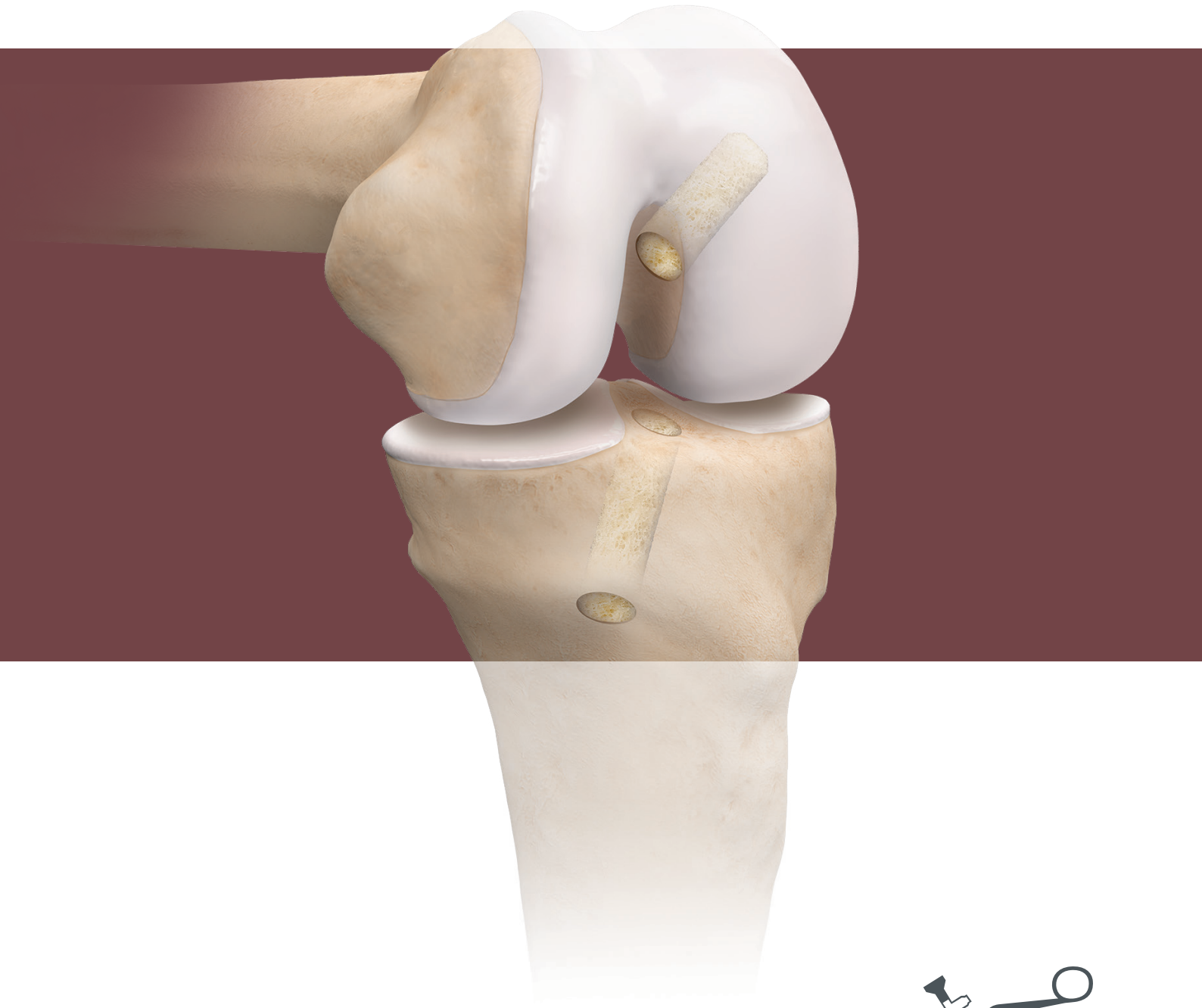
# Bone Dowel Revision Kit

Surgical Technique



Arthrex®

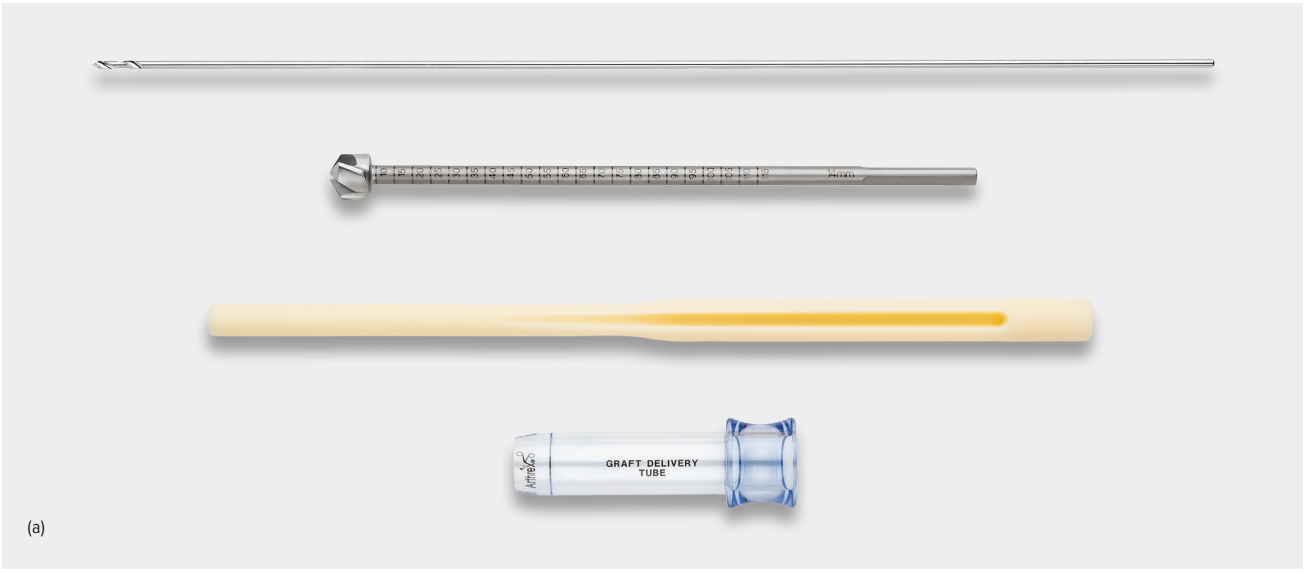
# Bone Dowel Revision Kit

## A System for Implanting Biologic Scaffolds

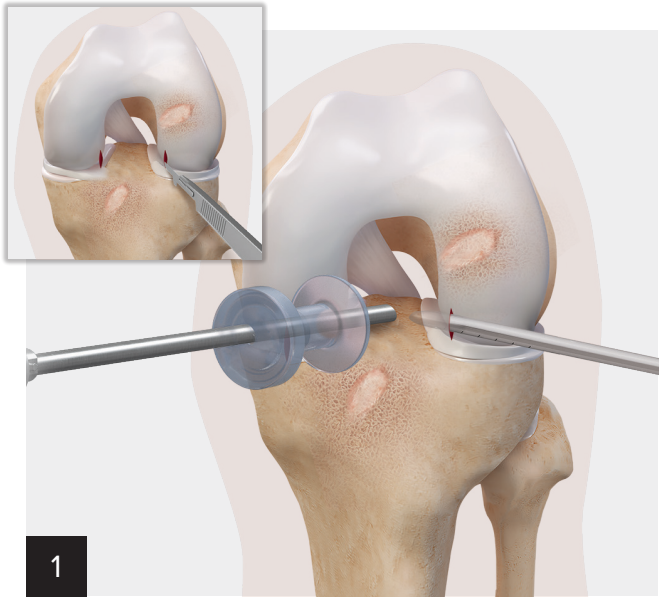
The Arthrex Cannulated Bone Dowel kit simplifies bone tunnel restoration for staged revision ACL procedures by combining properly sized reamers and a cannulated bone tamp in a single-use kit. The bone tamp was designed for use with a guide pin to allow for proper placement of the cannulated bone dowels into bone tunnels. Using allograft bone dowels to fill bone voids allows for the immediate management of widened tunnels and cystic bone areas.[1]

It is estimated that between 1.8% and 10.4% of patients with an ACL reconstruction will require a revision.[2] Restoration of previously malpositioned ACL tunnel placement or widened tunnels can be challenging, sometimes requiring a two-stage approach.[3]

