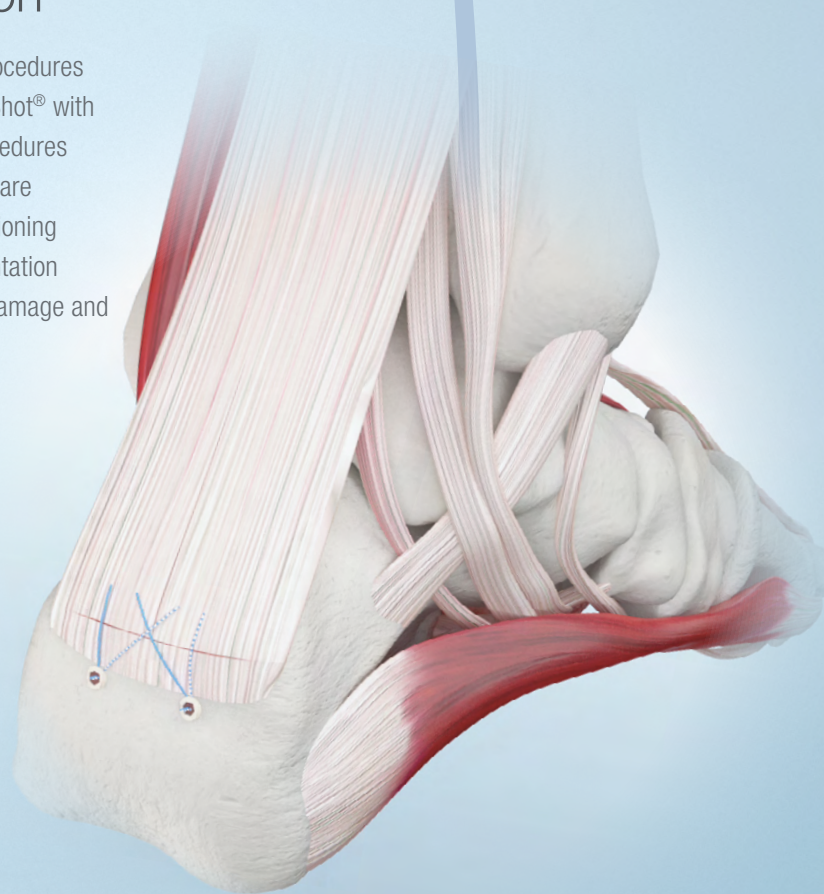
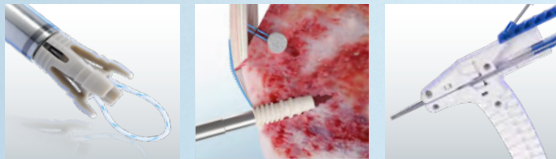




# Achilles Reconstruction Solutions

## with Optional FHL Augmentation

Insertional Achilles Reconstruction is one of the most common procedures in foot and ankle surgery. This technique features CONMED's TruShot® with Y-Knot®, which simplifies anchor placement in foot and ankle procedures through its all-in-one technology. The CrossFT® Knotless anchors are designed to optimize tendon compression through controlled tensioning technology. Finally, the versatile TenoLok® anchor for FHL Augmentation allows for strong tendon-to-bone fixation while reducing tendon damage and tendon wrap.



### Technique featured by

Pradeep Alexander, MD – William Osler Health System Foot & Ankle Reconstruction, Orthopedics\*

Benjamin Overley, DPM – Private Practice (Hilton Head, SC) Foot & Ankle Reconstruction, FACFAS

\*Paid member of the CONMED Extremities Design Team

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# Insertional Achilles Reconstruction

Using TruShot® with Y-Knot® and CrossFT® Knotless, Optional Augmentation using TenoLok®

