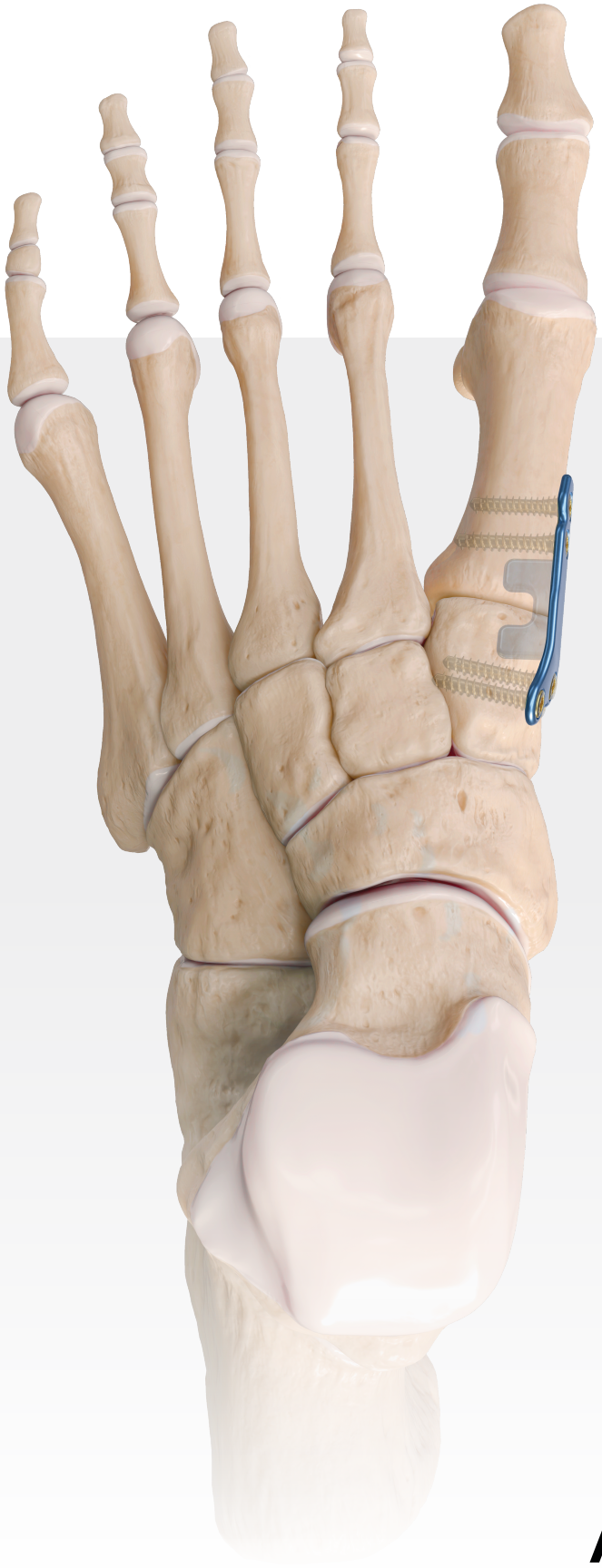
Lapidus I-Beam Plate

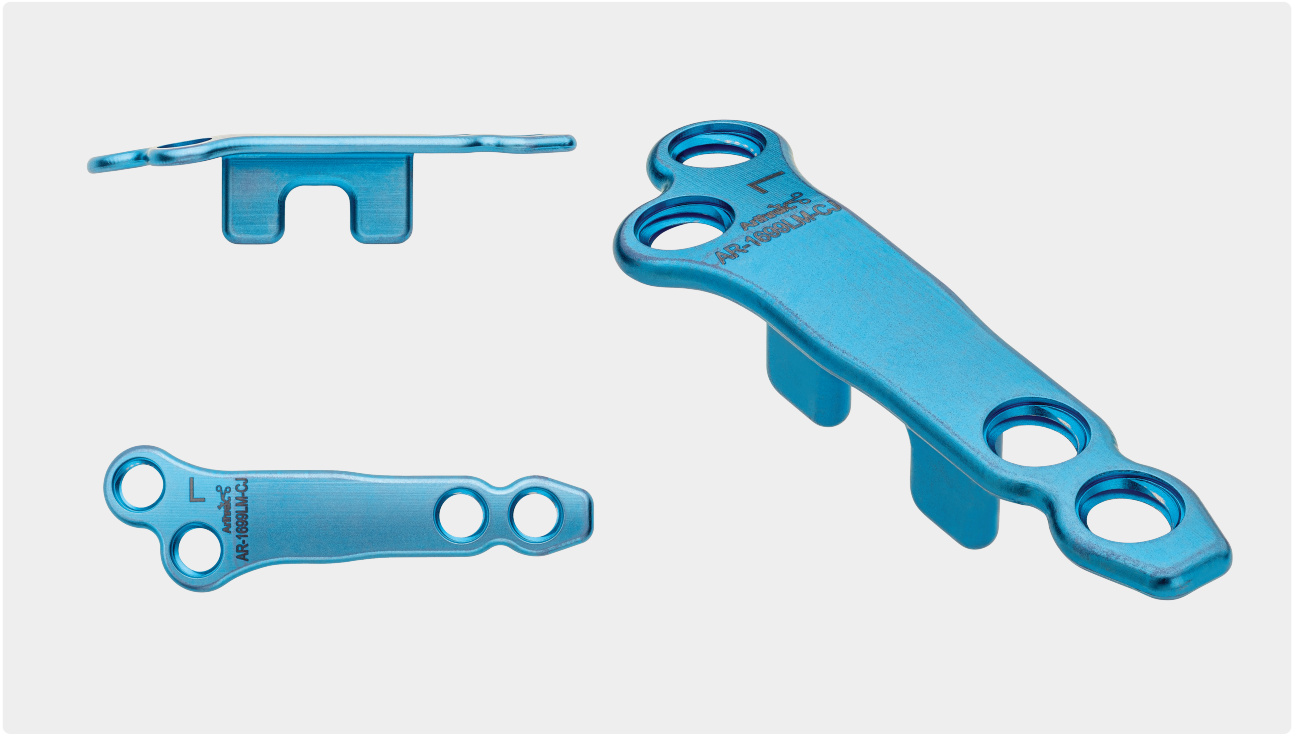
Surgical Technique



Arthrex®

Lapidus I-Beam Plate

This low-profile medial plate is designed to provide optimal fixation for a Lapidus procedure. It features an integrated internal beam that spans the 1st tarsometatarsal (TMT) joint to increase strength and stiffness across the fusion site compared with traditional fixation methods.[1] A novel set of instruments allows surgeons to reduce the intermetatarsal angle, correct sesamoid position in the frontal plane, and prepare the bone for the internal beam. The shape of the plate and location of the screw holes contour to the medial side of the joint to minimize potential irritation of the surrounding soft-tissue structures. The 4 locking holes are compatible with variable-angle locking (VAL) KreuLock™ locking compression screws to optimize plate-to-bone compression.[1] Additional plates are available without the integrated beam.



Advantages

Anatomic shape
› Precontoured left and right plates with optimal locking hole locations for low-profile medial placement and reduction of soft-tissue irritation

Multiple plate offerings
› Small, medium, and large left and right plates available with and without the I-Beam

Compatible with KreuLock locking compression screws
› Two proximal and 2 distal locking screw holes compatible with 2.7 mm, 3 mm, and 3 mm hybrid locking screws

Plate trial sizer
› Sterile-packed left and right trials to assist with plate selection under fluoroscopy

All-in-one sterile kit
› Kits include plate, plate-specific cut guide, and burr

Surgical Technique

1

Make a small 4-5 cm incision over the 1st metatarsal-cuneiform joint.

