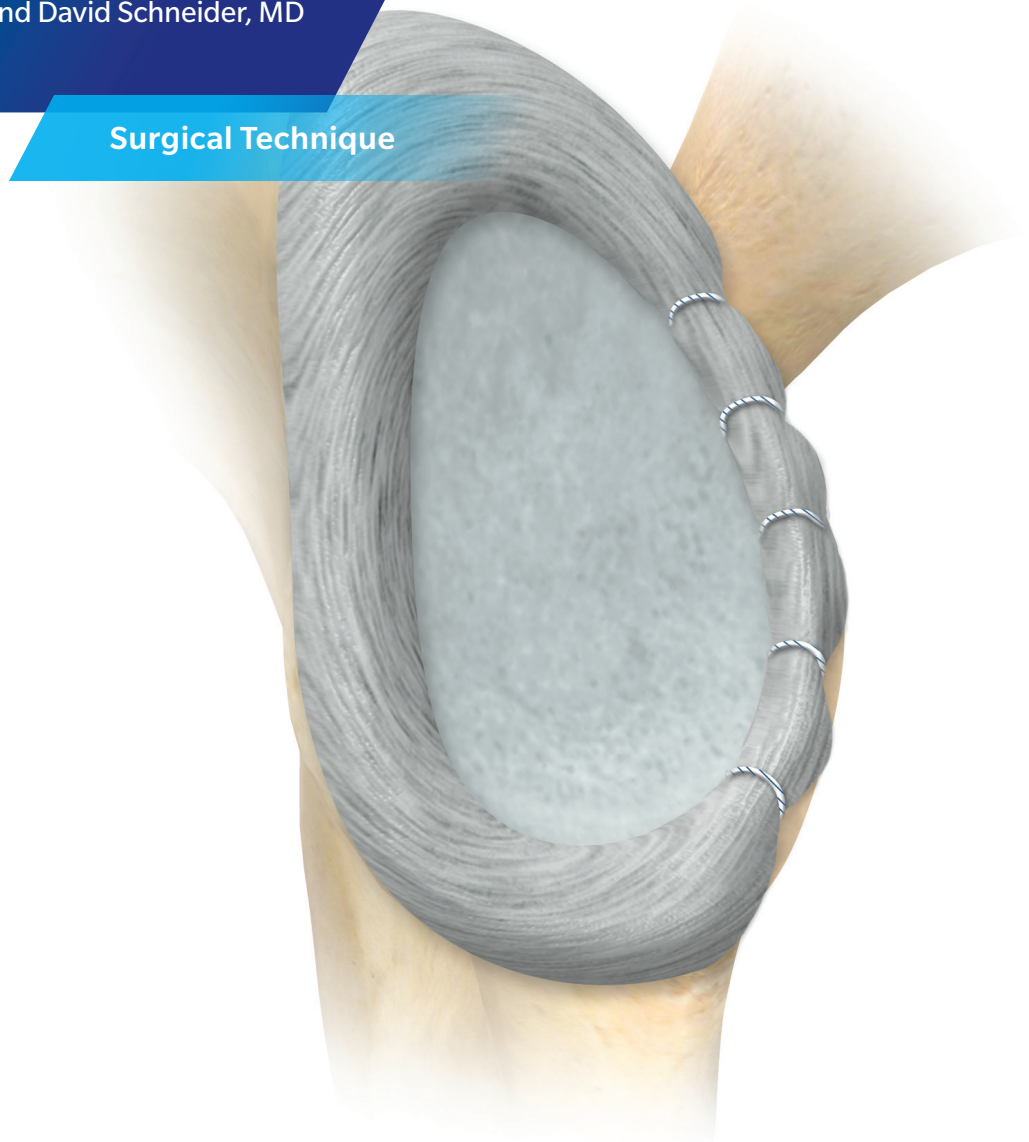


# JuggerKnotless® Soft Anchor for Labral Repair

Surgical Protocol by: Jeffrey Hartzell, MD,  
Peter Borden, MD, and David Schneider, MD

Surgical Technique



## Patient Positioning

Beach chair or lateral decubitus depending on surgeon preference.

