

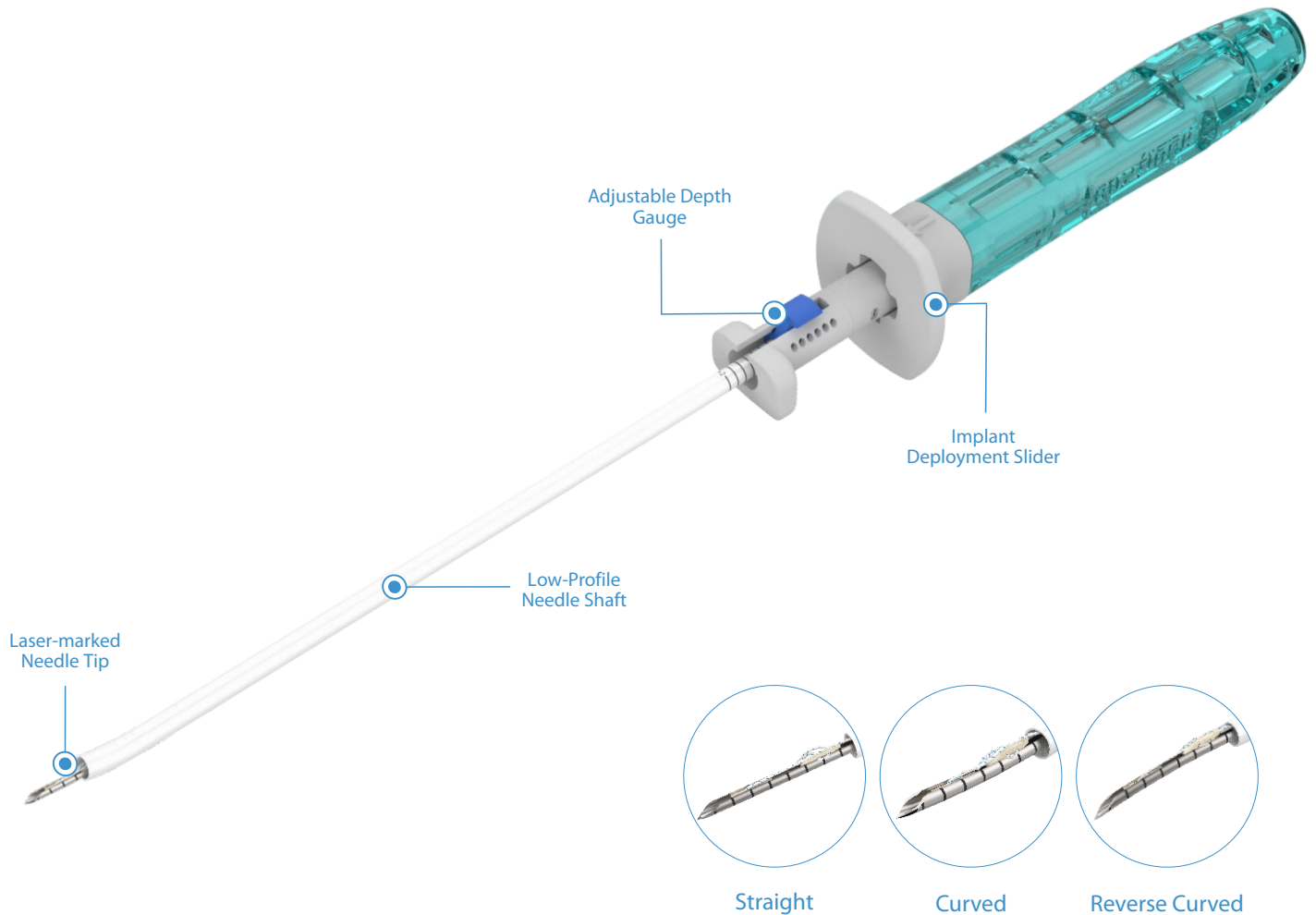
**auxilock**<sup>®</sup>  
powered by  **Auxein**<sup>®</sup>

