



TightRope® Attachable Button System (ABS) Implant  
All-Inside ACL Reconstruction

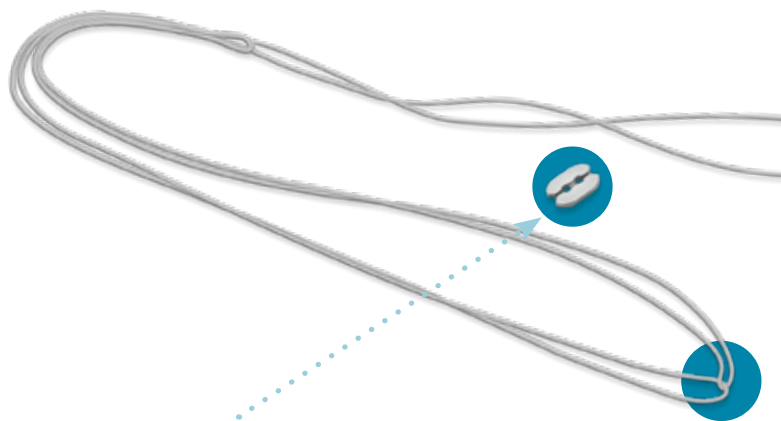
Surgical Technique



# TightRope ABS ACL Reconstruction

## *Introduction*

The 2-piece TightRope® Attachable Button System (ABS) implant easily passes through narrow bone tunnels and allows increased cortical fixation with the assembly of a large button over the cortical bone. Use the TightRope ABS for tibial fixation during all-inside ACL reconstruction using the GraftLink® technique or graft fixation over small bone tunnels created during transtibial ACL reconstruction.



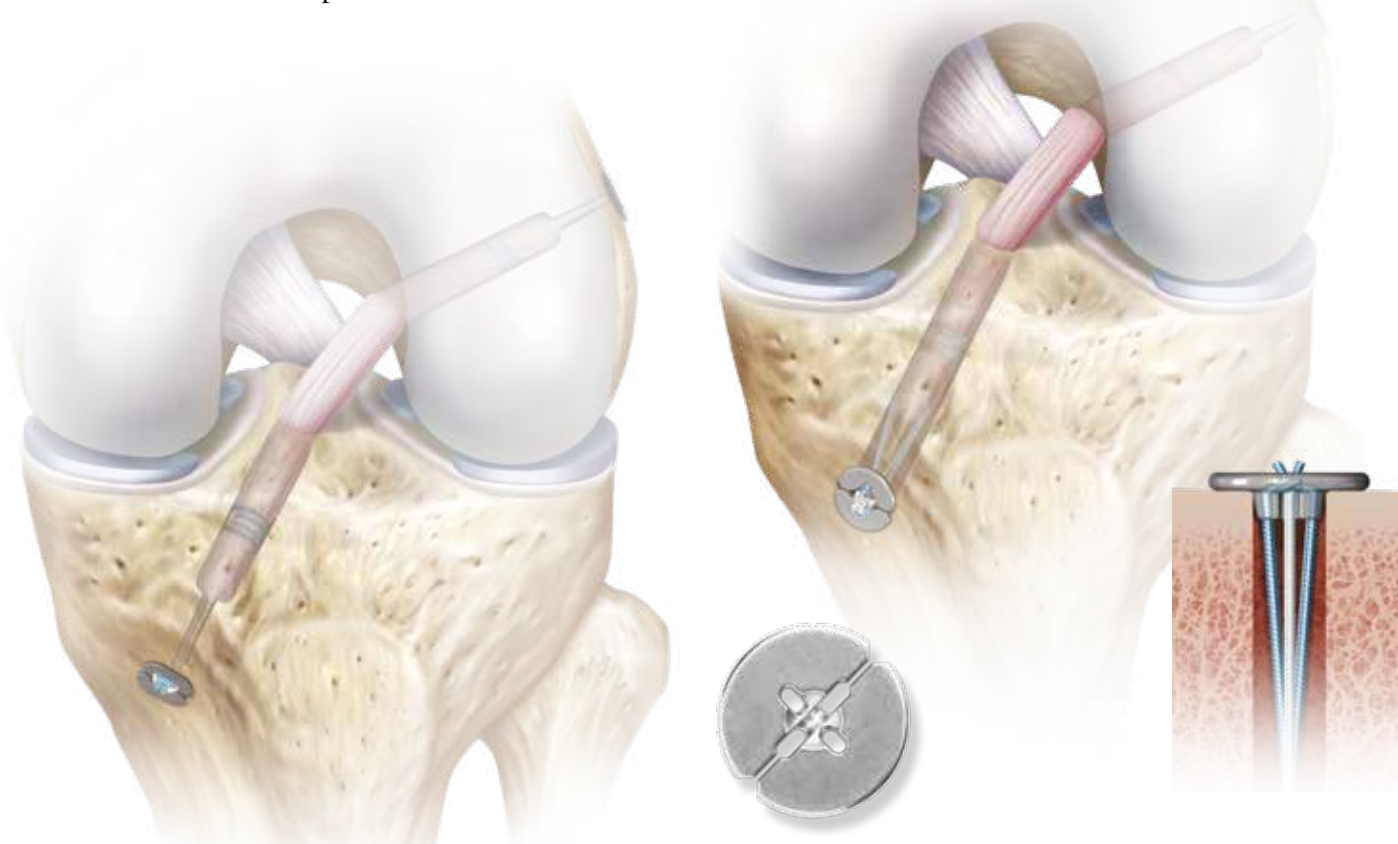
- The slotted buttons can be loaded over the TightRope implant and locked into place
- Larger attachable button options extend footprint, maximizing button-to-bone contact against the cortex
- Buttonless TightRope implant facilitates passing through narrow bone tunnels
- Four-point, knotless locking system provides strong, stiff graft fixation



