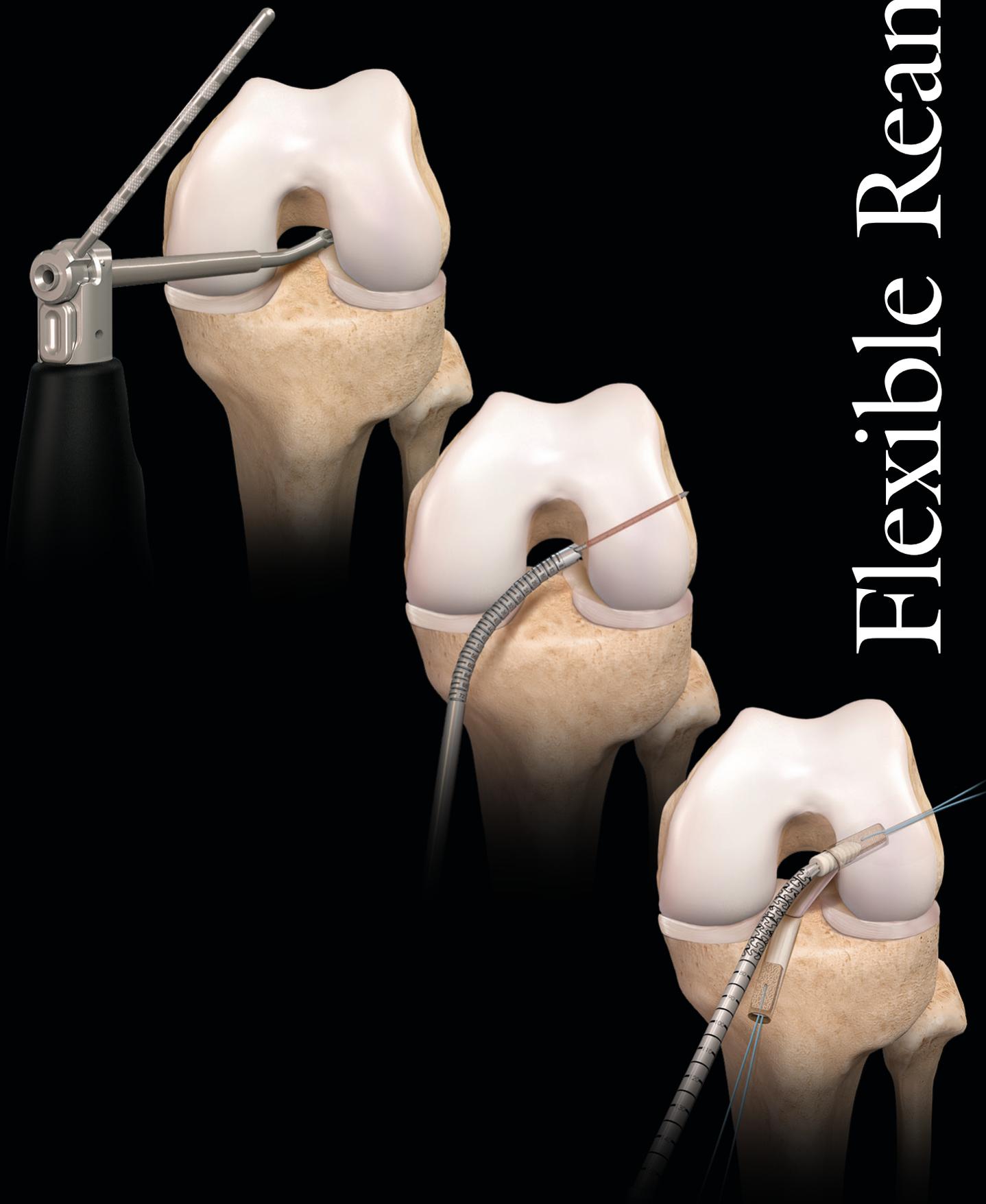




Flexible Reamer for ACL Reconstruction  
Surgical Technique



# Flexible Reamer



# Flexible Reamers

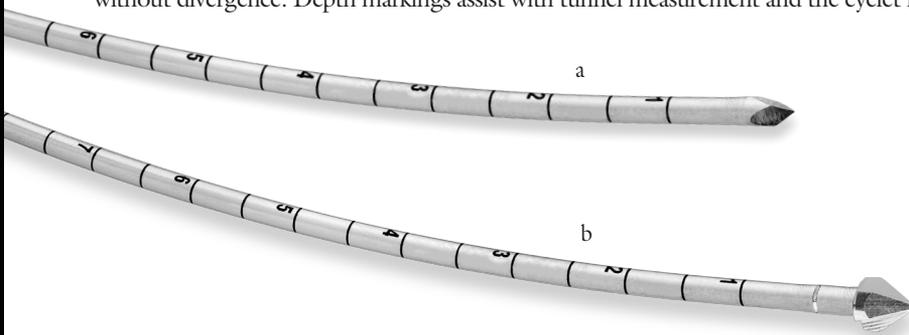
The Arthrex® Flexible Reamer system facilitates reproducible femoral socket creation from the medial portal without hyperflexion of the knee. An innovative, flexible link design allows unmatched flexibility with increased strength over standard “puzzle-piece” designs.<sup>1</sup> The adjustable curved guide, flexible guide pins and screwdrivers give surgeons more versatility in socket placement and graft fixation options.

- Flexible link design provides increased strength and flexibility versus “puzzle-piece” designs<sup>2</sup>
- Low-profile head facilitates atraumatic passage through the portal and past the condyle
- Provided sterile for a sharp, clean reamer for every patient

Sterile, single-use reamers assure sharpness and sterility with each case. No worries of dullness, metal fatigue or incomplete cleaning as with reusable systems.<sup>2</sup>

## Flexible Guide Pins that Measure Up

Unique Flexible Guide Pins allow bending in the curved guide, but retain enough stiffness to drill straight through bone without divergence. Depth markings assist with tunnel measurement and the eyelet facilitates suture passing through the socket (a).



First of its kind, the **Flexible TightRope® Drill Pin (b)** eliminates the need to overdrill the pin for button passage and functions as a depth guide to measure tunnel length.

