Arthrex FibuLock® Fibular Nail

Specifications:
- 3.0 mm and 3.8 mm diameters
- 130 mm and 180 mm lengths
- 316L stainless steel

Talons:
- Provides proximal fixation
- May be easily deactivated for removal

Syndesmosis Fixation:
Accepts 3.5 mm syndesmotic screws

Multiplanar Screws:
- 2.7 mm cortical locking
- 2 lateral/medial screws
- 1 anterior/posterior screw

Compression Slot:
Allows 2.5 mm of compression

End Cap Optional:
- Locks in compression
- Prevents bone ingrowth
Introduction

Operative fixation of an ankle fracture requires restoration of appropriate length, alignment, and restabilization of the ankle mortise. The FibuLock® fibular nail system was designed to achieve those operative objectives, using a soft-tissue-friendly, minimally invasive approach for fibula fractures.

The FibuLock fibular nail offers the ability to achieve both proximal and distal fixation along with syndesmotic reduction and fixation. Multiplanar fixation allows for treatment of almost any ankle fracture.

The nail insertion outrigger can provide compression if needed and ensure syndesmosis fixation is parallel to the mortise with 3.5 mm screws angled posterior to anterior.
Preoperative Planning
Evaluation of the proximal canal size can help when selecting the proper nail diameter. Determine if the isthmus or canal is large enough to accept a 3.2 mm reamer.

Basic AP and lateral radiographic landmarks (isthmus and fibular fossa) of the distal fibula will aid in entry point accuracy and ensure the K-wire is in the center of the canal.

- Isthmus
- Malleolar fossa
- Correct entry point - lateral to the edge of the malleolar fossa

Patient Positioning

Place the patient in the supine position with a bump under the affected ankle.
Entry Point

Make a small skin incision 1 cm distal to the tip of the fibula, down the axis of the fibula. When reducing the fracture, place clamp handles proximally to avoid outrigger interference. Many reductions are percutaneous, but older fractures may require a limited open approach for anatomic reduction.

Starting Point

AP: Lateral to the edge of the malleolar fossa

Lateral: In line with the center of the canal

Entry Point and Initial K-wire Trajectory:
Establish the entry point using the 1.6 mm K-wire and tissue protector. Advance the K-wire 15 mm to 20 mm into the distal fibula with the drill on oscillate. Supinating the foot will increase accessibility to the distal fibula.

Take multiple A/P and lateral fluoroscopy views to ensure the K-wire is angled towards the center of the canal.

Note: Avoid placing the K-wire too lateral as reaming will violate the lateral cortex of the fibula. Once a good entry point and trajectory are established, advance the guidewire further into the fibula.
Distal Reaming

Drive the 6.2 mm tapered reamer over the guidewire through the tissue protector until the reamer flutes are fully within the bone. The reamer shaft features a secondary depth indicator correlating to the back of the tissue protector.

Proximal Reaming

Drive the 3.2 mm reamer over the guidewire and through the tissue protector, until the depth indicator collar is within the bone. If chatter is not evident, repeat with the 4.0 mm reamer. Reamer placement should be checked in 2 planes to avoid cortical disruption. Use the corresponding long reamers for 180 mm nails when indicated. Ream on oscillate and recheck the reduction after this step.

Attach the appropriate nail (diameter and length) to the outrigger.

3.2 mm Reamer = 3.0 mm Nail
4.0 mm Reamer = 3.8 mm Nail
Remove the guidewire. Insert the nail with the outrigger directly lateral to the leg. A mallet should not be required.
After the nail is inserted and before the talons are activated, confirm the position of the nail on fluoroscopy.

Place a 1.6 mm K-wire in the outrigger “end hole” to confirm that the distal portion of the nail (red line) is flush or countersunk in the fibula.

