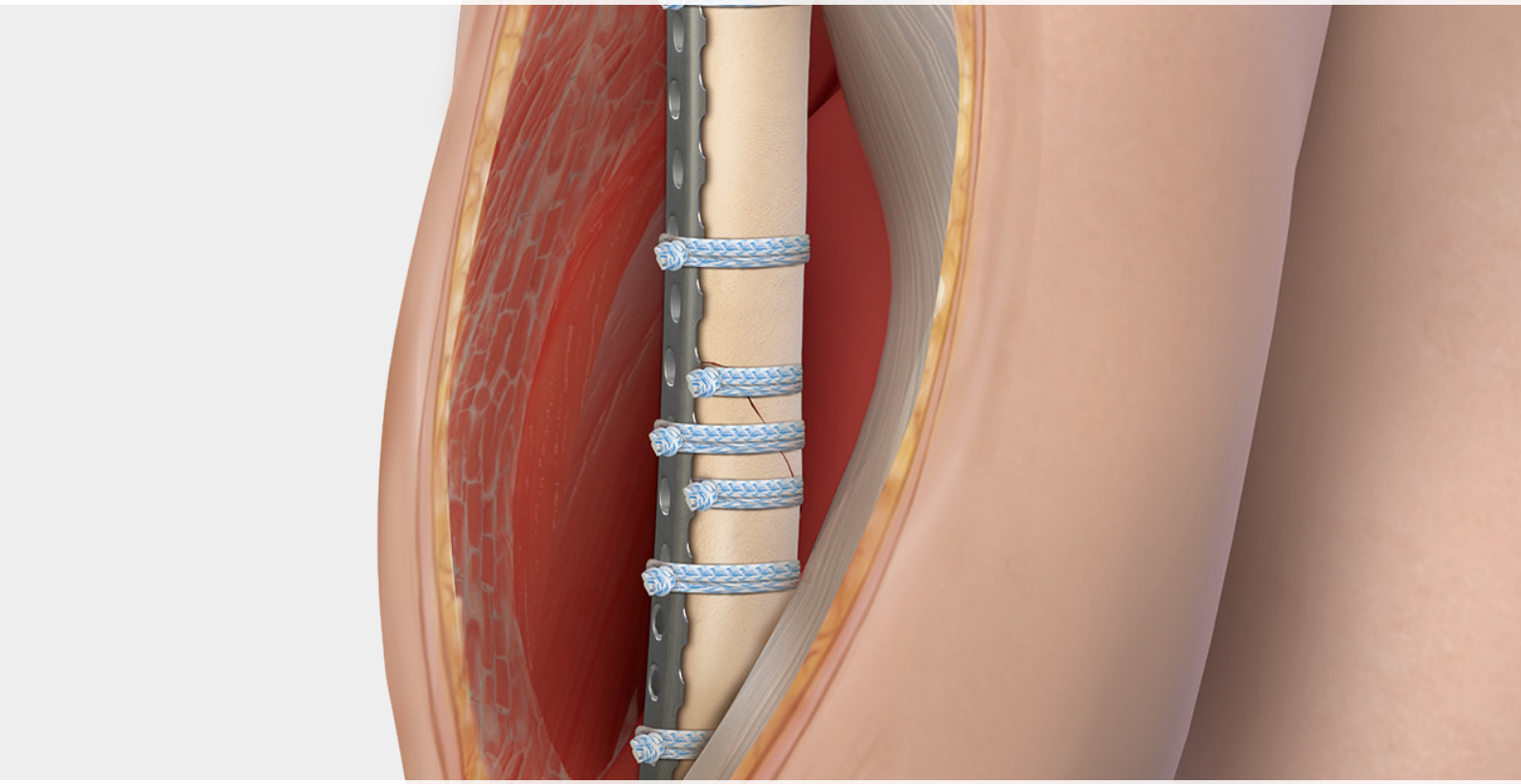
FiberTape® Cerclage System

Management of Periprosthetic Femur Fractures Surgical Technique



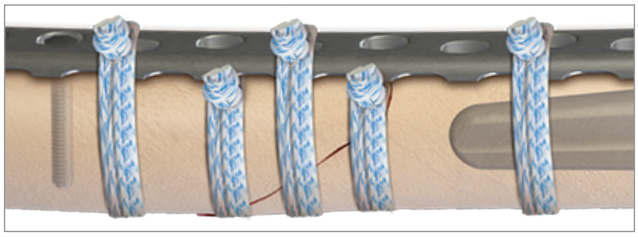
Arthrex®

FiberTape® Cerclage System

The FiberTape cerclage system is a nonmetallic alternative to metal cables and wires traditionally used for fracture management during trauma and reconstruction procedures. Its high-strength, all-suture design and biomechanical properties make FiberTape cerclage an ideal adjunct for stabilization and fixation of periprosthetic femur fractures.

Low-Profile Design

FiberTape cerclage lays flat above or under plating, allowing hardware to be placed flush against bone.

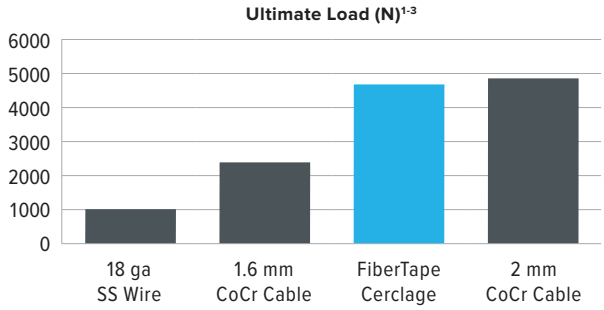


Broad Footprint Compression

FiberTape cerclage may be used to fixate strut grafts. Its unique tape design helps minimize bone cut-through.

