



GraftLink™ All-Inside® ACL Reconstruction
with ACL TightRope® ABS

Surgical Technique



GraftLink All-Inside ACL

GraftLink Minimally Invasive ACL Reconstruction

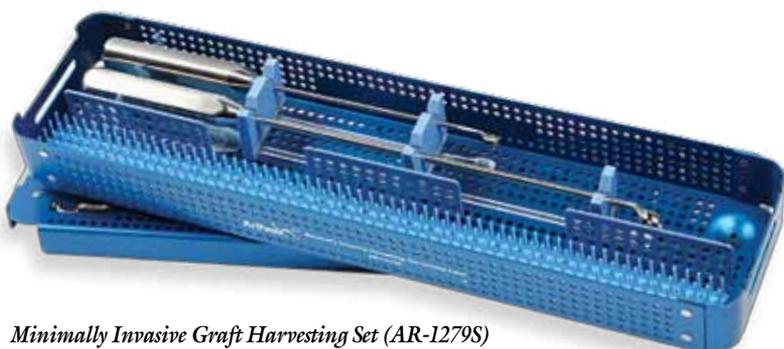
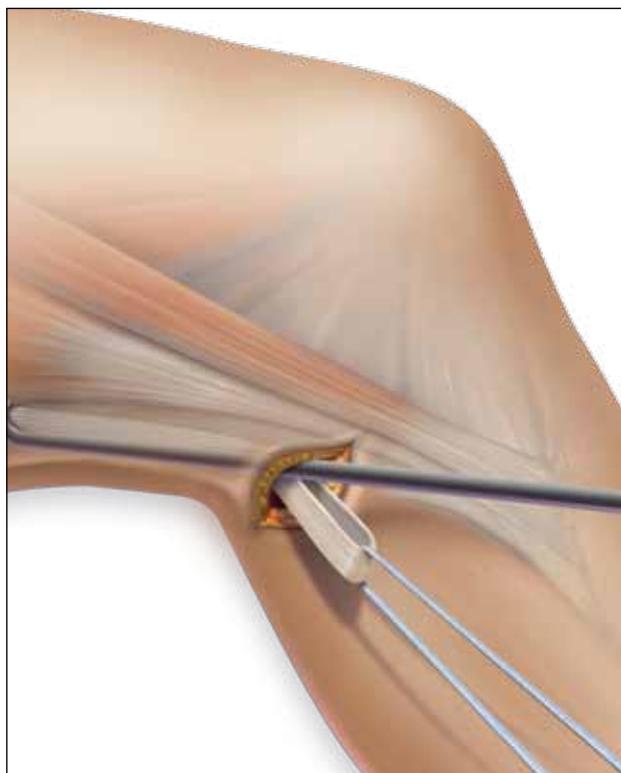
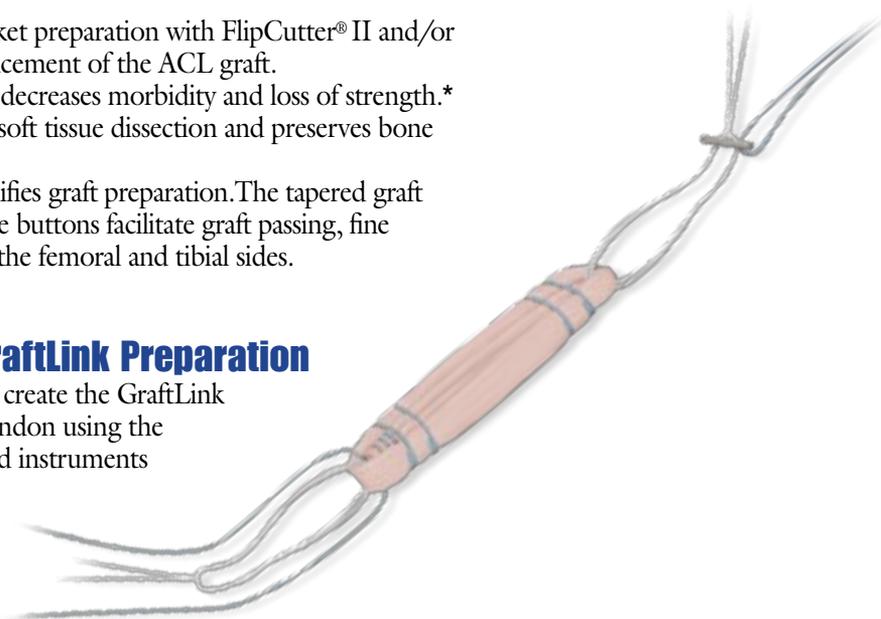
The GraftLink technique provides the ultimate in anatomic, minimally invasive and reproducible ACL reconstruction.

- **Anatomic** – Independent tibial and femoral socket preparation with FlipCutter® II and/or Low Profile Reamers facilitate unconstrained placement of the ACL graft.
- **Minimally Invasive** – Single hamstring harvest decreases morbidity and loss of strength.* Socket preparation with the FlipCutter II limits soft tissue dissection and preserves bone and periosteum.
- **Reproducible** – The GraftLink workstation simplifies graft preparation. The tapered graft and adjustable femoral and tibial ACL TightRope buttons facilitate graft passing, fine tuning of graft depth and graft tensioning from the femoral and tibial sides.

Semitendinosis Harvesting and GraftLink Preparation

In most cases only the semitendinosis is needed to create the GraftLink construct. For a less invasive option, harvest the tendon using the minimally invasive hamstring harvest technique and instruments described in technique guide LT0124.

