

WRIST TECHNIQUE GUIDE

# TFCC All-arthroscopic Operative Repair Technique with the TFCC FAST-FIX<sup>◇</sup> Kit

Prepared in Consultation with Jeffrey Yao, M.D



KNEE

HIP

SHOULDER

EXTREMITIES

# TFCC All-arthroscopic Repair, Operative Technique

The following technique guide was prepared under the guidance of Dr. Jeffrey Yao. Created under close collaboration with the physician, it contains a summary of medical techniques and opinions based upon his training and expertise in the field, along with his knowledge of Smith & Nephew's FAST-FIX 360 System. Smith & Nephew does not provide medical advice and recommends that surgeons exercise their own professional judgment when determining a patient's course of treatment. This guide is presented for educational purposes only.

## Prepared in Consultation with:

Jeffrey Yao, M.D

## Introduction

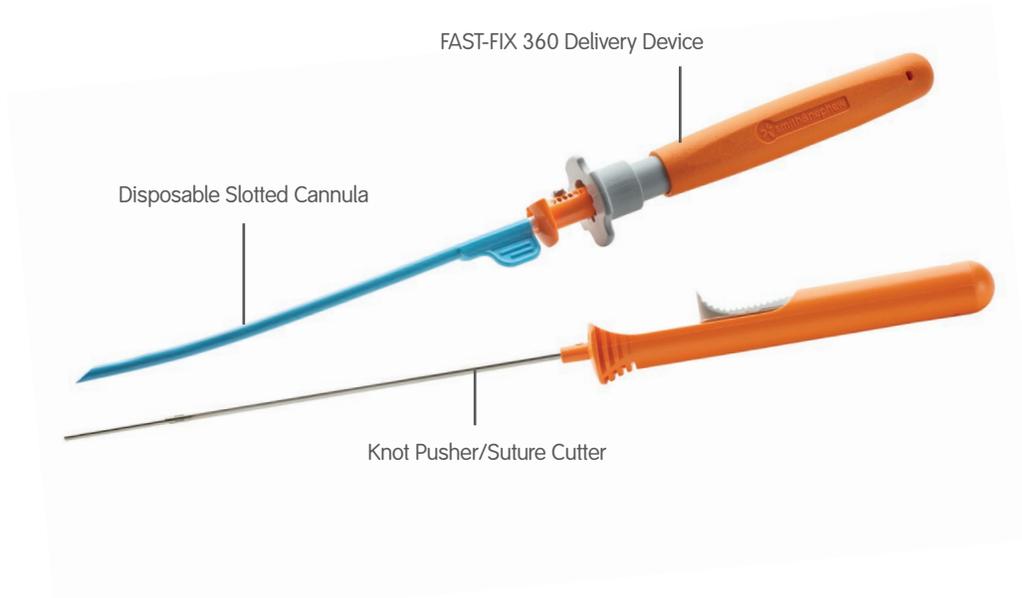
This technique provides a complete description of an all-arthroscopic repair of a peripheral Type 1B TFCC tear. This technique uses the Smith & Nephew TFCC FAST-FIX<sup>®</sup> Kit, an all-arthroscopic TFCC repair system. The Kit consists of the delivery device pre-assembled with a disposable split cannula and also packaged with a Knot pusher/ Suture cutter. The delivery device includes two non-absorbable polymer implants, pre-tied with #2-0 ULTRABRAID<sup>®</sup> non-absorbable suture and preloaded into a needle delivery system. The two implants are tied with a patented one-way self-locking sliding knot that can be tightened to close the tear.

## Preoperative Considerations

The technique description below is provided as an educational tool. When making final determinations in product usage and technique execution, it is the responsibility of the operating medical professional to exercise their professional judgment and rely on their own medical training and experience. Prior to performing this technique, or utilizing any product referenced herein, please conduct a thorough review of each product's indications, contraindications, warnings, precautions and instructions as detailed in the Instructions for Use provided with the individual components.

## Patient Positioning

Place the patient in a supine position on a standard operating room table with the operative extremity placed on a hand table. Regional anesthesia is preferred, but this procedure may also be done under general anesthesia.