Trusted Biomechanical Performance and Strength

FiberTape cerclage's strength stands up to metal cables and wires and is proven to withstand high loads that may be experienced when used as a femoral cerclage.[1-3]



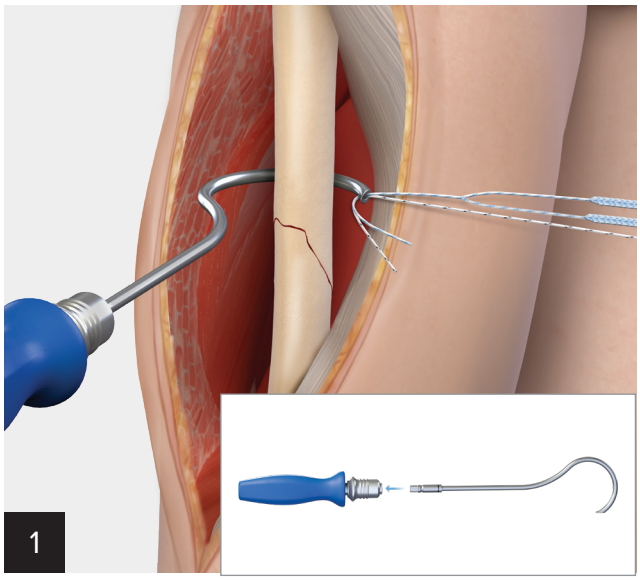
Advantages of Suture-Based Cerclage

- 100% radiolucent—no radiographic interference
- No sharp ends or broken wires that could potentially harm surgeons or patients
- No concerns about metal mismatch with adjacent implants
- No migration of metallic debris or risk of metallosis

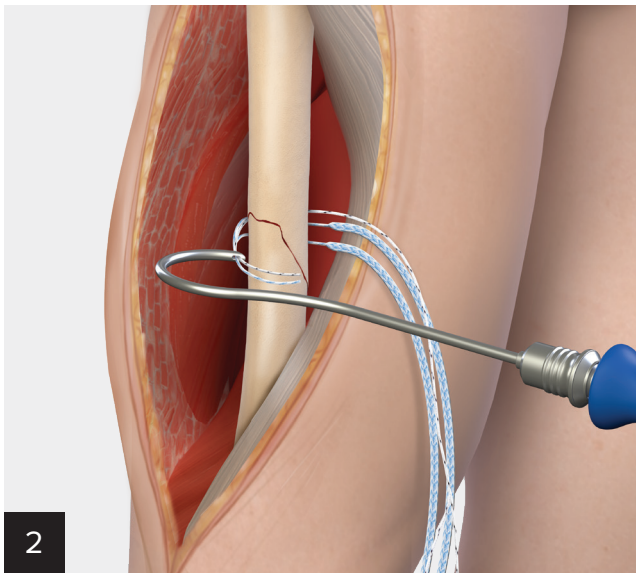
Surgical Technique

This surgical technique guide describes using FiberTape® cerclage to support open reduction and internal fixation of periprosthetic femur fractures and the steps for inserting and tensioning the cerclage. FiberTape cerclage can be used with additional fixation methods (eg, plates, nails, strut grafts, or protheses) as needed for proper fracture management.

FiberTape® Cerclage Single-Use Passers



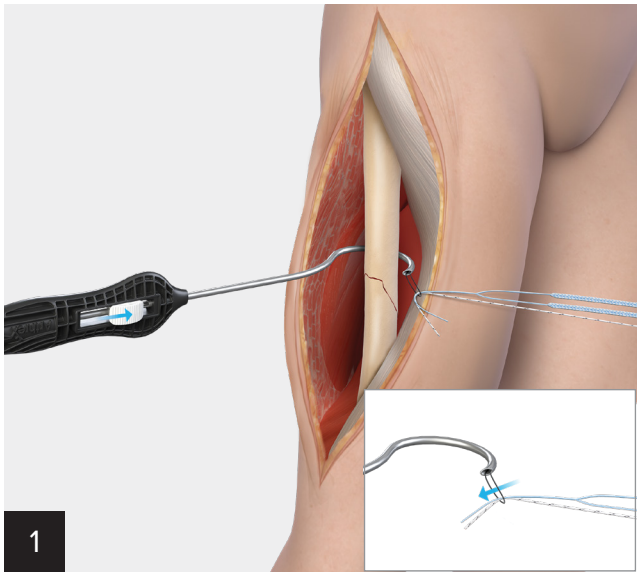
Choose the appropriate cerclage-passing hook to pass the FiberTape cerclage suture around the bone. To connect the passing hook to the handle, pull back on the handle's quick-connect mechanism and insert the passing hook to the level of the laser line, locking the hook in place. Once the handle is connected, position the hook around the bone. Load the FiberTape cerclage suture tail along with the tail end of a TigerLink™ suture into the eyelet of the passing hook.



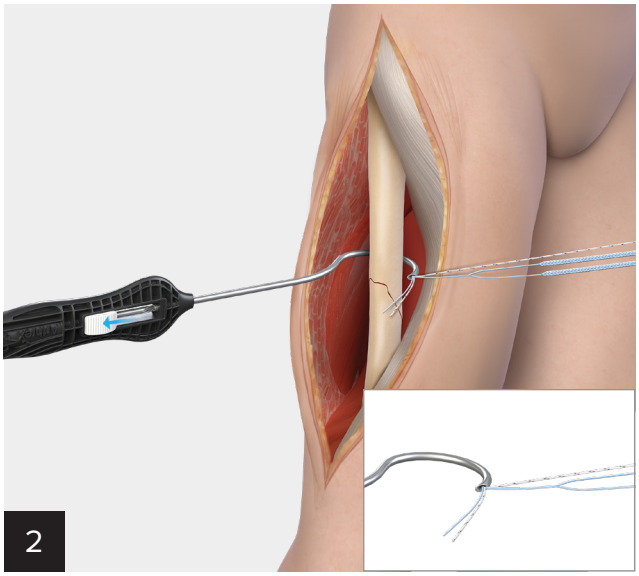
Pull the hook back around the bone and unload the sutures from the eyelet.

FiberTape® Cerclage Single-Use Passers (Optional)

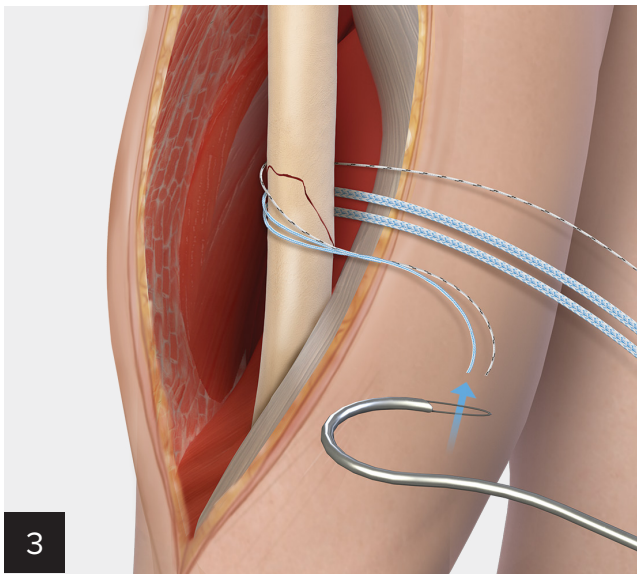
There is a collection of FiberTape cerclage disposable passing hooks with various geometries available to accommodate patient anatomy, surgical approach, and surgeon preference. Each passing hook features a retractable nitinol suture eyelet to facilitate the passing and shuttling of FiberTape cerclage.



