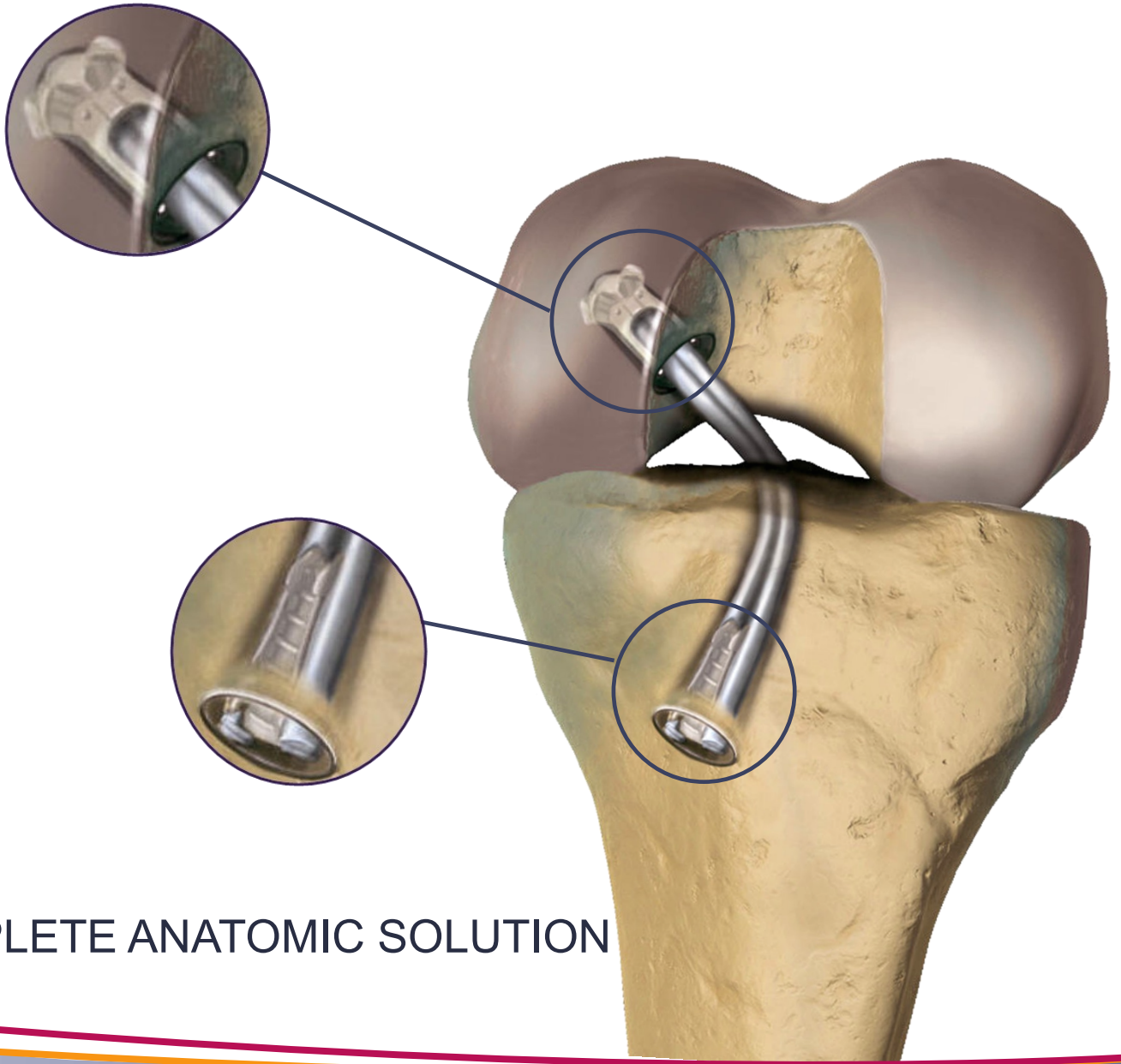


AperFix[®] II System

PCL SURGICAL TECHNIQUE GUIDE



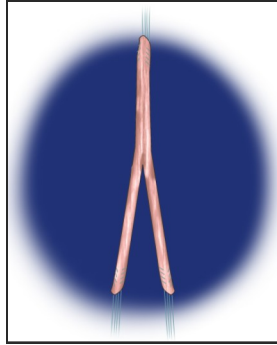
A COMPLETE ANATOMIC SOLUTION

Graft Preparation and Tunnel Placement

- 1 Recommended graft choice is an anterior or posterior allograft tendon at least 240 mm in length. Split the anterior or posterior tibialis graft longitudinally to half of its length.