# Buttons

The TightRope® ABS implant has revolutionized tibial fixation of ACL and PCL grafts. TightRope ABS loops can be used on all graft types and attach to a variety of button configurations for fixation over “retroreamed” sockets or full tunnels with new concave buttons. The advantages of the TightRope ABS include:

- Strong, reliable cortical fixation superior to interference screws<sup>1</sup>
- Maximum graft-to-bone contact improves incorporation and healing<sup>2</sup>
- The ability to retension grafts after fixation and knee cycling
- Several different button options for sockets and full tunnels



## ABS Buttons

Ideal for use over tibial sockets created with a FlipCutter® II reamer, the ABS loops pass easily through small-diameter tunnels and allow attachment of ABS buttons against the tibial cortex. ABS buttons are available in multiple sizes and shapes and provide strong, reliable cortical fixation.<sup>1</sup>

## Concave ABS Buttons

Ideal for full tunnels, the centering feature of these buttons maintains position over the tunnel and provides a better seal at the cortex than standard flat buttons. The concave surface countersinks sutures and knots. The 14 mm and 20 mm buttons have slots for the TightRope loop along with 2 holes for additional sutures.



*TightRope ABS Button*  
8 mm x 12 mm  
AR-1588TB

*TightRope ABS Button*  
round, 14 mm  
AR-1588TB-1

*TightRope ABS Button*  
oblong, 3.4 mm x 13 mm  
AR-1588TB-2

*Concave ABS Button*  
11 mm w/4 mm collar  
AR-1588TB-3

*Concave ABS Button*  
14 mm w/7 mm collar  
AR-1588TB-4

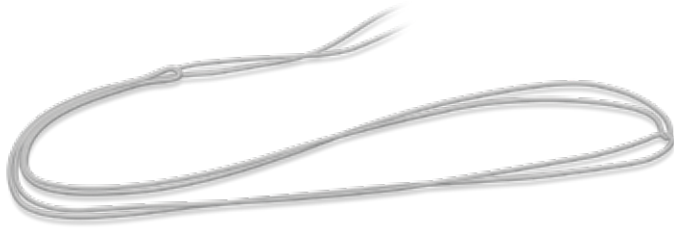
*Concave ABS Button*  
20 mm w/9 mm collar  
AR-1588TB-5

## References

1. Smith PA, DeBerardino TM. Tibial fixation properties of a continuous-loop ACL hamstring graft construct with suspensory fixation in porcine bone. *J Knee Surg.* 2015;28(6):506-512. doi:10.1055/s-0034-1394167.
2. Smith PA, Stannard JP, Pfeiffer FM, et al. Suspensory versus interference screw fixation for arthroscopic anterior cruciate ligament reconstruction in a translational large-animal model. *Arthroscopy.* 2016;32(6):1086-1097. doi:10.1016/j.arthro.2015.11.026.