## Portal Placement

Access labral pathology to carry out arthroscopic shoulder stabilization utilizing a 7 mm AquaLoc™ Cannula. Placement of the cannula should be just superior to the subscapularis tendon using an anterior portal. **Note:** A spinal needle can be used to localize and ensure proper angle and cannula placement.

This material represents the surgical technique utilized by Jeffrey Hartzel, MD, Peter Borden, MD, and David Schneider, MD. Zimmer Biomet does not practice medicine. The treating surgeon is responsible for determining the appropriate treatment, technique(s), and product(s) for each individual patient.

Standard posterior placement is utilized for diagnostic purposes. A standard anterior portal located superior to the subscapularis tendon may be created using a Wissinger Rod for inside-out placement or with a spinal needle for outside-in placement. If a Bankart labral tear is encountered, an anterior-superior portal may be placed for arthroscopic viewing with instrumentation through the anterior portal. If a SLAP labral tear is encountered a superior portal may be placed for viewing and instrumentation.

## Prepare Surface

The bone surface may be roughened as desired to create a bleeding bone surface; however, cortical bone integrity must not be compromised at anchor sites. An elevator should be used to help free scarred tissue from the scapula neck of the glenoid to allow tissue to be mobilized.

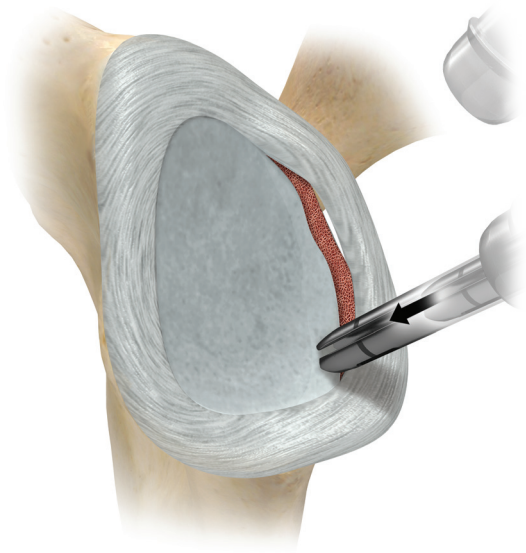


Figure 1

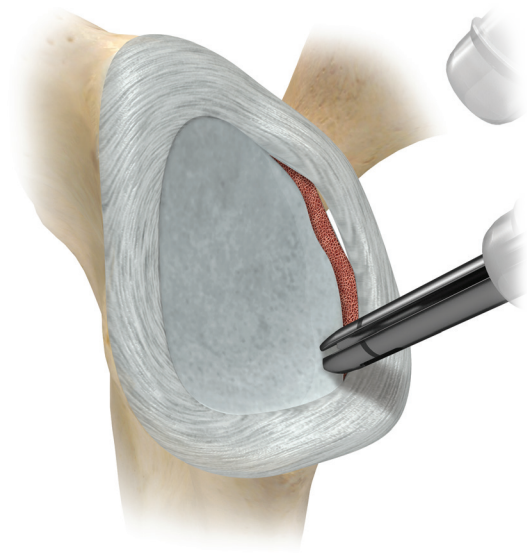


Figure 2

## Placement of the JuggerKnotless Guide

The guide is passed through a cannula portal to the repair site (Figure 1). Position the JuggerKnotless guide at a stable location on bone (Figure 2).

