FlipCutter® III Drill

A New Standard in Arthroscopic Tunnel Drilling

Arthrex®

FlipCutter® III Drill

The new, innovative FlipCutter III drill is an adjustable, variable-size, all-in-one guide pin and reamer that allows minimally invasive socket creation from the inside-out. Arthrex's proprietary FlipCutter technology allows unconstrained freedom of socket positioning and is ideal for difficult-to-reach applications such as tibial socket creation for PCL reconstruction, anatomic femoral socket creation for ACL reconstruction, and socket creation for meniscal allograft transplantation or meniscal root repair.

The new FlipCutter III drill can accommodate sockets ranging from 6 mm to 12 mm diameter, including half sizes*, in a single device.

Size	Image
3.5 mm (smallest)	
12 mm (largest)	

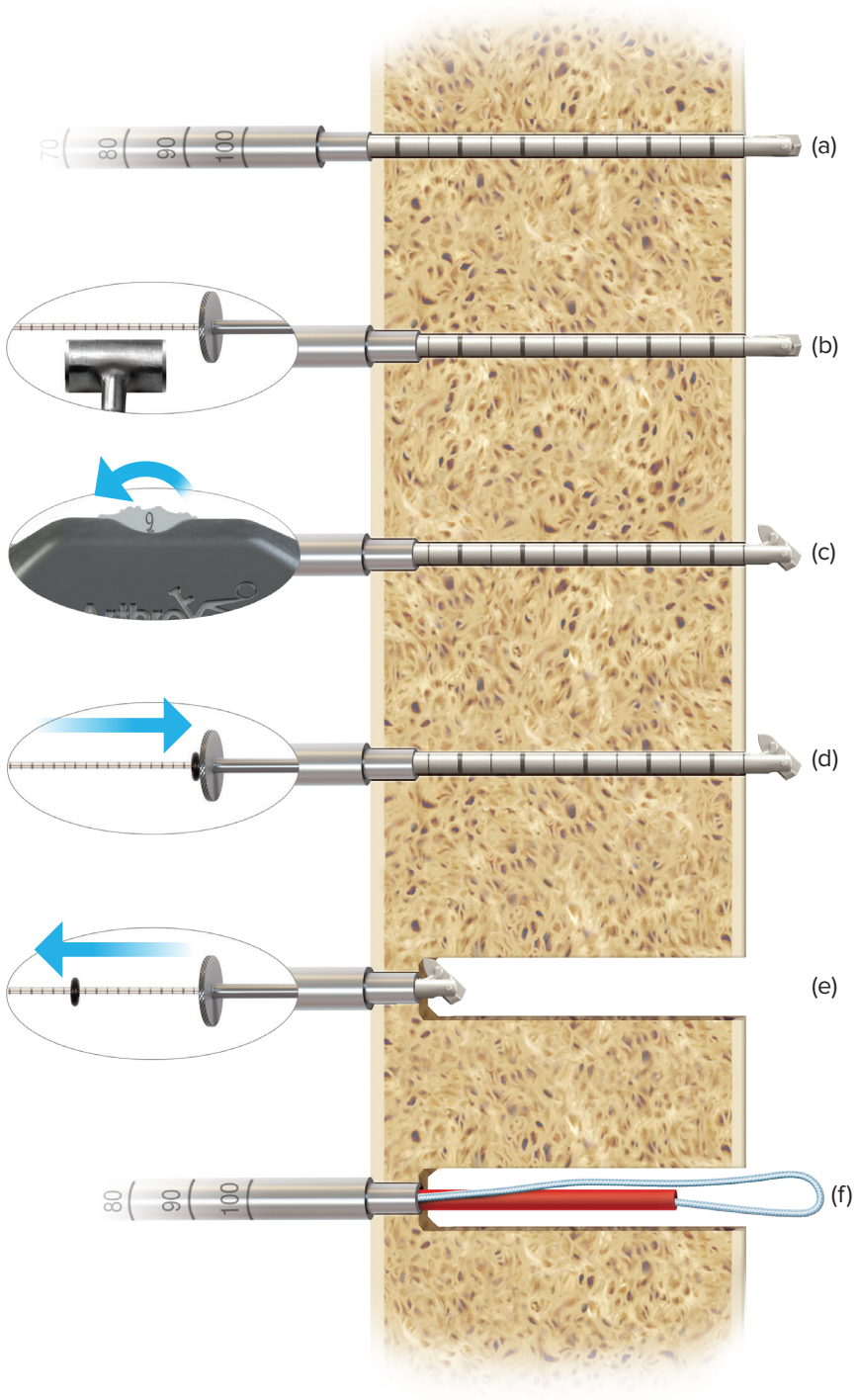
*Except 6.5 mm

Features and Benefits

- **Adjustable, Variable Size:** Designed for the ultimate in convenience and utility, the FlipCutter III drill helps reduce inventory and minimize the costs associated with opening multiple drills during a procedure.
- **Dual Cutting Edge:** The FlipCutter III drill's unique design includes two cutting edges for improved performance — a distal edge for drilling and a proximal edge for retrograde reaming.

FlipCutter® III Drill Technique Steps

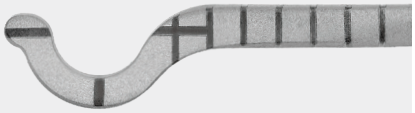
- Advance the FlipCutter III drill into joint, and remove the guide **(a)**
- Lightly tap the 7 mm drill sleeve into the bone **(b)**
- Rotate the sizing wheel to the appropriate socket diameter **(c)**
- Set the depth marker rubber ring (or “grommet”) to the base of the drill sleeve **(d)**
- Hold forward pressure on the drill sleeve. Retrograde drill until the FlipCutter III drill “bottoms out” on the drill sleeve. Socket length may be read using the grommet. Straighten the blade by rotating the wheel back to the starting position (3.5 mm). **(e)**
- Remove the FlipCutter III drill and pass a FiberStick™ graft-passing suture **(f)**



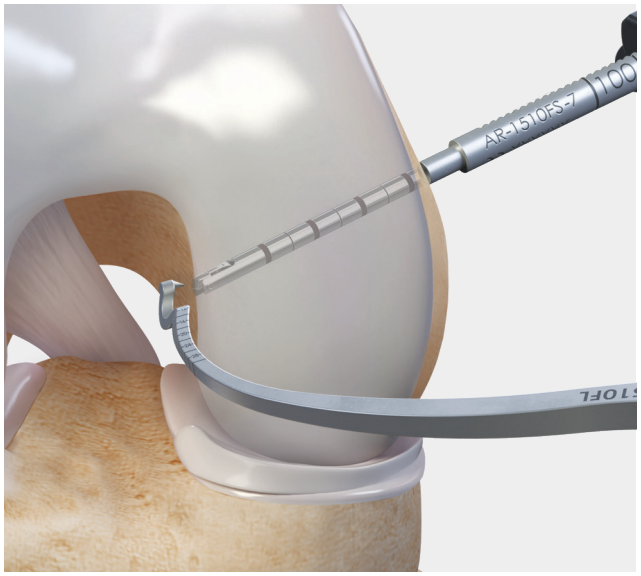
ACL Reconstruction

Anatomic femoral socket placement is paramount to successful ACL reconstruction. Using the FlipCutter® III drill with the femoral ACL marking hooks uniquely enables surgeons to drill the femoral socket completely independent of the tibial tunnel and medial portal, without the additional morbidity of a two-incision technique or the need for hyperflexion.