## Technique

**WARNING:** Prior to performing this technique, consult the Instructions for Use documentation provided with the Kit – including indications, contraindications, warnings, cautions, and instructions.

1. Using a Smith & Nephew wrist arthroscopy tower or SPIDER2 Limb Positioner, distract the radiocarpal joint with 10 to 12 lb of longitudinal traction placed on the index and long fingers.
2. Use the standard 3-4, 4-5 and 6-R portals for diagnostic arthroscopy. Create the portals using an 11 blade to simply nick the skin, followed by blunt dissection and spreading down to the dorsal wrist capsule to prevent injury to the adjacent neurologic and tendon structures. Place the arthroscope in the 3-4 portal and perform diagnostic arthroscopy.
3. Identify the tear location. This technique is used for peripheral TFCC tears as these tears are the most vascular and most amenable to healing following repair. Based on the surgeon's judgment, if the insertion needle can cross the TFCC tear and exit in the target zone located between the Extensor Carpi Ulnaris (ECU) and Flexor Carpi Ulnaris (FCU) tendons, then the TFCC FAST-FIX Kit is appropriate for use. If it is determined that the needle may contact the ECU or the FCU, or if the needle would penetrate somewhere dorsal to the ECU or volar to the FCU, consider using an alternate method of repair such as the one provided by the Smith & Nephew TFCC Mender Kit (REF 7210752).
4. Mark the ECU and FCU tendons (**Figure 1**). The area between the ECU and FCU tendons represents the target zone.

