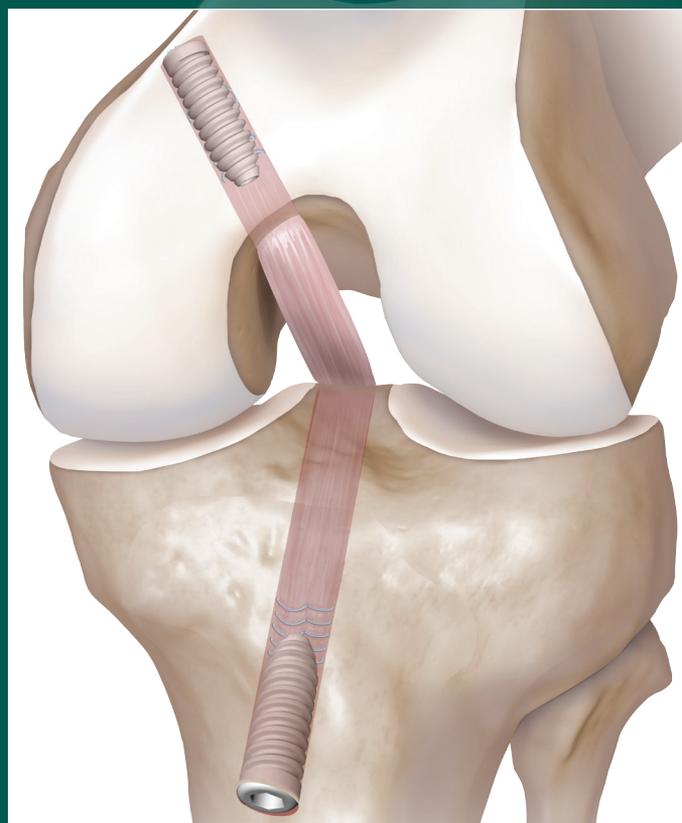




Transtibial PCL Reconstruction

Surgical Technique



# Transtibial PCL Reconstruction



The Arthrex Transtibial PCL Reconstruction System includes unique features helping to protect posterior neurovascular structures during tibial tunnel drilling.

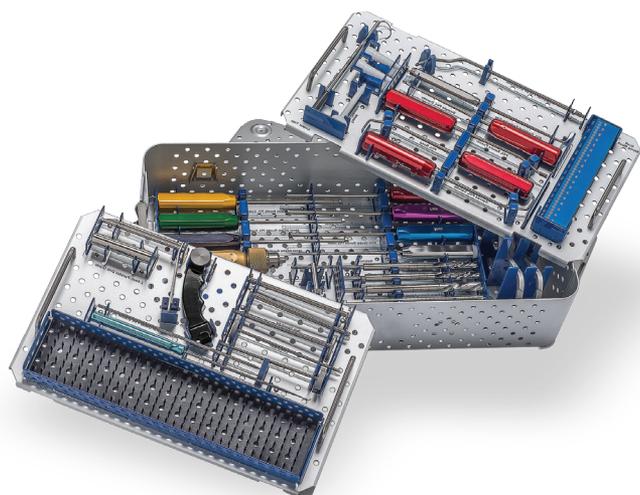
Tunnel placement can be accurately positioned using instrumentation that references distances from anatomical constants on the tibia and femur.

Graft passing has been simplified by using curving suture passers to bring the graft-passing sutures into the joint when introducing the graft through the tibial tunnel.