Actuate the Nail
Confirm the outrigger is positioned lateral prior to actuation. Remove the impactor cap. Insert the actuation driver. Hold the outrigger while actuating to prevent rotation. Turn the actuation driver until it “clicks” to deploy the talons. The talons may not deploy fully in a tight canal. **Do not rotate the nail after talon actuation.** K-wires can be placed through the outrigger to control rotation provisionally.
2.7 mm Distal Screw Fixation

Ensure the outrigger slide is in the “static” position. Insert the drill guide sleeve and 2 mm drill guide into a 2.7 mm hole in the outrigger. The proximal lateral to medial hole is the most commonly used. Drill, measure, and insert the appropriate 2.7 mm screw through the drill guide sleeve.

Syndesmotic Fixation

Prior to drilling, a K-wire can be placed through the outrigger to determine the trajectory of syndesmotic fixation. Insert the drill guide sleeve and 3.5 mm drill guide through the desired 3.5 mm syndesmosis screw hole in the outrigger. Drill lateral to medial through the nail and into the medial tibial cortex with the 3.5 mm drill.
Insert the 1.6 mm guidewire from the knotless TightRope® kit and overdrill the tibia from medial to lateral with the 3.7 mm drill bit. Remove the outrigger from the nail by unscrewing the attachment screw.

Insert the End Cap
Insert a 1.35 mm K-wire into the nail end. Drive the end cap over the K-wire into the nail using the cannulated T15 driver.
If the K-wire is malpositioned, the K-wire offset guide can be used to redrill a new K-wire 2.5 mm or 5 mm from the initial K-wire.

Widen the hole in the cortex by driving the 6.2 mm tapered reamer to half the length of the fluted section. Remove the K-wire and reamer.

Insert the fracture finger past the fracture if possible. Direct the tip of the finger towards the center of the canal. Insert the spade tip guidewire on oscillate (gold tip first) through the hole in the finger handle and into the canal.

Remove the fracture finger, leaving the guidewire in place, and ream the distal and proximal portion with the 6.2 mm/3.2 mm reamers.
Retain the guidewire. Place the insertion guide over the guidewire and into the distal fragment. Remove the inner cannula (with the round, white handle) and guidewire, retaining the V-channel in the canal.

**Compression Technique**

When compression is desired, **it must be performed prior to inserting any other distal screws**. Move the outrigger slide to the “COMP” position. Insert the drill guide sleeve and 2 mm drill guide into the most distal 2.7 mm hole in the outrigger. Drill, measure, and insert the corresponding 2.7 mm screw.

Thread the compression driver into the back of the outrigger attachment screw and turn clockwise to compress the fracture. Keep the compression driver in place to maintain compression until another distal screw is implanted, or it is time to insert the end cap, which must be used when using compression mode. Maximum compression is 2.5 mm.
FibuLock® Nail Sizes

Left

- 3.0 mm
- 3.8 mm

Right

- 3.0 mm
- 3.8 mm

Screw Sizes:

- 2.7 mm Screw
  12 mm – 34 mm
- 4.0 Cannulated Screw
  40 mm – 60 mm, Short Thread
  40 mm – 60 mm, Long Thread

Washer, 7 mm
Guidewire: 1.6 mm x 12 in
K-wire Offset Guide
Distal Reamer: Cannulated, 6.2 mm
Proximal Reamer: Cannulated, 3.2 mm
Impactor Cap
Outrigger With Attachment Screw
*Disposable sterile instrument included in FibuLock® Disposable Kit (ST6100).
FibuLock® Instrument Set  ST6001
FibuLock Disposable Kit  ST6100

**Implants**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
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<tbody>
<tr>
<td>Fibula Nail, left, 3.0 mm × 130 mm</td>
<td>FIB30130L</td>
</tr>
<tr>
<td>Fibula Nail, right, 3.0 mm × 130 mm</td>
<td>FIB30130R</td>
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<tr>
<td>Fibula Nail, left, 3.0 mm × 180 mm</td>
<td>FIB30180L</td>
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<td>Fibula Nail, right, 3.0 mm × 180 mm</td>
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<tr>
<td>Fibula Nail, right, 3.8 mm × 180 mm</td>
<td>FIB38180R</td>
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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.