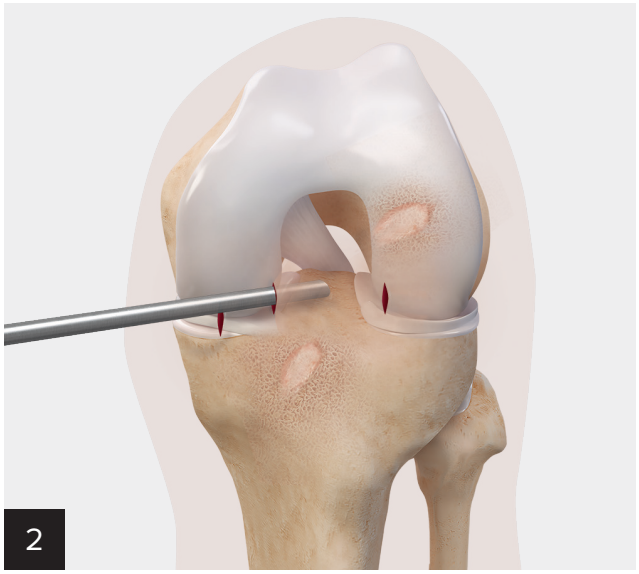
Favorable outcomes have been reported for patients undergoing single-stage ACL reconstruction using allograft bone dowels.[4]



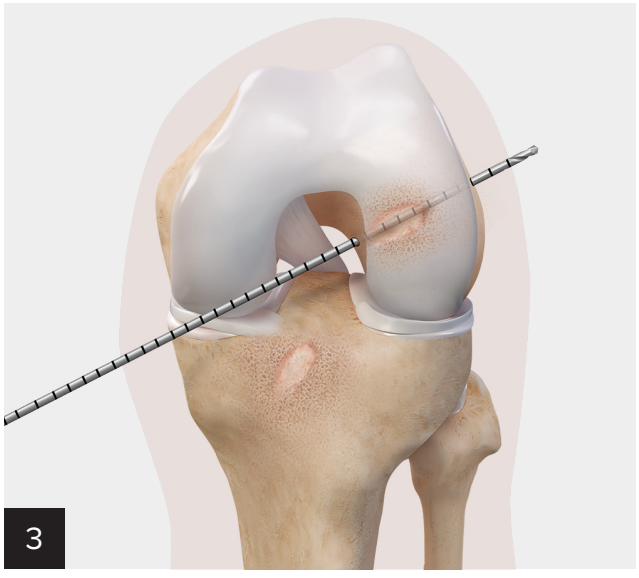

(a)



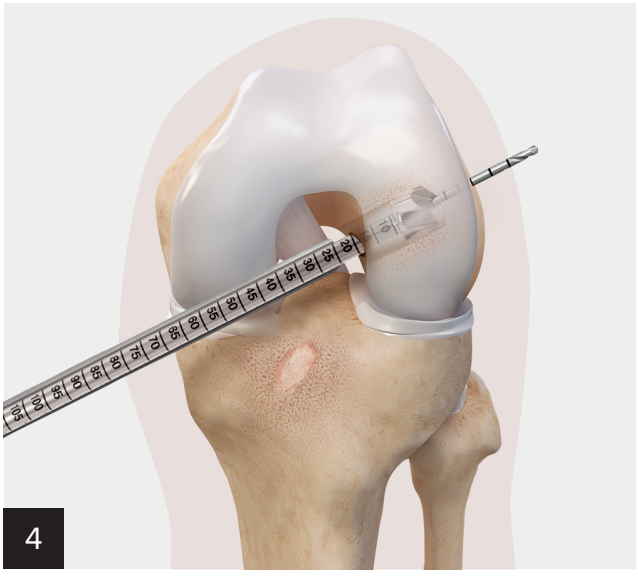

Establish standard arthroscopic portals in the knee and thoroughly debride the fat pad, ACL graft, and any loose soft tissue from the area.



