

DePuy Synthes Mitek Sports Medicine

ACL RECONSTRUCTION

WITH RIGIDLOOP™ BTB ADJUSTABLE
CORTICAL SYSTEM

Surgical Procedure

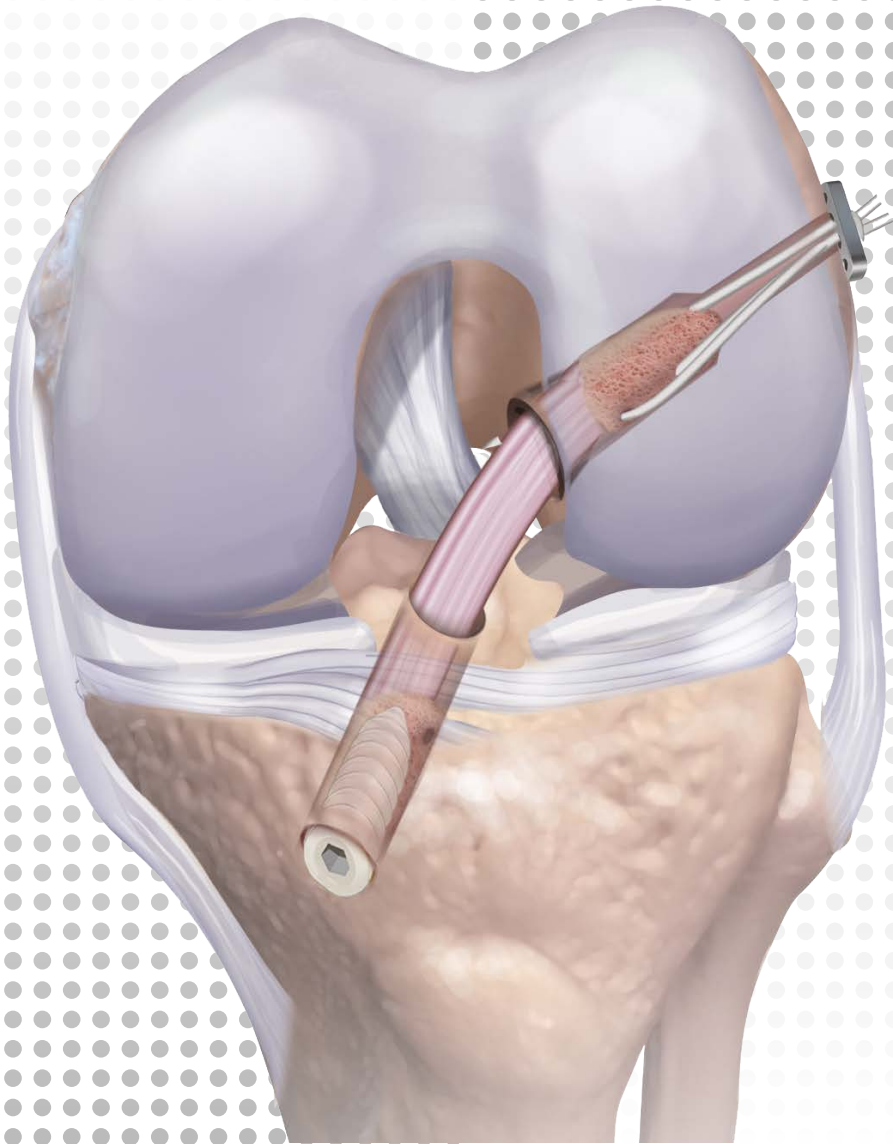


Table of Contents

Introduction	4
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Surgical Procedure	Graft Harvest and Preparation	5
	Button Attachment to Femoral Side Bone Plug	6
	Femoral Socket Retrograde Reaming	8
	Tibial Tunnel Reaming	8
	Graft Fixation on the Femur	9
	Final Fixation	11
	Suture Cutting	11

Ordering Information	TWISTR™ Retrograde Reamer & Cruciate+ Instruments	12
	Suture and Suture Passers	12
	RIGIDLOOP™ System	13
	MILAGRO® ADVANCE Interference Screw	13

Introduction

Special Thank You

This surgical procedure guide was written with the assistance of Dr. Karen Sutton. Dr. Sutton is a board-certified sports medicine surgeon with surgical expertise in arthroscopy of the shoulder and knee. Dr. Sutton is an Associate Attending Orthopedic Surgeon at the Hospital for Special Surgery and is a member of the Sports Medicine Institute and Women's Sports Medicine Center at HSS. She is also Chief Medical Officer for World Lacrosse and Team Physician for US Ski & Snowboard. Dr. Sutton is a paid consultant for DePuy Synthes Mitek Sports Medicine.

