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MECTRON PIEZOSURGERY® 3

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PIEZOSURGERY® 3 – THE EVOLUTION OF A REVOLUTION

The innovative qualities of the original mectron PIEZOSURGERY®

- Micrometric cutting action for maximum surgical precision and intra-operative sensitivity
- Selective cutting action for minimal damage to soft tissue, maximum safety for you and your patients
- Cavitation effect for maximum intra-operative visibility and a blood-free surgical site

are further improved in PIEZOSURGERY® 3

The most effective device in the market becomes even more powerful, and at the same time it becomes even simpler to use.

1997

- mectron and Prof. Tomaso Vercellotti developed the idea of piezoelectric bone surgery
- the main technological advancement is the adaption of ultrasound movement for bone cutting
- mectron produces the first prototype devices for piezoelectric bone surgery
- first extraction treatments

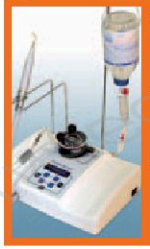
1998

- first lateral sinus lift treatments

1999

- Prof. Tomaso Vercellotti introduced the name PIEZOSURGERY® for the new method
- first bone splitting treatments in the maxilla

2000



- first bone splitting treatments in the mandible
- first case studies about ridge expansion are published*
- mectron starts serial production of the PIEZOSURGERY® device

2001

- first crestal sinus lift treatments
- Piezosurgery® I, the world-wide exclusive first unit of piezoelectric bone surgery, is presented by mectron at IDS
- over 20 inserts are already available
- first study about sinus lift with PIEZOSURGERY® presented

2002

- development of periodontal resection surgeries
- first bone block grafting treatments

2004



- more powerful and better ergonomics – mectron presents the 2nd generation of the PIEZOSURGERY® device
- first orthodontic microsurgery treatments

PIEZOSURGERY®

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2005

- more than 30 scientific studies about PIEZOSURGERY® are published
- the first competitive units are launched
- first implant site preparation treatments using PIEZOSURGERY®

2007

- mectron presents the innovative inserts for implant site preparation, at the same time the first study about the inserts is published