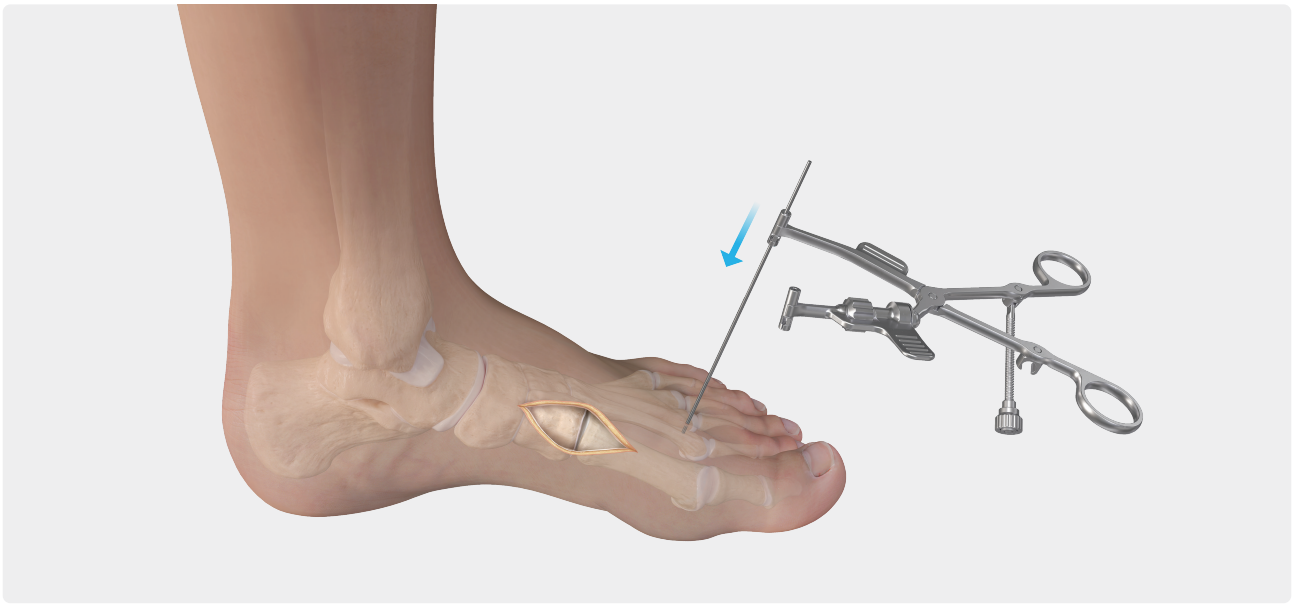
2

Dissect down to the joint. Using an osteotome or Freer elevator, incise and release the medial joint capsule so the 1st metatarsal can rotate freely.

The following steps pertain to the use of the optional Lapidus clamp. Use may depend on surgeon preference, patient anatomy, and severity of the intermetatarsal angle.

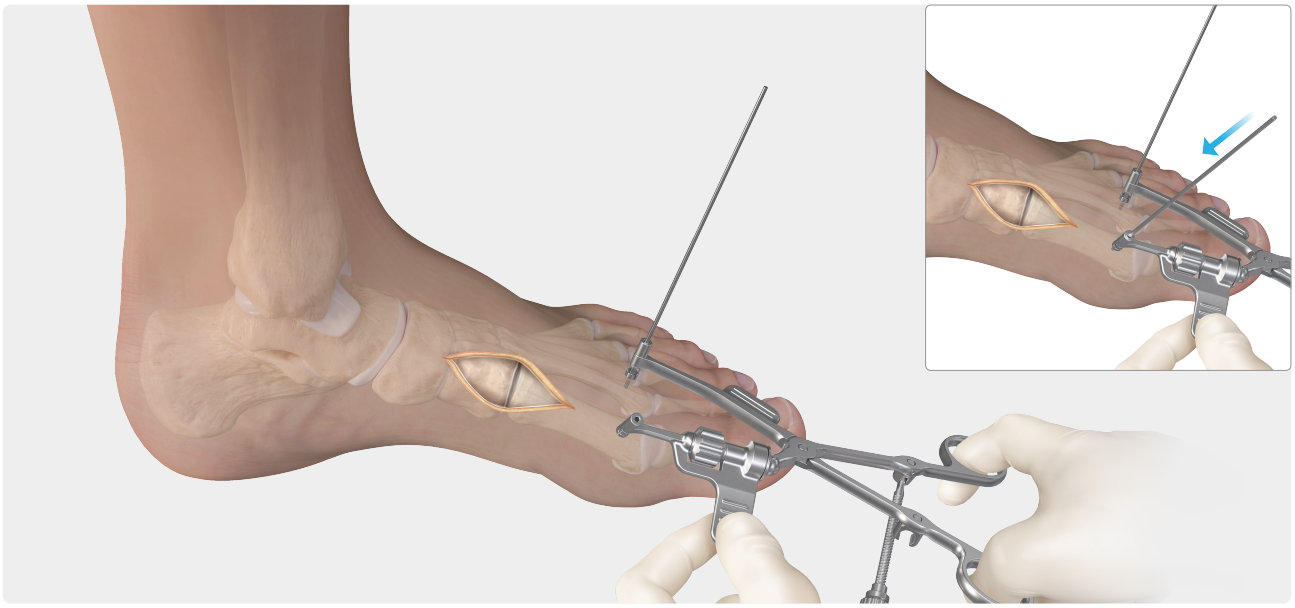
3

Place a 1.6 mm guidewire into the neck of the 2nd metatarsal.



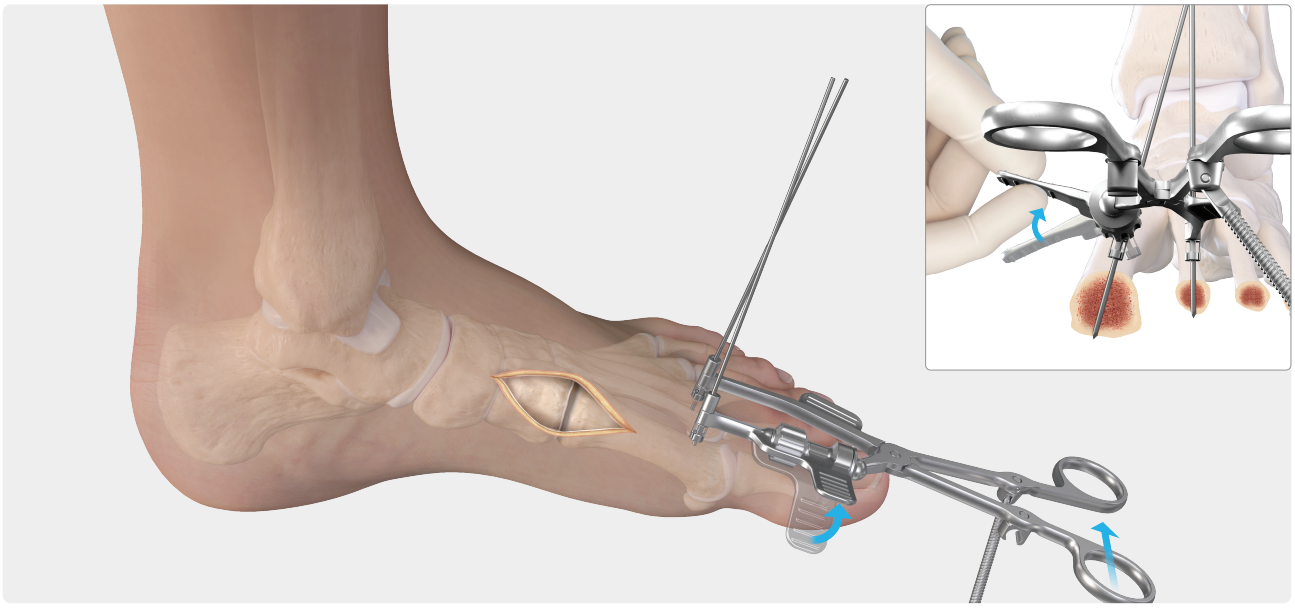
4

Slide the lateral portion of the Lapidus clamp over the guidewire in the 2nd metatarsal.