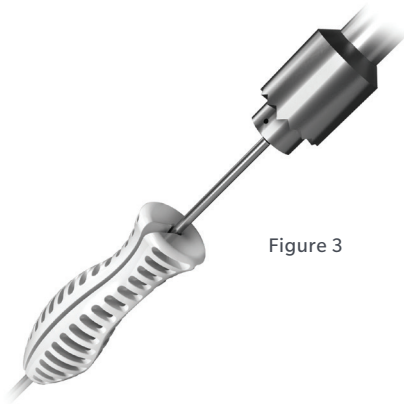


Figure 3

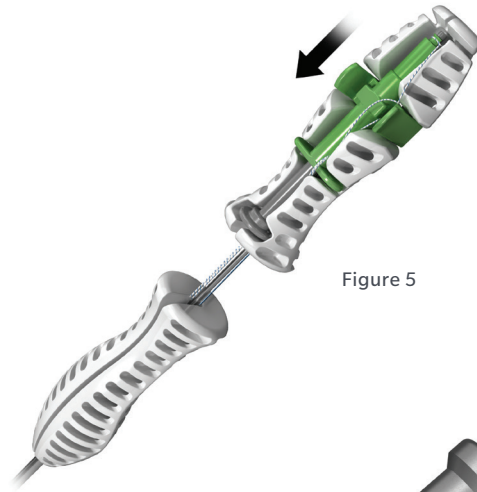


Figure 5



Figure 4

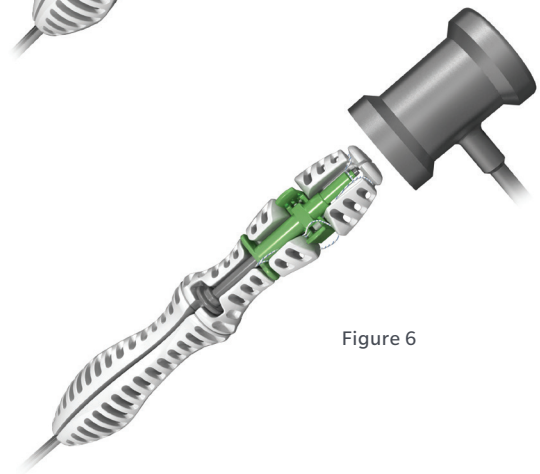


Figure 6

## Drill Pilot Hole

To ensure appropriate drill depth, connect the JuggerKnotless drill bit to a power drill so that the proximal laser-etch line is flush with the distal edge of the drill chuck. Insert the drill into the JuggerKnotless guide (Figure 3). Advance drill until contact is made with the guide handle (Figure 4). Carefully maintain stability of the drill guide during drilling and after removal of the drill.

## Insert Anchor

ⓘ **Note:** Caution must be taken to maintain precise guide position over the pilot hole during drill removal.

While maintaining the guide position securely against the bone, insert the JuggerKnotless Anchor through the guide and into the pilot hole (Figure 5). Start to seat the anchor by hand, then lightly mallet to fully seat the anchor into bone. Align the laser etch marks in the guide window or bottom out inserter handle on the back of the guide to ensure anchor is inserted to appropriate depth (Figure 6).