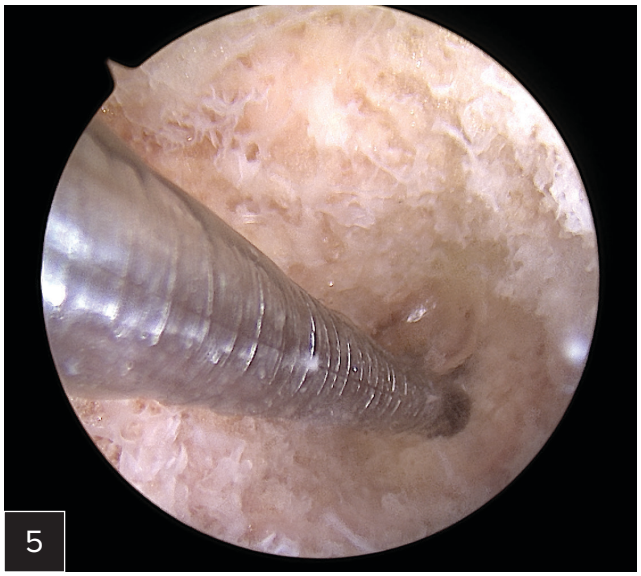

Establish an accessory portal for inserting the allograft bone dowel into the femur. **Note: In some cases, it may be best to prepare the tibial tunnel first, but not graft it. This will allow access to the femoral tunnel through the tibial tunnel, which is often larger than the femoral socket.**



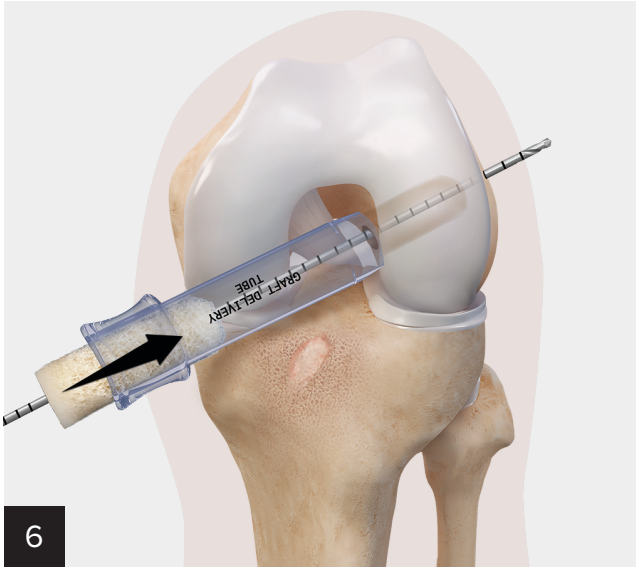

Using a wire driver, advance the 2.4 mm guide pin through the center of the failed graft location through the femur and out the skin. It is often helpful to use a tunnel dilator to center the pin.



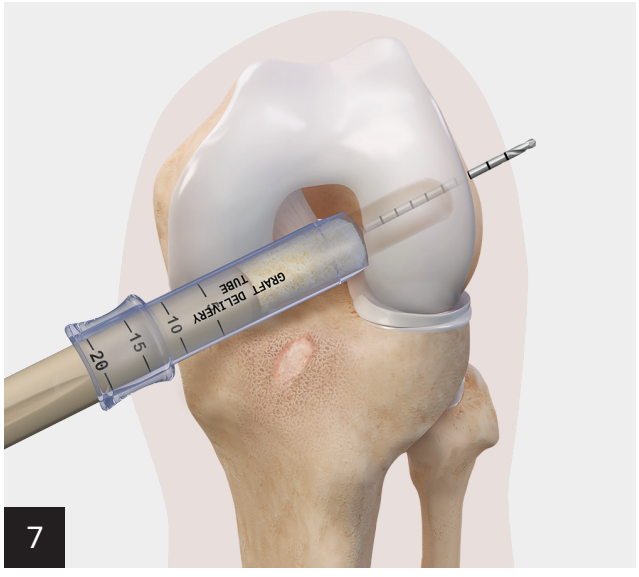

Advance the reamer over the 2.4 mm guide pin to a depth matching the length of the planned dowel into the femur. Serial reaming is done at 2 mm intervals until healthy bone surrounds the tunnel. **Note: Use a portal skid (AR-4505) behind the reamer to protect the femoral condyle and soft tissues.**




Inspect the tunnel and remove any loose bodies, soft tissue, or unwanted particulate after each reaming and debridement during serial reaming.