## Surgical Technique

MENI-FIX All Inside Meniscal Repair System



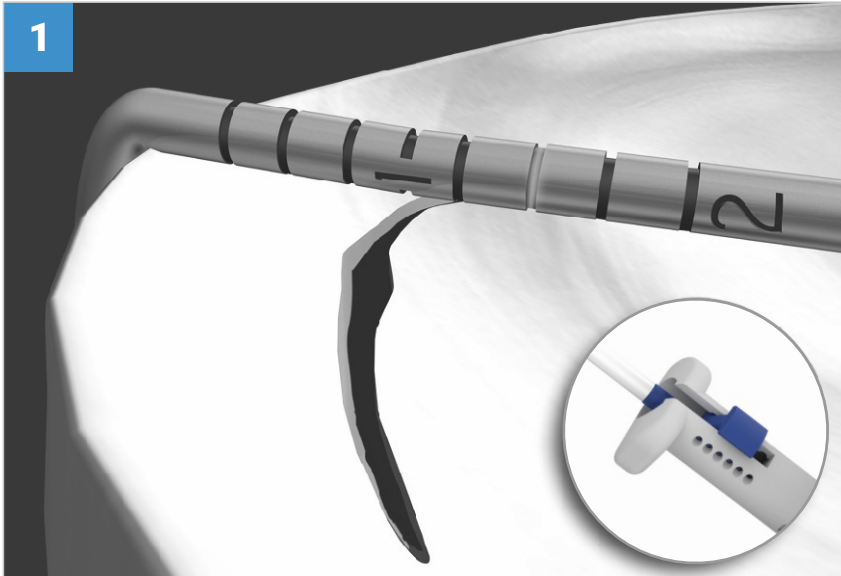
## MENI-FIX All Inside



MENI-FIX All-Inside Meniscal Repair System includes two 0.9mm PEEK anchors with a pretied, self-sliding knot comprised of #2-0, UHMWPE Biobraid Suture.

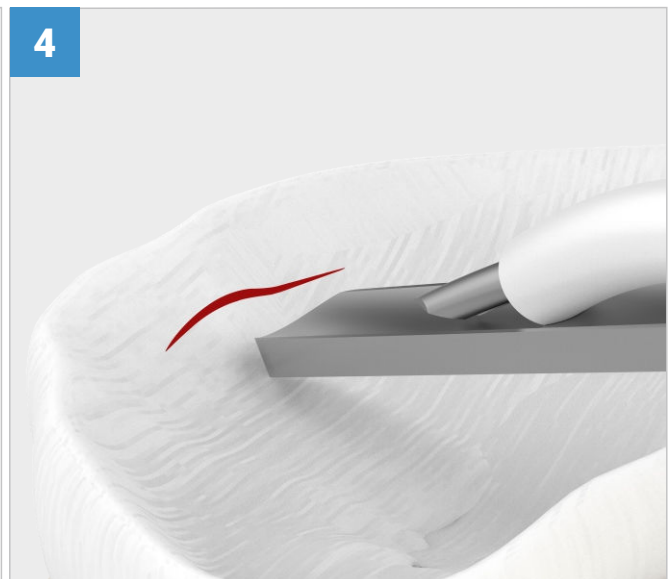
The delivery needles are available in Curved, Straight, and Reverse Curved designs. The Curved and Reverse Curved designs allow the surgeon to rotate the needle tip away from the neurovascular structures when penetrating the meniscus, further reducing the risk of neurovascular injury. The Curved delivery needle is optimally shaped to allow vertical mattress sutures to be inserted on either the femoral or tibial surfaces of the meniscus.

The Reverse Curved delivery needle is most useful for repairing tears on the tibial surface and more anterior located tears. The built-in, adjustable depth penetration limiter is adjustable from 8mm to 18mm from the tip of the needle. Use of the meniscal depth probe in conjunction with the adjustable depth penetration limiter allows controlled delivery of the implants.



Meniscal tear site preparation is essential for biological healing of the tear. Meniscal rasps and/or arthroscopic shavers are used to abrade and excoriate both sides of the tear and the perimeniscal synovium. Once the optimal portal placement is determined and the meniscal tear site is prepared, perform the repair as follows:

**1.** Use the meniscal depth probe to determine the desired depth limit. Place the tip of the probe at the meniscosynovial junction and measure the width of the meniscus at the desired entry point for the delivery needle. In the average size knee a depth of 14mm is usually adequate. Adjust the depth penetration limiter to the desired length by pressing the depth limiter button (Image 1). This length can be adjusted outside or inside of the joint. The laser marks on the tip of the needle can also be used as a reference (Image 2).



**2.** Insert the MENI-FIX All Inside needle into the joint through the appropriate arthroscopic portal. Insertion is facilitated through the use of the slotted cannula. (Image 3).