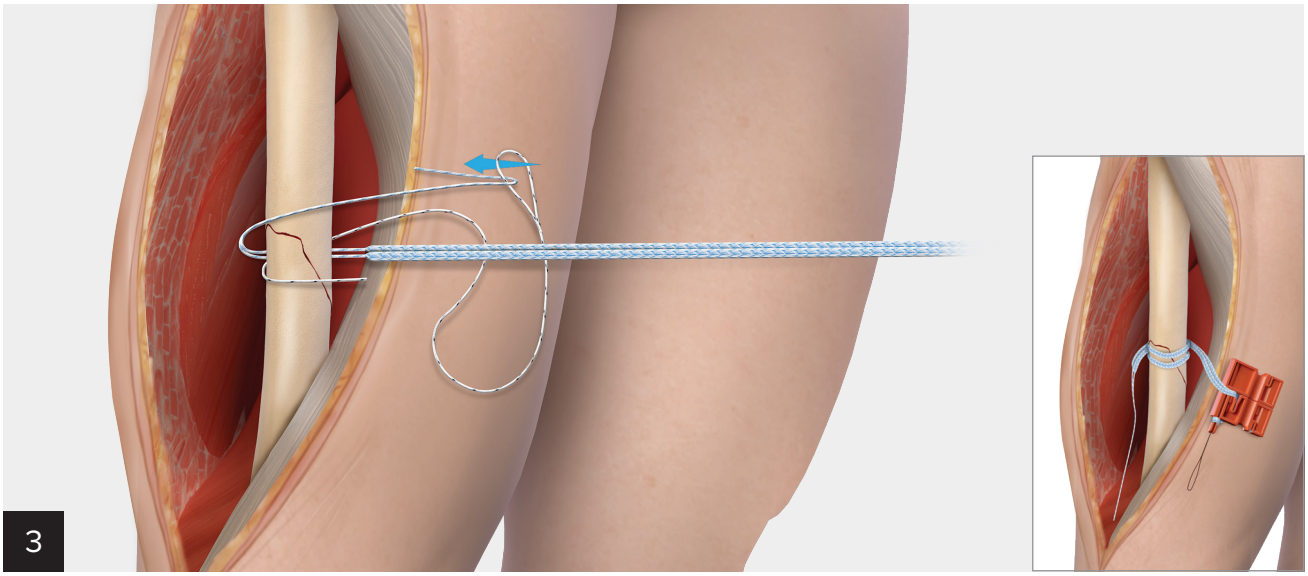
Choose the appropriate single-use cerclage passer and position it around the bone. With the passer in place, advance the handle slider forward to extend the nitinol suture eyelet and load both FiberTape cerclage and TigerLink™ tails into the eyelet.



Slide the handle slider all the way back to retract the nitinol eyelet and lock the suture tails in place.

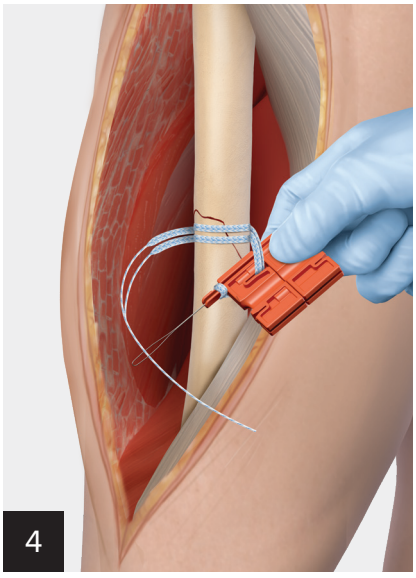


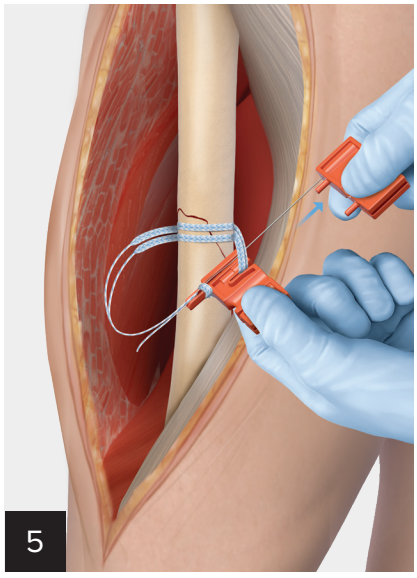
Remove the passer from around the bone. Once removed, advance the handle slider forward to extend the nitinol eyelet and remove the suture tails.

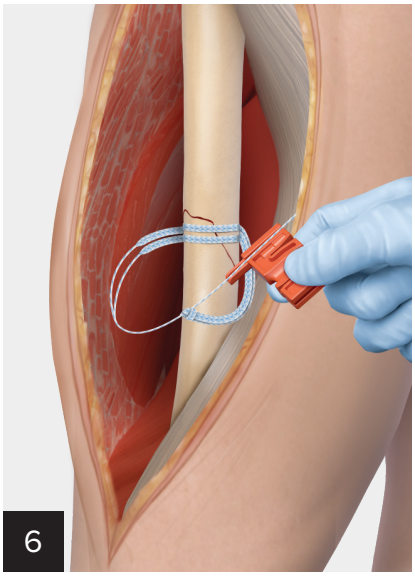


Load the tail of the FiberTape® cerclage suture into the loop end of the TigerLink™ suture. Pull the tail of the TigerLink suture to shuttle the FiberTape cerclage around the bone, completing the second pass of the FiberTape cerclage suture.

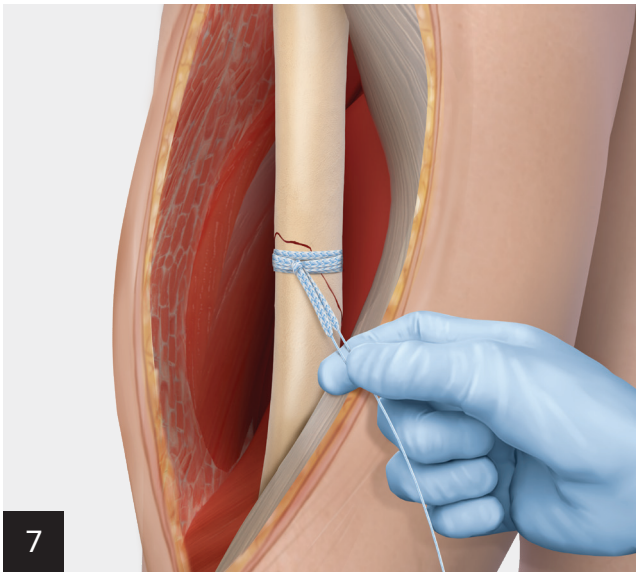
Note: To remove slack from the suture wrapped around the bone, pull on the tail of the FiberTape cerclage to advance the loading device closer to the bone.







