

# + Reimagine reconstruction

Knee Ligament Solutions

**Smith+Nephew**



# Comprehensive Ligament Solutions

For knee surgeons seeking to address the full spectrum of ligament pathologies and concomitant injuries, our comprehensive ligament solutions portfolio provides high-quality products and thoughtful techniques developed in collaboration with leading global experts. Building upon our trusted legacy of data-driven solutions, we continue to innovate with a commitment to improve patient lives.

## Contents

---

### Procedures

#### Reconstruction

##### ACL

- REGENESORB<sup>®</sup> BTB
- UltraSTAR
- UltraSURE
- REGENESORB QT-B


### Products

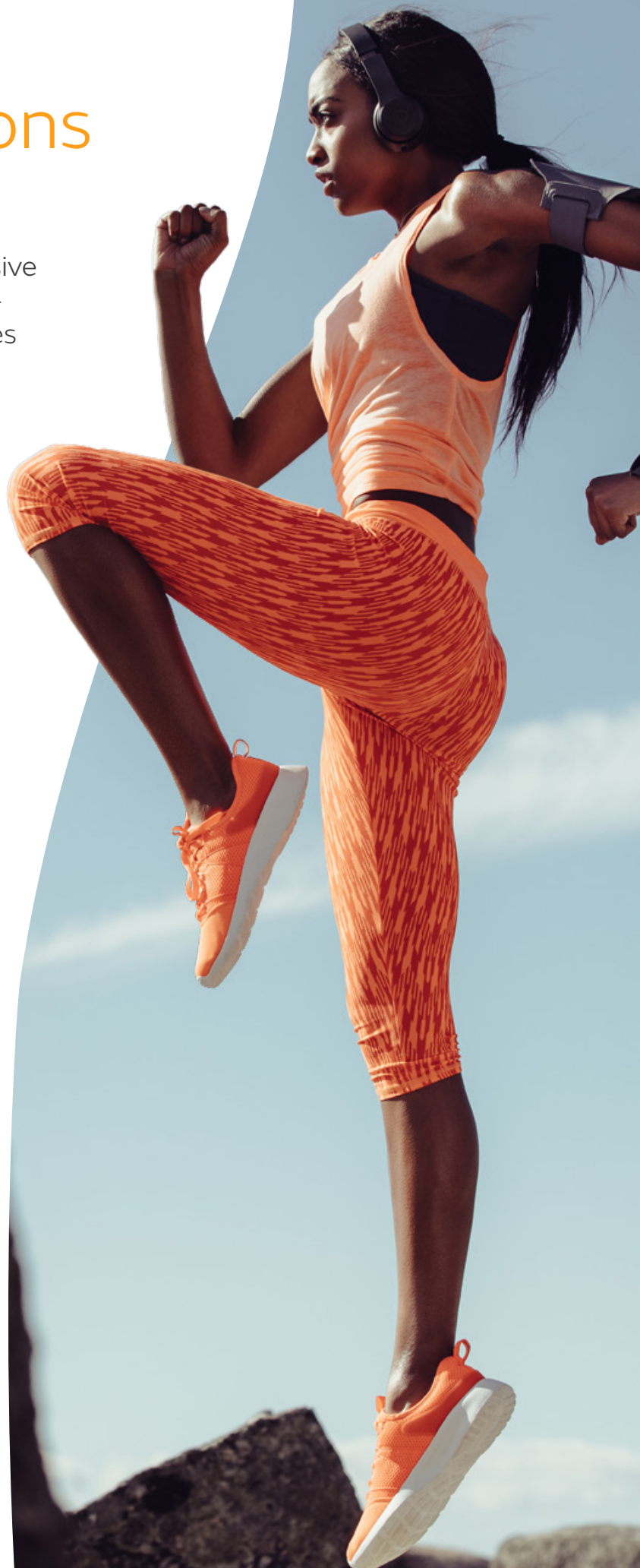
### Arthroscopy Enabling Technology

### Ordering Information

 Click on a section to jump to that page

 To return to this page, click the icon in the bottom right corner

 To view the ordering information, click this icon

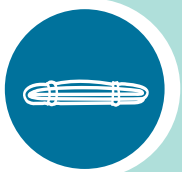
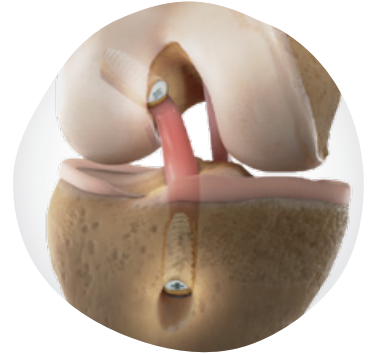


 Click on a technique for more information



### REGENESORB<sup>®</sup> Bone-tendon-bone (BTB)

Flexible anteromedial portal drilling with BIOSURE<sup>®</sup> REGENESORB Interference Screw fixation.



### UltraSTAR

Single tendon anterior cruciate ligament (ACL) reconstruction using a semitendinosus with double ULTRABUTTON<sup>®</sup> Adjustable Fixation devices and preferred drilling method.



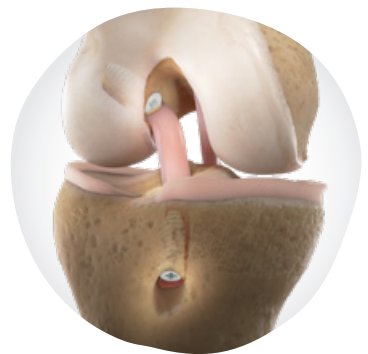
### UltraSURE

Standard solution for ACL reconstruction using a semitendinosus and gracilis graft with an ULTRABUTTON Device + BIOSURE REGENESORB Screw fixation.



### REGENESORB Quad tendon-bone (QT-B)

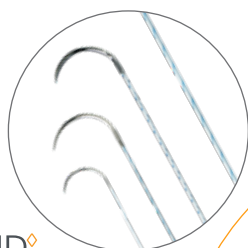
Rigid anteromedial portal drilling with BIOSURE REGENESORB Interference Screw fixation.





## REGENESORB BTB

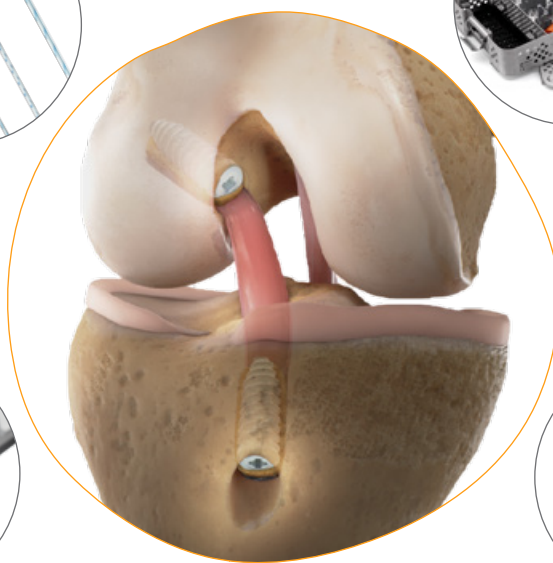
The REGENESORB bone-tendon-bone (BTB) technique takes BTB ACL reconstruction procedure to the next level by utilising an advanced biocomposite, open-architecture BIOSURE<sup>◊</sup> REGENESORB Interference Screw for fixation. The CLANCY ANATOMIC CRUCIATE GUIDE Flexible Drill System provides the instrumentation to achieve the right trajectory and femoral entry point in anatomic repairs.<sup>72-76</sup>



ULTRABRAID<sup>◊</sup>  
Suture Family



CLANCY ANATOMIC  
CRUCIATE GUIDE  
Flexible Drill System



X-WING<sup>◊</sup>  
Graft Preparation System



BIOSURE<sup>◊</sup>  
REGENESORB<sup>◊</sup>  
Interference Screw



ACUFEX<sup>◊</sup> DIRECTOR  
ELITE<sup>◊</sup>  
ACL Drill Guide System



ACL reconstructions with a BTB autograft comprise most of my ACL reconstruction practice for a reason. Clinical literature has shown that the BTB graft minimises the chance for re-tear in addition to having the best initial fixation strength.<sup>4-9</sup>

Jorge Chahla, MD, PhD  
Sports Medicine Service, Midwest Orthopaedics at Rush  
Chicago, IL





## + REGENESORB BTB Features and Benefits:

This technique takes advantage of the innovative open-architecture design of the BIOSURE<sup>◊</sup> REGENESORB screw, allowing bone ingrowth across the screw\*, which also provides the kind of fixation strength expected from a solid absorbable screw\*\*1-3

ACL reconstruction with a BTB graft offers:

- High initial graft strength and stiffness<sup>4-6</sup>
- Faster fixation site healing as compared to soft tissue to bone<sup>7</sup>
- Favorable clinical results<sup>8,9</sup>
- High level of patient satisfaction after long term follow-up<sup>8,9</sup>

### CLANCY ANATOMIC CRUCIATE GUIDE Flexible Drill System

- Shown to achieve longer tunnel lengths than can be attained with straight, rigid drilling systems<sup>10,72</sup>
- CLANCY Flexible Drills facilitate the ability to reach the desired location on the lateral notch wall to access the anatomic footprint of the native ACL<sup>10,72,74,75</sup>
- CLANCY Flexible Drills do not require knee hyperflexion while drilling through the medial portal to help avoid challenges with positioning and fat pad ingress<sup>72-75</sup>

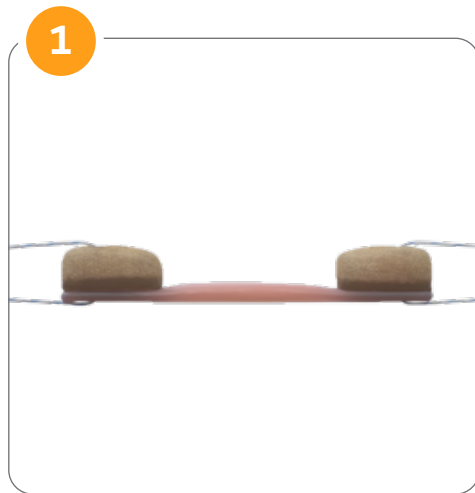


\*As demonstrated *in vivo*

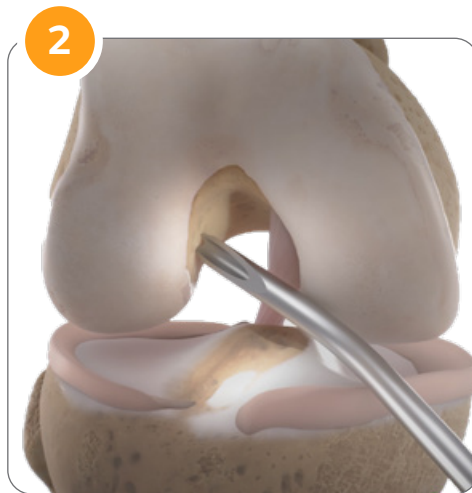
\*\*Compared to BIOSURE HA Interference Screws; as demonstrated in benchtop testing



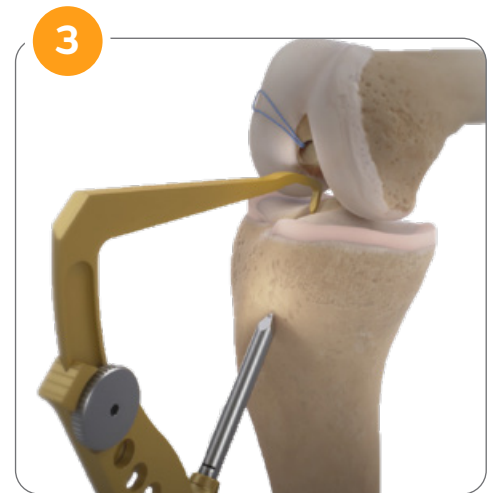
## Technique Highlights



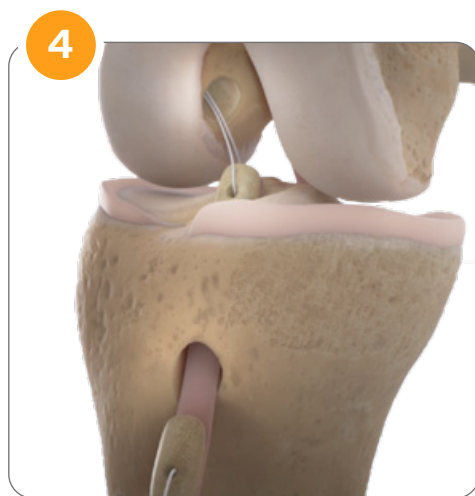
1 Prepare the BTB graft using the X-WING<sup>®</sup> Graft Preparation System and #5 ULTRABRAID<sup>®</sup> Suture on Needle



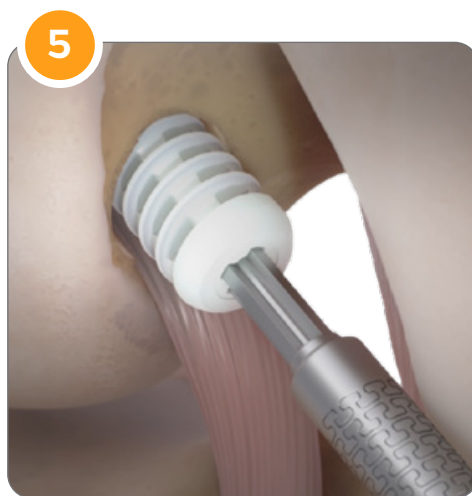
2 Drill the femoral tunnel with CLANCY ANATOMIC CRUCIATE GUIDE Flexible Drill System



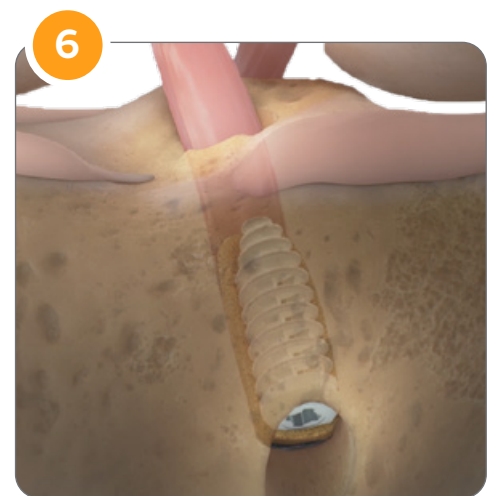
3 Drill the tibial tunnel with ACUFEX<sup>®</sup> DIRECTOR ELITE<sup>®</sup> ACL Drill Guide System, and collect the bone chips



4 Pass the graft



5 Fixate with a BIOSURE<sup>®</sup> REGENESORB Interference Screw on the femur



6 Fixate with a second BIOSURE<sup>®</sup> REGENESORB on the tibia



## Case Checklist

Qty	SKU	Product
<b>Capital</b>		
1	72203086	CLANCY ANATOMIC CRUCIATE GUIDE Flexible Drill System
1	72203169	ACUFEX <sup>®</sup> Tunnel Gauge
1	7205517	ACUFEX DIRECTOR Guide Handle
1	7205519	ACUFEX DIRECTOR ACL Tip Aimer
1	7205524	ACUFEX DIRECTOR ACL Angled Bullet
1	72201942	BIOSURE <sup>®</sup> EASY Tap System
1	013546	Cannulated drill, 10mm
<b>Consumables</b>		
2	72205432	ULTRABRAID <sup>®</sup> Suture on Needle, #5, straight needle, white
2	72204399	BIOSURE REGENESORB Interference Screw 8mm x 25mm
1	72201594	2.4mm Flexible Passing Pin
1	7211138	Guide Wire, 1.2mm x 12"
1	7207221	2.4mm drill tip guidewire, 12"
1	014477	Cannulated Bone Tunnel Plug, latex free
1	72290037	FLOW 50 <sup>°</sup> COBLATION <sup>®</sup> Wand
1	72202531	DYONICS <sup>®</sup> BONECUTTER <sup>®</sup> PLATINUM Blade, 4.5mm

Click the SKU number to see the full SKU list

## Watch



### Graft Harvest + Preparation

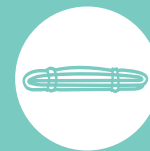
- BTB graft harvest featuring Dr. Chahla
- BTB graft preparation featuring Dr. Chahla

### Surgical Techniques

- REGENESORB BTB ACL reconstruction video featuring Dr. Chahla
- REGENESORB BTB ACL reconstruction animation
- ENDOBUTTON BTB ACL reconstruction animation



\*Placing an order with this code will order individual units of all X-WING components as shown in the Ordering Information section. Devices are not provided kitted or part of a system and all devices are individually packaged with their own instructions for use, as applicable.



# UltraSTAR Technique

## Single Tendon ACL Reconstruction

The UltraSTAR ACL reconstruction technique uses a single, quadrupled semitendinosus graft, where less hamstring is harvested, reducing patient morbidity as compared to traditional dual-hamstring tendon techniques.<sup>11</sup> The technique also allows for preparation of large diameter grafts that are associated with improved outcomes.<sup>12-14</sup> UltraSTAR features a double ULTRABUTTON construct which has shown low displacement during cyclic loading.<sup>\*15,21,23-25</sup> This can all be done while using your current trusted drilling technique.



**ULTRABUTTON** ◊  
Adjustable Fixation Device



**ACUFEX** ◊ **DIRECTOR ELITE** ◊  
ACL Drill Guide System



**X-WING** ◊  
Graft Preparation System



**MINITAPE** ◊  
Suture Family



**XTENDOBUTTON** ◊  
Family of Fixation Devices



UltraSTAR is a great technique for surgeons that are comfortable with their current drilling approach but are looking to get graft diameters consistently larger than 8mm and minimise the case morbidity of their patients through the harvest of a single-hamstring tendon. Coupled with the ULTRABUTTON Adjustable Fixation Device and the X-WING Graft Preparation System, I have confidence that the graft is well prepared and will lead to a great outcome for my patients.

