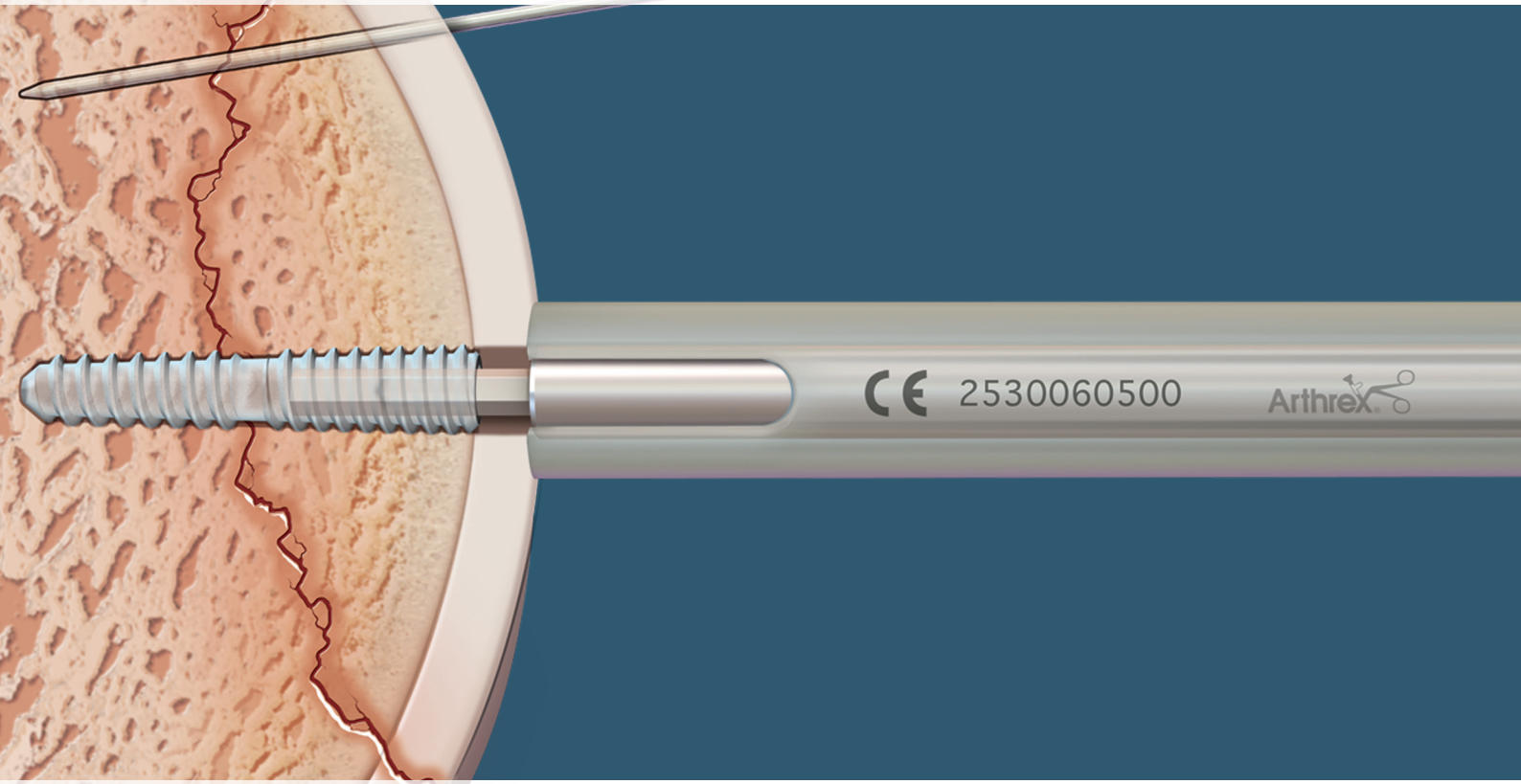
Bio-Compression Screw System

Surgical Technique



Arthrex®

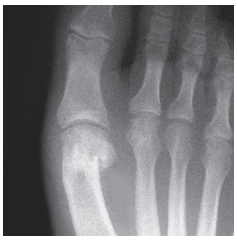
Bio-Compression Screw System

Bio-Compression screws are versatile and have a broad range of applications in both lower and upper extremities. Designed with a stepped pitch and taper, this screw draws two fragments together using straightforward instrumentation for drilling and tapping. Made of solid enhanced PLLA material, the Bio-Compression screw absorbs over time without losing strength during the healing phase.

