Arthrex

Bio-Tenodesis™

Screw System

Knee
Lateral and Medial Collateral Ligament Repair and Secondary Fixation of an ACL Soft Tissue Graft

Foot & Ankle
Achilles, Lateral Stabilizations and FDL, FHL Tendon Transfers

Hand
Ligament Reconstruction Tendon Interposition (LRTI), Scapholunate Ligament Reconstruction and Collateral Ligament Reconstruction

Elbow
UCL and Distal Biceps Tendon Repair

Shoulder
Proximal Biceps Tendon Repair and Rotator Cuff Repair

The ONLY Complete Tendon Transfer System

Bio-Tenodesis™

Ligament Reconstruction Tendon Interposition (LRTI), Scapholunate Ligament Reconstruction and Collateral Ligament Reconstruction

UCL and Distal Biceps Tendon Repair

Proximal Biceps Tendon Repair and Rotator Cuff Repair
The Bio-Tenodesis Screw System

The Bio-Tenodesis Screw System eliminates transosseous tunnels in tendon repairs and ligament reconstructions. Tenodesis Screws may be used in conjunction with #2 or 2-0 FiberWire® to facilitate intraoperative tissue-tensioning and fixation in a predrilled socket. The predrilled socket minimizes incision length, dissection and overall morbidity. BioComposite and vented PEEK Tenodesis screw insertion provides superior and immediate fixation for foot and ankle indications such as Achilles repair, FDL, FHL tendon transfers and lateral ligament stabilization. The system can also be used for applications in the hand and elbow (UCL, LRTI, SL reconstruction, distal biceps), shoulder (rotator cuff repair, proximal biceps), as well as collateral ligament repair/reconstruction and secondary graft or suture fixation for ACL/PCL reconstruction. This construct allows for direct tendon-to-bone healing, without hardware prominence.

Strongest Fixation Strength

The chart below demonstrates the average load-to-failure force of the Bio-Tenodesis Screw compared to the Mitek GII Suture Anchor. The testing was performed to determine the mechanical strength of fixation of a biceps tendon by the Bio-Tenodesis Screw in a bone socket. The Bio-Tenodesis Screw fixation of the biceps tendon was inserted into a socket in the proximal humerus in cadaveric bone. The results indicate that Bio-Tenodesis Screws behave in a mechanically superior fashion, when compared to the Mitek GII Suture Anchors (57 lbs vs. 24 lbs).*
Creation of the FiberWire Suture Loop

The surgeon must create a FiberWire loop at the tip of the driver to snare the tendon so it can be placed in the bone tunnel. The FiberWire loop is created by a disposable Nitinol suture passing wire and #2 FiberWire found in the Bio-Tenodesis Disposables Kit. Snare the tip of the whipstitched tendon 2 mm from the end of the graft. Place tension on the sutures exiting the back of the Tear Drop Handle and wrap them once around the O-ring inside the cleat as shown. It is important to maintain maximum tension between the driver tip and the tendon during initial placement of the tendon in the tunnel.

Surgical Technique: Tendon or Graft Fixation

An anatomic attachment site is determined and a 2.4 mm Guide Pin is inserted with a power drill. A bone socket is created to a depth 2 mm longer than the screw used. An optional tap may be used, if extra hard bone is encountered. The tendon graft is anatomically tensioned over the socket and a methylene blue line is drawn on the tendon at the inner socket rim to mark the appropriate tensioned graft length. The appropriately sized screw is inserted onto the Tenodesis Driver and a FiberWire suture loop is created and positioned around the tendon the length of the screw, away from the methylene blue mark (a). The extended Tenodesis Driver tip is inserted into the socket with the graft end until the methylene blue mark lies over the socket rim (b). The screw is inserted, maintaining tension on the graft. After full insertion of the screw, the driver is removed and graft passing sutures exiting the screw/socket interface are tied with the FiberWire loop exiting the screw cannulation over the screw rim as additional fixation (c).
Disposables Kits

The Bio-Tenodesis Screw product line includes a disposables kit (AR-1676DS), to be used in conjunction with the master set, AR-1675S. AR-1530DS is a complete kit with disposables and instrumentation. Combining the necessary accessories for most distal extremity surgical solutions, customers will now be able to stock a complete Tenodesis System which supports all of our Tenodesis Screws, simplifying OR stocking.