Choose from point-to-point marking hooks, which allow visualization of the round socket before drilling, or “footprint” marking hooks. The stepped drill sleeve helps preserve 7 mm (or 10 mm if using the 10 mm stepped drill sleeve) of cortex, ensuring maximum socket depth without the risk of cortical “blowout.”

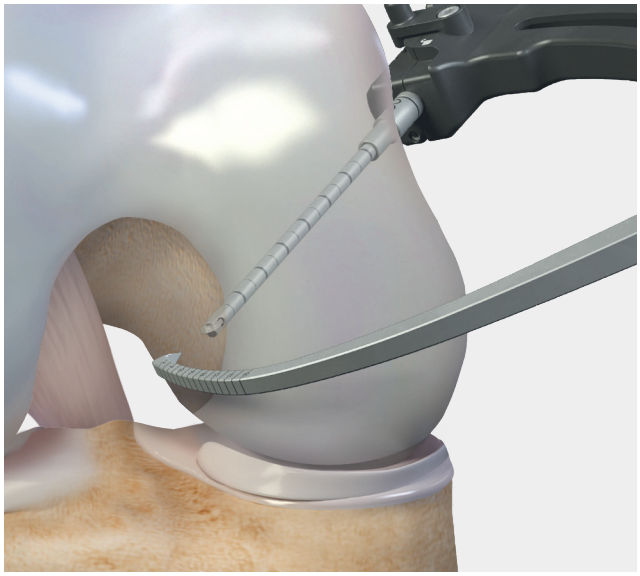
Size	Image
Footprint Femoral ACL Marking Hook	
Point-to-Point Femoral ACL Marking Hook	

Footprint Femoral ACL Marking Hook



The footprint-style style marking hook tip replicates the perimeter of the socket. The outer diameter of the marking hook is 9 mm and the inner diameter is 6 mm. The FlipCutter III drill will exit through the center of the marking hook tip, in line with the “crosshairs.”

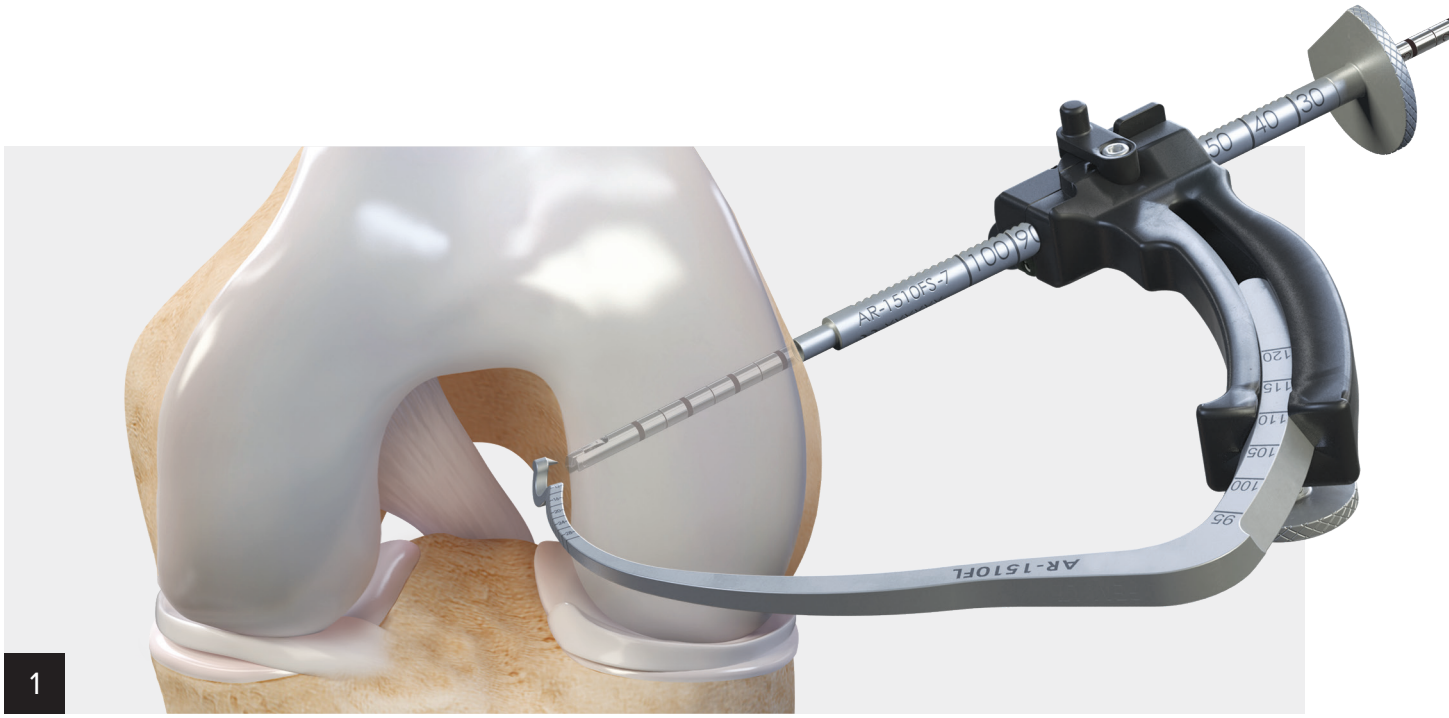
Point-to-Point Femoral ACL Marking Hook



This pointed aiming guide allows the FlipCutter III drill to be aimed directly at a sharp-tipped marking hook. The specialized curvature allows placement through the lateral portal and the built-in ruler facilitates quick and effective measurement of the lateral notch and ACL footprint.

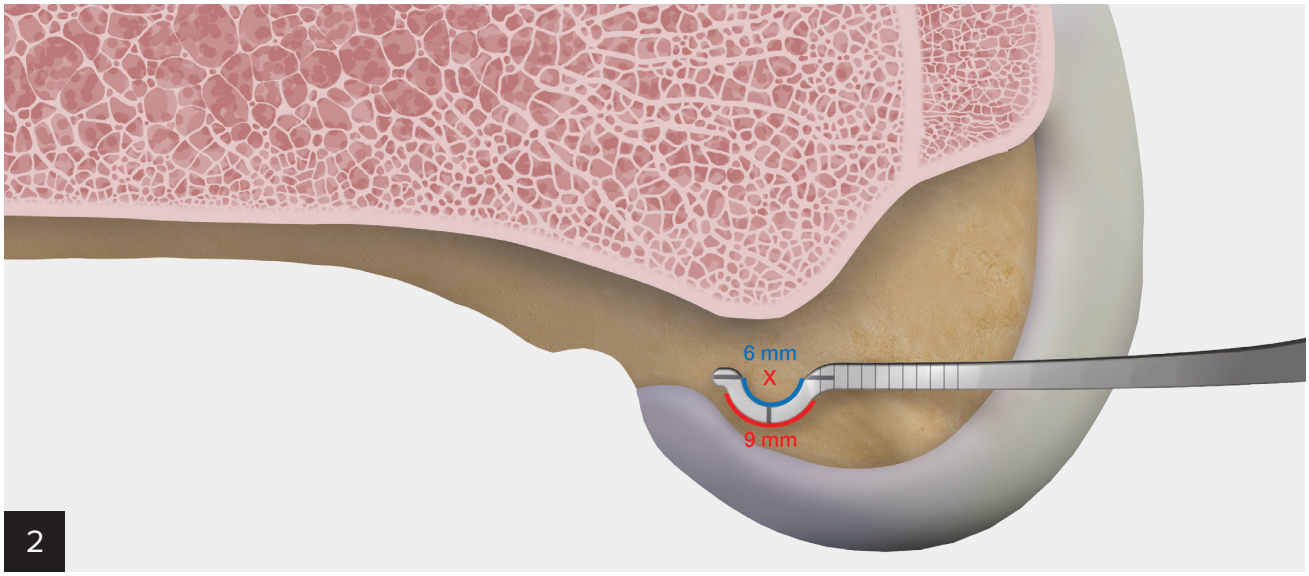
Recreating the ACL Femoral Footprint Using the Guide to Target Pin Placement

The unique, multi-plane curvature and spiked tip allow the guide to fit against the notch securely, while facilitating an appropriate entry point for the guide pin on the lateral femur, without levering or twisting. The footprint guides facilitate recreation of native femoral positioning by replicating tunnel shape and size before drilling. The low-profile tip of the guide, and the ability to place it through the lateral portal, allow the best possible visualization of the socket edges in relation to the cartilage border and back wall.