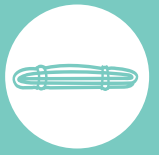
Mark Bowen, MD  
NorthShore University Health System  
Chicago, IL



\*For an adjustable fixation device; as demonstrated in bench top testing

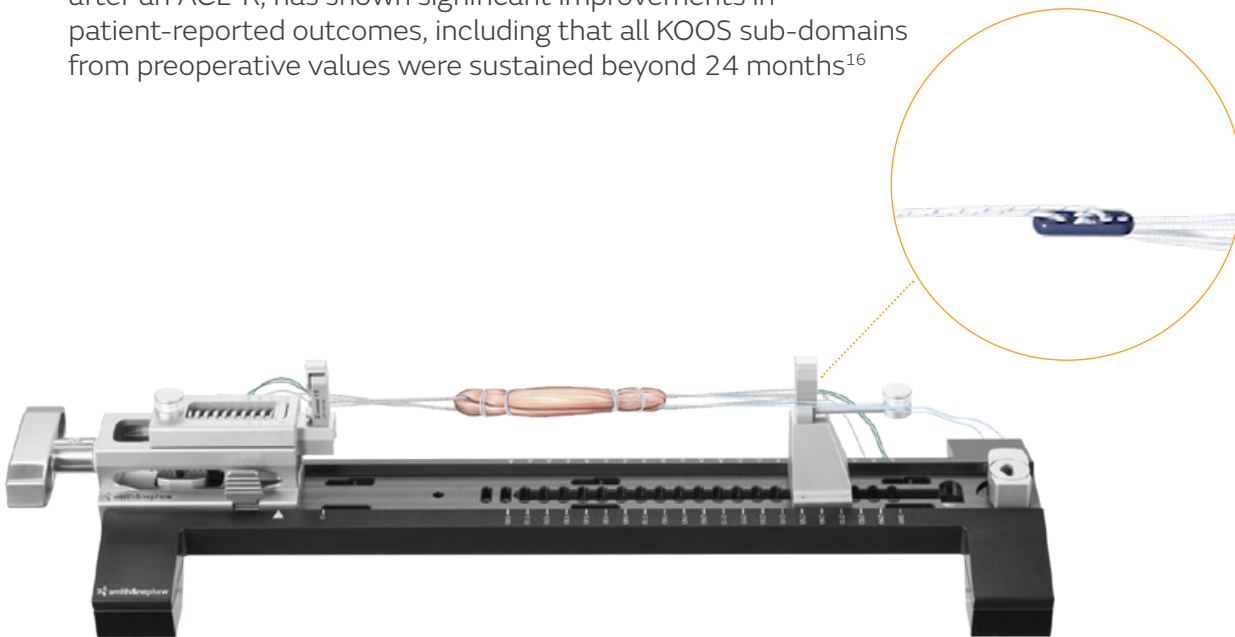




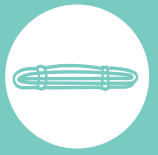


## + UltraSTAR Technique Features and Benefits

- Quadrupled semitendinosus grafts consistently provide an 8mm+ graft construct<sup>71</sup>
- Suspensory fixation allows for 360° graft contact within the femoral and tibial tunnel
- Lower case morbidity from reduced hamstring harvest through preservation of gracilis tendon<sup>11</sup>
- Accommodates surgeon's current drilling preferences
- Allows for graft tensioning after fixation
- Utilises the ULTRABUTTON® Adjustable Fixation Device, which, after an ACL-R, has shown significant improvements in patient-reported outcomes, including that all KOOS sub-domains from preoperative values were sustained beyond 24 months<sup>16</sup>



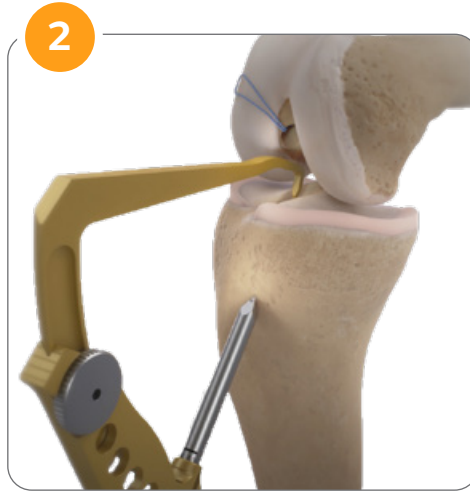
[Click here to enlarge the image](#)



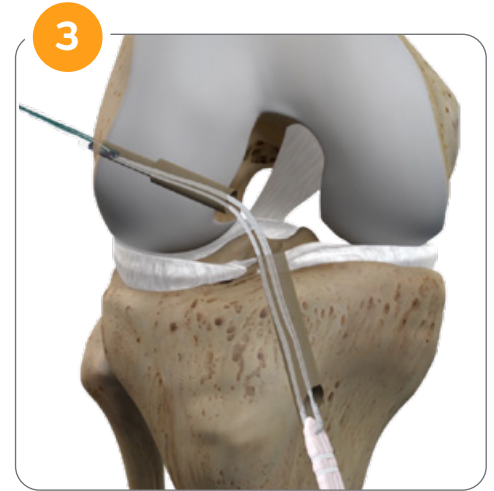
## Technique Highlights



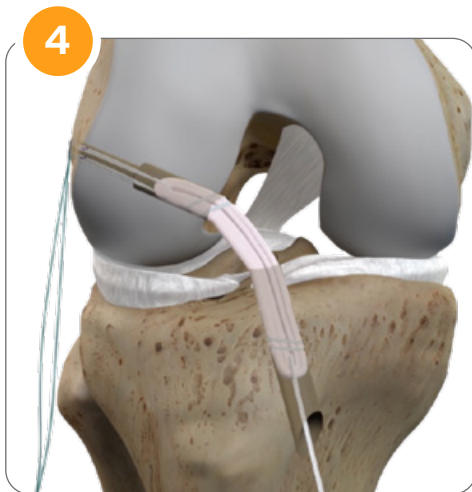
1 Prepare the single-tendon graft using the X-WING<sup>®</sup> Graft Preparation System



2 Drill the femoral and tibial tunnels with the ACUFEX<sup>®</sup> DIRECTOR ELITE<sup>®</sup> ACL Drill Guide System



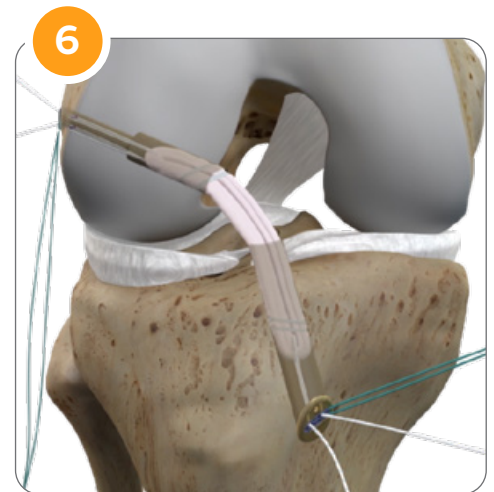
3 Pass and flip the ULTRABUTTON<sup>®</sup> Adjustable Fixation Devices on the femur and tibia



4 Reduce the ULTRABUTTON on the femoral cortex



5 Load the XTENDOBUTTON<sup>®</sup> Oval/Round Device onto the tibial ULTRABUTTON

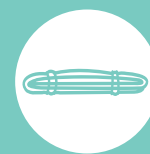


6 Reduce the ULTRABUTTON on the tibial cortex



Watch  
UltraSTAR ACL Reconstruction animation





## Case Checklist

Qty	SKU	Product
<b>Capital</b>		
1	72205269	X-WING <sup>®</sup> Graft Preparation Board*
1	72201746	ACUFEX <sup>®</sup> DIRECTOR ELITE <sup>®</sup> ACL Drill Guide System
1	3134186	Single FLUTE ENDOSCOPIC Cannulated DRILL 9.0mm
1	7205517	ACUFEX DIRECTOR Guide Handle
1	7205519	ACUFEX DIRECTOR ACL Tip Aimer
1	7205524	ACUFEX DIRECTOR ACL Angled Bullet
<b>Consumables</b>		
2	72290003	ULTRABUTTON <sup>®</sup> Adjustable Fixation Devices
1	72202797	1.2 RAP-PAC B Latex Free
1	71935602	XTENDOBUTTON <sup>®</sup> Fixation Device Round 17mm Ø (medium); Tunnel diameter: 7.5mm-9.5mm
1	7207315	4.5mm ENDOBUTTON <sup>®</sup> Drill, Sterile
1	72290037	FLOW 50 <sup>®</sup> COBLATION <sup>®</sup> Wand
1	72205292	DYONICS <sup>®</sup> PLATINUM FLYER <sup>®</sup> Blade

Click the SKU number to see the full SKU list

\*Placing an order with this code will order individual units of all X-WING components as shown in the Ordering Information section. Devices are not provided kitted or part of a system and all devices are individually packaged with their own instructions for use, as applicable.

### Watch



#### Graft Harvest + Preparation

- UltraSTAR Hamstring Graft Harvest Technique with Dr. Mark Bowen
- Graft preparation using the GRAFTMASTER<sup>®</sup> III featuring Dr. Brandon Bryant
- Semi-T graft preparation using the X-WING System featuring Dr. Bowen
- Preparing a short semi-t graft on the X-WING System featuring Dr. Bowen

#### Surgical Technique

- UltraSTAR ACL reconstruction animation
- UltraSTAR ACL reconstruction video featuring Dr. Bowen
- EndoSTAR ACL reconstruction video featuring Dr. Toby Ley

### Learn



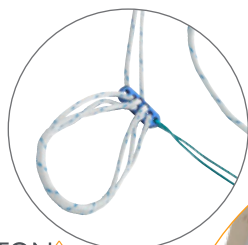
- X-WING Graft Preparation System Technique Guide





## UltraSURE Technique

The UltraSURE technique enables the use of a semitendinosus and gracilis graft—the most commonly used graft in the industry for ACL reconstruction.<sup>18</sup> It utilises two trusted fixation technologies with the ULTRABUTTON<sup>◊</sup> Adjustable Fixation Device and the advanced biocomposite screw, BIOSURE<sup>◊</sup> REGENESORB<sup>◊</sup>. Versatile drilling options provide the ability to use single fluted reamers designed to minimise iatrogenic damage to the femoral condyle when drilling or other preferred drilling options.



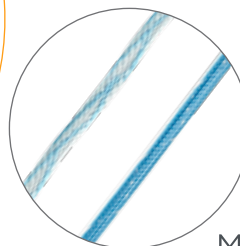
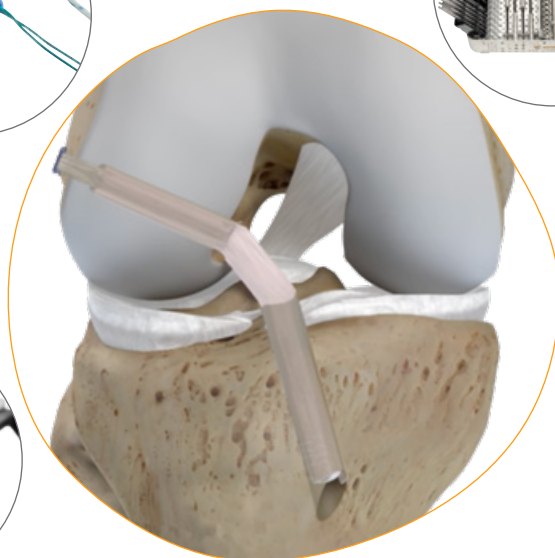
ULTRABUTTON<sup>◊</sup>  
Adjustable Fixation Device



ACUFEX<sup>◊</sup> DIRECTOR  
ELITE<sup>◊</sup>  
ACL Drill Guide System



X-WING<sup>◊</sup>  
Graft Preparation System



MINITAPE<sup>◊</sup>  
Suture Family



BIOSURE<sup>◊</sup>  
REGENESORB<sup>◊</sup>  
Interference Screw



We like to use the hamstring tendon soft-tissue graft typically in non-collision, non-contact athletes. When you have a four stranded hamstring or soft-tissue hamstring graft, we aim for at least an 8mm diameter graft. So far the evidence has shown that leads to less risk of graft re-rupture.<sup>17</sup> In this technique, the suspensory fixation on the femur is with the ULTRABUTTON, which is adjustable, so there's no math. With the tunnel on the tibia, we can use the BIOSURE REGENESORB Interference Screw.



Vehniah Tjong, MD  
Northwestern Center for Comprehensive Orthopaedic and Spine Care  
Chicago, IL





## + UltraSURE Technique Features and Benefits

### Semitendinosus and gracilis graft:

- Is the most-used graft in ACL reconstruction<sup>18</sup>
- Ensures a maximum load to failure of around 4,590N<sup>19</sup>

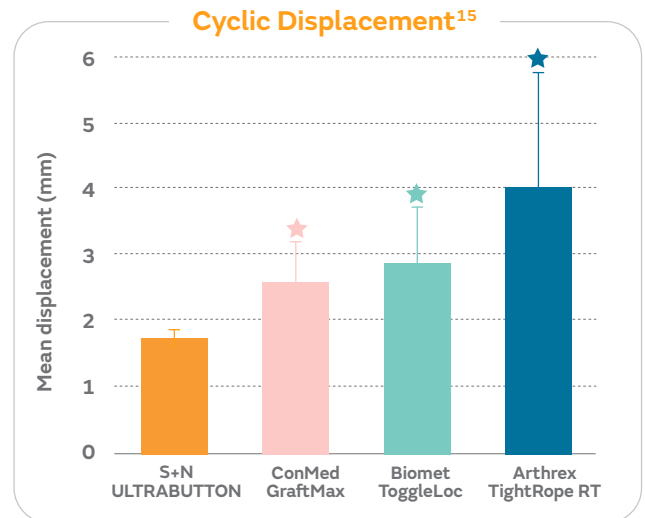
### Using the ULTRABUTTON<sup>®</sup> Adjustable Fixation Device and the BIOSURE<sup>®</sup> REGENESORB<sup>®</sup> screw for fixation:

- ULTRABUTTON allows for easy graft loading<sup>20</sup>, has shown in a study to have significantly less cyclic displacement than other competitive adjustable fixation devices<sup>\*15</sup> and has ultra-strong fixation<sup>\*\*15,21,22</sup>
- BIOSURE REGENESORB's open-architecture design allows bone ingrowth across the interference screw<sup>^1</sup> and has shown approximately 50% bone volume is restored by new bone within the center cannulation at 12 weeks in a pre-clinical study<sup>1</sup>

### Accommodates surgeon's current drilling preferences

## ULTRABUTTON Adjustable Fixation Device

↓ Up to **75%** less displacement<sup>†15,21-24</sup>

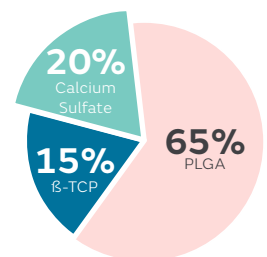


★ Denotes that comparison relative to the ULTRABUTTON Adjustable Fixation Device is statistically significant.

### Advanced Material

REGENESORB material is replaced by bone within

**24 months**  
in clinical and pre-clinical studies<sup>25-27</sup>



\*As demonstrated in benchtop testing; compared to TightRope<sup>®</sup>, ToggleLoc<sup>™</sup> and GraftMax<sup>™</sup>

\*\*For an adjustable fixation device; as demonstrated in benchtop testing

† As demonstrated in benchtop testing; compared to TightRope

^As demonstrated *in vivo*

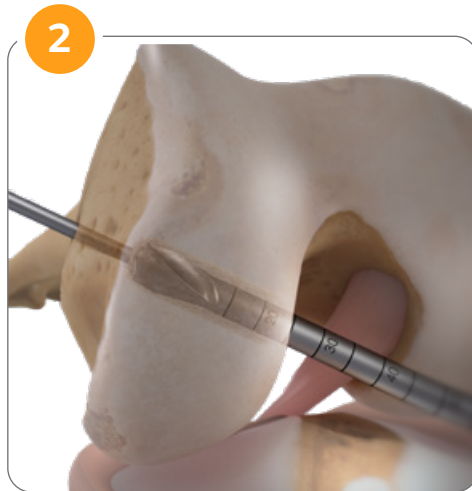




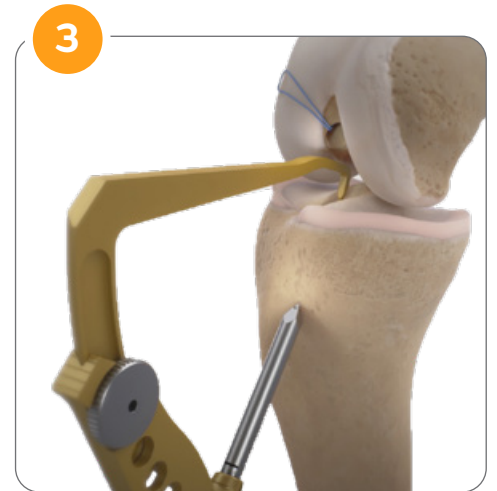
## Technique Highlights



1 Prepare the semitendinosus and gracilis graft using the X-WING<sup>®</sup> Graft Preparation System



2 Drill the femoral tunnel and socket using the ACUFEX<sup>®</sup> DIRECTOR ELITE<sup>®</sup> with ACL Drill Guide System single fluted reamers



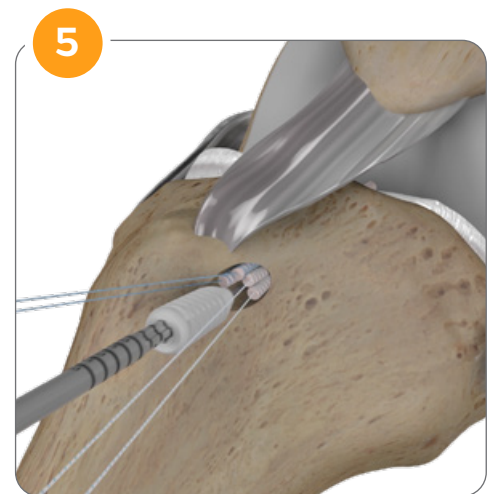
3 Drill the tibial tunnel using the ACUFEX DIRECTOR ELITE System



4 Pass the graft and flip an ULTRABUTTON<sup>®</sup> Adjustable Fixation Device on the femur



5 Reduce the ULTRABUTTON



5 Fixate the tibia with a BIOSURE<sup>®</sup> REGENESORB<sup>®</sup> Interference Screw





## Case Checklist

Qty	SKU	Product
<b>Capital</b>		
1	72205269	X-WING <sup>®</sup> Graft Preparation System*
1	72201746	ACUFEX <sup>®</sup> DIRECTOR ELITE <sup>®</sup> ACL Drill Guide System
1	3134186	Single FLUTE ENDOSCOPIC Cannulated DRILL, 9.0mm
1	7205519	ACUFEX DIRECTOR ACL Tip Aimer
1	7205524	ACUFEX DIRECTOR ACL Angled Bullet
<b>Consumables</b>		
1	72290003	ULTRABUTTON <sup>®</sup> Adjustable Fixation Devices
1	72204404	BIOSURE <sup>®</sup> REGENESORB <sup>®</sup> Interference Screw, Size 9mm x 25mm
1	7207315	4.5mm Endoscopic ULTRABUTTON/ ENDOBUTTON <sup>®</sup> Drill, Sterile
1	72202797	1.2 RAP-PAC B Latex Free
1	72290037	FLOW 50 <sup>®</sup> COBLATION <sup>®</sup> Wand
1	72205292	DYONICS <sup>®</sup> PLATINUM FLYER <sup>®</sup> Blade

Click the SKU number to see the full SKU list

### Watch



#### Graft Harvest + Preparation

- Hamstring graft harvest featuring Dr. Tjong
- UltraSURE hamstring graft preparation featuring Dr. Tjong

#### Surgical Technique

- UltraSURE ACL reconstruction video featuring Dr. Tjong

### Learn



- X-WING Graft Preparation System Technique Guide



\*Placing an order with this code will order individual units of all X-WING components as shown in the Ordering Information section. Devices are not provided kitted or part of a system and all devices are individually packaged with their own instructions for use, as applicable.

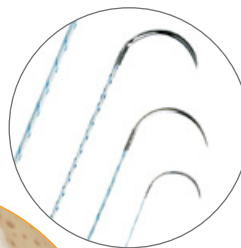


## REGENESORB QT-B

The REGENESORB quad tendon-bone (QT-B) technique uses the innovative, open-architecture BIOSURE<sup>◊</sup> REGENESORB Interference Screw for bone ingrowth across the screw<sup>\*1</sup> with a quadriceps tendon bone graft which provides a lower risk of anterior knee pain<sup>7,32,77</sup> and predictable, larger graft diameter<sup>7,28,76</sup> as compared to bone-tendon-bone and BTB or hamstring grafts, respectively.