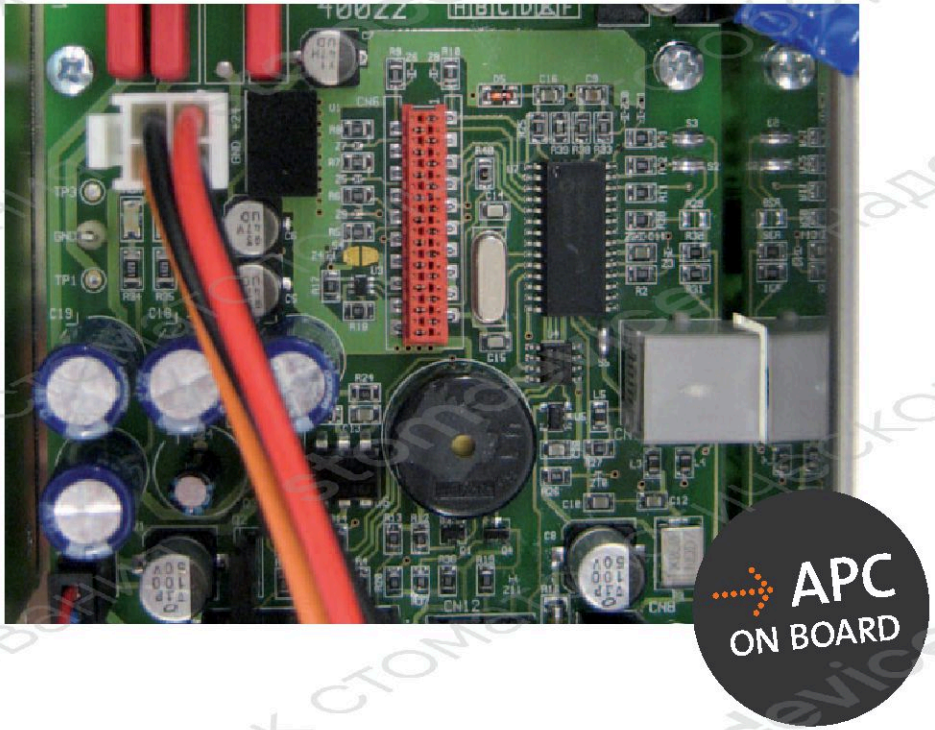
2009

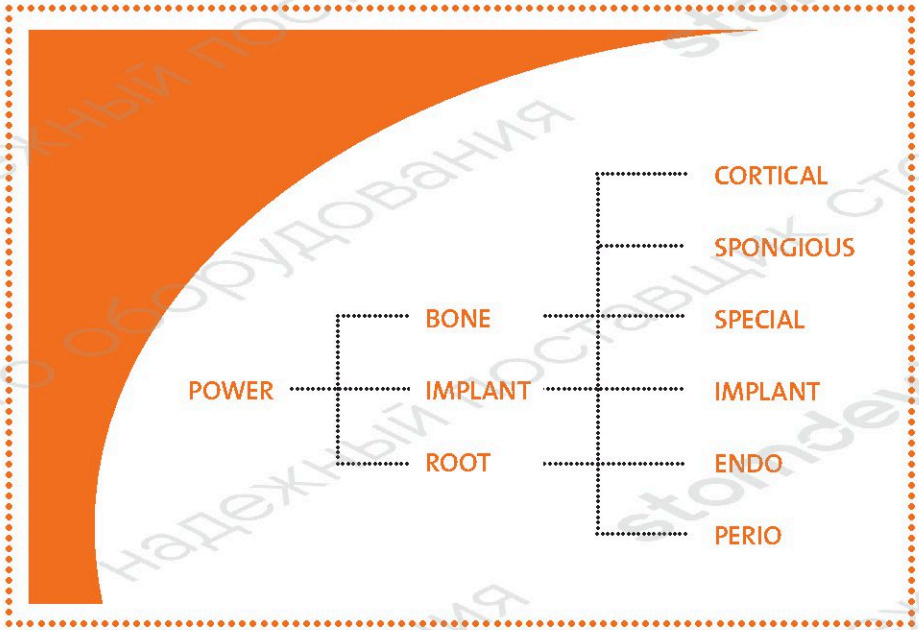
- PIEZOSURGERY® 3 – the third generation is presented

* You will find a selection of clinical and scientifical studies about mectron PIEZOSURGERY® in the two volumes of the brochure „Scientific Abstracts – 10 years of clinical research". A downloadable version is available at the mectron website www.mectron.com.

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POWER

- controlled by unique digital electronics
- unique frequency range of 24-36 kHz for operating with highly complex inserts efficiently and safely

FEEDBACK-SYSTEM

- constant and optimal tuning of insert movement
- 29% increased sensitivity compared to PIEZOSURGERY® II
- automatically detects if more or less power is necessary and adjusts it accordingly
- user intervention is simplified to the push of the foot pedal