Place approximately 2 cm to 3 cm of the FiberTape suture tails into the nitinol loop attached to the loading device. Separate the two tabs of the loader, pulling the nitinol loop and the FiberTape suture tails through the knot. Once the tails are through the knot, uncleat the remaining suture and remove the knot from the loader.



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Slide the knot down to the bone and tighten by hand to remove the gross slack from the cerclage loops. Position the knot so that it does not interfere with the placement of other implants (eg, plates and/or strut grafts) that may be used.

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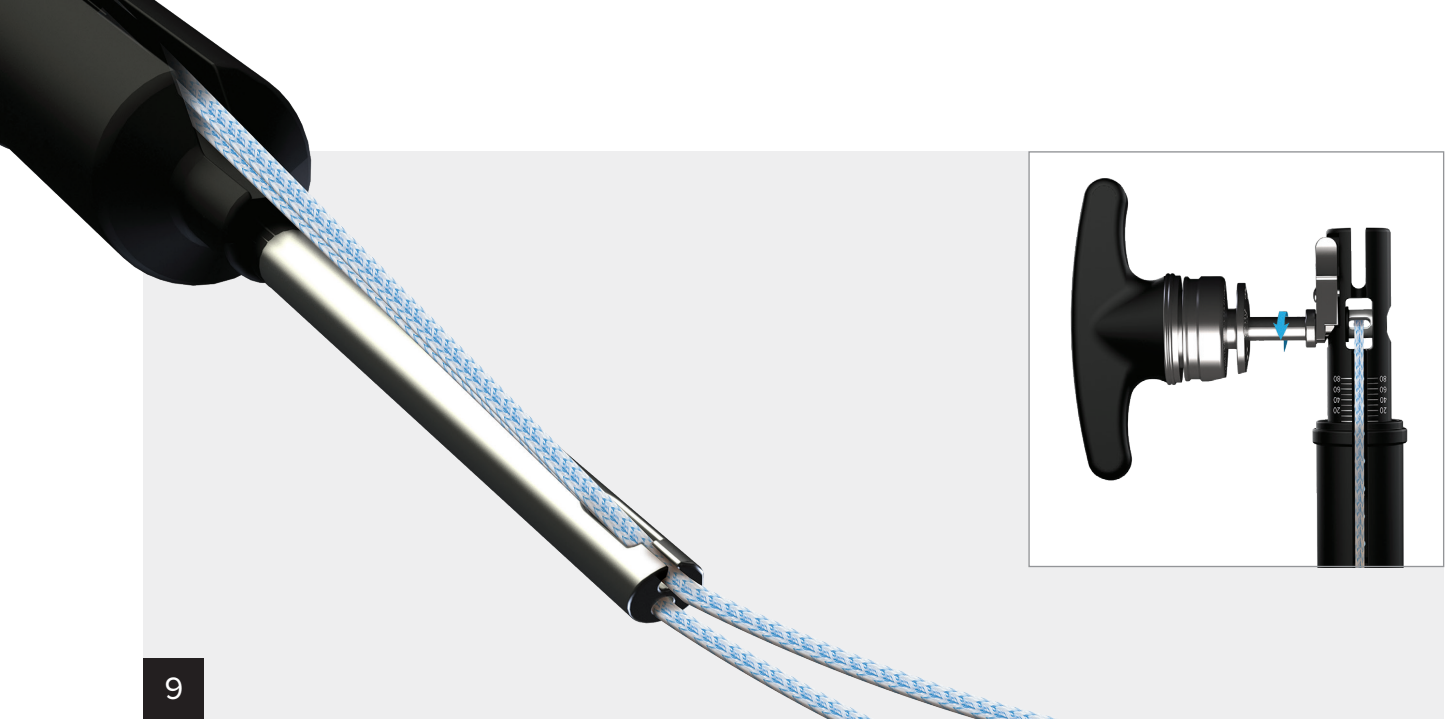
Cut the swedged part of the suture to separate the two limbs of the FiberTape® cerclage.



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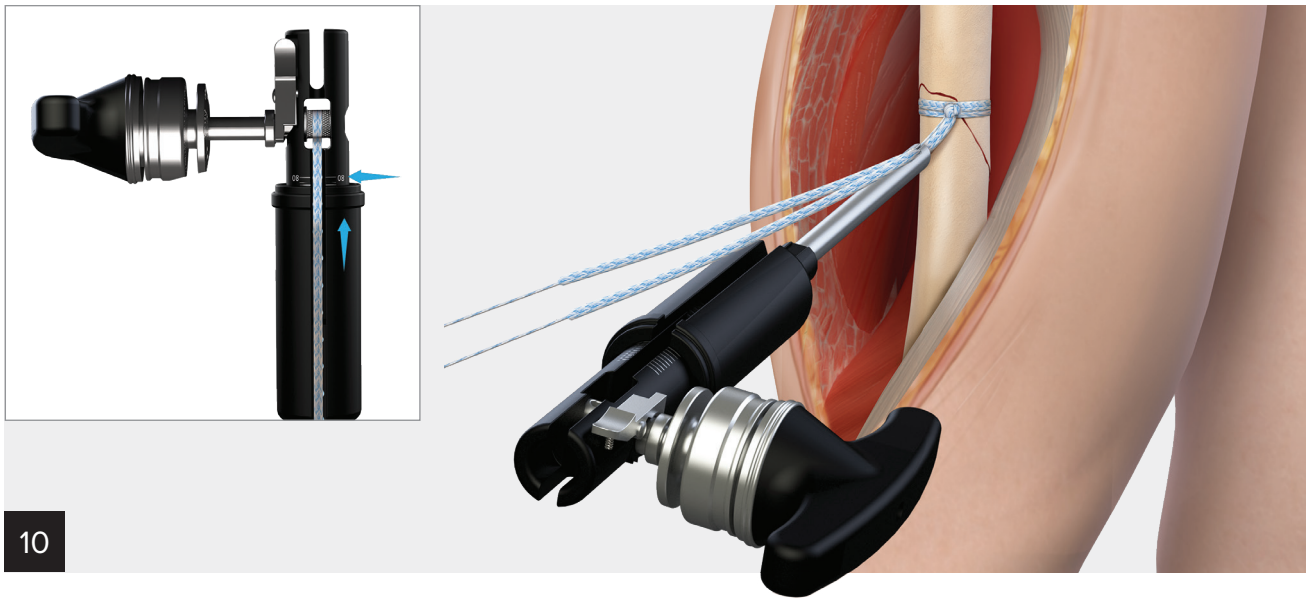
Insert one limb through the bottom hole at the distal end of the tensioner and the other limb through the slot. Load both tails together through the slot near the handle.