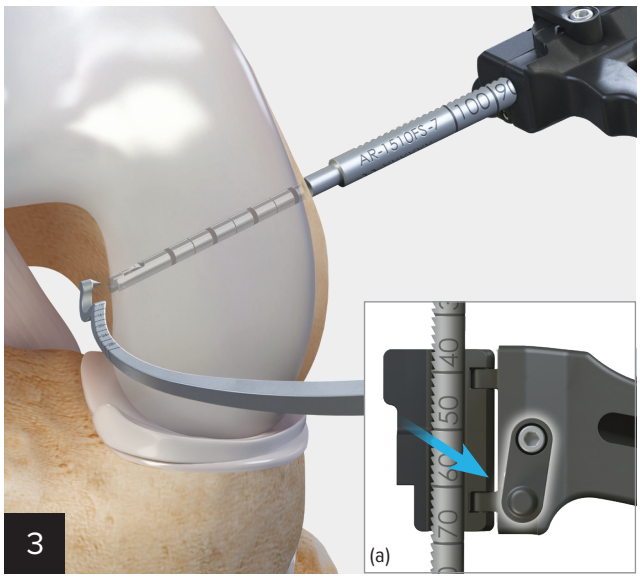
1

Place the guide through the lateral portal and over the center of the ACL footprint.

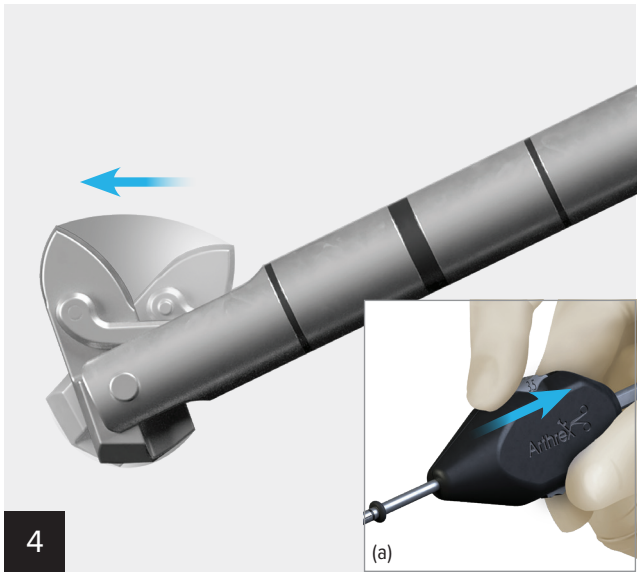


2

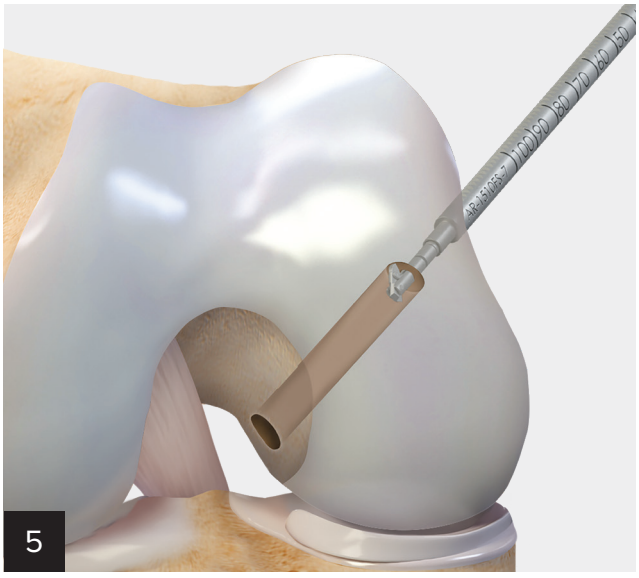
Use the crescent-shaped portion of the footprint femoral guide to estimate the distance of the posterior ACL socket from the cartilage border. The inner and outer diameters of the guide are 6 mm and 9 mm, respectively.



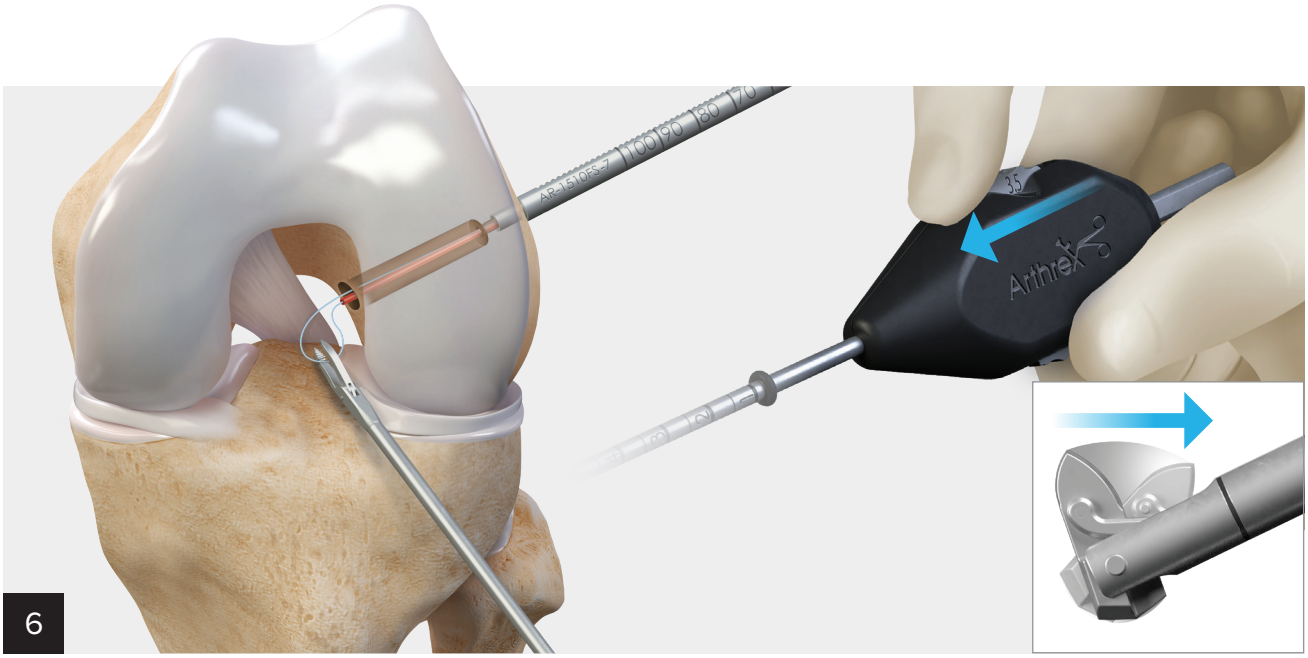
Advance the FlipCutter® III drill into the joint and remove the guide **(a)**. After ensuring the rubber grommet is positioned flush on the drill sleeve, mallet the drill sleeve 7 mm into the cortical bone **(b)**. **Note: Use light taps with the mallet to advance the sleeve. The cortex can be felt when seated.** In hard bone, the 3.5 mm predrill pin for FlipCutter drill (or a standard 2.4 mm guide pin) may be used to enter the joint and then replaced with a FlipCutter drill for reaming.