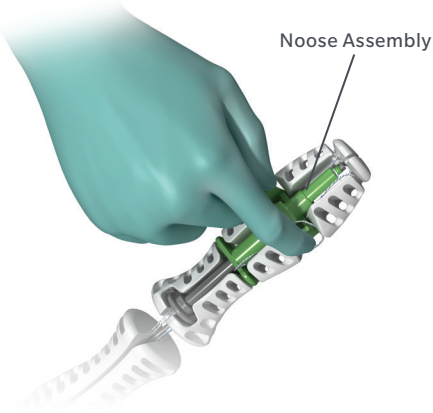


Figure 7

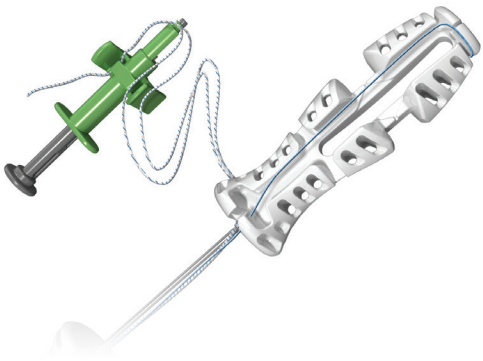


Figure 7b

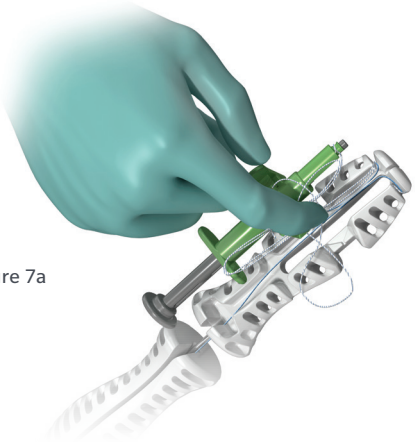
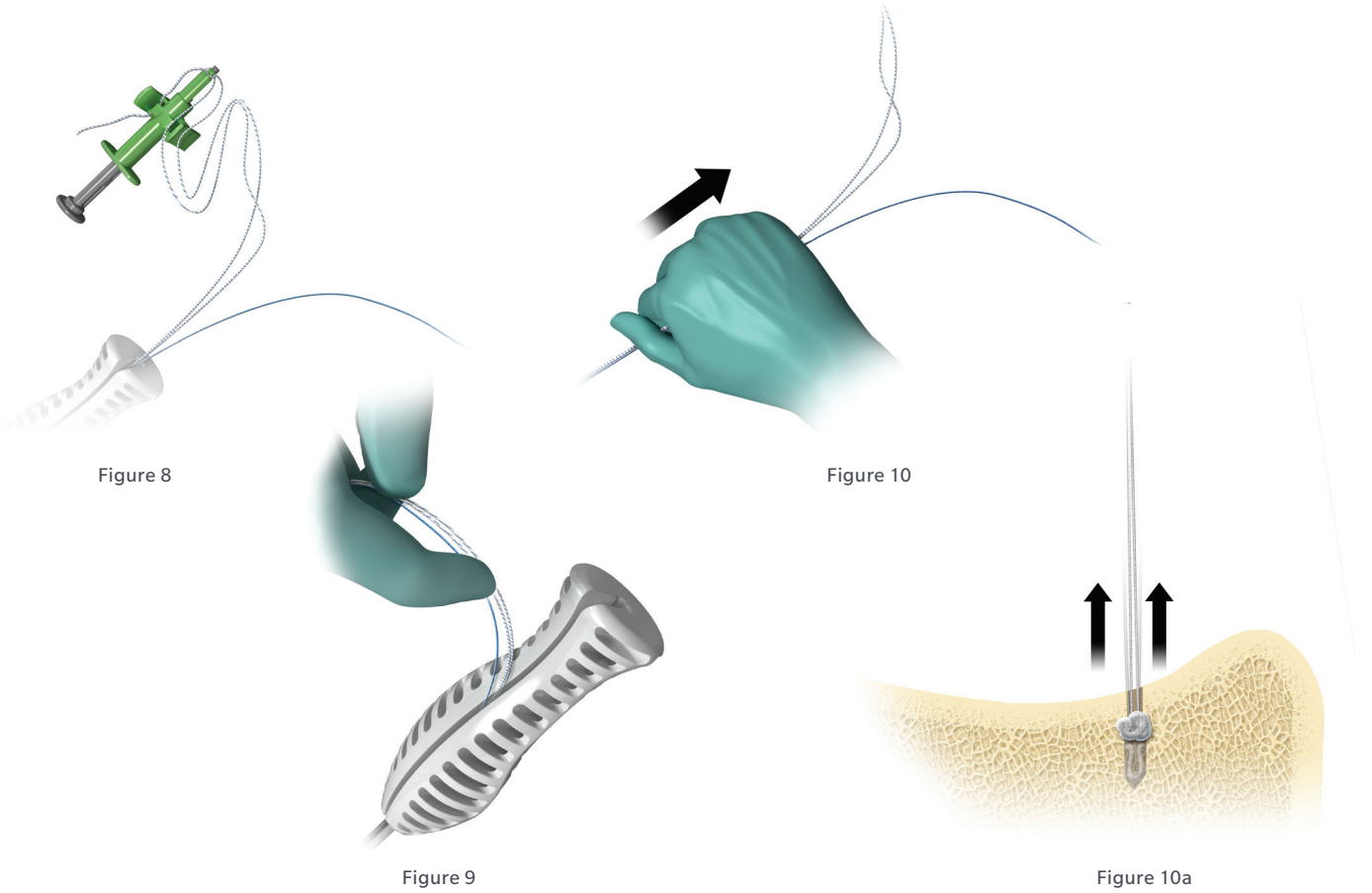


Figure 7a

**Deploy Anchor**

First remove the light green noose assembly and sutures from the inserter by lightly squeezing the side tabs (Figures 7, 7a, 7b).