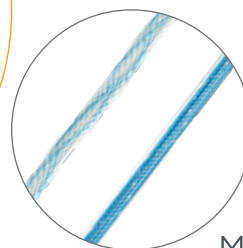
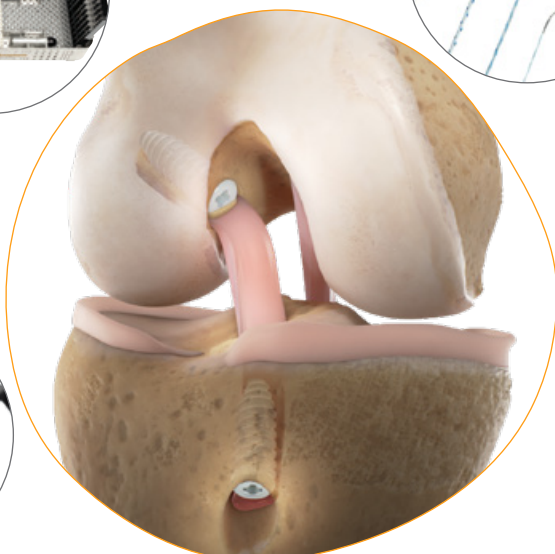
ACUFEX<sup>◊</sup> DIRECTOR  
ELITE<sup>◊</sup>  
ACL Drill Guide System



ULTRABRAID<sup>◊</sup>  
Suture Family



X-WING<sup>◊</sup>  
Graft Preparation System



MINITAPE<sup>◊</sup>  
Suture Family



BIOSURE<sup>◊</sup>  
REGENESORB<sup>◊</sup>  
Interference Screw



*The addition of the REGENESORB QT-B technique to my practice has allowed me to improve the standard of care for my patients. I recommend this option to my young athletic female patients looking to return to cutting and pivoting sports to help minimise the risk of a re-rupture which has been shown in literature to be as high as 20% using other graft options.<sup>29</sup>*

Geoffrey Van Thiel, MD  
Orthollinois  
Chicago, IL







## + REGENESORB QT-B Features and Benefits

### The QT-B graft offers:

- Direct bone-to-bone integration of the graft, like BTB
- Predictable, larger graft diameter<sup>7,28,76</sup>
- Stability results on par with hamstring and BTB autografts<sup>30,31</sup>
- Favorable clinical results<sup>30,31</sup>
- Lower risk of anterior knee pain as compared to BTB<sup>7,32,77</sup>

### Using the BIOSURE<sup>®</sup> REGENESORB screw for fixation:

- Achieves circumferential graft-to bone integration with the innovative open-architecture design<sup>\*1</sup>

### Minimise possible iatrogenic damage

- The ACUFEX<sup>®</sup> DIRECTOR Single Fluted Reamers were designed with a smooth face to help minimise the risk of cartilage damage during insertion

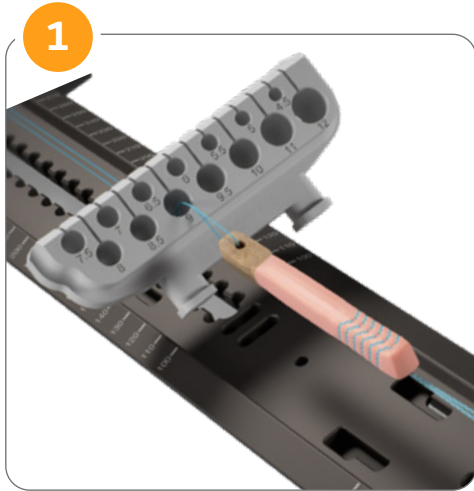


\*As demonstrated *in vivo*

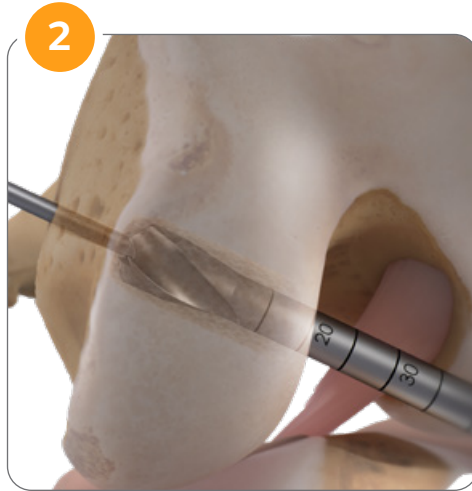




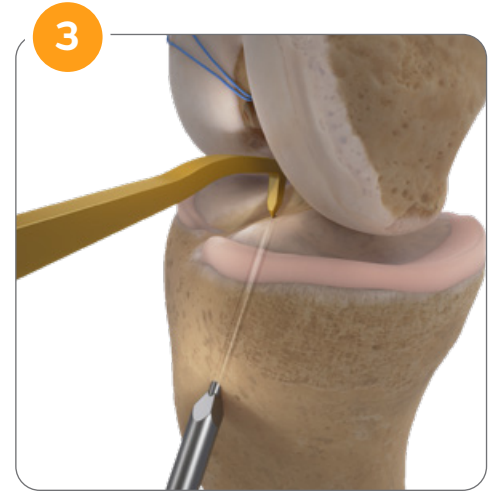
## Technique Highlights



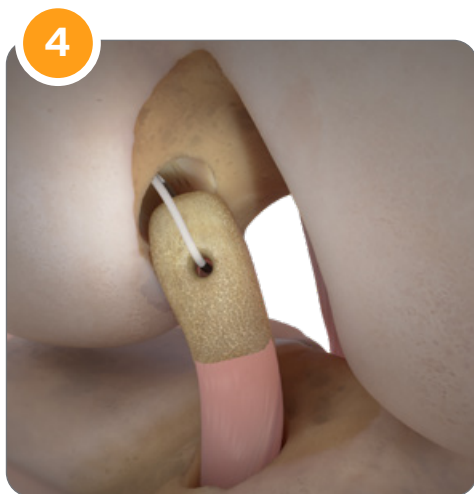
1 Prepare the QT-B graft using the X-WING<sup>®</sup> Graft Preparation System, #5 ULTRABRAID<sup>®</sup> Suture on Needle



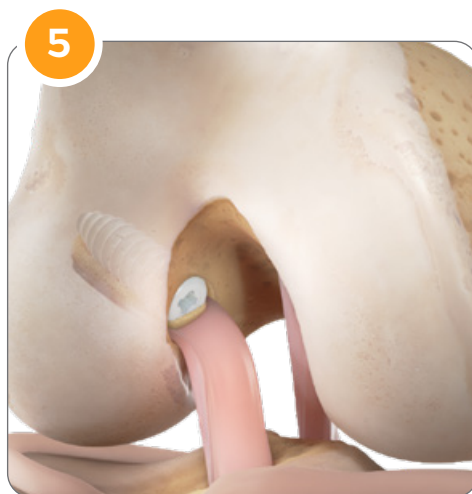
2 Drill the femoral tunnel with the ACUFEX<sup>®</sup> DIRECTOR ELITE<sup>®</sup> ACL Drill Guide System with single fluted reamers



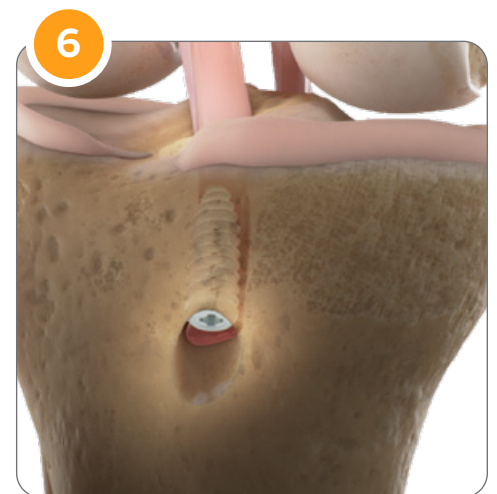
3 Drill the tibial tunnel and collect the bone chips



4 Pass the graft



5 Fixate with a BIOSURE<sup>®</sup> REGENESORB<sup>®</sup> Interference Screw on the femur



6 Fixate with a second BIOSURE<sup>®</sup> REGENESORB<sup>®</sup> on tibia





## Case Checklist

Qty	SKU	Product
<b>Capital</b>		
1	72205269	X-WING <sup>®</sup> Graft Preparation System*
1	72201746	ACUFEX <sup>®</sup> DIRECTOR ELITE <sup>®</sup> ACL Drill Guide System
1	3134186	Single Flute Endoscopic Cannulated Drill
1	7205519	ACUFEX DIRECTOR ACL Tip Aimer
1	7205524	ACUFEX DIRECTOR ACL Angled Bullet
1	72201942	BIOSURE <sup>®</sup> EASY TAP System
<b>Consumables</b>		
1	72202798	1.2 RAP-PAC C latex free
2	72205432	ULTRABRAID <sup>®</sup> Suture on Needle, #5, straight needle, white, 40", 12 per box
1	72204394	BIOSURE REGENESORB Interference Screw 7mm x 20mm
1	72204404	BIOSURE REGENESORB Interference Screw 9mm x 25mm
1	72290037	FLOW 50 <sup>®</sup> COBLATION <sup>®</sup> Wand
1	72202531	4.5mm DYONICS <sup>®</sup> BONECUTTER <sup>®</sup> PLATINUM Blade

Click the SKU number to see the full SKU list

## Watch

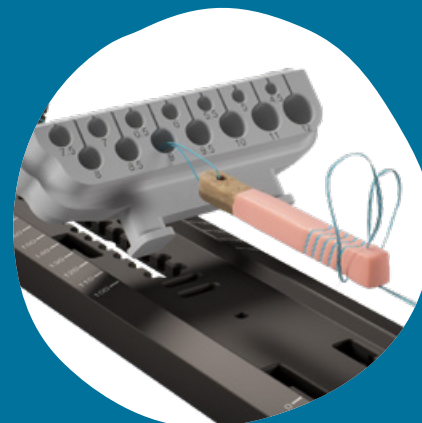


### Graft Harvest + Preparation

- QT-B graft harvest featuring Dr. Van Thiel
- QT-B graft preparation featuring Dr. Van Thiel
- Why quad tendon? featuring Dr. R. Lee Murphy

### Surgical Technique

- QT-B surgical technique video featuring Dr. Van Thiel
- All soft tissue quad tendon with ULTRABUTTON technique video featuring Dr. Murphy



\*Placing an order with this code will order individual units of all X-WING components as shown in the Ordering Information section. Devices are not provided kitted or part of a system and all devices are individually packaged with their own instructions for use, as applicable.



# Products

## Graft Preparation

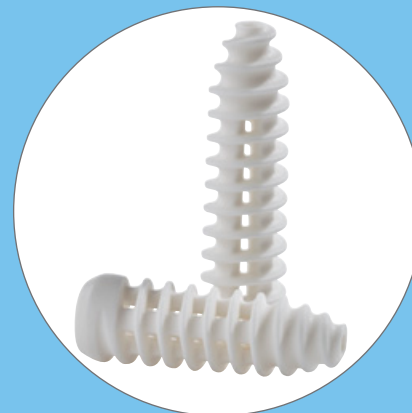
- Suture Solutions
- Graft Prep Boards

## Guide Systems and Tunnel Drilling

- Inside-out Rigid Drilling
- Inside-out Flexible Drilling
- Retrograde Drilling
- Outside-in Drilling
- Extra-articular Drilling

## Fixation

- Button Fixation
- Screw Fixation



# Graft preparation

## Suture

### LOOPED SUTURE on Needle

Designed for smooth passage, low graft disruption and versatility.


- **Smooth** needle throw from swaged suture
- **Optimised** design for minimised graft disruption
- **Versatility** in needle options and suture color choice

	Suture					Needle		Packaged	
	Size	Colors	Length	Knot Pull <sup>67</sup>	Straight Tensile <sup>67</sup>	Options	Length		Diameter
<b>LOOPED SUTURE on Needle</b>	#2	• Blue • Cobraid	20" loop	Up to 39.07lbf	Up to 85.20lbf	• Straight • Curved, HC-5 ½ circle	• 50.8mm (straight) • 25.9mm (curved)	1.28mm	12 per box

### ULTRABRAID<sup>®</sup> Suture

ULTRABRAID is composed of an ultra-high molecular weight polyethylene (UHMWPE) fiber and features a braid configuration.

	Suture				Needle		Packaged
	Size	Colors	Length	Options	Length	Diameter	
<b>ULTRABRAID Suture</b>	2-0	• White • Cobraid	24"	N/A	N/A	N/A	10 per box
	#2	• White • Cobraid • Blue	38"	N/A	N/A	N/A	10 per box
<b>ULTRABRAID Suture on Needle</b>	2-0	• White • Cobraid	24"	• Curved, HR22 ½ circle	N/A	N/A	10 per box
	#2	• White • Cobraid	38"	• Curved, HR27 ½ circle	N/A	N/A	• Individual • 10 per box
	#5	• White • multi-colored braid	40"	• Straight • Curved, HC5 ½ circle	50mm (straight)	1.28mm	12 per box

 **Preview**  
 REGENESORB<sup>®</sup> BTB ACL Reconstruction Technique  
 REGENESORB QT-B ACL Reconstruction Technique

 **Ordering information**



# Graft preparation

## Tapes

### MINITAPE<sup>◊</sup> Suture

MINITAPE is a braided suture tape made from ultra-high molecular weight polyethylene (UHMWPE) fiber. Its seamless transitions from round suture to flat braid and back to round suture. MINITAPE has a broader footprint and more uniform distribution of pressure compared to similar sutures.\* This may reduce tissue strangulation and a "cutting effect" in applications where tissue pull-through may be concern.

	Tape					Options	Needle		Packaged
	Colors	Length	Width	Knot Pull	Straight Tensile <sup>68</sup>		Length	Diameter	
<b>MINITAPE Suture</b>	<ul style="list-style-type: none"> <li>• Blue</li> <li>• Cobraid blue</li> <li>• Cobraid white</li> </ul>	39.5"	1.4mm	N/A	50.13lbf	N/A	N/A	N/A	6 per pack



**Preview**

- UltraSTAR ACL Reconstruction Technique
- UltraSURE ACL Reconstruction Technique
- REGENESORB<sup>◊</sup> QT-B ACL Reconstruction Technique

### ULTRATAPE<sup>◊</sup> Suture

ULTRATAPE is a smooth suture tape, which, when compared to a traditional #2 suture, provides a **75% increase** in contact area while offering a significantly lower and more evenly distributed level of pressure (demonstrated in pre-clinical testing).<sup>70</sup>

	Tape			Options	Packaged
	Colors	Length	Width		
<b>ULTRATAPE</b>	<ul style="list-style-type: none"> <li>• Blue</li> <li>• Cobraid</li> </ul>	38"	2mm	N/A	6 per box

\*Testing conducted on size 3 & 4, and 5 Force Fiber Fusion<sup>®</sup> Suture against comparable product in sterilised form. These tests may not be indicative of clinical performance. Testing was performed in 2017 upon sutures manufactured using the same braiding method, materials, and equipment as MINITAPE Size 2 except on a differing yet representative size. Similar results expected.

## Graft preparation

### Tools

#### ULTRAGRAB<sup>◊</sup> Suture Manager\*

ULTRAGRAB is designed to shuttle sutures through bone tunnels with its stiffened #2 suture and patient-contacting protective tube. It is available in cobraid- and solid-color versions.

	Suture						Tube		Packaged	
	Size	Colors	Total Length	Stiffened Length	Suture Knot Pull Average <sup>69</sup>	Suture Straight Pull Average <sup>69</sup>	Material	Length		Diameter
<b>ULTRAGRAB</b>	#2	• Blue • Cobraid	48"	12"	34.2lbf	74.8lbf	Polypropylene	12"	Inner: 1.5mm Outer: 2.5mm	6 per box

#### ULTRALOOP<sup>◊</sup> Suture Tape Loop\*

ULTRALOOP features a 1.25" MINITAPE<sup>◊</sup> loop on a #2 26" suture tail. It is designed to bring the benefits of suture tape to luggage tag applications. It is available in both cobraid- and solid-color versions.

	Suture			Loop			Suture Knot Pull Average <sup>69</sup>	Suture Straight Pull Average <sup>69</sup>	Packaged
	Size	Colors	Length	Size	Loop Length	Tape Width			
<b>ULTRALOOP</b>	#2	• Blue • Cobraid	26"	MINITAPE	1.25"	1.5mm	39.0lbf	99.8lbf	12 per box

#### WHIPKNOT Soft Tissue Cinch\*

The WHIPKNOT is indicated for use in assisting in the harvest, preparation and placement of soft-tissue grafts during ligament reconstructive surgical procedures. The disposable soft tissue cinch comes pre-assembled in a sterile pack that also includes a disposable cannula.

\*Available in Australia and New Zealand late 2022.

## Graft preparation

Graft prep boards

### X-WING<sup>®</sup> Graft Preparation System

The X-WING System is evolving the preparation of hamstring, BTB and quad grafts for ligament reconstruction.



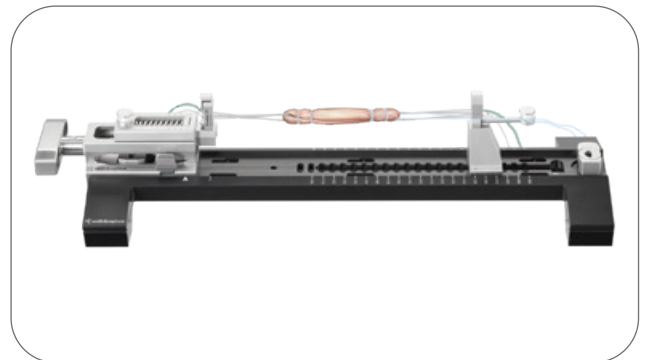
#### Preview

- REGENESORB<sup>®</sup> BTB ACL Reconstruction Technique
- UltraSTAR ACL Reconstruction Technique
- UltraSURE ACL Reconstruction Technique
- REGENESORB QT-B ACL Reconstruction Technique



#### Learn

X-WING Graft Preparation System technique guide

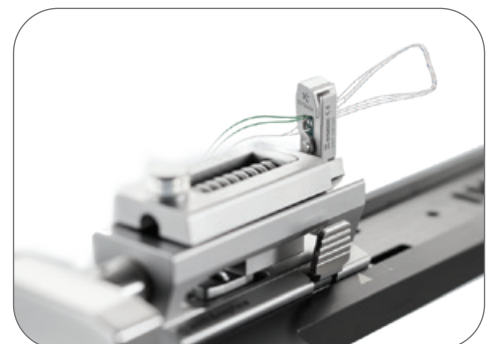
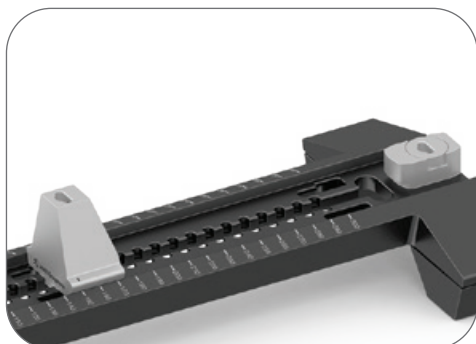


## Simplify graft preparation

+ Guided graft length

+ Controlled pre-tensioning

+ Secure button attachment





## Guide systems + tunnel drilling

### Inside-out Rigid

#### ACUFEX<sup>◇</sup> DIRECTOR ELITE<sup>◇</sup> Set

##### Swing-out drill racks

Tightly organised for operating room efficiency, swing-out racks include slots for virtually every instrument—from whole and half-size drills to aimers and chondral picks. No more searching the bottom tray for an instrument.

##### Extra room if you need it

In addition to the swing-out racks, the bottom of the tray has more room for loose instruments.

The ACUFEX DIRECTOR ELITE Drill Guide offers:

- A familiar dovetail arm design used for more than a decade in ACUFEX linear instruments
- Simple, self-locking mechanism for one-handed operation of the guide
- A ratchet bullet locking mechanism that self-locks as the surgeon advances the bullet
- Choice of tip-to-tip or tip-to-elbow aimers (depending on surgeon's preferred technique)



##### Preview

REGENESORB<sup>◇</sup> BTB ACL Reconstruction Technique  
UltraSTAR ACL Reconstruction Technique  
UltraSURE ACL Reconstruction Technique  
REGENESORB QT-B ACL Reconstruction Technique



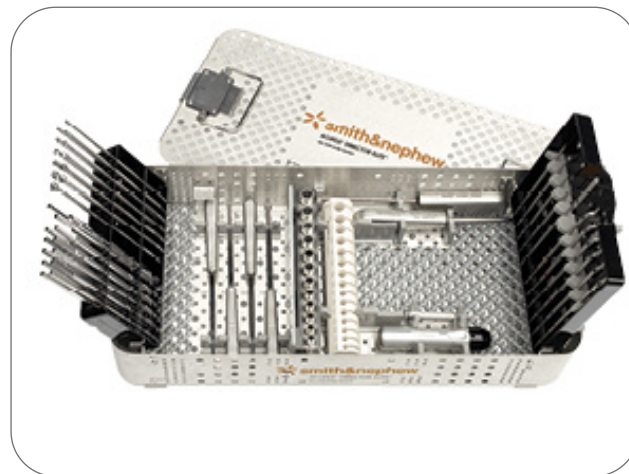
##### Watch

REGENESORB<sup>◇</sup> BTB ACL Reconstruction animation

---

##### Single fluted reamers

Designed to minimise iatrogenic damage on the femoral condyle when entering the joint.