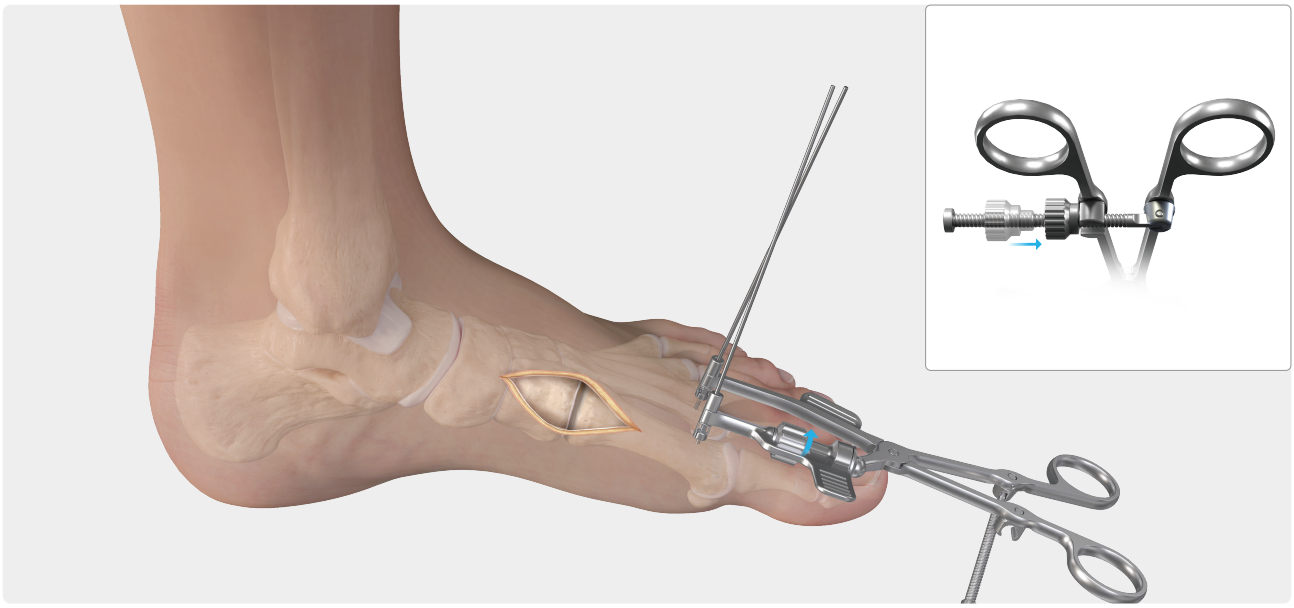
5

Position the medial portion of the clamp over the dorsal medial aspect of the 1st metatarsal. Place the second 1.6 mm guidewire through the clamp and into the 1st metatarsal with care to protect the medial dorsal cutaneous nerve. The guidewire should not penetrate the plantar cortex of the 1st metatarsal head.



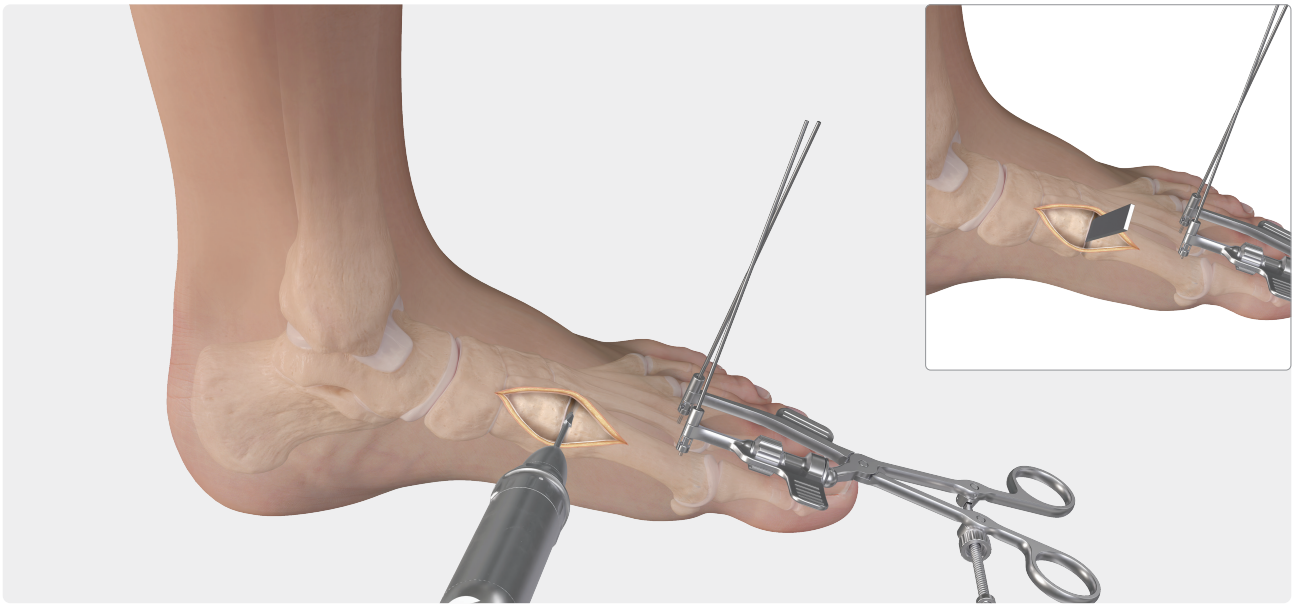
6

Close the clamp to reduce the intermetatarsal angle and derotate the 1st metatarsal until the sesamoids are corrected in the frontal plane. A widening of the medial joint space of the 1st TMT joint may occur upon application of valgus stress.



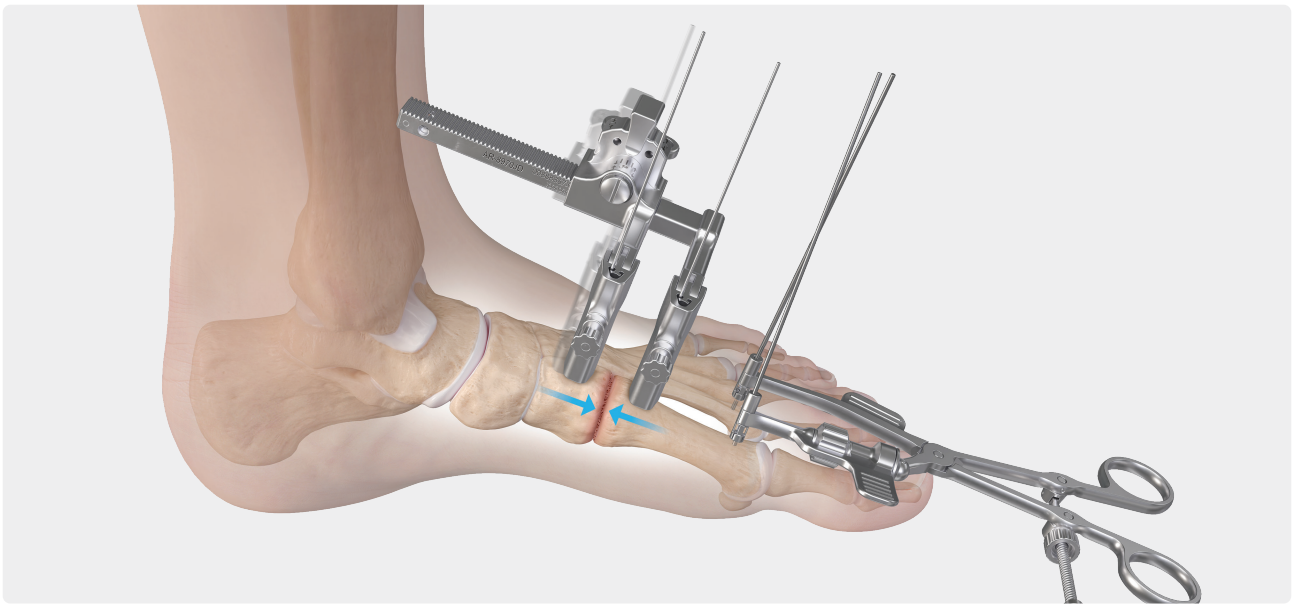
7

Once the intermetatarsal angle is sufficiently reduced, use the spin-down feature of the clamp to hold correction via the clamp. Once the sesamoids are in the appropriate position, spin the locking feature on the 1st metatarsal portion of the clamp in a clockwise fashion to maintain frontal plane rotation.