## Deploy Anchor (cont.)

Next, pull anchor inserter handle directly out of the guide (Figure 8). Finally, remove drill guide.

ⓘ **Note:** Slide sutures with the noose along the opened slot of drill guide while removing the guide (Figure 9). Pull firmly on all sutures to ensure anchor is under cortical bone and fixation is achieved (Figures 10 & 10a). Slide the sutures back and forth to confirm that they move within the bone anchor.

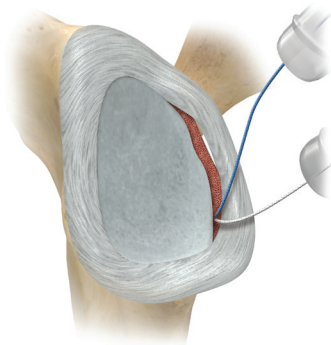


Figure 11

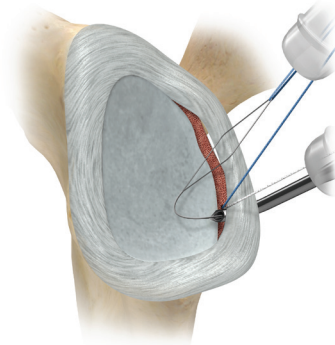


Figure 12

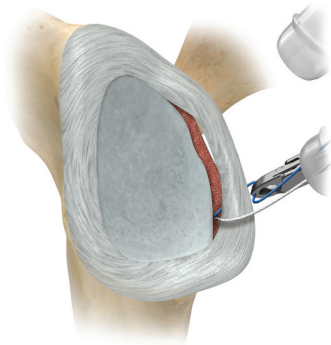


Figure 13

## Passing Suture Through Labrum

To ensure the limbs are not twisted, use a grasper and slide along the solid blue passing strand before and after the strand is passed through the labrum (Figure 11). Isolate the solid blue passing strand of the suture assembly, and pass it through tissue at the repair site using a suture passing instrument (Figure 12). Ensure any twists have been eliminated and that both ends of the suture construct are exiting the body through the same portal or incision with no soft tissue bridges (Figure 13).

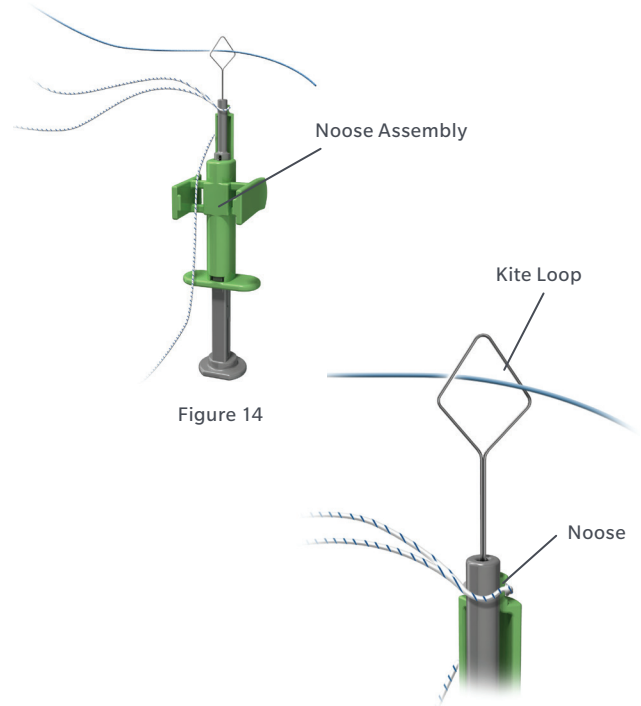


Figure 14

Figure 14a

## Tensioning of the ZipLoop™ Technology

Outside the body, place at least 3 cm of the solid blue passed suture through the Nitinol noose assembly (Figure 14, 14a).