## Guide Systems + Tunnel Drilling

### Inside-out Flexible

#### CLANCY ANATOMIC CRUCIATE GUIDE Flexible Drill System

##### One complete system

Featuring flexible reamers and a 42° femoral guide, the CLANCY System offers the necessary tools for the accurate placement and drilling of femoral tunnels.

- Reach more inferior and anterior sites on the lateral condyle than conventional instrumentation.<sup>10,72,74</sup>
- No need to hyperflex the knee while drilling through the medial portal which allows for easier positioning and avoidance of fat pad ingress.<sup>72-75</sup>
- Permits an anteromedial approach with 90° of knee flexion allowing for optimised visualisation.<sup>\*10,72-75</sup>

 [Ordering information](#)

### Retrograde

#### ACUFEX<sup>®</sup> TRUNAV Retrograde Drills

The ACUFEX TRUNAV Retrograde Drill is the **ONLY** cannulated drill designed for **pin-guided antegrade/retrograde reaming** over a guide wire to deliver precision and control.<sup>\*\*33-36</sup>

- **Precision:** Precise tunnel planning and placement is facilitated with a 2.4mm guide wire that delivers more than 50% of bone savings during initial tunnel placement.<sup>\*\*\*35</sup>
- **Control:** Support and control for the establishment of concentric tunnels during antegrade and retrograde drilling are achieved through the drill's cannulated design.<sup>\*\*33,36,37</sup>
- **Performance:** Enhanced drill performance has been shown to create smoother tunnels<sup>†</sup> which may facilitate easier graft passage.<sup>37</sup>

\*As compared to rigid drilling systems

\*\*As demonstrated in cadaver and bench-top testing

\*\*\*As demonstrated in bench-top testing, n=20, compared to FlipCutter®, TWISTR™ and SwitchCut™

†As compared to DePuy Synthes TWISTR™ and Arthrex FlipCutter™ II, n=6

 [Ordering information](#)



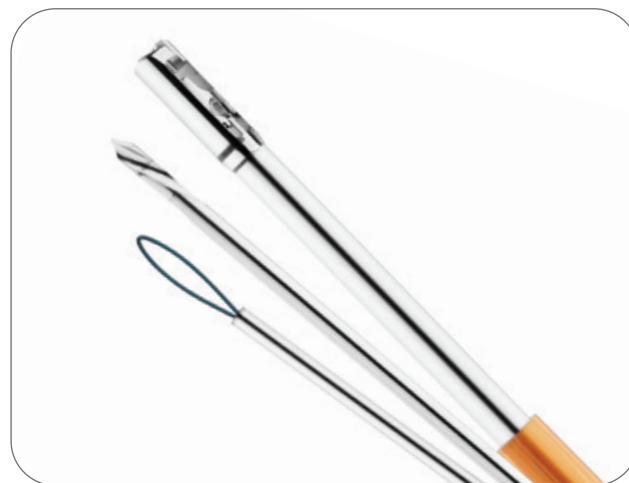
##### Preview

REGENESORB<sup>®</sup> BTB ACL Reconstruction Technique



##### Watch

REGENESORB BTB ACL Reconstruction animation



##### Preview

UltraSURE ACL Reconstruction Technique



## Guide Systems + Tunnel Drilling

### Outside-in

#### ACUFEX<sup>®</sup> PINPOINT Guides Anatomic ACL Guide System

Designed to be versatile and easy-to-use, the system allows the surgeon to tailor femoral tunnel location.

- Change guide trajectory to achieve desired femoral tunnel lengths and avoid anatomic landmarks, previous tunnels or fixation devices.
- Estimate the size and coverage of the native ACL footprint with the concentric single-bundle guides.
- Adjust placement of the guide on the condylar wall for stability and control during guide wire placement.



 [Ordering information](#)

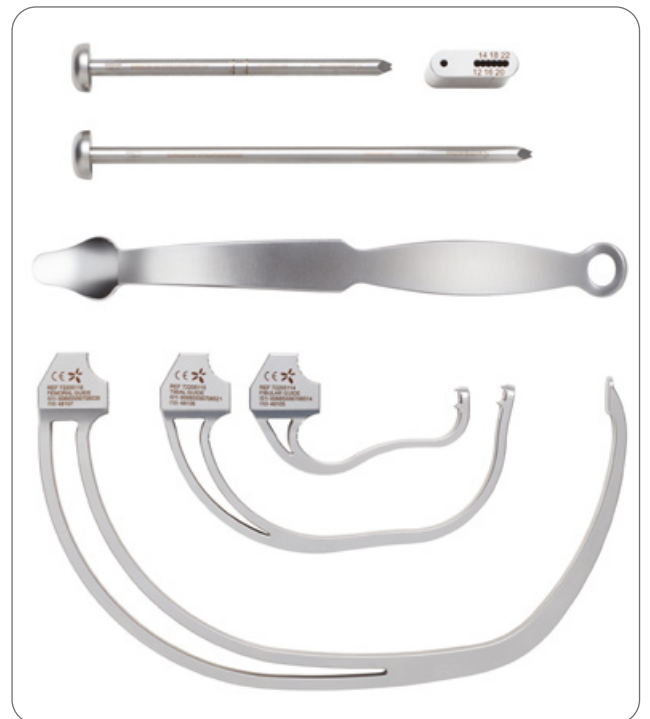
---

### Extra-articular

#### ACUFEX EXTRA-ARTICULAR Reconstruction Guide System

A complete solution for surgical reconstruction of the posterolateral corner (PLC) or medial collateral ligament (MCL).

- Ratcheting guides are designed to clamp onto the patient's knee and stay attached without support. The two-piece design allows for quick assembly and disassembly.
- The Offset Guide and the Retractor help further the surgeon's ability to drill tunnels for a PLC reconstruction safely and efficiently.



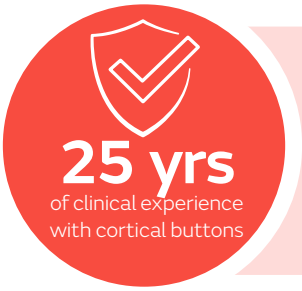
[Click here to see another view](#)

 [Ordering information](#)



# Fixation

## Button Fixation



ENDOBUTTON® CL ULTRA Fixation Device



ENDOBUTTON Fixation Device



XTENDOBUTTON® Family of Fixation Devices



ENDOBUTTON CL BTB Fixation Device



ULTRABUTTON® Adjustable Fixation Device

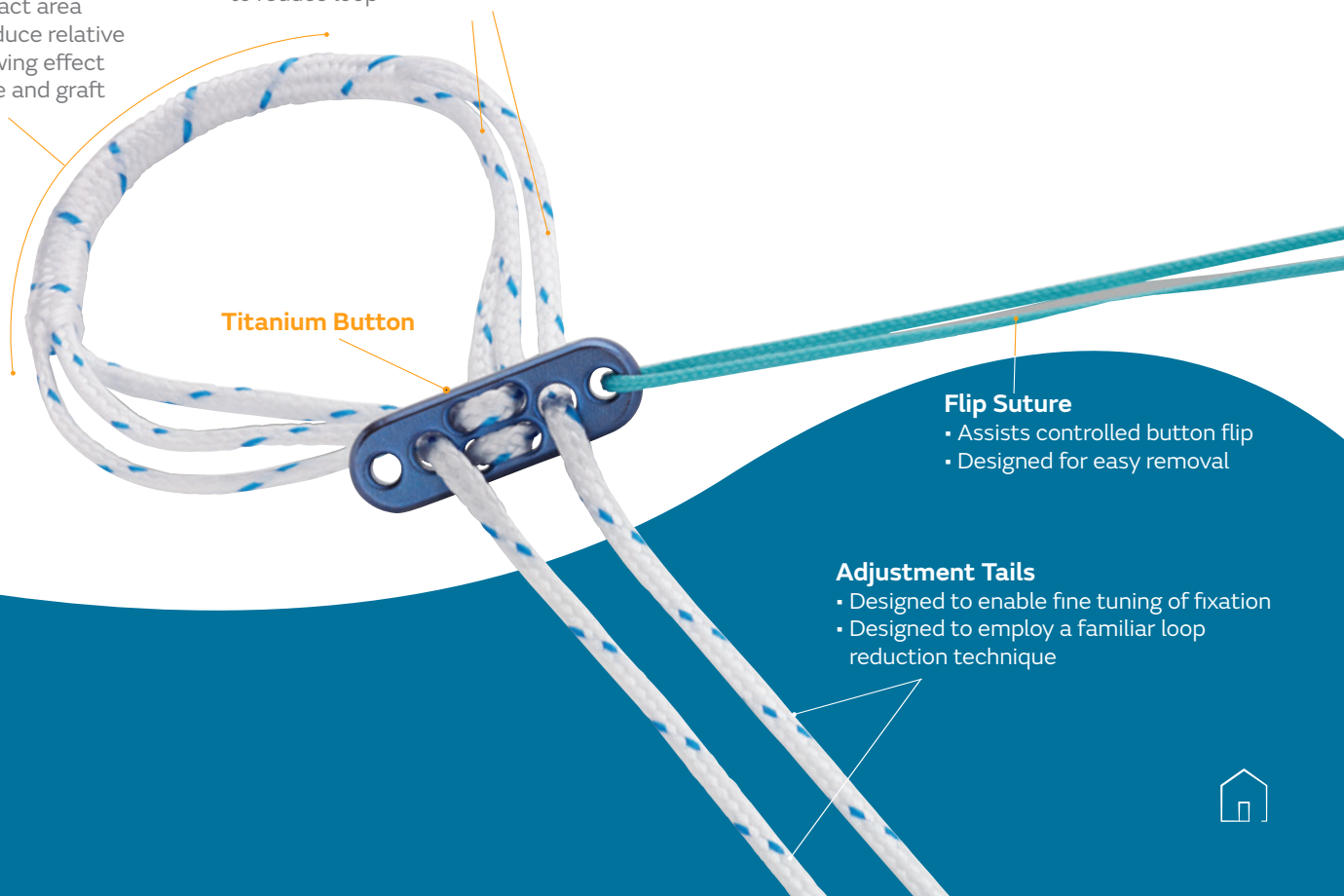
## ULTRABUTTON Adjustable Fixation Device

### Graft Cradle

- Designed to protect graft with large contact area
- Designed to reduce relative motion and sawing effect between device and graft

### Interlocking Adjustment

- Maximises graft in tunnel<sup>20</sup>
- Requires minimal force to reduce loop<sup>20,78</sup>



Titanium Button

### Flip Suture

- Assists controlled button flip
- Designed for easy removal

### Adjustment Tails

- Designed to enable fine tuning of fixation
- Designed to employ a familiar loop reduction technique



# Fixation

## Button Fixation

### ULTRABUTTON<sup>®</sup> Adjustable Fixation Device

#### Less Displacement

ULTRABUTTON has been shown to have less cyclic displacement than other competitive adjustable fixation devices.<sup>\*15,21</sup>

#### Leading Fixation Strength

ULTRABUTTON has been shown to provide stronger fixation when evaluated in biomechanical testing against leading competitors.<sup>\*15,21</sup>

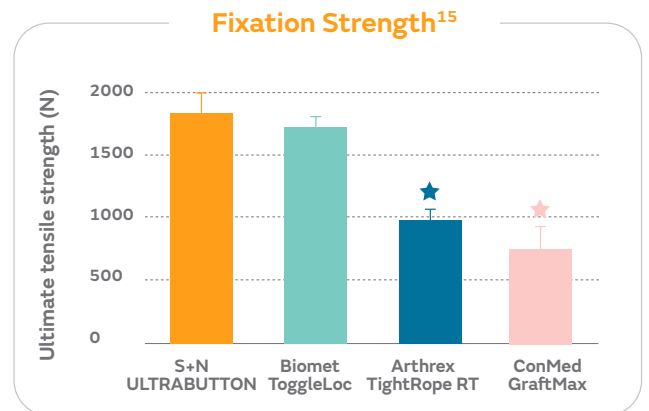
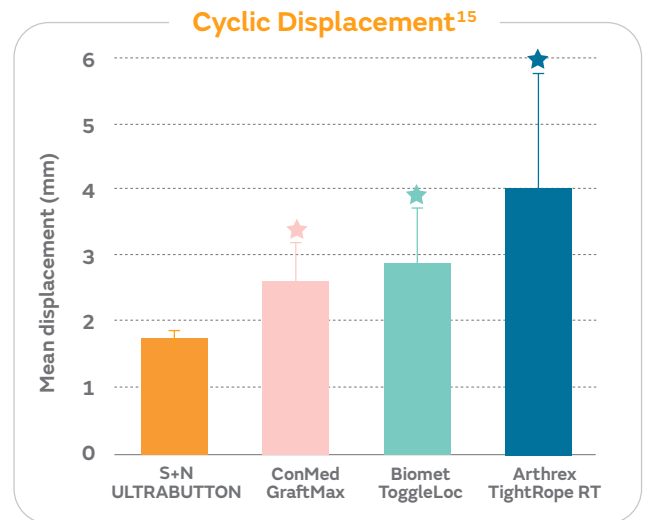
#### Graft Protection

Graft cradle is designed to protect the graft during loop reduction by minimising relative graft/device motion to avoid sawing effect.



#### Preview

UltraSTAR ACL Reconstruction Technique  
UltraSURE ACL Reconstruction Technique



★ Denotes comparison relative to the ULTRABUTTON Adjustable Fixation Device is statistically significant.

\*As demonstrated in benchtop testing; compared to TightRope<sup>®</sup>, ToggleLoc<sup>™</sup> and GraftMax<sup>™</sup>

## Fixation

### Button Fixation

#### XTENDOBUTTON<sup>®</sup> Adjustable Fixation Device

Enhance your cortical fixation options.

#### XTENDOBUTTON Oval + Round

Designed to extend button fixation and available in small, medium and large sizes.

**XTENDOBUTTON Oval Fixation Devices** are designed to nestle onto native anatomy.

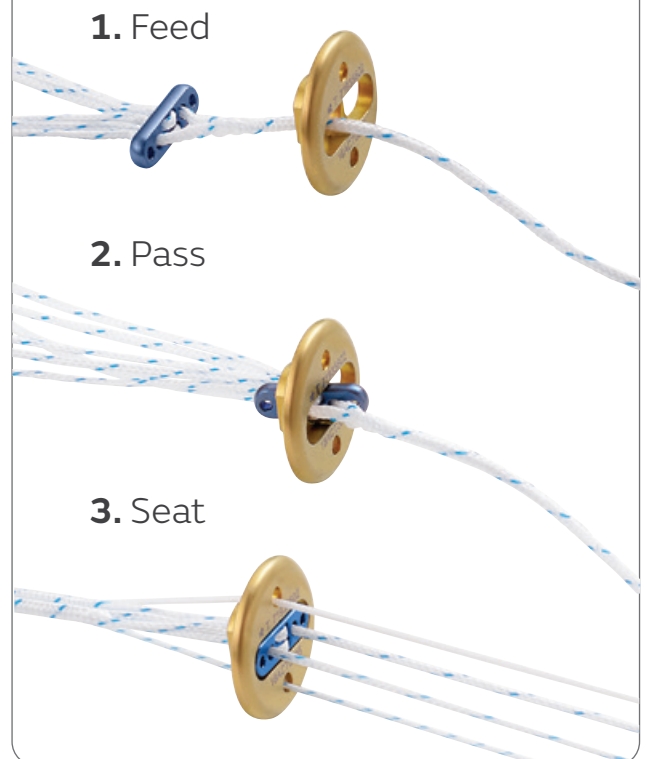
**XTENDOBUTTON Round Fixation Devices** are designed to provide extended surface area.

- Peg design centers the button in the tunnel
- Suture management holes provide additional suture tie locations

 **Preview**  
UltraSTAR ACL Reconstruction Technique



#### Simple to connect without removing graft



## Screw Fixation

### BIOSURE<sup>◇</sup> REGENESORB<sup>◇</sup> Interference Screw

Enhance your cortical fixation options.

The innovative BIOSURE REGENESORB Screw is the first interference screw made of the unique REGENESORB advanced biocomposite material with an open-architecture design to allow for bone ingrowth\*, which also provides the kind of fixation strength expected with a solid absorbable interference screw.\*\*1-3

#### Advanced Material

REGENESORB material is an advanced biocomposite shown to be absorbed and effectively replaced by bone within 24 months in clinical and pre-clinical studies.<sup>25,26,27</sup>

Approximately 50% bone volume is restored by new bone within center cannulation at 12 weeks as demonstrated by a pre-clinical study.<sup>1,38,39,79</sup>



#### Preview

REGENESORB BTB ACL Reconstruction Technique  
UltraSURE ACL Reconstruction Technique  
REGENESORB QT-B ACL Reconstruction Technique

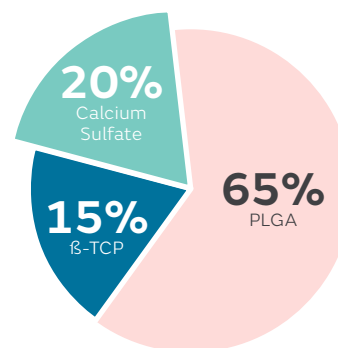


#### Watch

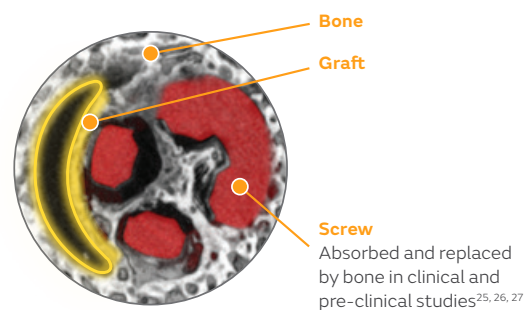
REGENESORB BTB ACL Reconstruction animation



#### Advanced Material



#### Circumferential graft-to-bone integration<sup>†1</sup>



BIOSURE REGENESORB Screw has been shown to allow integration of bone on all sides of the graft, a key aspect of the ligament healing process.<sup>1,38,39,79</sup>

\*As demonstrated *in vivo*

\*\*Compared to BIOSURE HA Interference Screws; as demonstrated in benchtop testing