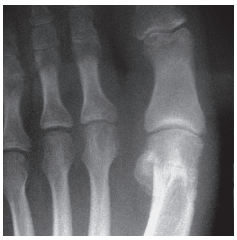
- 3 mm solid Bio-Compression screw, 16 mm to 26 mm

Foot and Ankle

Applications in the foot and ankle include OCDs, fractures, and osteotomies as well as arthrodesis of the tarsals, metatarsals, and phalanges. For lower extremity surgery, the Bio-Compression screw may be inserted either percutaneously or in an open procedure. Accurate placement of the screw can be ensured by using the cannulated instrumentation in the set.



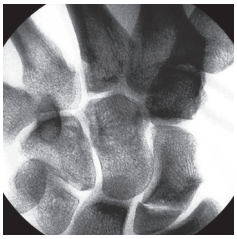
- Post-op



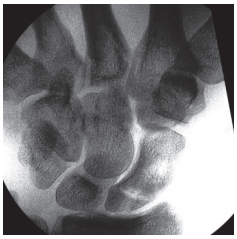
- Post-op

Hand, Wrist, and Elbow

The Bio-Compression screw is an excellent solution for complications such as hardware prominence and postoperative imaging. Arthrodesis of small bones in the wrist or fingers are also situations where the compression and zero-prominence benefits of the screw come into play. For upper extremity surgery, the Bio-Compression screw may be inserted either percutaneously or in an open procedure. Accurate placement of the screw can be ensured by using the cannulated instrumentation in the set.



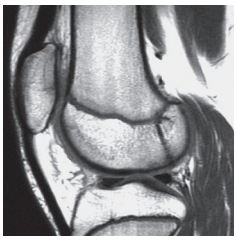
- Pre-op



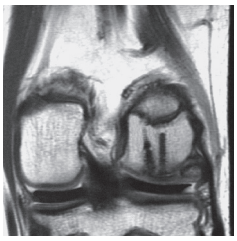
- Post-op

Knee OCD

Osteochondral fragments, flaps, or grafts with sufficient bone stock are ideal candidates for fixation with the Bio-Compression screw. Preoperatively, radiographs and MRIs should be examined to determine location and size of the osteochondral defect and its suitability for fixation. For the more common medial condyle defect, the lateral portal is used for visualization and the medial portal is used for hardware placement.