This presentation reflects the techniques, approaches and opinions of the individual presenter. This DePuy Synthes, Inc. sponsored presentation is not intended to be used as a training guide. Other surgeons may employ different techniques. The steps demonstrated may not be the complete steps of the procedure. Individual surgeon preference and experience, as well as patient needs, may dictate variation in procedure steps. Before using any medical device, review all relevant package inserts with particular attention to the indications, contraindications, warnings and precautions, and steps for use of the device(s).

Surgical Procedure

Graft Harvest and Preparation

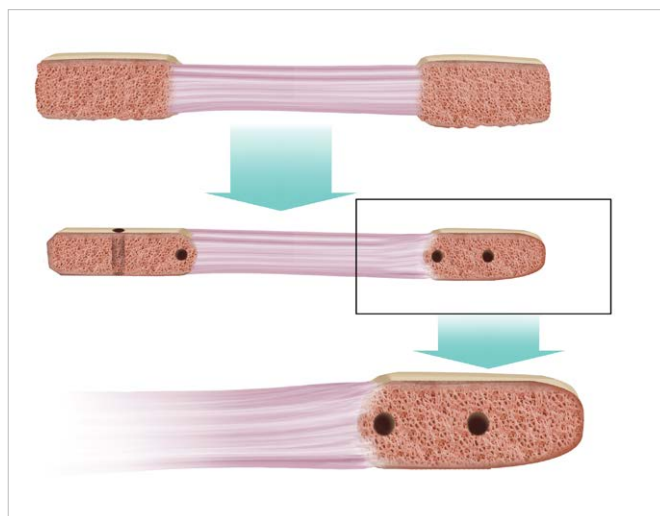
Harvest a BTB graft according to surgeon preference. Please account for the following aspects of graft preparation:

- Bone Plug: RIGIDLOOP™ BTB Adjustable Cortical System attaches to the bone plug using two sutures and two holes.
- Bone Plug Length: A bone plug shorter than 20mm is easier to pass through the knee and into the socket.
- Overall Length: When the overall length of the graft exceeds 90mm, adapt your technique to account for this. There are three ways to adapt your technique to handle a longer graft: drill a longer femoral tunnel, drill a longer tibial tunnel, or manage excess graft outside the tibial tunnel.

Use a sagittal saw and rongeur to cut and shape the femoral and tibial bone plugs.

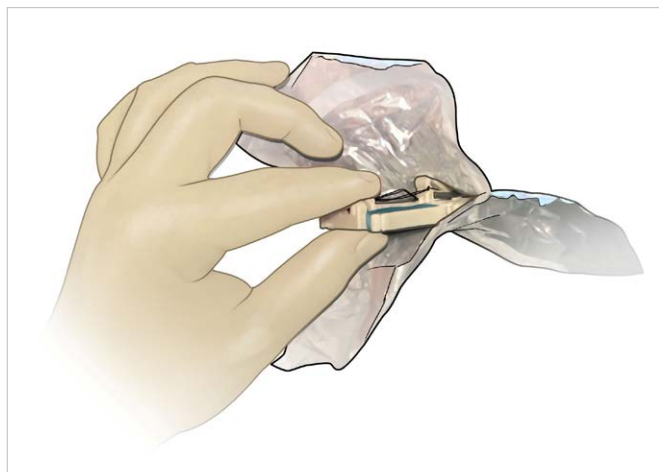
Use a rongeur to bullet the femoral bone plug.
Drill two 1.5mm diameter holes on the femoral side bone plug.

Drill two 1.5mm diameter holes on the tibial side bone plug. These holes will be used for traction sutures. The diagram shows holes drilled perpendicular to each other, but the orientation (and even number of holes) is a matter of surgeon preference.