The slotted cannula eases passage through the fat pad, and the cannula can also be used to help position the tip of the delivery needle at the desired location on the meniscus. Introduce the delivery needle through the slotted cannula into the joint, ensuring that the tip of the needle is pointing down (Image 4). Once the needle is inside the joint, the slotted cannula may be removed if desired.

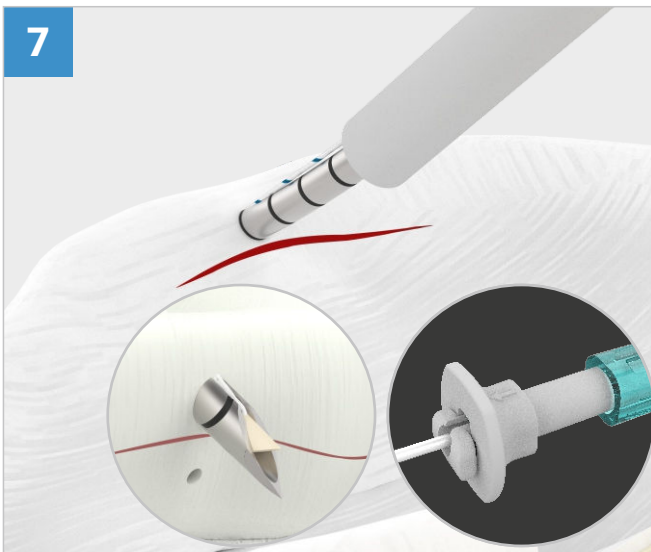
**Note:** Hold the delivery needle at the handle and push the slider with the thumb to deploy the implants. Do not advance the deployment slider while introducing the delivery needle into the joint or the implant will deploy prematurely.



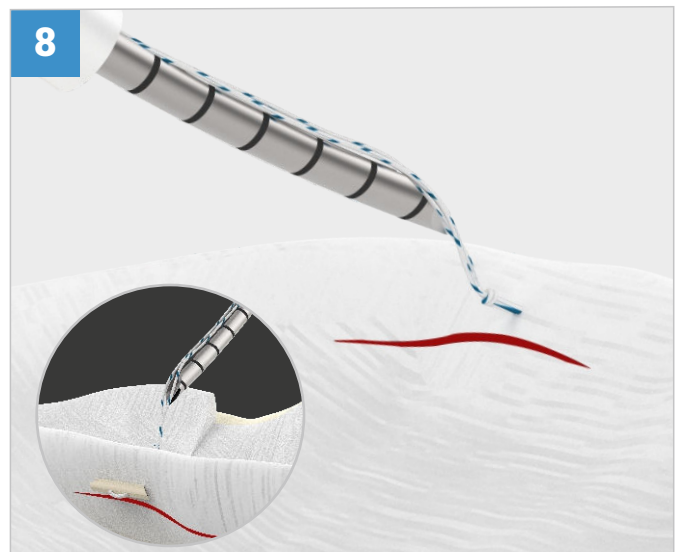
**Image 5.** Insert the delivery needle into the meniscus through the capsule.



**Image 6.** Keep the delivery needle in position during deployment of the implants.



**Image 7.** Push the deployment slider all the way forward to deploy (Implant1).

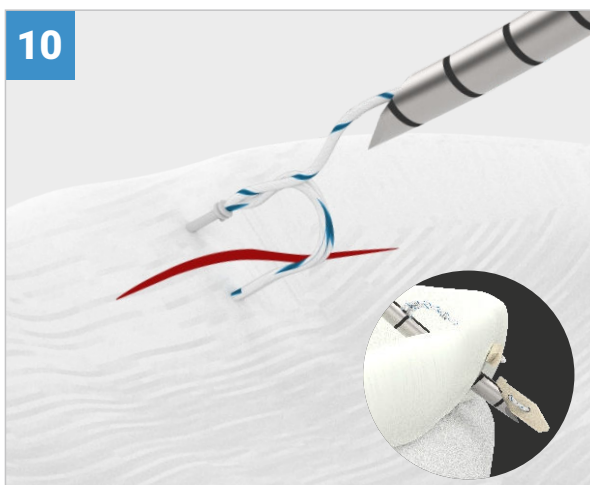
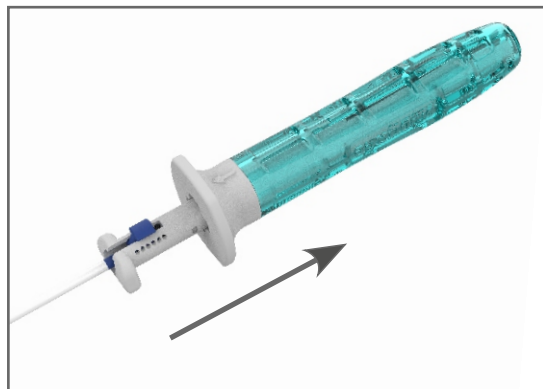


