

Arthroscopic Latarjet operation
air: **Glenoid Bone Loss** instrumenty linkings

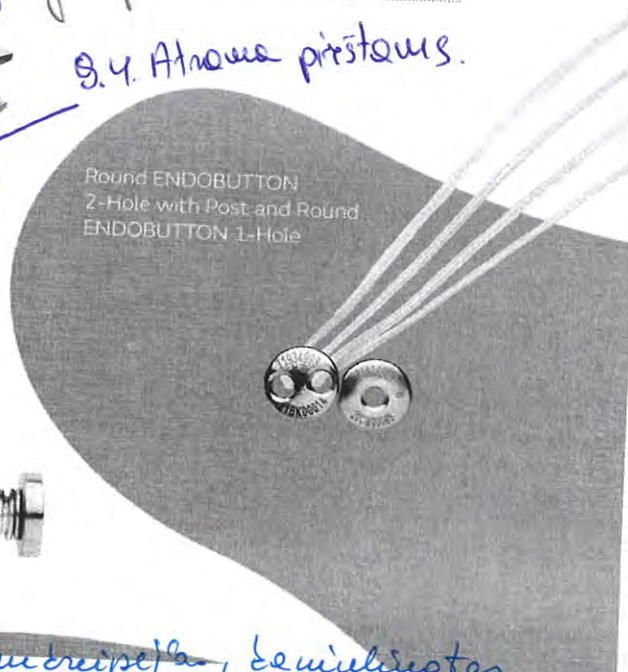
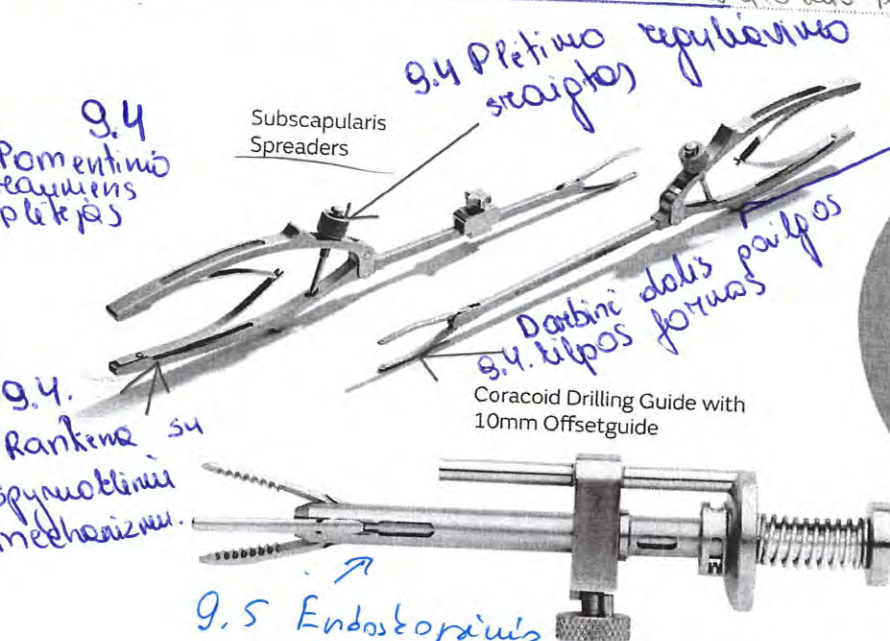
Shoulder

Instability Repair: Glenoid Bone Loss

Product code	Description	Per carton
	Arthroscopic Latarjet - Disposables	
71934993	Round ENDOBUTTON® 2-Hole with Post SST with SZ 3/4 Suture Loop	1
71934989	Round ENDOBUTTON 1-Hole SST for SZ 3/4 Suture Loop	1
014771	T-FIX RCG Drill Pac with one Drill and two Sleeves	1
71935043	Reciprocating Rasp	1
71935042	Reciprocating Saw Blade	1
013593	Suture Retriever	1
		6

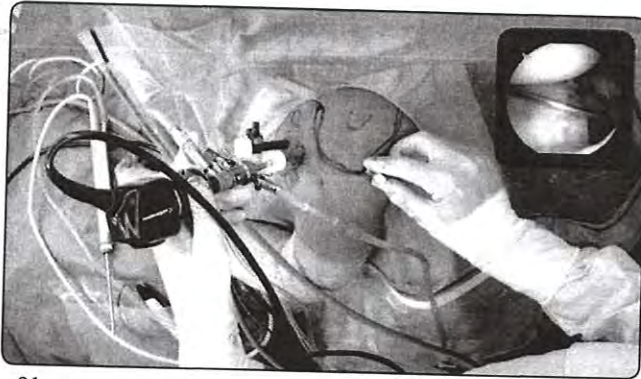
Arthroscopic Latarjet - Instruments

	Arthroscopic Latarjet/Bone Block Tray	1
71935618	Arthroscopic Latarjet/Bone Block Lid	1
71935459	Bone Grasper	1
71935461	Glenoid Drill Guide Short Bullet	1
71935463	Half Cannula, Short	1
71935464	Half Cannula Obturator, Short	1
71928166	Pin Inserter/Extractor	1
71935612	Single Posterior Glenoid Drill Guide	1
71935607	Suture Tensioner	1
71935610	Tissue Retractor - 90°	1
71935611	Tissue Retractor - 45°	1
71935615	Coracoid Drilling Guide	1
71935616	Coracoid Drilling Offset Guide 10mm	1
71935613	Subscapularis Spreader	1
71935614	Subscapularis Spreader Sliding Block	1
71935608	Half Cannula, Long	1
71935609	Half Cannula Obturator, Long	1



9.5 Endostoxinis mentis snapinis etapas su trimis pūbiciūnais rentene su spyrūkliniu mechanizmu ir fikserimo raigta

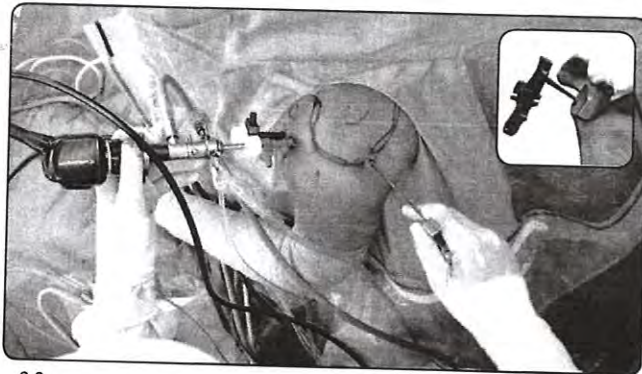
STEP 2: Glenoid Guide and Drill Pin Placement



2.1

2.1.

Insert a spinal needle from posterior to anterior along, and parallel to, the face of the glenoid and centre on the anterior glenoid bone defect below the midline.



2.2

2.2

Insert the hook end of the Glenoid Guide through the posterior portal and pass it along the glenoid parallel to the glenoid face to avoid damaging the articular surface. Use the cannula for introduction of Glenoid Guide.

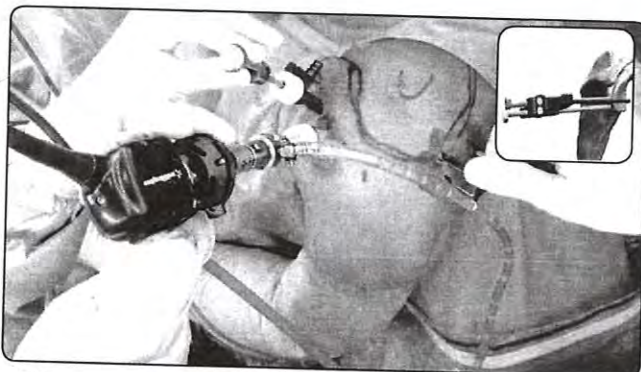
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2.3

2.3

Once sufficiently advanced, the guide is rotated to capture the anterior edge of the glenoid under the hook. The hook should be placed at the centre of the anterior glenoid defect, usually between the 3- and 4-o'clock position. The Glenoid Guide should be parallel and flush to the glenoid surface.



2.4

2.4

The guide is secured by two bullets placed percutaneously. A small skin incision is made and a bullet can be advanced until it firmly contacts the posterior aspect of the glenoid neck. Care should be taken to ensure the ratchet teeth of the bullet are aligned with the screws that are adjacent to the handle of the guide. The process is repeated for the second bullet.

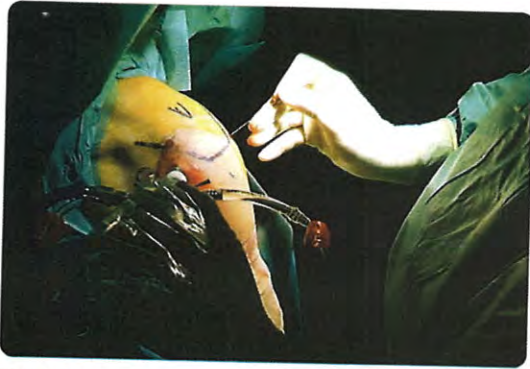


Figure 2a

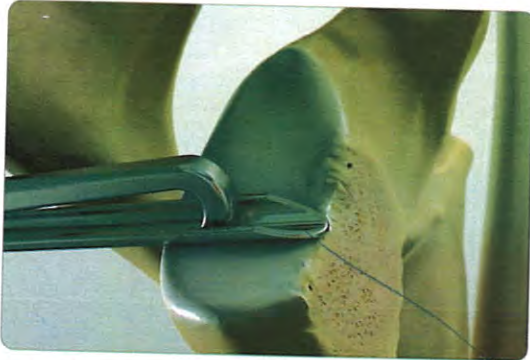


Figure 2b

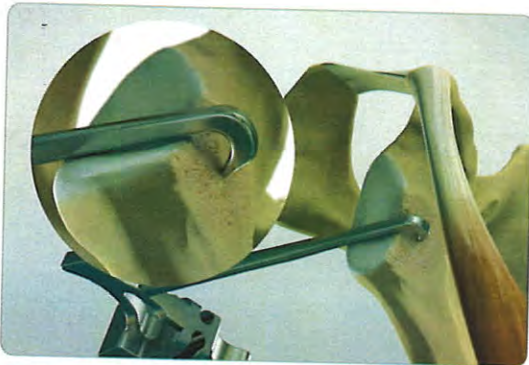


Figure 2c

Step 2 – Glenoid guide placement and drilling

This guide is used to ensure the correct position of two drill tunnels which should be parallel to each other and perpendicular to the glenoid neck.