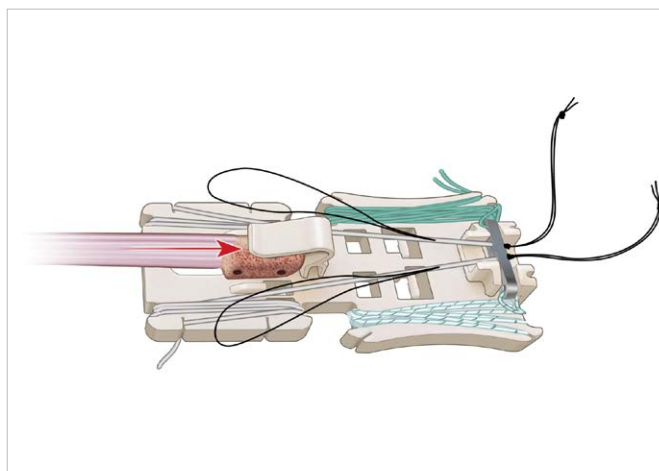
Button Attachment to Femoral Side Bone Plug

Unpack a RIGIDLOOP™ BTB Adjustable Cortical System - Standard. Grasp it with two fingers, as shown, to avoid pulling the black relay loops out of the assembly.

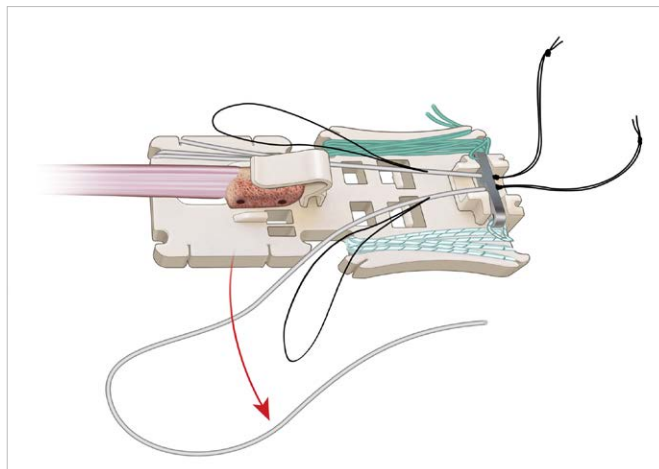


Hold the preparation card flat against a table.

Insert the femoral bone plug flush against the graft clamp on the button's preparation card. The drill holes must be oriented as shown.



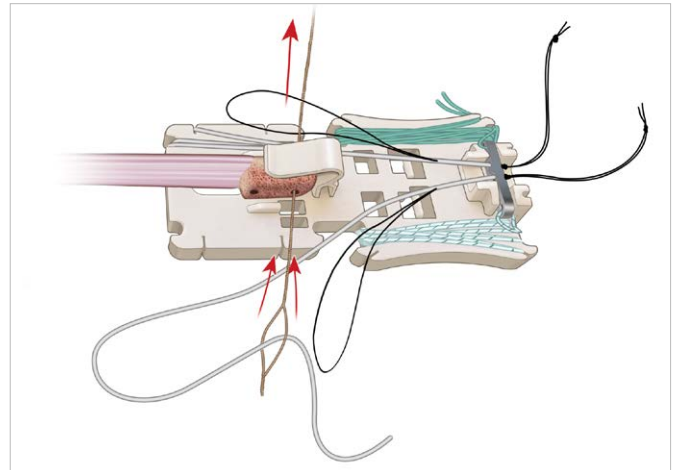
Completely unravel one of the two white tensioning sutures. It doesn't matter which side is chosen.



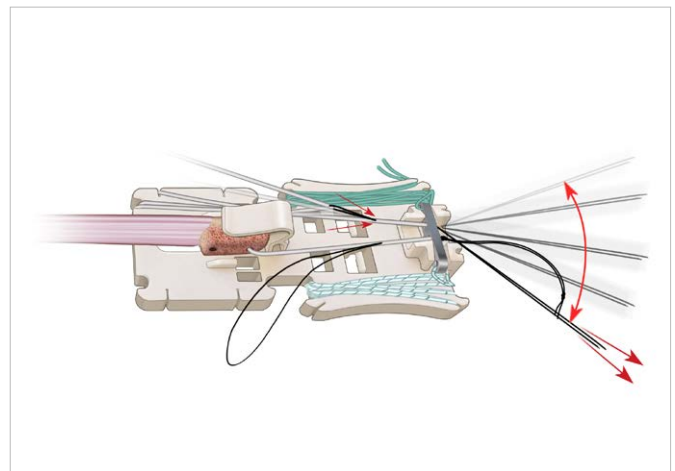
Using a suture passing device such as a CHIA PERCPASSER® Suture Passer or a free needle with kite, pass the white tensioning suture through the proximal bone plug hole and the opposing black relay loop.