# Arthroscopy Enabling Technology

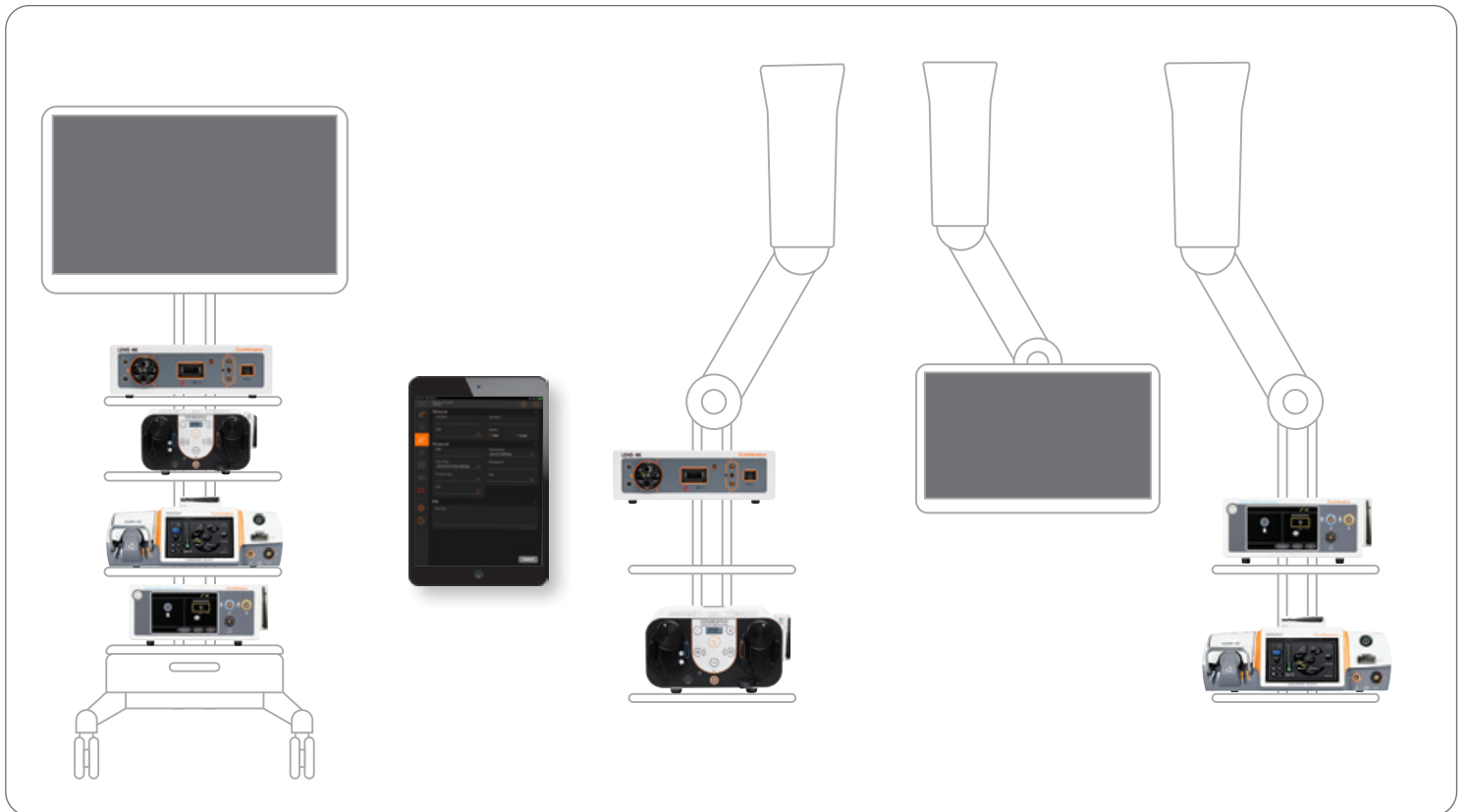
- INTELLIO<sup>®</sup> Connected Tower
- Access and Fluid Management
- COBLATION<sup>®</sup> Technology
- Patient Positioning
- Resection
- Visualisation





## INTELLIO<sup>®</sup> Connected Tower

Smith+Nephew is committed to finding new ways to maximise your capital investment and minimise equipment complexity. We drive connectivity with simplicity, helping you stay focused on what matters most—your patient.



LENS Connected Tower App is integral to achieving efficiency in operating your LENS 4K Surgical Imaging System, DYONICS<sup>®</sup> POWER II Control System and WEREWOLF<sup>®</sup> COBLATION<sup>®</sup> System. It can manage patient work lists, capture images and videos, and control COBLATION, resection and fluid management settings wirelessly. INTELLIO Connected Tower helps you set a high standard for efficiency.



# Arthroscopy Enabling Technology

The INTELLIO<sup>®</sup> Connected Tower Solution features wireless connectivity to support your preferred surgical equipment placement, whether in a tower or pendant configuration.



## Access and Fluid Management

### DOUBLEFLO<sup>®</sup> Inflow/Outflow Pump

Simplify your workflow with an integrated fluid management system.

- **Simple**

The DOUBLEFLO Pump is easier to set up than the competition—56% fewer errors and 34% less time compared to FMS VUE<sup>®</sup>, and 36% fewer errors and 43% less time compared to DualWave<sup>™</sup>.<sup>\*40</sup> This may help busy surgeons and staff tend to the patient, not the equipment.

- **Effective**

The DOUBLEFLO Pump is more responsive than the competition—17% faster in response to a sudden decrease in joint volume, and 38% faster in response to a sudden increase in joint volume.<sup>\*\*41</sup> This may help surgeons in diverse clinical situations, by providing consistent debris removal for clear visualisation as well as an efficient flow to conserve saline and minimise set up complications.

- **Connected**

The DOUBLEFLO Pump is designed to perform with the INTELLIO<sup>®</sup> Connected Tower, which provides a surgeon and staff the convenience of viewing critical settings via the onscreen display and one-touch set up via the app.



\*In a survey of 15 HCPs

\*\*Compared to DualWave<sup>™</sup>; as demonstrated in benchtop testing

## COBLATION<sup>o</sup> Technology

### COBLATION Technology

#### Safety + Precision

Our WEREWOLF<sup>o</sup> and QUANTUM<sup>o</sup> 2 Controller Systems are suitable for use on all joint soft tissue.<sup>42-46,80,81</sup>

COBLATION resulted in faster patient recovery compared to mechanical debridement.<sup>+47</sup>

- Significantly better KOOS<sup>\*47-49</sup> and Tegner scores at 4 years.<sup>\*\*47,49</sup>
- An 88% reduction in the relative risk of joint replacement surgery at 4 years.<sup>^+49</sup>
- A 91% reduced relative risk of taking NSAIDs at 1 year for knee pain.<sup>^+47</sup>



---

### FLOW~IQ<sup>o</sup> Technology

- Automatically regulates saline outflow with COBLATION energy to optimise performance across all tissue types.
- Controls energy output and outflow suction.
- Enables VAC mode to rinse the joint and clear debris with a simple push of a button.



---

### AMBIENT<sup>o</sup> Technology

- Offering real-time temperature monitoring of intra-articular fluid.
- When the temperature in the joint space exceeds the user-selected set point, the controller will emit visual and audible alarms.

+In a randomised, controlled study for knee chondroplasty in patients with a grade chondral lesion and concomitant meniscal tears

\*P<0.001

\*\*P≤0.005

^Compared to mechanical debridement

## COBLATION<sup>®</sup> Wand Family

### FLOW 50<sup>°</sup> COBLATION Wand

- The FLOW 50 Wands optimise removal of femoral ACL remnants and helps define the posterior cruciate ligament (PCL) to aid in preparation for tunnel placement.
- FLOW 50 allows you to treat concomitant pathologies during your ACL procedure with one device.
- Combined COBLATION technology and FLOW-IQ<sup>®</sup> featuring Ambient Technology removes tissue with speed\* and precision.\*\*50,51



---

### SUPER MULTIVAC<sup>®</sup> 50

The SUPER MULTIVAC 50 provides tissue removal for ACL debridement, articular cartilage debridement and meniscal sculpting procedures.



\*In Vac mode the FLOW 50 COBLATION Wand removes free-floating tissue approximately four times faster than AMBIENT™ SUPER MULTIVAC 50, *in vitro*.

\*\*The controlled plasma field produced by COBLATION allows for precise removal of soft tissue with minimal damage (100—200µm) as evident in untargeted cartilage tissue *ex vivo*; cell damage may vary depending on protocol used.

## Patient Positioning

### SPIDER2 Limb Positioner

SPIDER2 is a multi-procedure limb positioner designed to provide unimpeded access and full control of range of motion from within the sterile field. Our SPIDER2 knee accessories are designed to position the knee for both arthroscopy and open procedures.

### Leg Accessory

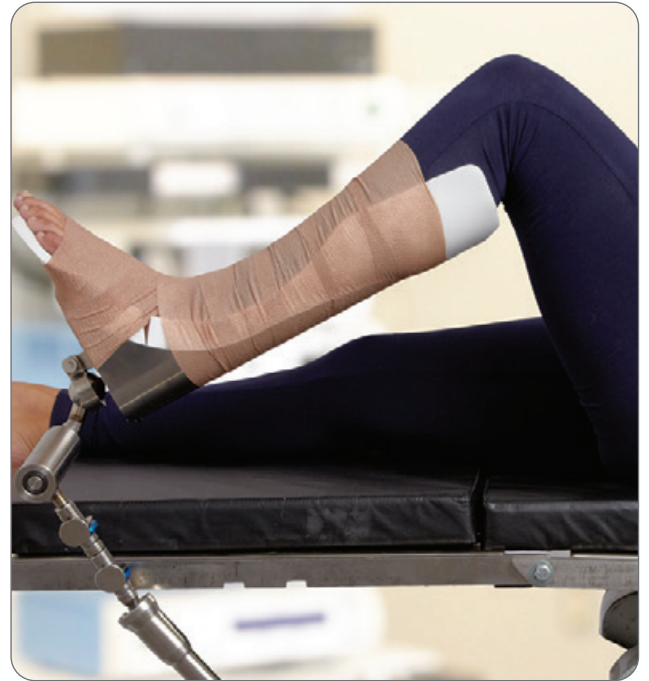
Designed for use with SPIDER2 to provide stable positioning<sup>52</sup> for knee procedures that require bone tunnel drilling or meniscal repairs.

- Ability to make changes to internal/external rotation, hyperflex/extend the knee or make a modified figure-four position<sup>52</sup>
- Easy to secure the boot<sup>52</sup>

### Distal Thigh Holder

Designed for use with SPIDER2 to provide stable positioning<sup>53</sup> for both arthroscopy and open knee procedures that do not require traction.

- The lower limb hangs freely using gravity to open the joint space
- Easily disconnects during surgery<sup>53</sup>
- The sterile stabilisation kit can be placed over a tourniquet



## Patient Positioning

### ACUFEX<sup>®</sup> and Surgical Assistant Leg Holder

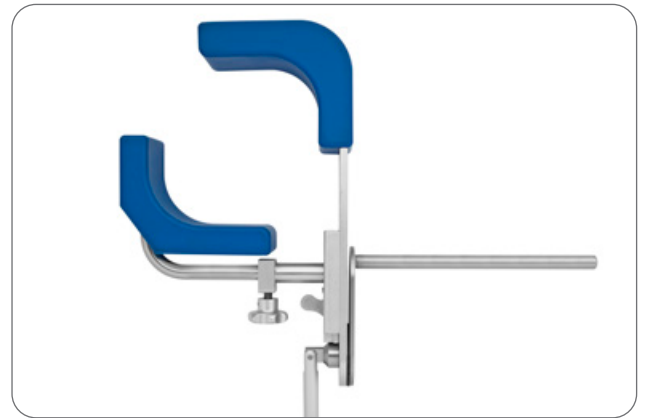
Both leg holders help stabilise the knee during various procedures.<sup>82,83</sup>

- Ability to adjust the height and width to accommodate patients of varying sizes
- Directly attaches to the OR table

Surgical Assistant Leg Holder



ACUFEX Leg Holder



---

### Meniscal Post

The Meniscal Post increases access to the medial joint space during arthroscopic knee procedures.

- Post height is adjustable from within the sterile field<sup>54</sup>
- The design allows for both varus and valgus force to be applied
- The shaped pad is designed to conform to the patient's anatomy
- Attaches to the OR table rail for simple setup

Meniscal Post



## Resection

### DYONICS<sup>®</sup> POWER II Control System

The DYONICS POWER II provides soft tissue and bone resection<sup>55</sup> with the proven DYONICS shaver hand piece and DYONICS PLATINUM blades. The wireless module enables connectivity with the LENS 4K Surgical Imaging System to display shaver speed and resection mode on the surgical display.



---

### DYONICS BONECUTTER<sup>®</sup> PLATINUM Blade

By combining soft-tissue and bone-resection capability in one blade, the DYONICS BONECUTTER PLATINUM Blade eliminates the need to switch from a blade to a burr. BONECUTTER PLATINUM has an 18% faster soft tissue resection rate\* and 53% faster bone resection rate\* than the standard BONECUTTER Blade.<sup>56</sup>



---

### DYONICS PLATINUM FLYER<sup>®</sup> Shaver Blade

The DYONICS PLATINUM FLYER blade tip and window are designed to offer surgeons ease of access when addressing tight joint spaces.<sup>57</sup> With a concave window designed to maximise resection rate and minimise clogging, the PLATINUM FLYER is a versatile specialty blade that meets a variety of arthroscopic soft tissue resection needs.<sup>57</sup>



\*As demonstrated in the 3.5mm device ex vivo at maximum settings; p < 0.0001



## Visualisation

### LENS 4K Surgical Imaging System

The LENS 4K Surgical Imaging System is a surgical video platform with the latest 4K technology designed for sports medicine and multispecialty centers for use in arthroscopic and endoscopic procedures to maximise your overall investment.<sup>58,59</sup>

With native 3840 x 2160 resolution, the LENS 4K system provides detailed images with four times as many pixels as HD and over 1 billion colors (10 bit) creating impressive color reproduction,<sup>59</sup> image clarity and enhanced depth of field.

#### Benefits of LENS 4K

- Newly designed, ergonomic 4K camera head
- 4K UHD native Smith+Nephew's proprietary 3-CMOS (complementary metal oxide semiconductor) sensor designed to reduce artifacts and optimise resolution
- Proprietary 4K real-time image processing designed to reduce flare and enhanced depth of field
- Control camera functions and image management outside the sterile field with the LENS Connected Tower Application
- Flexible integration and connectivity options to support your unique workflow



---

### 4K-Optimised (4KO<sup>o</sup>) Arthroscopes and Laparoscopes

4KO is designed to increase brightness,<sup>\*60,61</sup> optimise color transmission<sup>\*60-62</sup> and improve overall image quality.<sup>\*60-66</sup>

4KO scopes are optimised for LENS 4K but provide improved image clarity on existing LENS HD systems, offering the flexibility to upgrade your visualisation system using one range of scopes.

\*Compared to the specification of Smith+Nephew high definition scopes. Increased brightness applies to 4mm DV and VAS scopes. Optimised color transmission applies to 4mm DV and VAS scopes and 2.7mm VAS scopes.





# Ordering Information



## Graft Preparation

### Suture Solutions

#### SUTURES

##### LOOPED SUTURE on Needle

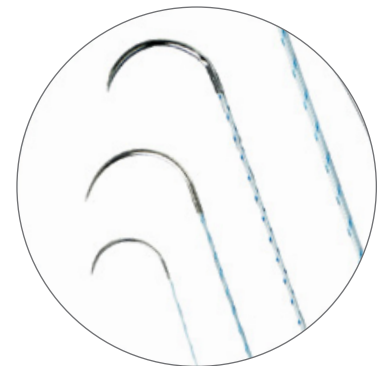
Reference	Description
72205181	LOOPED SUTURE on Needle, #2, straight needle, cobraid, 20", 12 per box
72205182	LOOPED SUTURE on Needle, #2, straight needle, blue, 20", 12 per box
72205183	LOOPED SUTURE on Needle, #2, curved needle, cobraid, 20", 12 per box
72205184	LOOPED SUTURE on Needle, #2, curved needle, blue, 20", 12 per box

##### ULTRABRAID<sup>®</sup> Suture

72200886	ULTRABRAID Suture, #2, white, 38", 10 per box
72200887	ULTRABRAID Suture, #2, cobraid, 38", 10 per box
7210914	ULTRABRAID Suture on Needle, #2, white, 38", 10 per box
7210915	ULTRABRAID Suture on Needle, #2, cobraid, 38", 10 per box



LOOPED SUTURE on Needle



ULTRABRAID Suture Family

## Graft Preparation

### Suture Solutions

#### TAPES

##### MINITAPE Suture

72205127	MINITAPE Suture, blue, 39.5", 6 per box
72205128	MINITAPE Suture, cobraid blue, 39.5", 6 per box
72205129	MINITAPE Suture, cobraid white, 39.5", 6 per box

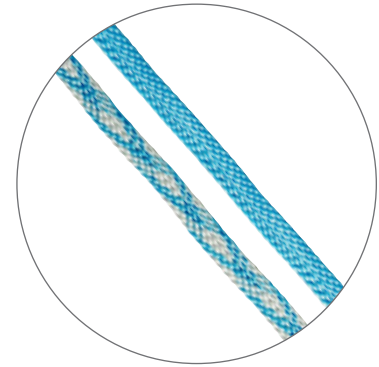
##### ULTRATAPE<sup>o</sup> Suture

72203896	ULTRATAPE Suture, blue, 38", 6 per box
72203897	ULTRATAPE Suture, cobraid blue, 38", 6 per box

#### SUTURE TOOLS

##### WHIPKNOT Soft Tissue Cinch

7211015	WHIPKNOT Soft Tissue Cinch, #5, 1 per box
---------	---



MINITAPE Suture

## Graft Preparation

### Graft Preparation Boards

#### X-WING<sup>®</sup> Graft Preparation System\*

Reference	Description
72205269	X-WING Graft Preparation System

#### System includes

72205270	X-WING Base
72205271	X-WING Tensioner
72205272	X-WING Sliding Base
72205275	X-WING Tray
72205424	X-WING Lid
72205273	Button Holder**
72205274	Button Holder – Suture Management**

#### Recommended accessories

72202317	ACUFEX <sup>®</sup> GRAFTMASTER III Cutting Strip
72202315	ACUFEX GRAFTMASTER III Tissue Grasper (2)
72202319	ACUFEX GRAFTMASTER III Slotted Sizing Block

#### Compatible with

7207342	ACUFEX GRAFTMASTER III Tensioning Post
---------	--

#### ACUFEX GRAFTMASTER III Graft Preparation System

72202788	ACUFEX GRAFTMASTER III Graft Preparation System
----------	---

#### System includes

72202316	GRAFTMASTER III Sliding Base (2)
72202315	GRAFTMASTER III Tissue Grasper (2)
72202317	GRAFTMASTER III Cutting Strip
72202453	GRAFTMASTER III BTB Holder
72202452	GRAFTMASTER III Preparation Board
72202319	GRAFTMASTER III Slotted Sizing Block
72202441	GRAFTMASTER III System Sterilization Tray
014415	ENDOBUTTON <sup>®</sup> Holder
014413	Suture Vise

#### Optional components

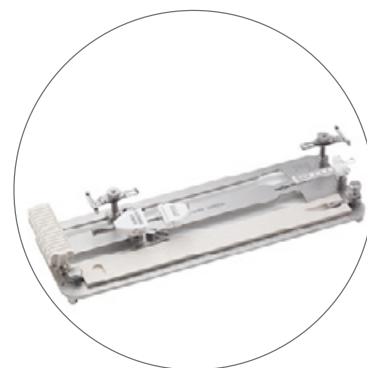
014414	Suture Vise with Tensiometer (Allows pre-tensioning of grafts)
--------	---

\*Placing an order with this code will order individual units of all X-WING components referenced within. Devices are not provided kitted or part of a system and all devices are individually packaged with their own instructions for use, as applicable.