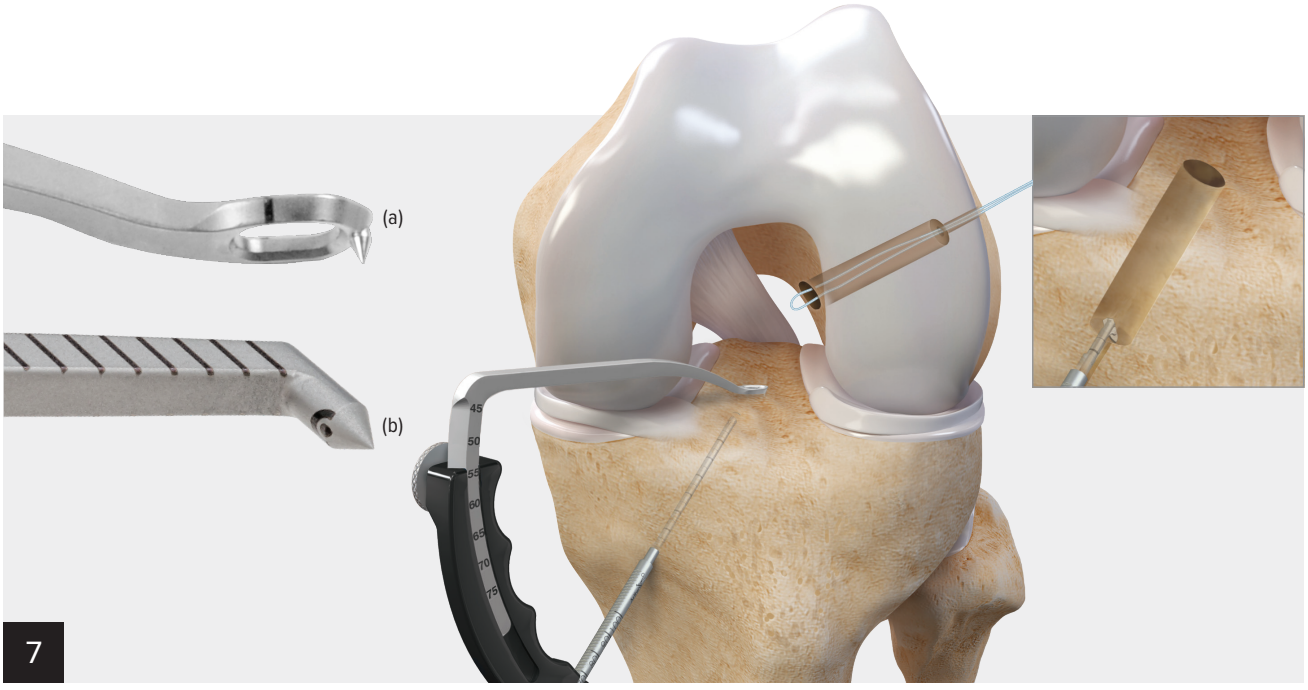
Flip the cutting tip into reaming position by rotating the sizing wheel to the predetermined socket diameter **(a)**.



While holding the drill sleeve securely onto bone, start reaming (on forward) with the FlipCutter III drill tip away from the bone, then slowly pull back on the FlipCutter drill to begin cutting. **Note: A high RPM should be used with a slow pulling motion for best results.**

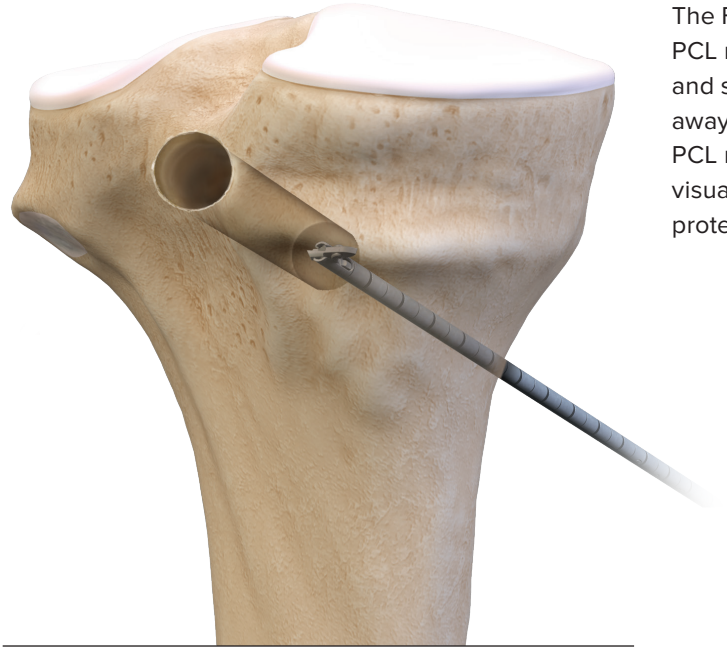


Once the drill has reached the desired depth as shown on the rubber ring, or when the blade of the FlipCutter® III drill has bottomed out on the drill sleeve, stop drilling and move the FlipCutter tip back into the straight position by rotating the sizing wheel back to the starting position (3.5 mm). The FlipCutter III drill can now be removed from the sleeve and a FiberStick™ suture passer advanced through the sleeve and into the joint for implant and graft passing.



Using the FlipCutter III drill for the tibia facilitates accurate pin placement, due to the stiff drill guide and 3.5 mm FlipCutter drill,[1] and allows preservation of the tibial cortex for all-inside ACL reconstruction techniques. The tibial marking hook **(a)** resembles an 8 mm × 10 mm tunnel aperture to allow visualization of the tunnel before drilling. A “point-to-point” marking hook **(b)** is also available.