To find the correct position for the Glenoid Drill Guide, insert a needle from posterior to anterior along, and parallel to, the face of the glenoid and centered on the anterior glenoid bone defect below the mid-line (**Figure 2a**).

Insert the hook end of the Double Posterior Glenoid Drill Guide through the posterior portal from step 2a and pass it along parallel to the glenoid face to reduce damage on the articular surface.

NOTE: An optional Half Pipe Cannula may be used to introduce the hook end into and across the glenoid face to help reduce damage on the articular surface (**Figure 2b**).

Once sufficiently advanced, rotate the guide to capture the anterior edge of the glenoid under the hook. The hook should be centered on the glenoid defect with the tip of the hook over the glenoid rim, usually between the 3- and 4-o'clock position (**Figure 2c**).

The arm of the Glenoid Guide should be parallel and flush to the glenoid surface.

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cicini*

9.1

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kutu nuozulnu distalini
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9.2. ir oplinkini audini paxidino
tiximylz*

Surgical Technique

Step 3: Subscapularis split

3a. Anterior bursectomy and "three sisters" identification

With the scope in the (W) portal, use a radio-frequency device through the (S) portal to remove the bursae of the subscapularis and identify the anterior axillary vessels (the so called "three sisters").



Figure 3a

3b. Axillary and musculo-cutaneous nerves identification and protection

Following medially, the "three sisters" lead to the "two brothers": the axillary and musculo-cutaneous nerves. Introduce the Tissue Retractor through the (S) portal, to retract the nerves medially.



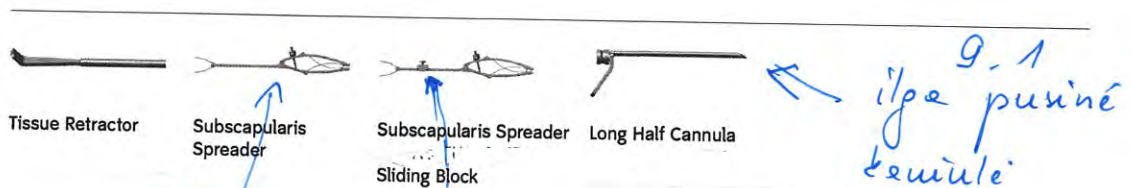
Figure 3b

3c. Lateral subscapularis split (Fig 3a)

After checking the position of the Subscapularis Spreader (correct at the 2/3 superior 1/3 inferior junction of the subscapularis tendon), gently open it. Use a radio-frequency device through the (S) portal to further open the tendon.

3d. Medial split (Fig 3b)

From the (E) portal, introduce the Long Half Cannula through the pectoralis major and aim towards the base of the coracoid graft. Slide the Subscapularis Spreader along the cannula. Open the Subscapularis Spreader to visualize the abraded neck of the glenoid and to get clear sight of the drill and sleeve. Slide the open Spreader medially and under the glenoid neck. Together, the two Spreaders create a "safe window" through the subscapularis muscle.



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9.3.
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Instability Repair: **Glenoid BoneLoss**

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✓ 71935614	Subscapularis Spreader Sliding Block	1
71935608	Half Cannula, Long	1
71935609	Half Cannula Obturator, Long	1

9.3 Pomentinis raumens pletys slenkėvis
blokelis su trintinimo nagais

Subscapularis
Spreaders

Coracoid Drilling Guide with
10mm Offsetguide

Round ENDOBUTTON
2-Hole with Post and Round
ENDOBUTTON 1-Hole



Surgical Technique



Figure 2d

2d. Glenoid Drill Guide placement (Fig 2d)

Using a switching stick, move the scope to the (NW) portal to view the glenoid surface and anterior glenoid neck.

Place a switching stick in the (P) portal and slide the Short Half Cannula down it. Remove the stick and slide the Glenoid Drill Guide down the cannula and then remove the cannula. Place the Glenoid Drill Guide flush to the glenoid at the 5 o'clock position (in a right shoulder), with the tip of the hook over the glenoid rim. Make a second posterior skin incision and push the "bullet" into the joint until it reaches the posterior neck of the glenoid.

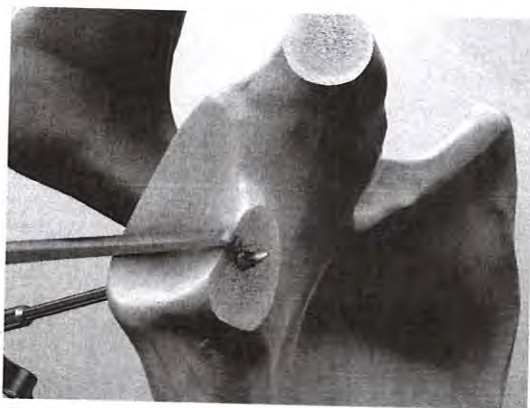


Figure 2e

2e. Glenoid drilling (Fig 2e)

Advance a second 2.8 mm drill and sleeve from posterior to anterior through the Glenoid Drill Guide until both are visible from the anterior glenoid.

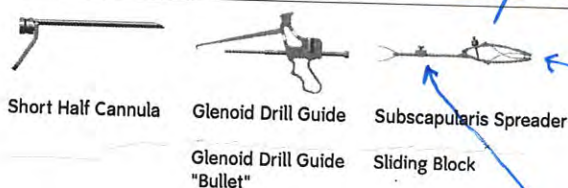
Remove the drill and "bullet", leaving the sleeve in place. Reintroduce the drill into the sleeve for additional stability and reduced water leakage.



Figure 2f

2f. Posterior spreader placement (Fig 2f)

Slide the half cannula under the Glenoid Drill Guide, remove the guide, and replace with the Subscapularis Spreader with Sliding Block (ensuring the spreader is closed at this stage). Remove the cannula. In a lateral direction, gently push the Subscapularis Spreader through the subscapularis muscle, below the labrum and at the same level as the drill and sleeve (5 o'clock). Lock the Subscapularis Spreader against the skin of the posterior aspect of the shoulder.



Short Half Cannula

Glenoid Drill Guide

Subscapularis Spreader

Glenoid Drill Guide "Bullet"

Sliding Block

9.4. darbine instrumento dala pailpos
tilpos formas

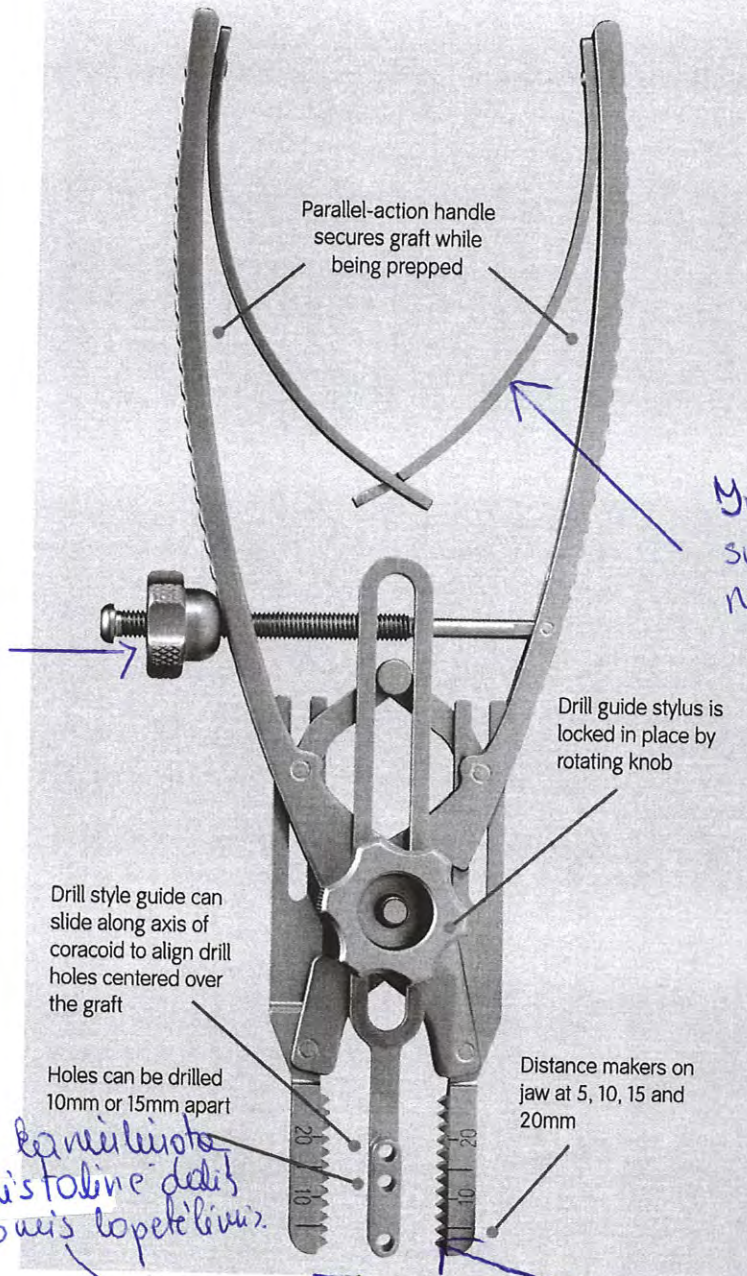
9.4 Pomentino raemens pletipos

9.3

Slentuxis blokelis

Endoskopinis mentės snapinė's ataugos nuėmimo įrankis

Coracoid Prep Tool: Hold, prep and drill graft with one instrument



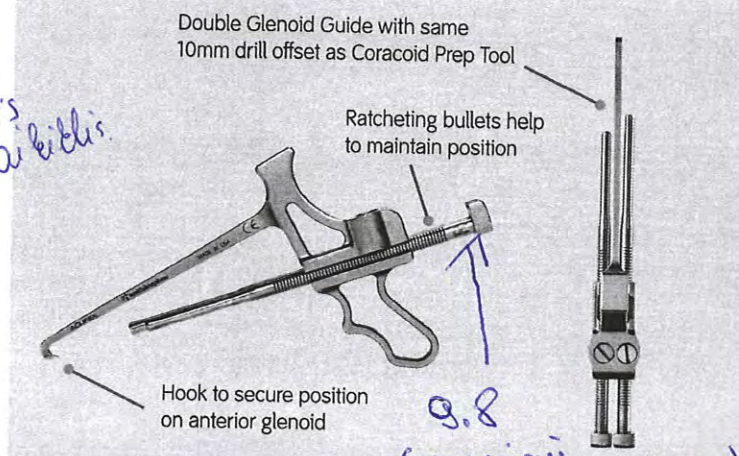
9.5
Fiksuojimo
sraigtas

9.5.