Authored by Pradeep Alexander, MD | Benjamin Overley, DPM, FACFAS

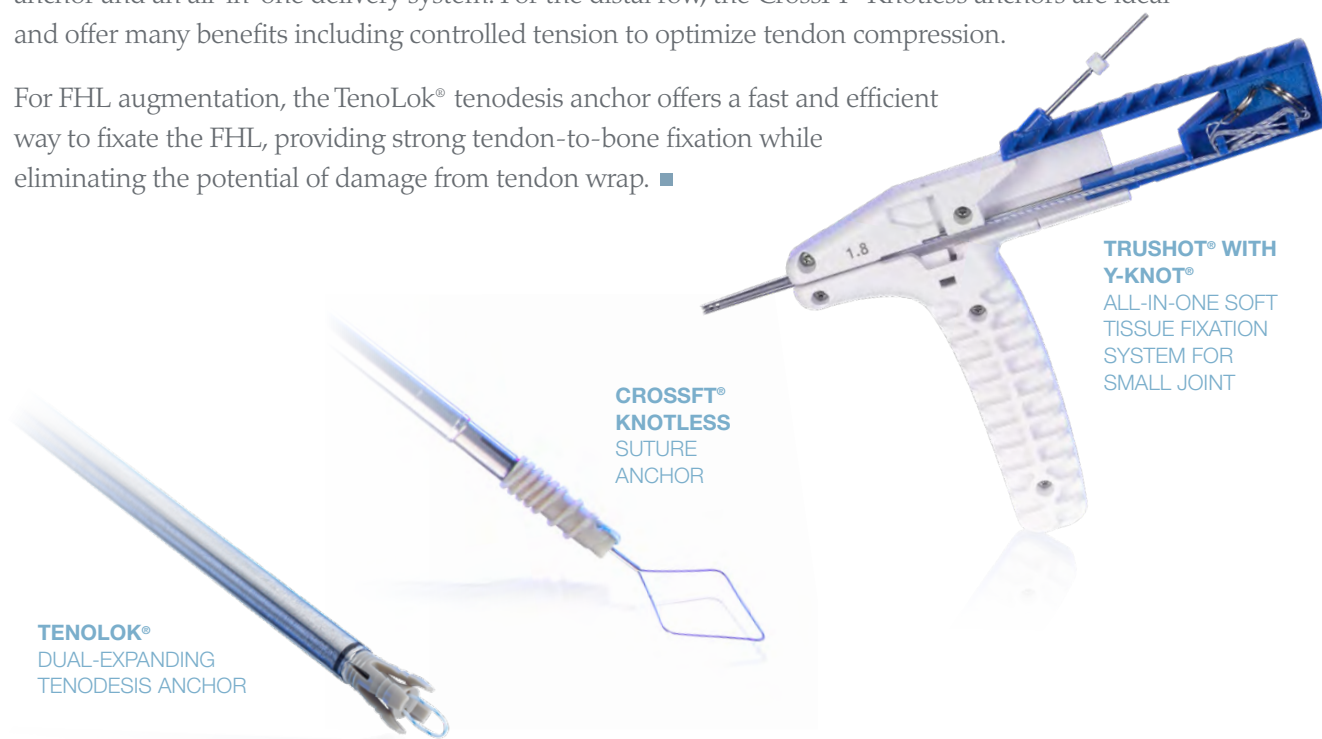
*Insertional Achilles Reconstruction is one of the most common procedures in foot and ankle surgery. This technique outlines the key steps that will allow patients to participate in an accelerated rehabilitation protocol.*

There are many techniques to address insertional tendinopathy, but the key factors include removing the Haglund's deformity, debriding the damaged tendon, and using suture anchors to reattach the tendon to bone for a strong repair.

Utilizing a four-anchor construct provides the best opportunity for healing because of the greater area of compression to bone and the elimination of knot stacks in this area that can be especially sensitive to irritation. In some instances, the repair can be augmented with a flexor hallucis longus (FHL) transfer. This can provide additional strength to the repair if the tendon quality is severely compromised to create additional biologic and biomechanical augmentation.

The proximal row fixation consists of the TruShot® with Y-Knot®, which features a strong all-suture anchor and an all-in-one delivery system. For the distal row, the CrossFT® Knotless anchors are ideal and offer many benefits including controlled tension to optimize tendon compression.

For FHL augmentation, the TenoLok® tenodesis anchor offers a fast and efficient way to fixate the FHL, providing strong tendon-to-bone fixation while eliminating the potential of damage from tendon wrap. ■





## PRADEEP ALEXANDER, MD

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**Dr. Pradeep Alexander** is a board certified orthopedic surgeon at William Osler Health System in Toronto, specializing in Foot/Ankle Reconstruction.

- Clinical Assistant Professor (Adjunct) McMaster University, Department of Orthopaedic Surgery
- Former Physician Lead, Musculoskeletal Program and Former Head of Orthopaedic Surgery at William Osler Health System, Etobicoke General and Brampton Civic Hospital.
- Lecturer: University of Toronto, Department of Surgery.