## Graft Options

TightRope® ABS fixation can be used in conjunction with any graft type. The TightRope ABS loop allows fixation of grafts that can be passed around a closed loop (hamstrings) or sutured to the graft (quad tendon). The Open TightRope ABS construct can be assembled around closed-end grafts such as BTB and presutured GraftLink® allografts.



*TightRope ABS Loop*



*Open TightRope ABS Loop*

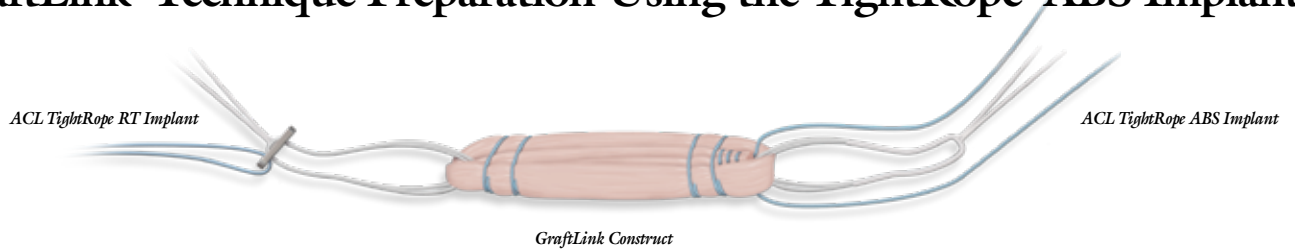
*Autograft Hamstring  
GraftLink Construct*

*Quad Tendon With  
FiberTag™ Suture*

*Patellar Tendon  
Construct*

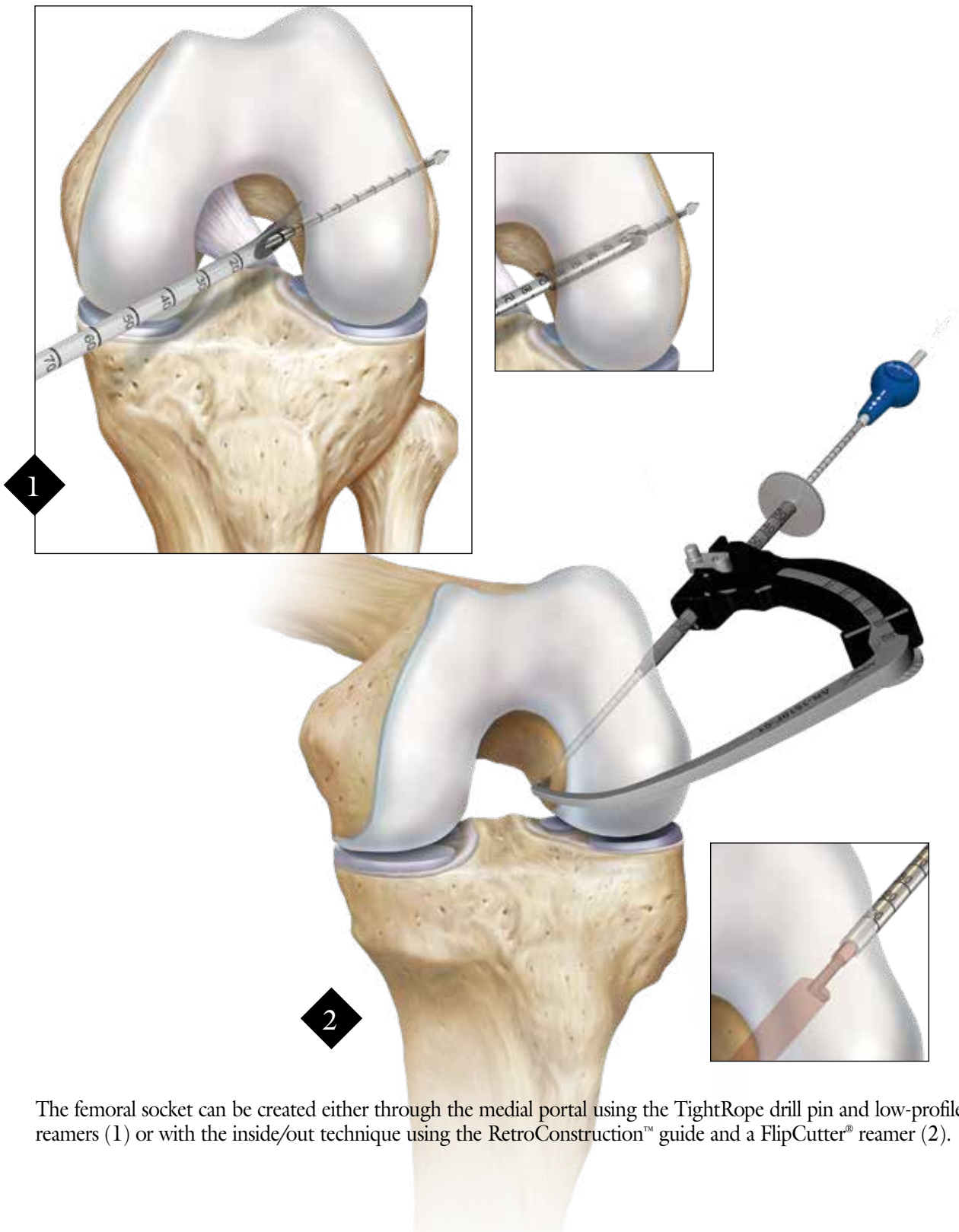
*Presutured Allograft  
GraftLink Construct*