Instrumento rankena
su spyruoliniu mechu
nizumi

9.5.
Dorbinė daktis rankenoto
Dorbinės dakties distalinė dalis
su trineis priekinėms lūpėlinėms.

Posterior Glenoid Guide: One Step Closer to an Arthroscopic Approach



Fiksuojimo mentės
snapinė's dakties rankenėlė

9.5
su smulkiomis
dantulelėmis.

9.8
su sraigčiu
fiksuojamą
snapinė's dakties nuėmimo įrankio.

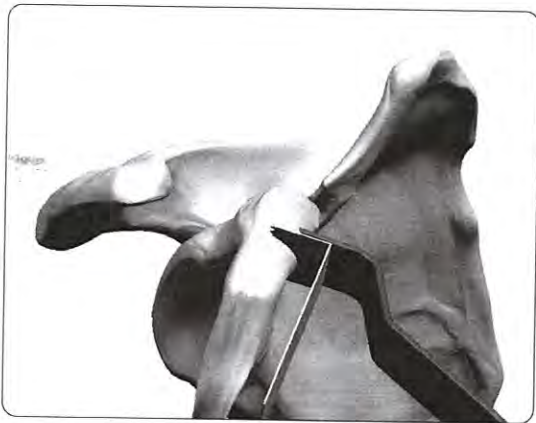


Figure 4



Figure 5

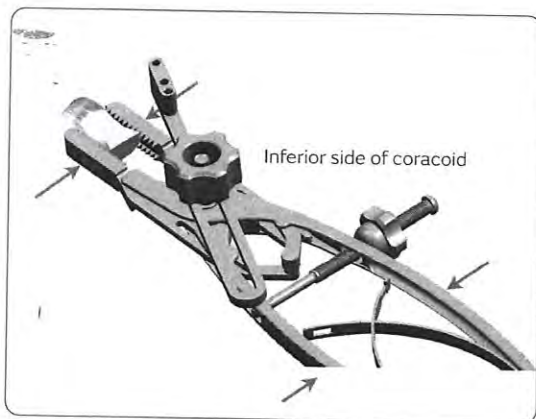


Figure 6

Coracoid osteotomy

The superior mini hohmann retractor can be used to provide medial retraction and protection of the neurovascular structures during osteotomy. Using a 90° sagittal saw or osteotome, 20-25mm of coracoid will be harvested. The osteotomy is carried out in a medial to lateral direction to protect the neurovascular structures.

Once the resection is complete, the remaining soft tissue and coracohumeral ligament tissue is dissected and sharply released from the coracoid and distal dissection is carried out to mobilize the conjoint tendon. (**Figure 4**)

Identification and protection of neurovascular structures

Care must be taken to identify and protect the musculocutaneous nerve which is generally found within 5cm of the coracoid as shown in **Figure 5**. In addition, the axillary nerve can be identified and protected as it traverses below the inferior capsule of the glenohumeral joint.

Coracoid graft prep and drilling

The graft prep tool can be used to hold and prepare the graft. The inferior side of the coracoid is oriented toward the drill guide stylus and the attachment of the conjoint tendon is seen distally as shown in **Figure 6**. Soft tissue is removed and a light decortication and planing of the graft is achieved. Healthy, bleeding cancellous bone should be exposed.

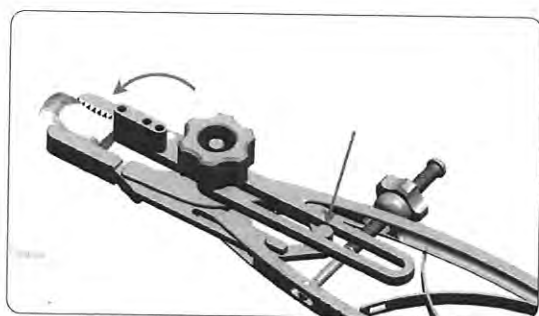


Figure 7

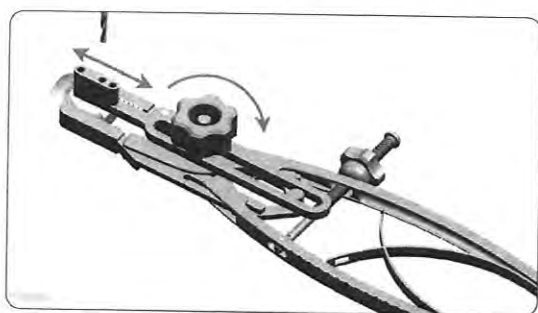


Figure 8

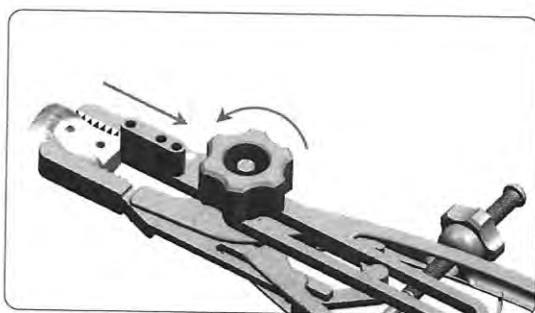


Figure 9

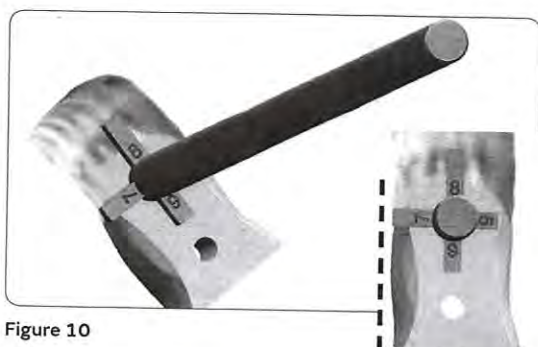


Figure 10

Coracoid graft prep and drilling

Once the cortical bone has been removed, the drill guide stylus can be rotated and aligned to be axially centered to the graft, as shown in **Figure 7**.

An alignment pin near the handles should sit within the opposite side of the drill guide stylus.

The drill guide stylus can slide along the center axis of the coracoid to align the drill holes centered over the graft, as shown in **Figure 8**. Lock the stylus in place by rotating the knob clock-wise. A 2.7mm drill is used to create two holes which are 10mm apart (center-center distance), as shown in **Figures 8 and 9**.

Holes may be made 15mm apart in cases with larger coracoid graft.

With the drill still in the second hole, you may find it beneficial to flip the graft over and mark the drill holes with a Bovie. This will make it easier to identify the holes when introducing the screw.

Inferior hole measurement

The offset measurement tool can be used to match the distance of the inferior hole in the coracoid to a corresponding glenoid drill guide used in a later step. This will ensure flush graft placement on the glenoid. The measurement is made from the center point of the inferior distal hole to the cortical margin of the coracoid which will become flush to the articular edge of the glenoid following coracoid fixation. **Figure 10** would represent the offset for a right shoulder. A left shoulder would be opposite from the shown image.

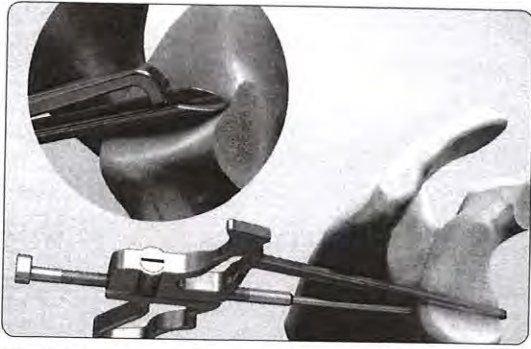


Figure 2d



Figure 2e

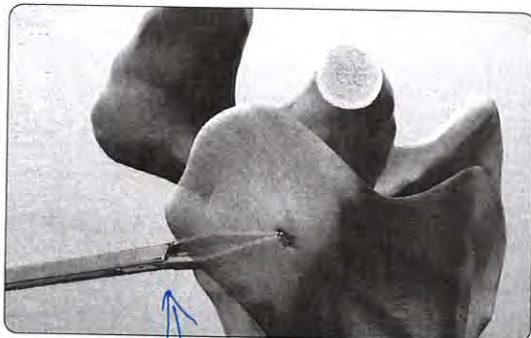


Figure 2f

Glenoid Drill Guide placement

Using a switching stick, move the scope to the O portal to view the glenoid surface and anterior glenoid neck.

Place a switching stick in the P portal and slide the Short Half Cannula down it. Remove the stick and slide the Glenoid Drill Guide down the cannula and then remove the cannula. Place the Glenoid Drill Guide flush to the glenoid at the 5 o'clock position (in a right shoulder), with the tip of the hook over the glenoid rim. Make a second posterior skin incision and push the 'bullet' into the joint until it reaches the posterior neck of the glenoid (**Figure 2d**).

Glenoid drilling

Advance a second 2.8mm drill and sleeve from posterior to anterior through the Glenoid Drill Guide until both are visible from the anterior glenoid.

Remove the drill and 'bullet', leaving the sleeve in place. Reintroduce the drill into the sleeve for additional stability and reduced saline leakage (**Figure 2e**).