■ **Note:**

“Proximal” in this context means the bone plug hole that is closest to the button.



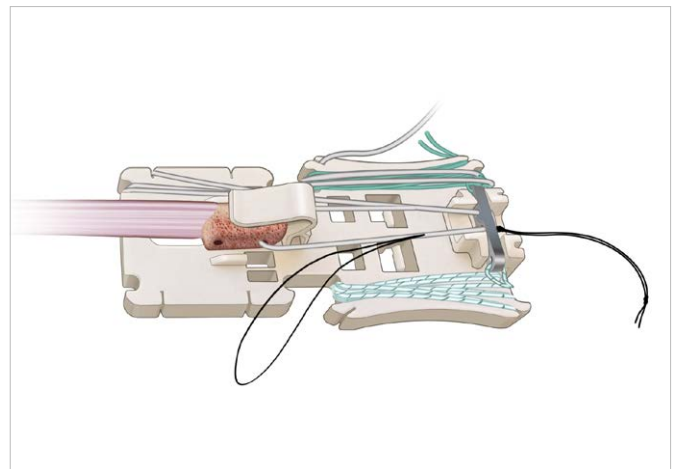
Pull the corresponding black relay loop gently in a plane horizontal with the graft. Exercise slight counter-tension on the white suture, and once the white suture has entered the splice in the button, apply slow lateral movements (“wiggles”) to the end of the temporary black relay loop. Do this until the suture has fully exited the splice.



Pull the tensioning suture to eliminate slack in the loop. Wind the excess length of the tensioning suture around the winder and wedge it in the notch to lock it.

Unwind the second white tensioning suture. Pass it through the distal drill hole in the opposite direction of the first tensioning suture. “Wiggle” it through the splice using the same technique utilized for the proximal suture.

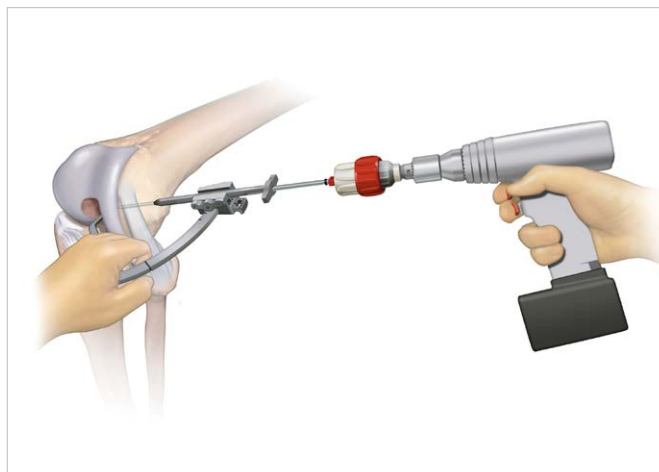
Insert two sutures into the tibial bone plug drill holes. These sutures will be used to control placement of the tibial bone plug.



Femoral Socket Retrograde Reaming

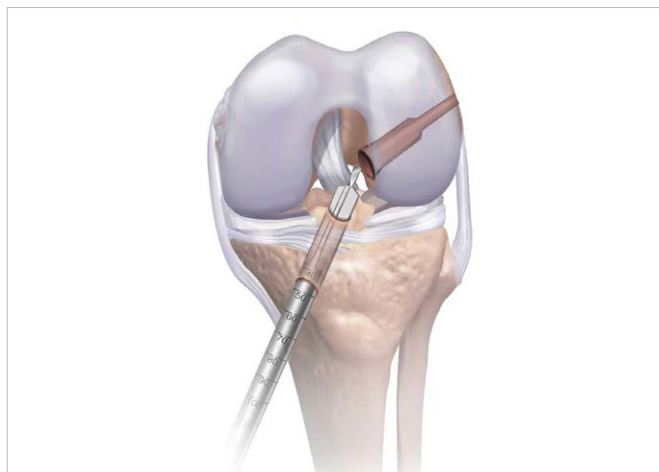
Drill the femoral socket using the TWISTR™ Retrograde Reamer according to the IFU.