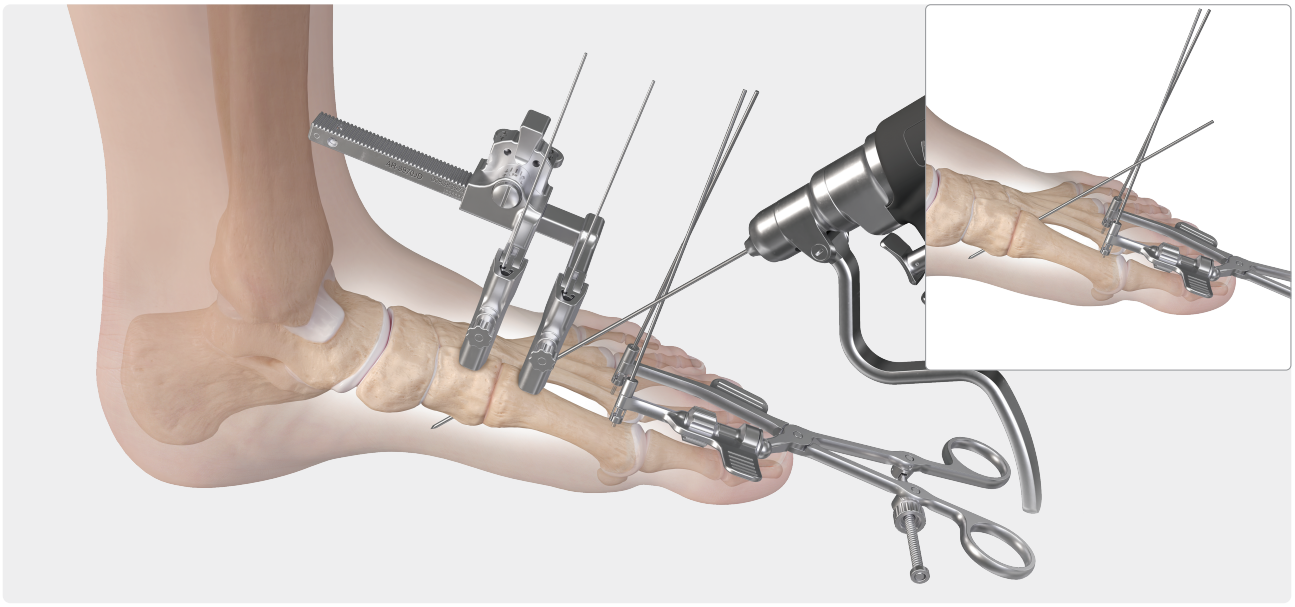
8

Use either the MIS burr or other bone instruments to prepare the joint for fusion. Resect the joint surfaces of the 1st metatarsal-cuneiform joint down to subchondral bone.



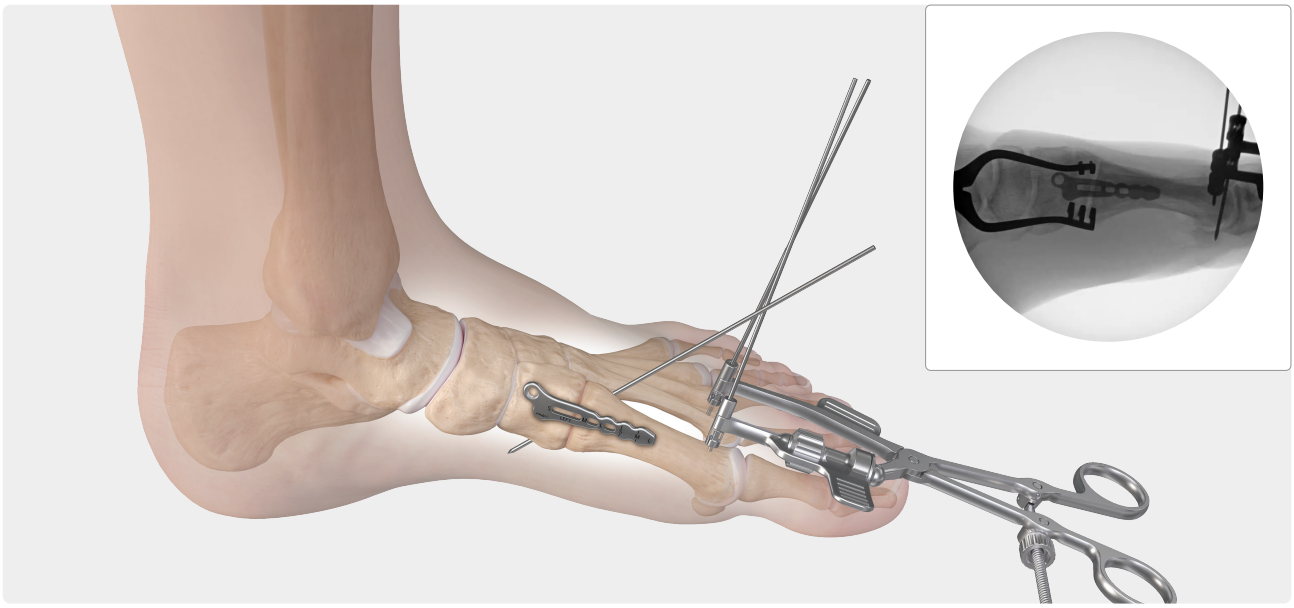
9

Ensure bony apposition at the joint and confirm radiographically before performing the next steps. If additional compression of the joint is desired, position the optional mini joint distractor/compressor over the dorsal aspect of the 1st metatarsal-cuneiform joint using either traction pins or 0.062 guidewires. Compress the joint until bony apposition and compression are achieved.



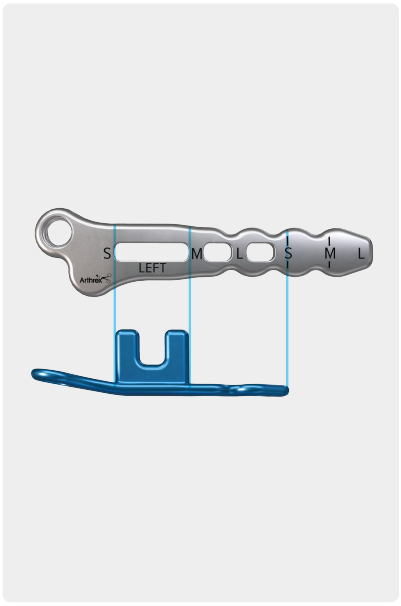
10

If removal of the distractor is desired, place one or two guidewires across the joint to hold the position temporarily until the plate is positioned and fixated. It is best to position guidewires on the lateral side of the joint to allow space for burring and for the beam of the plate. Ensure the joint is reliably fixated and stable prior to the next steps.