Posterior spreader placement

Slide the half cannula under the Glenoid Drill Guide, remove the guide, and replace with the Subscapularis Spreader with Sliding Block (ensuring the spreader is closed at this stage). Remove the cannula. In a lateral direction, gently push the Subscapularis Spreader through the subscapularis muscle, below the labrum and at the same level as the drill and sleeve (5 o'clock). Lock the Subscapularis Spreader against the skin of the posterior aspect of the shoulder (**Figure 2f**).

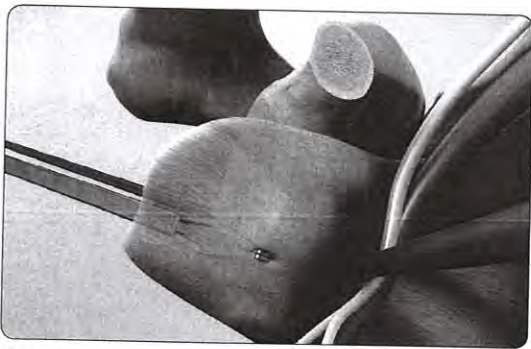


Figure 3a



Figure 3b

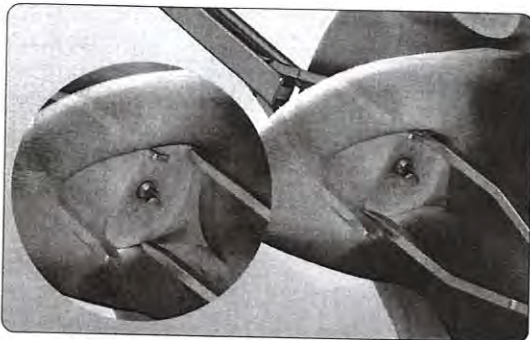


Figure 3c

Subscapularis split

Anterior bursectomy and 'three sisters' identification

With the scope in the W portal, use a radio frequency device through the S portal to remove the bursae of the subscapularis and identify the anterior axillary vessels (the so called 'three sisters').

Axillary and musculo-cutaneous nerves identification and protection

Following medially, the 'three sisters' lead to the 'two brothers': the axillary and musculo-cutaneous nerves. Introduce the Tissue Retractor through the S portal, to retract the nerves medially (**Figure 3a**).

Lateral subscapularis split

After checking the position of the Subscapularis Spreader (correct at the 2/3 superior 1/3 inferior junction of the subscapularis tendon), gently open it. Use a radio-frequency device through the S portal to further open the tendon (**Figure 3b**).

Medial split

From the E portal, introduce the Long Half Cannula through the pectoralis major and aim towards the base of the coracoid graft. Slide the Subscapularis Spreader along the cannula at the level of the drill. Open the Subscapularis Spreader and go gently medial while sliding the jaws under the neck of the scapula this will allow one to visualize the abraded neck of the glenoid and to get clear sight of the drill and sleeve. Together, the two Spreaders create a 'safe window' through the subscapularis muscle.

For repositioning of the spreaders close the jaws to prevent torque and high side forces when in contact with bone (**Figure 3c**).

G. 4

Surgical Technique

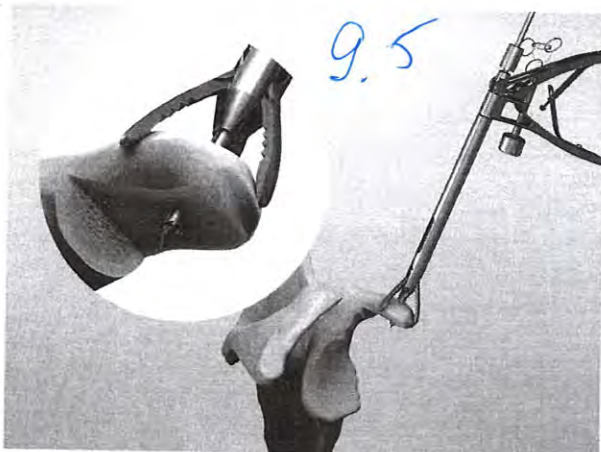


Figure 1d



Figure 1e

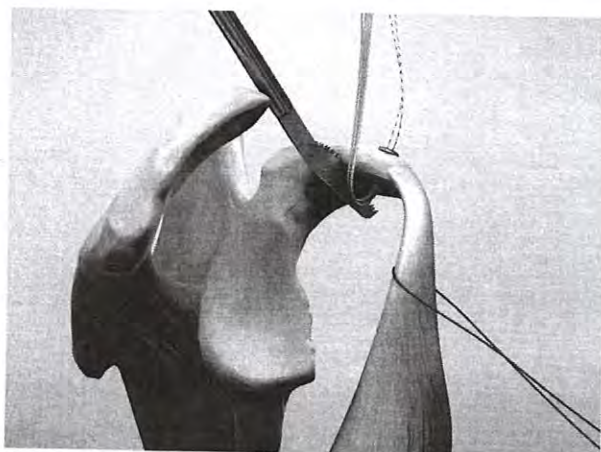


Figure 1f

1d. Coracoid drilling (Fig 1d)

Introduce the Coracoid Drilling Guide through the (N) portal and grasp the coracoid perpendicular to its surface. To achieve this, the guide must be tilted 45° medially.

Advance a 2.8 mm drill and sleeve through the coracoid until both exit the prepared surface of the coracoid. Remove the Coracoid Drilling Guide.

Remove the drill (leaving the sleeve in place), and pass a PDS suture through the coracoid (superior to inferior) and retrieve through the (W) portal. Remove the sleeve using the Pin Puller.

1e. Coracoid shuttling (Fig 1e)

Tie the PDS suture coming from the (N) portal to the blue/white cobraid attached to the white suture loop of the ENDOBUTTON®.

From the (W) portal, pull the PDS suture to draw the white suture bundle and then the ENDOBUTTON into the hole in the coracoid.

Retrieve the white suture through the (N) portal and the blue/white cobraid suture on the ENDOBUTTON through the (S) portal.

1f. Coracoid osteotomy (Fig 1f)

Through the (NW) portal, use the Reciprocating Saw to osteotomize 15 to 20 mm of the coracoid process. Additional soft tissue release may be helpful to fully mobilize the coracoid graft. Temporarily close the (N) portal with a clamp to avoid losing excess water.



Coracoid Drilling Guide



Round ENDOBUTTON® S2 3/4 Suture Loop



Reciprocating Saw



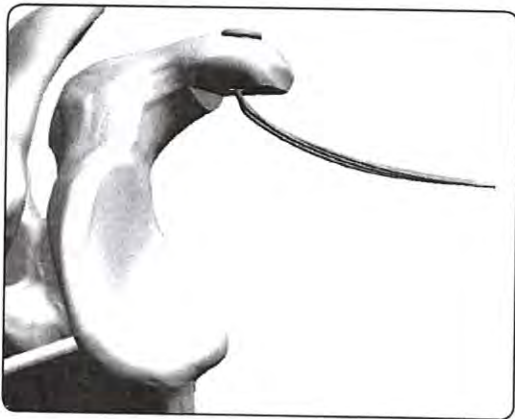
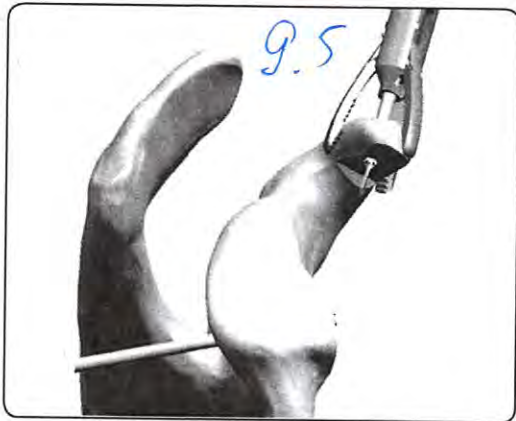
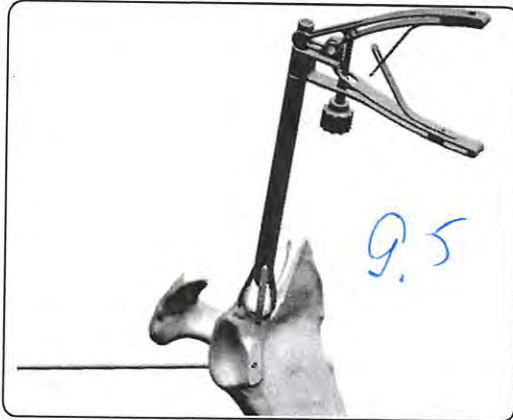
Pin Puller

minig guide / istrautepes

9.11

47

COROCOID DRILL



A switching stick, introduced through the anterosuperior (North-West) portal, is used to elevate the deltoid muscle from the upper part of the coracoid process and avoids extravasation of the fluid. Before creating the proximal (North) portal, great care is taken to cauterize branches of the acromial artery which run at the under surface of the deltoid muscle, close to the anterior border of the clavicular. Missing this step will lead to bleeding and makes visualization difficult or impossible. A spinal needle is used to locate the North portal just anterior to the clavicle and medial to the coracoid. It is important to rotate the arthroscope to ensure perpendicular alignment of the needle and placement onto the medial aspect of the coracoid process. The coracoid drill guide is placed through the North portal in order to grasp the coracoid. The guide is tilted slightly medial to ensure placement of the K-wire strictly perpendicular to the under surface of the coracoid process. The hole is placed in the central axis of the coracoid and about 1 cm apart (5 mm from its rims). Once accurate (i.e. perpendicular) alignment is confirmed, the purpose designed drill piece (2.8 mm) is advanced through the guide and drilled until it exits the inferior bone surface of the coracoid. The central K-wire is removed and a PDS suture is passed through the sleeve and the hole drilled in the coracoid process, and retrieved through the South portal. The sleeve is removed using the pin-puller and the coracoid peg button pulled into place by using the PDS as a shuttle.

Repair Option 1:

Mini-Open Latarjet

This system offers a streamlined set of innovative instruments designed to provide an accurate and efficient method of placing the coracoid bone graft on the anterior glenoid rim.

1 Graft prep

The Coracoid Prep Tool provides the ability to securely hold, fully prepare and accurately drill the bone graft with one instrument.