## BENJAMIN OVERLEY, DPM, FACFAS

*Board Certified Foot /Ankle Surgeon - Private Practice (Hilton Head, SC). Temple University School of Podiatric Medicine, PA. Foot /Ankle Fellowship, Ilizarov Institute for Restorative Orthopaedics and Traumatology, Kurgan, Russia. Surgical visitation, Kanton Hospital, Liestal, Switzerland.*

**Dr. Benjamin Overley** is a board certified Foot/Ankle surgeon at a Private Practice (Hilton Head, SC). He specializes in Foot and Ankle Surgery.

- Fellow of American College of Foot/Ankle Surgeons.
- Currently serves as a special editor for Total Ankle Replacements for the Journal of Foot and Ankle Surgery
- Local, regional and national lecturer and moderator for ACFAS.
- Published in numerous publications on total ankle replacement, ankle arthroscopy and Foot /Ankle reconstructive surgery.
- Former Chair and Co-Chair, as well as a designer of the ACFAS Total Ankle Replacement Course

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The following technique involves the TruShot® with Y-Knot® and CrossFT® Knotless, but a variety of products are available to best suit your surgical needs.

## Insertional Achilles Reconstruction

### Using TruShot® with Y-Knot® and CrossFT® Knotless

Authored by Pradeep Alexander, MD | Benjamin Overley, DPM, FACFAS

#### INCISION AND SITE PREPARATION



**Cut a posterior midline incision** down to the calcaneus with the patient in prone position.

Provision is taken to protect the peritoneum and to retract the medial and lateral skin.



**Make another longitudinal incision** splitting the Achilles tendon to reflect medially and laterally.



**Use the MicroFree® Cordless Small Bone Power Drill** with Sagittal Saw to resect and remove the Haglund's deformity completely from the calcaneus.

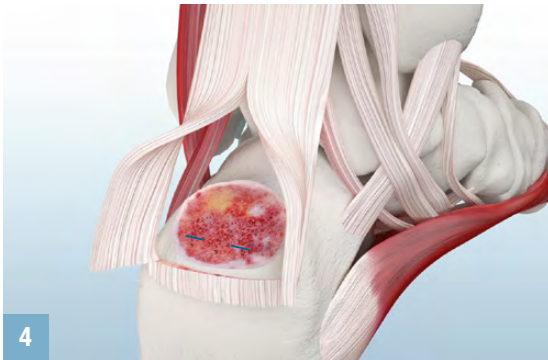
Rongeur to resect the retro-calcaneal bursa. ■

**MICROFREE®**  
CORDLESS  
SMALL BONE  
POWER DRILL



*At this point in the procedure, a tendon transfer incorporating the FHL is an option. For steps showcasing this part of the procedure, reference page 8. If an augmentation is unnecessary, continue on through the technique.*

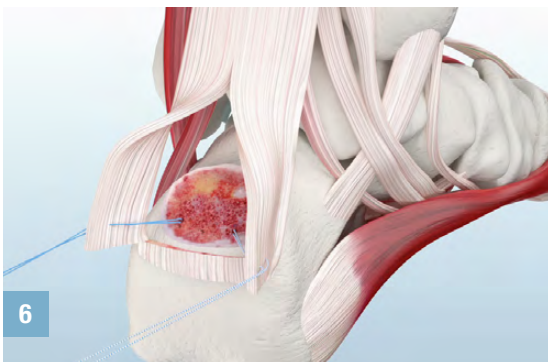
## INSERTIONAL ACHILLES RECONSTRUCTION: PROXIMAL ROW



**Identify and mark** the proximal row insertion points on the calcaneus.



**Insert and deploy** the first and second TruShot® with Y-Knot® 1.8 anchors into the proximal insertional point of the calcaneus.