\*\*Compatible with the GRAFTMASTER III



X-WING Graft Preparation System



ACUFEX GRAFTMASTER III

## Graft Preparation

### Accessories

Compaction Pliers	
Reference	Description
7209441	Compaction Pliers, 7mm
7209442	Compaction Pliers, 8mm
7209443	Compaction Pliers, 9mm
7209446	Compaction Pliers, 10mm
7209447	Compaction Pliers, 11mm
7209448	Compaction Pliers, 12mm
Hamstring Tendon Strippers	
013550	Tendon Stripper, closed, 6.4mm I.D. x 12" working length
013554	Tendon Stripper, slotted, 5mm I.D. x 12" working length
7207179	Large Tendon Stripper, closed, 7.4mm I.D. x 13.5" working length
Graft Sizing Tubes	
7207499	Graft Sizing Tube, 5mm
7207500	Graft Sizing Tube, 5.5mm
013522	Graft Sizing Tube, 6mm
7207163	Graft Sizing Tube, 6.5mm
013523	Graft Sizing Tube, 7mm
7207164	Graft Sizing Tube, 7.5mm
013524	Graft Sizing Tube, 8mm
7207165	Graft Sizing Tube, 8.5mm
013525	Graft Sizing Tube, 9mm
7207501	Graft Sizing Tube, 9.5mm
013526	Graft Sizing Tube, 10mm
7207502	Graft Sizing Tube, 10.5mm
013527	Graft Sizing Tube, 11mm
7207503	Graft Sizing Tube, 11.5mm
013528	Graft Sizing Tube, 12mm
7207504	Graft Sizing Tube, 12.5mm
013529	Graft Sizing Tube, 13mm
7207505	Graft Sizing Tube, 13.5mm
013540	Graft Sizing Tube, 14mm



## Guide Systems and Tunnel Drilling

### Rigid Drilling

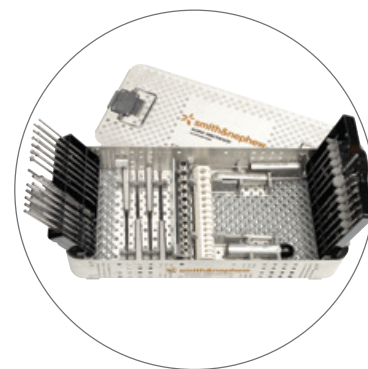
ACUFEX <sup>®</sup> DIRECTOR ELITE <sup>®</sup> System	
Reference	Description
<b>ACL Guides</b>	
7205517	ACUFEX DIRECTOR Drill Guide
7205518	ACUFEX DIRECTOR ACL Elbow Aimer
7205519	ACUFEX DIRECTOR ACL Tip Aimer
7205524	ACUFEX DIRECTOR ACL Angled Bullet
7205525	ACUFEX DIRECTOR ACL 4-Point Bullet
72201732	Universal Endofemoral Aimer Handle
72201737	Endofemoral Aimer Arm, no offset
72201713	Endofemoral Aimer Arm, 3mm offset
72201714	Endofemoral Aimer Arm, 4mm offset
72201715	Endofemoral Aimer Arm, 5mm offset
72201716	Endofemoral Aimer Arm, 6mm offset
72201717	Endofemoral Aimer Arm, 7mm offset
<b>Cannulated Drills</b>	
013498	Cannulated Drill, 5mm
7207491	Cannulated Drill, 5.5mm
013542	Cannulated Drill, 6mm
7207483	Cannulated Drill, 6.5mm
013543	Cannulated Drill, 7mm
7207484	Cannulated Drill, 7.5mm
013544	Cannulated Drill, 8mm
7207485	Cannulated Drill, 8.5mm
013545	Cannulated Drill, 9mm
7207486	Cannulated Drill, 9.5mm
013546	Cannulated Drill, 10mm
7207487	Cannulated Drill, 10.5mm
013547	Cannulated Drill, 11mm
7207488	Cannulated Drill, 11.5mm
013548	Cannulated Drill, 12mm

7207489	Cannulated Drill, 12.5mm
7207490	Cannulated Drill, 13.5mm
<b>Single Fluted Endoscopic Drills</b>	
3134179	Single Flute Cannulated Drill Bit, 5.5mm
3134180	Single Flute Cannulated Drill Bit, 6mm
3134181	Single Flute Cannulated Drill Bit, 6.5mm
3134182	Single Flute Cannulated Drill Bit, 7mm
3134183	Single Flute Cannulated Drill Bit, 7.5mm
3134184	Single Flute Cannulated Drill Bit, 8mm
3134185	Single Flute Cannulated Drill Bit, 8.5mm
3134186	Single Flute Cannulated Drill Bit, 9mm
3134187	Single Flute Cannulated Drill Bit, 9.5mm
3134188	Single Flute Cannulated Drill Bit, 10mm
3134189	Single Flute Cannulated Drill Bit, 10.5mm
3134190	Single Flute Cannulated Drill Bit, 11mm
3134191	Single Flute Cannulated Drill Bit, 11.5mm
3134192	Single Flute Cannulated Drill Bit, 12mm
3134193	Single Flute Cannulated Drill Bit, 12.5mm
3134194	Single Flute Cannulated Drill Bit, 13mm

## Guide Systems and Tunnel Drilling

### Rigid Drilling

ACUFEX <sup>®</sup> DIRECTOR ELITE <sup>®</sup> System	
Reference	Description
<b>Endoscopic Cannulated Drills (Acorn)</b>	
7208686	Endoscopic Cannulated Drill, 5mm
7207482	Endoscopic Cannulated Drill, 5.5mm
013499	Endoscopic Cannulated Drill, 6mm
7207492	Endoscopic Cannulated Drill, 6.5mm
013660	Endoscopic Cannulated Drill, 7mm
7207493	Endoscopic Cannulated Drill, 7.5mm
013661	Endoscopic Cannulated Drill, 8mm
7207494	Endoscopic Cannulated Drill, 8.5mm
013662	Endoscopic Cannulated Drill, 9mm
7207495	Endoscopic Cannulated Drill, 9.5mm
013663	Endoscopic Cannulated Drill, 10mm
7207496	Endoscopic Cannulated Drill, 10.5mm
013664	Endoscopic Cannulated Drill, 11mm
7207497	Endoscopic Cannulated Drill, 11.5mm
013665	Endoscopic Cannulated Drill, 12mm
7207498	Endoscopic Cannulated Drill, 12.5mm
013666	Endoscopic Cannulated Drill, 13mm
<b>Accessories</b>	
72201883	Chondral Pick, small, 20°
72201884	Chondral Pick, large, 20°
72201885	Chondral Pick, small, 40°
72201886	Chondral Pick, large, 40°
72201736	Chondral Pick, small, 90°
72201735	Bone Tunnel Plug, 5–6mm
72201733	Half-round Rasp, 5mm
72201734	Half-round Rasp, 6mm
7205521	2-5mm Offset Guide
7205622	NOTCHMASTER <sup>®</sup> 8mm Curette
7209214	Slotted sizing block
72201731	Sterilization Tray



ACUFEX DIRECTOR ELITE System



## Guide Systems and Tunnel Drilling

### Retrograde Drilling

#### ACUFEX® TRUNAV Retrograde Drill

(Includes Retrograde Drill, 2.4mm Guide Wire and Suture Retriever)

Reference	Description
72204037	ACUFEX TRUNAV Retrograde Drill, 5.5mm
72204038	ACUFEX TRUNAV Retrograde Drill, 6mm
72204039	ACUFEX TRUNAV Retrograde Drill, 6.5mm
72204040	ACUFEX TRUNAV Retrograde Drill, 7mm
72204041	ACUFEX TRUNAV Retrograde Drill, 7.5mm
72204042	ACUFEX TRUNAV Retrograde Drill, 8mm
72204043	ACUFEX TRUNAV Retrograde Drill, 8.5mm
72204044	ACUFEX TRUNAV Retrograde Drill, 9mm
72204045	ACUFEX TRUNAV Retrograde Drill, 9.5mm
72204046	ACUFEX TRUNAV Retrograde Drill, 10mm
72204047	ACUFEX TRUNAV Retrograde Drill, 10.5mm
72204048	ACUFEX TRUNAV Retrograde Drill, 11mm
72204049	ACUFEX TRUNAV Retrograde Drill, 11.5mm
72204050	ACUFEX TRUNAV Retrograde Drill, 12mm

#### ACUFEX Guide Systems

72205038	ACUFEX PINPOINT® Adapter
7205517	ACUFEX DIRECTOR Drill Guide
72203450	ACUFEX PINPOINT 4-Point Bullet, 6.5" (Long)
72203433	ACUFEX PINPOINT Single-bundle Guide, 6mm
72203434	ACUFEX PINPOINT Single-bundle Guide, 7mm
72203435	ACUFEX PINPOINT Single-bundle Guide, 8mm
72203436	ACUFEX PINPOINT Single-bundle Guide, 9mm
72203437	ACUFEX PINPOINT Single-bundle Guide, 10mm
72203169	ACUFEX Tunnel Gauge



ACUFEX TRUNAV  
Retrograde Drill



ACUFEX PINPOINT

## Drilling and Tunnel Preparation

### Flexible Drilling

CLANCY Anatomic Cruciate Guide Flexible Drill System	
Reference	Description
72203086	CLANCY Anatomic Cruciate Guide Flexible Drill System A
<b>System includes</b>	
72202971	CLANCY Flexible Drill, 4.5mm
72202972	CLANCY Flexible Drill, 5.0mm
72203161	CLANCY Flexible Drill, 5.5mm
72202594	CLANCY Flexible Drill, 6.0mm
72203162	CLANCY Flexible Drill, 6.5mm
7209008	CLANCY Flexible Drill, 7.0mm
72203163	CLANCY Flexible Drill, 7.5mm
7209737	CLANCY Flexible Drill, 8.0mm
72203164	CLANCY Flexible Drill, 8.5mm
7209738	CLANCY Flexible Drill, 9.0mm
72203165	CLANCY Flexible Drill, 9.5mm
7209739	CLANCY Flexible Drill, 10.0mm
72203166	CLANCY Flexible Drill, 10.5mm
72203090	CLANCY Flexible Drill, 11.0mm
72203167	CLANCY Flexible Drill, 11.5mm
72203091	CLANCY Flexible Drill, 12.0mm
72203170	CLANCY Curved Femoral Guide, 42°
72203085	CLANCY System Sterilization Tray
72203252	BIOSURE <sup>®</sup> Flexible Tap, 6mm
72203253	BIOSURE Flexible Tap, 7mm
72203254	BIOSURE Flexible Tap, 8mm
72203255	BIOSURE Flexible Tap, 9mm
72203256	BIOSURE Flexible Tap, 10mm
72203168	BIOSURE Flexible Driver (requires 7207707)
7207707	Ratcheting Handle with Hudson Adapter
Passing Pin	
72201594	Passing Pin, 2.4mm x 13.5", CLANCY Flexible, 5 per package



CLANCY System

## Guide Systems and Tunnel Drilling

### Outside-in Drilling

ACUFEX® PINPOINT Anatomic ACL Guide System	
Reference	Description
72203454	ACUFEX PINPOINT Anatomic ACL Guide System
System includes	
72203433	Single-bundle Guide, 6mm
72203434	Single-bundle Guide, 7mm
72203435	Single-bundle Guide, 8mm
72203436	Single-bundle Guide, 9mm
72203437	Single-bundle Guide, 10mm
72203438	Double-bundle Guide, Left, 5-6mm
72203439	Double-bundle Guide, Left, 5-7mm
72203440	Double-bundle Guide, Left, 6-7mm
72203441	Double-bundle Guide, Left, 6-8mm
72203442	Double-bundle Guide, Left, 7-8mm
72203443	Double-bundle Guide, Right, 5-6mm
72203444	Double-bundle Guide, Right, 5-7mm
72203445	Double-bundle Guide, Right, 6-7mm
72203446	Double-bundle Guide, Right, 6-8mm
72203447	Double-bundle Guide, Right, 7-8mm
72203425	Outside-in Aimer Arm, Left
72203426	Outside-in Aimer Arm, Right
72203432	Inside-out Handle
72203427	Double-bundle Bullet Support, 5-6mm
72203428	Double-bundle Bullet Support, 5-7mm
72203429	Double-bundle Bullet Support, 6-7mm
72203430	Double-bundle Bullet Support, 6-8mm
72203431	Double-bundle Bullet Support, 7-8mm
72203448	System Sterilization Tray
72203453	ACUFEX Insertion Site Marking Awl, 45°
72203450	4-point Bullet, 6.5" (2 included)



ACUFEX PINPOINT Guide System

## Guide Systems and Tunnel Drilling

### Extra-articular Drilling

ACUFEX® EXTRA-ARTICULAR Reconstruction Guide System	
Reference	Description
72205196	EAR Guide System
System includes	
72205114	Fibular Guide
72205115	Tibial Guide
72205116	Femoral Guide
72205117	Offset Guide
72205118	Retractor
72205122	Short Bullet
72205123	Long Bullet
72205139	System Tray



ACUFEX EXTRA-ARTICULAR System

### Tunnel Dilation

Tunnel Dilator System	
Reference	Description
7207878	Tunnel Dilator System
System includes	
7207640	Tunnel Dilator, 6mm
7207641	Tunnel Dilator, 6.5mm
7207642	Tunnel Dilator, 7mm
7207643	Tunnel Dilator, 7.5mm
7207644	Tunnel Dilator, 8mm
7207645	Tunnel Dilator, 8.5mm
7207646	Tunnel Dilator, 9mm
7207647	Tunnel Dilator, 9.5mm
7207648	Tunnel Dilator, 10mm
7207649	Tunnel Dilator, 11mm
7207650	Tunnel Dilator, 12mm
7207638	Sizing Block
7207639	Slaphammer
7207637	Tray

## Guide Systems and Tunnel Drilling

### Pins, Guide Wires + PACs

ULTRABUTTON® + ENDOBUTTON® DRILLS	
Reference	Description
7207315	ENDOBUTTON Drill, 4.5mm, cannulated, 1 per package
Passing Pins	
014508	Drill-Tip Passing Pin, 2.7mm x 15", 6 per package
7208678	Drill-Tip Passing Pin, 2.4mm x 15", graduate, 1 per package
014395	Trocar-Tip Passing Pin, 2.4mm x 11", 1 per package
7207220	Trocar-Tip Passing Pin, 2.4mm x 17", 1 per package
72202815	Trocar-Tip Beath Pin, 2.4mm x 11.5", double eyelet, 1 per package
72202814	Spade-Tip Passing Pin, 3mm head, 2.4mm x 11" shaft
72201594	Passing Pin, 2.4mm x 13.5", CLANCY Flexible, 5 per package
Guide Wires	
014396	Drill-Tip Guide Wire, 2.4mm x 10", 1 per package
7207221	Drill-Tip Guide Wire, 2.4mm x 12", 1 per package
7207284	PCL Safety Guide Wire 2.4mm x 10", 1 per package

ENDOBUTTON PACS	
Reference	Description
72202799	1.2 ENDOBUTTON CL ULTRA PAC
Includes one of each	
7207315	ENDOBUTTON Drill, 4.5mm, cannulated
7207221	Drill-Tip Guide Wire, 2.4mm x 12"
7211138	Guide Wire, 1.2mm x 12"
014477	Cannulated Bone Tunnel Plug, latex free
72200948	TRUKOR Gauge
7209216	ENDOBUTTON CL PAC
Includes one of each	
7207315	ENDOBUTTON Drill, 4.5mm, cannulated
014508	Drill-Tip Passing Pin, 2.7mm x 15"
014396	Drill-Tip Guide Wire, 2.4mm x 10"
014477	Cannulated Bone Tunnel Plug, latex free
-	ENDOBUTTON CL Sizing Chart
014893†	ENDOBUTTON PAC
Includes one of each	
013186	ENDOBUTTON, 4mm x 12mm, sterile
7207315	ENDOBUTTON Drill, 4.5mm, cannulated
014508	Drill-Tip Passing Pin, 2.7mm x 15"
014396	Drill-Tip Guide Wire, 2.4mm x 10"
014477	Cannulated Bone Tunnel Plug, latex free
-	ENDOBUTTON CL Sizing Chart
7209216	ENDOBUTTON PAC A
Includes one of each	
7207315	ENDOBUTTON Drill, 4.5mm, cannulated
014508	Drill-Tip Passing Pin, 2.7mm x 15"
014396	Drill-Tip Guide Wire, 2.4mm x 10"

†Not available globally. Please contact your Smith+Nephew representative if you have questions about availability.



## Guide Systems and Tunnel Drilling

### Pins, Guide Wires + PACs

RAP-PAC <sup>o</sup>	
Reference	Description
72202796	1.2 RAP-PAC A latex free
PAC includes	
7207221	Drill-Tip Guide Wire, 2.4mm x 12"
7211138	Guide Wire, 1.2mm x 12"
014477	Cannulated Bone Tunnel Plug, latex free
72200948	TRUKOR Gauge
72202797 <sup>†</sup> 1.2 RAP-PAC B latex free	
PAC includes	
7207221	Drill-Tip Guide Wire, 2.4mm x 12"
7208678	Drill-Tip Passing Pin, 2.4mm x 15", graduated
7211138	Guide Wire, 1.2mm x 12"
014477	Cannulated Bone Tunnel Plug, latex free
72200948	TRUKOR Gauge
72202798 <sup>†</sup> 1.2 RAP-PAC C latex free	
PAC includes	
7207221	Drill-Tip Guide Wire, 2.4mm x 12"
7208678	Drill-Tip Passing Pin, 2.4mm x 15", graduated
72201201	Guide Wire, 1.2mm x 18"
014477	Cannulated Bone Tunnel Plug, latex free
72200948	TRUKOR Gauge

RAP-PAC <sup>o</sup>	
Reference	Description
014725 <sup>†</sup>	RAP-PAC latex free
PAC includes	
013593	Suture Retriever
014508	Drill-Tip Passing Pin, 2.7mm x 15"
014396	Drill-Tip Guide Wire, 2.4mm x 10"
014394	CANNU-FLEX <sup>o</sup> Screw Guide Wire, 1mm x 12"
014859	CANNU-FLEX Screw Guide Wire, 1.5mm x 12"
7207227	7 mm CLEAR-TRAC Screw Cannula, latex free
014477	Cannulated Bone Tunnel Plug, latex free
7209217 <sup>†</sup> RAP-PAC 1.5 latex free	
PAC includes	
014508	Drill-Tip Passing Pin, 2.7mm x 15"
014396	Drill-Tip Guide Wire, 2.4mm x 10"
7207775	CANNU-FLEX Screw Guide Wire, 1.5mm x 15"
014477	Cannulated Bone Tunnel Plug, latex free
7209218 <sup>†</sup> RAP-PAC 2 latex free	
PAC includes	
014508	Drill-Tip Passing Pin, 2.7mm x 15"
014396	Drill-Tip Guide Wire, 2.4mm x 10"
7207222	CANNU-FLEX Screw Guide Wire, 2mm x 15"
014477	Cannulated Bone Tunnel Plug, latex free

<sup>†</sup>Not available globally. Please contact your Smith+Nephew representative if you have questions about availability.



## Guide Systems and Tunnel Drilling

### Pins, Guide Wires + PACs

RAP-PAC <sup>o</sup>	
Reference	Description
7207738	Pin and Wire PAC A
<b>PAC includes</b>	
7207220	Trocar-Tip Passing Pin, 2.4mm x 17"
7207221	Drill-Tip Guide Wire, 2.4mm x 12"
014859	CANNU-FLEX <sup>o</sup> Screw Guide Wire, 1.5mm x 12"
7207925 <sup>†</sup>	Pin and Wire PAC B
<b>PAC includes</b>	
7207220	Trocar-Tip Passing Pin, 2.4mm x 17"
7207221	Drill-Tip Guide Wire, 2.4mm x 12"
7207222	CANNU-FLEX Screw Guide Wire, 2mm x 15"
7207940 <sup>†</sup>	Pin and Wire PAC D
<b>PAC includes</b>	
014508	Drill-Tip Passing Pin, 2.7mm x 15"
7207221	Drill-Tip Guide Wire, 2.4mm x 12"
014859	CANNU-FLEX Screw Guide Wire, 1.5mm x 12"
014477	Cannulated Bone Tunnel Plug, latex free
7209313 <sup>†</sup>	Pin and Wire PAC F (made to order)
<b>PAC includes</b>	
7207220	Trocar-Tip Passing Pin, 2.4mm x 17"
7207221	Drill-Tip Guide Wire, 2.4mm x 12"
014859	CANNU-FLEX Screw Guide Wire, 1.5mm x 12"
014477	Cannulated Bone Tunnel Plug, latex free

<sup>†</sup>Not available globally. Please contact your Smith+Nephew representative if you have questions about availability.