PCL Reconstruction

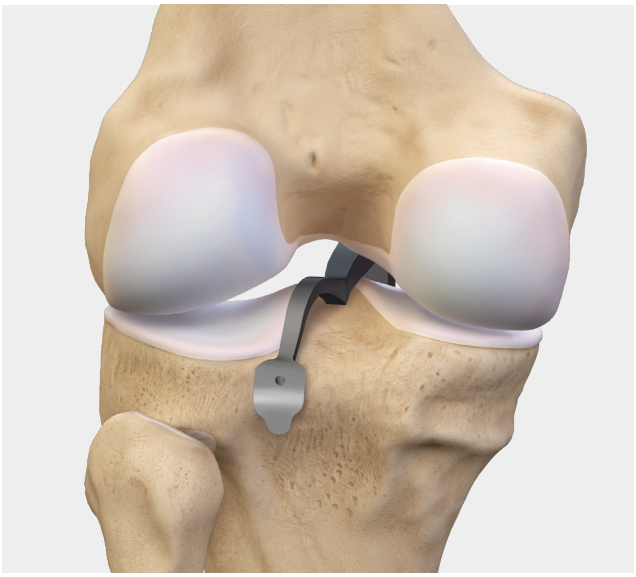


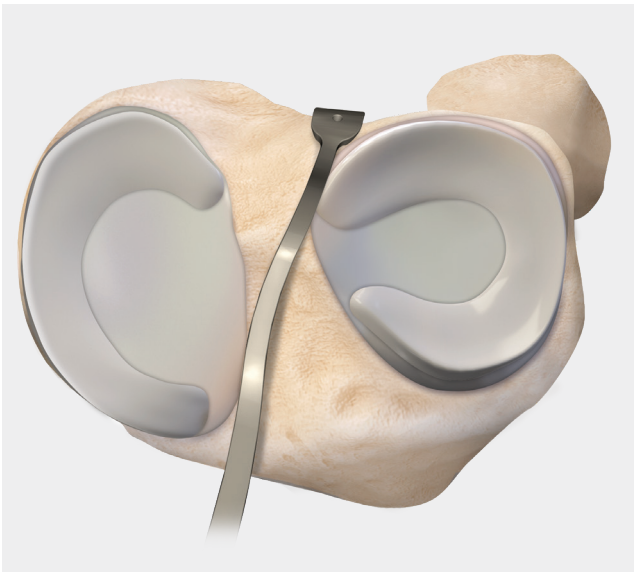
The FlipCutter® III system has unique advantages for PCL reconstruction. Retrograde drilling of tibial tunnels and sockets protects popliteal vessels due to drilling away from the posterior structures. The unique tibial PCL marking hooks provide a broad footprint to help visualize tunnel placement before drilling and may protect the popliteal area during drill pin advancement.

- Anatomic Contour PCL Tibial Guide (AR-**1510PTL** left) or (AR-**1510PTR** right)

- Arthroscopic Inlay Technique (AR-**1510PT**)

Tibial PCL Drilling With the Anatomic Contour Guide





The anatomic contour PCL guides greatly simplify tibial pin positioning by referencing anatomic constants. The “over-the-back” hook grasps the distal edge of the posterior facet, guiding the pin into the proper position in the sagittal plane. The wide, convex tip helps position the guide properly in the coronal plane, between the mamillary bodies.

- For soft tissue/all-inside GraftLink® PCL reconstruction

The unique left- and right-specific curves facilitate positioning around the ACL for isolated PCL reconstructions, in contrast to straight guides which can often lead to medialized socket position. These curves also help the surgeon properly position the guide in the coronal plane adjacent to the anteromedial tibial crest.

Tibial PCL Drilling With the Arthroscopic Inlay Guide

PCL inlay reconstruction techniques have been shown to reduce the “killer turn” associated with transtibial constructs and may lead to less graft abrasion and better approximation of native biomechanics. The arthroscopic inlay PCL provides the benefits of both open inlay and arthroscopic transtibial techniques by combining the biomechanics of the open tibial inlay and the ease of visualization and decreased morbidity of an arthroscopic approach.

The PCL reconstruction guide may be used for the inlay procedure and allows placement of the socket within the posterior facet for anatomic inlay positioning. By using the FlipCutter® III drill and the PCL TightRope® fixation system, an inlay construct may be achieved in a more minimally invasive way.

Femoral PCL Technique

The femoral PCL marking hook allows for a variable angle drilling to reduce the “killer corner” angle of the femoral socket. The 8 mm “footprint” marking hook also allows visualization of the socket before drilling.

- Femoral PCL, Hook Arm (AR-**1510PF**)

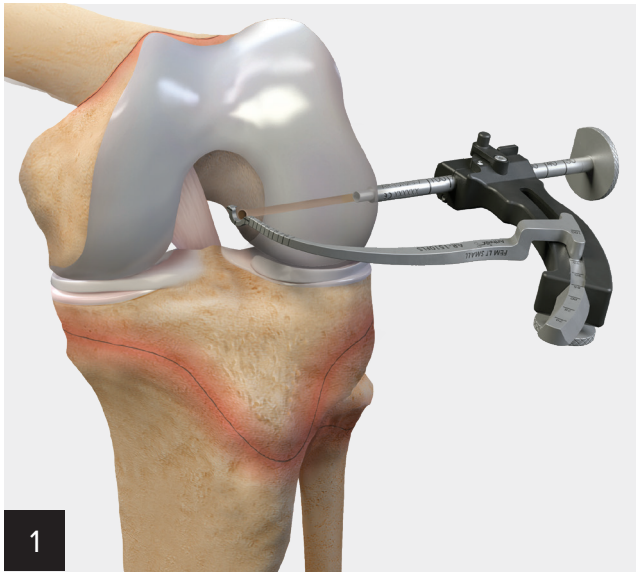
Small Angle Guides for All-Epiphyseal ACL Drilling

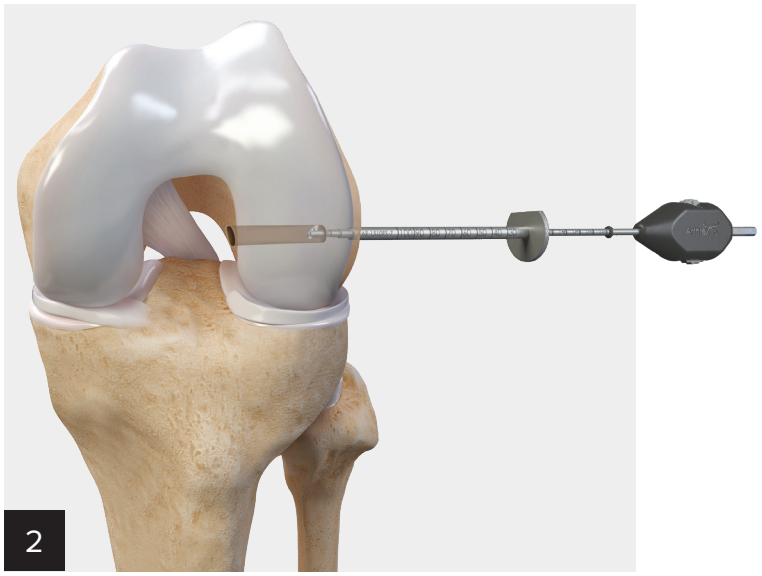
The small angle guides facilitate acute angles needed for drilling all epiphyseal sockets and tunnels with the FlipCutter® III drill.

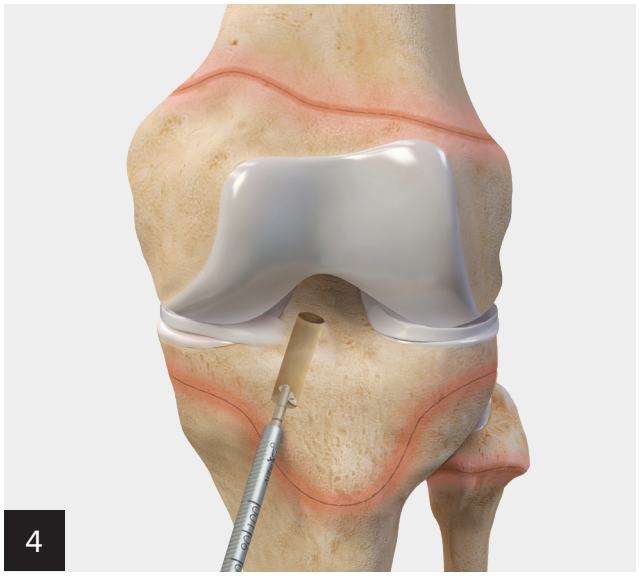
- Small Angle Footprint Femoral ACL Guide, (AR-**1510FRS** right) or (AR-**1510FLS** left)

- Small Angle Tibial Marking Hook ACL Guide (AR-**1510GTS**)

