Micro	Auto Blend Cut Micro	Auto Papillo Pure Cut	Auto Polipo Blend Cut	Auto Endocut
<b>Max Output Power</b>	200 W	200 W	200 W	200 W	200 W	200 W	200 W	200 W	200 W	200 W
<b>Rated load</b>	400 Ω	400 Ω	400 Ω	400 Ω	400 Ω	300 Ω	300 Ω	300 Ω	300 Ω	300 Ω
<b>Vpp</b>	2550	3390	3330	2640	3330	1137	1500	1140	1490	1670
<b>Crest factor</b>	1,46	1,94	2,29	2	3,2	1,5	1,98	1,5	1,98	
<b>Modulation</b>	0	17 kHz	17 kHz	3 Hz	50 Hz	0	17 kHz	0	17 kHz	-
<b>Duty Cycle</b>	100%	95%	65%	50%	50%	100%	90%	100%	95%	
<b>Power setting</b>	Progressive with steps from 1 to 10 W					10 Effects				
<b>Power control</b>	<i>ADC System</i> – Dynamic self-adjusting with constant power					<i>APC System</i> - Totally self-adjusting with constant voltage				

## MONOPOLAR COAGULATION

	Fulg Forced Coag	Spray Coag	Pin Point Contact Coag	Pulsed Spray Coag	Soft Micro Coag
<b>Max Output Power</b>	150 W	200 W	200 W	200 W	200 W
<b>Rated load</b>	300 Ω	700 Ω	400 Ω	700 Ω	300 Ω
<b>Vpp</b>	4500	7750	3700	7850	2875
<b>Crest factor</b>	6,4	7,75	2,2	11,54	2,1
<b>Modulation</b>	60 kHz	30 kHz	17 kHz	3 Hz	17 kHz
<b>Duty Cycle</b>	18%	7%	85%	50%	75%
<b>Power setting</b>	Progressive with steps from 1 to 10 W			10 Effects	
<b>Power control</b>	<i>ADC System</i> - Dynamic self-adjusting with constant power			<i>APC System</i> - Totally self-adjusting with constant voltage	

## ARGON PLASMA COAGULATION (Model NHP/TA-200 only)

	Spray Coag + Gas Argon			Pulsed Spray Coag + Gas Argon
<b>Max Output Power</b>	200 W			200 W
<b>Rated load</b>	700 Ω			700 Ω
<b>Vpp</b>	7750			7850
<b>Crest factor</b>	7,75			11,54
<b>Modulation</b>	30 kHz			3 Hz
<b>Duty Cycle</b>	7%			50%
<b>Power setting</b>	Progressive with steps from 1 to 10 W			
<b>Gas setting</b>	From 1 to 15 Lt/min			
<b>Power control</b>	<i>ADC System</i> - Dynamic self-adjusting with constant power			

## BIPOLAR CUTTING

	Saline Uro-Gyn Cut	Saline Arthro Cut	Standard Bicut	Blend Bicut
<b>Max Output Power</b>	350 W	230 W	200 W	160 W
<b>Rated load</b>	350 Ω	350 Ω	300 Ω	200 Ω
<b>Vpp</b>	1070	1070	1070	740
<b>Crest factor</b>	1,5	1,5	1,5	1,57
<b>Modulation</b>	0	0	0	17 kHz
<b>Duty Cycle</b>	100%	100%	100%	95%
<b>Power setting</b>	10 Effects		Progressive with steps from 0,1 to 5 W	
<b>Power control</b>	<i>ADC System</i> – Dynamic self-adjusting with constant power			

## BIPOLAR COAGULATION AND VESSEL SEALING

	Soft Micro Bicoag	Auto Soft Micro Bicoag	Sealing	Auto Sealing	Forced Macro Bicoag	
<b>Max Output Power</b>	140 W	140 W	320 W	320 W	200 W	
<b>Rated load</b>	100 Ω	100 Ω	50 Ω	50 Ω	100 Ω	
<b>Vpp</b>	460	460	780	780	550	
<b>Crest factor</b>	1,56	1,56	2,47	2,47	1,6	
<b>Modulation</b>	0	0	0	0	0	
<b>Duty Cycle</b>	100%	100%	100%	100%	100%	
<b>Power setting</b>	Progressive with steps from 0,1 to 5 W		10 Effects		Progressive with steps from 0,1 to 5 W	
<b>Power control</b>	<i>APC System</i> - Totally self-adjusting with constant voltage			<i>ADC System</i> - Dynamic self-adjusting with constant power		



EXCELL NHP/T-400  
with footswitch DS/Esw



EXCELL NHP/T-400  
with footswitch DS/Eswl

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