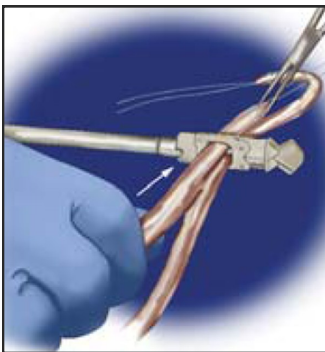
- 2 Whip stitch ~20 mm of graft ends with a sturdy suture (#2 non-absorbable suture).

- 3 Pull the doubled graft bundle through a graft sizing block to determine the diameter of the implant to be used.



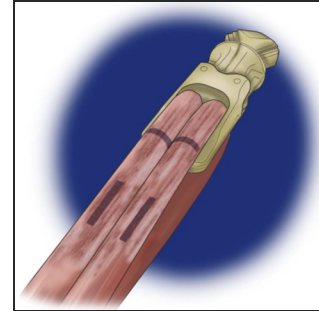
If Tendon Bundle Diameter is:	Use AperFix® Femoral & Tibial:
Less than 7.5mm	9mm Implants with 9mm Drills
7.5mm to 9mm	10mm Implants with 10mm Drills
9mm to 10mm	11mm Implants with 11mm Drills

- 4 Pass the prepared soft tissue double bundle grafts through the orifices of the AperFix® femoral implant.
 - **NOTE:** Taper graft ends for easier graft passage through implant.



- 5 Wrap the sutures of the prepared tendons around the suture cleats of the inserter handle.
 - **NOTE:** To achieve optimal anatomical placement of bundles it is recommended to wrap AL graft bundles on one suture cleat and PM graft bundles on the opposite suture cleat.

- 6 Make a horizontal mark on the tendon bundles at the inferior edge of the implant to serve as the aperture depth indicator.
 - **NOTE:** It is recommended to make a second mark on the grafts that will represent the AL bundle, at both the implant end and sutured end to help orient the bundles.



- 7 Drill the femoral tunnel first to avoid fluid outflow through the tibial tunnel. With the knee flexed between 90° and 120°, insert a guide wire through the lateral portal to the center of the PCL footprint (approximately 6-8 mm posterior to the articular surface of the medial femoral condyle). Using a femoral drill, ream to a depth of at least 30 mm.

- 8 Flex the knee to 45° and place a transtibial PCL guide through the medial portal to the PCL insertion location (approximately 1.5 cm distal to the tibial articular surface and slightly lateral to midline).
 - **NOTE:** A posteromedial portal is recommended to fully debride the posterior tibia. This is important for tunnel positioning and graft passage.

- 9 Place a curette posteriorly to protect the neurovascular structures and drop the guide parallel to the tibial plateau. Pass the guide wire through the PCL guide to the posterior tibial cortex.
 - **NOTE:** Fluoroscopic imaging is recommended to confirm proper pin placement.

- 10 Using the appropriate size tibial drill, carefully ream the tibial tunnel.
 - **NOTE:** Fluoroscopic and direct visualization should be used as guidance. It is important to clear soft-tissue and debris from the tibial tunnel and footprint to facilitate ease of graft passage.

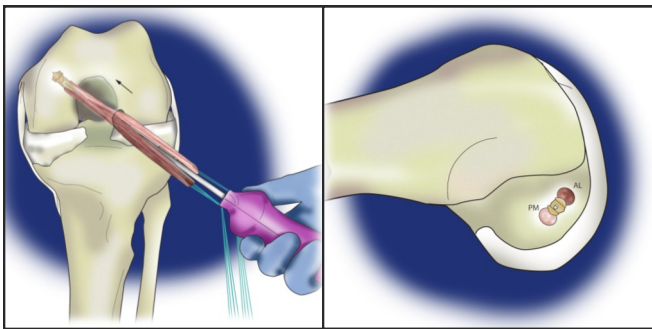
Femoral Fixation

- 11 Advance two looped, high tensile strength sutures through the tibial tunnel and retrieve through the intercondylar notch and out of the anterolateral portal. Each suture loop will be used to shuttle the graft bundles independently through the “killer turn”.

- **NOTE:** Placing hemostats on the ends of the retrieval suture loops will keep the sutures in position while inserting the AperFix® femoral implant.

- 12 Insert the prepared AperFix® device through the lateral portal and into the femoral socket to the marked depth location.

- **NOTE:** Ensure the knee flexion angle matches the position that was maintained while the femoral tunnel was being drilled.

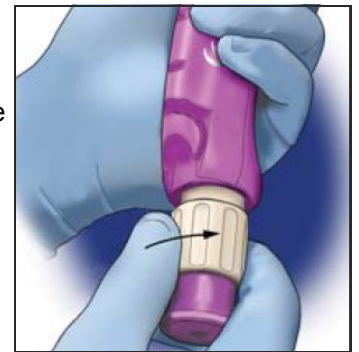


- 13 To optimize anatomic femoral placement of the bundles, rotate the AperFix® inserter until the two graft bundles are positioned anterior (for the AL bundle) and posterior (for the PM bundle) in the femur.