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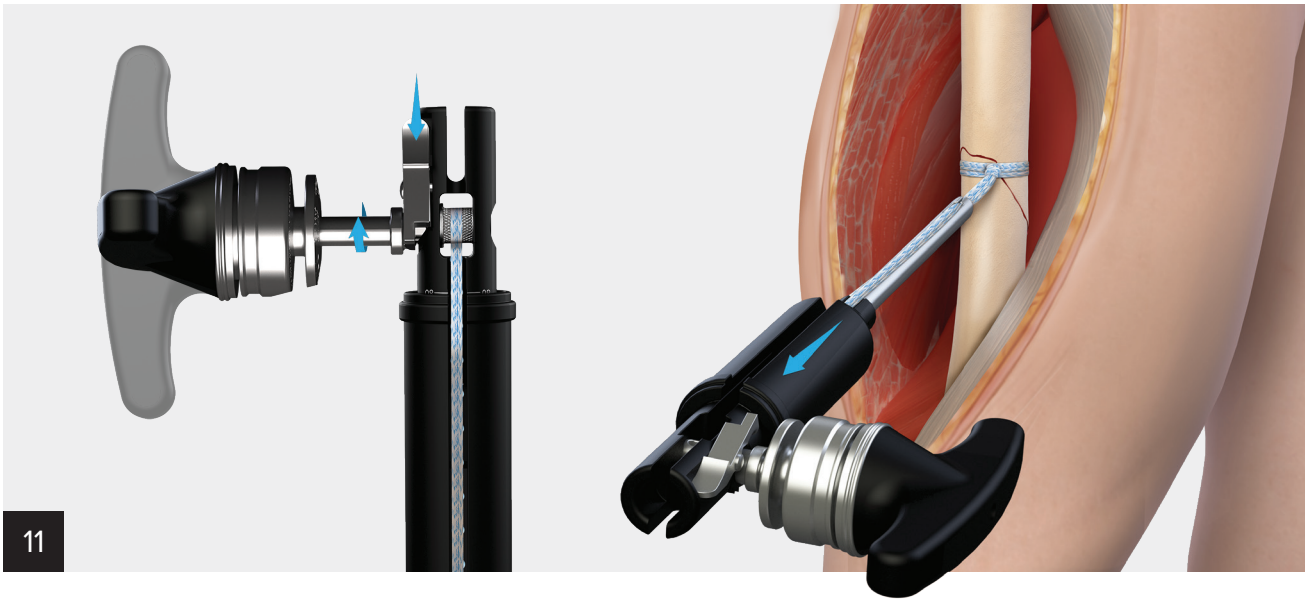
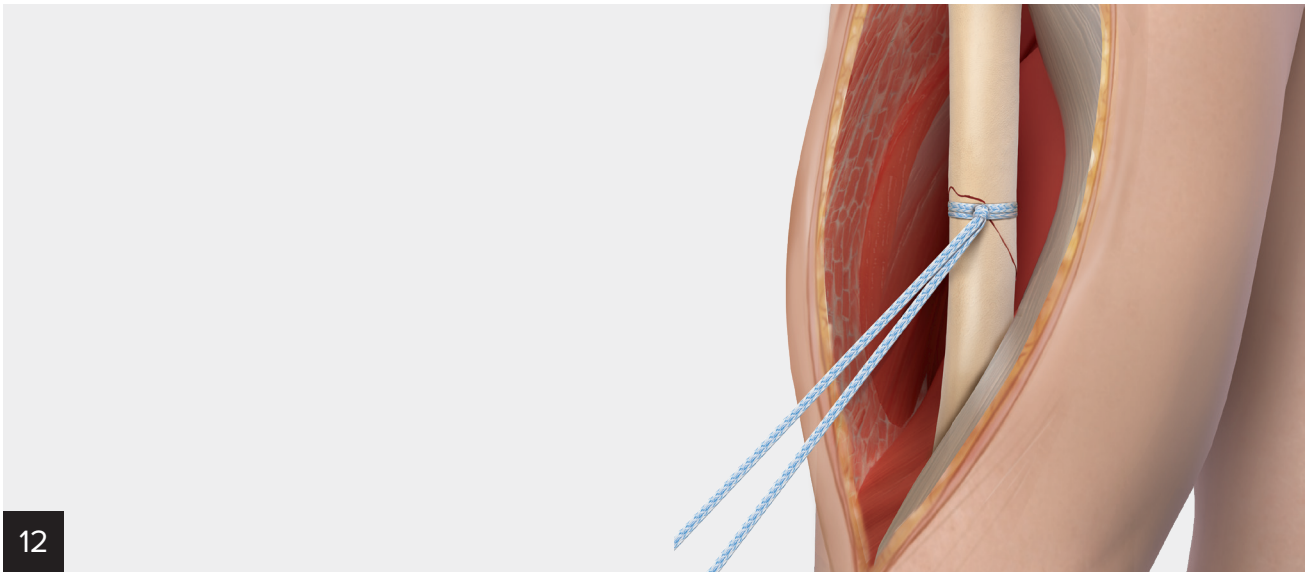
Place the tensioner against the knot and begin to tension the cerclage by turning the handle. Tension until slack is removed from the suture loops and the desired amount of compression is achieved. Avoid bottoming out the spring in the tensioner and damaging the knot by going past the “80” mark on the tensioner.