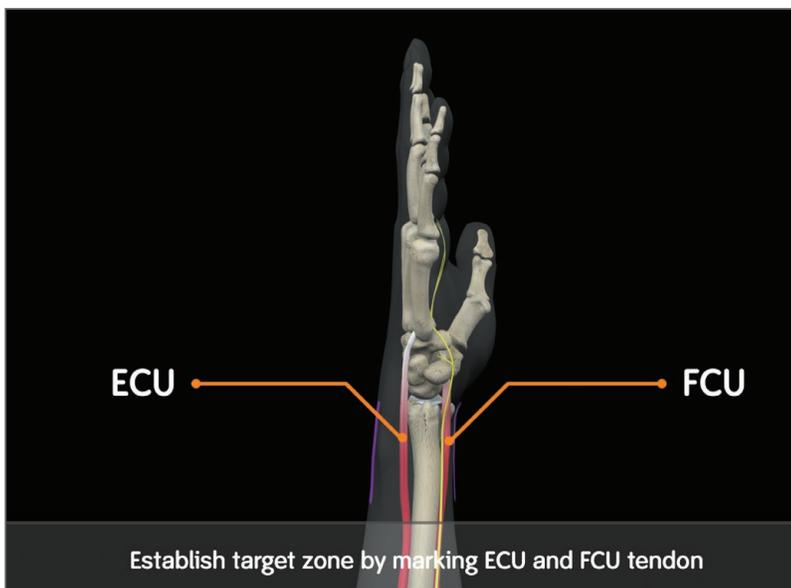


Figure 1

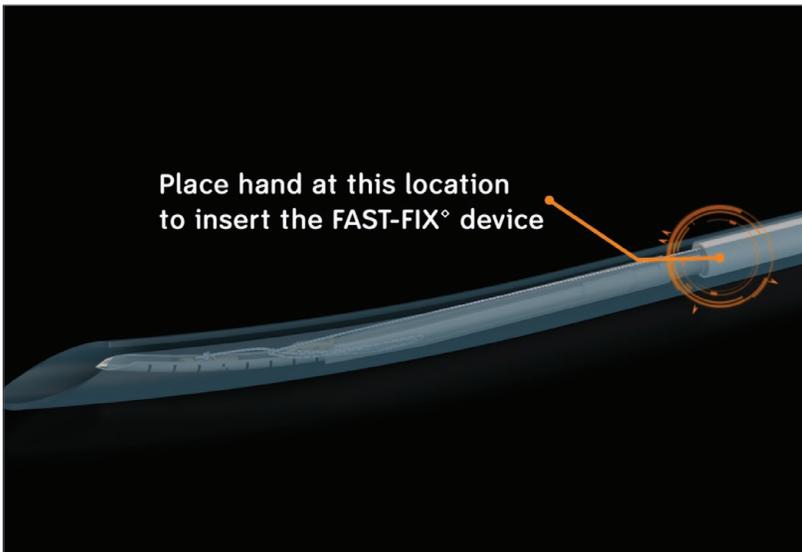


Figure 2

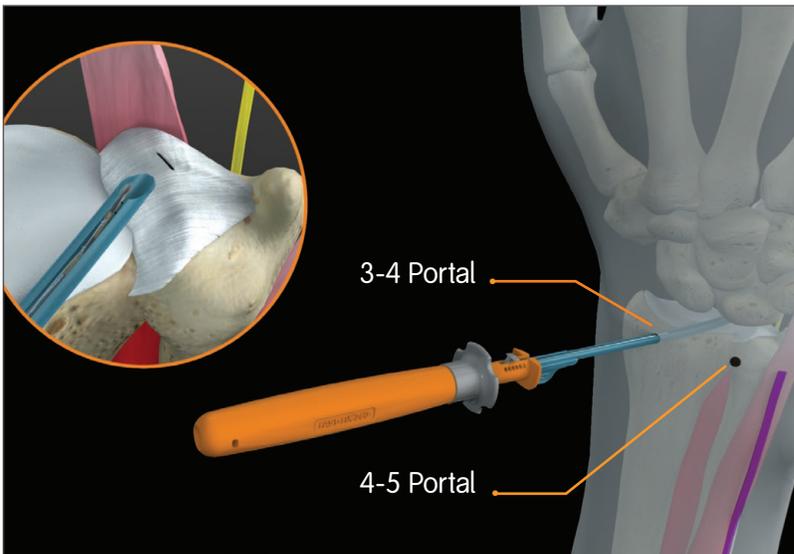


Figure 3

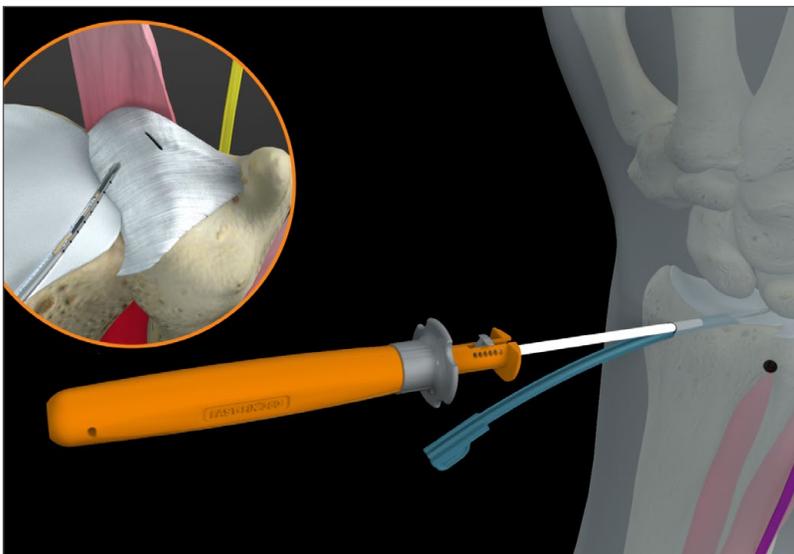


Figure 4

5. Debride the peripheral TFCC tear using a Smith & Nephew 3.5 mm full radius POWERMINI® shaver to stimulate angiogenesis and a healing response at the repair site.
6. Hold the shaft of the FAST-FIX® 360 delivery device in the area of the distal end of the white tube, to minimize bending of tip. (See **Figure 2**) With the arthroscope in the 4–5 portal looking ulnarly at the periphery of the TFCC, introduce the curved FAST-FIX 360 Delivery Device through the 3-4 portal into the ulnocarpal joint using the split cannula, as shown in **Figure 3**.
7. Once inside the joint, grasp the blue tab on the split cannula and pull to separate it from the delivery device, as shown in **Figure 4**.
8. Grasp the orange handle on the delivery device and advance the needle through the articular disc of the TFCC, approximately 2 mm away from the tear site, and further advance the needle through the ulnar capsule. (See **Figure 5**) When the ulnar wrist capsule has been