R.S. DB5629E

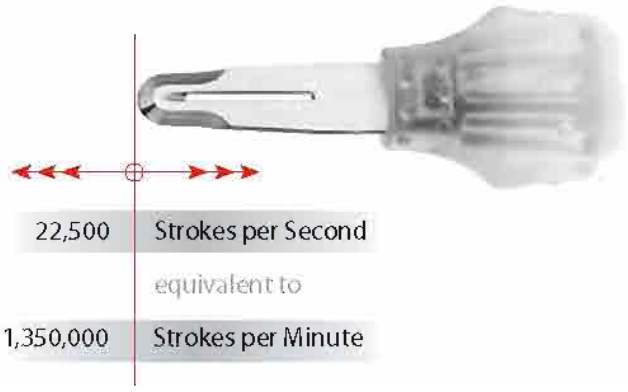
Lea minuciosamente el manual de instrucciones de uso

NIX®

BETTER MATTERS™

The Ultrasound Advantage

The BoneScalpel® is an ultrasonic surgical device that enables safe and controlled bone removal. It is designed to provide clean cuts through hard tissue structures while sparing adjacent soft tissues.



The BoneScalpel handpiece receives an electrical signal with the nominal frequency of 22.5 kHz from the ultrasonic console. A piezoelectric transducer converts the input signal into mechanical oscillations that are further amplified in order to achieve efficient cutting characteristics.

The blunt BoneScalpel blade oscillates in a linear, piston-like motion enabling an effortless dissection of hard, cortical bone.

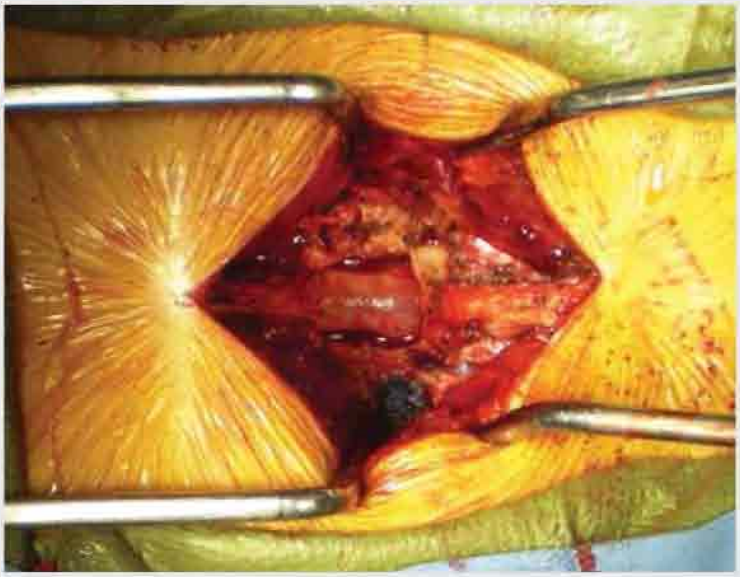
"The advent of ultrasonic bone removal is as significant to spine surgery today as the adoption of the pneumatic drill was several decades ago. Power drills liberated spine surgeons from the slow, repetitive, fatigue inducing, and occasionally dangerous maneuvers that are characteristic of manually operated rongeurs. Now ultrasonic removal with the BoneScalpel empowers the surgeon to cut bone with an accuracy and safety that surpasses that of the power drill."

- Peyman Pakzaban, MD, FAANS Houston MicroNeurosurgery, Houston, TX

Tissue-Specific

- Controlled cutting
- Improved efficiencies
- Soft tissue sparing
- Reduced bleeding

BoneScalpel® is tissue-specific as it allows for controlled removal of rigid bone while being atraumatic to the surrounding elastic soft tissues.