Insert a relay suture using an outside-in suture passing pin.

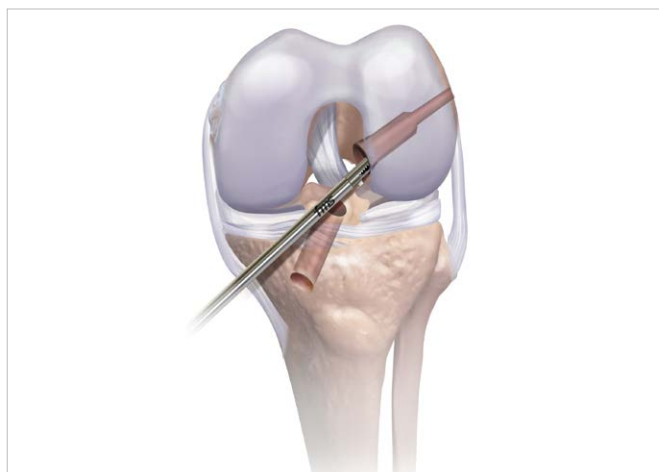


Tibial Tunnel Reaming

Drill the tibial tunnel from the outside-in using a fluted reamer. Reamer size and tunnel location should be chosen according to surgeon preference.



Use a shaver or rasp to chamfer the edges of the socket entrance and ease bone block passage into the socket.



Graft Fixation on the Femur

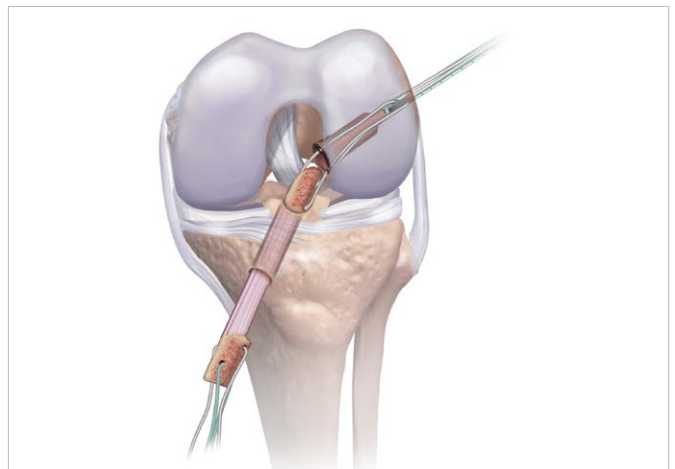
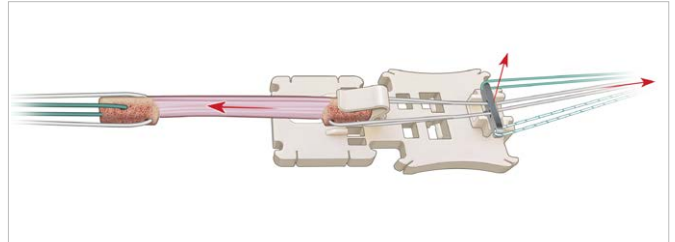
Remove the RIGIDLOOP™ BTB Adjustable Cortical System and graft from the preparation card. Unwind all sutures from the button preparation card. Remove the button from the card by lifting up all the sutures. Pull on the femoral bone plug to remove it from the clip on the preparation card.

Gently pull on each of the two suture loops to lengthen the distance from the underside of the button to the beginning of the femoral bone plug to 6cm or more.

Mark the femoral socket length on the femoral side suture loop. This mark is an indication of where to flip the button.

Use the relay suture to pull the RIGIDLOOP™ BTB Adjustable Cortical System sutures through the femoral socket.