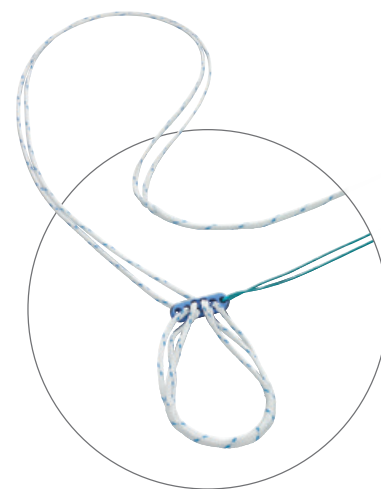
## Fixation

### Button Fixation

ULTRABUTTON® Adjustable Fixation Device	
Reference	Description
72290003	ULTRABUTTON Adjustable Fixation Device
ENDOBUTTON® CL ULTRA Fixation Devices	
72203331	ENDOBUTTON CL ULTRA, 10mm
72200146	ENDOBUTTON CL ULTRA, 15mm
72200147	ENDOBUTTON CL ULTRA, 20mm
72200148	ENDOBUTTON CL ULTRA, 25mm
72200149	ENDOBUTTON CL ULTRA, 30mm
72200150	ENDOBUTTON CL ULTRA, 35mm
72200151	ENDOBUTTON CL ULTRA, 40mm
72200152	ENDOBUTTON CL ULTRA, 45mm
72200153	ENDOBUTTON CL ULTRA, 50mm
72200154	ENDOBUTTON CL ULTRA, 55mm
72200155	ENDOBUTTON CL ULTRA, 60mm
ENDOBUTTON CL BTB Fixation Devices	
72203330	ENDOBUTTON CL BTB, 15mm
7210080	ENDOBUTTON CL BTB, 20 mm
7210081	ENDOBUTTON CL BTB, 25 mm
7210082	ENDOBUTTON CL BTB, 30 mm
7210085	ENDOBUTTON CL BTB, 45 mm
7210086	ENDOBUTTON CL BTB, 50 mm
7210087	ENDOBUTTON CL BTB, 55 mm
7210088	ENDOBUTTON CL BTB, 60 mm
ENDOBUTTON Fixation Device	
013186	ENDOBUTTON, 4.0mm x 12mm

ENDOBUTTON Accessories	
Reference	Description
72202544	ENDOBUTTON Indicator
014868	ENDOBUTTON TAPE with Passing Needle, 12 per box
7207315	ENDOBUTTON Drill. 4.5mm, cannulated
015185	ENDOBUTTON Depth Probe

XTENDOBUTTON® Fixation Devices		
Reference	Tunnel Diameter	Description
72200134	6-10mm	XTENDOBUTTON Fixation Device 5.5 x 20mm
71935601	4-7mm	Round 15mm ø (small)
71935602	7.5-9.5mm	Round 17mm ø, 7.5mm peg (medium)
71935603	10-13mm	Round 21mm ø, 10mm peg (large)
71935604	4-7mm	Oval 9 x 16mm (small)
71935605	7.5-9.5mm	Oval 11 x 18mm, 7.5mm peg (medium)
71935606	10-13mm	Oval 15 x 21mm, 10mm peg (large)



ULTRABUTTON Adjustable Fixation Device



## Fixation

### Screw Fixation

BIOSURE <sup>®</sup> REGENESORB <sup>®</sup> Interference Screw	
Reference	Description
72204389	BIOSURE REGENESORB, 5mm x 20mm
72204390	BIOSURE REGENESORB, 5mm x 25mm
72204391	BIOSURE REGENESORB, 6mm x 20mm
72204392	BIOSURE REGENESORB, 6mm x 25mm
72204393	BIOSURE REGENESORB, 6mm x 25mm, Reverse Thread
72204394	BIOSURE REGENESORB, 7mm x 20mm
72204395	BIOSURE REGENESORB, 7mm x 25mm
72204396	BIOSURE REGENESORB, 7mm x 25mm, Reverse Thread
72204397	BIOSURE REGENESORB, 7mm x 30mm
72204398	BIOSURE REGENESORB, 8mm x 20mm
72204399	BIOSURE REGENESORB, 8mm x 25mm
72204400	BIOSURE REGENESORB, 8mm x 25mm, Reverse Thread
72204401	BIOSURE REGENESORB, 8mm x 30mm
72204402	BIOSURE REGENESORB, 8mm x 35mm
72204403	BIOSURE REGENESORB, 9mm x 20mm
72204404	BIOSURE REGENESORB, 9mm x 25mm
72204405	BIOSURE REGENESORB, 9mm x 30mm
72204406	BIOSURE REGENESORB, 9mm x 35mm
72204407	BIOSURE REGENESORB, 10mm x 20mm
72204408	BIOSURE REGENESORB, 10mm x 25mm
72204409	BIOSURE REGENESORB, 10mm x 30mm
72204410	BIOSURE REGENESORB, 10mm x 35mm
72204411	BIOSURE REGENESORB, 11mm x 25mm
72204412	BIOSURE REGENESORB, 11mm x 30mm
72204413	BIOSURE REGENESORB, 11mm x 35mm
72204414	BIOSURE REGENESORB, 12mm x 35mm

BIOSURE HA Interference Screw	
Reference	Description
72201768	BIOSURE HA, 6mm x 20mm
72201769	BIOSURE HA, 6mm x 25mm
72201770	BIOSURE HA, 6mm x 25mm, Reverse Thread
72201771	BIOSURE HA, 7mm x 20mm
72201772	BIOSURE HA, 7mm x 25mm
72201773	BIOSURE HA, 7mm x 25mm, Reverse Thread
72201774	BIOSURE HA, 7mm x 30mm
72201775	BIOSURE HA, 8mm x 20mm
72201776	BIOSURE HA, 8mm x 25mm
72201777	BIOSURE HA, 8mm x 25mm, Reverse Thread
72201778	BIOSURE HA, 8mm x 30mm
72201779	BIOSURE HA, 8mm x 35mm
72201780	BIOSURE HA, 9mm x 20mm
72201781	BIOSURE HA, 9mm x 25mm
72201782	BIOSURE HA, 9mm x 30mm
72201783	BIOSURE HA, 9mm x 35mm
72201784	BIOSURE HA, 10mm x 20mm
72201785	BIOSURE HA, 10mm x 25mm
72201786	BIOSURE HA, 10mm x 30mm
72201787	BIOSURE HA, 10mm x 35mm



## Fixation

### Screw Fixation

BIOSURE <sup>®</sup> PK Interference Screw	
Reference	Description
72202259	BIOSURE PK, 6mm x 20mm
72202260	BIOSURE PK, 6mm x 25mm
72202261	BIOSURE PK, 6mm x 25mm, Reverse Thread
72202262	BIOSURE PK, 7mm x 20mm
72202263	BIOSURE PK, 7mm x 25mm
72202264	BIOSURE PK, 7mm x 25mm, Reverse Thread
72202265	BIOSURE PK, 7mm x 30mm
72202266	BIOSURE PK, 8mm x 20mm
72202267	BIOSURE PK, 8mm x 25mm
72202268	BIOSURE PK, 8mm x 25mm, Reverse Thread
72202269	BIOSURE PK, 8mm x 30mm
72202270	BIOSURE PK, 8mm x 35mm
72202271	BIOSURE PK, 9mm x 20mm
72202272	BIOSURE PK, 9mm x 25mm
72202273	BIOSURE PK, 9mm x 30mm
72202274	BIOSURE PK, 9mm x 35mm
72202275	BIOSURE PK, 10mm x 20mm
72202276	BIOSURE PK, 10mm x 25mm
72202277	BIOSURE PK, 10mm x 30mm
72202278	BIOSURE PK, 10mm x 35mm
BIOSURE SYNC Tibial Fixation System	
72202744	BIOSURE SYNC Device, 5-6mm
72202745	BIOSURE SYNC Device, 7-8mm
72202746	BIOSURE SYNC Device, 9-10mm
72202747	BIOSURE SYNC Device, 11-12mm



BIOSURE PK Interference Screw



BIOSURE SYNC Tibial Fixation System



## Fixation

### Screw Fixation

#### BIOSURE<sup>®</sup> Drivers

Reference	Description
72201887	BIOSURE Driver
72204647	BIOSURE Driver, 5mm
72203168	BIOSURE Flexible Driver (requires 7207707)
72201888	BIOSURE Ratchet Driver (requires 7207707)
7207707	Ratcheting Handle with Hudson Adapter

#### BIOSURE Taps

72201941	BIOSURE TAP System
----------	--------------------

#### System includes

72201889	BIOSURE Tap, 6mm
72201890	BIOSURE Tap, 7mm
72201891	BIOSURE Tap, 8mm
72201892	BIOSURE Tap, 9mm
72201893	BIOSURE Tap, 10mm
72201887	BIOSURE Driver
72201938	BIOSURE Tap Tray

#### BIOSURE EASY Taps

72201942	BIOSURE EASY TAP System
----------	-------------------------

#### System includes

72201190	6mm BIOSURE EASY Tap
72201191	7mm BIOSURE EASY Tap
72201192	8mm BIOSURE EASY Tap
72201193	9mm BIOSURE EASY Tap
72201194	10mm BIOSURE EASY Tap
72201888	BIOSURE Ratchet Driver
7207707	Ratcheting Handle with Hudson Adapter
72201939	BIOSURE EASY Tap Tray

#### BIOSURE Flexible Taps

Reference	Description
72203252	BIOSURE Flexible Tap, 6mm
72203253	BIOSURE Flexible Tap, 7mm
72203254	BIOSURE Flexible Tap, 8mm
72203255	BIOSURE Flexible Tap, 9mm
72203256	BIOSURE Flexible Tap, 10mm

#### BIOSURE Guide Wires

7211137	Guide Wire, 1.2mm x 9" Box of 5 Sterile
7211138	Guide Wire, 1.2mm x 12" Box of 5 Sterile
72201201	Guide Wire, 1.2mm x 18" Box of 5 Sterile

#### BIOSURE SYNC Instrument System

72202843	BIOSURE SYNC Instrument System
----------	--------------------------------

#### System includes

72202752	BIOSURE SYNC Inserter
72202754	BIOSURE SYNC Tensioner



## Fixation

### Screw Fixation

BIORCI <sup>®</sup> -HA Screws	
Reference	Description
7207686	BIORCI-HA 7/7 x 20mm
7207674	BIORCI-HA 7/7 x 25mm
7207677	BIORCI-HA 7/7 x 30mm
7207675	BIORCI-HA 7/8 x 25mm
7209023	BIORCI-HA 7/8 x 25mm, Reverse Thread
7207676	BIORCI-HA 7/8 x 30mm
7209012	BIORCI-HA 8 x 20mm
7207678	BIORCI-HA 8 x 25mm
7209021	BIORCI-HA 8 x 25mm, Reverse Thread
7207679	BIORCI-HA 8 x 30mm
7207680	BIORCI-HA 8 x 35mm
7209013	BIORCI-HA 9 x 20mm
7207681	BIORCI-HA 9 x 25mm
7209020	BIORCI-HA 9 x 25mm, Reverse Thread
7207682	BIORCI-HA 9 x 30mm
7207683	BIORCI-HA 9 x 35mm
7209016	BIORCI-HA 10 x 25mm
7209019	BIORCI-HA 10 x 25mm, Reverse Thread
7209017	BIORCI-HA 10 x 30mm
7209018	BIORCI-HA 10 x 35mm
7209014	BIORCI-HA 11 x 30mm
7209022	BIORCI-HA 11 x 35mm
7209015	BIORCI-HA 12 x 35mm

BIORCI Guide Wire	
Reference	Description
014859	Guide Wire, 1.5mm x 12", Sterile, 1 per package

BIORCI Screw Instruments	
7208656	BIORCI Torx Driver
7207359	BIORCI Starter
7209371	BIORCI Threaded Screw Starter, 7mm
7208661	BIORCI tap for BTB grafts, 7mm
7208662	BIORCI tap for BTB grafts, 8mm
7208663	BIORCI tap for BTB grafts, 9mm
7208664	BIORCI tap for BTB grafts, 10mm



## Fixation

### Screw Fixation

RCI Screws, 2.0 Cannulation	
Reference	Description
7207030	RCI Screw 7/8 x 25mm
7207247	RCI Screw 7 x 25mm, Reverse Thread
7209409	RCI Screw 7/8 x 35mm
7207250	RCI Screw 7 x 40mm
7207248	RCI Screw 8 x 25mm
7209410	RCI Screw 8 x 25mm, Reverse Thread
7209411	RCI Screw 8 x 35mm
7207249	RCI Screw 8 x 40mm
7207301	RCI Screw 9 x 25mm
7209412	RCI Screw 9 x 35mm
7209779	RCI Screw 10 x 25mm
7209413	RCI Screw 10 x 30mm
7209414	RCI Screw 10 x 35mm
7209415	RCI Screw 11 x 30mm
7209416	RCI Screw 11 x 35mm
RCI Screw Guide Wire	
72202881	CANNU-FLEX <sup>®</sup> Screw Guide Wire, 2mm x 12", stainless steel, 6 per package
7205659	CANNU-FLEX Screw Guide Wire, 2mm x 12", blunt tip, 1 per package
7207222	CANNU-FLEX Screw Guide Wire, 2mm x 15", blunt tip, 1 per package

RCI HA Screws	
Reference	Description
35130412	RCI HA Screw 5 x 20mm
35130413	RCI HA Screw 6 x 20mm
35130414	RCI HA Screw 6 x 25mm
35130415	RCI HA Screw 7 x 20mm
35130416	RCI HA Screw 7 x 20mm, Reverse
35130417	RCI HA Screw 7 x 25mm
35130418	RCI HA Screw 7 x 25mm, Reverse
35130419	RCI HA Screw 7 x 30mm
35130420	RCI HA Screw 8 x 20mm
35130421	RCI HA Screw 8 x 20mm, Reverse
35130422	RCI HA Screw 8 x 25mm
35130423	RCI HA Screw 8 x 25mm, Reverse
35130424	RCI HA Screw 8 x 30mm
35130425	RCI HA Screw 9 x 25mm
35130426	RCI HA Screw 9 x 30mm
35130427	RCI HA Screw 9 x 35mm
35130428	RCI HA Screw 10 x 30mm
35130429	RCI HA Screw 10 x 35mm
35130430	RCI HA Screw 11 x 35mm



## Fixation

### Screw Fixation

RCI Screw Instruments	
Reference	Description
7207170	RCI Screw System
System includes	
7207163	Graft sizing tube, 6.5mm
013523	Graft sizing tube, 7mm
7207164	Graft sizing tube, 7.5mm
013524	Graft sizing tube, 8mm
7207165	Graft sizing tube, 8.5mm
7207167	Tibial stepped router, 6.5mm
7207168	Tibial stepped router, 7mm
7207171	Tibial stepped router, 7.5mm
7207172	Tibial stepped router, 8mm
7207173	Tibial stepped router, 8.5mm
7207174	Femoral stepped router, 6.5mm
7207175	Femoral stepped router, 7mm
7207176	Femoral stepped router, 7.5mm
7207177	Femoral stepped router, 8mm
7207178	Femoral stepped router, 8.5mm
7207193	3.5mm Hex Driver, 2mm cannulation
7207169	RCI Screw System Sterilization Tray



## Fixation

### Screw Fixation

SOFTSILK® 1.5 Fixation Screws	
Reference	Description
7207001	SOFTSILK 1.5 Screw, 7mm x 20mm
7207002	SOFTSILK 1.5 Screw, 7mm x 25mm
7207003	SOFTSILK 1.5 Screw, 7mm x 30mm
7207004	SOFTSILK 1.5 Screw, 8mm x 20mm
7207005	SOFTSILK 1.5 Screw, 8mm x 25mm
7207006	SOFTSILK 1.5 Screw, 8mm x 30mm
7207007	SOFTSILK 1.5 Screw, 9mm x 20mm
7207008	SOFTSILK 1.5 Screw, 9mm x 25mm
7207009	SOFTSILK 1.5 Screw, 9mm x 30mm
7210760	SOFTSILK 1.5 Screw, 10mm X 25mm
7210762	SOFTSILK 1.5 Screw, 11mm X 25mm
SOFTSILK 1.5 Screw Instruments	
72202428	Instrument Tray
014815	3.5mm Hex Driver, 1.5mm cannulation
014851	TRAILBLAZER, 1.5mm cannulation
SOFTSILK 1.5 Guide Wires + Accessories	
Reference	Description
72202810	CANNU-FLEX Screw Guide Wire, 1.5mm x 9", 6 per package
014859	CANNU-FLEX Screw Guide Wire, 1.5mm x 12", 1 per package
7207227	CLEAR-TRAC Screw Cannula, 7mm, latex free, 10 per box
7207229	CLEAR-TRAC Screw Cannula, 9mm, latex free, 10 per box



## Fixation

### Screw Fixation

CANNU-FLEX <sup>®</sup> SILK 1.0 Fixation Screws	
Reference	Description
014206	CANNU-FLEX 1.0 Screw, 6mm x 20mm
014207	CANNU-FLEX 1.0 Screw, 6mm x 25mm
014208	CANNU-FLEX 1.0 Screw, 6mm x 30mm
014200	CANNU-FLEX 1.0 Screw, 7mm x 20mm
014201	CANNU-FLEX 1.0 Screw, 7mm x 25mm
014202	CANNU-FLEX 1.0 Screw, 7mm x 30mm
014814	CANNU-FLEX 1.0 Screw, 8mm x 25mm
014203	CANNU-FLEX 1.0 Screw, 9mm x 20mm
014204	CANNU-FLEX 1.0 Screw, 9mm x 25mm
014205	CANNU-FLEX 1.0 Screw, 9mm x 30mm
CANNU-FLEX SILK 1.0 Screw Instruments	
014270	CANNU-FLEX DRIVER, 6mm-8mm screws, cannulated
014271	CANNU-FLEX DRIVER, 9mm screws, cannulated
014417	TRAILBLAZER, 1.0mm cannulation
CANNU-FLEX SILK 1.0 Guide Wires	
014394	CANNU-FLEX Screw Guide Wire, 1mm x 12", 1 per package





## Arthroscopy Enabling Technology

INTELLIO <sup>o</sup> Connected Tower	
Reference	Description
72205189	LINK, DYONICS <sup>o</sup> POWER II*
72205190	LINK, DOUBLEFLO Pump
72205191	LINK, WEREWOLF <sup>o**</sup>
72205347	LENS Connected Tower App***



INTELLIO Connected Tower

\*Requires DYONICS II POWER software version 2.00.02

\*\*Requires WEREWOLF software version 2.06

\*\*\*Requires LENS 4K Camera Control Unit Wi-Fi

†Only available in the US

## Access and Fluid Management

<b>DOUBLEFLO<sup>®</sup> Inflow/Outflow Pump</b>	
Pump + accessories	
Reference	Description
72205352	DOUBLEFLO Pump and Manual
72205357	Footswitch – wired
72205359	Remote – wireless
72205360	DYONICS <sup>®</sup> POWER II Interface Cable
72205361	Arthrex Hand Control Interface
72205362	Arthrex Foot Control Interface
72205363	Stryker Hand Control Interface
72205364	CONMED Hand Control Interface
72205365	CONMED Foot Control Interface
72205012	Sterile Sleeve for Wireless Remote
72205190	LINK, DOUBLEFLO Pump
72205355	Inflow Tube Set
72205356	Outflow Tube Set
<b>GoFlo Pump</b>	
72204968	GoFlo Pump
T0449-01	Sterile Tube Set, 10 per box
72204972	GoFlo Remote Control
72205012	Remote Control Sterile Sleeve, 50 per box