**Pass the suture** through the distal end of the Achilles Tendon.



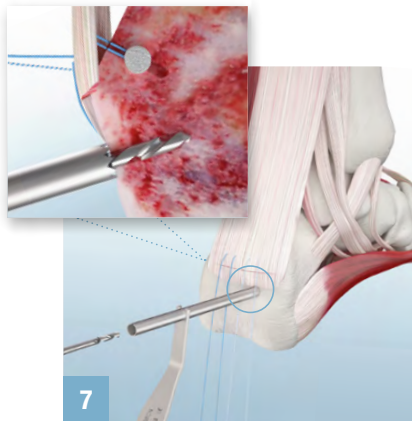
**TRUSHOT® WITH Y-KNOT®**  
ALL-IN-ONE SOFT TISSUE  
FIXATION SYSTEM FOR  
SMALL JOINT

**CONMED  
SURGICAL  
TECHNIQUE**

## INSERTIONAL ACHILLES RECONSTRUCTION: DISTAL ROW

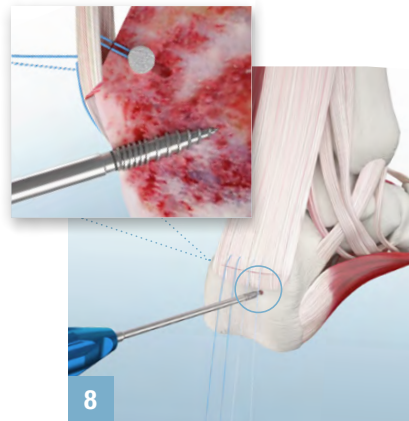
### Insertional Achilles Reconstruction

Using TruShot® with Y-Knot® and CrossFT® Knotless



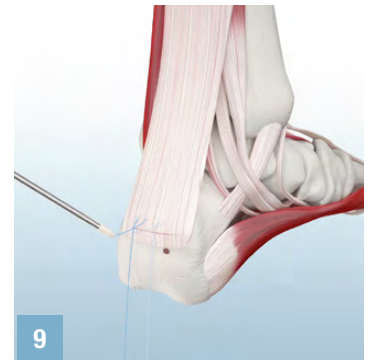
7

**Using a CrossFT® Knotless**  
4.75 Drill Bit and Y-DGRCN  
Guide, drill a pilot hole into  
the desired proximal and  
medial distal insertion points.



8

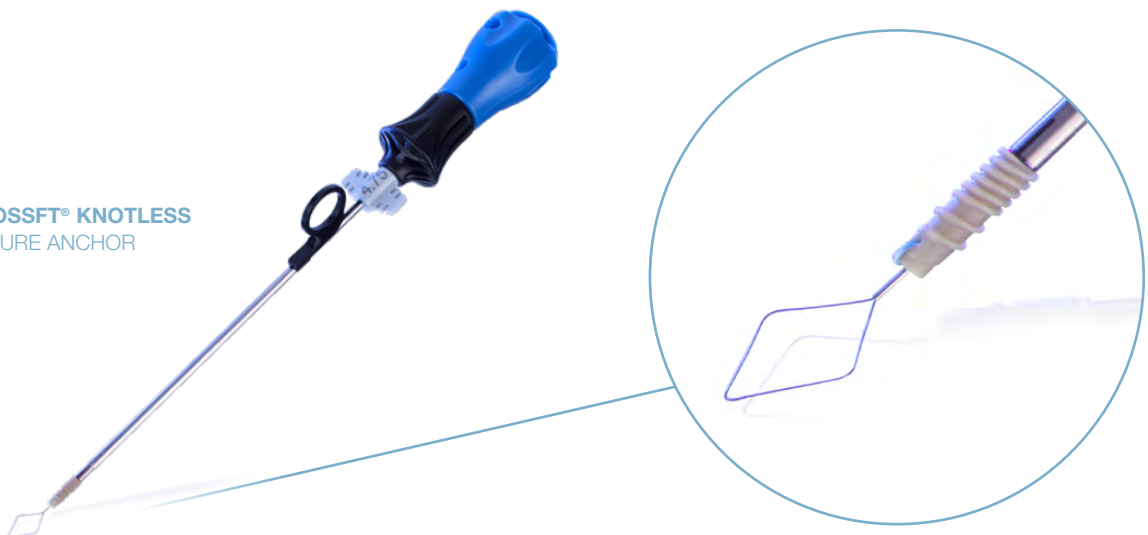
**Insert the CrossFT® Knotless**  
4.75 Tap into each pilot hole  
to create thread patterns.