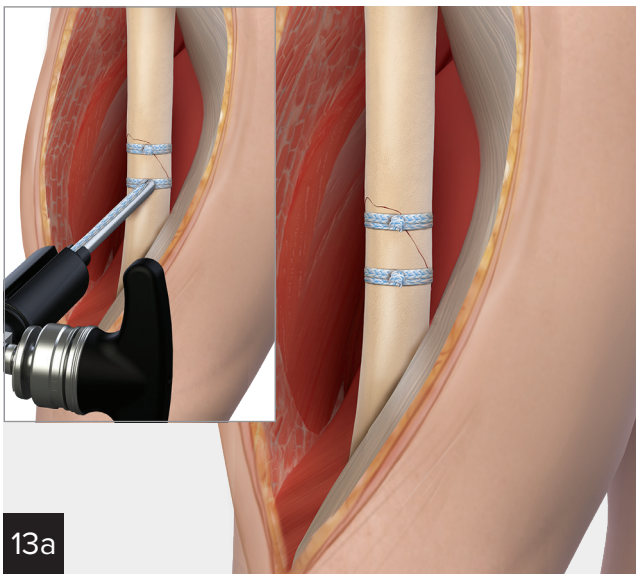


Press and hold the release button near the handle and pull back on the tensioner. Remove the suture limbs from the tensioner.

Note: The tensioner handle will spin when the release button is pressed.



Tie a half-hitch knot to secure the cerclage construct and aid in retaining the cerclage's tension. If necessary, place additional FiberTape® cerclage constructs following the same steps as the first cerclage.



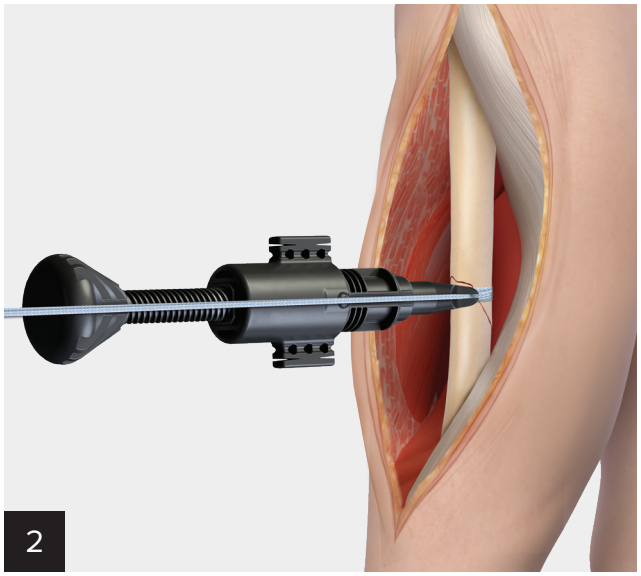
After initial tensioning and applying the first half-hitch knot, each cerclage can be retensioned if necessary until the desired amount of compression is achieved. Reload the suture limbs into the tensioner and perform a final tensioning. Once the desired amount of compression is achieved, tie two alternating half-hitch knots to complete the cerclage construct and cut the remaining suture limbs.

Note: Once the two alternating half-hitch knots are tied, the cerclage construct can no longer be tensioned.

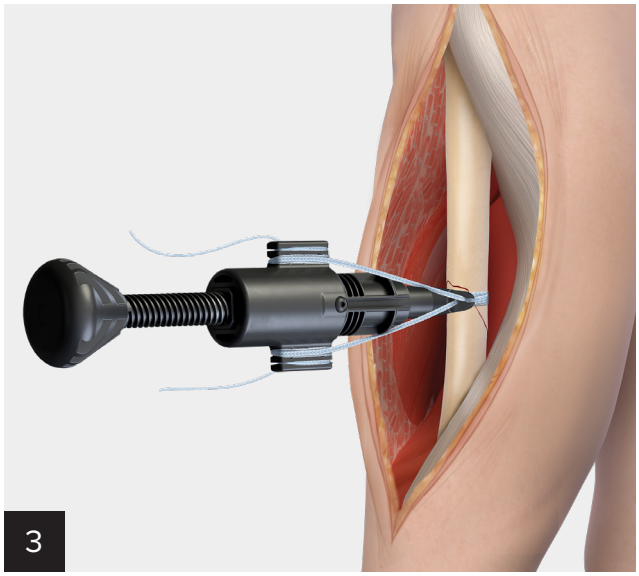
FiberTape® Cerclage Single-Use Tensioner (Optional)

A disposable FiberTape cerclage tensioner is also available.

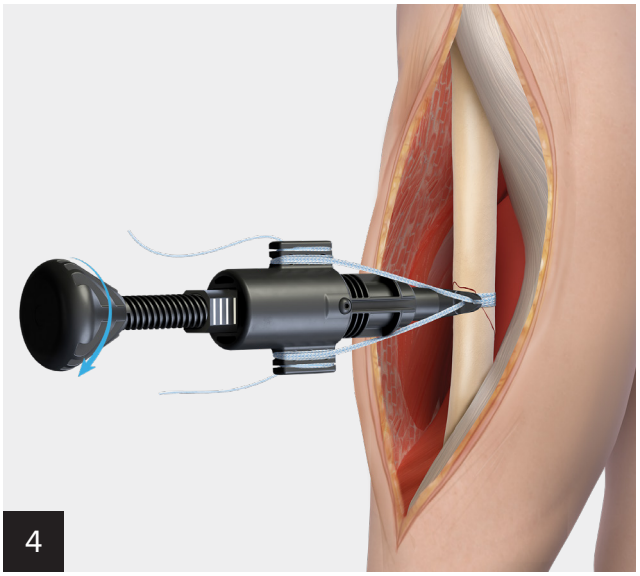
Insert one cerclage suture limb through the bottom hole and the other suture limb through the top slot at the distal end of the tensioner.



Slide the tensioner down onto the knot.

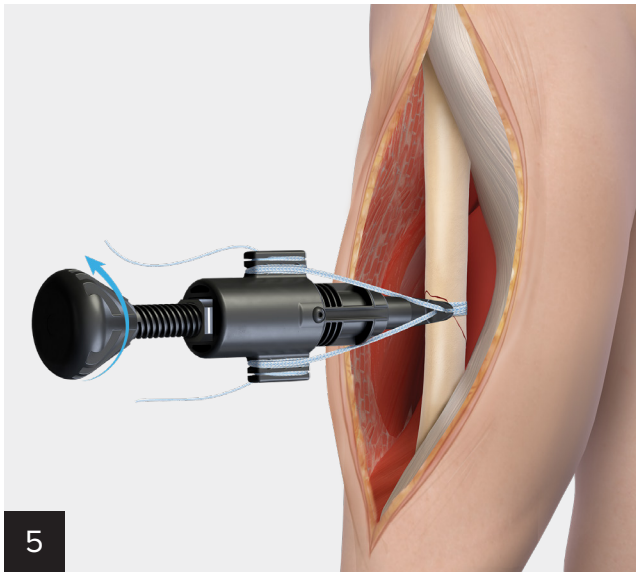


Wrap each suture limb around the main body of the suture wings and secure the tape portion of the sutures in the cleats.