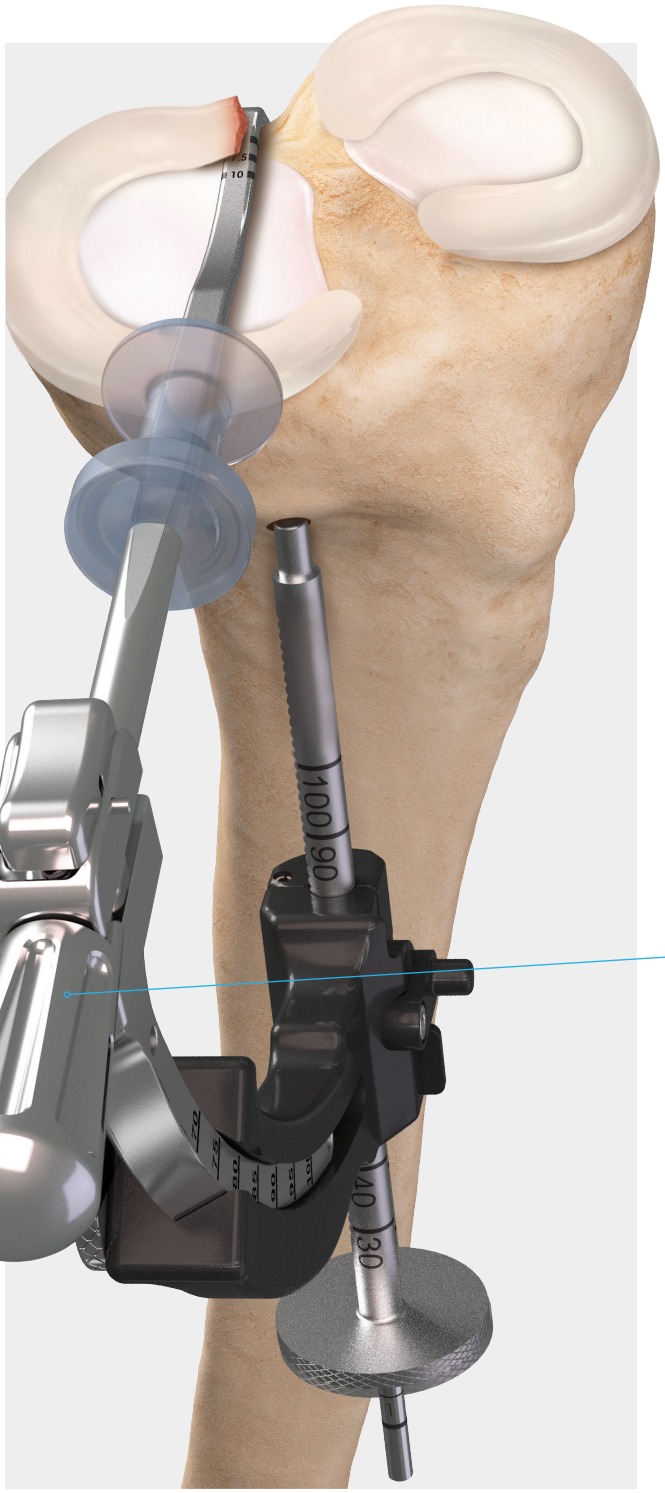
Small Angle Guides for All-Epiphyseal ACL Drilling (Surgical Steps)







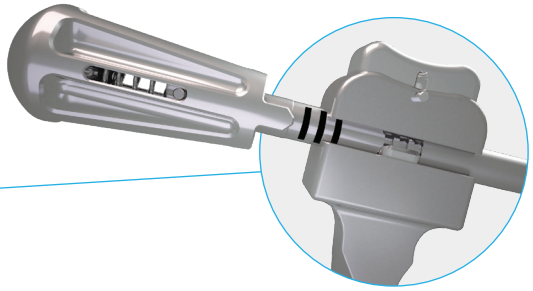
Meniscal Root Repair

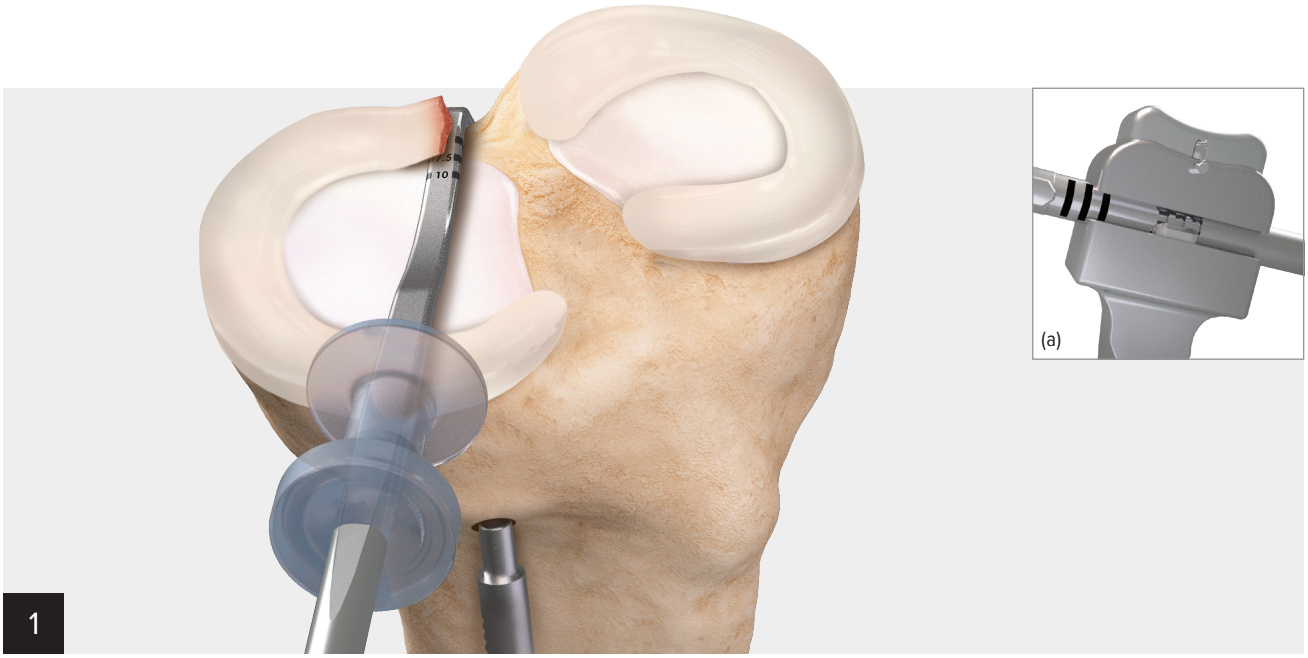


Locations that are difficult to reach with standard drilling approaches may be easily accessed using the low-profile FlipCutter® III drill, without creating unnecessary full-bone tunnels. Meniscal root repair and transplantation are ideal applications for the FlipCutter III system.

The adjustable meniscal root marking hook has several features that facilitate effective tunnel and socket placement. The low-profile tip fits easily into the tight compartments of the knee. The offset hook with a small spike stays securely positioned during drilling. The multiple offset positions on the guide and the rotating drill sleeve enable the surgeon to adjust the pin entry point and tunnel trajectory.