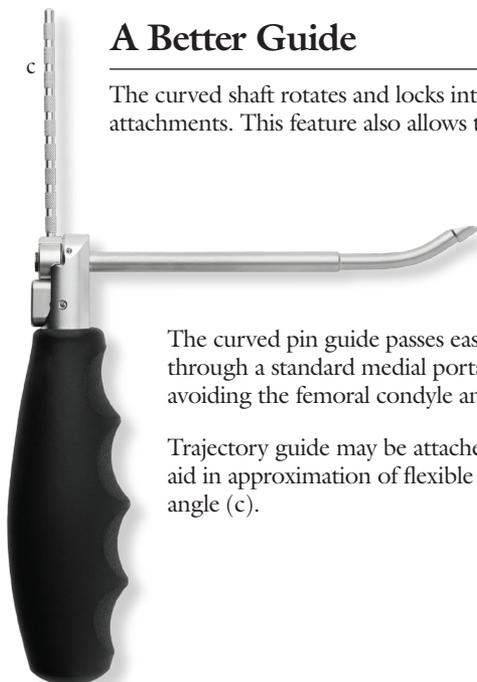
## Flexible Driver and Tap

Flexible shafts facilitate placement of either BioComposite™ or PEEK Interference Screws into femoral sockets reamed with flexible reamers, ensuring similar trajectory and alignment of the socket, graft and screw.



## A Better Guide

The curved shaft rotates and locks into 5 positions for left and right knees, eliminating the need for a tray full of angled guide attachments. This feature also allows the handle to be rotated out of the way during guide pin drilling.



The curved pin guide passes easily through a standard medial portal while avoiding the femoral condyle and PCL.

Trajectory guide may be attached to aid in approximation of flexible pin exit angle (c).



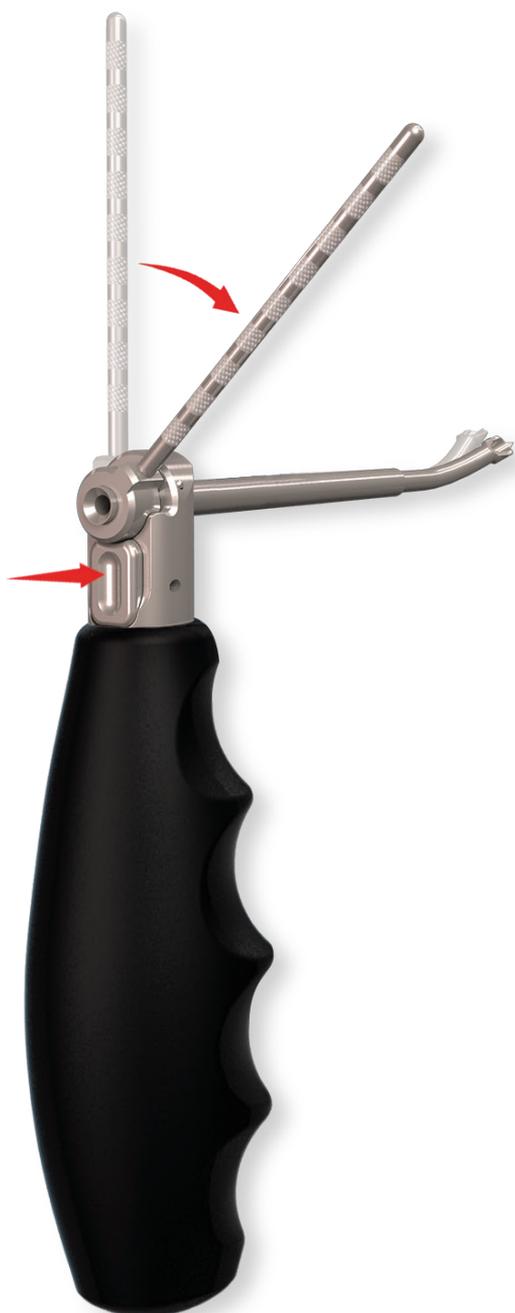
The spiked tip is easily stabilized on the femur without hyperflexion and allows ideal trajectory through the femur.

### References

1. Swiontkowski M, Resnick L. Avoiding flexible reamer breaking during anatomic ACL reconstruction. *JBJS Case Connect.* 2014;4(4):e94. doi:10.2106/JBJS.CC.N.00174.
2. Data on file.

# ACL Reconstruction Technique Using the Arthrex® Flexible Reamer

1



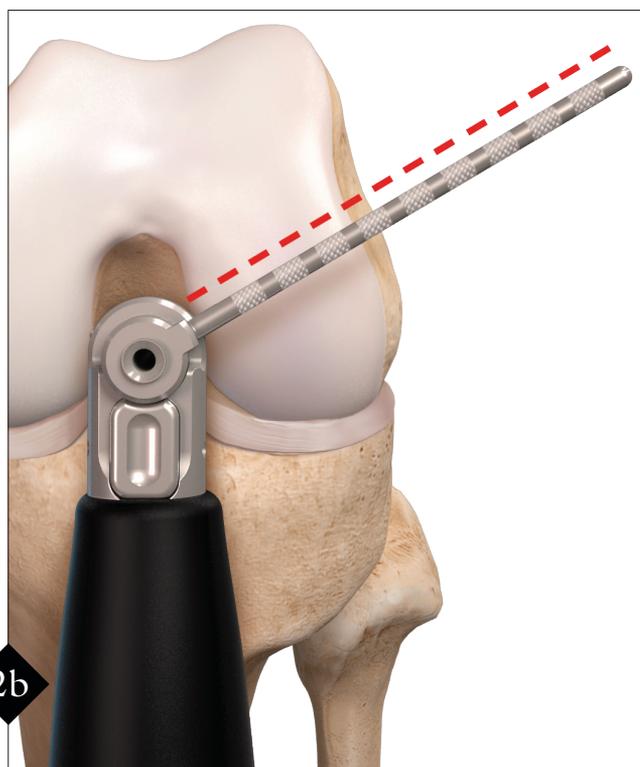
Rotate the guide to the preferred angle by depressing the unlock button and moving the shaft left or right. Release the button to lock the shaft into the desired position.