APC ON BOARD

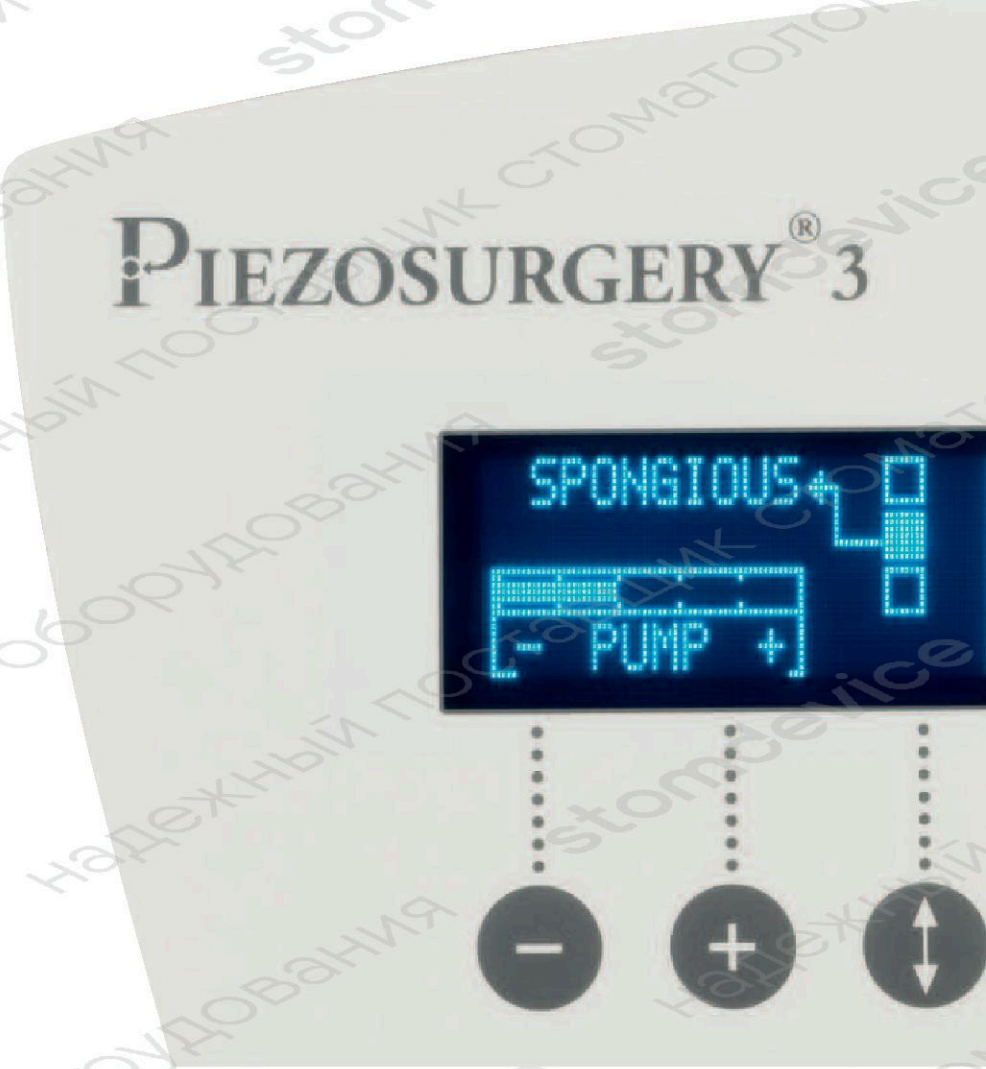
- APC = Automatic Protection Control
- APC ensures maximum safety
- automatically recognizes deviations from normal functioning and stops both the ultrasound and irrigation within less than 0.1 seconds.
- the cause of the interruption is indicated on the display

PROGRAMS

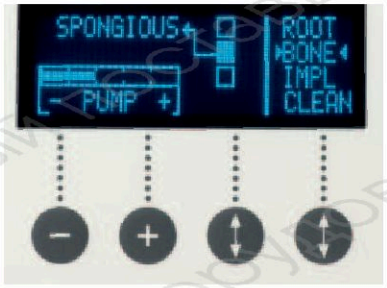
Choose a basic mode (BONE, IMPLANT, ROOT), select the type of surgery, adjust irrigation with the „-“ or „+“ buttons and the surgery can start.
The necessary fine tuning for each insert and indication is achieved automatically by the electronic feedback-system.

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PIEZOSURGERY® 3 – THE INTELLIGENT WAY OF SHOWING STRENGTH!

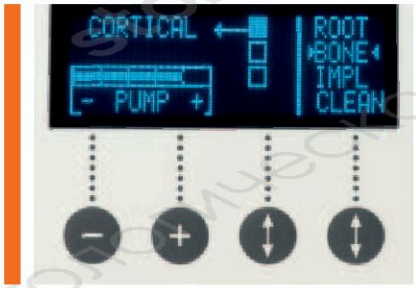


PIEZOSURGERY® 3's electronics provides maximal power. Thanks to its intelligent software the original PIEZOSURGERY® achieves its unique cutting efficacy. Additionally, all of the electronics work automatically without time consuming settings.