*Data on file



Minimally Invasive Graft Harvesting Set (AR-1279S)

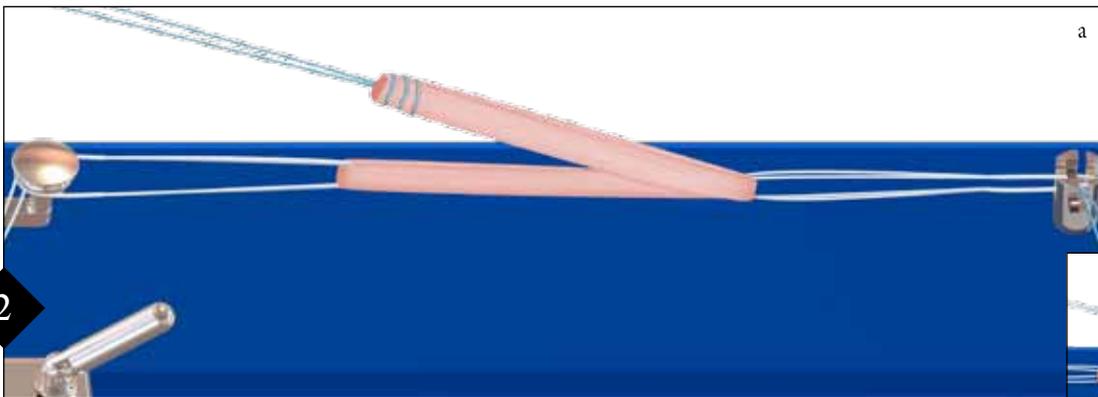


Graft Preparation



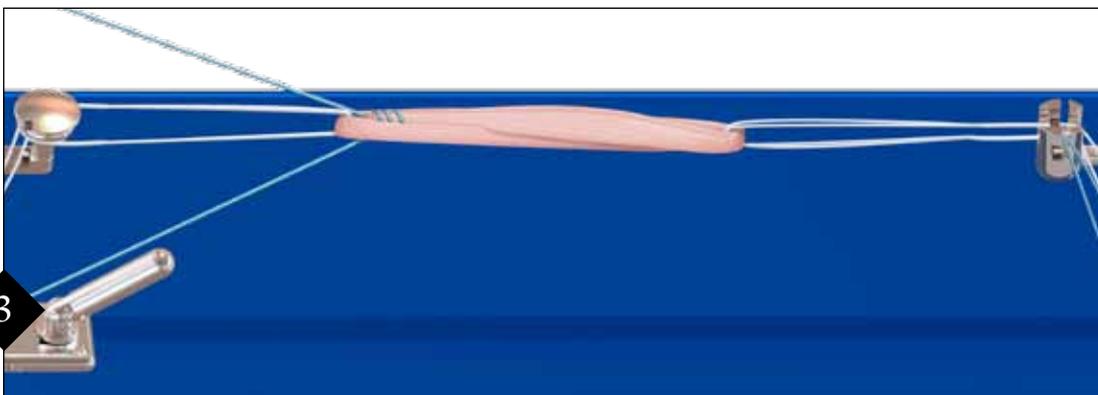
1

The GraftLink Graft Prep Attachments are placed on the base and the ACL TightRope implants are loaded into the attachments. The distance between TightRope loop ends is measured. This distance should equal 10 mm less than the desired final graft length. *In this example, a TightRope is used for femoral fixation and a TightRope ABS is used for tibial fixation. Alternatively, a TightRope RT may be used for tibial fixation.*



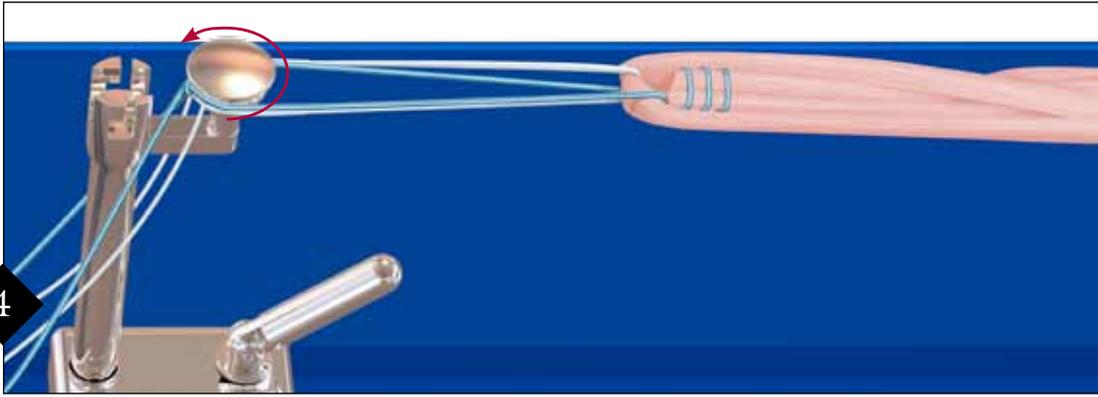
2

The overall graft length is measured. *Note: a length of 27 cm will yield a four-stranded GraftLink of at least 7 cm, which will provide at least 20 mm of graft in the femoral and tibial sockets.* Load the graft through the implants by folding it symmetrically over the loops. Stitch both graft ends together with a single #2 FiberLoop after passing the graft through ACL TightRopes (a). Alternatively, stitch approximately 2 cm of each graft end with one #2 FiberLoop and one #2 TigerLoop (b).



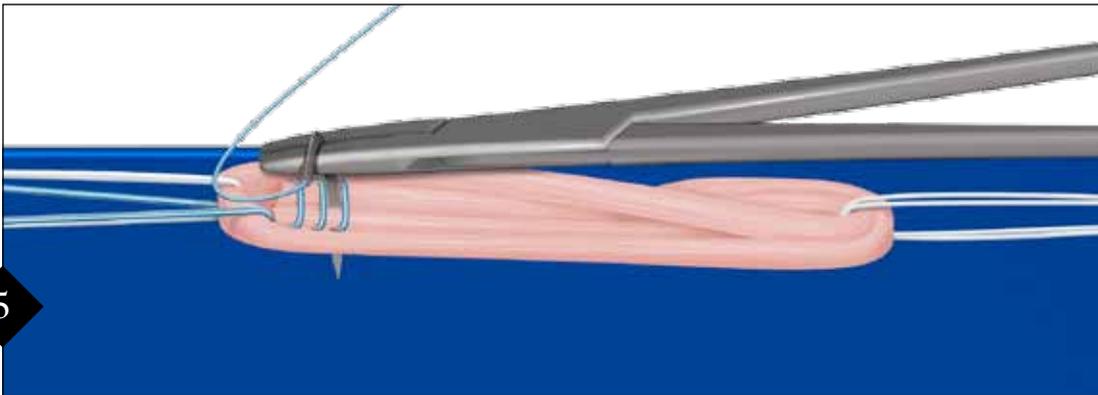
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Pass one tail of each whipstitch over the graft loop and the other under the graft loop. This will ensure that the tails of the graft are tucked inside the loop during tensioning, which will facilitate tapering of ends and uniform thickness of the graft.