Recent literature describes a significant interaction between the posterior cruciate ligament (PCL) and the posterolateral corner (PLC).<sup>1</sup> It is important to note that a significant number of PCL injuries involve combined injuries to the PLC.<sup>2,3</sup>

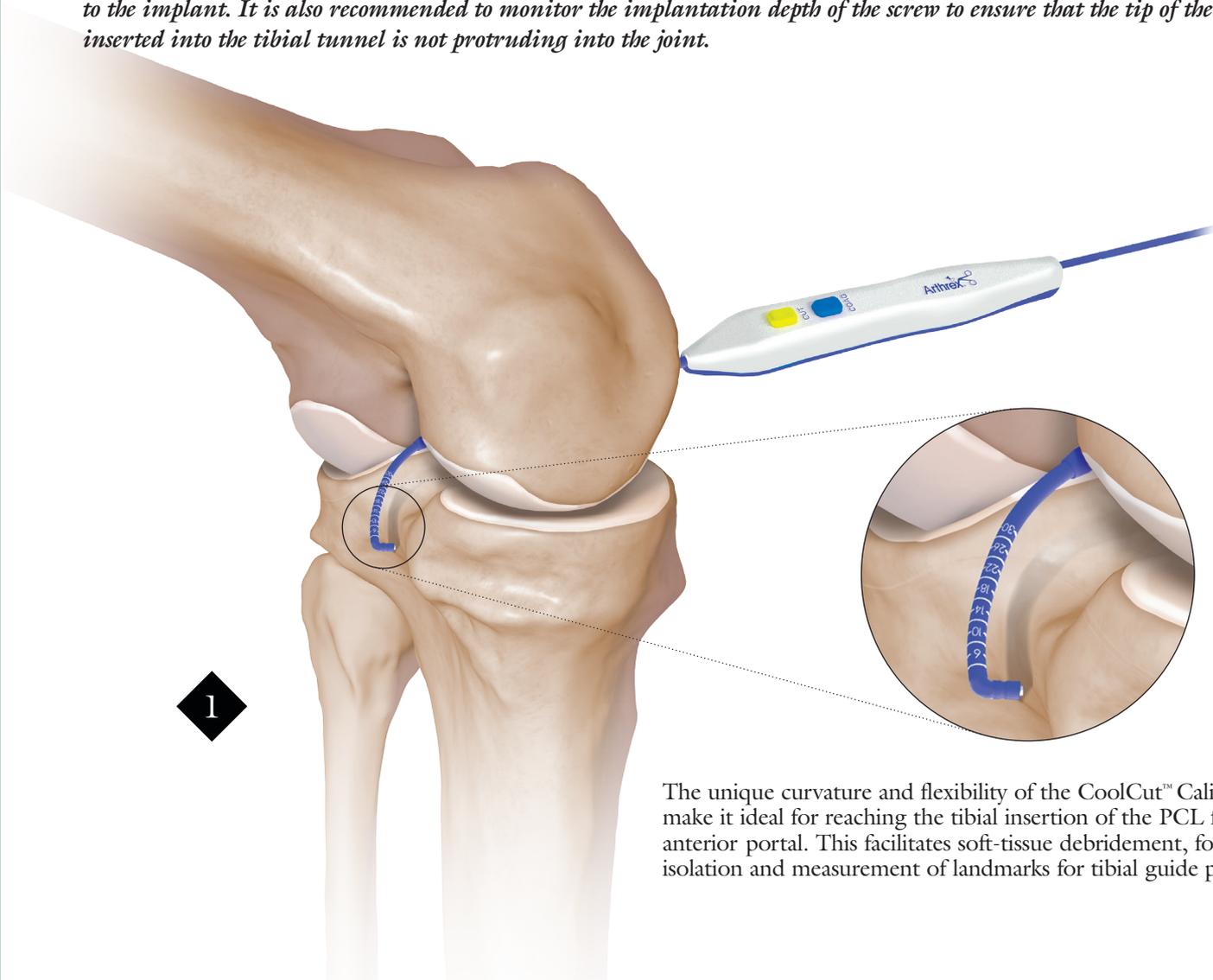
This PCL reconstruction technique relates to the correct usage of the specific PCL instrumentation presented and does not attempt to provide the entire medical indications or surgical criteria for performing this procedure.

In preparation for tibial tunnel guide pin placement, adequate visualization of the posterior aspect of the tibial plateau with a 30° or 70° arthroscope down to the insertion of the PCL should be performed.