CONTROLS

- only 4 buttons
- simple and ergonomical



IRRIGATION

- adjusted by „-" und „+" buttons
- internal safety control ensures constant irrigation flow during surgery



CLEAN FUNCTION

- controlled by the foot pedal
- cleaning cycle for the device's main tubes

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PIEZOSURGERY® 3 – THE PERFECT TOOL FOR DAILY USE!

The ergonomics of PIEZOSURGERY® 3 are ideal for daily use. With its simple handling it offers utmost treatment security. Materials and surfaces are selected for easy cleaning, disinfection and sterilization. As part of its commitment to customer satisfaction, whenever possible, mectron avoids the use of expensive single use parts, such as disposable liquid lines.









FLEXIBILITY
- flexible choice of several irrigation options
- 360° function of the foot control
- digital transformer allows voltage from 100 - 240 V

HYGIENE
- handpiece and handpiece cord (including the liquid line) are fully sterilizable together
- easy-to-clean keyboard
- tube of peristaltic pump tubing and connections of the liquid line are sterilizable
- sterilizable torque wrench

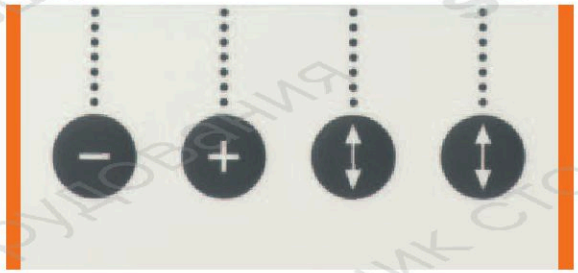
ECONOMY
- the irrigation system works with cost-effective standard parts
- tube of peristaltic pump is reusable
- standard connections for tubing
- liquid line integrated in handpiece cord

SAFETY
- reliable peristaltic pump for irrigation
- handpiece cord coupling protected against mishandling
- unique all-in-one handpiece and handpiece cord system
- once positioned the foot pedal is stable due to its weight
- transformer stable against variation in voltage (avoid insert breakage)

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ERGONOMICS

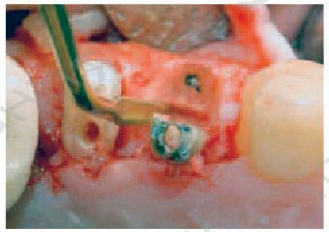
- controlled by only 4 buttons
- unique all-in-one handpiece and handpiece cord system
- handpiece cord is extremely flexible
- slim design of the handpiece
- easy-to-read, illuminated display
- high-grade handpiece connectors
- torque wrench ensures optimal energy transmission
- simple peristaltic pump

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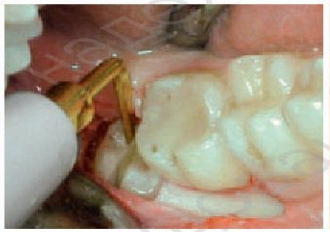
PIEZOSURGERY® 3 – EXTREMELY VERSATILE ... FROM IMPLANTOLOGY TO ORTHODONTIC SURGERY