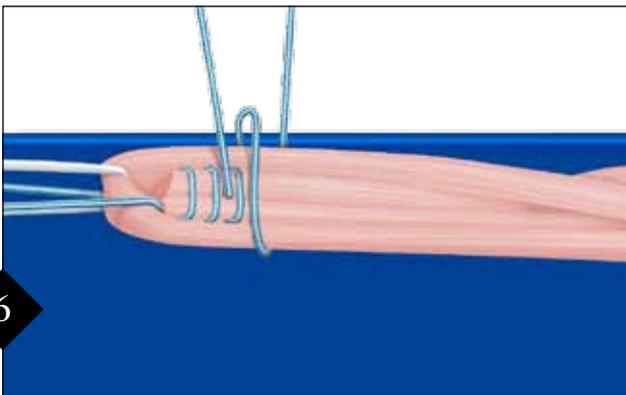
4

Once the graft is folded appropriately and the desired length is obtained, wrap the whipstitch sutures around the post to hold the construct in place.

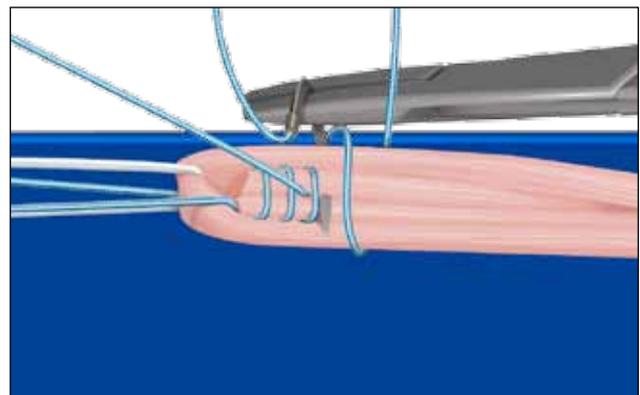


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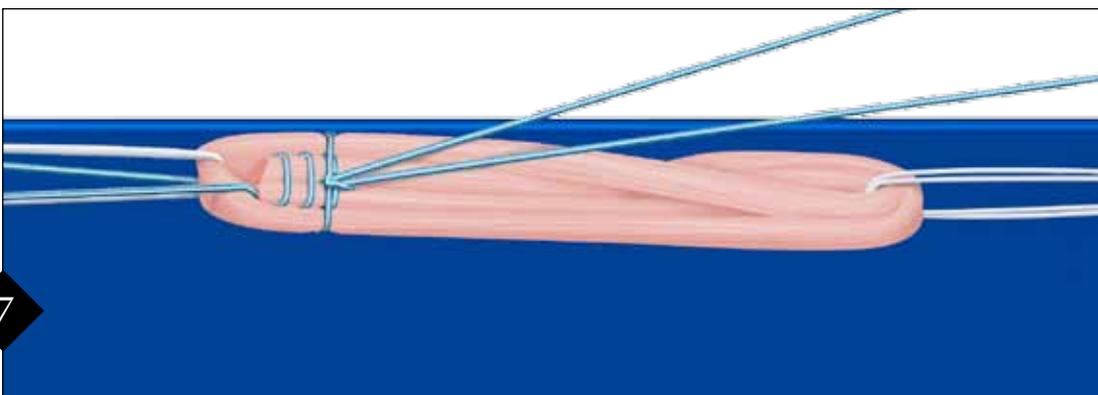
The first stitch may now be placed. Using a “buried knot” technique, start from the inside of the graft and place the needle through the first two graft limbs.



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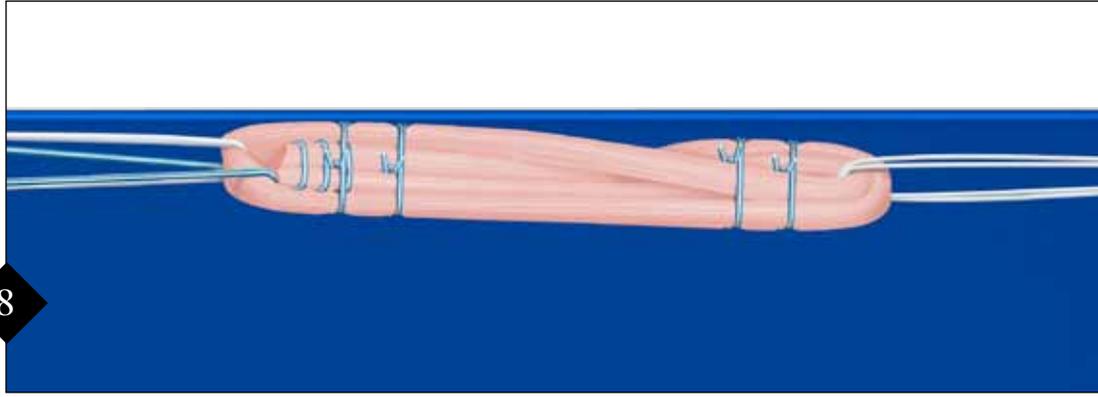


Wrap the suture around the graft then place the needle through the second set of graft limbs from outside/in.



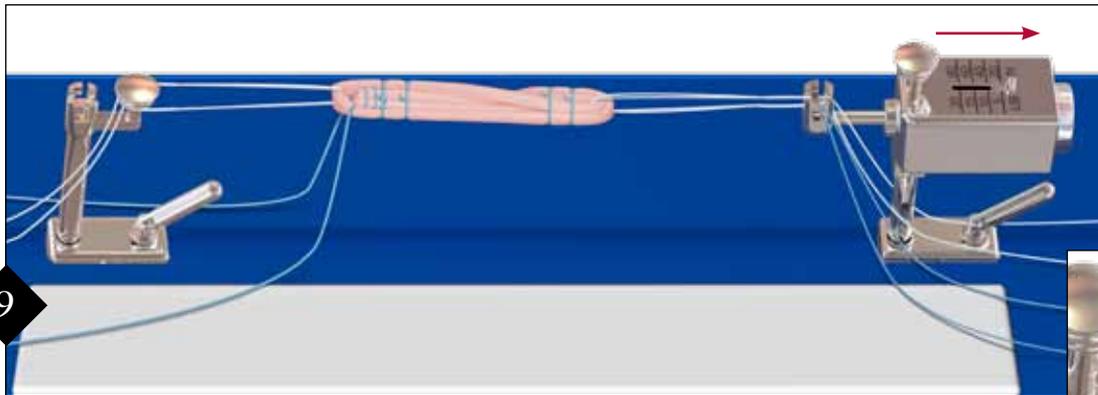
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Tension the suture and tie a knot to secure the stitch.