DOUBLEFLO Inflow/Outflow Pump

## COBLATION<sup>o</sup> Technology

WEREWOLF <sup>o</sup> COBLATION + FLOW 50 <sup>o</sup>	
Reference	Description
72290146	WEREWOLF+ Controller
72290037	FLOW 50 COBLATION Wand
SUPER MULTIVAC <sup>o</sup> 50 COBLATION Wand Family	
ASHA4830-01	AMBIENT <sup>o</sup> SUPER MULTIVAC 50 Wand with Integrated Finger Switch (IFS)
ASH4830-01	SUPER MULTIVAC 50 WAND with Integrated Finger Switch (IFS)
ASC4830-01	SUPER MULTIVAC 50 WAND



WEREWOLF+ generator

## Patient Positioning

SPIDER2 Limb Positioner for Knee	
Reference	Description
72203299	SPIDER2 Limb Positioner
<b>System includes</b>	
72203301	Battery Pack
72203840	Battery Charger
72200918	SPIDER2 Cart
7210570	Piggy Back Connector, 2 per box (required for all sterile procedures)
<b>Single use disposables</b>	
72203300	Switch Drape, case of 20
Leg Accessory	
72203235	SPIDER Leg Accessory, left
72203236	SPIDER Leg Accessory, right
72203239	3D SPIDER Connector (one required for each Leg Accessory)
<b>Disposable kit</b>	
72203238	SPIDER Leg Stabilization Kit, case of 10
Distal Thigh Holder	
72204133	Distal Thigh Holder
<b>Disposable kit</b>	
72204134	Thigh Stabilization Kit, case of 10

ACUFEX <sup>®</sup> Leg Holder	
Reference	Description
012310	ACUFEX Leg Holder (Table Clamp not included)
<b>Single use disposable</b>	
3757	Disposable Leg Holder Pads
<b>Replacement part</b>	
012311	Replacement Lateral Leg Pad (included with 012310)
SURGICAL ASSISTANT Leg Holder	
7209451	SURGICAL ASSISTANT Leg Holder
<b>System includes</b>	
7209450	SURGICAL ASSISTANT T-Bar
7209452	SURGICAL ASSISTANT Replacement Cross Bar
<b>Single use disposables</b>	
7209457	SURGICAL ASSISTANT Foam Insert, blue, 20 per box



## Resection

DYONICS® POWER II Shaver System		
Reference	Description	
72200873	DYONICS POWER II Shaver System Control Unit. All units 100-240 VAC, 50/60 Hz	
72200616	Power Max Elite Headpiece with Hand Control	
DYONICS PLATINUM Blades		
72202531	4.5mm DYONICS BONECUTTER® PLATINUM Blade	
72202530	5.5mm DYONICS BONECUTTER PLATINUM Blade	
72205292	DYONICS PLATINUM 4.0 FLYER® Blade	
DYONICS INCISOR® PLUS ELITE® Blades		
7210976	Slate	4.5mm Straight
72200081	Lilac	5.5mm Straight



DYONICS POWER II system



DYONICS BONECUTTER PLATINUM Blade



DYONICS INCISOR PLUS ELITE Blade

## Visualisation

LENS 4K Surgical Imaging System	
Wi-Fi Camera Control Units	
Reference	Description
72205059	LENS 4K CCU Wi-Fi Enabled
Cameras	
72205058	LENS 4K Camera Head A/C
Couplers	
72200315	LENS Coupler, 19.5mm
72200422	LENS Coupler, 26.5mm
4KO Scopes for Shoulder + Hip + Knee	
72205149	4KO VAS 4.0mm x 30° x 160mm
72205150	4KO VAS 4.0mm x 70° x 160mm, round tip
72202958	HD VAS 4.0mm x 70° x 157mm
72202963	HD VAS 4.0mm x 30° x 160mm, reverse non-A/C post, non-A/C
72202964	HD VAS 4.0mm x 70° x 160mm, reverse post, non-A/C
72205153	4KO DV 4.0mm x 0° x 160mm
72205154	4KO DV 4.0mm x 30° x 160mm
72205155	4KO DV 4.0mm x 70° x 160mm, round tip
72205156	4KO DV 4.0mm x 45° x 160mm
72201845	HD DV 4.0mm x 30° x 157mm, reverse post
72202088	HD DV 4.0mm x 70° x 160mm
7208132	HD DV 4.0mm x 30° x 175mm
72201597	HD DV HIP Scope 4.0mm x 30° x 278mm
72201598	HD DV HIP Scope 4.0mm x 70° x 280mm

## References

1. Smith+Nephew 2015. BIOSURE® REGENESORB® ovine ACL implantation study NCS250.
2. Smith+Nephew 2014. Verif, BIOSURE HA Screw Fixation Strength and Insertion 15002832 Revision A.
3. Smith+Nephew 2017. Verification & Validation, BIOSURE REGENESORB Interference Screws 15004843 Revision F.
4. Cerulli G, Placella G, Sebastiani E, et al. ACL reconstruction: choosing the graft. *Joints*. 2013;1(1):18-24.
5. West RV, Harner CD. Graft selection in Anterior Cruciate Ligament Reconstruction. *J Am Acad Orthop Surg*. 2005;13(3):197-207.
6. Slone H, Romine S, Premkumar A, Xerogeanes J. Quadriceps Tendon Autograft for Anterior Cruciate Ligament Reconstruction: A Comprehensive Review of Current Literature and Systematic Review of Clinical Results. *J Arthrosc Relat Surg*. 2015;31(3):541-554.
7. Buerba RA, Boden SA, Lesniak B. Graft Selection in Contemporary Anterior Cruciate Ligament Reconstruction. *JAAOS: Global Research and Reviews*. 2021;5(10).
8. Salmon LJ, Russell VJ, Refshauge K, et al. Long-term outcome of endoscopic anterior cruciate ligament reconstruction with patellar tendon autograft: minimum 13-year review. *Am J Sports Med*. 2006;34(5):721-32.
9. Lebel B, Hulet C, Galaud B, Burdin G, Locker B, Vielpeau C. Arthroscopic reconstruction of the anterior cruciate ligament using bone-patellar tendon-bone autograft: a minimum 10-year follow-up. *Am J Sports Med*. 2008;36(7):1275-82.
10. Silver AG, Kaar SG, Grisell MK, et al. Comparison between rigid and flexible systems for drilling the femoral tunnel through an anteromedial portal in anterior cruciate ligament reconstruction. *J Arthro*. 2009;26(6):790-795.
11. Sengoku T, Nakase J, Asai K, et al. The effect of gracilis tendon harvesting in addition to semitendinosus tendon harvesting on knee extensor and flexor strength after anterior cruciate ligament reconstruction. *Archives of Orthopaedic and Trauma Surgery*. Published online April 2, 2021.
12. Sherman O. Editorial Commentary: multiple-strand mamstring autografts for anterior cruciate ligament reconstruction: if graft diameter is at least 8 millimeters, bigger may not be better. *Arthroscopy*. 2021; 37:586-587.
13. Snaebjornsson T, Senorski E, Ayeni O, et al. graft diameter as a predictor for revision anterior cruciate ligament reconstruction and koos and eq-5d values. *Am J Sports Med*. 2017;45:2092-2097.
14. Spragg L, Chen J, Mirzayan R, Love R, Maletis G. the effect of autologous hamstring graft diameter on the likelihood for revision of anterior cruciate ligament reconstruction. *Am J Sports Med*. 2016;44:1475-1481.
15. Arthrocare Corporation 2016. Test Report: Comparative Testing of ULTRABUTTON® Adjustable Fixation Device to Competitive Devices P/N 69889-01 C. NOTE: The results of *in vitro* simulation testing have not been proven to predict clinical performance.
16. Smith+Nephew, 2020. MAP 627: 2019 New Zealand ACL Registry Implant Report.
17. Mariscalco MW, Flanigan DC, Mitchell J, et al. The Influence of Hamstring Autograft Size on Patient-Reported Outcomes and Risk of Revision After ACL Reconstruction: A Multicenter Orthopaedic Outcomes Network (MOON) Cohort Study. *J Arthrosc Relat Surg*. 2013;29(12):1948-1953.
18. Tibor L, Chan P, Funahashi T, et al. Surgical technique trends in primary ACL reconstruction from 2007 to 2014. *J Bone Joint Surg Am*. 2016;98:1079-89.
19. Widner M, Dunleavy M, Lynch S. outcomes following acl reconstruction based on graft type: are all grafts equivalent? *Curr. Rev. Musculoskelet*. 2021;12:460-465.
20. Smith+Nephew 2016. Tier 1 Customer Preference Evaluation Report: ULTRABUTTON Adjustable Fixation. Report 68688-01 B.
21. Ahmad SS, Hirschmann MT, Voumard B, et al. Adjustable loop ACL suspension devices demonstrate less reliability in terms of reproducibility and irreversible displacement. *Knee Surg Sports Traumatol Arthrosc*. 2018;26(5):1392-1398.
22. Shelburne KB, Pandy MG, Anderson FC, Torry MR. Pattern of anterior cruciate ligament force in normal walking. *J Biomech*. 2004;37(6):797-805.
23. Arthrocare Corporation 2018. Test Report: Comparative Testing of ULTRABUTTON Adjustable Fixation Device to Competitive Devices. P/N 69889-01 F.
24. Arthrocare Corporation 2018. Test Report: Comparative Testing of ULTRABUTTON Adjustable Fixation Device to Competitive Devices P/N 69889-01 D.
25. Vonhoegen J, John D, Hägermann C. Osteoconductive resorption characteristics of a novel biocomposite suture anchor material in rotator cuff repair. *Orthop Traumatol Surg Res*. 2019;14(1):12.
26. Smith+Nephew 2010. Micro-CT and histological evaluation of specimens from resorbable screw study (RS-II / OM1-08) 24-month post-implantation. Internal Report WRP-TE045-700-08.
27. Smith+Nephew 2016. HEALICOIL® REGENESORB Suture Anchor – a study to assess implant replacement by bone over a 2 year period. NCS248.
28. Todor A, Nistor DV, Catelev S. Clinical outcomes after ACL reconstruction with free quadriceps tendon autograft versus hamstring tendons autograft. A retrospective study with a minimal follow-up two years. *Acta Orthop Traumatol Turc*. 2019;53(3):180-183. doi:10.1016/j.aott.2019.03.004.
29. Barrett AM, Craft JA, Replogle, WH, et al. A comparison of graft type based on age and tegner activity level. *Am J Sports Med*. 2011;39(10):2194-98.
30. Slone HS, Romine SE, Premkumar A, Xerogeanes JW. Quadriceps tendon autograft for anterior cruciate ligament reconstruction: a comprehensive review of current literature and systematic review of clinical results. *Arthroscopy*. 2015;31(3):541-554.
31. Cavaignac E, Coulin B, Tscholl P, et al. Is quadriceps tendon autograft a better choice than hamstring autograft for anterior cruciate ligament reconstruction? a comparative study with a mean follow-up of 3.6 years. *Am J Sports Med*. 2017;45(6):1326-1332.
32. Lund, Bent et al. "Is Quadriceps Tendon a Better Graft Choice Than Patellar Tendon? A Prospective Randomized Study." *Arthroscopy* 2014; 30(5): 593-598.
33. Smith+Nephew 2019. ACUFEX® TRUNAV Report 15007793.
34. Smith+Nephew 2019. ACUFEX TRUNAV Reports 15007628.
35. Smith+Nephew 2019. ACUFEX TRUNAV Report 15008563.
36. Smith+Nephew 2019. ACUFEX TRUNAV Report 15008565.
37. Smith+Nephew 2019. ACUFEX TRUNAV Report 15008567.
38. Prodromos C, Brown C, Fu F, et al. The Anterior Cruciate Ligament: Reconstruction and Basic Science. Philadelphia, USA: Saunders; 2007.
39. Kuang GM, Yau WP, Lu WW, Chiu KY. Osteointegration of soft tissue grafts within the bone tunnels in anterior cruciate ligament reconstruction can be enhanced. *Knee Surg Sports Traumatol Arthrosc*. 2010;18(8):1038-1051.
40. Smith+Nephew 2021. DOUBLEFLO® Simplicity Usability Evaluation. Internal Report. 15010931.
41. Smith+Nephew 2021. DOUBLEFLO Response Test. Internal Report. 15009773.
42. Barker SL, Johnstone AJ, Kumar K. *In vivo* temperature measurement in the subacromial bursa during arthroscopic subacromial decompression. *J Shoulder Elbow Surg*. 2012;21(6):804-807.
43. Sean NY, Singh I, Wai CK. Radiofrequency microtenotomy for the treatment of plantar fasciitis shows good early results. *Foot Ankle Surg*. 2010;16(4):174-177.
44. Taverna E, Battistella F, Sansone V, et al. Radiofrequency-based plasma microtenotomy compared with arthroscopic subacromial decompression yields equivalent outcomes for rotator cuff tendinosis. *Arth*. 2007;23(10):1042-1051.
45. Wei M, Liu Y, Li Z, Wang Z. Short-term effects of radiofrequency shrinkage treatment for anterior cruciate ligament relaxation on proprioception. *J Int Med Res*. 2013;41(5):1586-1593.
46. Zini R, Munegato D, De Benedetto M, Carraro A, Bigoni M. Endoscopic iliotibial band release in snapping hip. *Hip Int*. 2013;23(2):225-232.
47. Spahn G, Kahl E, Muckley T, et al. Arthroscopic knee chondroplasty using a bipolar radiofrequency-based device compared to mechanical shaver: results of a prospective, randomized, controlled study. *Knee Surg Sports Traumatol Arthrosc*. 2008;16(6):565-573.
48. Spahn G, Hofmann GO, Von Engelhardt LV. Mechanical debridement versus radiofrequency in knee chondroplasty with concomitant medial meniscectomy: 10-year results from a randomized controlled study. *Knee Surg Sports Traumatol Arthrosc*. 2016;24(5):1560-1568.
49. Spahn G, Klinger HM, Muckley T, Hofmann GO. Four-year results from a randomized controlled study of knee chondroplasty with concomitant medial meniscectomy: mechanical debridement versus radiofrequency chondroplasty. *Arthroscopy*. 2010;26(9 Suppl):S73-80.
50. Amiel D, Ball ST, Tasto JP. Chondrocyte viability and metabolic activity after treatment of bovine articular cartilage with bipolar radiofrequency: an *in vitro* study. *Arthroscopy*. 2004;20(5):503-510.
51. ArthroCare 2014. FLOW 50° Wand Vac Mode Comparative Bench-Top Study Report. P/N 53303-01\_A.
52. Tenet Medical Engineering 2008. Design Verification Results - Spider Leg Accessory Rev. A.
53. Tenet Medical Engineering 2013. Design Verification Report - Distal Thigh Holder Rev. B.
54. Tenet Medical Engineering 2013. Design Verification - Meniscal Post Rev. B.
55. Smith+Nephew 2021. The Efficient Resection of the DYONICS® PLATINUM Blades: Evidence Evaluation. Internal Report. EO.SPM.PCS031.001.v1.
56. Smith+Nephew 2019. Competitive Testing, 3.5mm Platinum Blades. Internal Report. 15007992 Rev A.
57. Smith+Nephew 2020. Design Validation Testing, 4.0mm PLATINUM FLYER Blade 15009195 Rev. A.
58. Smith+Nephew 2019. Lens 4K user needs design validation. 15008697 B.
59. Smith+Nephew 2019. LENS 4K image quality test. 15007295 A.
60. Smith+Nephew 2020. Report 15008166 (4mm VAS).
61. Smith+Nephew 2020. Report 15008167 (4mm Direct View).
62. Smith+Nephew 2020. Report 15008165 (2.7mm HD VAS) is HD resolution.
63. Smith+Nephew 2020. Report 15010420 REV A.
64. Smith+Nephew 2020. Report 15008168 (all 5.5mm).
65. Smith+Nephew 2020. Report 15008169 (all 10mm).
66. Smith+Nephew 2020. Report 15010292 (4mm VAS, 4mm Direct View).
67. Teleflex Product Claims Sheet 2021.
68. MINITAPE Test Report 15005671 Rev. A.
69. Riverpoint Medical R&D Test Report "ULTRAGRAB AND ULTRALOOP TEST REPORT" Rev. A.
70. Smith + Nephew 2013. ULTRATAPE Report 15001847.
71. Nuelle CW, Cook JL, Gallizzi MA, Smith PA. Posterior Single-Incision Semitendinosus Harvest for a Quadrupled Anterior Cruciate Ligament Graft Construct: Determination of Graft Length and Diameter Based on Patient Sex, Height, Weight, and Body Mass Index. *Arthroscopy*. 2015;31(4):684-690.
72. Kim JG, Chang MH, Lim HC, et al. An *In Vivo* 3D Computed Tomographic Analysis of Femoral Tunnel Geometry and Aperture Morphology Between Rigid and Flexible Systems in Double-Bundle Anterior Cruciate Ligament Reconstruction Using the Transportal Technique. *Arthroscopy*. 2015;31(7):1318-1329.
73. Smith+Nephew 2012. Validation, CLANCY Anatomic Flexible Drill Guide System. Internal Report. 15001409 Rev A.
74. Bedi A, Altchek DW. The "footprint" anterior cruciate ligament technique: an anatomic approach to anterior cruciate ligament reconstruction. *Arthroscopy*. 2009;25(10):1128-1138.
75. Rasmussen JF, Lavery KP, Dhawan A. Anatomic Anterior Cruciate Ligament Reconstruction With a Flexible Reamer System and 70° Arthroscop. *Arthroscopy Techniques*. 2013;2(4):e319-e322.
76. Runer A, Csapo R, Hepperger C, Herbort M, Hoser C, Fink C. Anterior Cruciate Ligament Reconstructions With Quadriceps Tendon Autograft Result in Lower Graft Rupture Rates but Similar Patient-Reported Outcomes as Compared With Hamstring Tendon Autograft: A Comparison of 875 Patients. *AJSM*. 2020;48(9).
77. Malinowski K, Paszkowski J, Mostowy M, Góralczyk A, Laprade RF, Hermanowicz K. Quadriceps Tendon-Bone Full-Thickness Autograft: Reproducible and Easy Harvesting Technique Using Simple Surgical Tools. *Arthroscopy Techniques*. 2021;10(4).
78. Arthrocare Corporation 2015. Adjustable Loop Button (P/N 65203) Design Verification and T=0 Packaging Validation P/N 65492-01 B.
79. Siebold R, Dejour D, Zaffagnini S, eds. Anterior Cruciate Ligament Reconstruction: A Practical Surgical Guide. Springer; 2014.
80. Gharaibeh M, Szomor A, Chen DB, Maccessi SJ. A Retrospective Study Assessing Safety and Efficacy of Bipolar Radiofrequency Ablation for Knee Chondral Lesions. *Cartilage*. 2018;9(3):241-247.
81. Liu YJ, Wang Y, Xue J, Lui PP, Chan KM. Arthroscopic gluteal muscle contracture release with radiofrequency energy. *Clin Orthop Relat Res*. 2009;467(3):799-804.
82. Smith and Nephew 2018. LSS - System Stability Design Verification. 15007263.
83. Smith and Nephew 2018. LSPS, Hand Stability, Verification. 15007351.

This technique is for informational and educational purposes only. It is not intended to serve as medical advice. It is the responsibility of the treating physicians to determine and utilise the appropriate products and techniques according to their own clinical judgment for each of their patients. For more information on the products shown in this surgical technique, including indications for use, contraindications, effects, precautions and warnings, please consult the Instructions for Use (IFU) for the product.

Smith & Nephew Pty Ltd Australia	Smith & Nephew Ltd New Zealand	<a href="http://www.smith-nephew.com/australia">www.smith-nephew.com/australia</a>
T +61 2 9857 3999	T +64 9 820 2840	<a href="http://www.smith-nephew.com/new-zealand">www.smith-nephew.com/new-zealand</a>
F +61 2 9857 3900	F +64 9 820 2841	°Trademark of Smith+Nephew. All trademarks acknowledged. 19481-anz V2 04/22