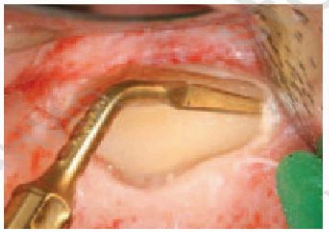
ORAL SURGERY

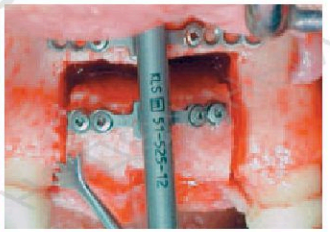

Extraction for immediate loading


Ankylotic tooth extraction


Dysgnatic surgery

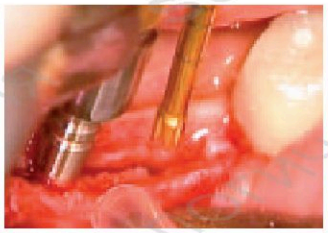

Eighth tooth extraction

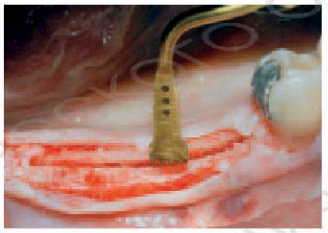

Included tooth extraction

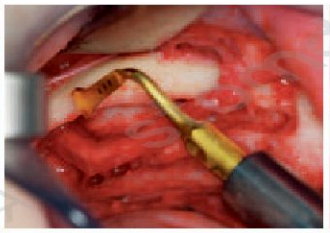

Distraction osteogenesis

IMPLANTOLOGY

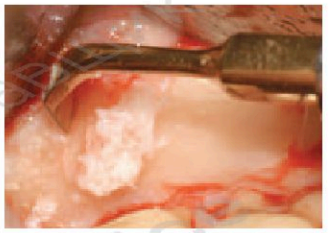

Laterale Sinus Lift


Implant site preparation


Ridge expansion


Lateralization of nerves


Crestal Sinus Lift


Bone chips harvesting

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PERIODONTAL SURGERY


Cystectomy


Implant explantation

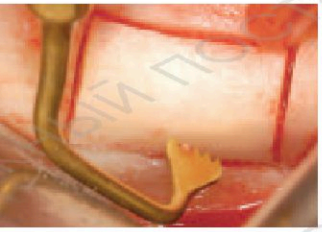

Root planing


Root debridement


Crown lengthening


Osteoplasty

ENDODONTIC SURGERY


Bone block harvesting


Peri-apical access


Retrograde preparation of the root canal

ORTHODONTIC SURGERY


Corticotomy


Included tooth extraction

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SHARP INSERTS

- gentle and effective bone cutting action
- fine and well-defined cutting line
- used for implant site preparation, osteo-plasty techniques and bone chip harvesting

IM3A

highly complex insert for the implant site preparation. New and exclusive patented technology by mectron.

SMOOTHING INSERTS

- diamond surfaces for precise and controlled operation on bone structures
- preparation of difficult and delicate structures (ex: sinus augmentation, nerve lateralization)
- preparation of the final bone shape

BLUNT INSERTS

- soft tissue preparation (ex: Schneiderian's membrane)
- root planing in periodontology

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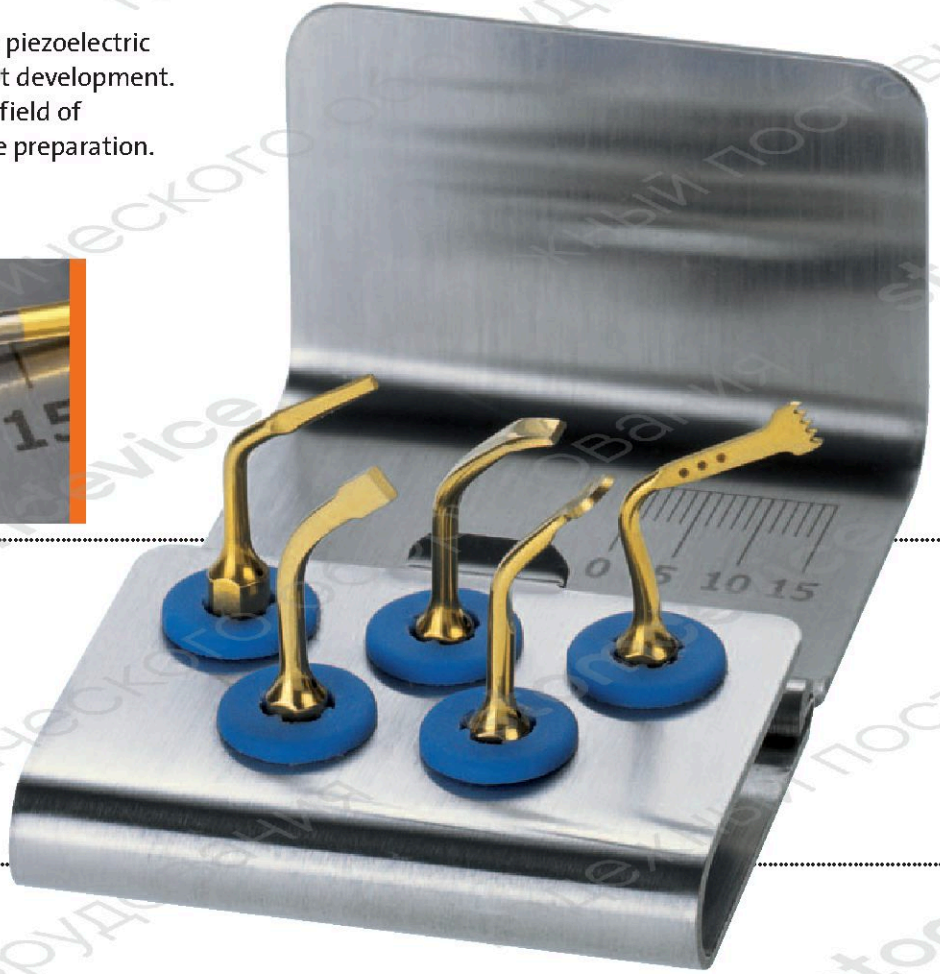
PIEZOSURGERY® 3 INSERTS – FROM CLINICIANS FOR CLINICIANS!