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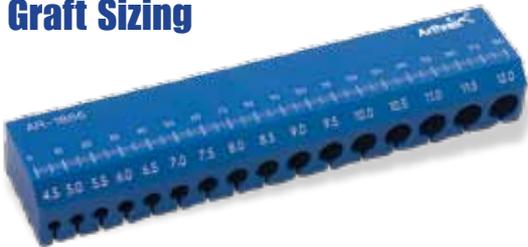
This may be repeated on either end of the graft for a total of two stitches on each end.



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The GraftLink Graft Prep Attachments may now be used for tensioning by simply pulling on one side until the desired tension is obtained, as read on the tensiometer. The FiberLoop whipstitch sutures may be cut off or used as supplemental fixation.

Graft Sizing

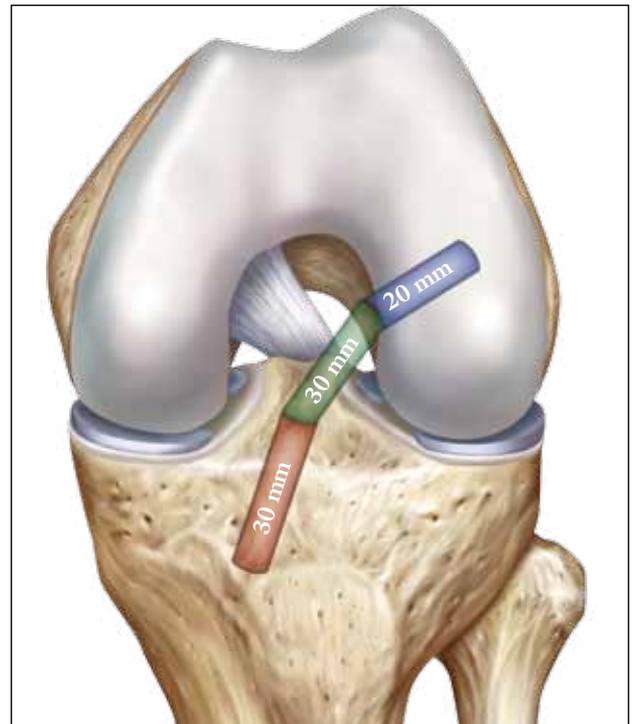


Measure the graft length and diameter. Pass both the femoral and tibial ends of the graft into the sizing block to measure diameter for socket drilling.

Socket Creation

The length from the end of the femoral socket to the end of the tibial socket should be at least 10 mm longer than the graft to ensure that the graft can be tensioned fully.

Example: 70 mm graft length



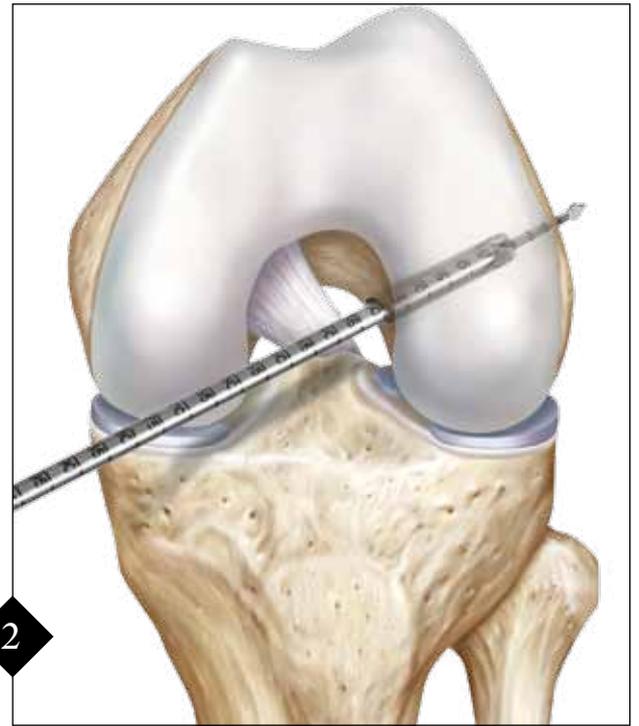
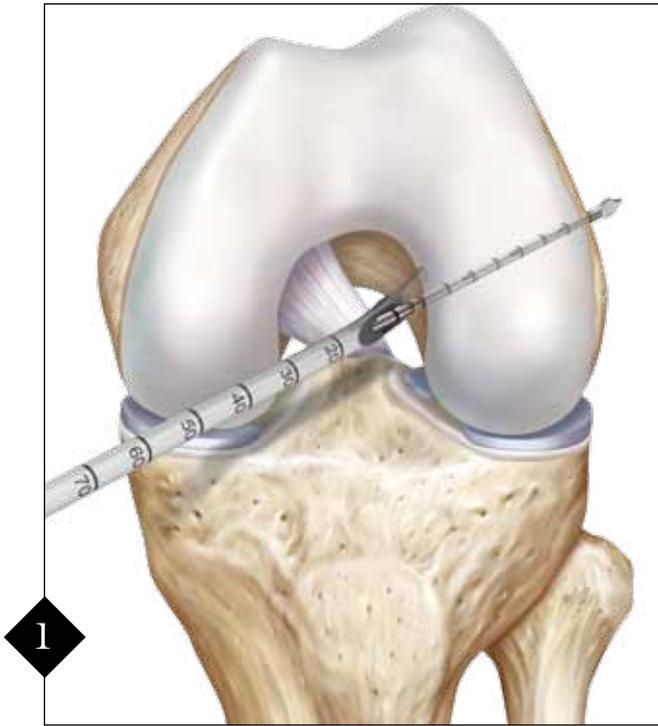
Assuming a maximum intraarticular length of 30 mm, there will be approximately 20 mm of graft in the femoral and tibial socket.

Drill the femur 20 mm deep and the tibia approximately 30 mm deep to allow an extra 10 mm for tensioning.