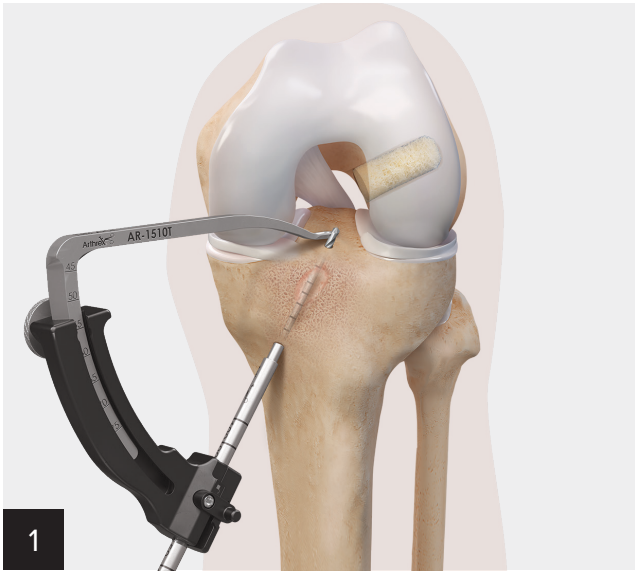



Place the delivery sleeve over the guide pin and into the portal. An obturator may be used to help with introduction of the delivery sleeve. Load the allograft bone dowel (tapered side first) over the guide pin and advance into the delivery sleeve.

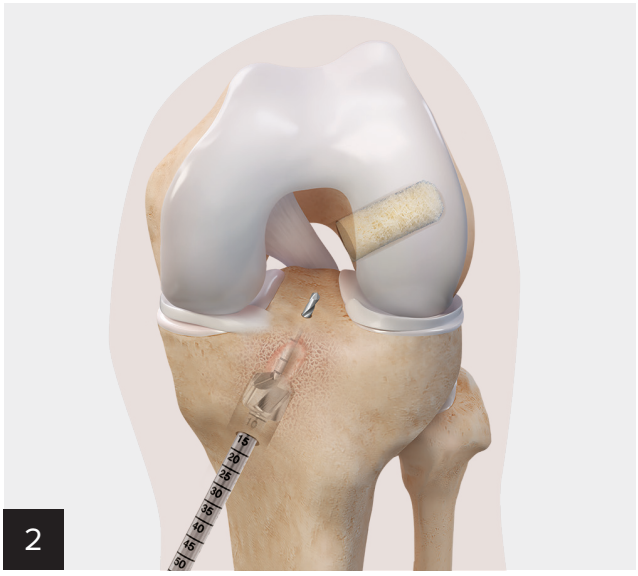



Insert the tamp over the guide pin and gently tap the dowel through the delivery sleeve and into the socket. Impact the back end of the tamp with a mallet until the dowel is flush or slightly proud into the socket.

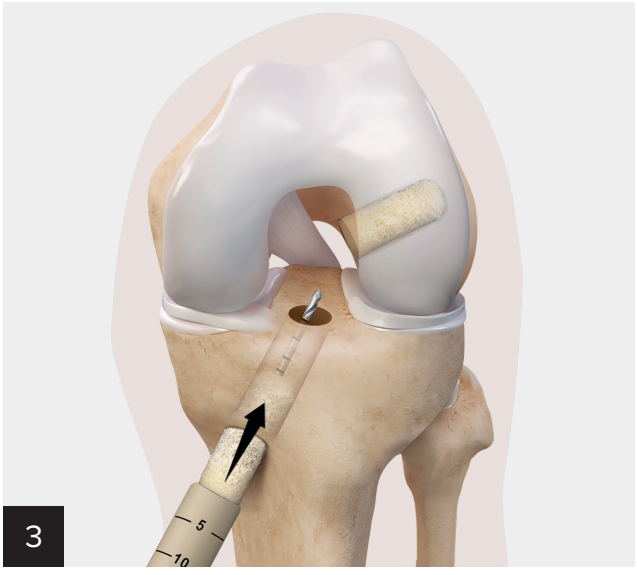
## Tibial Socket Preparation



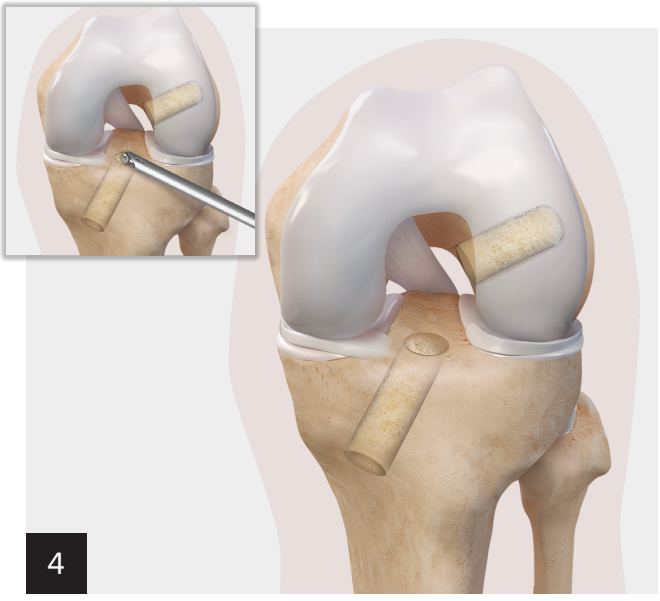

Using the anteromedial incision, expose the tibia and identify the tibial tunnel. A dilator may be helpful for centering the guide pin. An ACL tibial guide can be used. The sleeve of the guide should fit into the center of the previous tunnel.