PCL Cruciate Reconstruction ToolBox – AR-1296S

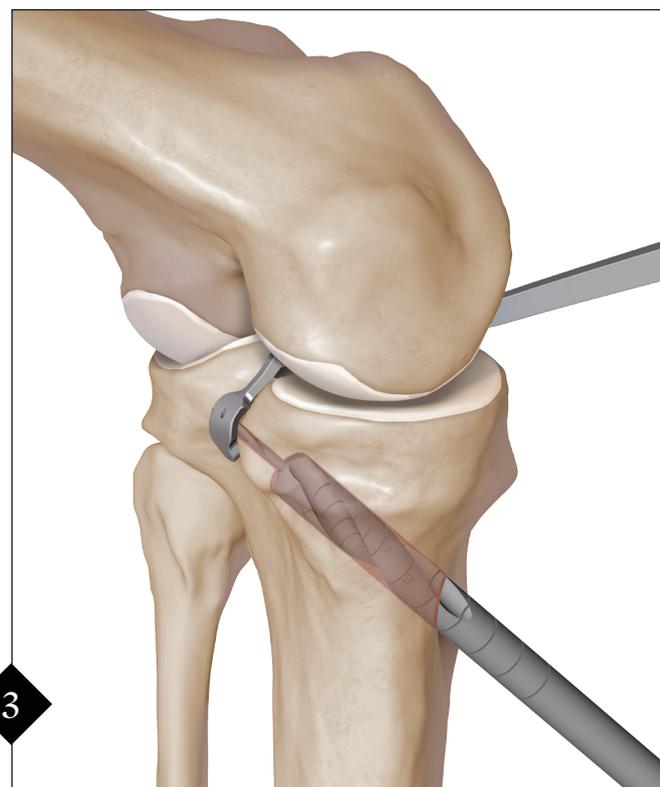
*Note: Proper technique must be followed to ensure adequate tunnel/socket and aperture preparation. Deviating from the technique may cause excessive torque on the screw during implantation and lead to damage to the graft or damage to the implant. It is also recommended to monitor the implantation depth of the screw to ensure that the tip of the screw inserted into the tibial tunnel is not protruding into the joint.*



The unique curvature and flexibility of the CoolCut™ CaliBlator make it ideal for reaching the tibial insertion of the PCL from an anterior portal. This facilitates soft-tissue debridement, footprint isolation and measurement of landmarks for tibial guide pins.