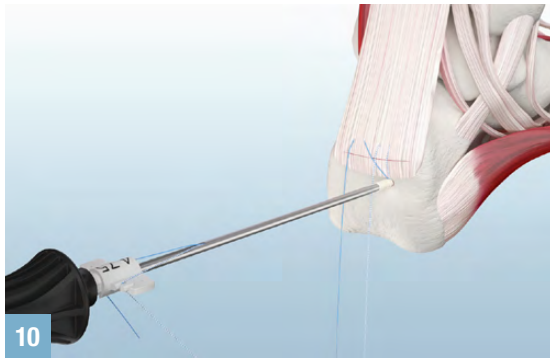
9

**Load 2-3cm of two TruShot®**  
with Y-Knot® suture limbs from  
each proximal anchor into the  
nitinol loop on the threader tab  
of the first CrossFT® Knotless  
Anchor. ■

**CROSSFT® KNOTLESS**  
SUTURE ANCHOR

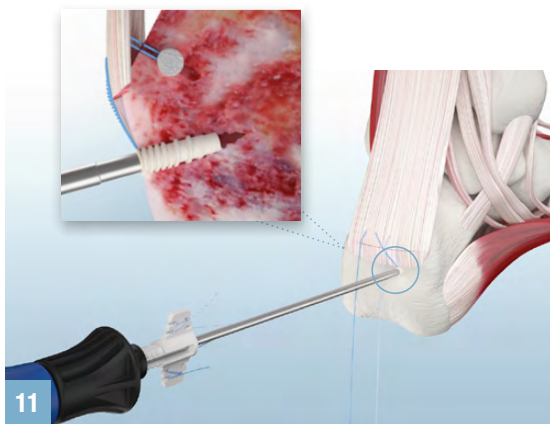


## INSERTIONAL ACHILLES RECONSTRUCTION: DISTAL ROW



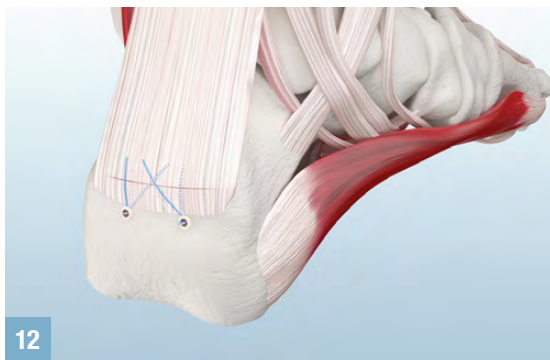
**Place the nose of the anchor body** into the first hole and pull the suture limbs until desired tension is achieved.

Cleat the suture limbs onto the gray telescoping cleats on the device.



### **Deploy the CrossFT® Knotless Anchor**

Deploy the CrossFT® Knotless Anchor by holding the black knob stationary while turning the blue knob clockwise until the anchor is inserted to the laser line.



### **COMPLETING THE REPAIR:**

**Repeat steps 9-11** with a second CrossFT® Knotless Anchor to complete the distal row construct, and cut the remaining suture limbs. ■

*“TruShot® confers a major advantage over what is available in the market today. Most anchors are not designed for small joints and require a large hole or implant size that is impractical for fixation in small joints.”*

■ Pradeep Alexander, M.D.

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SURGICAL  
TECHNIQUE**

## AUGMENTED ACHILLES REPAIR: FHL TRANSFER

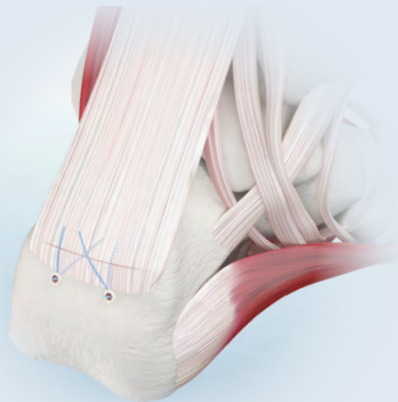
1. Identify and retract the FHL tendon. Then release the FHL tendon as far distally as possible.
2. In preparation for TenoLok,<sup>®</sup> tag and shape the tendon with free suture.
3. Using a Beath pin with an eyelid, drill mediolaterally through the posterior calcaneal cortex until the pin is exposed on the plantar side of the foot.
4. Using a cannulated reamer, drill the appropriate diameter tunnel into the calcaneus to the recommended 19mm depth. The tunnel diameter can vary upon tendon size and anchor size between the 5mm and 6mm TenoLok<sup>®</sup> implant.