2a

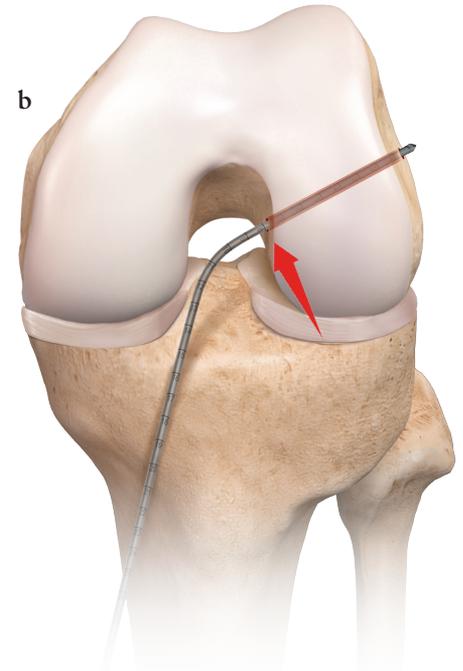
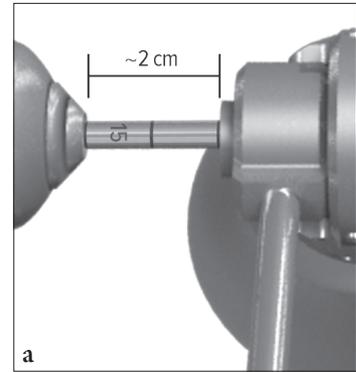
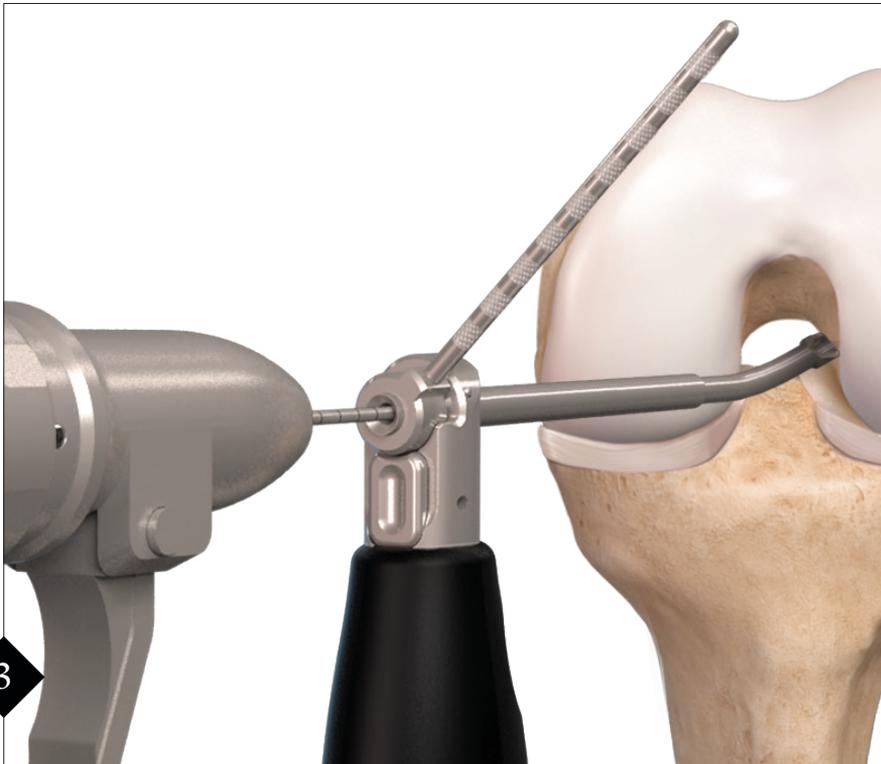


The guide is placed through a standard medial portal with the knee hanging freely in near 90° of flexion. Place the spiked tip into the wall of the femoral notch in the desired position.

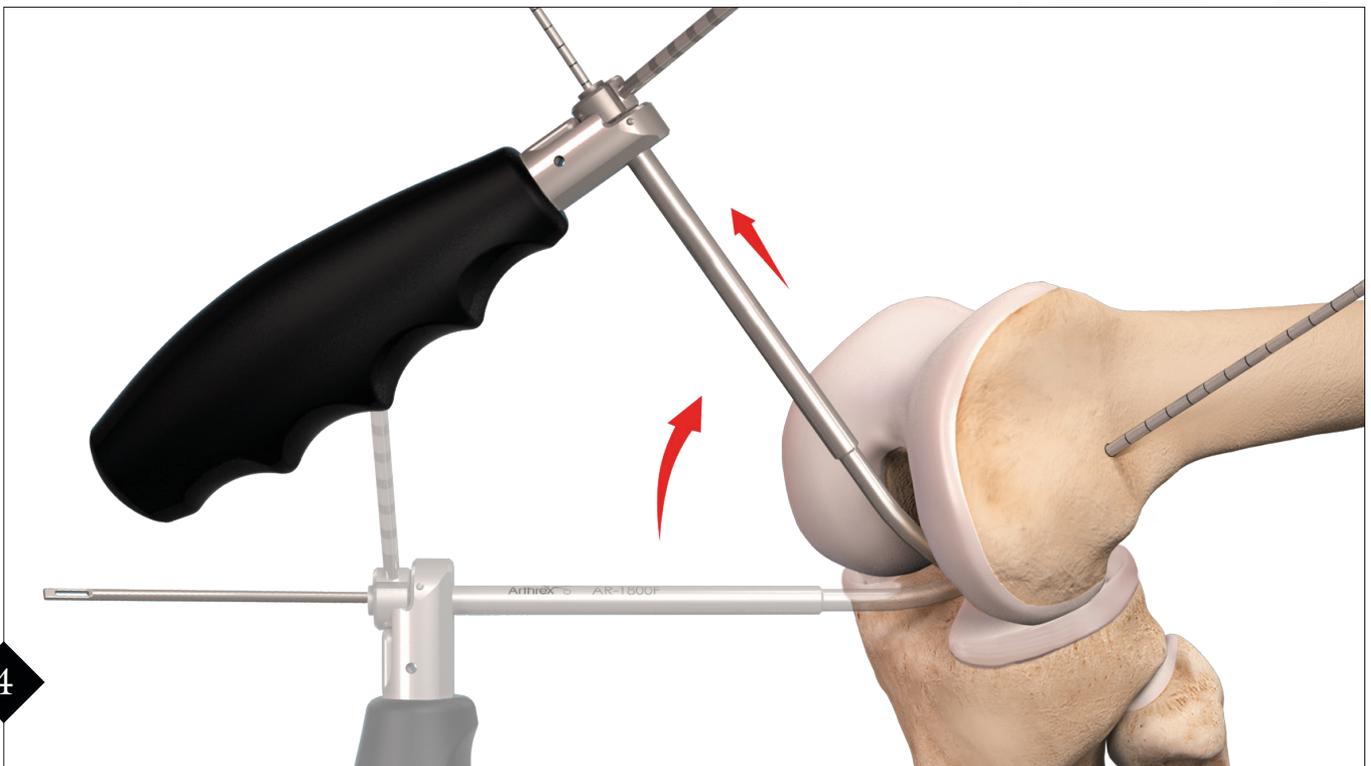
2b



The alignment rod may be used as an external indicator of where the flexible pin will exit the thigh before drilling.