**Image 8.** Withdraw the delivery needle from the meniscus slowly for better suture management.

## Vertical Mattress Suture Repair

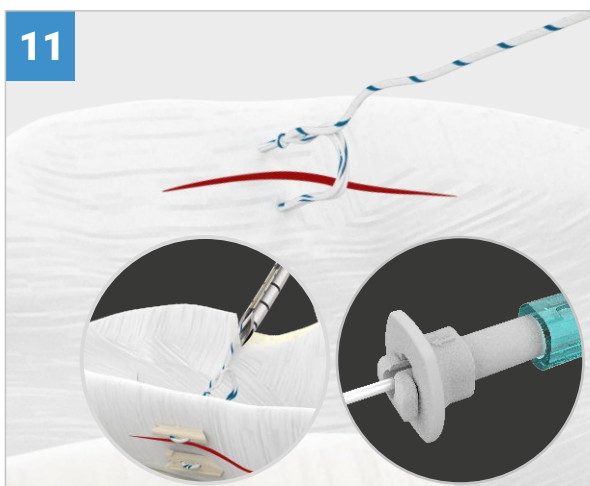
**3.** For a vertical mattress suture repair, place the first implant (Implant1) on the capsular side of the tear. Insert the MENI-FIX All-Inside delivery needle into the capsule or into any remaining meniscal tissue on the capsular side of the tear. (Image 5). Use the slotted cannula to stabilize the meniscus, enhance visualization, and minimize skiving of the delivery needle to ensure more accurate placement of the implants. Position the tip of the slotted cannula at the desired entry point and rotate the cannula away from the direction of the neurovascular structures. Rotating the cannula allows better visualization of the delivery needle tip and directs the needle away from the neurovascular structures. Keeping the delivery needle in position, push the deployment slider all the way forward to deploy (Implant1). Proper deployment of the implant is accompanied by a “clicking” sound. For better suture management and to prevent pulling out the second implant (Implant2), release the deployment slider and slowly withdraw the needle out of the meniscus, keeping the needle inside the slotted cannula (if desired) and within arthroscopic view. (Image 8).

**Note:** Release the slider right after deployment of (Implant 1) to allow the “spring back” of the slider to its original position flush with the handle to pick up the (Implant 2) implant (Image 9). Do not slowly release or hold the slider. If the slider does not spring back, the user may manually return the slider to its original position.



Position the slotted cannula at the desired entry point on the inner meniscal fragment (if desired). The entry point for the second (Implant 2) implant should be at least 5mm from the tear site. Advance the delivery needle until the depth penetration limiter contacts the surface of the meniscus (Image 10). Keeping the delivery needle in position, push the deployment slider all the way forward to deploy Implant 2. As with Implant 1, proper deployment of Implant 2 is accompanied by a “clicking” sound. Slowly withdraw the delivery needle from the joint after deployment of Implant 2 (Image 11).

**Note:** Do not push the deployment slider until the needle is fully penetrated through the meniscus to the preset depth limit or Implant 2 will deploy prematurely.