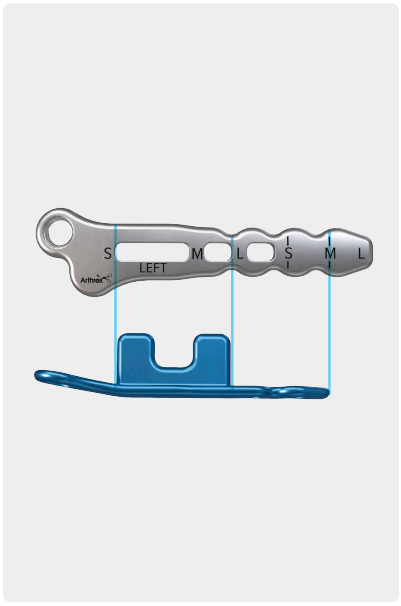


11

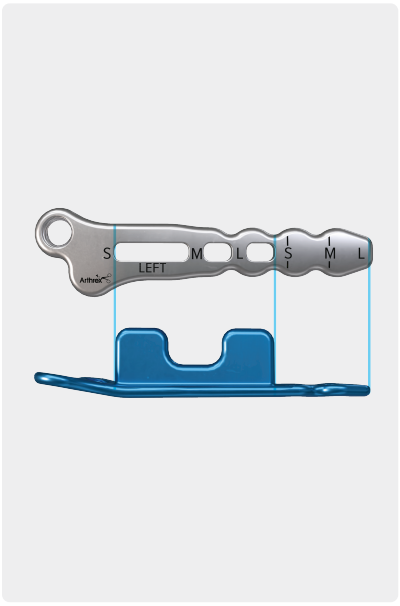
Place the plate trial over the medial aspect of the joint and use fluoroscopy to determine the appropriate plate size.



12a



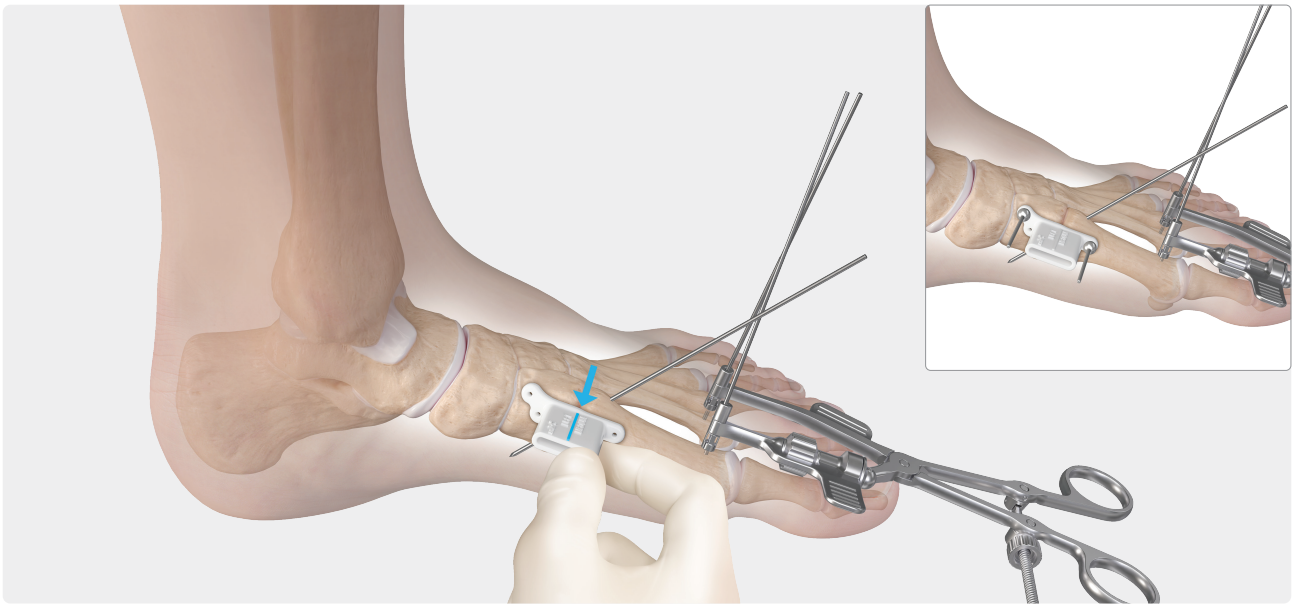
12b



12c

With the plate trial appropriately positioned and using fluoroscopy, select the I-beam option that most uniformly spans the joint, allowing sufficient clearance for the beam on either side.

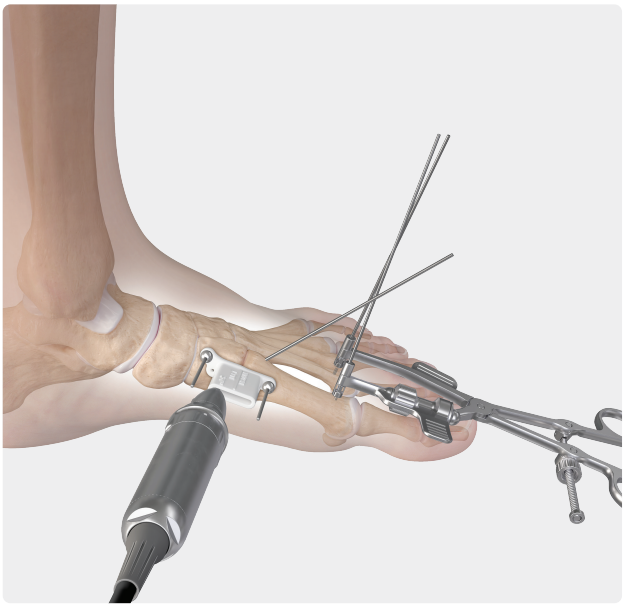
> **Note:** The holes in the trial indicate the outer dimensions of the beam for each plate size, while the lines indicate the end point of each plate size.



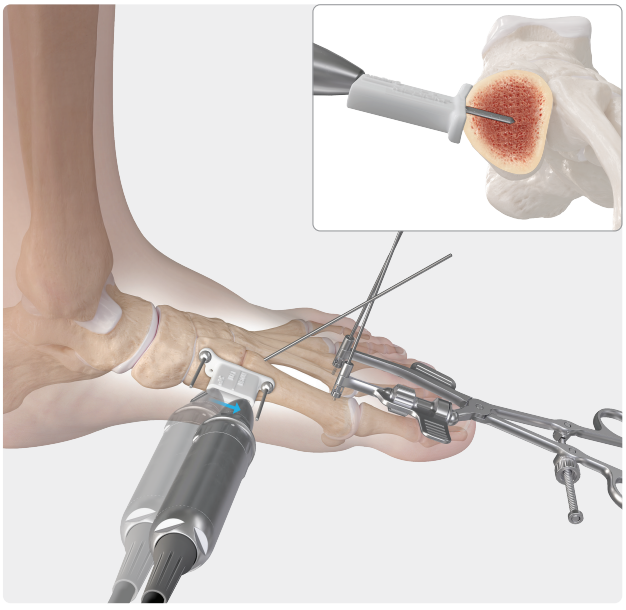
13

Once the appropriate plate size is confirmed, place the appropriately sized cutting guide over the joint. The line on the top of the guide should align with the joint. Fixate with K-wires or BB-Taks.

> **Note:** If the surgeon desires to harvest autograft with the OsteoAuger™ harvester or augment the fusion with alternative biologic products, this should be done prior to preparing the joint for the I-Beam.