# GraftLink® Technique Preparation Using the TightRope® ABS Implant

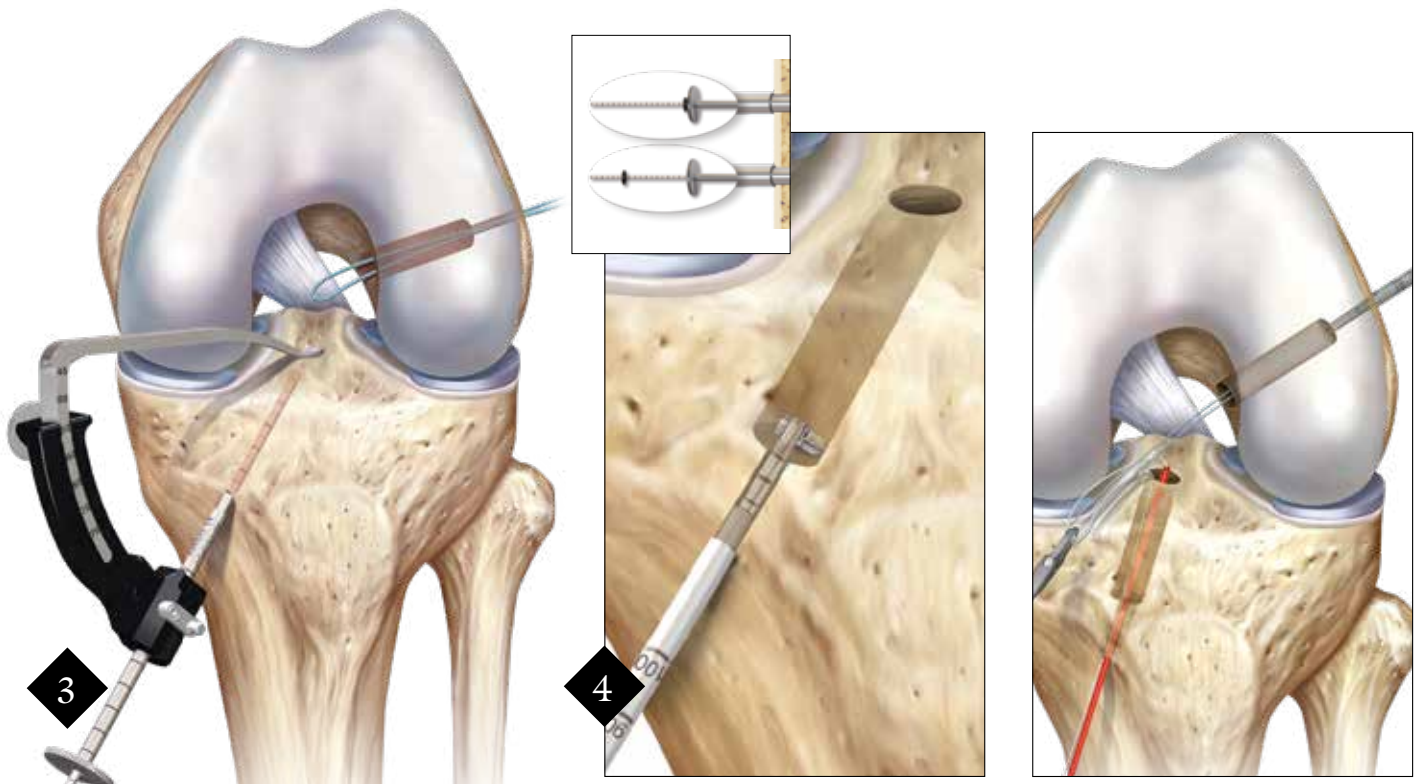


Prepare the GraftLink construct with a single semitendinosus graft as described in the GraftLink technique guide (LT1-0157-EN). Load an ACL TightRope RT implant on the femoral side and a TightRope ABS implant on the tibial side. Size the femoral and tibial graft diameters for socket preparation and size the overall graft length to ensure appropriate socket depth.