Once the 2.4 mm guide pin is centered, remove the drill guide. Place the reamer over the guide pin and advance the drill (antegrade) until the reamer exits into the intraarticular space. Continue serial reaming until all soft tissue is cleared from the tunnel, as viewed arthroscopically.




Place the allograft bone dowel over the guide pin (tapered end first) and advance to the proximal edge of the bone tunnel. Place the tamp over the guide pin and up to the back end of the bone dowel.




Impact the back end of the tamp to advance the bone dowel until the allograft is fully inserted into the tunnel and flush with the tibial plateau surface.

A burr may be used to shape the femoral and tibial dowel edge to fit flatter at the surface.

# Ordering Information

## Bone Dowel Revision Kits

| Product Description | Item Number |
|---|---|
| Kits contain a cannulated bone tamp, 2.4 mm guide pin, delivery tube, and cannulated reamer | |
| Bone Dowel Revision Kit, 9 mm | ABS-**2850-09** |
| Bone Dowel Revision Kit, 10 mm | ABS-**2850-10** |
| Bone Dowel Revision Kit, 11 mm | ABS-**2850-11** |
| Bone Dowel Revision Kit, 12 mm | ABS-**2850-12** |
| Bone Dowel Revision Kit, 13 mm | ABS-**2850-13** |
| Bone Dowel Revision Kit, 14 mm (a) | ABS-**2850-14** |
| Bone Dowel Revision Kit, 16 mm | ABS-**2850-16** |
| Bone Dowel Revision Kit, 18 mm | ABS-**2850-18** |

## FlexiGRAFT® Cannulated Revision Dowels

| Bone Dowel Diameter | Standard Length (25-29 mm) | Extra Long Length (30-35 mm) |
|---|---|---|
| 9 mm | PCD**9** | PCDXL**9** |
| 10 mm | PCD**10** | PCDXL**10** |
| 11 mm | PCD**11** | PCDXL**11** |
| 12 mm | PCD**12** | PCDXL**12** |
| 13 mm | PCD**13** | PCDXL**13** |
| 14 mm | PCD**14** | PCDXL**14** |
| 16 mm | PCD**16** | PCDXL**16** |
| 18 mm | PCD**18** | PCDXL**18** |

The FlexiGRAFT Cannulated Revision Dowels must be ordered through LifeNet Health Customer Service at 888-847-7831.

## Optional

| Product Description | Item Number |
|---|---|
| Arthrex ACP® Double-Syringe System | ABS-**10010S** |
| Arthrex Angel® cPRP and BMA Tray | ABS-**10062T** |
| JumpStart® Antimicrobial Wound Dressing, 2 in × 5 in, single layer | ABS-**4025** |
| Energel® Wound Hydrogel | AGL-**L075-10** |
| Portal Skid | AR-**4505** |
| Obturator | AR-**6531** |

## References


1. Demyttenaere J, Claes S, Bellemans J. One-stage revision anterior cruciate ligament reconstruction in cases with excessive tunnel osteolysis. Results of a new technique using impaction bone grafting. *Knee In Press*. 2018;25(6):1308-1317. doi:10.1016/j.knee.2018.08.015.

2. MARS Group, Ding DY, Zhang AL, et al. Subsequent surgery after revision anterior cruciate ligament reconstruction: rates and risk factors from a multicenter cohort. *Am J Sports Med*. 2017;45(9):2068-2076. doi:10.1177/0363546517707207.

3. Richter DL, Werner BC, Miller MD. Surgical pearls in revision anterior cruciate ligament surgery. When must I stage? *Clin Sports Med*. 2017;36:173-187. doi:10.1177/0363546517707207.

4. Werner BC, Gilmore CJ, Hamann JC, et al. Revision ACL reconstruction: results of a single-stage approach using allograft dowel bone grafting for femoral defects. *J Am Acad Orthop Surg*. 2016;24(8):581-587. doi:10.5435/JAAOS-D-15-00572.