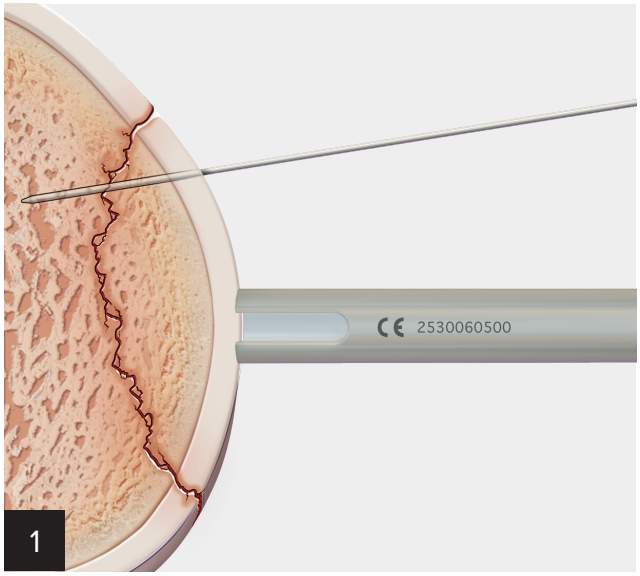


- Pre-op

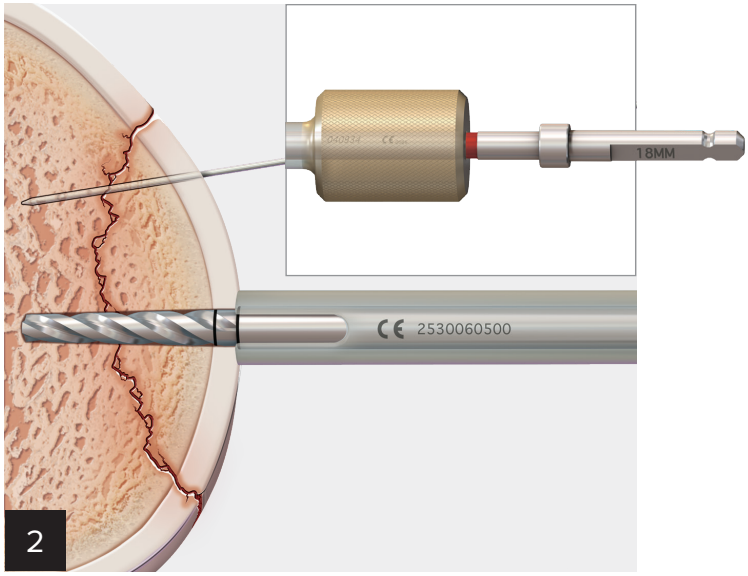


- Post-op

Surgical Technique

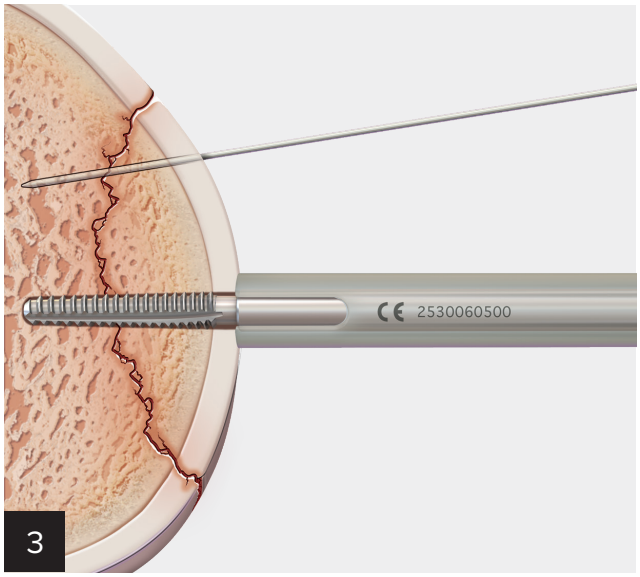


For provisional fixation, secure the osteochondral defect/flap with one or two K-wires such that they will provisionally stabilize the fragment during screw insertion and not interfere with the desired screw locations.



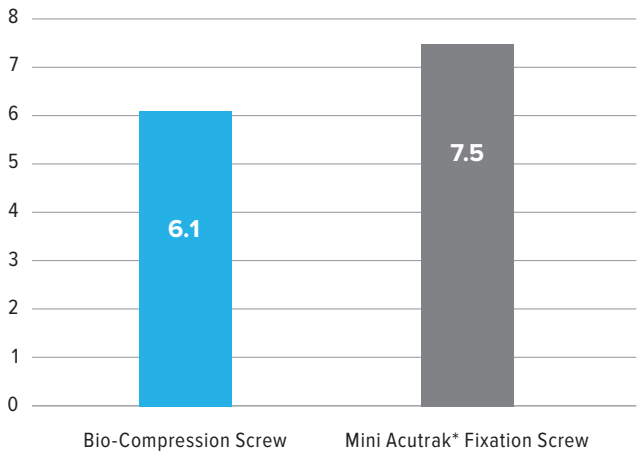
In articular applications, drill through a clear cannula with the tapered drill until the shoulder of the drill contacts the cannula and the second laser line is at the surface. This will set the screw 2 mm to 3 mm deep.

In nonarticular applications, drill to the first laser line. Orientation of the first screw should be perpendicular to the fracture for optimal compression. Any subsequent screws should be from slightly divergent angles to provide multiplanar stability.



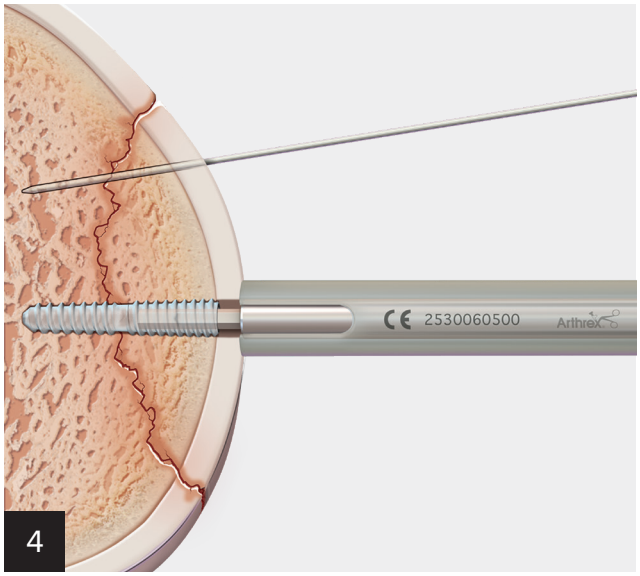
Tap the drill hole through the clear cannula with a tapered tap until the shoulder of the tap contacts the cannula. This will correspond to the end of the drill hole. In nonarticular applications, tap until the threads are just buried.