Femoral Socket Preparation

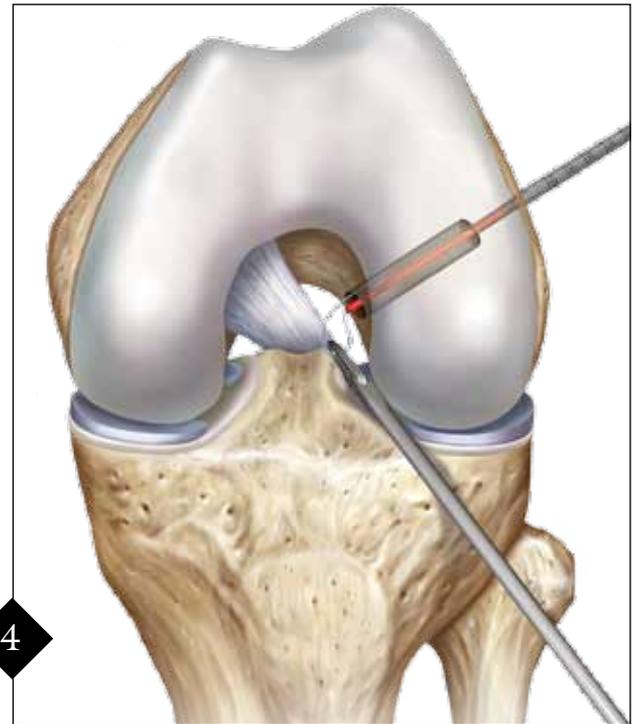
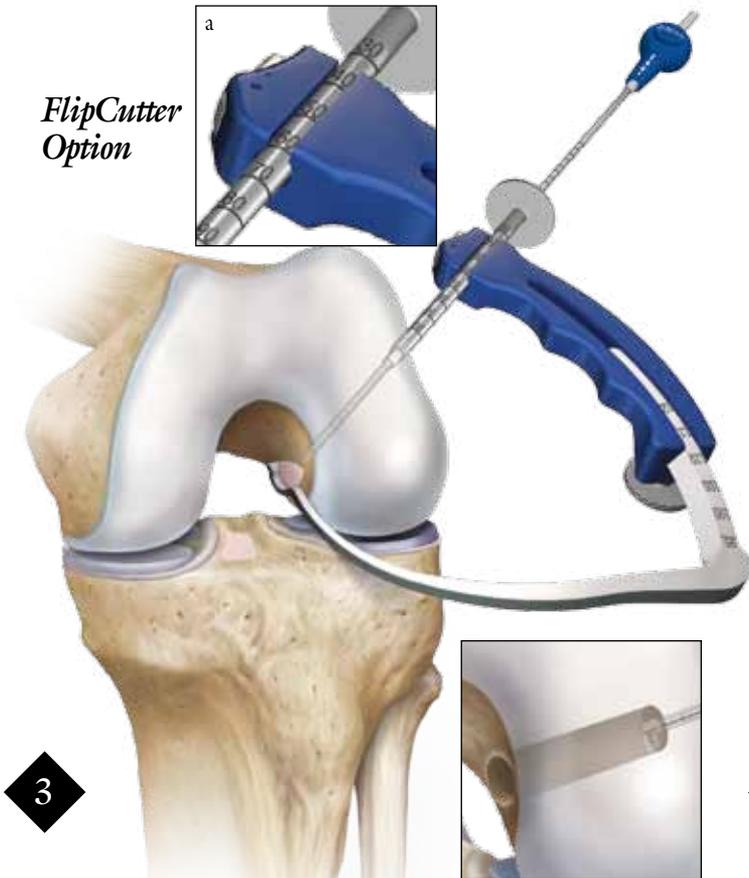
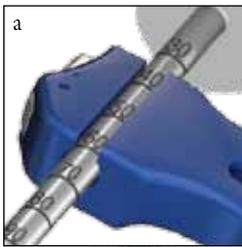
The femoral socket should be created either through the medial portal or from outside/in, using a FlipCutter II.

Medial Portal Option



For medial portal drilling, use the TightRope Drill Pin, Transportal ACL Guides and Low Profile Reamers. Note the intraosseous length from the TightRope Drill Pin. After socket drilling, pass a suture with the TightRope Drill Pin for later graft passing.

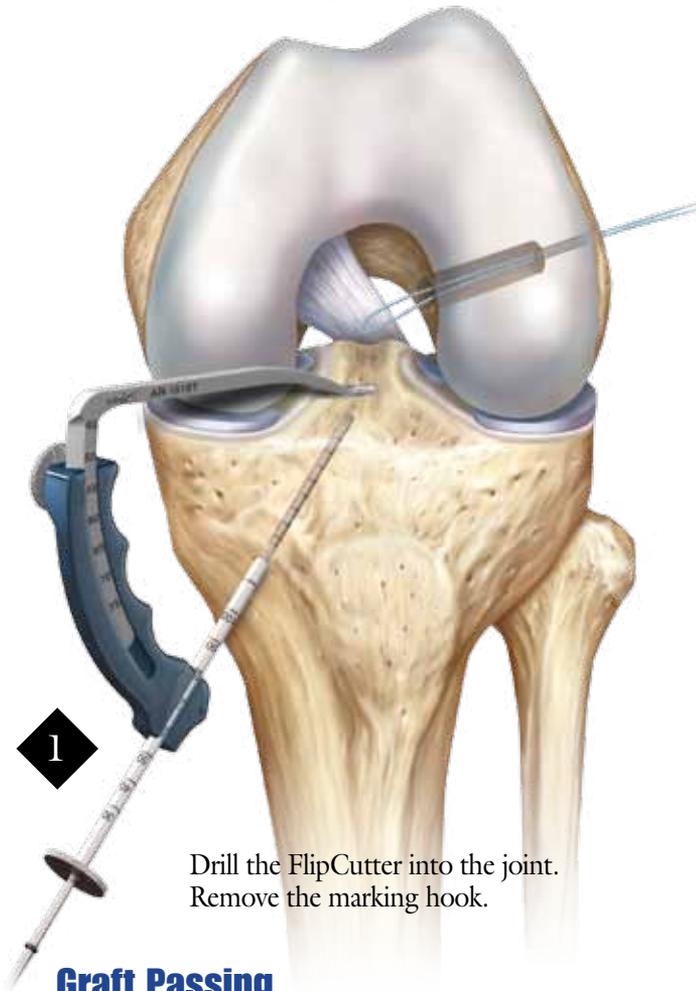
FlipCutter Option



The FlipCutter may also be used to create the femoral socket. Note the intraosseous length on the drill sleeve when pushed down to bone (a).