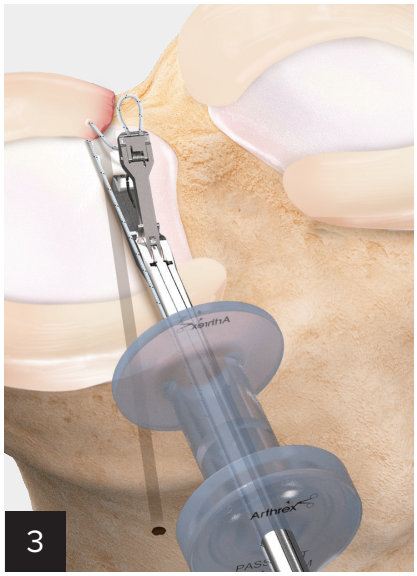
- For the full technique, please refer to LT1-00129-EN Meniscal Root Repair



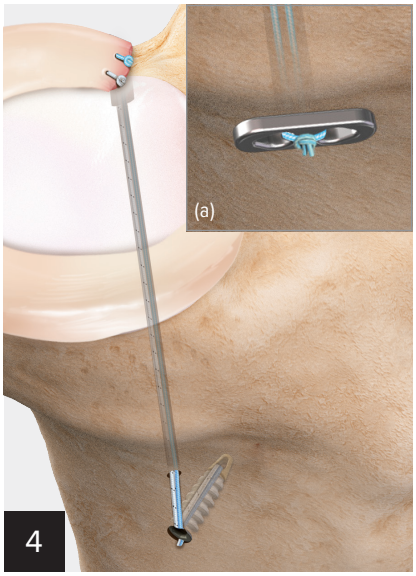


Place the adjustable meniscal root marking hook “over the back” of the tibia. Adjust the offset by depressing the button on the locking guide and aligning the laser marks with the desired offset **(a)**.

Use the FlipCutter® III drill to create a socket 5 mm to 10 mm in depth.



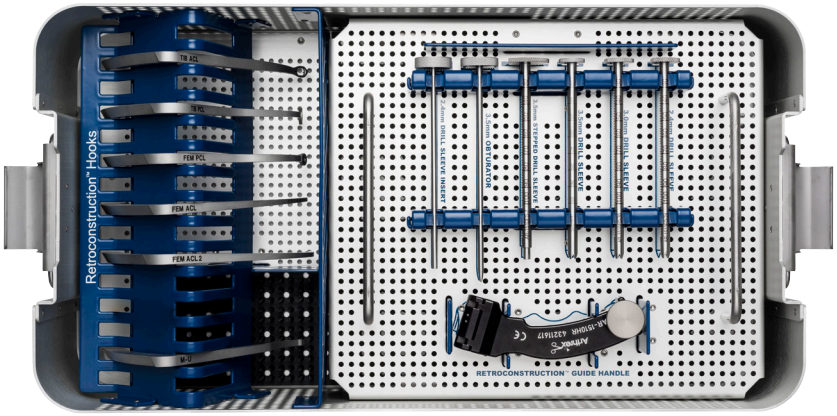
Use a Knee Scorpion™ suture passer to pass a size 0 TigerLink™ suture to create a cinch stitch. A second cinch stitch can be added using a size 0 FiberLink™ suture.



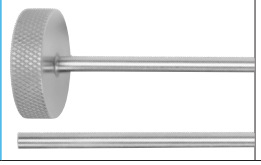
Secure the sutures to the anterior tibia with a 4.75 mm BioComposite SwiveLock® anchor. An alternate fixation method is a two-hole metal button **(a)**.

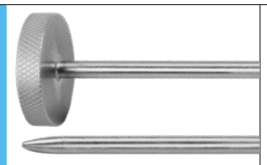
ACL ToolBox Instrumentation Set With RetroConstruction™ Drill Guides

The RetroConstruction drill guide set gives surgeons several marking hook options for multiple uses, in a single, easy-to-manage tray. The adjustable C-ring allows multiple drilling angles without sacrificing accuracy. The stepped drill sleeve also serves as a cortex-protecting depth stop for retrograde drilling with the FlipCutter® III system, and as a cannula for insertion of graft-passing sutures. RetroConstruction guides are also available in ACL and PCL ToolBox sets.



RetroConstruction Instruments from AR-**1510S**

	RetroConstruction Drill Guide Handle, side release	AR-**1510HR**
	7 mm Stepped Drill Sleeve	AR-**1510FS-7**
	10 mm Stepped Drill Sleeve	AR-**1204FDS-10**
	2.4 mm Ratchet Drill Sleeve	AR-**1510FD-24**
	3.5 mm Ratchet Drill Sleeve	AR-**1510D**
	Guide Pin Sleeve, 2.4 mm	AR-**1204F-24I**

	Obturator for Stepped Drill Sleeve, 3.5 mm	AR-**1204F-OB**
	Drill Tip Guide Pin, 3.5 mm	AR-**1250F**

ACL Reconstruction Marking Hooks

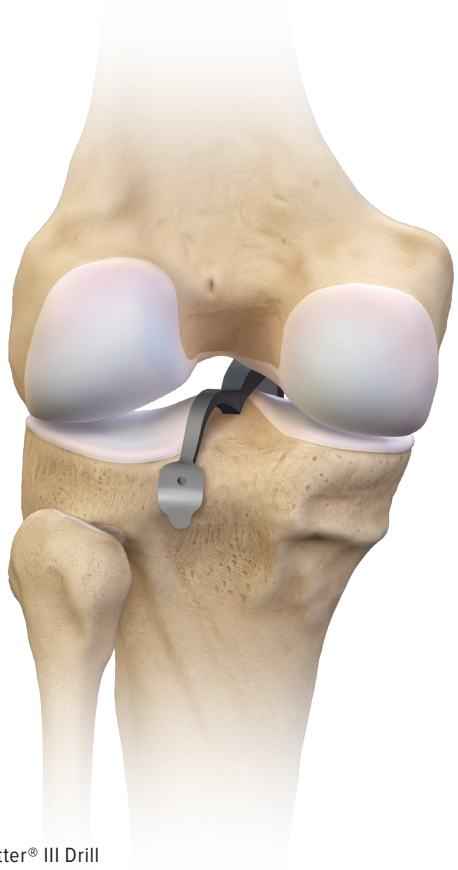
	Footprint Femoral ACL Guide, left	AR-**1510FL**
	Footprint Femoral ACL Guide, right	AR-**1510FR**
	Footprint Femoral ACL Guide w/ 7 mm Offset, left	AR-**1510FPL**
	Footprint Femoral ACL Guide w/ 7 mm Offset, right	AR-**1510FPR**
	Footprint Femoral ACL Guide, small angle, left	AR-**1510FLS**
	Footprint Femoral ACL Guide, small angle, right	AR-**1510FRS**
	Marking Hook Femoral ACL, curved	AR-**1510F-01**
	Femoral ACL Marking Hook for RetroConstruction™ Drill Guide	AR-**1510F**
	Tibial ACL Marking Hook for RetroConstruction Drill Guide	AR-**1510T**

	Pin Tip Tibial Marking Hook for RetroConstruction™ ACL Guide	AR-**1510GT**
	Pin Tip Tibial Marking Hook for RetroConstruction ACL Guide, small angle	AR-**1510GTS**

PCL Reconstruction Marking Hooks

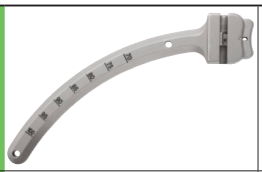
	Femoral PCL, hook arm	AR-**1510PF**
	Anatomic Contour PCL Guide, left **(a)**	AR-**1510PTL**
	Anatomic Contour PCL Guide, right	AR-**1510PTR**
	Tibial PCL, hook arm **(b)**	AR-**1510PT**

(a)



(b)

Meniscal Root Repair and Transplantation Marking Hooks

	Locking Guide for Meniscal Root Marking Hook	AR-**1610LG**
	Meniscal Root Marking Hook	AR-**1610MR**
	Multi-Use Hook	AR-**1510M**

Meniscal Root Repair Implant System, BioComposite SwiveLock® Anchor (AR-**4550BC**)

Ordering Information

FlipCutter® III Drill (single use, sterile)