Over 50 inserts – mectron offers the widest range of inserts for piezoelectric bone surgery – thanks to more than 12 years of experience in insert development. This experience makes mectron the inventor and innovator in the field of piezoelectric bone surgery, e.g. the new inserts for the implant site preparation.



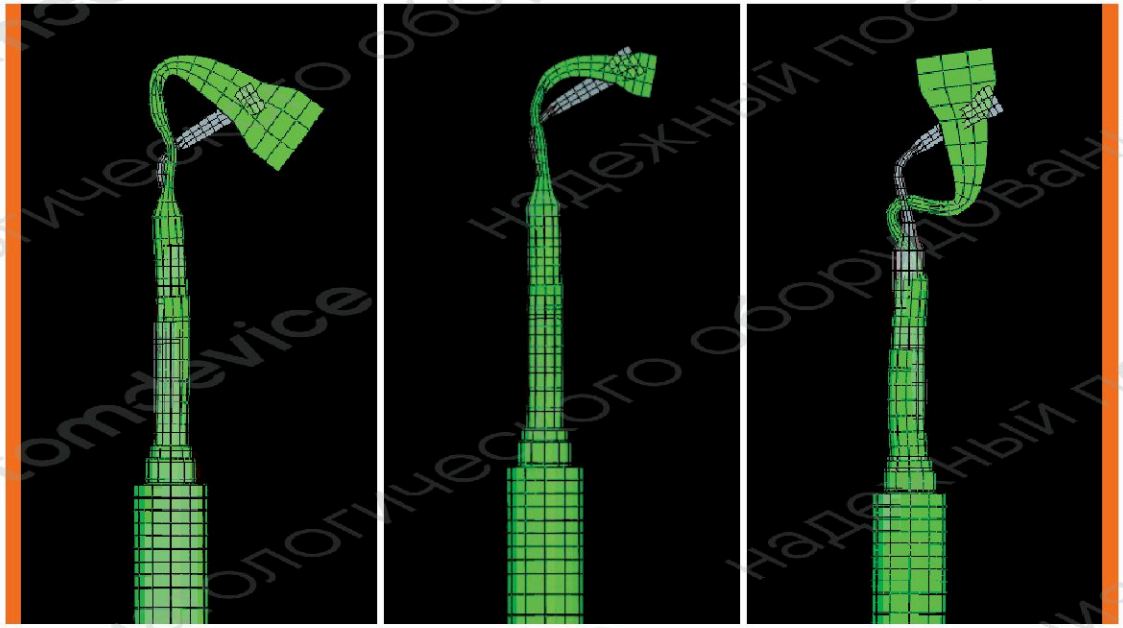
INSERT KITS

- set of inserts for specific application
- stainless steel tray with depth markings
- for sterilization and storage



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INSERT DEVELOPMENT

- **1.** close collaboration with universities for the development of inserts
- **2.** computer simulation of shape and insert movement. The finite elements method allows precise prognoses of insert movements
- **3.** extensive clinical testing – feedback from experienced practitioners



PRECISION

A CNC controlled 5-dimensional sharpening machine cuts with an accuracy of up to 0.1 µm. The whole cutting process for a single insert last up to 12 min.