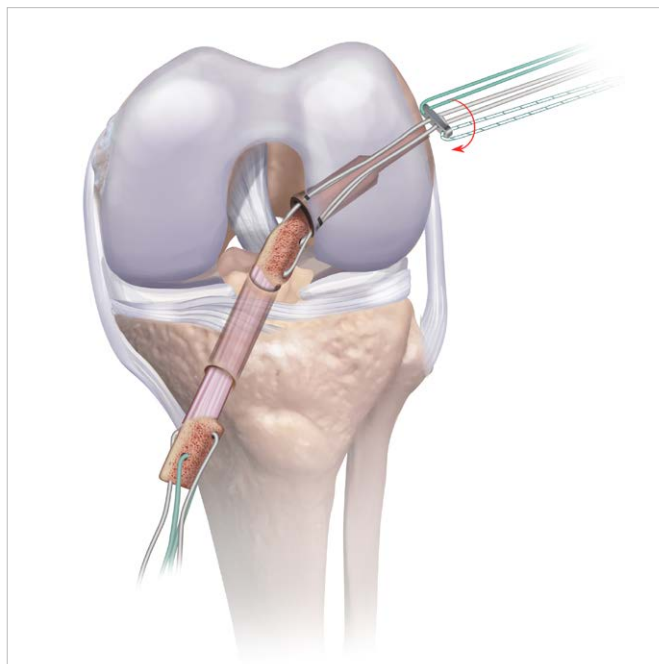
Pull the RIGIDLOOP™ BTB Adjustable Cortical System into the joint space. Pull lightly on the blue/white suture to position the button near the entrance of the femoral socket. Use the blue/white suture to pull the button through the socket, and lightly pull other sutures, as needed, to avoid tangles. Switching the arthroscope to the AM portal may allow for a clearer view of the button and may facilitate passage of the button and bone block into the femoral socket.



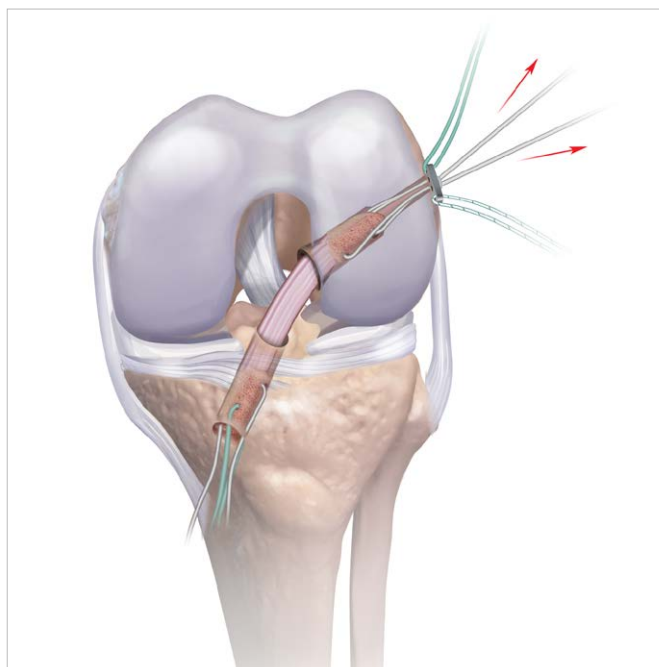
Flip the button by pulling on the green flipping suture.

Alternately pull on the green suture and the blue/white suture to confirm the button is on the cortex and has successfully flipped.

Throughout the process of flipping the button and testing for flip success, maintain counter tension on the graft to ensure the button stays on the cortex.



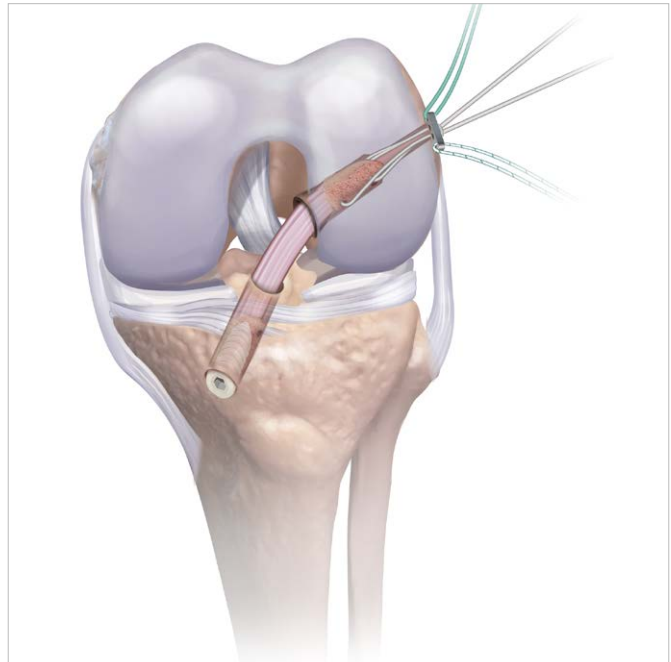
Pull alternately on the white tensioning sutures of the button until the bone plug is at the entrance of the femoral socket. Use a probe to help position the bone plug. When the bone plug is positioned to surgeon preference, alternately pull on the white tensioning sutures until the bone plug is fully seated in the femoral socket.