**NOTE:** The TenoLok<sup>®</sup> driver shaft has a visible laser line on the distal end indicating 19mm.

5. Thread the suture limbs from the whipstitched tip of the FHL through the eyelid of the Beath pin, and advance the pin until it is drilled completely through the calcaneus.
6. Pull the exposed suture limbs to advance the FHL into the tunnel, tensioning the tendon with the foot plantar flexed to approximately 40°.
7. Insert the TenoLok<sup>®</sup> Anchor into the bone tunnel at the same trajectory and angle as the tunnel was drilled. Gently mallet the device until the 20mm laser line is flush with the bone cortex.
8. Deploy the anchor by holding the TenoLok<sup>®</sup> white delivery handle stationary and turning the black deployment knob clockwise, until a loud audible “pop” is heard.

**NOTE:** The black deployment knob will increase in resistance to turn when approaching deployment of the anchor.

9. Disengage the TenoLok<sup>®</sup> Driver from the deployed implant by pulling back.





# Proximal Row Anchor Offerings



## TRUSHOT® WITH Y-KNOT®

Y18TN | 1.8MM ALL-SUTURE ANCHOR WITH TWO #2 (5 METRIC) HI-FI® SUTURE WITH NEEDLES

- All-In-One delivery eliminates unnecessary steps and extra time.
- Drill guide, drill bit, and anchor are combined into easy-to-use delivery system.
- Reduce the risk of misalignment during drilling and anchor insertion.

## Y-KNOT® PRO RC OPTIONS

YPRC02 | DOUBLE LOADED WITH TWO #2 HI-FI® SUTURES

- The Y-Knot® PRO combines our Y-Knot® anchor with a cleatless suture release technology.
- The Y-Knot® PRO eliminates the need for uncleating sutures after implanting the anchor by providing a more efficient delivery system.



YRC02N | DOUBLE LOADED WITH TWO #2 HI-FI® SUTURES

- Ideal for open procedures.
- Needles attached.

## Proximal Row Anchor Offerings (Cont'd)



### YPRCTW | LOADED WITH 2MM HI-FI® TAPE (WHITE/BLACK)

- Hi-Fi® Tape
  - is 69% less abrasive than the leading competitor when measuring tendon tear-through.<sup>1</sup>
  - has broader compression than #2 suture for increased tendon-to-bone interface.
  - is more than twice as strong as #2 suture.<sup>2</sup>
  - simplifies double-row repairs by eliminating need for medial knot tying the anchor by providing a more efficient delivery system.

### YPRC02R | LOADED WITH TWO RIBBONS

- Hi-Fi® Ribbon is a 1.3mm wide, flat, tie-able tape.
- Ribbon is:
  - 2X wider than #2 suture for broader compression and increased tendon-to-bone interface.
  - 14% stronger than high-strength USP #2 suture.<sup>3</sup>
  - Smaller knot stacks than USP #2 suture.<sup>4</sup>



<sup>1</sup> Data on File TR16-787. Compared with FiberTape. TR16-787-1, <sup>2</sup> Data on file TR16-219, <sup>3</sup> Data on file: TR18-00183-1 and TR12-441, <sup>4</sup> Data on file: TR17-01219

# Distal Row Anchor Offerings

*Also able to be manually loaded with ribbon or tape*

## **CROSSFT® KNOTLESS DT**

CFK-475SDT | 4.75MM KNOTLESS DT SUTURE ANCHOR WITH #2 HI-FI® SUTURE

- Controlled tension designed to optimize tendon compression.
- Strong: New deep thread pattern allows for cancellous bone fixation.
- Bone marrow vent channel designed to provide healing properties of bone marrow.
- Also available in 4.0mm for a smaller footprint and less bone removal.

## **CROSSFT® KNOTLESS**

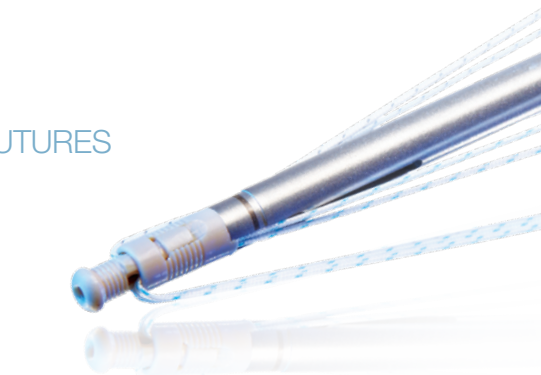
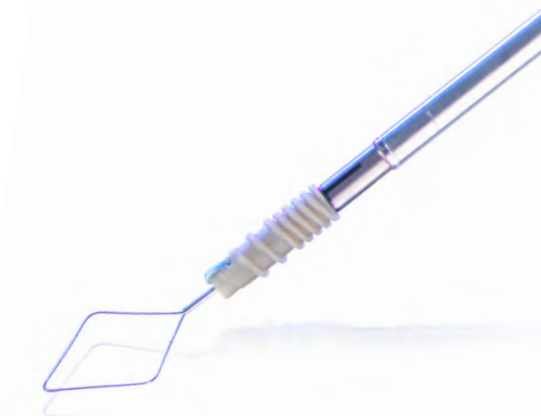
CFK-475S | 4.75MM KNOTLESS SUTURE ANCHOR