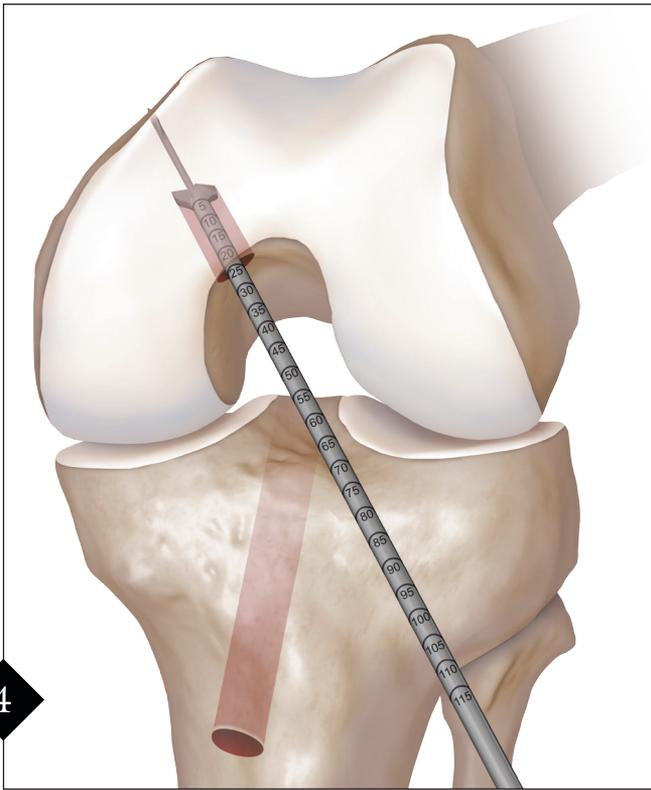


Place the tibial Anatomic Contour PCL Guide through the AM portal and, using the over-the-back hook, grasp the distal edge of the posterior facet for tactile feedback. The wide, convex paddle tip helps position the guide properly in the coronal plane, between the mamillary bodies. In this position, the pin is guided to the appropriate exit point in the sagittal plane. Fluoroscopy may be used to confirm placement. The Drill Sleeve is pushed against bone and the intraosseous distance is noted where the Drill Sleeve exits the guide, in this case, 70 mm. This measurement can be used to reference the pin depth during drilling.



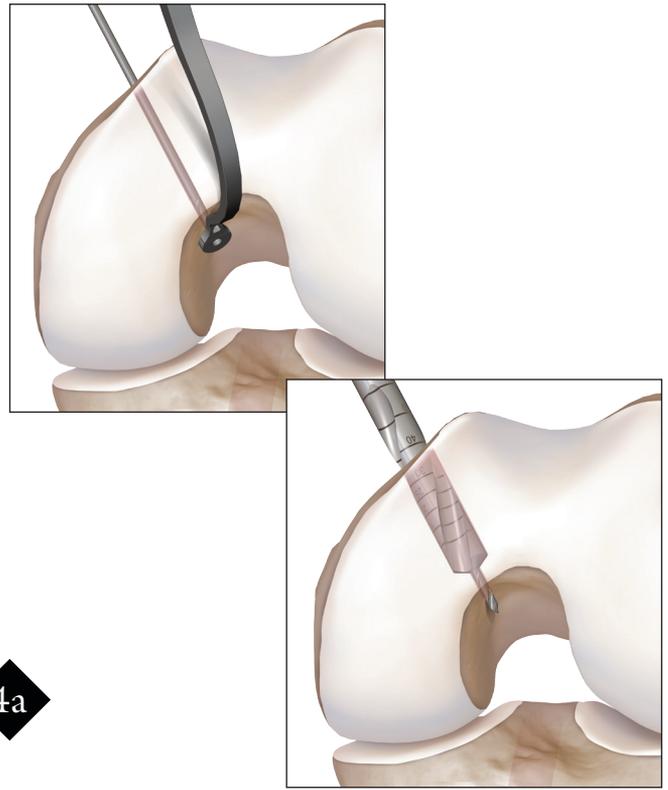
In this position, the pin is guided to the appropriate exit point in the sagittal plane. Fluoroscopy may be used to confirm placement.

With the 2.4 mm guide pin and Anatomic Contour PCL Guide in place, the appropriate size Cannulated Drill is used to ream over the 2.4 mm guidewire.



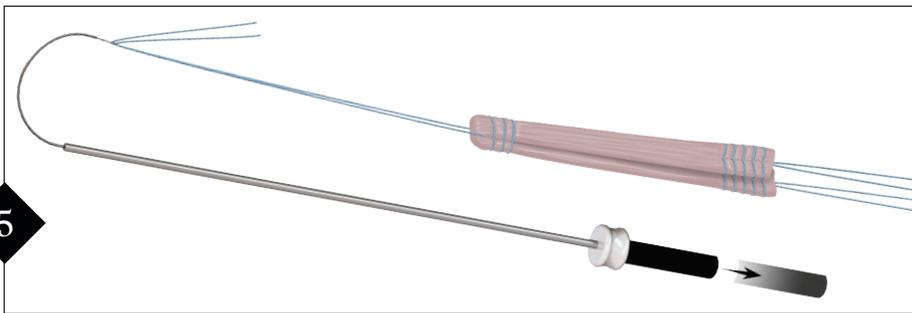
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The femur is drilled through an accessory anterolateral portal (distal and lateral to the standard anterolateral portal) using a Low Profile Reamer (a). A Double Bundle PCL Guide (b) can be used for placement against the superior inner wall of the medial femoral condyle.