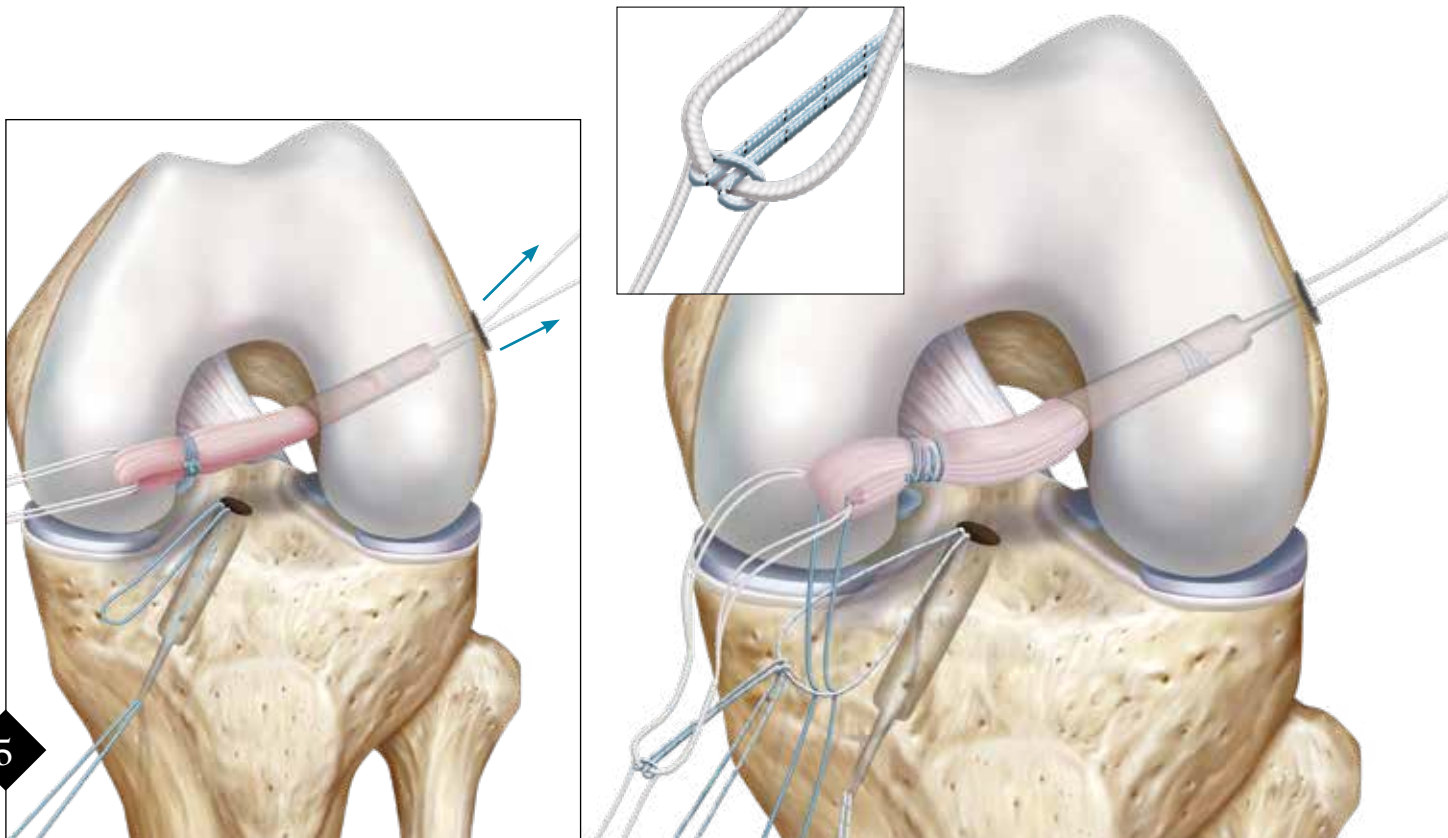
## Bone Socket Creation



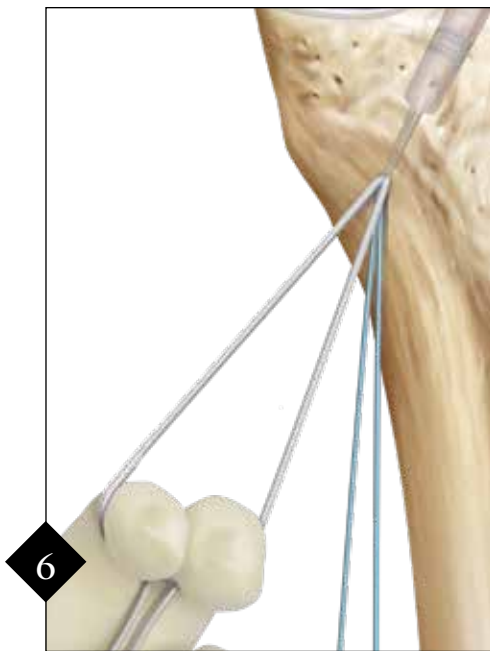
The femoral socket can be created either through the medial portal using the TightRope drill pin and low-profile reamers (1) or with the inside/out technique using the RetroConstruction™ guide and a FlipCutter® reamer (2).