- 14 Ensure the implant is in proper position and pull the safety pin completely out.

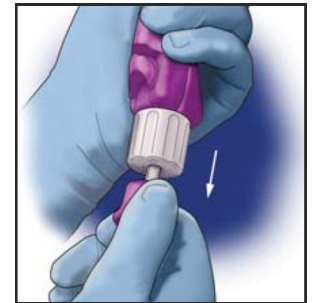


- 15 With the inserter handle held firmly in place, rotate the white implant deployment knob clockwise until the deployment knob can no longer be turned and comes into contact with the purple inserter handle.



- 16 Unwrap the sutures from the suture cleats.

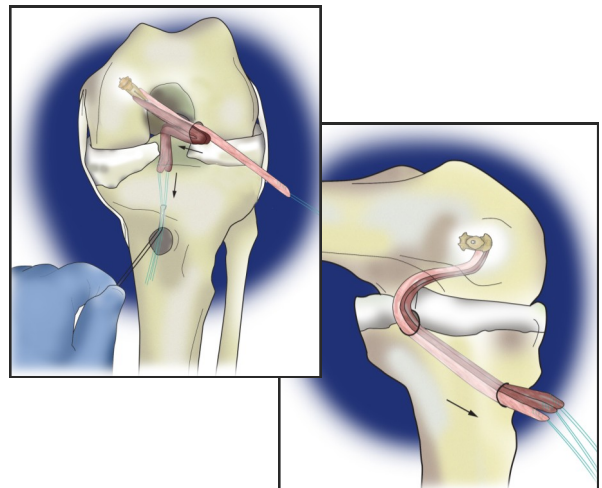
- 17 Release the inserter from the implant by pulling and holding the implant release knob, then drawing back the inserter handle. Remove the inserter from the operating site and discard.



- 18 Shuttle the bundles through the tibial tunnel by passing the sutures of the tendon bundles through the retrieval suture loops. Place hemostats or a probe between the tendons and the knee and maintain tension on the grafts as they begin to re-enter the lateral portal.

- **NOTE:** Care should be taken to first allow sutures to re-enter through the AL portal and then the tendons.

- 19 Once the tendon ends have been pulled in, remove the hemostats and allow for the rest of the tendons to pass through.

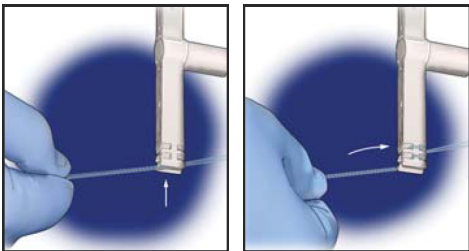


Tibial Fixation

20 Select the Tibial Implant size to match the drilled tunnel diameter.

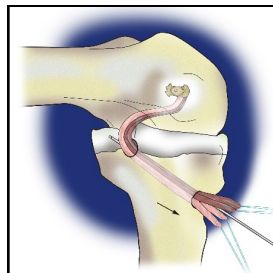
- The Tibial Implant will come with a Tendon Expander, Guide Wire, Cannulated Screw, and a Driver pre-loaded with the Tibial Sheaths and Sheath Holder.

21 Hold the Tendon Expander arms perpendicular to the tibial tunnel and wrap the sutures from the tendon bundles around the suture cleats of the Tendon Expander, such that the sutures are first inserted in the lateral slits, then wrapped around the vertical cleats.



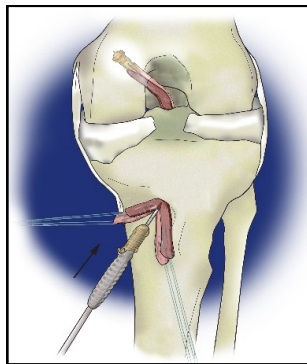
22 Insert the Guide Wire through the Tendon Expander, into the tibial tunnel (between the tendons) and into the joint space.

- Confirm the Guide Wire is in the joint space.



23 Place the knee at 90° of flexion and with the graft under tension, insert the Tibial Sheaths over the Guide Wire and into the tibial tunnel such that the cortical engagement tabs are in the 12 o'clock position.

- The Tibial Sheaths should be positioned such that the tabs are fully seated against the tibia.



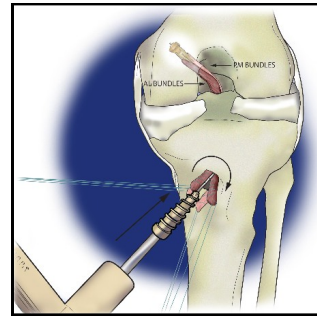
24 Pull back the Driver along the Guide Wire to disengage from the Tibial Sheaths.