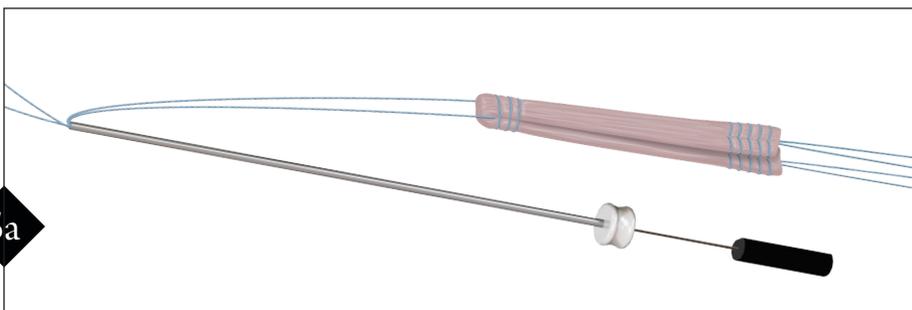
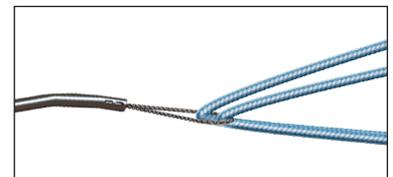
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*Alternatively:*  
The Femoral PCL Marking Hook for RetroConstruction Guide (c) and a Cannulated Drill (d) can be used with an outside/in technique.



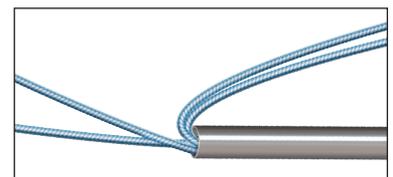
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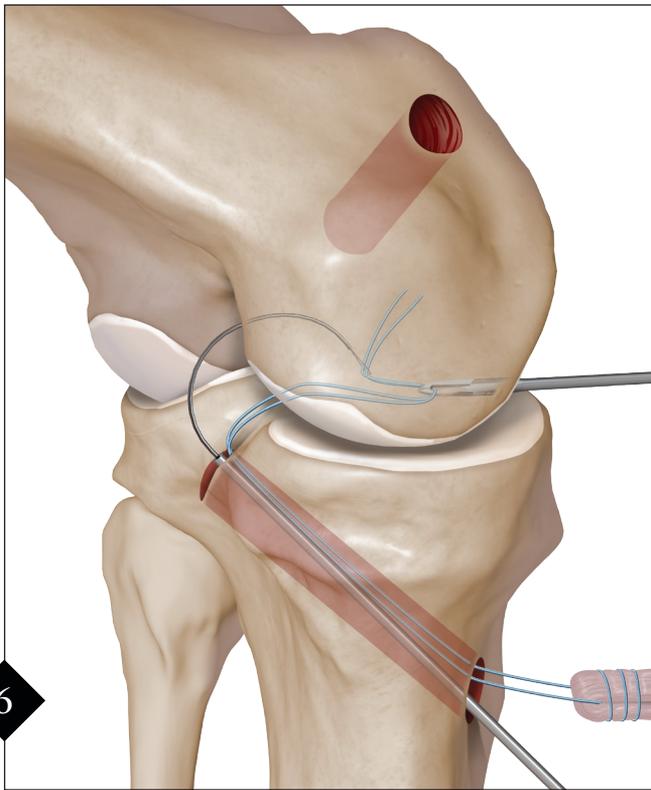
Pass the femoral graft sutures through the small Nitinol loop in the Curving Suture Passer.