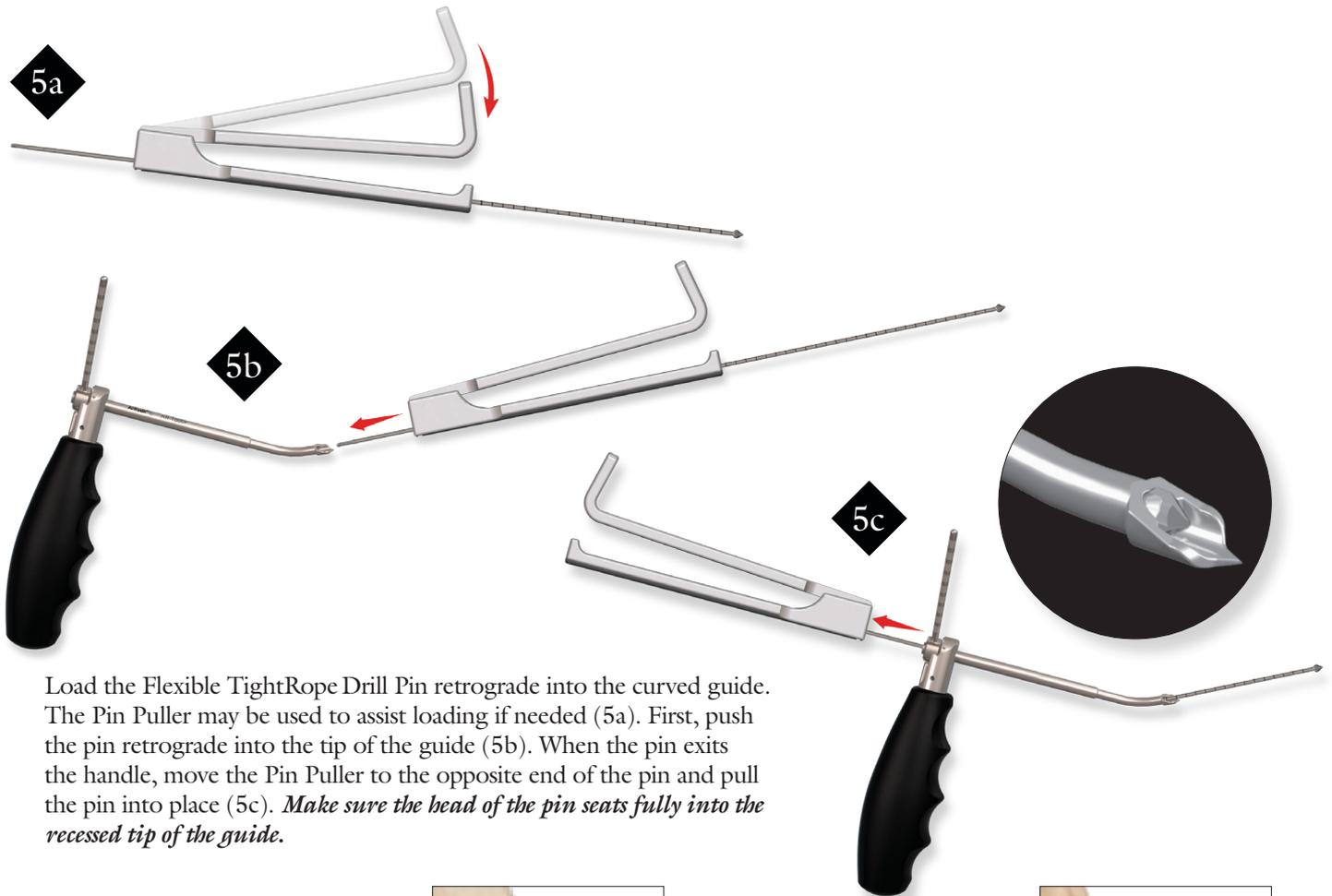


Once the guide is positioned appropriately, advance the flexible pin through the femur using a pin driver. Advance the pin about 2 cm at a time to avoid bowing (a). The numbered markings on the guide pin may be used to estimate tunnel length by reading the number against the notch as the pin engages the cortex (b). Take care not to pinch the eyelet of the pin with the driver. *Note: Always drill the pin in a fluid environment.*