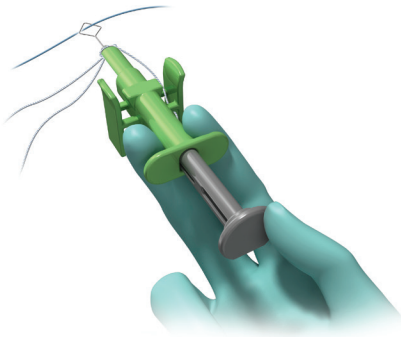


Figure 15

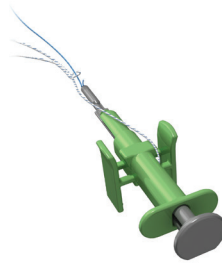


Figure 16

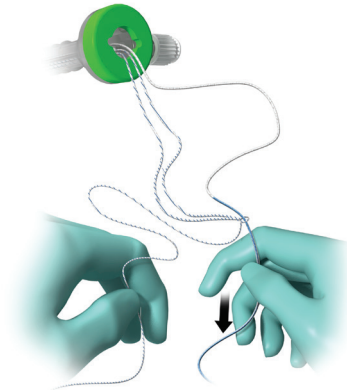


Figure 16a

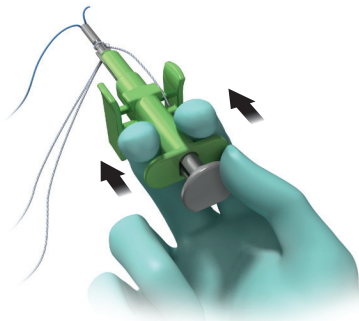


Figure 15a

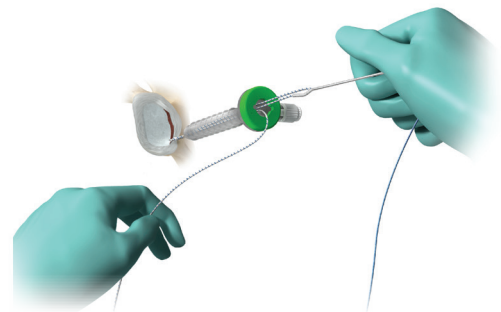


Figure 16b

## Tensioning of the ZipLoop Technology (cont.)

Deploy the noose assembly by actuating it like a syringe over the solid blue suture (Figure 15). Once the noose assembly is fully deployed, the solid blue suture is drawn into the grey tip, locking it to the noose assembly (Figure 15a). Once the noose assembly is locked, pull back on the assembly to disengage the noose from the assembly.

The noose will slide over and down the solid blue passing strand until it reaches the repair site (Figures 16, 16a, 16b). If preferred, once the noose has begun its descent down the solid blue passing strand, the green assembly may be ignored and tension may be applied directly to the solid blue strand till the noose reaches the repair site.

**Note:** Apply strong tension to ensure the noose fully closes over tissue. A probe can also be used to assist tightening the noose over the tissue.