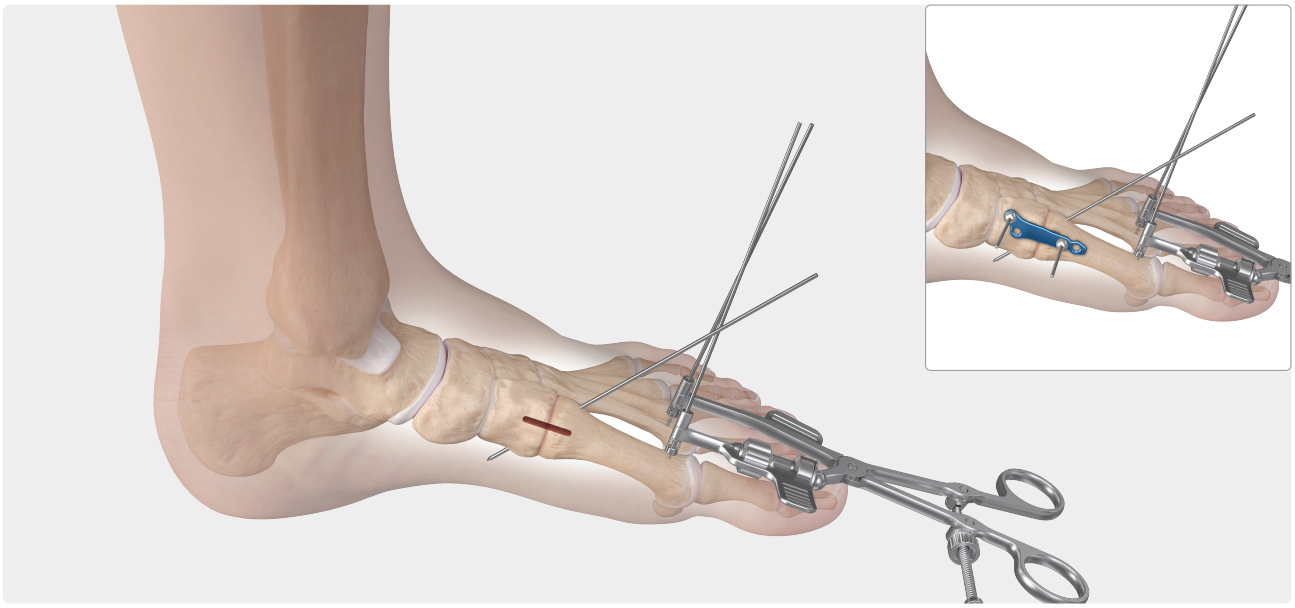


14a



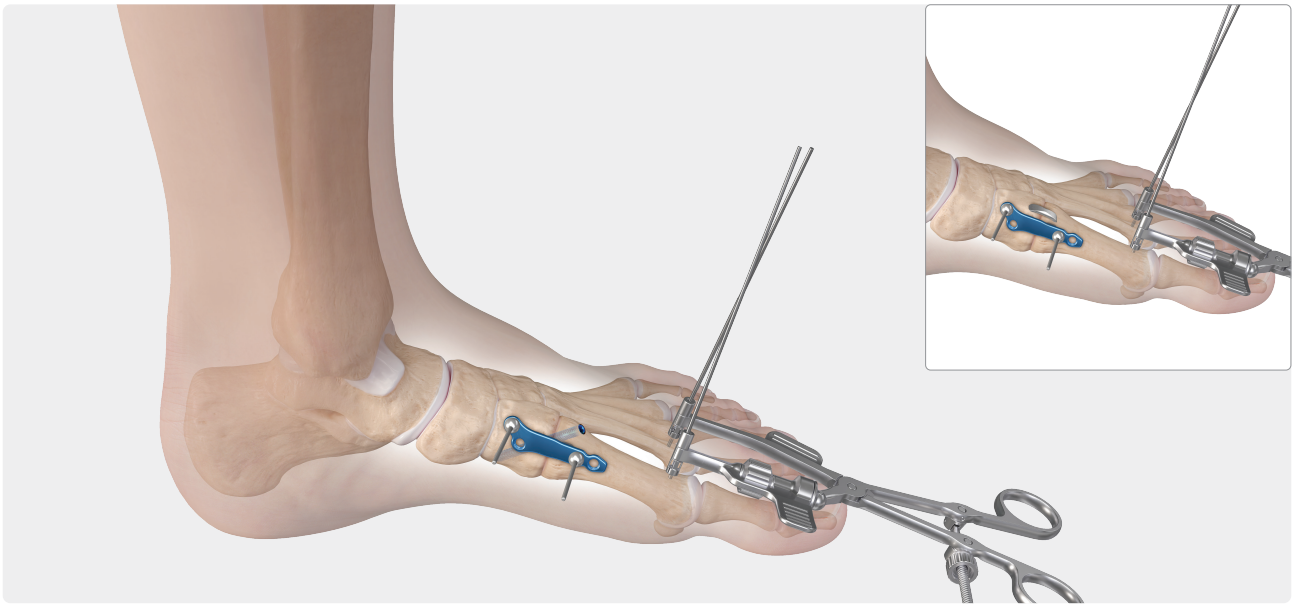
14b

Fully insert the MIS burr into the handpiece. After penetrating the bone with the MIS burr, use the MIS burr through the cutting guide in a back-and-forth motion to prepare the joint for the I-Beam. The cutting guide acts as a hard stop to prevent overinsertion of the burr.



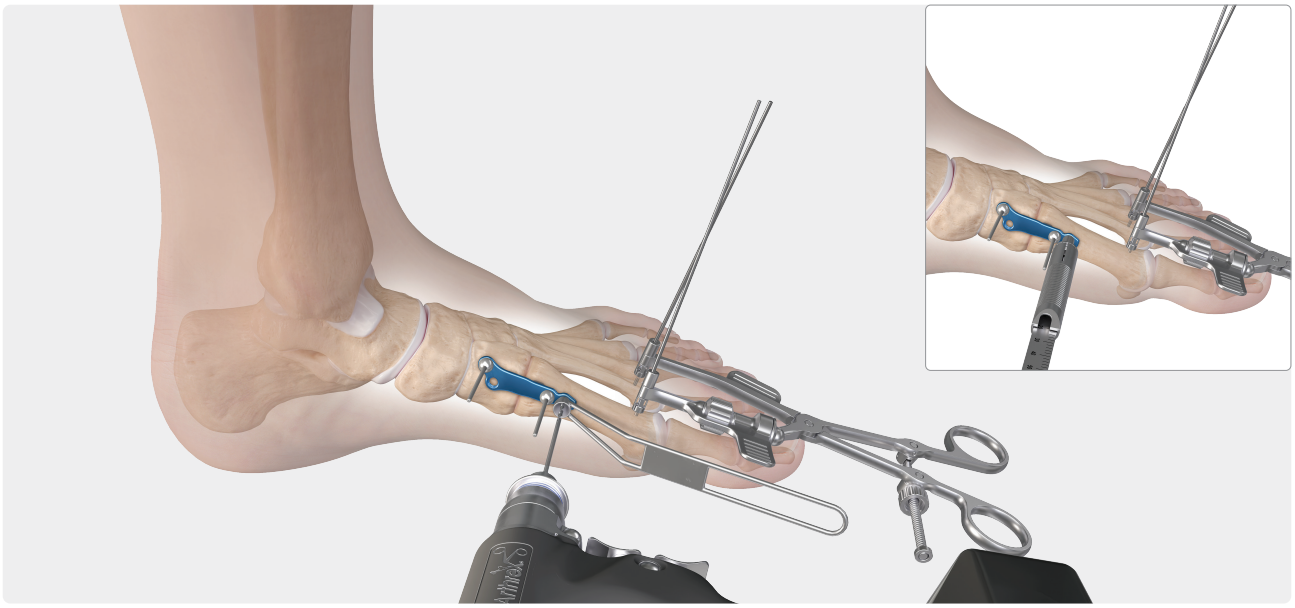
15

Place the predetermined I-Beam plate into the prepared “beam slot” and use the BB-Taks to hold the plate in position. Ensure that the plate is fully seated before performing next steps. Additional compression can be obtained across the joint using the mini joint distractor.