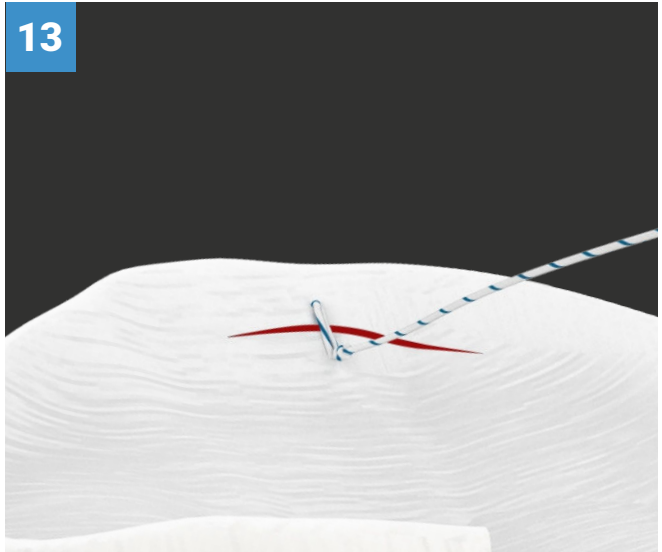
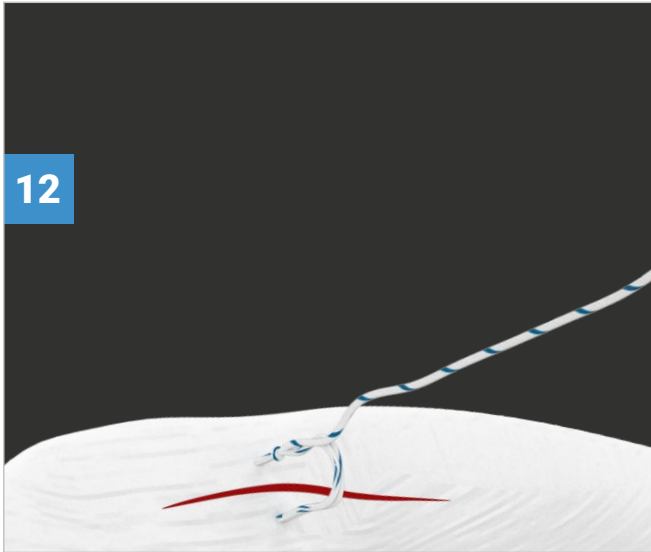


## Horizontal Mattress Suture Repair

**4.** For a horizontal mattress suture repair, place the first implant (Implant 1) at the posterior location. Place the delivery needle perpendicular to the tear and a minimum of 5mm from the tear site on the inner meniscal fragment. Advance the delivery needle until the depth penetration limiter contacts the surface of the meniscus. Keeping the delivery needle in position, push the deployment slider all the way forward to deploy Implant 1. Proper deployment of the implant is accompanied by a “clicking” sound. Release the deployment slider and slowly withdraw the delivery needle out of the meniscus, keeping the needle within arthroscopic view. Position the delivery needle more anteriorly along the meniscal tear site for the insertion of

the second limb of the horizontal mattress suture. In general, maintain a minimum width of 8 mm between the two insertion points. Advance the delivery needle until the depth penetration limiter contacts the surface of the meniscus. Keeping the delivery needle in position, push the deployment slider all the way forward to deploy Implant 2. As with Implant 1, proper deployment of Implant 2 is accompanied by a “clicking” sound. Slowly withdraw the delivery needle from the joint after deployment of Implant 2.

**Note:** Do not push the deployment slider until the needle is fully penetrated through the meniscus to the preset depth limit or Implant 2 will deploy prematurely.



5. Remove the delivery needle from the knee, pulling the free end of the suture out of the joint. The free end of the suture is pulled to advance the sliding knot and reduce the meniscal tear (Image 12). It is normal to encounter firm resistance as the knot is snugged down. It is important to pull the free end of the suture directly perpendicular to the tear site. Wrap the suture around several fingers and use the tibia as a fulcrum to provide a controlled method of tightening the knot. Slowly and steadily apply tension to the suture. In most cases, this steady pulling of the suture will cinch the knot down (Image 13).

**Note: If too much resistance is encountered while advancing the knot, use the AUXILOCK® MENI-FIX All Inside Straight or Curved Knot Pusher/Suture Cutter to help facilitate removing suture laxity.**

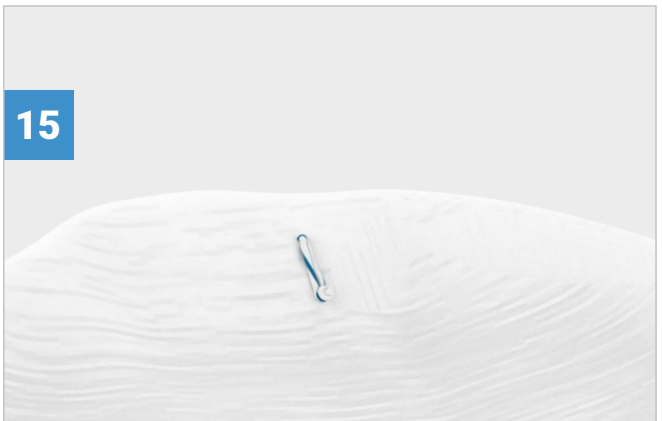
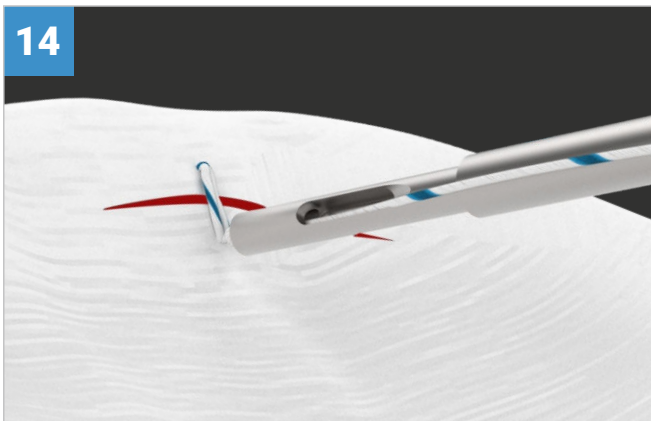