Compression Load 20 mm (lbf)[1]

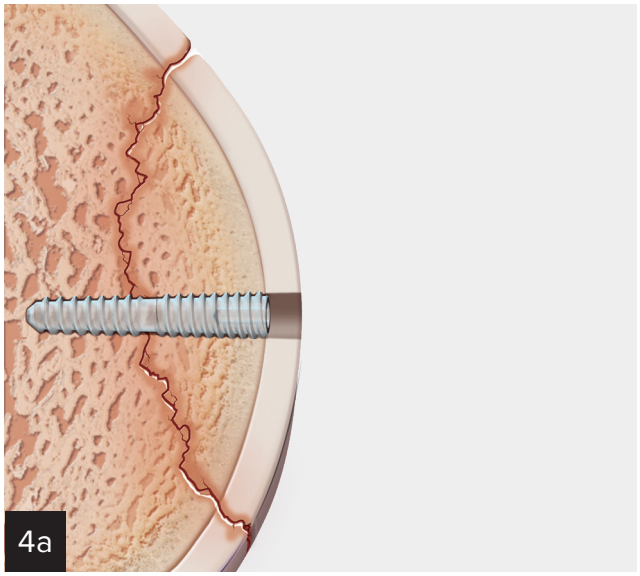


Test showed no statistically significant difference in compressive load

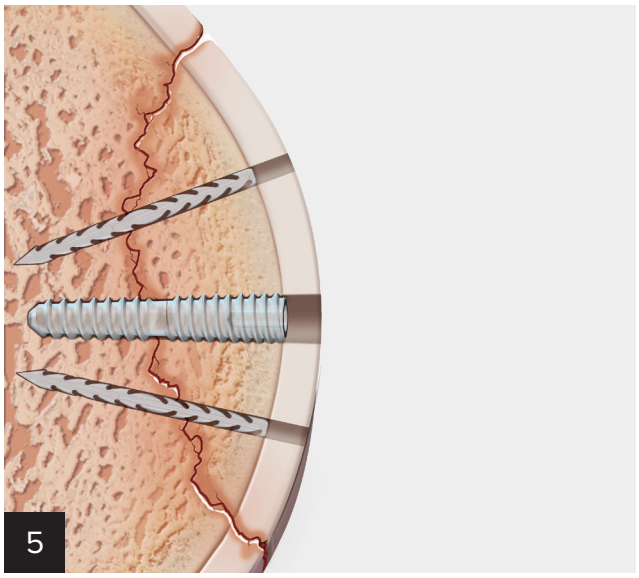
*Mini Acutrak is a registered trademark of Acumed.



Load the Bio-Compression screw onto the tip of the hex driver. The screw will remain 3 mm from the smooth shaft of the driver when seated. Insert the Bio-Compression screw through the clear cannula until the shoulder of the driver contacts the cannula.

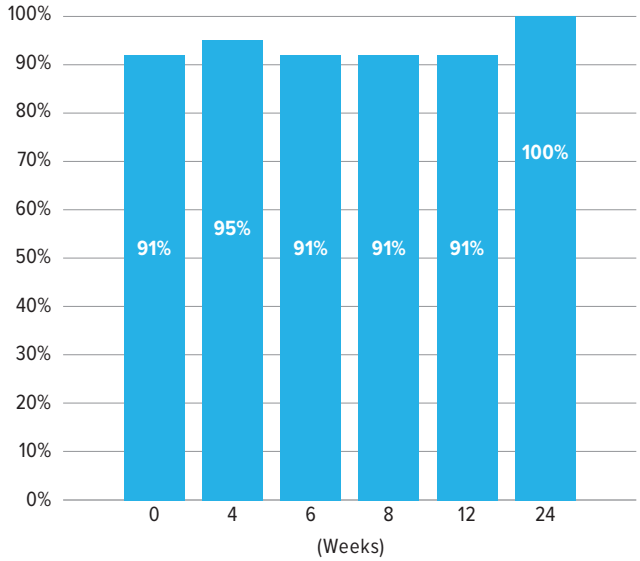


Typically the tapered screw will easily insert 60% before it engages bone. At full seating, the screw should be 2 mm to 3 mm below the articulating surface. Disengage the driver by pulling straight out.
Note: Insert additional Bio-Compression screws if needed using the same technique.