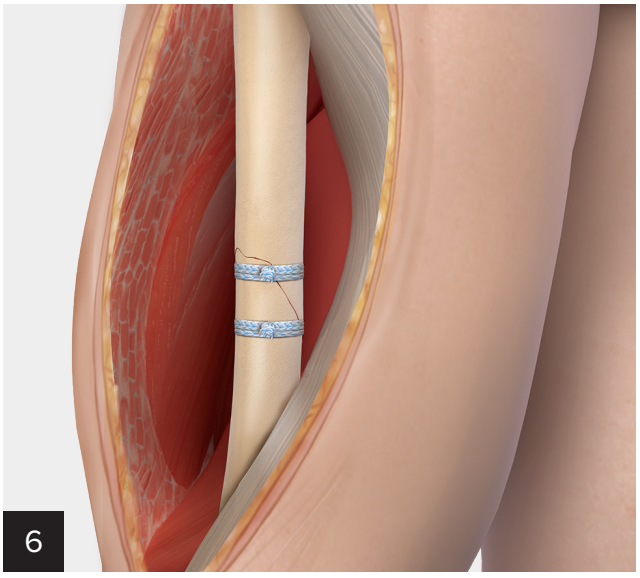


Turn the handle clockwise to tension the FiberTape® suture. Tension until slack is removed from the suture loops, and the desired amount of compression is achieved.

Note: Gauge lines exist to provide a reference and aid in applying a consistent amount of tension when multiple cerclages are used. Caution should be taken to avoid overtensioning and going beyond the fourth gauge line. When the fourth gauge line is reached, the tensioner's spring is nearing its maximum compression.

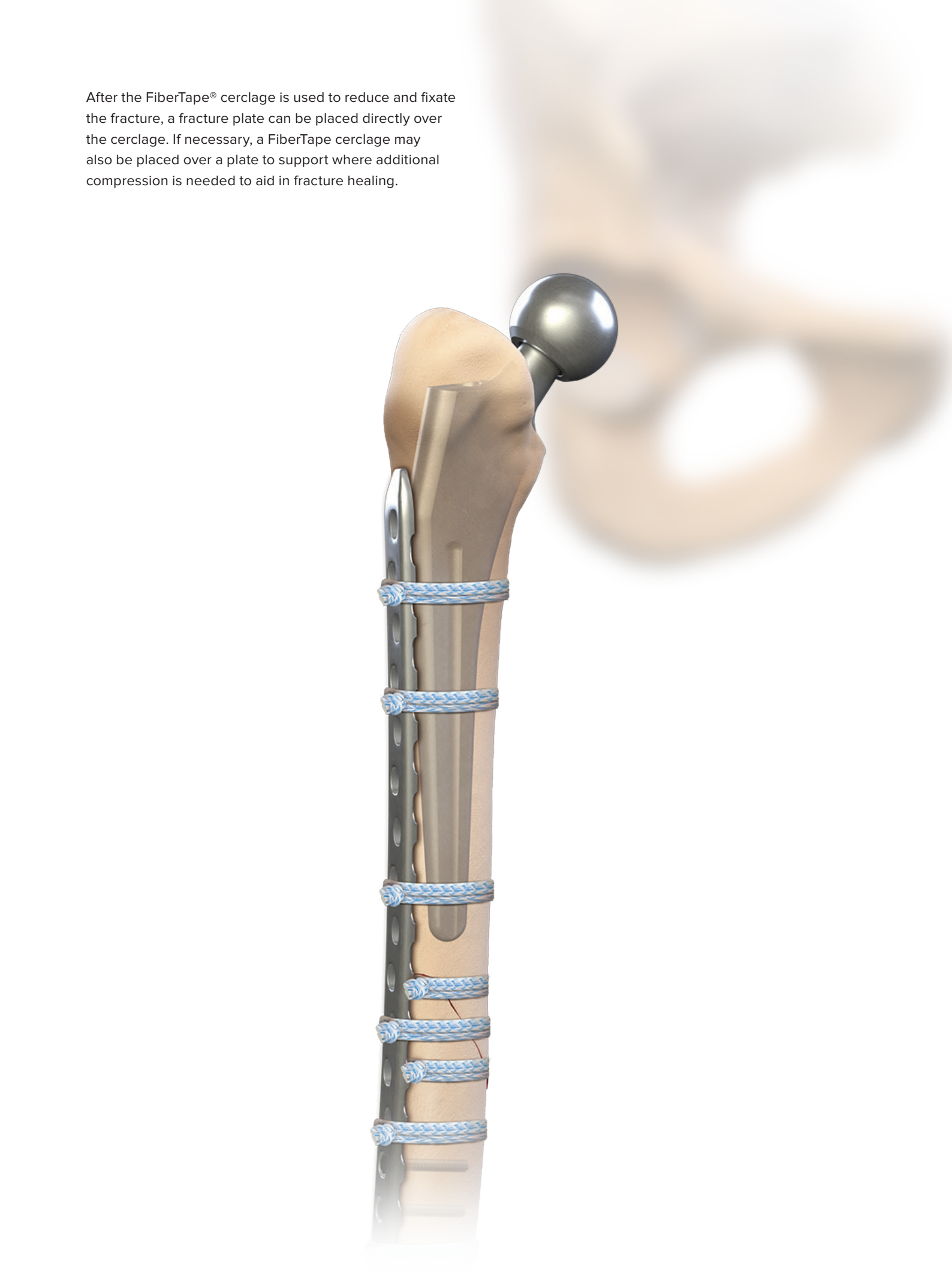


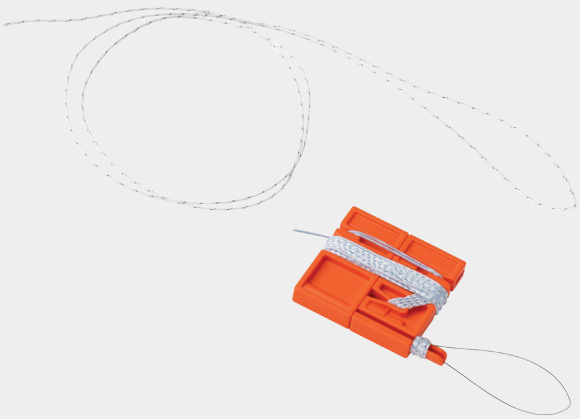
Once the desired amount of tension is achieved, turn the handle counterclockwise and unwrap the suture limbs to remove the tensioner. Tie a half-hitch knot to secure the cerclage construct. Place additional cerclage constructs if necessary.