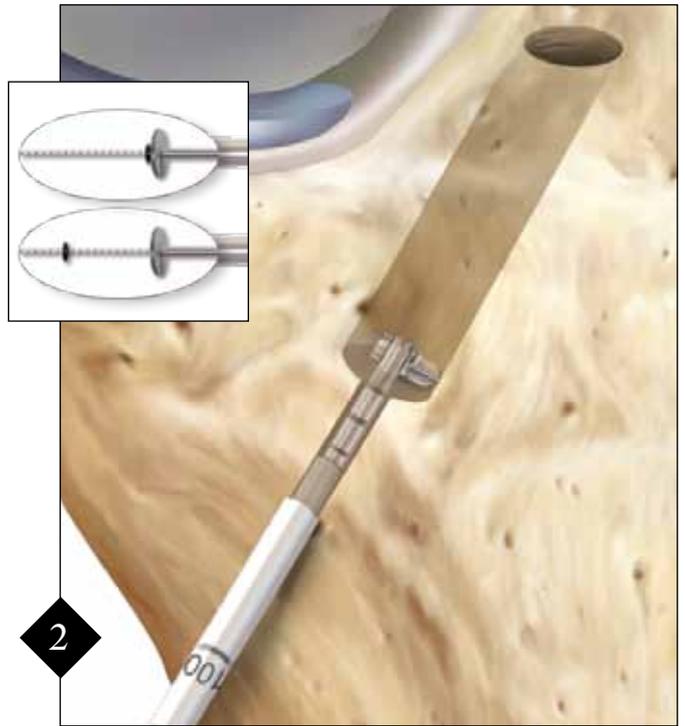
After “flipcutting”, pass a FiberStick™ suture through the Stepped Drill Sleeve and dock for later graft passing.

Tibial Socket Preparation

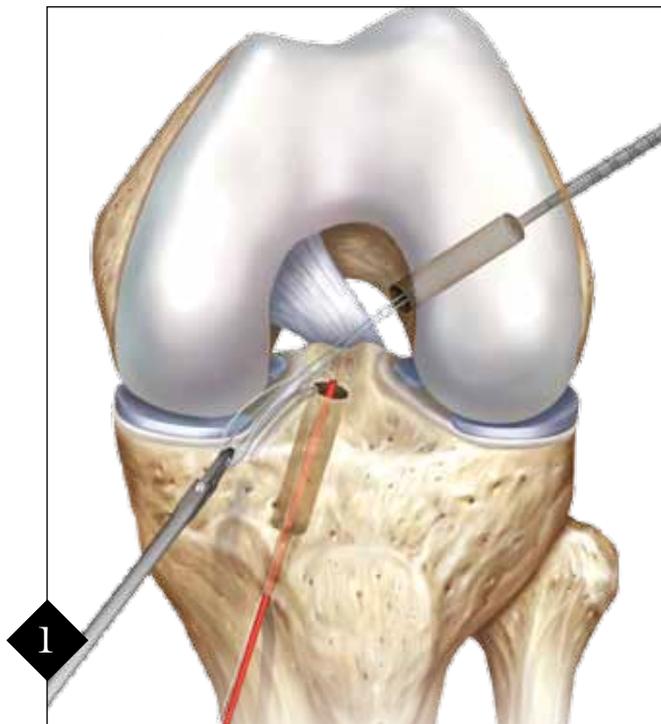


Drill the FlipCutter into the joint. Remove the marking hook.

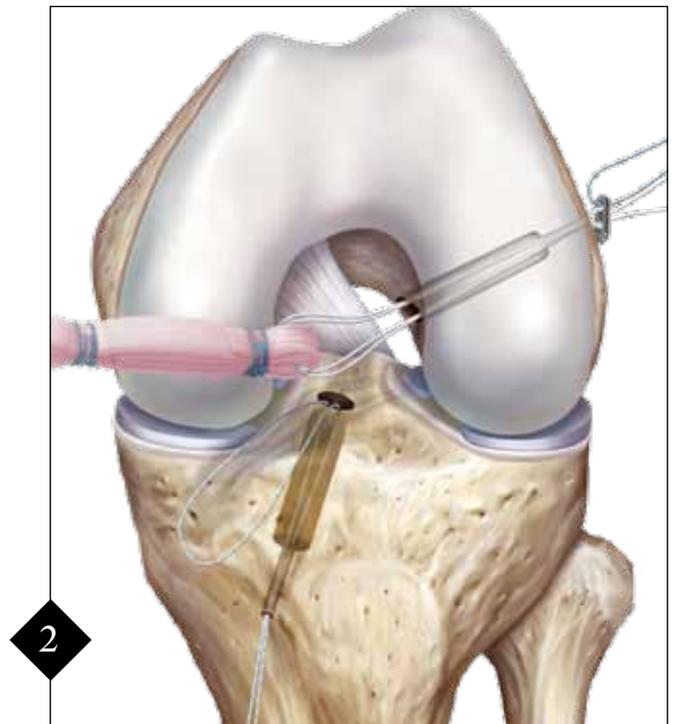
Graft Passing



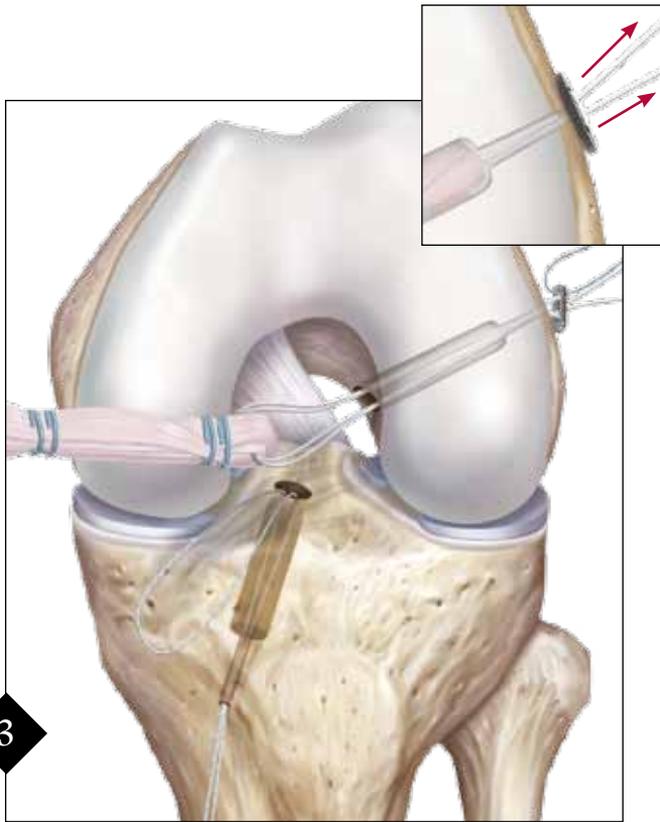
Flip the blade and lock into cutting position. Drill on forward, with distal traction, to cut the socket. Use the rubber ring and 5 mm markings on the FlipCutter to measure socket depth (inset).