Lateral Ankle Reconstruction Implant System

The highly anticipated release of the Lateral Ankle Reconstruction Implant System is now available. The implant kit delivers the gold standard interference screw fixation that surgeons have counted on for 11 years. The implant kit includes BioComposite Tenodesis Screws, instruments and accessories reducing OR inventory and sterilization costs. By using a free graft to recreate the ATFL and CFL ligaments, surgeons are able to achieve a reproducible, rigid and anatomic reconstruction necessary for patients with ligamentous laxity or surgical revisions.

CMC Ligament Reconstruction Implant System

The CMC Ligament Reconstruction Implant System provides a convenient all-in-one solution for ligament reconstruction of the base of the thumb. By combining our state-of-the-art BioComposite Tenodesis Screw with a convenient disposables kit, the CMC Ligament Reconstruction Implant System will enable a faster, more convenient repair—providing strong and immediate fixation of the tendon graft.

With the included Guide Pin and 4 mm cannulated Drill Bit, the bone tunnel at the base of the first metacarpal is established. The QuickPass Tendon Shuttle is included to allow for hassle-free passage of the tendon graft through the prepared tunnel. The 4 mm x 10 mm BioComposite Tenodesis Screw provides strong and immediate fixation, and enables precision tensioning of the graft.
**FiberLoop®**

FiberLoop is an excellent suture option for multi-strand tendon repairs. These small diameter looped FiberWire products allow for strong multi-strand flexor and extensor tendon repairs, while reducing tendon damage from multiple needle passes. FiberLoop is available with multiple needle options to prevent cutting suture while stitching.

### Reference Chart

<table>
<thead>
<tr>
<th>Graft Diameter</th>
<th>Implant Diameter</th>
<th>Implant Length</th>
<th>Screw Part Number</th>
<th>Drill Depth</th>
<th>Drill Diameter</th>
<th>Suture Loop</th>
<th>Driver Part Number</th>
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<tbody>
<tr>
<td>2.5 – 3.5 mm</td>
<td>3 mm</td>
<td>8 mm</td>
<td>AR-1530BC/PS</td>
<td>8 mm</td>
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<td>N/A</td>
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<td>4 mm</td>
<td>10 mm</td>
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<td>AR-1547BC/PS</td>
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<td>4.5 – 5.5 mm</td>
<td>#2</td>
<td>AR-1350D</td>
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<tr>
<td>4.5 – 5.5 mm</td>
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<td>15 mm</td>
<td>AR-1555BC/PS</td>
<td>17 mm</td>
<td>5.5 – 6.5 mm</td>
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<td>8 – 10 mm</td>
<td>#2</td>
<td>AR-1570DB</td>
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</table>

Implant diameter should be as close to graft diameter as possible by measuring 0 – 25 mm from the tip of the tendon.

Drill diameter should be 0.5 – 1 mm larger than tendon diameter, assuming the screw selected is within 1 mm of the tendon diameter.

Drill depth should be 2 mm deeper than the length of the screw selected.

Drill selection is based on diameter size of tendon and quality of bone.
Ordering Information

Bio-Tenodesis Screw Master Set (AR-1675S) includes:

- Drill Bit, 4 mm, cannulated: AR-1204L
- Drill Bit, 4.5 mm, cannulated: AR-1204.5L
- Headed Reamers, cannulated, 5 – 10 mm
  - Sizes: 5, 5.5, 6, 6.5, 7, 7.5, 8, 8.5, 9 and 10 mm
- Screwdriver Handle w/Suture Cleat: AR-2001AT
- Driver for 10 mm Tendon Transfer Screws: AR-1540DB
- Driver for 10 mm and 12 mm Tendon Transfer Screws: AR-1670DB
- Driver for 15 mm Tendon Transfer Screws: AR-1550DB
- Driver for 23 mm Tendon Transfer Screws: AR-1570DB
- Bio-Tenodesis Screw Instrumentation Case: AR-1675C

Implants:

- BioComposite Tenodesis Screw w/handled inserter, 3 mm x 8 mm: AR-1530BC
- BioComposite Tenodesis Screw, 4 mm x 10 mm: AR-1540BC
- BioComposite Tenodesis Screw, 4.75 mm x 15 mm: AR-1547BC
- BioComposite Tenodesis Screw, 5.5 mm x 15 mm: AR-1555BC
- BioComposite Tenodesis Screw, 6.25 mm x 15 mm: AR-1562BC
- BioComposite Tenodesis Screw, 7 mm x 10 mm: AR-1670BC
- BioComposite Tenodesis Screw, 7 mm x 23 mm: AR-1570BC
- BioComposite Tenodesis Screw, 8 mm x 12 mm: AR-1680BC
- BioComposite Tenodesis Screw, 8 mm x 23 mm: AR-1580BC
- BioComposite Tenodesis Screw, 9 mm x 23 mm: AR-1590BC
- PEEK Tenodesis Screw w/handled inserter, 3 mm x 8 mm: AR-1530PS
- PEEK Tenodesis Screw, 4 mm x 10 mm: AR-1540PS
- PEEK Tenodesis Screw, 4.75 mm x 15 mm: AR-1547PS
- PEEK Tenodesis Screw, 5.5 mm x 8 mm: AR-1655PS
- PEEK Tenodesis Screw, 5.5 mm x 15 mm: AR-1555PS
- PEEK Tenodesis Screw, 6.25 mm x 15 mm: AR-1562PS
- PEEK Tenodesis Screw, 7 mm x 10 mm: AR-1670PS
- PEEK Tenodesis Screw, 7 mm x 23 mm: AR-1570PS
- PEEK Tenodesis Screw, 8 mm x 12 mm: AR-1680PS
- PEEK Tenodesis Screw, 8 mm x 23 mm: AR-1580PS
- PEEK Tenodesis Screw, 9 mm x 23 mm: AR-1590PS

Disposables:

- Bio-Tenodesis Disposables Kit for 3 mm x 8 mm screw: AR-1530DS
- Disposable Tenodesis Driver w/5.5 mm Screw and #2 FiberWire: AR-1555DS

Accessories (optional):

- Bio-Tenodesis Tap, 4 mm x 10 mm: AR-1540T
- Bio-Tenodesis Tap, 4.75 mm x 15 mm: AR-1547T
- Bio-Tenodesis Tap, 5.5 mm x 15 mm: AR-1555T
- Bio-Tenodesis Tap, 6.25 mm x 15 mm: AR-1562T
- Bio-Tenodesis Tap, 7 mm x 10 mm: AR-1670T
- Bio-Tenodesis Tap, 7 mm x 23 mm: AR-1570T
- Bio-Tenodesis Tap, 8 mm x 12 mm: AR-1680T
- 6.7 mm Low Profile Screw System Tenodesis Module (for calcaneal osteotomies): AR-8967

Multimedia for Foot & Ankle and Hand & Wrist:

- Bio-Tenodesis Animation—An Alternative Technique for Anatomic Insertion with Tendon Shortage: DVD-1093
- Comprehensive Foot & Ankle Surgical Technique: DVD-1103
- Techniques for Tendon Transfer in Foot & Ankle Reconstruction using Bio-Tenodesis Fixation by Thomas Clanton, M.D.: DVD-1064
- Lateral Ankle Reconstruction, Ankle Arthroscopy and Talar OATS by Nicholas Abdin, M.D.: DVD-1107
- Scapholunate Reconstruction using the Arthrex Scapholunate Axis Method (SLAM) Surgical Technique Video: VID1-0401-EN
- Scapholunate Reconstruction using the Arthrex Scapholunate Axis Method (SLAM) Surgeon WebEx: VPT1-0032-EN
- LRTI Procedure using the Arthrex Bio-Tenodesis Screw for the Thumb Basilar Arthritis Surgical Technique Video: VID1-405-EN
- LRTI Procedure using the Arthrex Tenodesis Screw for the Thumb Basilar Arthritis Surgical Technique Video: VID1-410-EN

Literature for Foot & Ankle and Hand & Wrist:

- Bio-Tenodesis Technique Series: LB1-0005-EN
- Bio-Tenodesis Brochure: LB1-0505-EN
- LRTI for Thumb CMC Surgical Technique: LT1-0410-EN
- Thumb UCL Repair/Reconstruction Surgical Technique: LT0406

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