Image 14. Slide the knot pusher/suture cutter to the knot.

Image 15. Push the knot pusher/suture cutter tip against the knot to recess the knot.

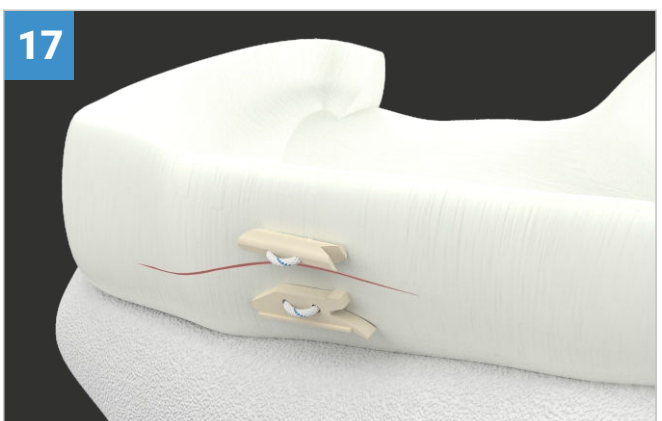
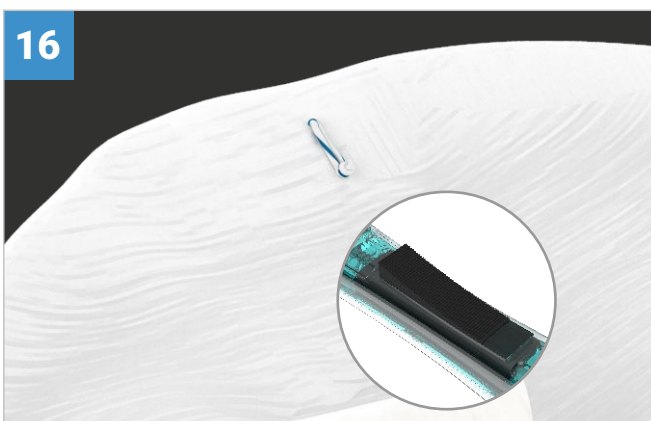


Image 16. Push the trigger to cut the suture.

Image 17. Completed vertical mattress stitch.

## Ordering Information

Code	Product Description
6-048-01	AUXILOCK® MENI-FIX All-Inside Meniscal Repair System - Straight Needle
6-048-02	AUXILOCK® MENI-FIX All-Inside Meniscal Repair System - Curve Needle
6-048-03	AUXILOCK® MENI-FIX All-Inside Meniscal Repair System - Reverse Curve Needle

## Related Instrumentation

Code	Product Description
7-156-08	Slotted Cannula
7-156-14	Knot Pusher with Suture Cutter for Meniscal Repair

7-156-08  
Slotted Cannula



7-156-10  
Curved Probe for Meniscal Repair



7-156-14  
Knot Pusher with Suture Cutter for Meniscal Repair

**Single Use & Available in** STERILE EO



## **USA**

### **Auxein Inc.**

1500 Nw 89th Court, Suite 107-108  
Doral, Florida 33172  
Tel: +1 305 395 6062  
E Fax: +1 305 395 6262  
Email: USoffice@auxein.com

## **MEXICO**

### **Auxein México, S.A. de C.V.**

Tepic 139 int 801, Colonia Roma Sur,  
Alcaldía Cuauhtémoc, CDMX,  
México, C.P. 06760  
Tel: +521 55 7261 0318  
Email: info@auxein.mx

## **INDIA**

### **Auxein Medical Pvt. Ltd.**

Plot No. 168-169-170, Phase-4,  
Kundli Industrial Area,  
HSIIDC, Sector-57, Sonapat - 131028, Haryana  
Tel: +91 99106 43638 | Fax: +91 86077 70197  
Email: info@auxein.com