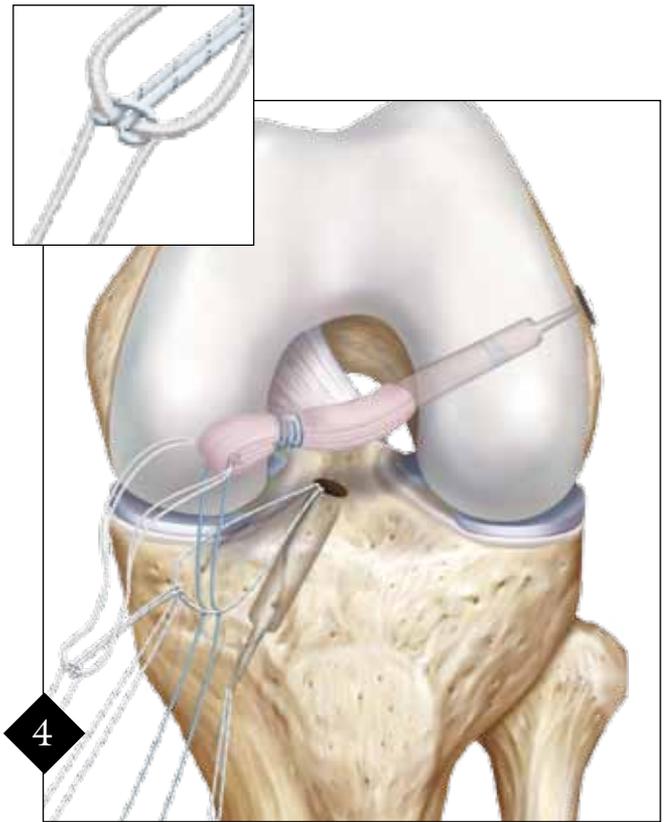
Straighten the FlipCutter blade and remove from the joint. Pass a TigerStick® into the joint and retrieve both the tibial TigerStick and the femoral FiberStick out the medial portal together with an open Suture Retriever. Retrieving both sutures at the same time will help avoid tissue interposition that can complicate graft passing.
Note: A PassPort Button Cannula™ may also be used in the medial portal to prevent tangling.



Pass the blue button suture and the white shortening strands through the femur. Remove slack from sutures and ensure equal tension. Clamp or hold both blue and white sutures together and pull them together to advance the button out of the femur. Use markings on the loop and arthroscopic visualization of the button to confirm exit from the femoral cortex. Pull back on the graft to confirm the button is seated.



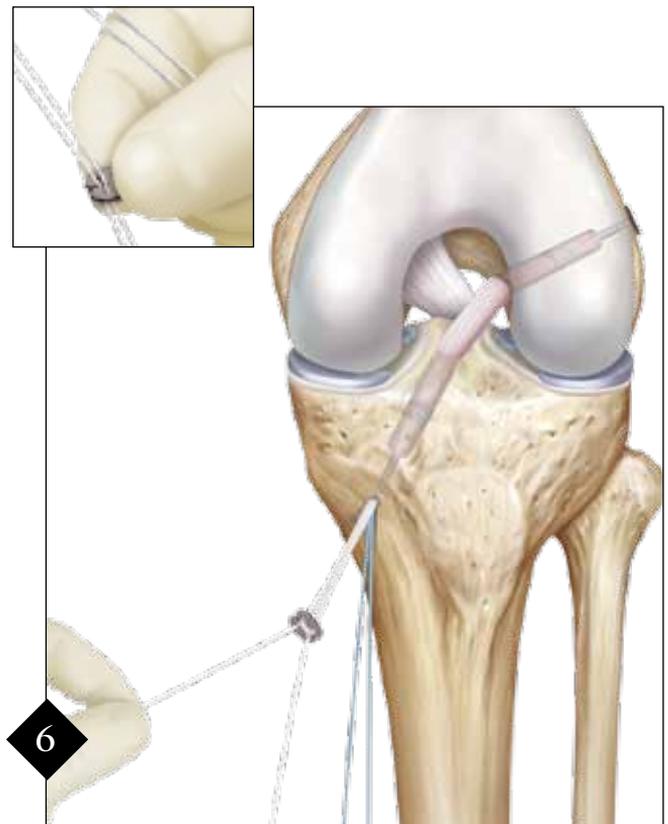
While holding slight tension on the graft, pull the shortening strands proximally, one at a time to advance the graft. Pull on each strand in 2 cm increments. *Note: The graft can be fully seated into the femur or left partially inserted until tibial passing is complete. The latter option allows fine tuning of graft depth in each socket.*



Cinch a suture around the end of the TightRope ABS loop to use for passing (inset). Load the cinch suture and the whipstitch tails from the graft into the tibial passing suture. Pull distally on the tibial passing suture to deliver both the TightRope ABS loop and the whipstitch sutures out of the tibia distally.



Advance the graft into the tibia by pulling on the inside of the ABS loop and whipstitch sutures.