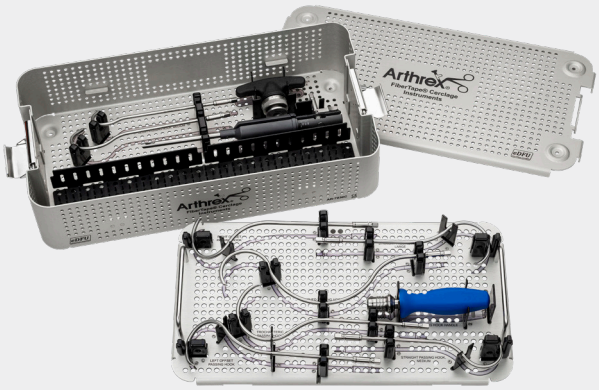
After initial tensioning and applying the first half-hitch knot, each cerclage can be retensioned if necessary until the desired amount of compression is achieved. Reload the suture limbs into the tensioner and perform a final tensioning. Once the desired amount of compression is achieved, tie two alternating half-hitch knots to complete the cerclage construct and cut the remaining suture limbs.

After the FiberTape® cerclage is used to reduce and fixate the fracture, a fracture plate can be placed directly over the cerclage. If necessary, a FiberTape cerclage may also be placed over a plate to support where additional compression is needed to aid in fracture healing.

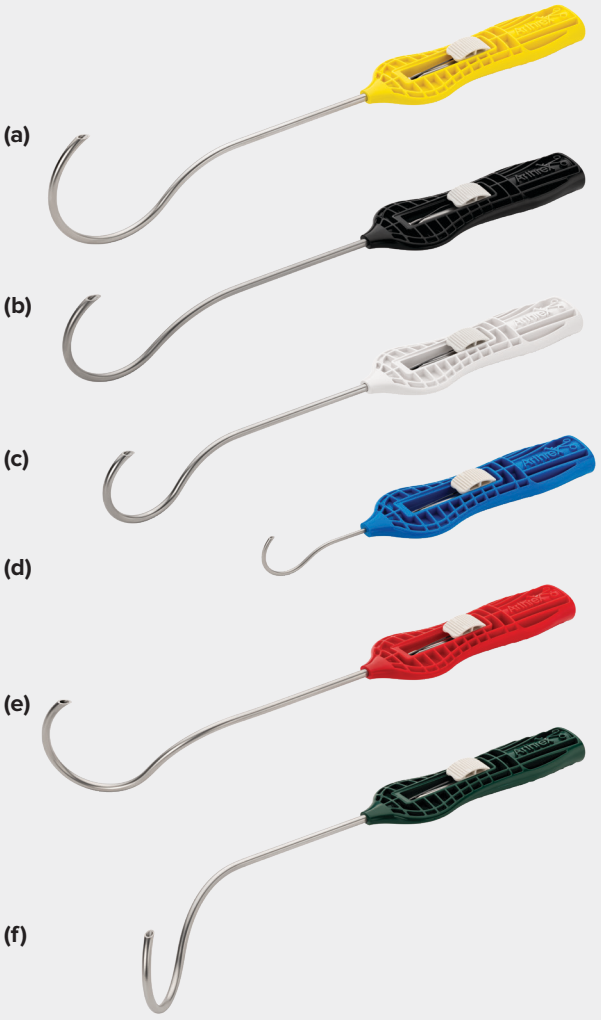




The 2 mm wide FiberTape® cerclage suture comes configured on a loading device with a pretied knot, and it is prepackaged with TigerLink™ shuttle suture.



Depending on the anatomy, surgical approach, and surgeon preference, there is a choice of cerclage-passing hooks to choose from to pass the FiberTape cerclage around the bone.



(a) Trochanteric Passing Hook

(b) Large Passing Hook

(c) Medium Passing Hook

(d) Small Passing Hook

(e) 45° Right-Offset Large Passing Hook

(f) 45° Left-Offset Large Passing Hook

A collection of disposable cerclage passers, with different size passing hooks and geometries, is available. Each passing hook features a retractable, nitinol suture eyelet.

A disposable cerclage tensioner is available. The unique design of the disposable tensioner allows for the suture limbs to simply be wrapped around the device and tensioned by turning the handle.

Ordering Information

Implants

Product Description	Item Number
FiberTape® cerclage suture	AR-**7268**
TigerTape™ cerclage suture	AR-**7268T**

Cerclage Tensioner Set (AR-7830S)

Product Description	Item Number
Tensioner	AR-**7800**
Tensioner handle	AR-**7801**
Cerclage passing hook handle	AR-**2003NR**
Straight passing hook, medium	AR-**7831**
Straight passing hook, large	AR-**7832**
Trochanteric passing hook	AR-**7833**
Curved passing hook	AR-**7835**
Offset passing hook, right	AR-**7834R**
Offset passing hook, left	AR-**7834L**
Blunt tip passing hook, medium	AR-**7836**
Blunt tip passing hook, large	AR-**7837**
FiberTape cerclage instrument case	AR-**7830C**

Single-Use Cerclage Instruments

Product Description	Item Number
Disposable passer, medium	AR-**7821**
Disposable passer, large	AR-**7822**
Disposable trochanteric passer	AR-**7823**
Disposable offset passer, right	AR-**7824R**
Disposable offset passer, left	AR-**7824L**
Disposable small bone passer	AR-**7825**
Passing needle	AR-**7816**
Disposable tensioner	AR-**7820**

Products advertised in this surgical technique guide may not be available in all countries. For information on availability, please contact Arthrex Customer Service or your local Arthrex representative.

References

1. Arthrex, Inc. Data on file (APT 3197). Naples, FL; 2017.
2. Arthrex, Inc. Data on file (APT 04426). Naples, FL; 2019.
3. Arthrex, Inc. Data on file (APT 4577). Naples FL; 2020.

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This description of technique is provided as an educational tool and clinical aid to assist properly licensed medical professionals in the usage of specific Arthrex products. The medical professional must use their professional judgment in making any final determinations in product usage and technique. In doing so, the medical professional should rely on their own training and experience and should conduct a thorough review of pertinent medical literature and the product's Directions for Use. Postoperative management is patient specific and dependent on the treating professional's assessment. Individual results will vary and not all patients will experience the same postoperative activity level and/or outcomes.

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