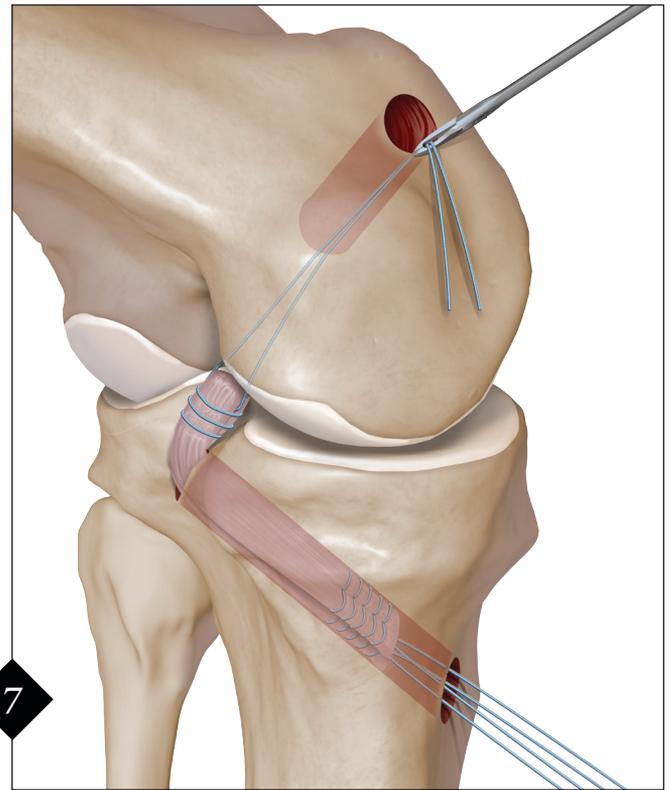
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Pull the black handle of the Curving Suture Passer until the wire loop containing the passing sutures is retracted