Should a smaller size rotational fixation be desired, Chondral Dart™ or TRIM-IT Drill Pin® implants (if performed open) can be placed adjacent to the Bio-Compression screw.

Enhanced PLLA Strength Retention/Normalized Shear Force[2]



Test showed no statistically significant difference in shear force over time

Ordering Information

3 mm Bio-Compression Screw Instrumentation Set (AR-**5025S**)

Product Description	Item Number
Bio-Compression Screw Driver, noncannulated, 2.7 mm	AR-**5025DB**
Small Handle w/ AO Connection	AR-**2001AOT**
Bio-Compression Screw Dilator Tap, 20 mm	AR-**5025TB**
Bio-Compression Screw Driver Guide, 20 mm	AR-**5025G**
Bio-Compression Screw Drill Bit, 20 mm	AR-**5025TD**
Bio-Compression Cannulated Dilator Tap, 16 mm	AR-**5025TBC-16**
Bio-Compression Cannulated Dilator Tap, 18 mm	AR-**5025TBC-18**
Bio-Compression Cannulated Dilator Tap, 20 mm	AR-**5025TBC**
Bio-Compression Cannulated Dilator Tap, 22 mm	AR-**5025TBC-22**
Bio-Compression Cannulated Dilator Tap, 24 mm	AR-**5025TBC-24**
Bio-Compression Cannulated Dilator Tap, 26 mm	AR-**5025TBC-26**
Bio-Compression Screw Cannulated Drill Bit, 16 mm	AR-**5025TDC-16**
Bio-Compression Screw Cannulated Drill Bit, 18 mm	AR-**5025TDC-18**
Bio-Compression Screw Cannulated Drill Bit, 20 mm	AR-**5025TDC**
Bio-Compression Screw Cannulated Drill Bit, 22 mm	AR-**5025TDC-22**
Bio-Compression Screw Cannulated Drill Bit, 24 mm	AR-**5025TDC-24**
Bio-Compression Screw Cannulated Drill Bit, 26 mm	AR-**5025TDC-26**
Bone Reduction Forceps w/ Teeth	AR-**4160FT**
Depth Device, cannulated	AR-**5025DG**
Bio-Compression Screw Instrumentation Case	AR-**5025C**

Implants

Product Description	Item Number
Bio-Compression Screw, 3 mm to 3.7 mm × 16 mm	AR-**5025B-16**
Bio-Compression Screw, 3 mm to 3.7 mm × 18 mm	AR-**5025B-18**
Bio-Compression Screw, 2.7 mm to 3.7 mm × 20 mm	AR-**5025B-20**
Bio-Compression Screw, 3 mm to 3.7 mm × 22 mm	AR-**5025B-22**
Bio-Compression Screw, 3 mm to 3.7 mm × 24 mm	AR-**5025B-24**
Bio-Compression Screw, 3 mm to 3.7 mm × 26 mm	AR-**5025B-26**
Disposable Accessory (necessary for procedure and may be used with both sets)	
Guidewire w/ Trocar Tip, 0.045 in, 1.1 mm	AR-**5025K**
Optional	
Bio-Compression Screw Instrumentation Plate	AR-**5025C-03**

Products may not be available in all markets because product availability is subject to the regulatory approvals and medical practices in individual markets. Please contact your Arthrex representative if you have questions about the availability of products in your area.

References

1. Arthrex, Inc. Data on file (APT 04510). Naples, FL; 2020.
2. Arthrex, Inc. Data on file (AR-4162B lot 139 3.5mm TrimIt Screw Degradation Report). Naples, FL; 2013.

Notes

Notes

This description of technique is provided as an educational tool and clinical aid to assist properly licensed medical professionals in the usage of specific Arthrex products. As part of this professional usage, the medical professional must use their professional judgment in making any final determinations in product usage and technique. In doing so, the medical professional should rely on their own training and experience and should conduct a thorough review of pertinent medical literature and the product's directions for use. Postoperative management is patient-specific and dependent on the treating professional's assessment. Individual results will vary and not all patients will experience the same postoperative activity level or outcomes.

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View U.S. patent information at www.arthrex.com/corporate/virtual-patent-marking

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