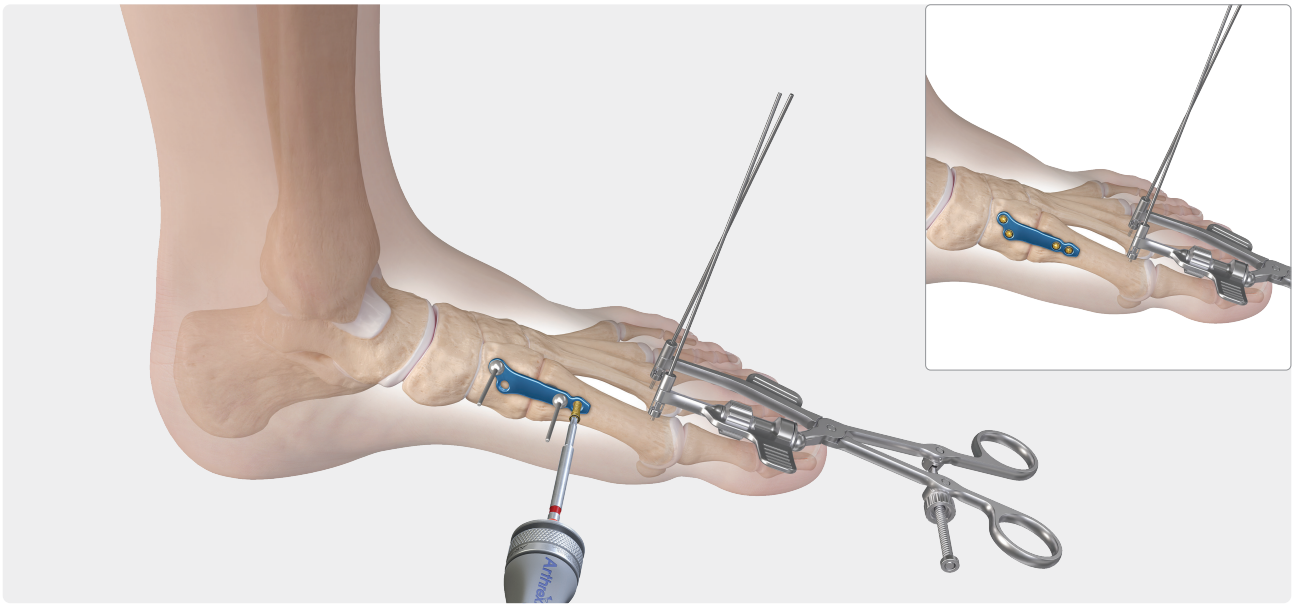
16

Prior to inserting screws into the plate, the surgeon may place a Compression FT screw or DynaNite™ staple across the joint for additional fixation and compression. The mini joint distractor may also be used.



17

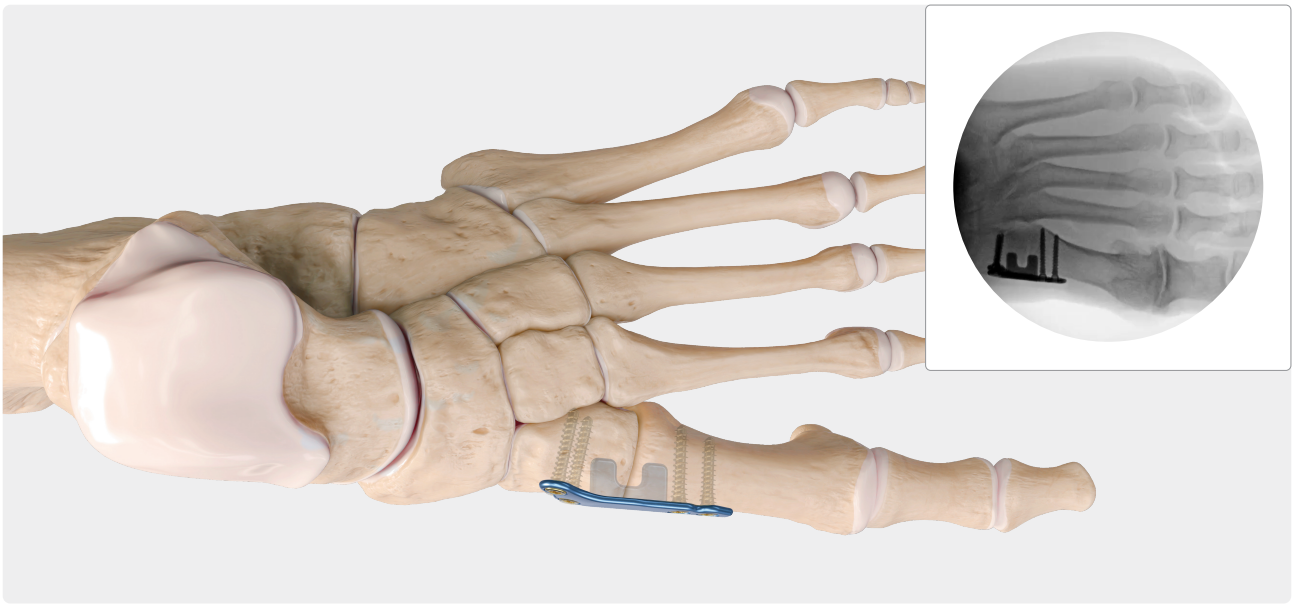
Using the VAL or locking drill guide, drill with the 2 mm drill for the 3 mm KreuLock™ locking compression screws and measure the appropriate depth.



18

Insert the appropriately sized 3 mm KreuLock locking compression screws into the plate to complete the construct.

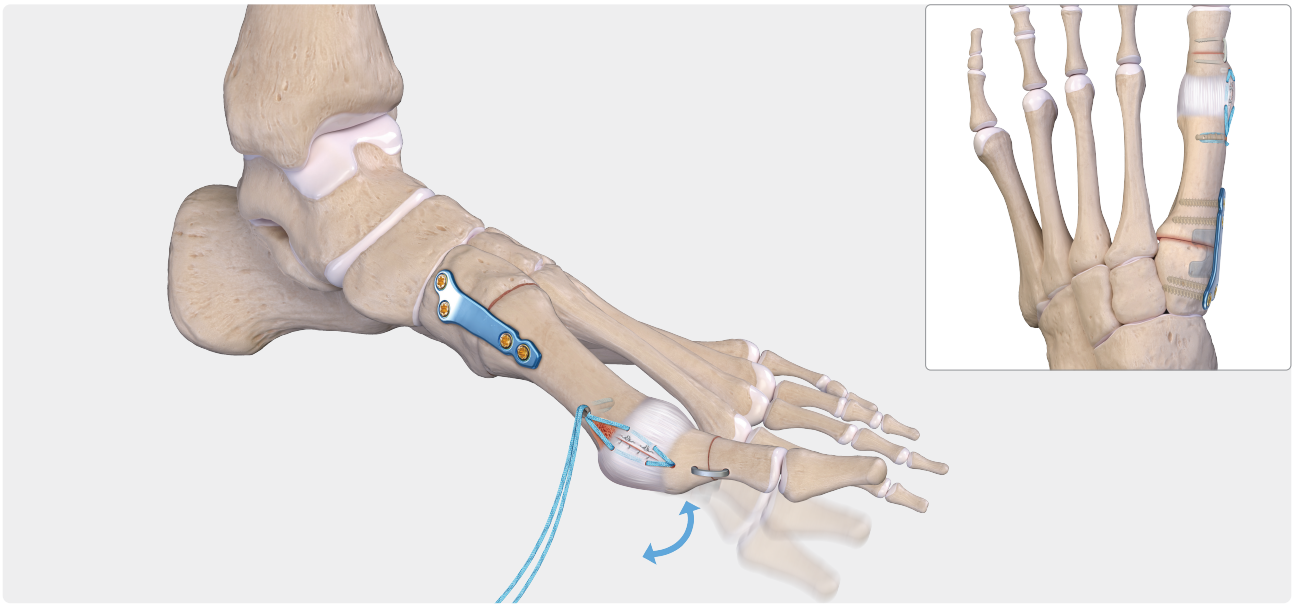
> **Note:** The 2.7 mm and 3 mm Hybrid KreuLock locking compression screws are also compatible with the Lapidus I-Beam plates.



19

Once all screws have been placed, remove any auxiliary instruments such as the Lapidus clamp and the mini joint distractor. Confirm final fixation radiographically.

> **Note:** If removal is necessary, first remove the screws, then place a Freer elevator or osteotome under the plate to loosen it from the bone if it's not removable by hand.