just inside the tube. *Note: Pulling the wire loop deeper into the tube may cause resistance during deployment.*

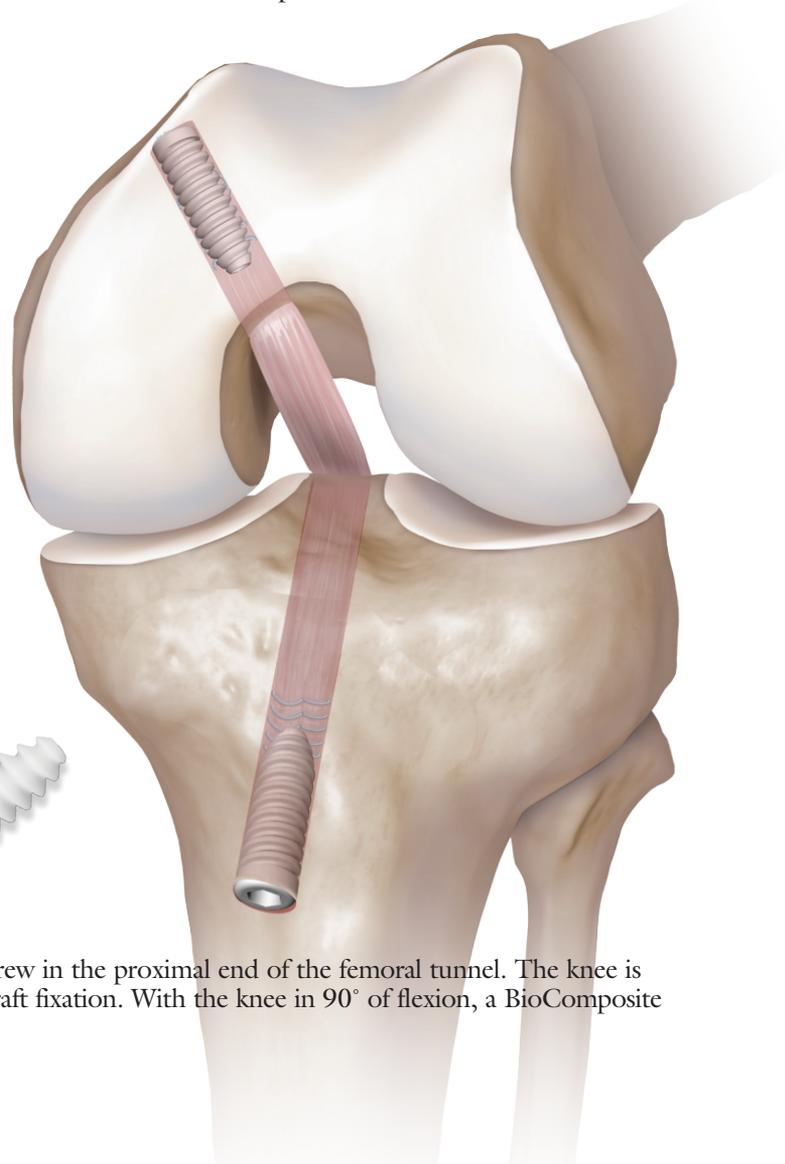
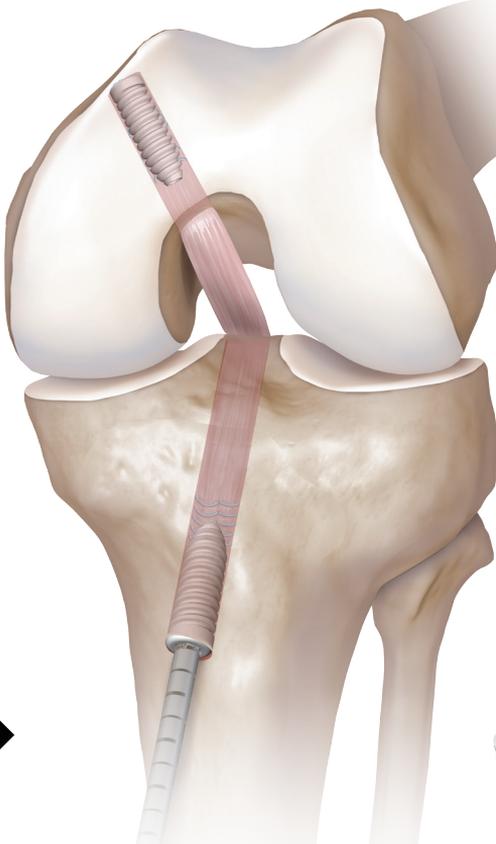