- Controlled tension designed to optimize tendon compression.
- Strong: Dual-thread pattern for cortical and cancellous bone fixation.
- Bone marrow vent channel designed to provide healing properties of bone marrow.
- Also available in 4.0mm for a smaller footprint and less bone removal.
- Available in PEEK and Biocomposite.

## **POPLOK®**

CFP-4502 | 4.50MM SUTURE ANCHOR WITH TWO #2 HI-FI® SUTURES

- The unique suture locking mechanism traps suture within the anchor, resulting in dependable fixation. The PopLok® Knotless Suture Anchor also has the ability to tension the suture after the anchor is seated in the pilot hole. When the anchor is “popped,” the wings are deployed subcortically to provide secure fixation in the bone.



## FHL Tendon Transfer Product Offerings

### TENOLOK®

#### DUAL-EXPANDING TENODESIS ANCHOR

It is designed to provide strong tendon-to-bone fixation, reduced tendon damage and tendon wrap as well as a fast, efficient technique.

- T50S65 | 5.0mm TenoLok® Anchor with one #2 Hi-Fi® Suture, Guide Pin, and 6.50mm Badger® Drill Bit
- T60S7 | 6.0mm TenoLok® Anchor with one #2 Hi-Fi® Suture, Guide Pin, and 7.5mm Badger® Drill Bit



### GENESYS™ MATRYX®

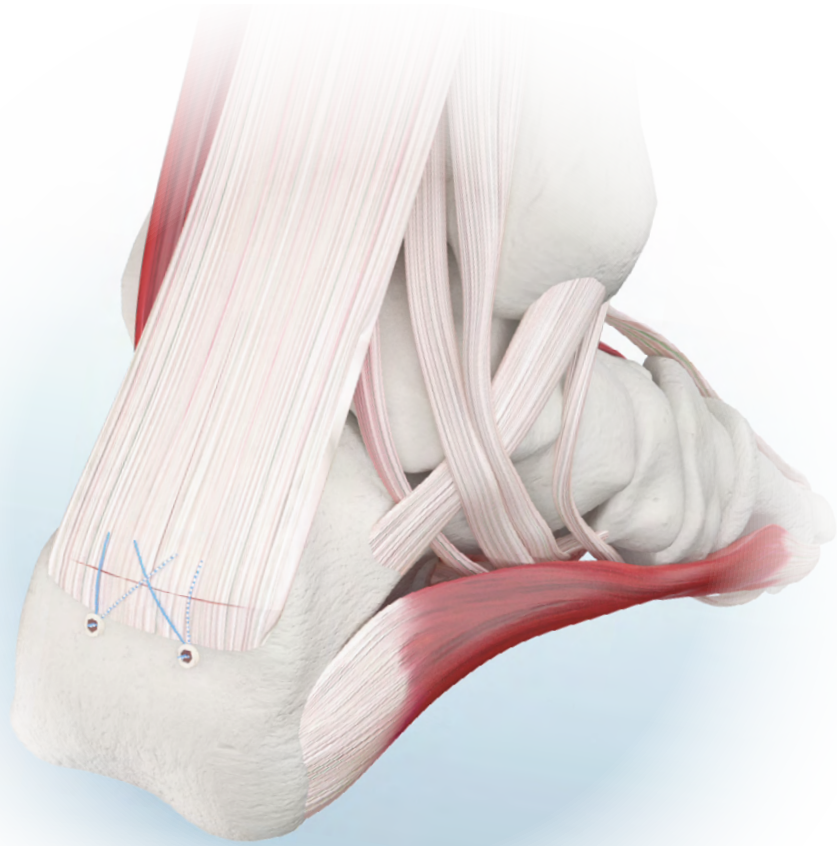
#### INTERFERENCE SCREW

Provide an optimal combination of biologic healing\* and mechanical integrity. These interference screws deliver strong initial fixation during the critical healing period and provide a scaffold to enable bone in-growth during the subsequent resorption period.