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PIEZOSURGERY® 3 INSERTS – BECAUSE QUALITY MATTERS!

Ultrasound inserts oscillate up to 36.000 times per second. An enormous stress for the material. Therefore mectron uses only medical grade, high quality, stainless steel for insert production. Each mectron ultrasound insert will pass through 12 working steps.

The basis of the original method's efficiency is the controlled insert vibration. Therefore inserts and device have to be matched perfectly – a complex procedure as you have to control a multitude of different parameters.





DIAMOND COATING

Depending on the indication, the inserts are coated with specially selected diamonds. The granulometry of the diamond coating is adapted to the respective treatment.



TITANIUM NITRID COATING

A coating of titanium nitride, applied to inserts, increases the hardness of the surface, avoids corrosion and therefore increases working life.



LABELING

Each insert is labeled gently by a laser.



QUALITY CHECK

Each insert is checked in detail before getting an OK for sales.

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PIEZOSURGERY® 3 – 12 YEARS OF SUCCESSFUL SCIENTIFIC RESEARCH

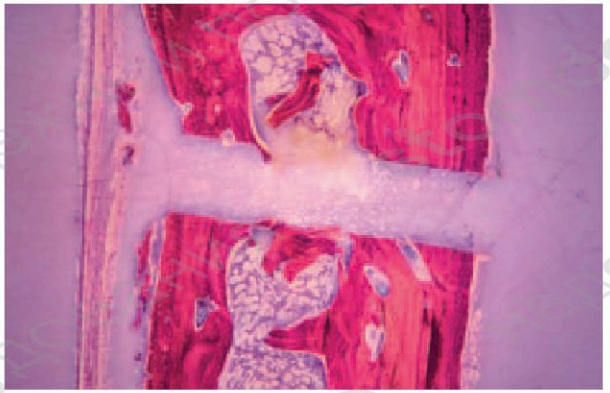
Bone bur



Bone saw



PIEZOSURGERY®



HISTOLOGICAL RESULTS

Comparative studies have demonstrated both the clinical and histological advantages of the PIEZOSURGERY® device.

METHOD PIEZOSURGERY®: EVIDENCED-BASED

With over 12 years of successful clinical research, the original PIEZOSURGERY® method is the only one supported by more than 100 clinical and scientific studies. An updated list of publications can be found at www.mectron.com. An abstract collection is also available for download.



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WWW.PIEZOSURGERYACADEMY.COM – THE SCIENTIFIC INFO PLATFORM

The website of the PIEZOSURGERY® academy, an independent institute for the advancement of the original PIEZOSURGERY® method. To find out about the possibilities of PIEZOSURGERY®, join one of the many seminars which are held in different languages.



TECHNICAL SPECIFICATIONS



Dimensions (L x W x H)	340 x 210 x 150 mm	
Weight	3.2 kg	
Working frequency	24.000 – 36.000 Hz	
Working power of handpiece	max. 25 W	
Output levels	adjustable to 6 output levels:	
	BONE Mode	CORTICAL
		SPONGIOUS
		SPECIAL
	IMPLANT Mode	IMPLANT
	ROOT Mode	ENDO
		PERIO
Delivery rate of the peristaltic pump	BONE outputs	8-90 ml per min.
	IMPLANT outputs	8-90 ml per min.
	ROOT outputs	0-90 ml per min.
Power supply	connection to the power supply is sufficient	
Power supply voltage	fully digital 100-240 Vac 50/60 Hz	
Max. power absorbed	120 W	
Warranty	device 2 years; handpiece and handpiece cord 1 year	

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WHY WOULD YOU BUY AN IMITATE WHEN YOU CAN HAVE THE ORIGINAL?

www.mectron.com or mectron@mectron.com

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