A tibial socket can be prepared with the Short FlipCutter® II reamer and the side-release RetroConstruction guide. FlipCutter reamers create socket diameters from 6 mm-13 mm while only leaving a small perforation through the cortex. Use a FiberStick™ suture to shuttle the graft retrograde into the socket.

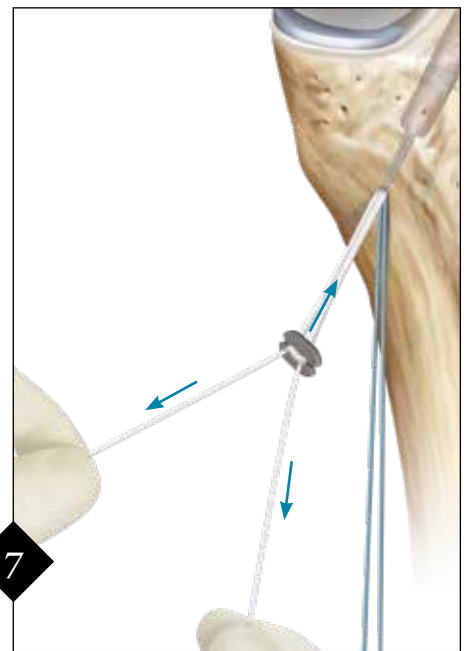
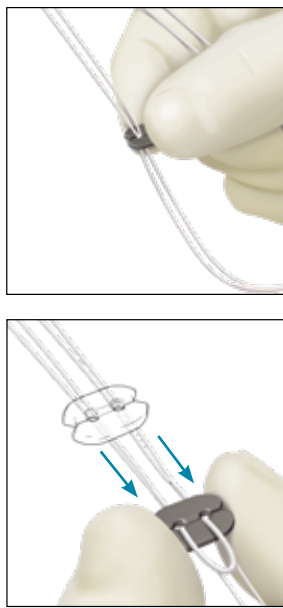