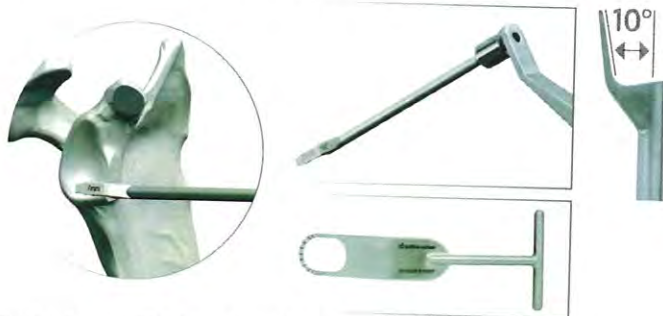
2 Offset measurement

To help ensure flush graft placement, the Offset Measurement Tool determines which Offset Drill Guide to use in Step 3. A measurement is taken from the center of the drilled hole to the coracoid edge that becomes aligned to the articular surface of the glenoid.



3 Anterior glenoid drilling

The 7mm Offset Drill Guide corresponding with the measurement taken in Step 2 is chosen and the spade is placed flush on the glenoid. There is a 10-degree divergent angle, which the design helps to minimize breaching of the cortical surface. A 2.7mm drill is inserted into the guide and drilled through the glenoid.



Use an Innomed® Fukuda retractor with embedded light source to pull back the humeral head to provide access and visualization inside the joint.

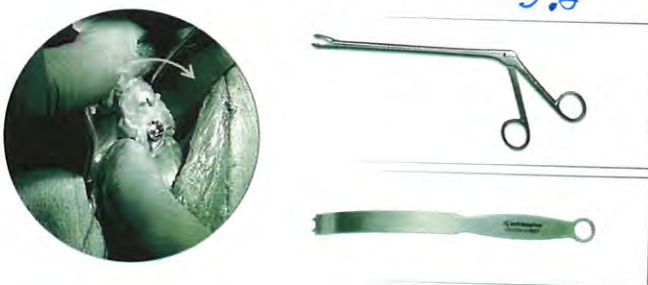
4 Coracoid graft placement

After using the depth gauge to determine screw length, insert the 4.0mm partially-threaded stainless steel screw partway through the coracoid and facilitate control of the graft with the 2.5mm Hex Screwdriver. Available in cannulate and solid, the screw head features an undercut that may help spread the load further away from the drill hole.



5 Graft alignment

Using the Coracoid Grasper, pivot the graft around the inferior screw to obtain proper alignment.



The Anterior Glenoid Retractor exposes the glenoid neck to provide access and visualization.

6 Final fixation

Once proper alignment is confirmed, drill the superior hole in the glenoid and affix the graft to the anterior glenoid, finger-tightening the screw with slight compressor.



A 1.3mm Guide Pin may be placed in the inferior screw cannulation to aid in superior drill trajectory.

71935459

Ordering information

Set number: 7193R004, Instruments, Arthroscopic Guided Latarjet and Bankart Procedure

Reference #	Description
71935618	Arthroscopic Latarjet/Bone Block Tray
71935619	Arthroscopic Latarjet/Bone Block Lid
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71935613	Subscapularis Spreader
71935614	Subscap Spreader Sliding Block
71935608	Half Cannula – Long
71935609	Half Cannula Obturator – Long
71935463	Half Cannula – Short
71935464	Half Cannula Obturator – Short
71928166	Pin Puller
9.7 71935459	Bone grasper Width 5 mm, Opening Width up to 20 mm ✓

*Mentes snapines etampas circulares
su sumidades dentadas, 5mm phors,
atadero de 20mm.*

Implants, Arthroscopic Guided Latarjet and Bankart Procedure

Reference #	Description
71934989	1-hole Round ENDOBUTTON® for 3/4 Suture Loop
71934993	Round ENDOBUTTON S2 for 3/4 Suture Loop

Specific disposables for Implants, Arthroscopic Guided Latarjet and Bankart Procedure

Reference #	Description
013593	Suture Retriever, 6 per box
014771	2.8mm Drill and Sleeve, 2
71935042	Reciprocating Saw Blade
71935043	Straight Cut Reciprocating Rasp

Additional instruction

To order the instruments used in this technique, call **+1 800 343 5717** in the U.S. or contact an authorized Smith+Nephew representative. Prior to performing this technique, consult the Instructions for Use documentation provided with individual components – including indications, contraindications, warnings, cautions and instructions.

Caution: U.S. Federal law restricts this device to sale by or on the order of a physician.

Learn more at smith-nephew.com



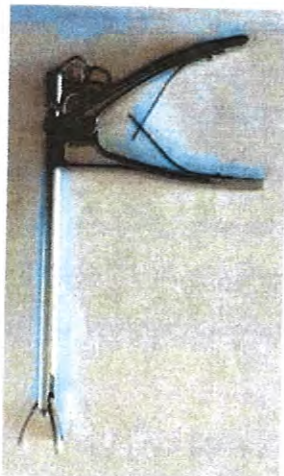
Endoscopy
Smith & Nephew, Inc.
150 Minuteman Road
Andover, MA 01810

www.smith-nephew.com
T +978 749 1000
US Customer Service:
+1 800 343 5717

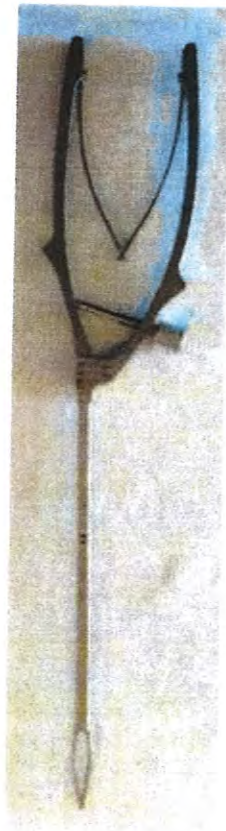
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All trademarks acknowledged.
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reserved 03282 V9 01/22

KIT DE BRISTOW LATARJET - BUTEE SOUS ARTHRO

Instrumentation:



Guide coracoïde dite "pince à sucre"



Ecarteur à souscapulaire X2

+



Viseur de glène

+ Canon pour viseur

+

Tenseur à fil



Limiteur pour écarteur postérieur X1



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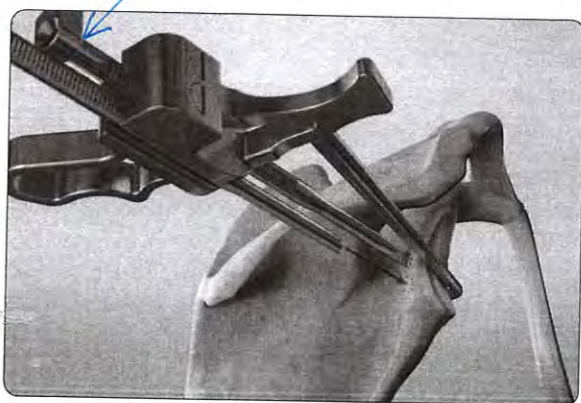


Figure 2d

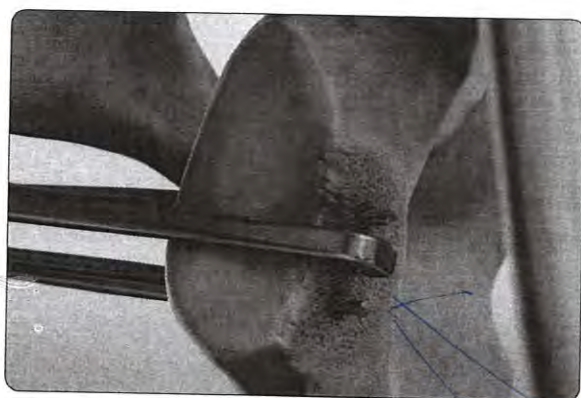


Figure 2e

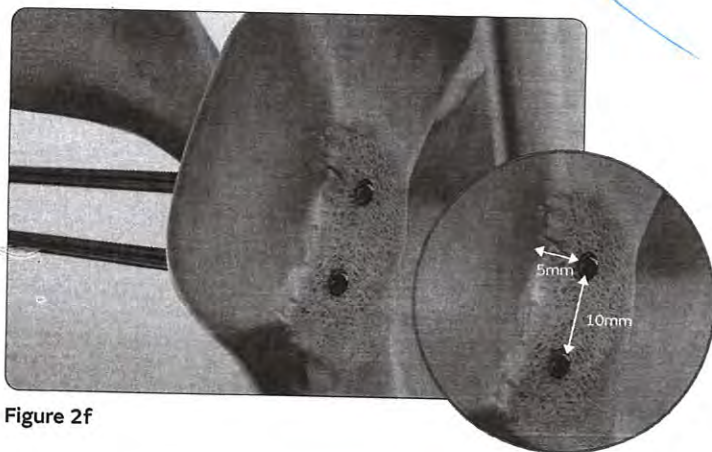


Figure 2f

The guide is secured by two bullets placed percutaneously (Glenoid Drill Guide Long Bullet and Glenoid Drill Guide Short Bullet). A skin incision is made and a bullet can be advanced until it firmly contacts the posterior aspect of the glenoid neck. The process is repeated for the second bullet. Once in position, the bullets rest against the posterior glenoid neck (**Figure 2d**).

A 2.8mm sleeved drill is placed through each bullet and advanced under power until exiting from the anterior aspect of the glenoid (**Figure 2e**). It is not necessary for the sleeve portion of the drill to exit the tunnel. Each drill will be 5mm below the cortical edge of the glenoid face, parallel to one another and 10mm apart. The inner drill is removed, leaving the cannulated outer sleeve in place.

The drill sleeves are used to create an accessible pilot hole through the glenoid used to carry out the remaining procedural steps including passage of sutures for coracoid guidance and final fixation onto the anterior glenoid.

The bullets are each removed by rotating to disengage the ratchet and pulling off the guide. The guide can be removed at this stage but leaving the drill sleeves in place (**Figure 2f**).