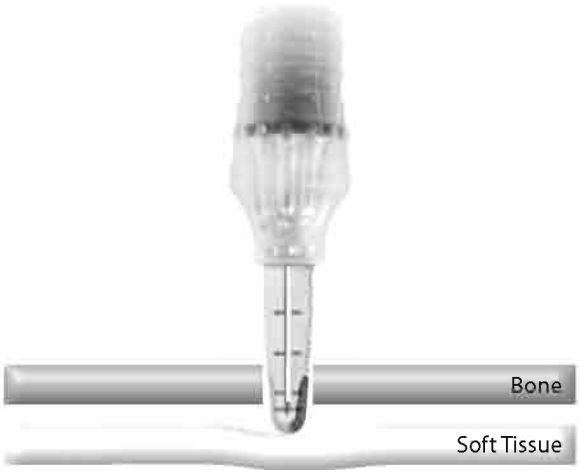


Hard Tissue Response

- BoneScalpel cuts bone as it is more rigid and unyielding than soft tissue.
- When rigid bone comes in contact with the BoneScalpel blade it does not bend, deform or move away.
- As a result bone absorbs a large portion of the blade's energy and is cut at the point of contact with the blade.

Soft Tissue Response

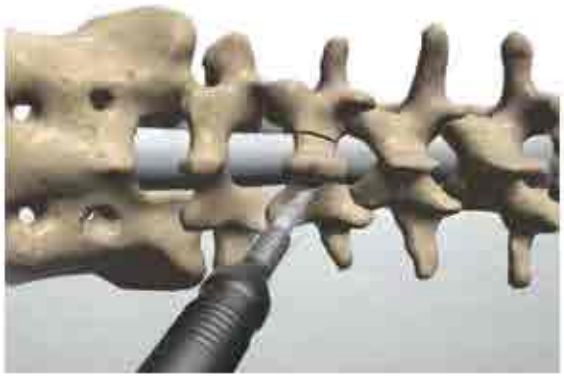
- In contrast, soft tissue responds elastically in contact with the blade, that is, it moves, deforms and vibrates.
- This results in substantial dampening of the energy transferred from the blade to the tissue.
- The energy absorbed by the soft tissue at the point of contact with the blade is generally not sufficient to cut the tissue unless soft tissue is held against the blade at high tension for a long period of time.



Four Key Benefits

Controlled Cutting

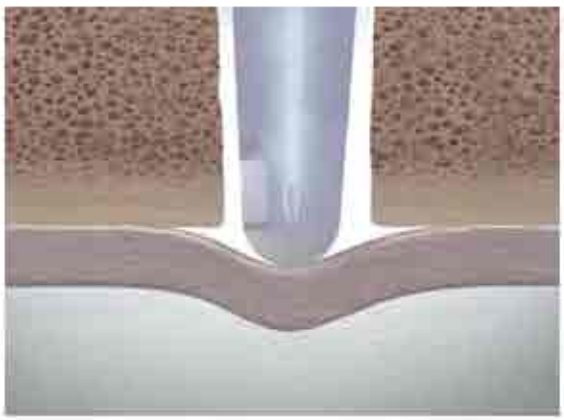
- Non-abrasive, controlled cutting
- Reach more anatomical structures
- Versatile product configurations
- Enhances cooling of surgical site
- Tactile feedback through cortical & cancellous bone
- Thin geometry allowing bone preservation
- Repeatable and predictable experience
- Eliminates chatter, skipping, or walking



Soft Tissue Sparing

- Minimal soft tissue interaction
- Preservation of non-targeted tissues
- Absence of tissue wrapping
- Differentiates tissue types

The BoneScalpel osteotomy is atraumatic to soft tissues. The blade is blunt and travels in a linear motion, which eliminates wrapping and tearing. In addition, soft tissue has elastic properties that allow it to deform and rebound without failure to its integrity. Osteotomies can be performed in close proximity to delicate structures.



Improved Efficiencies

- Non-abrasive, controlled cutting
- Efficient cooling of surgical site
- Reduced time vs. conventional methods
- Reduced blood loss
- Direct visualization vs. blind cutting
- Access through tubular retractors
- Universal tip geometry for multifunctional use
- Minimizes hand fatigue vs. conventional methods
- Micro-reciprocating movement

The longitudinal blade motion enables precision osteotomies free of gyroscopic effects and facilitates cutting techniques for en-bloc bone dissection and in close proximity to delicate soft tissue structures.