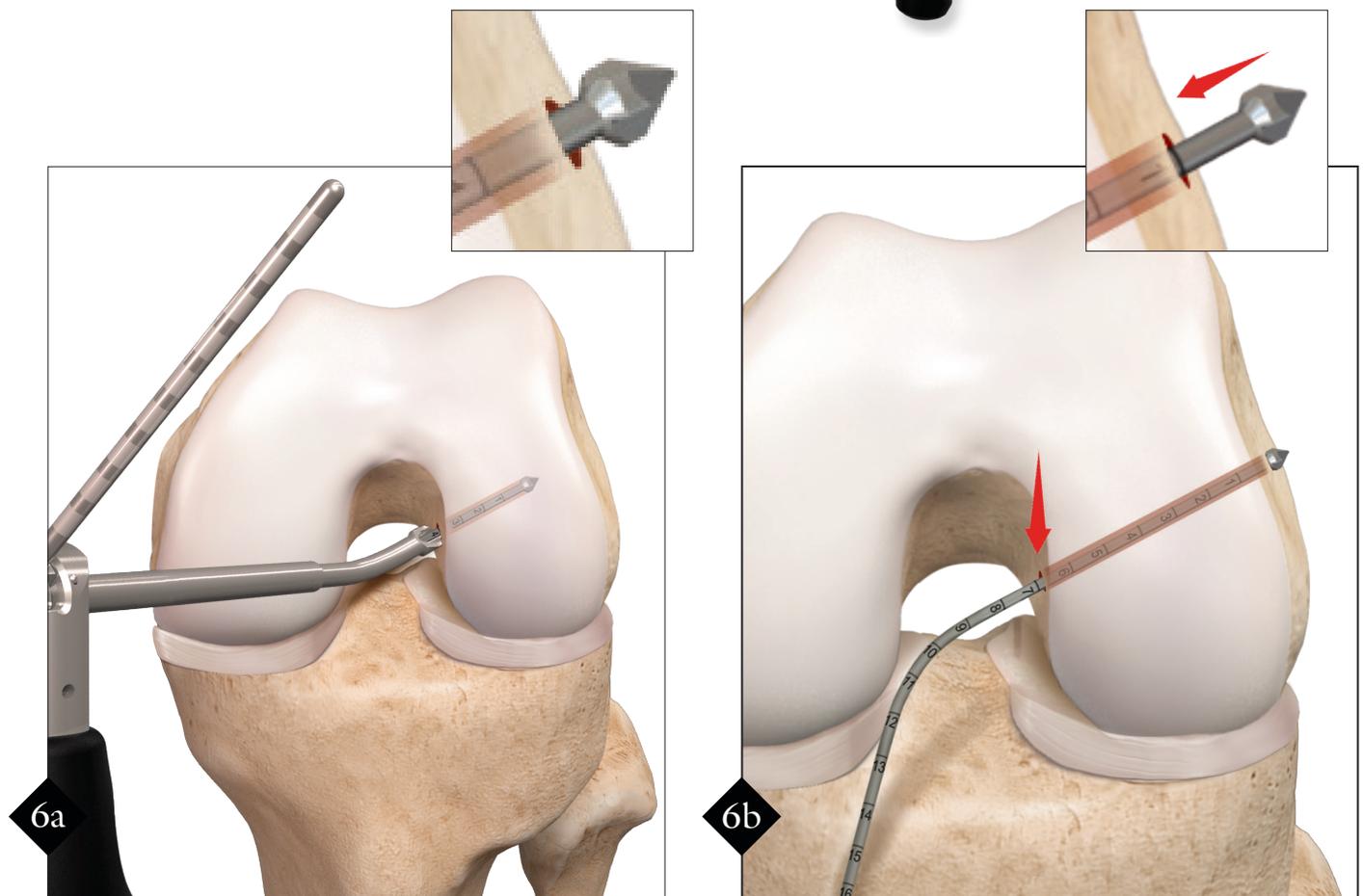


Advance the pin so only 5 cm is left outside of the guide. Clamp the pin after its exit from the distal lateral femur to assure it remains in place with the guide removal. *Note: To remove the guide from the knee, lift the handle while pulling backwards. The upward rotation of the guide will facilitate guide removal and friction against the pin.*

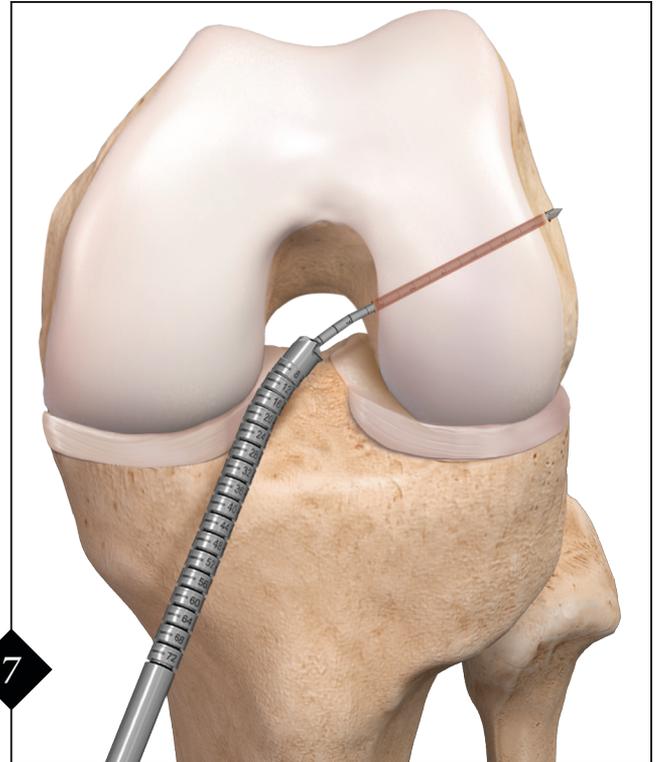
## Flexible ACL TightRope® Drill Pin Option



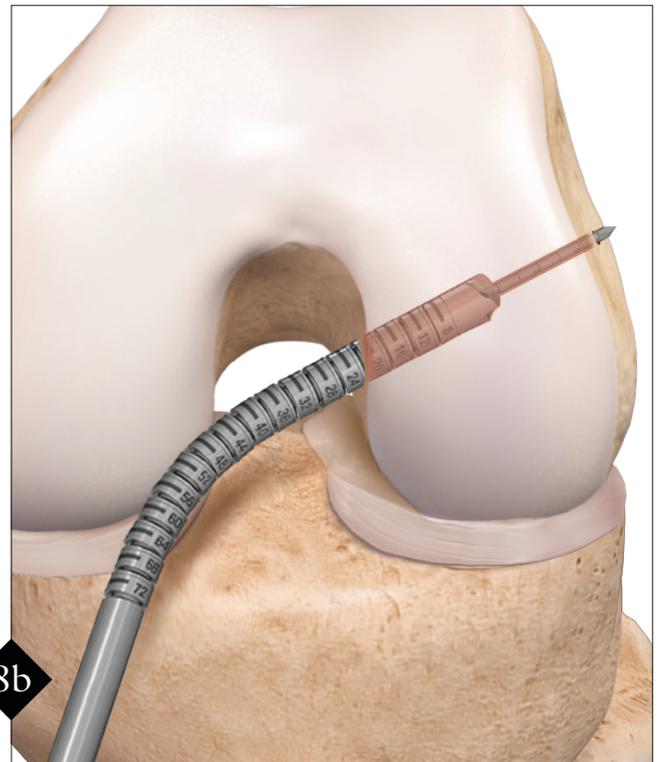
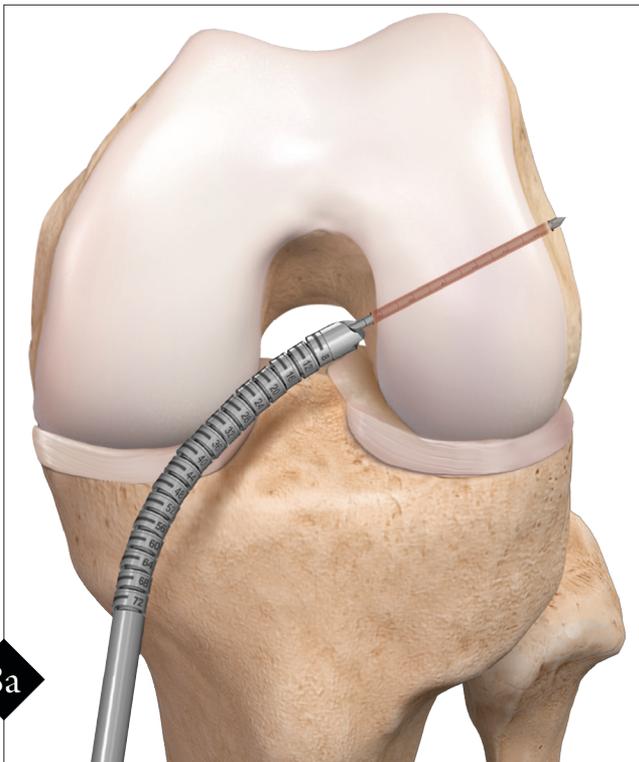
Load the Flexible TightRope Drill Pin retrograde into the curved guide. The Pin Puller may be used to assist loading if needed (5a). First, push the pin retrograde into the tip of the guide (5b). When the pin exits the handle, move the Pin Puller to the opposite end of the pin and pull the pin into place (5c). *Make sure the head of the pin seats fully into the recessed tip of the guide.*