- 235015m5 | GENESYS™ Matryx® 5 X 15mm Interference Screw
- 235020m5 | GENESYS™ Matryx® 5 X 20mm Interference Screw
- 236015m5 | GENESYS™ Matryx® 6 X 15mm Interference Screw
- 236020m5 | GENESYS™ Matryx® 6 X 20mm Interference Screw



\*Biologic Healing is defined by CONMED as the body's natural healing process



 **CONMED**

*Imagine What We Could Do Together*

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## ORDERING INFORMATION

To order any of our anchor products for Achilles Reconstruction, including instrumentation and other accessories, please call CONMED Customer Service at: (US) **1-866-4CONMED** or (International) **727-214-3000**.

### CROSSFT® KNOTLESS SUTURE ANCHOR

CrossFT® Knotless Anchor, 4.75mm ..... CFK-475S  
CrossFT® Knotless Drill Bit, 4.75mm ..... CFKD475D  
CrossFT® Knotless Tap, 4.75mm ..... CFK-T475

### CROSSFT® KNOTLESS DT SUTURE ANCHOR

CrossFT® Knotless DT Suture Anchor  
4.75mm with #2 Hi-Fi® Suture ..... CFK-475SDT  
CrossFT® Knotless DT Suture Anchor  
4.75mm Drill Bit, Disposable, Sterile ..... CFK-475D  
CrossFT® Knotless DT Suture Anchor  
4.75mm DT Tap, Reusable, Non-Sterile ..... CFK-T475DT

### GENESYS™ MATRYX® IMPLANT AND INSTRUMENTATION

#### INTERFERENCE SCREW

GENESYS™ Matryx® Interference Screw 5mm x 15mm .. 235015M5  
GENESYS™ Matryx® Interference Screw 5mm x 20mm .. 235020M5  
GENESYS™ Matryx® Interference Screw 5mm x 25mm .. 235025M5  
GENESYS™ Matryx® Interference Screw 5mm x 30mm .. 235030M5

#### CONSTANT DIAMETER REAMERS

Constant Diameter Reamer, 5mm x 178mm ..... CD050  
Constant Diameter Reamer, 6mm x 178mm ..... CD060

### HALL® MICROFREE® CORDLESS SMALL BONE POWER SYSTEM

Hall® MicroFree® Sagittal Saw ..... PRO8200SB

### POPLOK® KNOTLESS SUTURE ANCHORS

PopLok® Suture Anchor  
with Two #2 Hi-Fi® Sutures, 4.5mm ..... CKP-4502  
PopLok® Punch, 4.50mm ..... PKL-45M

### TENOLOK® DUAL EXPANDING TENODESIS ANCHOR

TenoLok® Dual-Expanding Tenodesis Anchor  
5.0mm, Fixation Kit ..... T50S65

TenoLok® Anchor, 5.0mm – loaded with one  
#2 Hi-Fi® Suture

1 Guide Pin

1 Drill Bit, 7mm

TenoLok® Dual-Expanding Tenodesis Anchor  
6.0mm, Fixation Kit ..... T60S75

TenoLok® Anchor, 6.0mm – loaded with one  
#2 Hi-Fi® Suture

1 Guide Pin

1 Drill Bit, 7.5mm

### TRUSHOT® WITH Y-KNOT® ALL-IN-ONE SOFT TISSUE FIXATION SYSTEM FOR SMALL JOINT

TruShot® with Y-Knot® 1.8mm ..... Y18TN

### Y-KNOT® ALL-SUTURE ANCHOR

Y-Knot® Pro RC Anchor with two #2 Hi-Fi® ..... YPRC02

Y-Knot® RC with Needles with two #2 Hi-Fi® Sutures .... YRC02N

Y-Knot® Pro RC Anchor  
with 2mm Hi-Fi® Tape (White/Black) ..... YPRCTW

Y-Knot® Pro RC Anchor with two Ribbons ..... YPRC02R

### ACCESSORIES

Y-Knot® RC Disposable Drill Bit, 2.8mm ..... Y28D

Y-Knot® RC Slotted Drill Guide ..... Y-DGRCN

For more information visit [www.CONMED.com/Ortho](http://www.CONMED.com/Ortho)

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## Achilles Reconstruction

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International: 727-214-3000

[www.CONMED.com](http://www.CONMED.com)

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