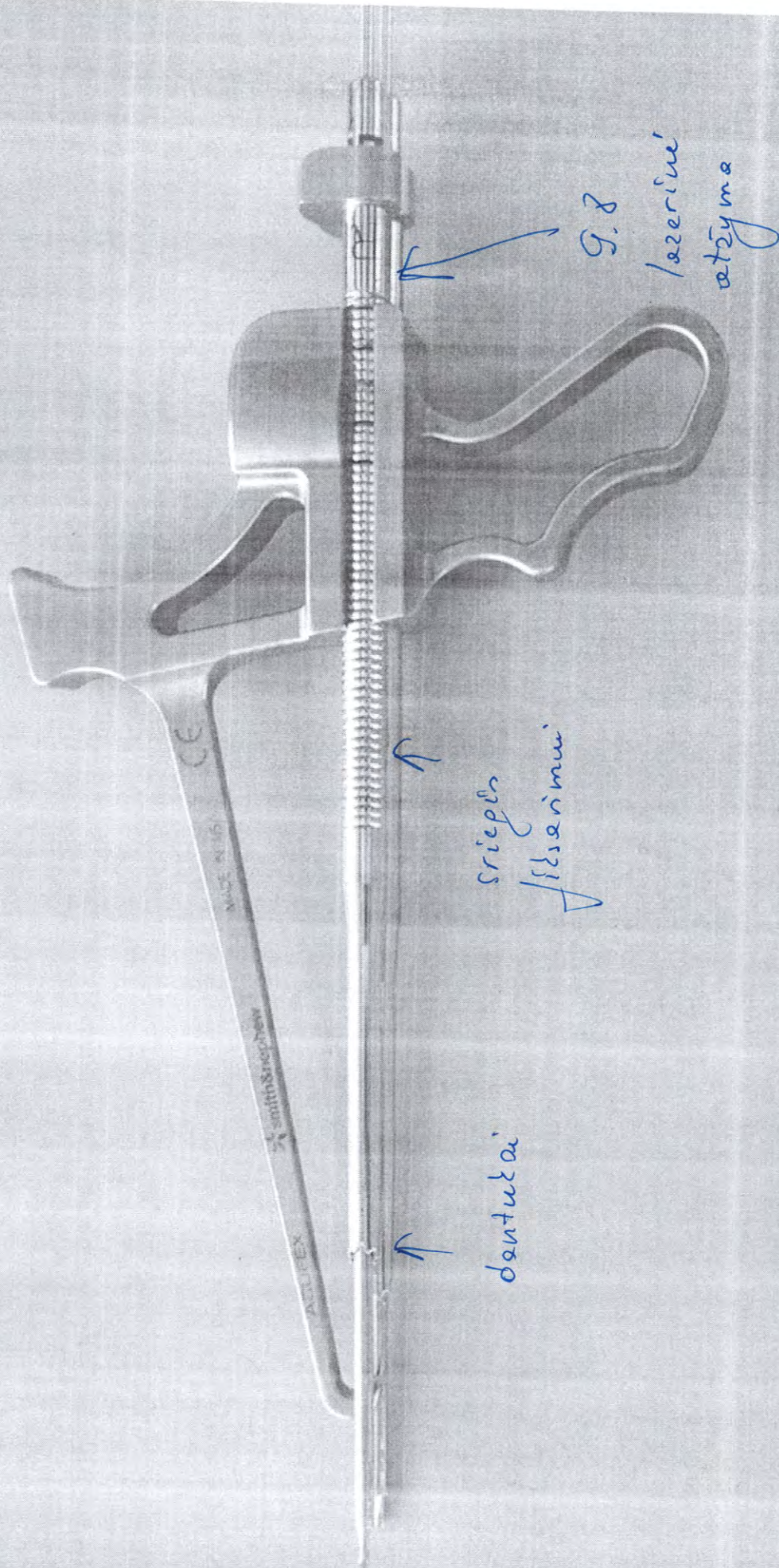
NOTE: When removing the guide, rotate it so that the hook is parallel to the glenoid surface.

An optional Half Pipe Cannula may be used to remove the hook end from the joint to help reduce damage on the articular surface.

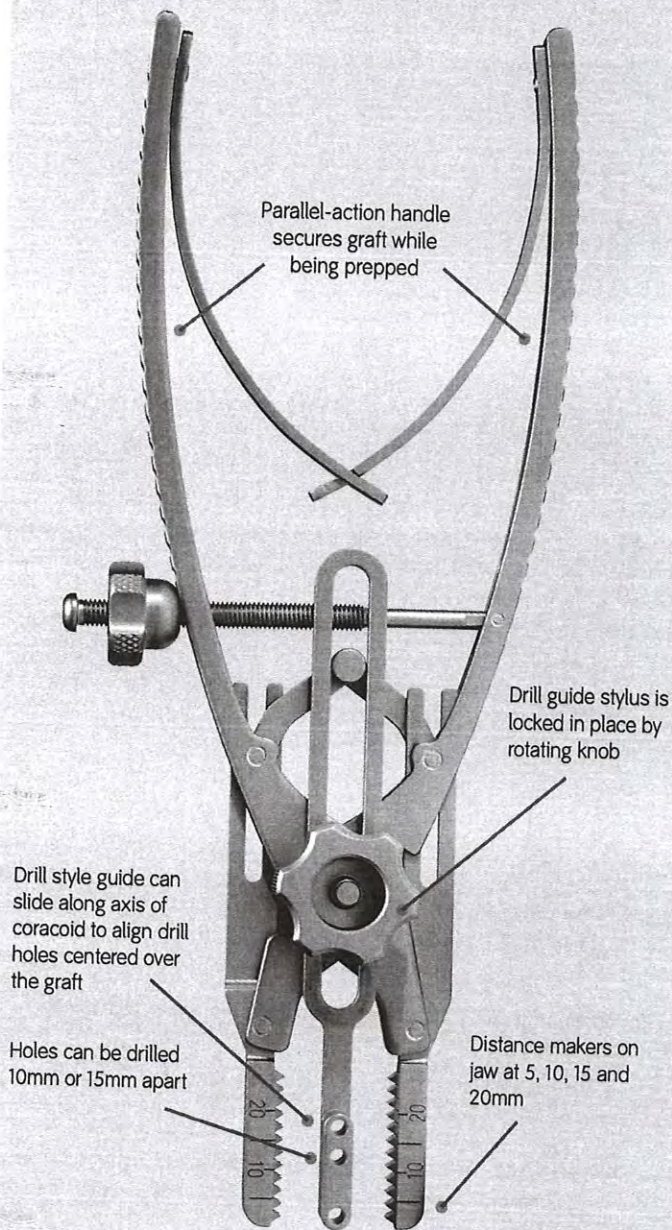
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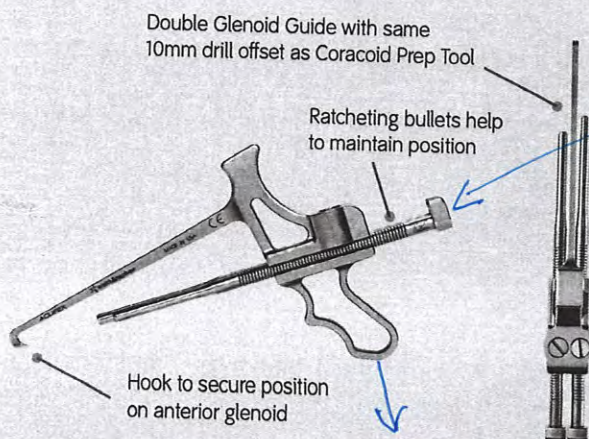
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Coracoid Prep Tool: Hold, prep and drill graft with one instrument



Posterior Glenoid Guide: One Step Closer to an Arthroscopic Approach



9.8 fiksuosamas mentės
sgraveris duobės šaltiklis
su specialiu fiksuojam
prie mentės sgraveris
duobės nutrupeja.

9.9. mentės sgraveris duobės nutrupeja.
su specialiu kaulu fiksuojam šaltikliu

Repair Option 1:

Mini-Open Latarjet

This system offers a streamlined set of innovative instruments designed to provide an accurate and efficient method of placing the coracoid bone graft on the anterior glenoid rim.

1 Graft prep

The Coracoid Prep Tool provides the ability to securely hold, fully prepare and accurately drill the bone graft with one instrument.



2 Offset measurement

To help ensure flush graft placement, the Offset Measurement Tool determines which Offset Drill Guide to use in Step 3. A measurement is taken from the center of the drilled hole to the coracoid edge that becomes aligned to the articular surface of the glenoid.



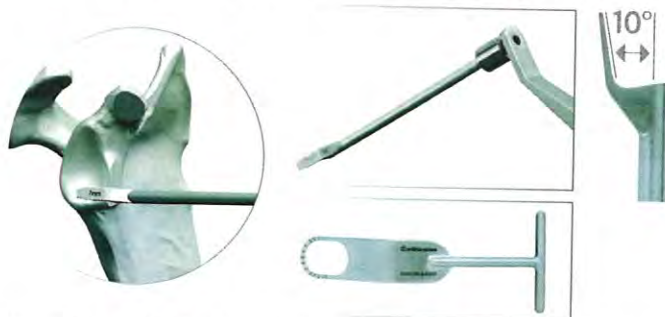
Planar face that attached to the anterior glenoid.

This edge will become flush with the glenoid face.



3 Anterior glenoid drilling

The 7mm Offset Drill Guide corresponding with the measurement taken in Step 2 is chosen and the spade is placed flush on the glenoid. There is a 10-degree divergent angle, which the design helps to minimize breaching of the cortical surface. A 2.7mm drill is inserted into the guide and drilled through the glenoid.



Use an Innomed® Fukuda retractor with embedded light source to pull back the humeral head to provide access and visualization inside the joint.

4 Coracoid graft placement

After using the depth gauge to determine screw length, insert the 4.0mm partially-threaded stainless steel screw partway through the coracoid and facilitate control of the graft with the 2.5mm Hex Screwdriver. Available in cannulate and solid, the screw head features an undercut that may help spread the load further away from the drill hole.



The screw's undercut area may help to spread the load further from the graft's drill hole.



5 Graft alignment

Using the Coracoid Grasper, pivot the graft around the inferior screw to obtain proper alignment.



The Anterior Glenoid Retractor exposes the glenoid neck to provide access and visualization.