Product Description	Item Number
FlipCutter III Drill, 6 mm-12 mm	AR-**1204FF**

Implant Systems with a FlipCutter III Drill

Product Description	Item Number
Each QuadLink™ Implant System includes: QuadPro™ tendon harvester, FiberTag® TightRope® RT and ABS implants, 11 mm round concave ABS button, FlipCutter III drill, PassPort Button™ cannula, FiberStick™ and TigerStick® sutures, and FiberWire® and TigerWire® sutures	
QuadLink Implant System, 8 mm	AR-**1288QIS-80**
QuadLink Implant System, 9 mm	AR-**1288QIS-90**
QuadLink Implant System, 10 mm	AR-**1288QIS-100**
QuadLink Implant System, 11 mm	AR-**1288QIS-110**
FiberTag TightRope and FlipCutter III Implant System (includes FiberStick suture)	AR-**1288RTT-FC3**
Implant System, ACL TightRope II RT implant w/ FiberTape suture for *Interna*Brace™ technique, FlipCutter III drill, and FiberStick suture	AR-**1288RTIB-FC3**
Implant System, ACL TightRope II BTB implant w/ FiberTape suture for *Interna*Brace technique, FlipCutter III drill, and FiberStick suture	AR-**1288BTBIB-FC3**

ACL and PCL ToolBox Sets

Product Description	Item Number
ACL ToolBox Set	AR-**1900S**
Reference Knee Catalog for Complete ACL ToolBox Set Listing	LB1-0115-EN
PCL ToolBox Set	AR-**1269S**
Reference Knee Catalog for Complete PCL ToolBox Set Listing	LB1-0115-EN

RetroConstruction™ Drill Guide Set (AR-**1510S**)

Product Description	Item Number
Tibial ACL Marking Hook for RetroConstruction Drill Guide	AR-**1510T**
Tibial PCL Marking Hook for RetroConstruction Drill Guide	AR-**1510PT**
Femoral PCL Marking Hook for RetroConstruction Drill Guide	AR-**1510PF**
Femoral ACL Marking Hook for RetroConstruction Drill Guide	AR-**1510F**
Femoral ACL Curved Marking Hook for RetroConstruction Drill Guide	AR-**1510F-01**
Multi-Use Marking Hook for RetroConstruction Drill Guide	AR-**1510M**
Guide Pin Sleeve, 2.4 mm	AR-**1204F-24I**
Obturator, 3.5 mm	AR-**1204F-OB**
7 mm Stepped Drill Sleeve, ratcheting	AR-**1510FS-7**
10 mm Stepped Drill Sleeve, ratcheting	AR-**1204FDS-10**
Drill Sleeve for RetroConstruction Drill Guide, 3.5 mm	AR-**1510D**
Drill Sleeve for Side-Release Handle, 2.4 mm, ratcheting	AR-**1510FD-24**
Side-Release RetroConstruction Handle	AR-**1510HR**
RetroConstruction Drill Guide System Case	AR-**1510C**

Optional Instrumentation

Product Description	Item Number
Pin Tip Tibial ACL Drill Guide	AR-**1510GT**
RetroConstruction Marking Hook for Tibial ACLR, 52.5˚ (for RetroDrill® system)	AR-**1510R**
Footprint Femoral ACL Guide, left	AR-**1510FL**
Footprint Femoral ACL Guide, right	AR-**1510FR**
Footprint Femoral ACL Guide w/ 7 mm Offset, left	AR-**1510FPL**
Footprint Femoral ACL Guide w/ 7 mm Offset, right	AR-**1510FPR**
Pin Tip Tibial Marking Hook ACL Guide, small angle	AR-**1510GTS**
Footprint Femoral ACL Guide, small angle, right	AR-**1510FRS**
Footprint Femoral ACL Guide, small angle, left	AR-**1510FLS**
Anatomic Contour PCL Guide, left	AR-**1510PTL**
Anatomic Contour PCL Guide, right	AR-**1510PTR**
Drill Tip Guide Pin, 3.5 mm (predrill for FlipCutter® system)	AR-**1250F**

TightRope® Implants

Product Description	Item Number
FiberTag® TightRope Implant	AR-**1588RTT**
FiberTag TightRope ABS Implant	AR-**1588TNT**
TightRope II RT Implant w/ Additional Flipping Suture	AR-**1588RT-2J**
TightRope II RT Implant w/ FiberTape® Suture for *Interna*Brace™ Technique	AR-**1588RT-IB**
TightRope II BTB Implant w/ Additional Flipping Suture	AR-**1588BTB-2J**
TightRope II BTB Implant w/ FiberTape Suture for *Interna*Brace Technique	AR-**1588BTB-IB**
TightRope II ABS Implant	AR-**1588TN-20**
TightRope II ABS Implant, open	AR-**1588TN-21**
TightRope ABS Button, round, concave 11 mm	AR-**1588TB-3**
TightRope ABS Button, round, concave 14 mm	AR-**1588TB-4**
TightRope ABS Button, round, concave 20 mm	AR-**1588TB-5**
TightRope Button Extender, 5 × 20 mm	AR-**1589RT**

ACL Backup Fixation Kits

Product Description	Item Number
Implant System, secondary fixation w/ BioComposite SwiveLock® anchor 4.75 × 19.1 mm	AR-**1593-BC**
Implant System, secondary fixation w/ PEEK SwiveLock anchor 4.75 × 19.1 mm	AR-**1593-P**

Suture

Product Description	Item Number
FiberStick™ Suture, #2 FiberWire® suture, 50 in (blue) one end stiffened	AR-**7209**
TigerStick® Suture, #2 TigerWire® suture, 50 in (white/black) one end stiffened	AR-**7209T**
#2 FiberLoop® Suture w/Straight Needle, 20 in (blue), 76 mm needle w/ 7 mm loop	AR-**7234**
#2 TigerLoop™ Suture w/Straight Needle, 20 in w/ TigerWire suture (white/green), 76 mm needle w/ 7 mm loop	AR-**7234T**
FiberSnare® Suture w/ #2 FiberWire Suture, 26 in, stiffened w/ closed loop	AR-**7209SN**

Meniscal Root Repair

Product Description	Item Number
Meniscal Root Repair Instruments	
Meniscal Root Marking Hook	AR-**1610MR**
Locking Guide for Meniscal Root Marking Hook	AR-**1610LG**
Knee Scorpion™ Suture Passer	AR-**12990**
Meniscal Root Repair Implant System, PEEK SwiveLock® Anchor	AR-**4550P**
Knee Scorpion Needle FlipCutter® II Reamer, 6 mm PassPort Button™ Cannula, 8 mm × 3 cm 2-0 FiberStick™ Suture, qty. 2 SutureLasso™ Needle w/ Nitinol Passing Wire 0 FiberLink™ Suture 0 TigerLink™ Suture PEEK SwiveLock Anchor, 4.75 mm × 19.1 mm Spade-Tip Drill Bit SwiveLock Anchor Tap, for hard bone	

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.

The *Interna*lBrace™ surgical technique is intended only to augment the primary repair/reconstruction by expanding the area of tissue approximation during the healing period and is not intended as a replacement for the native ligament. The *Interna*lBrace technique is for use during soft tissue-to-bone fixation procedures and is not cleared for bone-to-bone fixation.

Reference

1. Lubowitz JH, Konicek J. A 3.5-mm-diameter anterior cruciate ligament tibial retrograde socket drilling pin is more accurate than a 2.4-mm-diameter pin. *Arthroscopy.* 2011;27(5):666-671. doi:10.1016/j.arthro.2010.11.011

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