Pass the femoral ACL TightRope® RT implant. Pull on the femoral shortening strands to advance the graft into the femoral socket. Place a shuttle suture into the TightRope ABS implant and pass the suture through the tibia.



6

Pull the TightRope® ABS implant out of the tibia. Pull on the inside of the implant to pass the tibial side of the graft. Pass the strands of the TightRope ABS implant into the slots of the TightRope ABS button. Slide the button down to the end of the implant.



7

Pull on each of the tensioning strands alternately to slide the button down to bone. Place the backup FiberWire® sutures into the buttons slots as well. Place the knee in the desired amount of flexion and pull on the tensioning strands for final tensioning of the graft.



8

Cycle the knee and recheck tension. Retension if necessary. When tensioning is complete, a knot may be tied over the button for backup fixation. Cut the tensioning strands, leaving at least a 1 cm tail.

## Ordering Information

### Implants

ACL TightRope ABS Button	AR-1588TB
TightRope ABS Button, round	AR-1588TB-1
TightRope ABS Button, oblong	AR-1588TB-2
Concave ABS Button, 11 mm w/ 4 mm Collar	AR-1588TB-3
Concave ABS Button, 14 mm w/ 7 mm Collar	AR-1588TB-4
Concave ABS Button, 20 mm w/ 9 mm Collar	AR-1588TB-5
ACL TightRope ABS Implant	AR-1588TN
Open TightRope ABS Implant	AR-1588TN-1
ACL TightRope RT Implant	AR-1588RT
Double-Loaded TightRope RT Implant w/Short FlipCutter® Kits, 7 mm -11 mm	AR-1288-70 - 110
Double-Loaded BTB TightRope Implant w/Short FlipCutter Kits, 7 mm-11 mm	AR-1288BTB-70 -110
Autograft GraftLink® Convenience Pack	AR-1588AU-CP

### TightRope ABS Tibial Fixation Kits

TightRope ABS Implant w/ 11 mm Concave ABS Button	AR-1588TN-2
TightRope ABS Implant w/ 14 mm Concave ABS Button	AR-1588TN-3
TightRope ABS Implant w/ 20 mm Concave ABS Button	AR-1588TN-4

### Instruments

#### For FlipCutter Technique

RetroConstruction™ Drill Guide Set	AR-1510S
Short FlipCutter II Reamers, 5 mm -13 mm	AR-1204AS-50 - 130

#### For Medial Portal Technique

Transportal ACL Guides, 4 mm -8 mm	AR-1800-04 - 08
Low Profile Reamers, 5 mm-11 mm	AR-1405LP - AR-1411LP
ACL TightRope Drill Pin	AR-1595T

### Accessories

Suture Retriever	AR-12540
Suture Cutter, 4.2 mm, straight	AR-12250
Graft Tube Set	AR-1886-S
GraftPro® Graft Preparation System	AR-2950DS

### Suture

#2 FiberLoop® Suture w/Straight Needle	AR-7234
#2 TigerLoop™ Suture w/Straight Needle, w/TigerWire® Suture	AR-7234T
0 FiberWire Suture, 38" (blue)	AR-7250
FiberStick™ Suture, #2 FiberWire Suture, 50"	AR-7209
TigerStick® Suture, #2 TigerWire Suture, 50"	AR-7209T
#2 FiberWire Suture, w/2 Straight Needles	AR-7246-02



*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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