6 Final fixation

Once proper alignment is confirmed, drill the superior hole in the glenoid and affix the graft to the anterior glenoid, finger-tightening the screw with slight compression.



A 1.3mm Guide Pin may be placed in the inferior screw cannulation to aid in superior drill trajectory.

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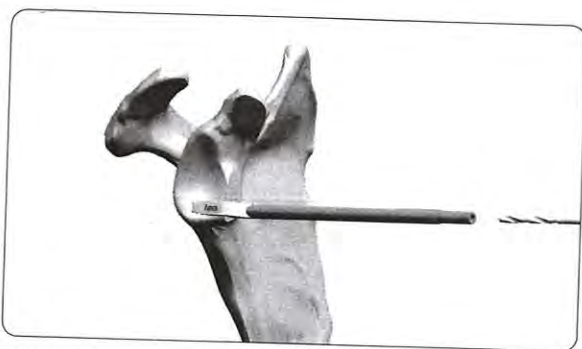


Figure 13

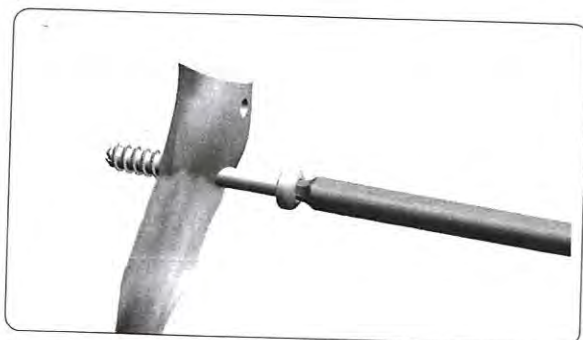


Figure 14

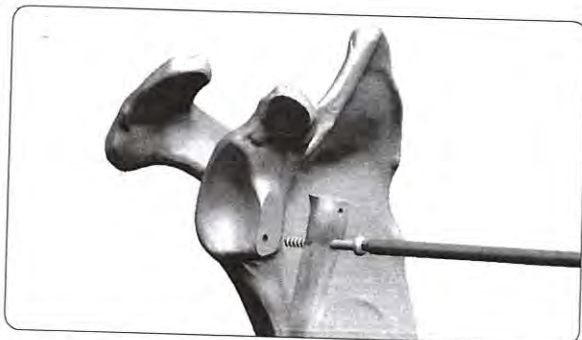


Figure 15



Figure 16

Glenoid drilling – inferior hole

A 2.7mm drill can be used with the corresponding offset drill guide (**Figure 13**) selected from the measurement taken off the inferior hole in the coracoid as shown in **Figure 10**. This will ensure that the inferior aspect of the graft is placed flush or slightly medial to the articular surface of the glenoid. The spade of the drill guide is placed flush on the glenoid to orient the drill hole at a 10° divergent angle from the glenoid articular surface. The inferior hole is generally placed at the approximate 4:30 clock face position on the glenoid face (right shoulder).

Graft placement

Using a depth gauge, screw length is determined by measuring the 1) thickness of the coracoid via the prepared drill hole, and adding the depth of the prepared hole in the glenoid. The selected flat head screw can be attached to the tapered hex driver for security. The screw is inserted part way through the coracoid to facilitate control of the graft with the driver (**Figure 14**). The graft can be fixed to the anterior glenoid as shown in **Figure 15** and tightened with slight compression. A coracoid grasper can help facilitate control of the graft as well.

Graft alignment

Rotate the graft around the inferior screw to adjust for flush placement of the superior portion relative to the native glenoid articular surface as shown in **Figure 16**. Palpate the graft and glenoid surface for confirmation of proper alignment. The inferior screw may be tightened additionally to prevent movement when drilling the superior glenoid hole. Alternatively a k-wire can provide provisional fixation.

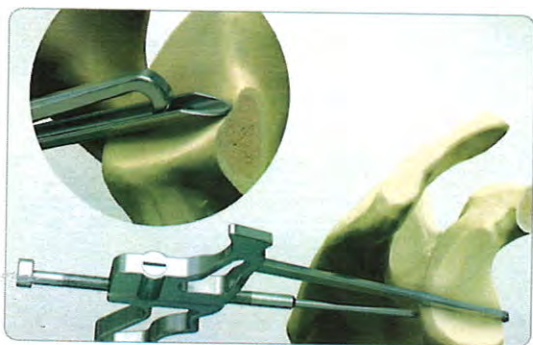


Figure 2d



Figure 2e

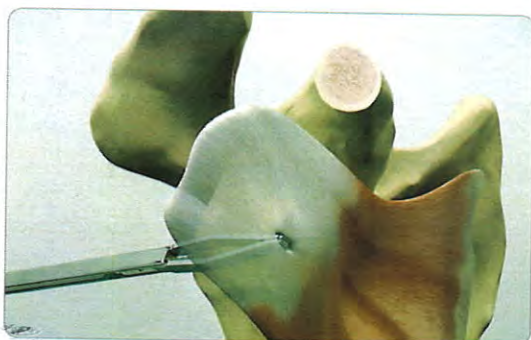


Figure 2f

Glenoid Drill Guide placement

Using a switching stick, move the scope to the O portal to view the glenoid surface and anterior glenoid neck.

Place a switching stick in the P portal and slide the Short Half Cannula down it. Remove the stick and slide the Glenoid Drill Guide down the cannula and then remove the cannula. Place the Glenoid Drill Guide flush to the glenoid at the 5 o'clock position (in a right shoulder), with the tip of the hook over the glenoid rim. Make a second posterior skin incision and push the 'bullet' into the joint until it reaches the posterior neck of the glenoid (**Figure 2d**).

Glenoid drilling

Advance a second 2.8mm drill and sleeve from posterior to anterior through the Glenoid Drill Guide until both are visible from the anterior glenoid.

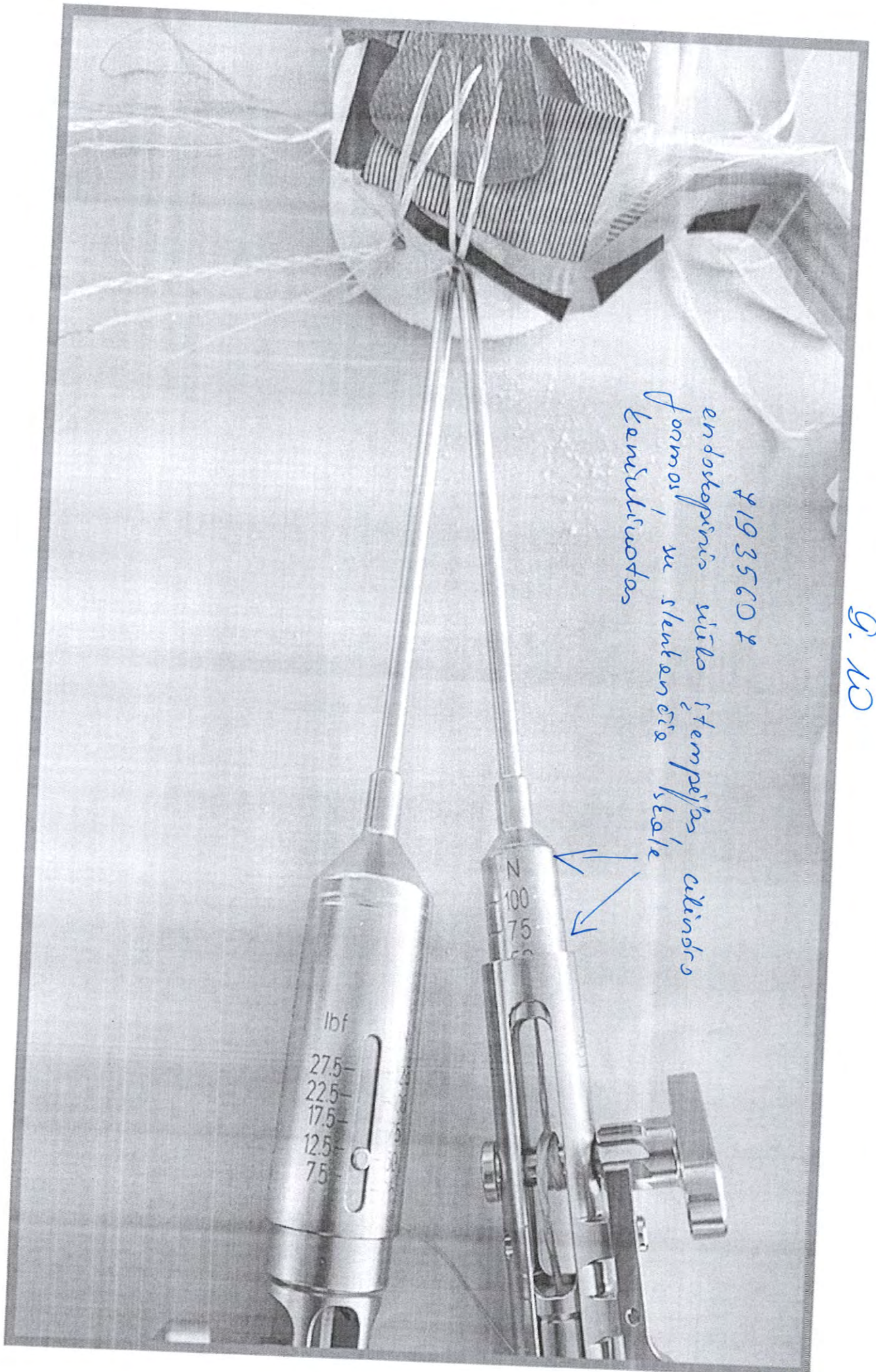
Remove the drill and 'bullet', leaving the sleeve in place. Reintroduce the drill into the sleeve for additional stability and reduced saline leakage (**Figure 2e**).

Posterior spreader placement

Slide the half cannula under the Glenoid Drill Guide, remove the guide, and replace with the Subscapularis Spreader with Sliding Block (ensuring the spreader is closed at this stage). Remove the cannula. In a lateral direction, gently push the Subscapularis Spreader through the subscapularis muscle, below the labrum and at the same level as the drill and sleeve (5 o'clock). Lock the Subscapularis Spreader against the skin of the posterior aspect of the shoulder (**Figure 2f**).