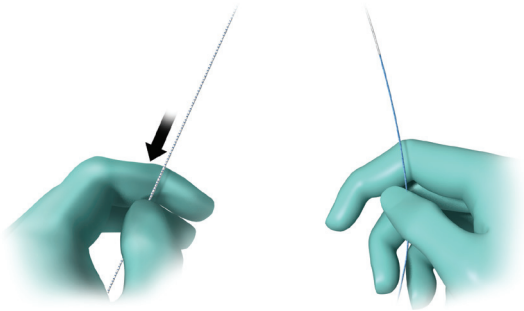


Figure 17

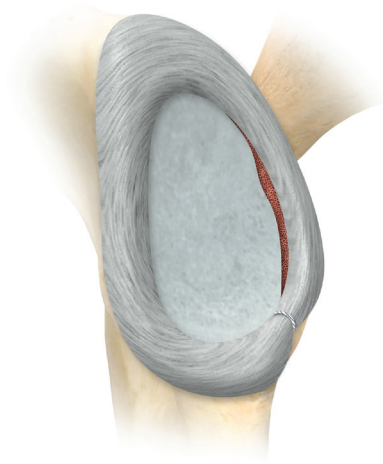


Figure 18



Figure 19

## Tensioning of the ZipLoop Technology (cont.)

While maintaining light back tension on the solid blue passing strand with the opposite hand, pull on the blue/white striped tensioning strand to tighten the ZipLoop strand against tissue/repair site (Figure 17). Only pull hard enough to get the second JuggerKnot<sup>®</sup> to flip to the back of the glenoid. Once it has flipped, more tension can be achieved by alternately pulling on the blue solid strand and the blue/white striped strand.

- ⓘ **Note:** If a large bite of tissue (capsule) is desired, use a crochet hook or probe to help compress the tissue and firmly tighten the blue/white striped ZipLoop strand to repair site.
- ⓘ **Note:** It is possible to gain additional tension by seesawing the suture limbs back and forth, but the blue/white striped tensioning strand should always be the last strand tensioned.

Once the blue/white striped ZipLoop strand is fully seated and desired tension is achieved, trim suture tails by cutting as close to flush as possible and continue repair with further anchors as repair necessitates (Figures 18, 19).

## Ordering Information

### Implants

<b>Part Number</b>	<b>Description</b>
110005198	JuggerKnotless Soft Anchor with Stainless Steel Inserter Implant
110005199	JuggerKnotless Soft Anchor with Stainless Steel Inserter Implant 10pk

### Instruments

<b>Part Number</b>	<b>Description</b>
110003182	JuggerKnotless Disposable Low Profile Drill Bit
110003172	JuggerKnotless Disposable Low Profile Kit
110017436	JuggerKnotless Reusable Low Profile Fishmouth Guide
110017434	JuggerKnotless Reusable Low Profile Obturator
110017433	JuggerKnotless Reusable Low Profile Trocar
110003181	JuggerKnotless Reusable Low Profile 4-Prong Guide

**INDICATIONS**

The JuggerKnotless Soft Anchors are indicated for soft tissue reattachment procedures in the shoulder, foot/ankle, elbow, knee, hand/wrist, and hip. Specific indications are as follows:

**Shoulder**

Acromio-clavicular Separation, Anterior Shoulder Instability Repair, Bankart lesion repair, Biceps tenodesis, Capsule Repair or Capsulolabral Reconstruction, Deltoid Repair, Rotator Cuff Repair, S.L.A.P. Lesion Repairs

**Foot and Ankle**

Achilles Tendon Repair/Reconstruction, Hallux Valgus Reconstruction, Lateral/Medial Stabilization Repairs/Reconstruction, Midfoot/Forefoot Reconstruction/Repairs

**Elbow**

Biceps Tendon Reattachment, Biceps Tendon Reconstruction, Lateral/Medial Repairs, Lateral Epicondylitis Repair (Tennis Elbow Repair), Ulnar & Radial Collateral Ligament Reconstruction

**Knee**

Iliotibial Band Tenodesis, Joint Capsule Closure, Lateral/Medial Collateral Ligament Repair, Patellar Ligament Repair, Patellar Tendon Repair, Patellar Realignment/Repair, Posterior Oblique Ligament Repair, VMO Advancement

**Hand and Wrist**

Collateral Ligament Repair (Gamekeeper's Thumb), Scapholunate Ligament Reconstruction, Tendon Transfers in Phalanx, Volar Plate Reconstruction

**Hip**

Labral

**CONTRAINDICATIONS**

1. Infection.
2. Patient conditions including blood supply limitations and insufficient quantity or quality of bone or soft tissue.
3. Patients with mental or neurologic conditions who are unwilling or incapable of following postoperative care instructions or patients who are otherwise unwilling or incapable of doing so.
4. Foreign body sensitivity. Where material sensitivity is suspected, testing is to be completed prior to implantation of the device.

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