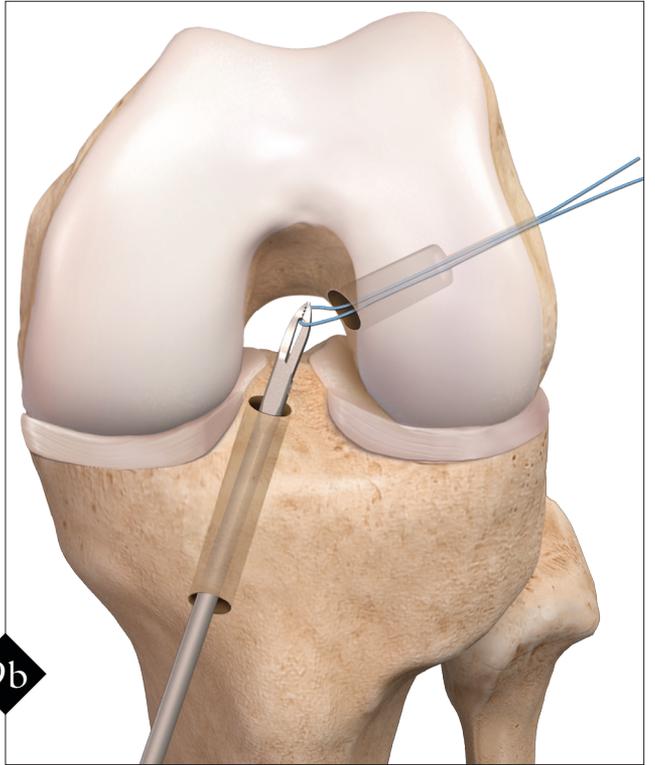
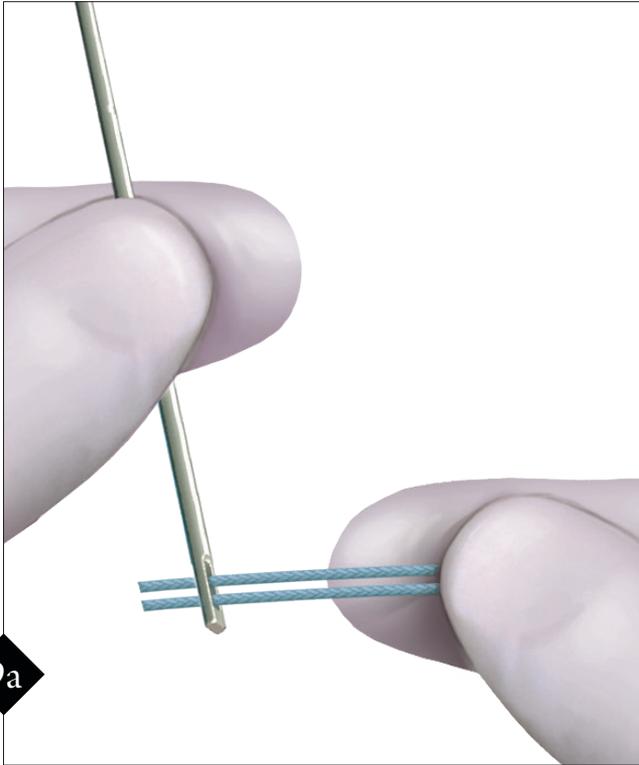
Drill through the femur until the tip exits the far cortex (6a). Remove the guide and pull back on the pin by hand until the tip of the pin engages the cortex (6b). This can be felt as the pin catches against the bone. The measurement at the notch is the length of the femoral tunnel.



Place the reamer over the guide pin and into the joint. When passing the drill through the medial portal, ensure that the cutting flute of the drill is facing away from the medial femoral condyle. *Note: A Shoeborn Cannula or PassPort Button™ cannula may also be used to facilitate entry of the reamer into the joint.*

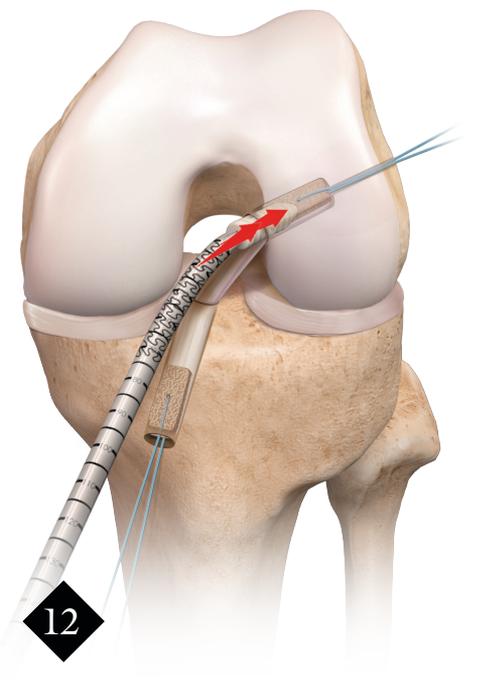
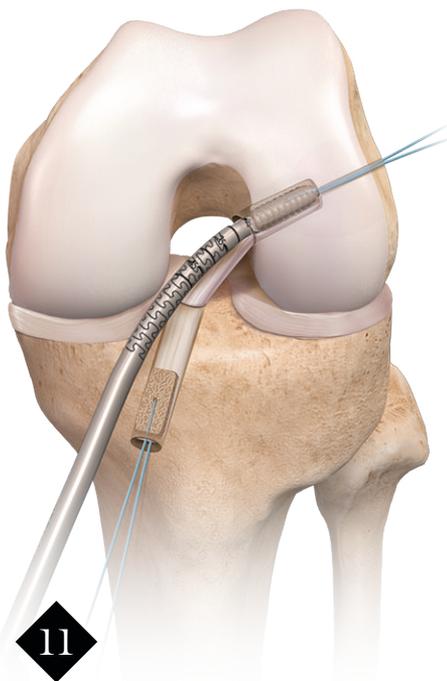
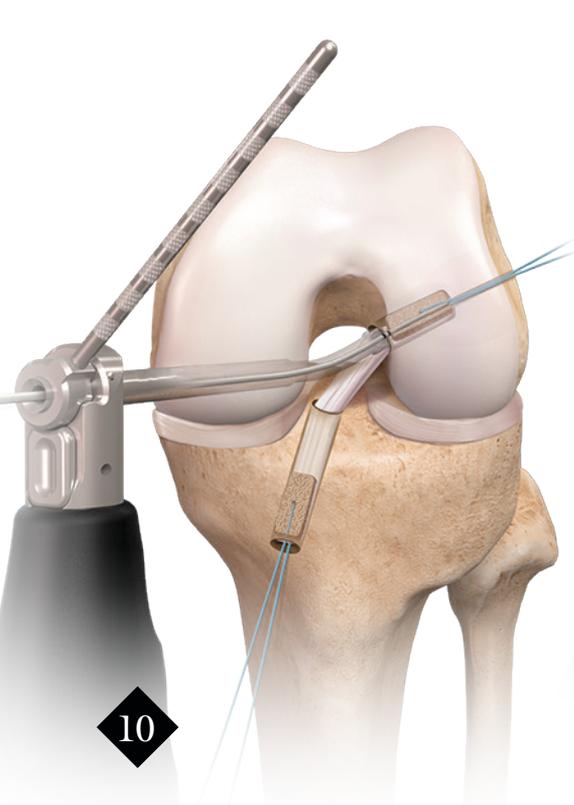


Start the drill slightly off the bone. Use light pressure and high RPMs to maximize efficiency while drilling. Use the numbered laser lines to indicate when the appropriate socket depth is reached. *Note: The low-profile cutting flute allows removal of bone chips from the socket during drilling to facilitate reaming.* If vision is compromised, it may be necessary to remove the scope from the sheath to rinse the joint during the drilling process.