- Palpate the cortical tabs to verify the tabs are against the cortex.

25 Remove the Sheath Holder from the Driver and securely place the Tibial Screw on the end.

26 Place the knee at 90° of flexion and insert the Tibial Screw over the Guide Wire until the tip of the screw engages the Sheaths.

- Use the “Easy Start” feature of the Tibial Screw by aligning the flat tip parallel with the sheaths prior to deployment.

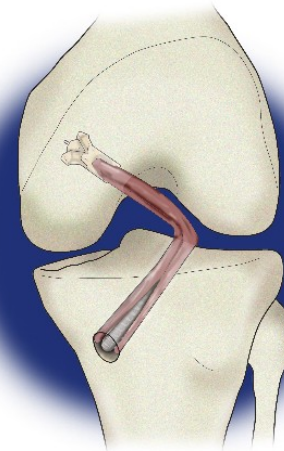


27 With forward pressure, turn the Driver clockwise until the screw head is flush with the superior rim of the cortical wall. Take care to maintain tension on the graft to prevent loss of graft stiffness.

- The Tibial Screw threads match that of the Sheath, therefore excessive torque is not needed to engage and insert the screw.

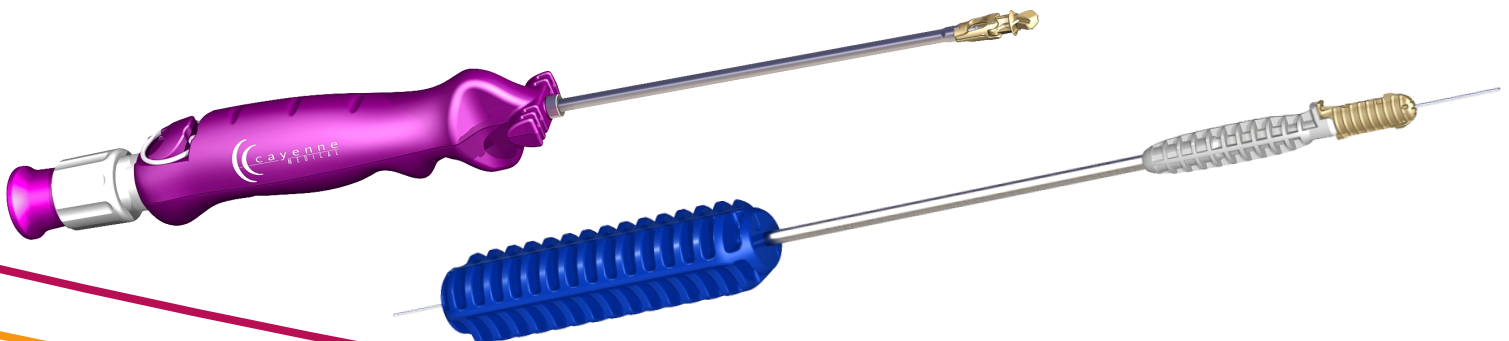
28 Once the Tibial Screw is completely seated between the Sheaths, remove the Driver by pulling the handle straight back. Remove the Guide Wire.

- Confirm the integrity of the repair.
- The orientation of the cortical engagement tabs do not necessarily reflect the orientation of the Tibial Sheaths.
- Trim the excess suture and tendon flush with the tibial surface.



Ordering Information

AperFix® II Femoral Implant with Inserter	
Model #:	Description
CM-2909	9 mm x 29 mm Femoral Implant with Inserter
CM-2910	10 mm x 29 mm Femoral Implant with Inserter
CM-2911	11 mm x 29 mm Femoral Implant with Inserter
AperFix® II Tibial Implant with Driver	
Model #:	Description
CM-3008	8 mm x 30 mm Tibial Implant with Driver
CM-3009C	9 mm x 30 mm Cannulated Tibial Implant with Driver
CM-3010C	10 mm x 30 mm Cannulated Tibial Implant with Driver
CM-3011C	11 mm x 30 mm Cannulated Tibial Implant with Driver
AperFix® Disposable Instruments	
Model #:	Description
CM-7014	Calibrated Drill Tipped Guide Wire , 14" x 2.4mm
CM-1501	ACL Disposable Kit
CM-7609	Accessory Portal Kit with Low Profile Drill and EZ Shuttle™ Suture Loop, 9 mm
CM-7610	Accessory Portal Kit with Low Profile Drill and EZ Shuttle™ Suture Loop, 10 mm
CM-7611	Accessory Portal Kit with Low Profile Drill and EZ Shuttle™ Suture Loop, 11 mm



Manufactured By



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