

ZIMMER BIOMET®
Sports Medicine



TRICERA™ SYSTEM
B R O C H U R E

Introducing Zimmer Biomet's **TRICERA SYSTEM**

The Tricera System is an advanced arthroscopy system that combines ablation/hemostasis, tissue resection, bone cutting, and fluid management into one proprietary system. This allows for surgeon control and quality tools for rapid procedures. The system is simple and intuitive with a quick setup.

The Tricera System's all-in-one architecture allows for efficiency and optimization by having all modalities work in harmony through a single console.

TRICERA FOOTSWITCH

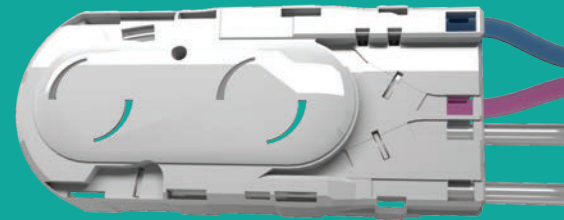
The Tricera Footswitch is designed to allow the surgeon to activate all system modes, pump, and flush the joint, with the familiarity of the standard yellow activate and blue coag pedals.



FLUID MANAGEMENT

Veriflow™, Tricera's self-loading integrated inflow/outflow fluid management system, results in optimized fluid pressure designed to minimize spikes and troughs. This intuitive system contains a proprietary algorithm that measures the backpressure and joint pressure and adapts to any sheath/scope manufacturer. This provides excellent visualization with consistent joint distension, even when using tapered sheaths.

Exoflow™ is an outflow-only fluid management offering that provides surgeons the flexibility to use their existing inflow fluid management setup while automating outflow through Tricera devices. The outflow activates automatically with device use as well as on-demand when the flush mode is activated.



Veriflow



Exoflow



TRICERA HANDPIECE

The Tricera Handpiece is the first ever integrated bipolar RF shaver handpiece. With the quick push of a button, the surgeons can move between modes, giving them control of the procedure. Surgeons can also adjust settings, joint flush and suction.

The handpiece has a device recognition feature and will automatically adjust the available modes and settings for each device attached.



The 3-in-1 SHAYER™ revolutionizes arthroscopic surgery by providing surgeons with an all-in-one multifunctional device: a combined shaver/bone cutter and RF probe.

The Tricera System's 3-in-1 SHAYER combines soft tissue resection, bone cutting, and ablation/coagulation into a single device. Similar in tip geometry to a standard shaver, the 3-in-1 SHAYER offers multiple modalities as well as on-demand coagulation, designed to minimize intraoperative instrument changes for procedural efficiency.

The device is available in 5.0 mm and 4.2 mm sizes for optimal access and versatility in knee and shoulder arthroscopic procedures.



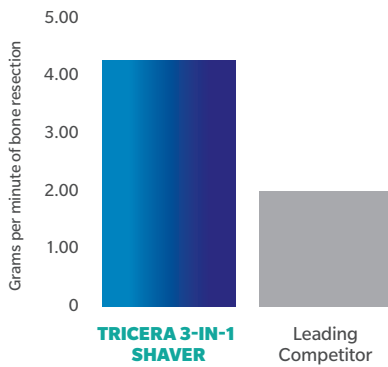
3-in-1 SHAYER Features:

Streamlined	Efficient	Optimization	Coagulation
Perform ablation/coagulation, soft tissue resection, and bone cutting with a single device	All-in-one device designed to minimize intraoperative instrument exchanges for overall efficiency	All modalities controlled by a single console for performance and efficiency	On-demand coagulation from any mode for optimal visualization
Speed	Versatility	Access	Visualization
Faster bone cutting and tissue resection speeds ¹ than two leading competitors combined in one device	Change between modes at the touch of a button or footpedal	5.0 mm and 4.2 mm available and fits through most 5.5 mm cannulas	Veriflow self-monitoring fluid management system maintains accurate pressure and automatic flow

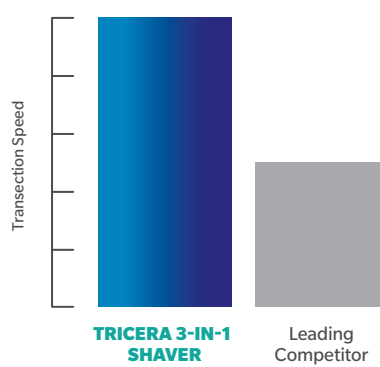
During testing of the 3-in-1 SHAVER for ablation rate, tissue resection, and bone resection against leading competitors, results^{1*} showed that:

- Resects bone 2.12x faster than leading competitor's shaver blade
- Time to transect bovine tendon was up to 2x faster for 3-in-1 SHAVER than the leading competitor
- 3-in-1 SHAVER ablates at an equivalent rate to the leading competitive ablation probes

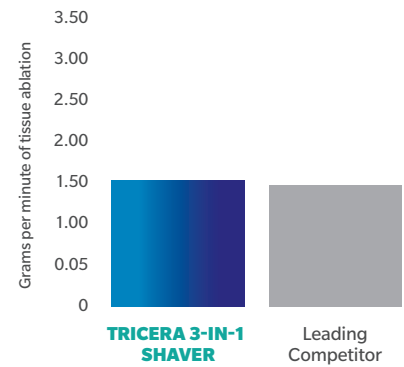
BONE RESECTION



TENDON TRANSECTION



TISSUE ABLATION



Ablation Mode



Resection Mode



Bone Cutting Mode

The Tricera Dynablator™ is an innovative device that combines a reciprocating electrode with plasma resection and suction for superior tissue removal.²

Dynablator removes tissue via Dynamic Ablation™, a unique and proprietary feature of the device. Dynamic Ablation involves reciprocating a smaller focused electrode 50 times per second, generating a large, dense plasma field. The Dynamic Ablation combination of the reciprocating electrode and a large suction channel provides aggressive bulk tissue removal with increased visibility and lower joint fluid temperatures.