Final Fixation

Fix the graft in place in the tibial tunnel using a MILAGRO® ADVANCE Interference Screw according to the IFU.

Cycle the knee and adjust button tension until satisfied with graft tension.



Suture Cutting

Remove the green and blue/white sutures from the RIGIDLOOP™ BTB Adjustable Cortical System. Cut the white tensioning sutures. Leave at least 6mm of tail, as this is essential for sustained tension.



Ordering Information

Product Codes

TWISTR™ Retrograde Reamer & Cruciate+ Instruments

232000	TWISTR™ Retrograde Reamer
232301	Outside-In Disposables Kit
219001	Side-Loading Guide Carriage
219002	Retroreamer Bullet Obturator
219003	Beath Pin Bullet
219004	Retroreamer Bullet
219005	2.4mm Insert For RR Bullet
219006	ACL Tibial Point Aimer
219007	ACL Tibial Capture Aimer
219008	ACL/PCL Femoral Point Aimer
219009	ACL/PCL Femoral Capture Aimer
219011	PCL Tibial Point Aimer
219012	PCL Tibial Disc Aimer
219015	Cannulated PCL Elevator
219013	PCL Rasp
219017	Pin Depth Gage
219018	Outside-In Suture Passing Pin
215203	Sterilization Tray
215205	Sterilization Tray Lid

Suture and Suture Passers

214101	CHIA PERCPASSER® Suture Passer
222069	#2 DYNACORD™ Suture Pack Striped/ Blue (without needles)
222067	#2 DYNACORD™ Suture Pack Blue (without needles)
222068	#2 DYNACORD™ Suture Pack Striped (without needles)
222065	#2 DYNACORD™ Suture Pack Blue (with OS-6 needles)
222066	#2 DYNACORD™ Suture Pack Blue (with MO-7 needles)
223105	#2 ORTHOCORD® Suture Violet (without needles)
223111	#2 ORTHOCORD® Suture Blue (without needles)
223104	#2 ORTHOCORD® Suture Violet (with MO-7 needles)
223103	#2 ORTHOCORD® Suture Violet (with OS-6 needles)

Product Codes

RIGIDLOOP™ System

232485	RIGIDLOOP™ BTB Adjustable Cortical System - Standard†
232486	RIGIDLOOP™ BTB Adjustable Cortical System - XL†
232453	Combo Beath/Drill Pin - 4.5mm (Sterile)
218034	RIGIDLOOP™ Adjustable Disposables Kit (Sterile)

MILAGRO® ADVANCE Interference Screw

231816	MILAGRO® ADVANCE BR Interference Screw, 7 × 23mm
231817	MILAGRO® ADVANCE BR Interference Screw, 8 × 23mm
231818	MILAGRO® ADVANCE BR Interference Screw, 9 × 23mm
231819	MILAGRO® ADVANCE BR Interference Screw, 10 × 23mm
231856	MILAGRO® ADVANCE PEEK Interference Screw, 7 × 23mm
231857	MILAGRO® ADVANCE PEEK Interference Screw, 8 × 23mm
231858	MILAGRO® ADVANCE PEEK Interference Screw, 9 × 23mm
231859	MILAGRO® ADVANCE PEEK Interference Screw, 10 × 23mm

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CAUTION: Federal Law restricts these devices to sale by or on the order of a physician.

Some devices listed in this surgical technique may not have been licensed in accordance with Canadian law and may not be for sale in Canada. Please contact your sales consultant for items approved for sale in Canada.

Not all products may currently be available in all markets.

Please refer to the instructions for use for a complete list of indications, contraindications, warnings and precautions.

Please also refer to the package insert(s) or other labeling associated with the devices identified in this surgical technique for additional information.



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