penetrated, a distinct decrease in resistance will be felt and a slight tenting of the ulnar skin may be observed. Ensure that tenting of the skin is in the target zone, as shown in **Figure 6**.
9. Pull the needle tip slightly away from the skin and advance the slider all the way forward to deploy T1 on the outside of the ulnar wrist capsule. A click will be heard and the deployment slider will return to its most proximal position. (See **Figure 7**)
10. Slowly retract the needle tip out of the TFCC with a gentle rocking motion, keeping the needle tip within arthroscopic view.

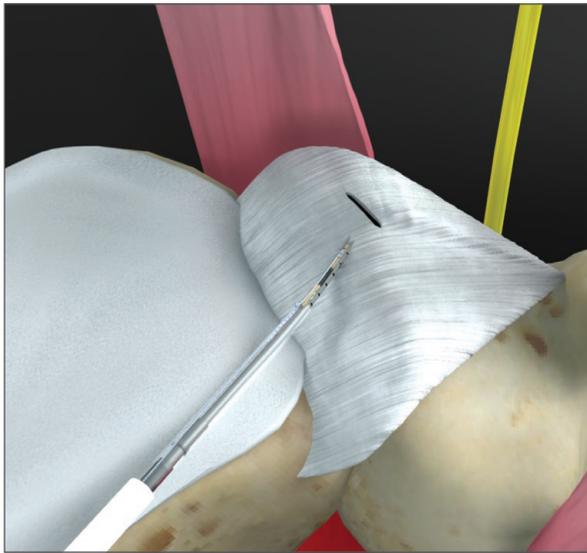


Figure 5

11. For a vertical mattress stitch (See **Figure 8**), advance the tip of the needle only through the ulnar capsule. When the ulnar wrist capsule has been penetrated, a distinct decrease in resistance will be felt and a slight tenting of the skin will be observed. Ensure that tenting of the skin is in the target zone. (See **Figure 6**, in Step 8)
12. Advance the deployment slider all the way forward to deploy T2. A click will be heard.
13. Remove the needle from the joint. Sutures will release freely from the delivery device.

