FORCE FX™ Electrosurgical Generator

Instant response to tissue density

VALLEYLAB introduces the FORCE FX generator with computer controlled INSTANT RESPONSE™ Technology – the newest advance in electrosurgery designed to ensure a consistent clinical effect through all tissue types.

VALLEYLAB INSTANT RESPONSE™ SYSTEM

utilizes TISSUE DENSITY FEEDBACK™ circuitry and computer controlled output for automatic response to changes in tissue density – reducing the need to adjust power settings for different types of tissue.

IMPROVED PERFORMANCE AT LOWER VOLTAGES

reduces sparking, neuromuscular stimulation and RF interference.

CUTTING, COAGULATING AND BIPOLAR OUTPUTS

are designed for laparoscopic surgery. *Low* cut and *Low* coag outputs use lower voltages to reduce the risks of electrosurgery. *Macrobipolar* mode is designed specifically for today's new generation of macrobipolar cutting instruments.

VALLEYLAB REM® SAFETY

virtually eliminates the risk of patient burns at the return electrode site. The VALLEYLAB REM® Contact Quality Monitoring System has been proven in over 85,000,000 procedures worldwide.

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THREE CUT MODES

offer a choice of *Low* cut for delicate tissue or laparoscopic cases, *Pure* cut for a clean, precise cut in any tissue, and *Blend* for cutting with hemostasis. All cut modes are controlled by the Instant Response™ System.

THREE COAG MODES

include *Low/Desiccate* for low voltage contact coagulation suitable in laparoscopic and delicate tissue work, *Medium/Fulgurate* for efficient noncontact coagulation in most applications, and *High/Spray* for coagulating large tissue areas with minimum depth of necrosis.

THREE BIPOLAR MODES

– *Low/Precise*, *Medium/Standard*, and *Macrobipolar* – are also controlled by the Instant Response™ System. *Low* and *Medium* settings utilize low voltage to prevent sparking.

CEM™ MODE

allows the FORCE FX™ generator to be used with the CUSA® CEM™ nosecone.

FORCE FX™ Electrosurgical Generator

Technical Specifications (110-120V)

OUTPUT WAVEFORMS

Bipolar

Precise: 470 kHz sinusoid

Standard: 470 kHz sinusoid

Macro: 470 kHz sinusoid

Monopolar Cut

Low: 390 kHz sinusoid. Similar to the Pure cut mode except the maximum voltage is limited to a lower value.

Pure: 390 kHz sinusoid

Blend: 390 kHz bursts of sinusoid, recurring at 27 kHz intervals. 50% duty cycle envelope.

Monopolar Coag

Desiccate: 240 kHz sinusoid repeated at 39 kHz. 8% duty cycle.

Fulgurate: 390 kHz damped sinusoidal bursts with a repetition frequency of 57 kHz into 300 ohms.

Spray: 390 kHz damped sinusoidal bursts with a randomized repetition centered at 28 kHz. Frequencies include 21 kHz < f < 35 kHz. Output is further modulated by a random 250 Hz envelope with a variable duty cycle.

Output power changes by less than 15% or 5 watts, whichever is greater.

WEIGHT AND DIMENSIONS

Height: 4-3/8 in. (11.1 cm)

Width: 14 in. (35.6 cm)

Length: 17 in. (43.9 cm)

Weight: <18 lbs. (<8.1 kg)

INPUT POWER REQUIREMENTS

Operating range is 85 to 132 AC volts. Maximum current is 7 amperes in cut and 4 amperes in coag.

AUTORANGING REM® SYSTEM

Measurement Frequency: 80 kHz ± 10 kHz

Measurement Current: Less than 10 µA

Acceptable Resistance Ranges:
REM pad — 5-135 ohms
Non-REM pad — less than 20 ohms

Acceptance range is 5-135 ohms after REM POLYHESIVE® II return electrode is applied. REM trip is initial impedance plus 40%. For example, if the initial impedance is 30 ohms, the upper level trip is approximately 42 ohms.

Meets UL and cUL specifications.

OUTPUT CHARACTERISTICS

	Mode	Maximum P-P Voltage	Rated Load (ohms)	Maximum Power (watts)	Crest Factor* (typical)
Bipolar	Precise	450	100	70	1.5
	Standard	320	100	70	1.5
	Macro	750	100	70	1.5
Monopolar Cut	Low	1350	300	300	1.5
	Pure	2300	300	300	1.5
	Blend	3300	300	200	2.5
Monopolar Coag	Desiccate	3500	500	120	5
	Fulgurate	6900	500	120	5.5
	Spray	9000	500	120	8
CEM	Monopolar Cut (Low)	1000	300	100	1.5
	Monopolar Coag (Desiccate)	3500	500	70	5

*Crest Factor is an indicator of a waveform's ability to coagulate bleeders without cutting effect.

ORDER INFORMATION

CATALOG NUMBER	DESCRIPTION	ORDER QUANTITY
FORCE FX	Microcontroller-based isolated electrosurgical generator, designed for all general surgical procedures. Unit includes the VALLEYLAB autoranging REM® System and INSTANT RESPONSE™ System.	1 each
E0017	Universal adapter - accepts most pin-tip plugs	1 each
E0502-1	VALLEYLAB to other manufacturers - active adapters	1 each
E0507-B	Multiple Return/S-Cord for VALLEYLAB REM equipped generators	1 each

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