Remove the reamer from the pin and place a passing suture into the eyelet of the pin. Pull the pin through the femur while maintaining the passing suture out the medial portal. The passing suture can now be used to pass the graft through the medial portal or shuttled through the tibial tunnel for transtibial graft passing.

### Graft Fixation with Interference Screw

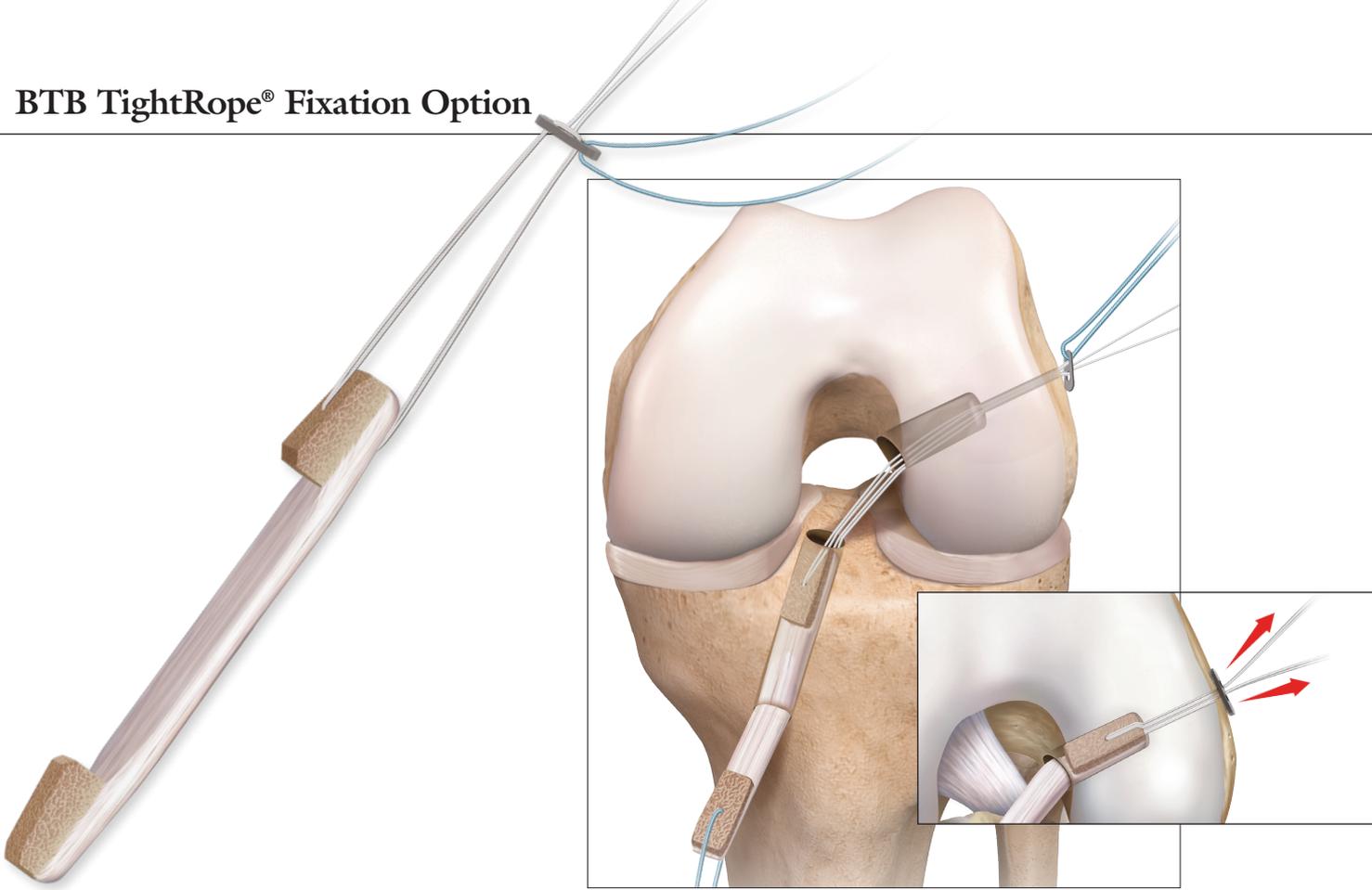


After passing the graft, insert the interference screw guidewire. The curved drill guide may be used to assist with parallel placement of the wire in regards to the tunnel and graft.

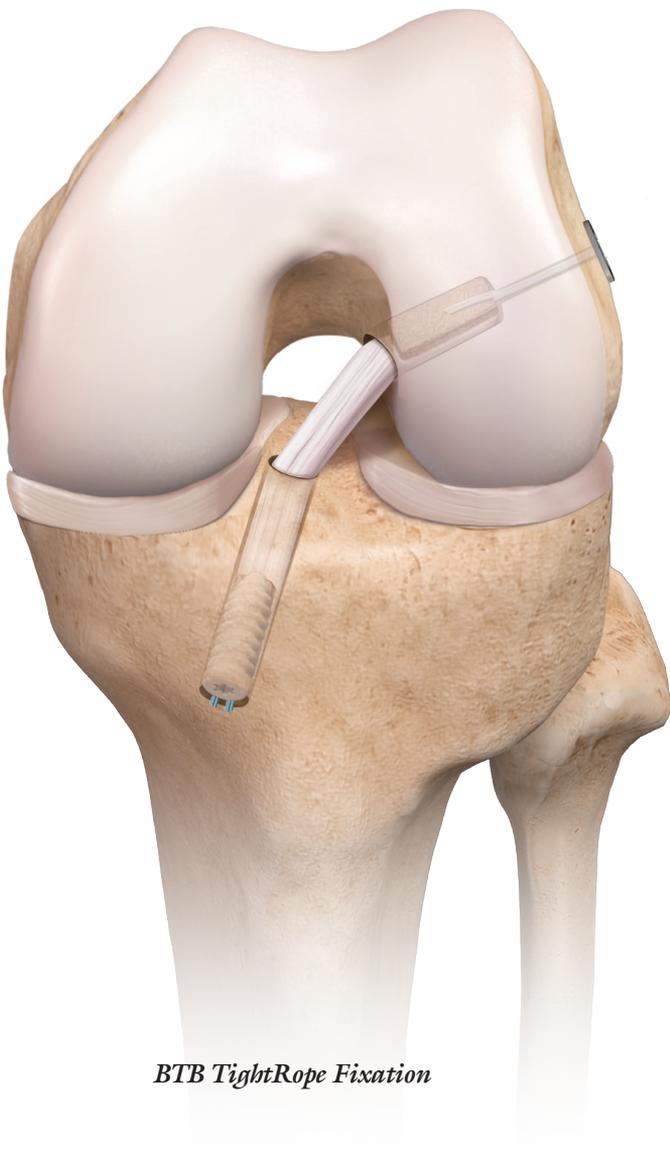
Place the appropriate sized Flexible Screw Tap over the guidewire and insert into the socket the full length of the screw.