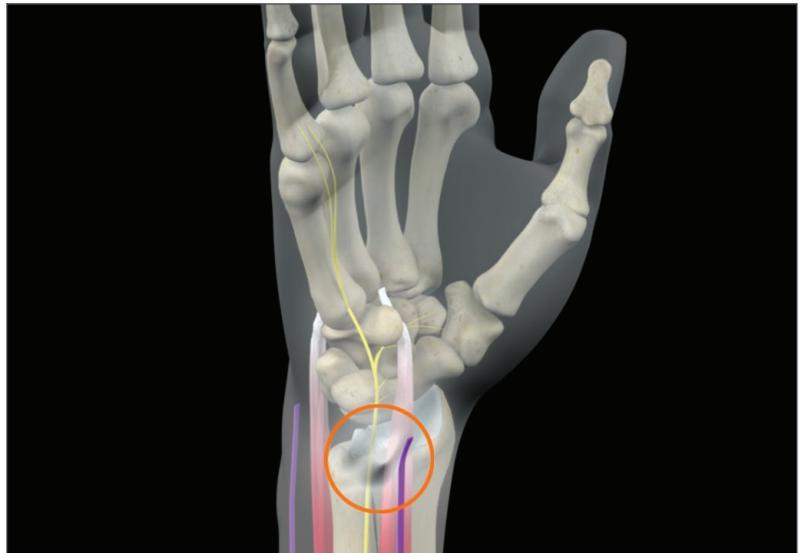


Figure 6

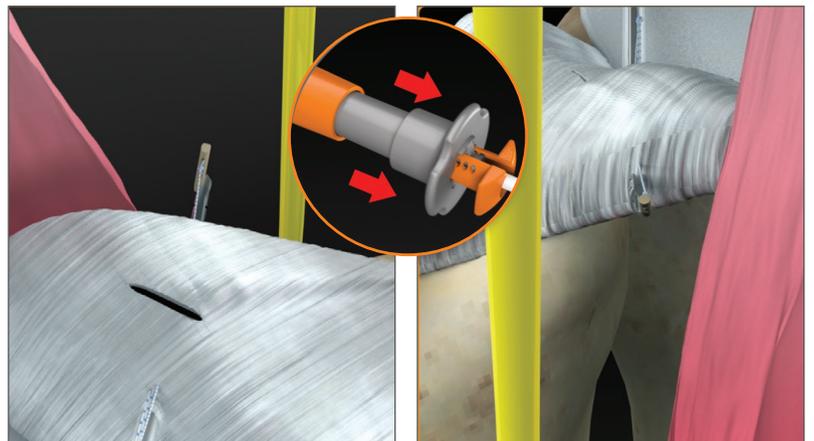


Figure 7

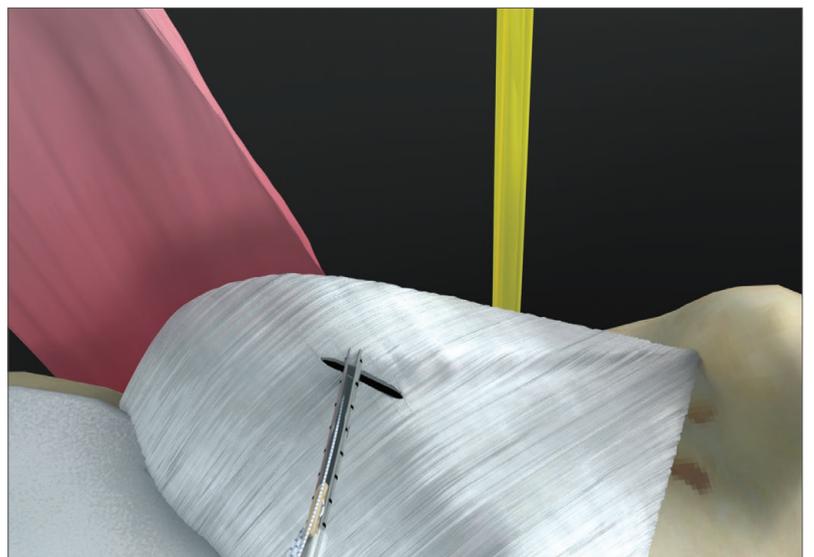


Figure 8

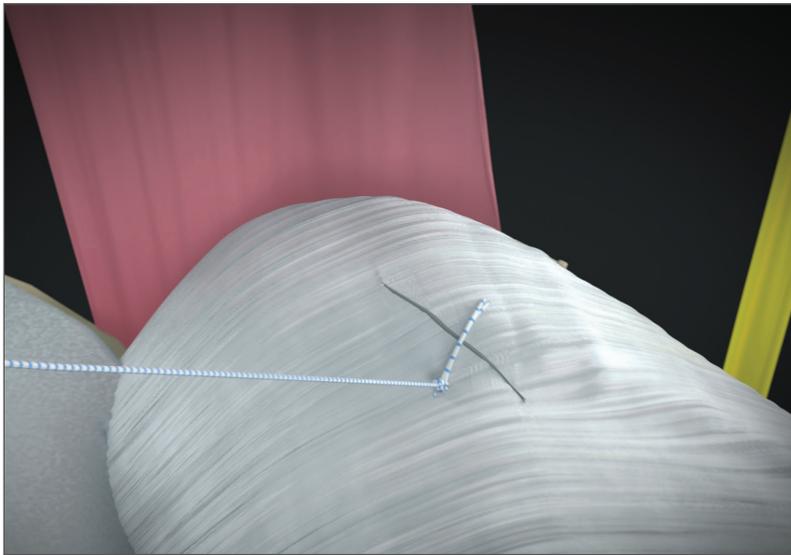


Figure 9

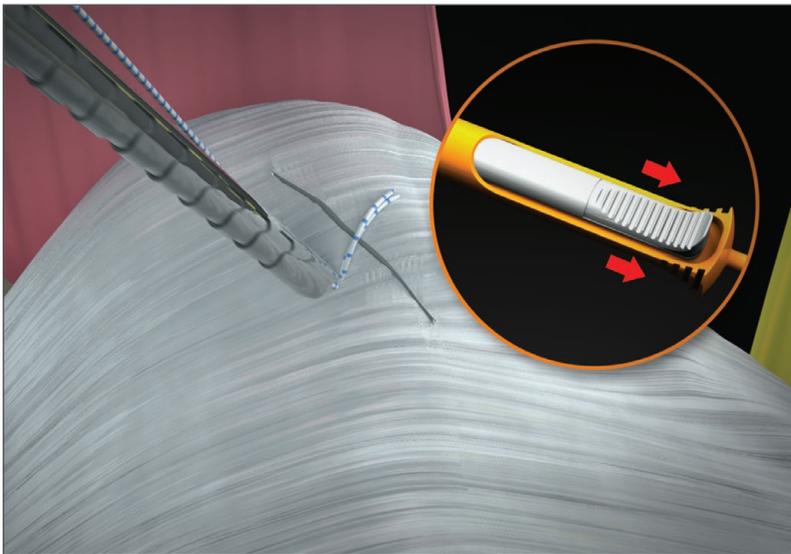


Figure 10



Figure 11

14. Gently tug the free end of the suture to advance the pre-tied sliding knot. This will reapproximate the tissue, bringing the articular disk to the ulnar capsule and therefore closing the tear. (See **Figure 9**)
15. To further snug down the suture construct, thread the free end of the suture through the knot pusher/suture cutter. While holding the suture taut, gently slide the knot pusher/suture cutter along the suture into the joint and down to the knot to achieve the desired tension. While holding the suture taut, cut the suture by advancing the trigger of the knot pusher/suture cutter forward. (See **Figure 10**)
16. If further suture tail reduction is desired, trim the tail using an arthroscopic biter or punch but ensure that a tail of 2 mm is left to prevent the knot from untying.
17. If more than one suture is necessary to completely repair the tear, use an additional TFCC FAST-FIX<sup>®</sup> Kit.
18. Once the repair is completed, evaluate the strength of the repair using an arthroscopic probe. Adequate restoration of the trampoline effect and elimination of the hook test should be achieved. The stability of the distal radioulnar joint should also be confirmed. (See **Figure 11**)
19. Close the wounds with a monofilament suture, and place the patient's extremity into a well-molded sugar tong splint with the forearm in neutral rotation for 2 weeks.