20

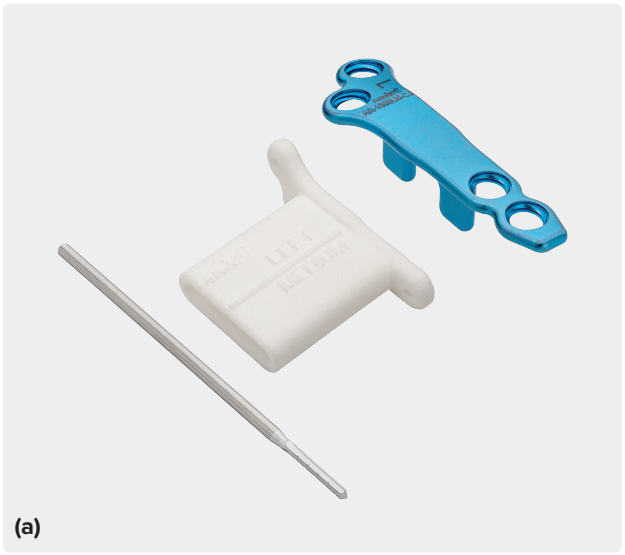
Once primary fixation for the bony correction of the hallux valgus deformity is complete, including the resection of the medial eminence, use the *Bunion*Brace™ system to augment and reinforce a direct repair to the medial capsule.

Augmenting the capsular repair using the *Bunion*Brace system aims to increase the strength of the primary repair.[2]

If additional correction of the forefoot is required, the surgeon may choose to perform an Akin osteotomy.

Ordering Information

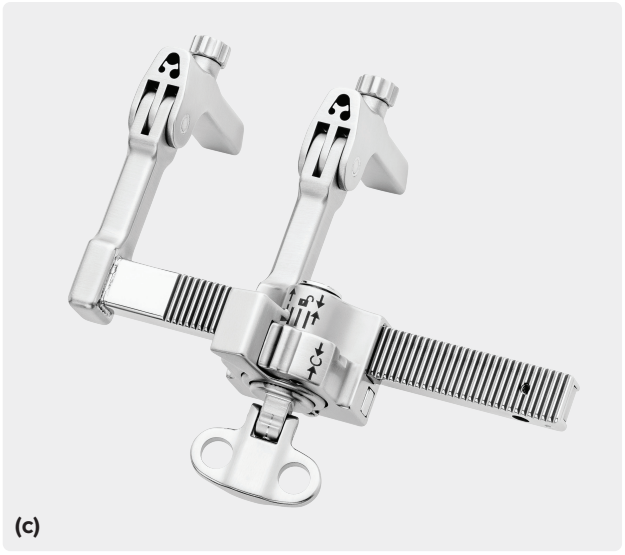
I-Beam and Anatomical Lapidus Plates	
Lapidus I-Beam plate, left, short	AR-1699LS-CJ
Lapidus I-Beam plate, left, medium **(a)**	AR-1699LM-CJ
Lapidus I-Beam plate, left, long	AR-1699LL-CJ
Lapidus I-Beam plate, right, short	AR-1699RS-CJ
Lapidus I-Beam plate, right, medium	AR-1699RM-CJ
Lapidus I-Beam plate, right, long	AR-1699RL-CJ
Anatomic Lapidus plate, left, short	AR-1699LS
Anatomic Lapidus plate, left, medium	AR-1699LM
Anatomic Lapidus plate, left, long	AR-1699LL
Anatomic Lapidus plate, right, short	AR-1699RS
Anatomic Lapidus plate, right, medium	AR-1699RM
Anatomic Lapidus plate, right, long	AR-1699RL
I-Beam plate trials, left, right **(b)**	AR-1699T



(a)

(b)

Instrumentation	
Mini joint distractor **(c)**	AR-8970JD
Lapidus reduction clamp **(d)**	AR-8841RC



(c)

(d)

***Bunion*Brace™ Medial Capsule Repair System (AR-1798PJ-CP)**
JumpStart® antimicrobial wound dressing **(a)**
Guidewire w/ trocar tip, 0.053 in × 5 in **(b)**
Drill bit, 1.6 mm **(c)**
SwiveLock® drill guide w/ metal insert **(d)**
Tap for 3.5 mm SwiveLock anchor **(e)**
DX FiberTak® anchor w/ collagen-coated SutureTape w/ needles **(f)**
SwiveLock anchor, closed eyelet, 3.5 mm × 10 mm **(g)**
Drill bit, 2.6 mm **(h)**
Drill bit, cannulated, 2.6 mm **(i)**
DX FIberTak drill guide **(j)**

Products advertised in this brochure / surgical technique guide may not be available in all countries. For information on availability, please contact Arthrex Customer Service or your local Arthrex representative.

Biologic Augmentation Options

ArthroCell™ Viable Bone Matrix
ArthroCell matrices offer osteogenic, osteoinductive, and osteoconductive properties, delivering a graft that mimics the structure of native bone, provides optimal handling, and resists irrigation. The grafts are preserved in a novel DMSO-free cryoprotectant for preservation of cells, eliminating the need to rinse or decant during graft preparation.

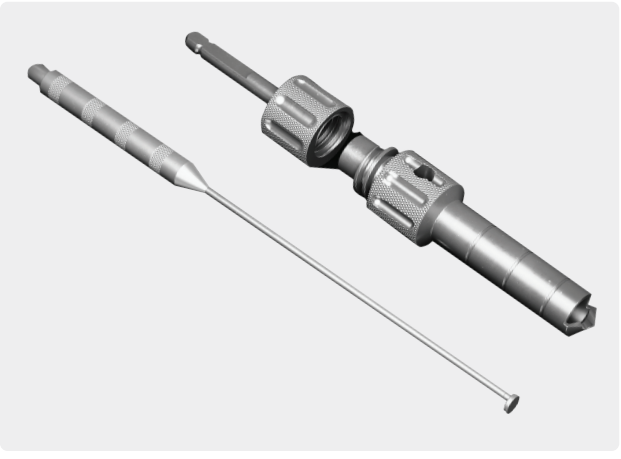
ArthroCell, 2.5 cc	ABS-2009-02
ArthroCell, 5 cc	ABS-2009-05
ArthroCell Plus allograft, 1 cc	ABS-2090-01
ArthroCell Plus allograft, 2.5 cc	ABS-2090-02
ArthroCell Plus allograft, 5 cc	ABS-2090-05

AlloSync™ Pure Matrix
AlloSync Pure demineralized bone matrix is derived from 100% allograft bone with no extrinsic carriers. Surgeons can adjust the viscosity of AlloSync Pure bone matrix for a more flowable or putty-like consistency based on hydration ratio to readily mold into various fracture patterns or bone voids.

AlloSync Pure, 1 cc	ABS-2010-01
AlloSync Pure, 2.5 cc	ABS-2010-02

AlloSync Putty, Gel, and Paste
AlloSync putty, gel, and paste grafts provide ease of use with optimized handling characteristics via reverse-phase medium carrier. Every lot of DBM is tested for osteoinductive potential with additional scaffolding.

AlloSync DBM putty, 1 cc	ABS-2012-01
AlloSync DBM putty, 2.5 cc	ABS-2012-02
AlloSync DBM gel, 1 cc	ABS-2013-01
AlloSync CB DBM paste, 1 cc	ABS-2015-01
AlloSync CB DBM paste, 3 cc	ABS-2015-03



The OsteoAuger™ system can be used to recover bone at common harvest sites including the iliac crest, calcaneus, distal and proximal tibia, and distal radius. The system is available in 6 mm, 8 mm, and 10 mm diameters to accommodate the various harvest sites and desired graft volume.

OsteoAuger bone graft harvester, 6 mm	ABS-8000-06
OsteoAuger bone graft harvester, 8 mm	ABS-8000-08
OsteoAuger bone graft harvester, 10 mm	ABS-8000-10

References

1. Arthrex, Inc. Data on file (APT-07508). Naples, FL; 2025.
2. Koroneos ZA, Alwine S, Tortora P, et al. Bicortical compression and construct stability with variable pitch locking screws in cadaveric specimens. *J Orthop Trauma.* 2024;38(10):e339-e346. doi:10.1097/BOT.0000000000002869