Using the flexible driver, place a BioComposite™ or PEEK Interference Screw over the guidewire and through the joint. Place the screw on the free edge of the bone plug away from the tendon under direct visualization to avoid graft laceration. Insert the screw to the appropriate depth. Check graft fixation and remove the driver and guidewire.

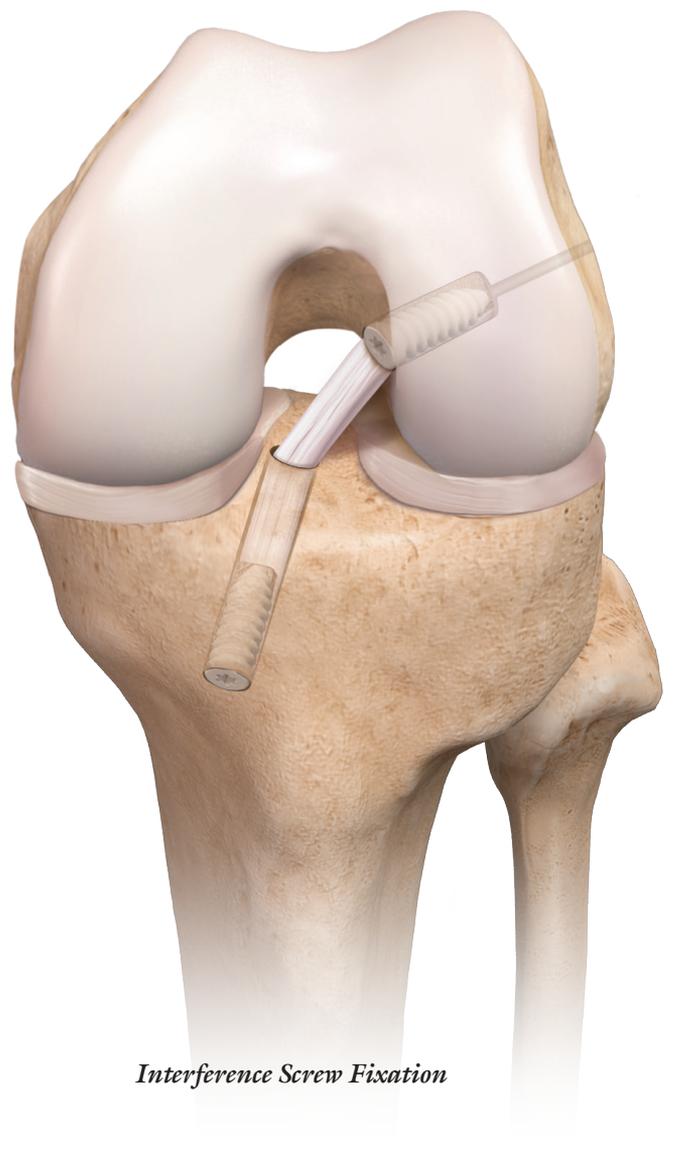
# BTB TightRope® Fixation Option



If using TightRope fixation and the Flexible TightRope Drill Pin, pass the TightRope passing sutures and shortening strands through the femur using the eyelet of the pin. Pull the button through the femur, flip onto the cortex and advance the graft by pulling the shortening strands.



*BTB TightRope Fixation*



*Interference Screw Fixation*

## Ordering Information

### Flexible Reamer w/Flexible Guide Pin Sets (a)

Flexible Reamer w/Flexible Guide Pin, 7 mm	AR-1400F-70
Flexible Reamer w/Flexible Guide Pin, 7.5 mm	AR-1400F-75
Flexible Reamer w/Flexible Guide Pin, 8 mm	AR-1400F-80
Flexible Reamer w/Flexible Guide Pin, 8.5 mm	AR-1400F-85
Flexible Reamer w/Flexible Guide Pin, 9 mm	AR-1400F-90
Flexible Reamer w/Flexible Guide Pin, 9.5 mm	AR-1400F-95
Flexible Reamer w/Flexible Guide Pin, 10 mm	AR-1400F-100
Flexible Reamer w/Flexible Guide Pin, 10.5 mm	AR-1400F-105
Flexible Reamer w/Flexible Guide Pin, 11 mm	AR-1400F-110

### Reusable Instruments

Flexible Screw Tap, 7 mm	AR-1998CTF-07
Flexible Screw Tap, 8 mm	AR-1998CTF-08
Flexible Screw Tap, 9 mm	AR-1998CTF-09
Flexible Screw Tap, 10 mm	AR-1998CTF-10
Flexible Screwdriver Shaft for 23 mm BioComposite™ and PEEK Screws	AR-1996FD-1
Curved Guide for Flexible Pins	AR-1800F
Pin Puller	AR-1298P
Ratcheting Screwdriver Handle	AR-1999

### Implants

BioComposite Interference Screw, 6 mm x 23 mm	AR-1360C
BioComposite Interference Screw, 7 mm x 23 mm	AR-1370C
BioComposite Interference Screw, 8 mm x 23 mm	AR-1380C
BioComposite Interference Screw, 9 mm x 23 mm	AR-1390C
BioComposite Interference Screw, 10 mm x 23 mm	AR-1400C
PEEK Interference Screw, 6 mm x 23 mm	AR-1360P
PEEK Interference Screw, 7 mm x 23 mm	AR-1370P
PEEK Interference Screw, 8 mm x 23 mm	AR-1380P
PEEK Interference Screw, 9 mm x 23 mm	AR-1390P
PEEK Interference Screw, 10 mm x 23 mm	AR-1400P
BTB TightRope® Implant	AR-1588BTB

### Flexible Guide Pins (without reamer)

Flexible Guide Pin, for Flexible Reamer	AR-1400FLX
Flexible TightRope Drill Pin, for Flexible Reamer	AR-1298FLX



a





*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 and/or outcomes.*

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