## Post-operative Care

- During the first post-operative visit, remove the skin sutures and place the arm in short arm cast for an additional 4 weeks. However, results from recent biomechanical studies suggest that the strength of repair may allow for shorter time of immobilization (down to 4 weeks) with a smaller cast.<sup>1</sup> After the cast is removed, at 4-6 weeks postoperatively, begin wrist range of motion exercises, with strengthening beginning as tolerated but no later than 8 weeks postoperatively.
- Release patients to full activity at 3-5 months postoperatively.

## Technique Pearls

- Remember to deploy T1 before withdrawing the needle. Push the trigger all the way forward to deploy each implant. A “click” should be heard confirming implant deployment
- After T1 deploys, let go of the trigger and allow it to spring back to the original position. If needed, manually pull the trigger back.
- Hold the device at the handle and push the slider with the thumb to deploy T1 and T2.
- Keep the device in position during deployment of T1 and T2.
- For better suture management and to prevent pulling out T2, release the deployment slider and slowly withdraw the needle out of the articular disk of the TFCC.
- If the knot does not cinch smoothly, it usually requires a steady and more forceful pull, which is facilitated by wrapping the suture around several fingers, like a pulley, and applying tension.
- Utilize the Knot Pusher/Suture Cutter to aid with cinching and sliding of the knot. Use the Knot Pusher to apply pressure, in lieu of pulling the suture, to tighten the knot construct.
- The pre-tied, self-sliding knot, included in the FAST-FIX<sup>®</sup> 360 device, slides from the first implant (T1) to the second implant (T2). Therefore, placing T1 farther away than T2 will facilitate sliding of the knot.
- Maintaining the needle insertion tip within the arthroscopic view at all times avoids potential suture tangling.