Substantial time savings have been reported for advanced osseous resections in the spinal anatomy such as multilevel laminectomies and bilateral facetectomies.

Reduced Bleeding

- Integrated, continuous irrigation
- Proprietary fluid pathway design
- Creates a tamponed effect
- Significantly less bleeding compared to standard methods[1]

A proprietary fluid pathway is instrumental in directing irrigation for the purposes of cooling and lubrication over the blade and directly into the kerf.

[1] Blood Loss Reduced During Surgical Correction of AIS with an Ultrasonic BoneScalpel – Peter O. Newton, MD. 20th International Meeting on Advanced Spine Techniques (IMAST), Vancouver, Canada, July 2013.

Introducing BoneScalpel® MIS System

BoneScalpel MIS System is the latest, most advanced addition to the Misonix BoneScalpel System family. The BoneScalpel MIS System is a valuable tool in minimally-invasive spine procedures, requiring less space when incising or removing bone than an osteotome or a Kerrison rongeur. Spine surgeons can now more precisely, and with greater confidence, control their bone cuts in difficult-to-reach areas while better protecting soft tissue.

The BoneScalpel MIS offers:

- Superior control in retractor and tube-based procedures for precise bone cutting of hard tissue while sparing soft tissue & neural structures
- Deep cuts through osseous structures with minimal blood loss, increased soft tissue protection and reduced hand fatigue for the treating surgeon
- A large amount of viable autograft bone compared to shavers or burrs, potentially offering a cost savings in these procedures

The outstanding capability of the **BoneScalpel MIS System** technology makes it ideally suited for the limited access and visibility of MIS applications, where the margins of error are even tighter than those of open surgical procedures.

Ordering Information

BoneScalpel® System	
BCM-SY	Misonix BoneScalpel System • Ultrasonic console • Two handpieces with wrenches • Footswitch and system accessories Console can be configured for 110-130V, 60Hz and 200-240V, 50Hz.

BoneScalpel Reusable Items - Autoclavable	
BCM-HP	BoneScalpel universal handpiece, for hard and soft tissue applications
BCM-SS	Handpiece cover, hard tissue
BCM-H2	Handpiece cover, soft tissue
BCM-CW	Handpiece wrench
BCM-2W	Blade T-wrench
BCM-CBS	Small cleaning brush set
BCM-CBL	Large cleaning brush set
BCM-PR	Replacement pump head
E-SYSCART	Misonix system cart

BoneScalpel Tubing – Single Use, Sterile	
MXB-T	Irrigation tube set

BoneScalpel Tips For Hard Tissue Removal – Single Use, Sterile	
BLADES	
MXB-10	10 mm Blade, Blunt – includes 10 mm blade, short extension and silicone sleeve
MXB-20	20 mm Blade, Blunt – includes 20 mm blade, short extension and silicone sleeve
MXB-B1	25 mm Blade, Serrated – includes blade, short extension and silicone sleeve
SHAVERS	
MXB-S1	Micro Hook Shaver – includes shaver tip, short extension and silicone sleeve
MXB-S3	Ø4.4 Diamond Shaver – includes shaver tip, short extension and silicone sleeve
MIS	
MXB-10LS	10 mm Blade, Long Straight – includes 10 mm blade, long straight extension and silicone sleeve
MXB-10LC	10 mm Blade, Long Curved – includes 10 mm blade, long curved extension, and silicone sleeve
MXB-20LC	20 mm Blade, Long Curved – includes 20 mm blade, long curved extension, and silicone sleeve
MXB-20LCRS	20 mm Blade, Long Curved, Rigid Sheath, includes 20 mm blade, long curved extension, silicone sleeve and rigid sheath

20 mm Blade
MXB- 20

Microhook Shaver
MXB-S1

Diamond Shaver
MXB-S3

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BETTER MATTERS™

If you would like further information or would like to evaluate the BoneScalpel® please contact us at +1.631.694.9555

1938 NEW HWY, FARMINGDALE, N.Y. 11735 | +1.631.694.9555 +1.631.694.3285 FAX
MISONIX, INC. | NASDAQ SYMBOL: MSON | MISONIX.COM