The Curving Suture Passer is inserted into the tibial tunnel. The curving wire loop with suture is pushed out of the insertion tube. The memory wire curves up the back of the tibia into the intercondylar notch. The direction of curve is indicated by the flat edge of the handle. A Suture Retriever is inserted through the anteromedial portal to retrieve the suture.



The Curving Suture Passer is removed and the suture is passed through the femur with a grasper inserted through the femoral tunnel. The graft is pulled through the tibial tunnel, into the intercondylar notch and into the femoral tunnel. Graft passing may be assisted by using instruments inserted through a posteromedial portal or through an anterior portal with the PCL Suture Pusher provided in the PCL toolbox.



Femoral fixation is carried out by placing an interference screw in the proximal end of the femoral tunnel. The knee is cycled repeatedly through range of motion prior to tibial graft fixation. With the knee in 90° of flexion, a BioComposite Interference Screw is inserted for tibial fixation.

### ***PCL Cruciate Reconstruction ToolBox (AR-1269S) includes***

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Hook Probe, 3.4 mm	AR-10010
Side-Release RetroConstruction Handle	AR-1510HR
Drill Sleeve for RetroConstruction Drill Guide, 3.5 mm	AR-1510D
Drill Sleeve for side-release handle, ratcheting, 2.4 mm	AR-1510FD-24
Drill Sleeve for side-release handle, ratcheting, 3 mm	AR-1510FD-30
Stepped Drill Sleeve for side-release handle, ratcheting	AR-1510FS-7
Obturator, 3.5 mm	AR-1204F-OB
Insert, 2.4 mm	AR-1204F-24i
Cannulated Drill, 9 mm	AR-1209L
Cannulated Drill, 10 mm	AR-1214L
Cannulated Drill, 11 mm	AR-1217L
Parallel Guide Sleeve, 2.4 mm pins	AR-1245L
Offset Drill Guide 3.5 mm	AR-1246-1
Offset Drill Guide, 3.5 mm pins	AR-1246-3
Tunnel Plug	AR-1258
PCL Suture Pusher	AR-1263
PCL Rasp	AR-1264
Knee Obturator for Posterior Portal	AR-1266
PCL Popliteal Protector Cap	AR-1267
Cannulated Headed Reamers, 8 mm – 11 mm	AR-1408 – AR-1411
Jacob's Chuck Handle	AR-1415
Tibial PCL Marking Hook for RetroConstruction Drill Guide	AR-1510PT
Femoral PCL Marking Hook for RetroConstruction Drill Guide	AR-1510PF
Anatomic Contour PCL Guide, left	AR-1510PTL
Anatomic Contour PCL Guide, right	AR-1510PTR
Drill Sleeve for RetroConstruction Drill Guide, 2.4 mm	AR-1778R-24
Drill Sleeve for RetroConstruction Drill Guide, 3 mm	AR-1778R-30
Obturator for AR-1802D	AR-1807
Tunnel Notcher	AR-1845
Graft Sizing Block	AR-1886
BioComposite Driver, quick connect	AR-1996CD-1
Cannulated Screwdriver Shaft for Delta Bio-Interference Screw	AR-1997D
Cannulated Screwdriver Shaft, 3.5 mm Hex	AR-1998
Ratcheting Screwdriver Handle	AR-1999
Double Bundle PCL Guides, 6 mm – 11 mm	AR-5015-06 – 11
PCL Curved Curette, closed end	AR-5013
PCL Straight Curette, closed end	AR-5014
Chuck Key	AR-8241
PCL Cruciate ToolBox Instrumentation Case	AR-1269C

### ***Implants and Disposables***

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BioComposite Interference Screw, Delta Tapered, 9 mm x 35 mm	AR-5035TC-09
BioComposite Interference Screw, Delta Tapered, 10 mm x 35 mm	AR-5035TC-10
BioComposite Interference Screw, Delta Tapered, 11 mm x 35 mm	AR-5035TC-11
BioComposite Interference Screw, Delta Tapered, 12 mm x 35 mm	AR-5035TC-12
BioComposite Interference Screw, Round Delta, 8 mm x 28 mm	AR-5028C-08
BioComposite Interference Screw, Round Delta, 9 mm x 28 mm	AR-5028C-09
BioComposite Interference Screw, Round Delta, 10 mm x 28 mm	AR-5028C-10
BioComposite Interference Screw, Round Delta, 11 mm x 28 mm	AR-5028C-11
Sheathed BioComposite Interference Screw, 6 mm x 23 mm	AR-1360C
Sheathed BioComposite Interference Screw, 7 mm x 23 mm	AR-1370C
Sheathed BioComposite Interference Screw, 8 mm x 23 mm	AR-1380C
Sheathed BioComposite Interference Screw, 9 mm x 23 mm	AR-1390C
Sheathed BioComposite Interference Screw, 10 mm x 23 mm	AR-1400C
Guide Wire Introducer, 1.1 mm	AR-4069
Tibial Tunnel Cannula	AR-1802D
Drill Tip Guide Pin, 2.4 mm	AR-1250L
Transibial ACL Disposables Kit without Saw Blade	AR-1898S
Curving Suture Passer, disposable	AR-1268D

*All implants and disposables come sterile and are single use.*

### ***References***

1. Barba D, Barker L, Chhabra A. Anatomy and biomechanics of the posterior cruciate ligament and posterolateral corner. *Oper Tech Sports Med.* 2015;23(4):256-268. doi:10.1053/j.otsm.2015.06.007.
2. Fanelli GC. Posterior cruciate ligament injuries in trauma patients. *Arthroscopy.* 1993;9(3):291-294. doi:10.1016/S0749-8063(05)80424-4.
3. Fanelli GC, Edson CJ. Posterior cruciate ligament injuries in trauma patients, Part II. *Arthroscopy.* 1995;11(5):526-529. doi:10.1016/0749-8063(95)90127-2.



*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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