The Dynablator can be used in static mode if a more conservative treatment is required.



Dynablator Features:

Innovation

Reciprocating electrode ablates/coagulates and simultaneously resects soft tissue

Resection

Aggressive bulk tissue resection removes tissue over 7 times faster than leading ablation probes²

Efficiency

Dynamic Ablation, combined with a large suction channel, provides efficient tissue removal with fewer clogs and superior visualization of the surgical field

Integration

Integrated Veriflow fluid management, combined with large suction channel, provides superior visualization and ensures lower joint fluid temperatures²

Functionality

Can be used in reciprocating mode or changed to static mode for a more customized treatment

Compatibility

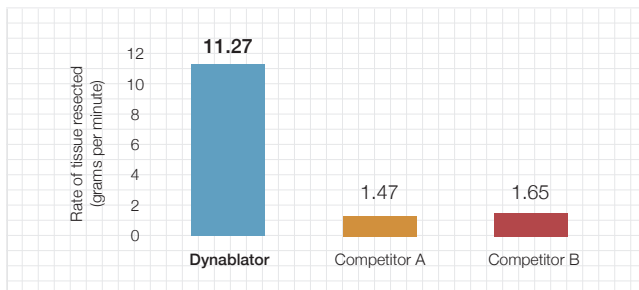
4.4 mm Dynablator shaft diameter is compatible with 5.5 mm cannulas

An inhouse study^{2*} tested the ablation rate, in joint fluid temperature, tip temperature, and volume of bubbles generated against the Smith & Nephew Super TurboVac™ and Stryker 90-S Cruise. Results showed that:

- Dynablator resects tissue 7.5 times faster than the leading ablation probes
- When compared to Dynablator the in joint fluid temperature change was up to 3.6 times higher for the leading competitors
- Dynablator tip temperature is up to 24% cooler than the leading ablation probes
- Dynablator generated up to 34 times fewer bubbles than these competitors

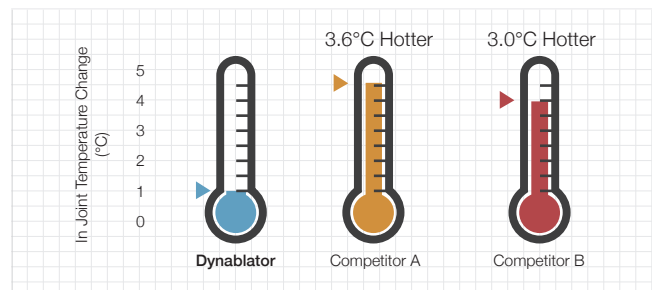
Tissue Removal Rate: Tricera's Dynablator vs. Leading Competitors' Ablation Probes

Tricera's Dynablator removes tissue 7.5 times faster than the leading competition



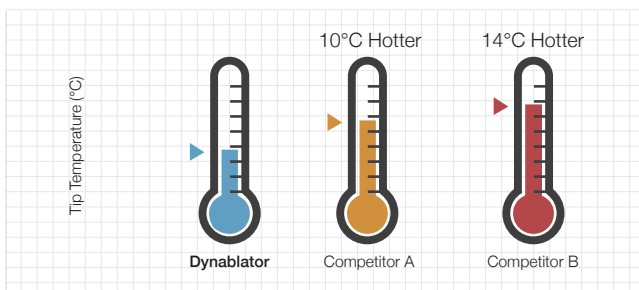
In Joint Fluid Temperature Change (°C) After 1 Minute of Ablation

When compared to Dynablator the in joint fluid temperature change was up to 3.6 times higher for the leading competitors



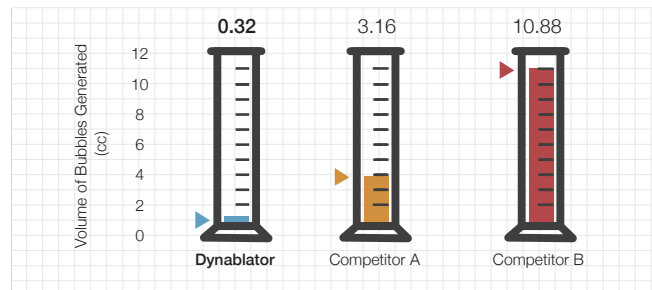
Tip Temperature (°C): Dynablator vs. Leading Competitors' Ablation Probes

Temperature at the tip is up to 14°C cooler with Tricera's Dynablator



Volume of Bubbles Generated (cc) in 1 Minute of Ablation

Tricera's Dynablator generates up to 34 times fewer bubbles than the leading competitors



To learn more about the Tricera System or to schedule an evaluation, please call **(800) 253-6190** or email us at contactus@zimmerbiomet.com

References

1. Relign 3-in-1 Shaver Performance Comparison Study. RELIGN Corporation ED 4264. 30 NOV 2020.
2. Comparison of Tissue Removal Rate, Gas Bubble Generation, In-Joint Fluid and Electrode Temperature of Radiofrequency Devices.” RELIGN Corporation, White Paper. NOV 2018.

*Laboratory testing is not necessarily indicative of clinical results

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