## References

1. Yao, J. All-Arthroscopic Repair of Peripheral Triangular Fibrocartilage Complex Tears Using FAST-FIX. *Hand Clin* 27 (2011) 237-242. This article was previously published in *Operative Techniques in Sports Medicine* 18:3.

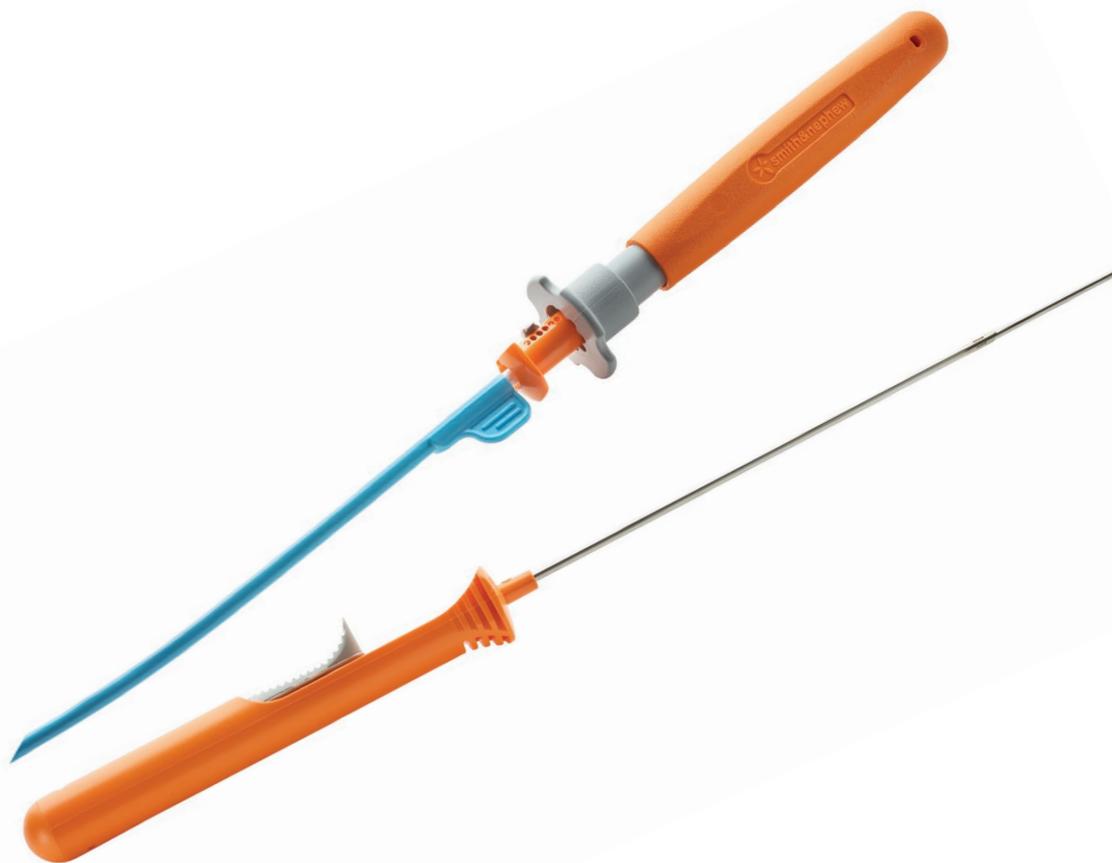
## Ordering Information

To order the instruments used in this technique, call +1 800 343 5717 in the U.S. or contact an authorized Smith & Nephew representative.

Prior to performing this technique, consult the Instructions for Use documentation provided with individual components – including indications, contraindications, warnings, cautions and instructions.

Reference #	Description
72203986	TFCC FAST-FIX® Kit (Includes FAST-FIX 360 Delivery Device, Disposable Slotted Cannula, and Knot Pusher/Suture Cutter.)

**CAUTION:** U.S. Federal law restricts this device to sale by or on the order of a physician.



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