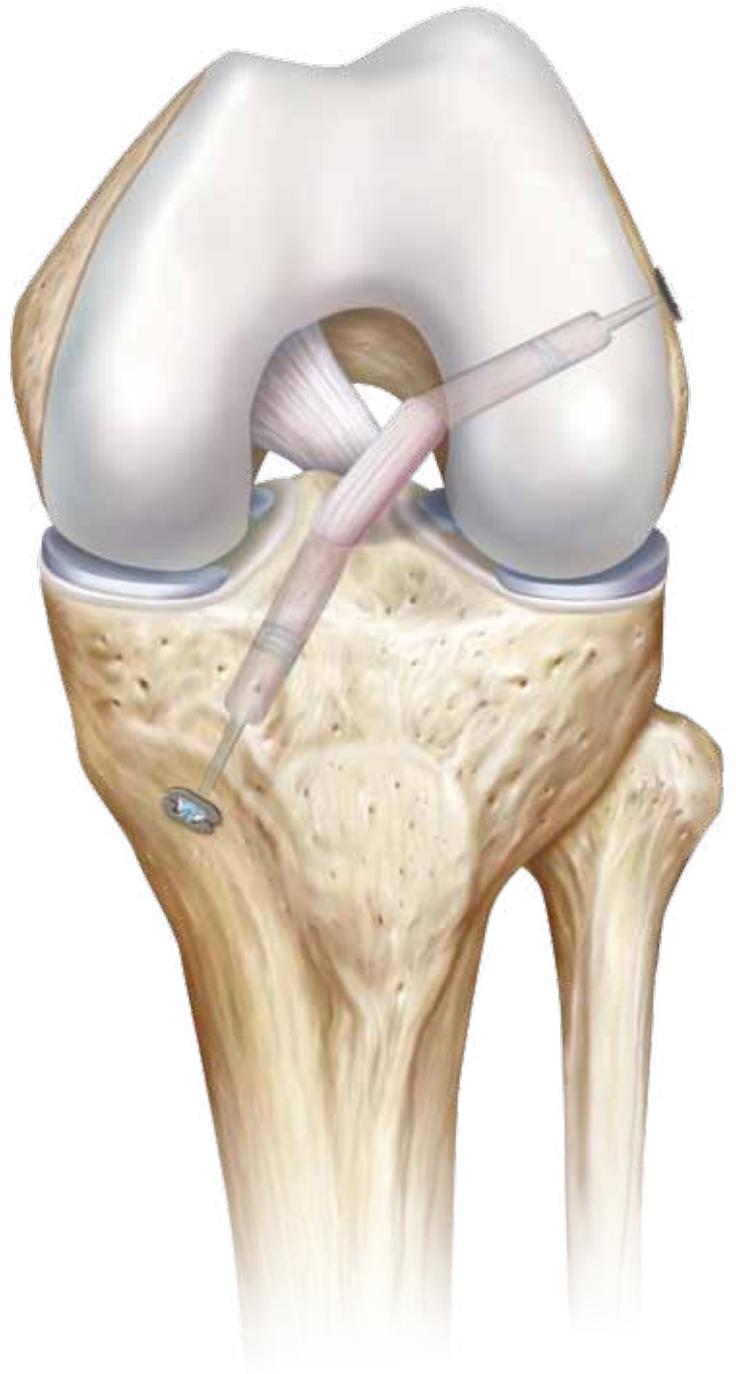


Load the TightRope ABS Button onto the loop. Pull on the white shortening strands to advance the button to bone and tension graft. *Note: Ensure the button has a clear path to bone, as to not entrap soft tissue under the button.*



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Load the whipstitch sutures into the button and tie a knot for backup fixation.



Ordering Information

Implants:

ACL TightRope RT	AR-1588RT
TightRope ABS	AR-1588TN
TightRope ABS Button	AR-1588TB
ACL TightRope Convenience Pack	AR-1588RTS

Instruments:

For FlipCutter Technique:

RetroConstruction Drill Guide Set	AR-1510S
Footprint Femoral ACL Guide, right	AR-1510FR
Footprint Femoral ACL Guide, left	AR-1510FL
FlipCutter II, 6 mm	AR-1204AF-60
FlipCutter II, 6.5 mm	AR-1204AF-65
FlipCutter II, 7 mm	AR-1204AF-70
FlipCutter II, 7.5 mm	AR-1204AF-75
FlipCutter II, 8 mm	AR-1204AF-80
FlipCutter II, 8.5 mm	AR-1204AF-85
FlipCutter II, 9 mm	AR-1204AF-90
FlipCutter II, 9.5 mm	AR-1204AF-95
FlipCutter II, 10 mm	AR-1204AF-100
FlipCutter II, 10.5 mm	AR-1204AF-105
FlipCutter II, 11 mm	AR-1204AF-110
FlipCutter II, 11.5 mm	AR-1204AF-115
FlipCutter II, 12 mm	AR-1204AF-120
FlipCutter II, 13 mm	AR-1204AF-130

For Medial Portal Technique:

Transportal ACL Guides (TPGs), 4 mm – 8 mm	AR-1800-04 – 08
Low Profile Reamer, 5 mm	AR-1405LP
Low Profile Reamer, 5.5 mm	AR-1405LP-50
Low Profile Reamer, 6 mm	AR-1406LP
Low Profile Reamer, 6.5 mm	AR-1406LP-50
Low Profile Reamer, 7 mm	AR-1407LP
Low Profile Reamer, 7.5 mm	AR-1407LP-50
Low Profile Reamer, 8 mm	AR-1408LP
Low Profile Reamer, 8.5 mm	AR-1408LP-50
Low Profile Reamer, 9 mm	AR-1409LP
Low Profile Reamer, 9.5 mm	AR-1409LP-50
Low Profile Reamer, 10 mm	AR-1410LP
Low Profile Reamer, 10.5 mm	AR-1410LP-50
Low Profile Reamer, 11 mm	AR-1411LP
Low Profile Reamer, 11.5 mm	AR-1411LP-50
Low Profile Reamer, 12 mm	AR-1412LP
Low Profile Reamer, 12.5 mm	AR-1412LP-50
Low Profile Reamer, 13 mm	AR-1413LP
TightRope Drill Pin, open	AR-1595T
TightRope Drill Pin, closed	AR-1595TC

Accessories:

Suture Retriever	AR-12540
Graft Sizing Block	AR-1886
Graft Prep Station Base	AR-2950
GraftLink Prep Attachment	AR-2951-1
GraftLink Prep Attachment with Tensioner	AR-2951-2
Suture Cutter for ACL TightRope	AR-4520

Suture:

0 FiberWire, 38" (blue) w/Tapered Needle, 22.2 mm 1/2 circle	AR-7250
FiberStick, #2 FiberWire, 50" (blue) one end stiffened	AR-7209
TigerStick, #2 TigerWire, 50" (white/black) one end stiffened	AR-7209T
#2 FiberLoop w/Straight Needle, 20" (blue), 76 mm needle w/7 mm loop	AR-7234
#2 TigerLoop w/Straight Needle, 20" w/TigerWire (white/green), 76 mm needle w/7 mm loop	AR-7234T

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.



U.S. PATENT NOS. 6,716,234; 7,029,490; 7,147,651 and PATENT PENDING

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