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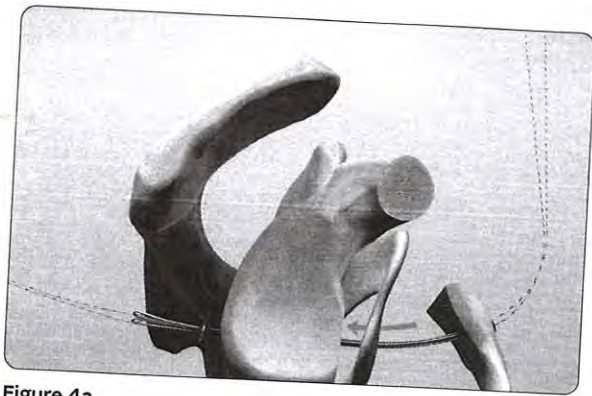


Figure 4a

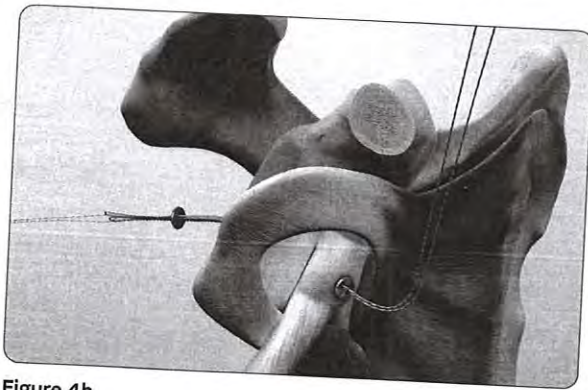


Figure 4b

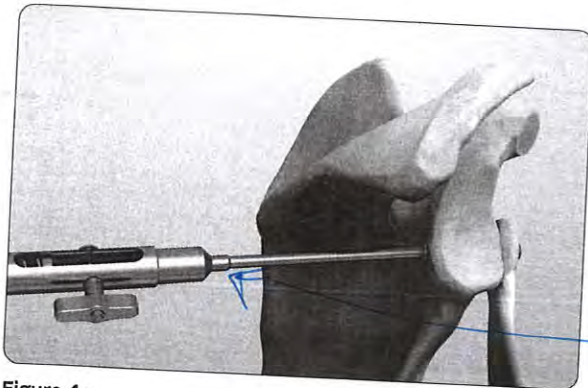


Figure 4c

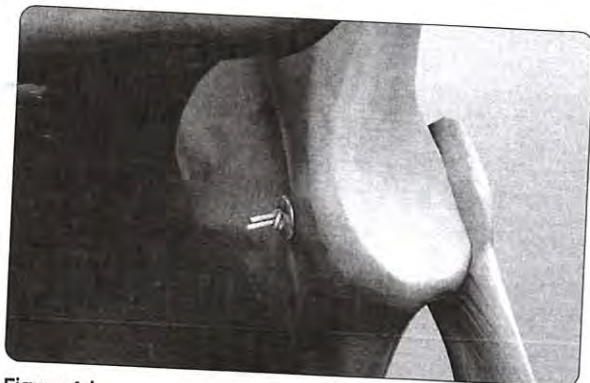


Figure 4d

Coracoid transfer and fixation

Suture shuttling

Remove the glenoid drill from the sleeve and introduce a Suture Retriever. Introduce a suture grasper through the N portal to retrieve the PDS suture (attached to the white suture) and direct it to the mouth of the Suture Retriever. Capture the PDS suture with the retriever and pull posteriorly through the glenoid. Before transferring the white suture through the glenoid, remove the sleeve from the glenoid using the Pin Puller (**Figure 4a**).

Coracoid transfer

Pull on the blue/white cobraid suture from the P portal to transfer the coracoid bone graft. There must be no resistance when pulling. Introduce the Bone Grasper through the S portal, and use it to adjust the rotation of the graft in order to be flush with the glenoid surface. (Check for a smooth pulley by alternating pulls on the two suture loops) (**Figure 4b**).

Posterior button placement & knot tightening

Using the Suture Retriever, pass the four white sutures through the posterior ENDOBUTTON®. Tie a Nice knot (sliding locking knot) making sure that the loop with the blue/white cobraid remnant is post. Advance the Suture Tensioner through the P portal and apply a tension of 50 Newtons. Reintroduce the scope through the P portal to control placement and rotation of the bone block ensuring no lateral overhang. The positioning and the rotation of the coracoid graft are controlled with the help of the Bone Grasper through the S portal if needed. Further compression of 50 Newtons (total 100 Newtons) on the bone graft against the anterior glenoid neck is obtained by using the Suture Tensioner. Remove the tensioner and lock the construct using three square knots (**Figure 4c to 4d**).

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exulimotas, su selenencia
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was, matiofemas Nintomas.*

Surgical Technique

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endoskopik suture technique, cilindroform, 6mm knots

4c. Posterior button placement & knot tightening (Fig 4c to 4d)

Using the Suture Retriever, pass the four white sutures through the posterior ENDOBUTTON®. Tie a Nice knot (sliding locking knot) making sure that the loop with the blue/white cobraid remnant is the post. Advance the Suture Tensioner through the (P) portal and apply a tension of 50 Newtons. Reintroduce the scope through the (P) portal to control placement and rotation of the bone block, ensuring no lateral overhang. The positioning and the rotation of the coracoid graft are controlled with the help of the Bone Grasper through the (S) portal if needed. Further compression of 50 Newtons (total 100 Newtons) on the bone graft against the anterior glenoid neck is obtained by using the Suture Tensioner. Remove the tensioner and lock the construct using 3 square knots.

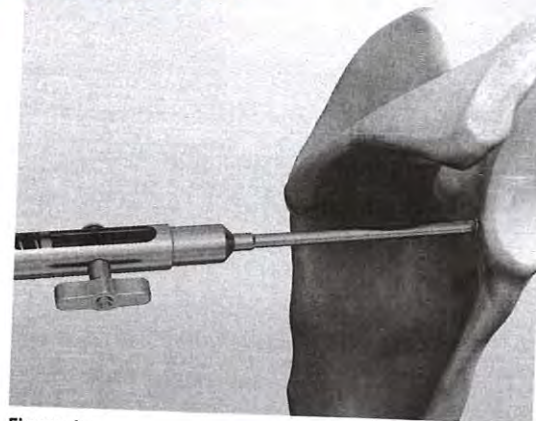


Figure 4c

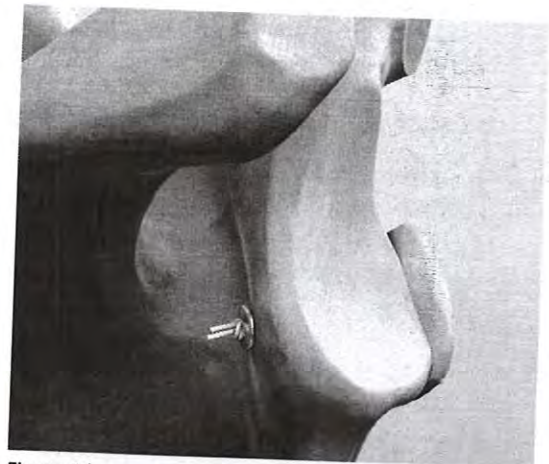


Figure 4d

Step 5: Bankart repair (Fig 5)

Using the previously placed SUTUREFIX ULTRA S anchor, reattach the capsule and labrum to the glenoid rim, leaving the bone graft in an extra-articular position.

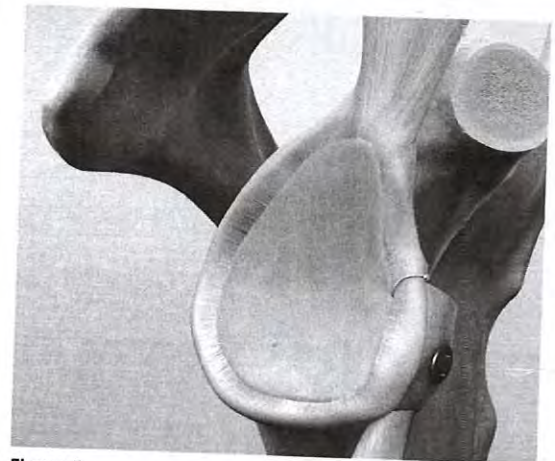


Figure 5



Suture Tensioner
Cat. No. EU000715



Bone Grasper
Cat. No. 75102285



Suture Retriever
Cat. No. 013593



Round ENDOBUTTON®
S2 3/4 Suture Loop
Cat. No. 71934993



SUTUREFIX® ULTRA
Cat. No. 72203853

61

Surgical Technique



Figure 4a

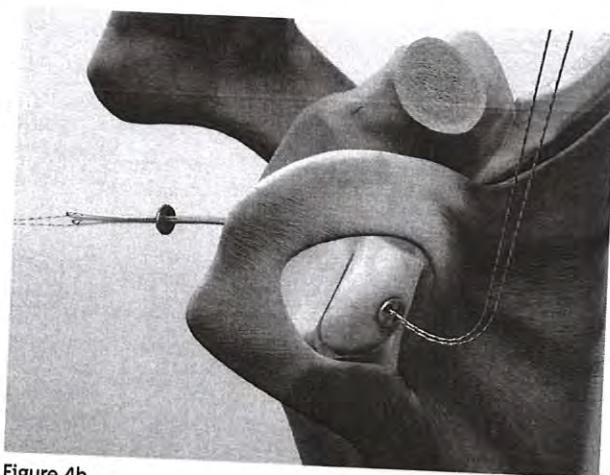


Figure 4b

Step 4: Coracoid transfer and fixation

4a. Suture shuttling (Fig 4a)

Remove the glenoid drill from the sleeve and introduce a Suture Retriever. Introduce a suture grasper through the (N) portal to retrieve the PDS suture (attached to the white suture) and direct it to the mouth of the Suture Retriever. Capture the PDS suture with the retriever and pull posteriorly through the glenoid. Before transferring the white suture through the glenoid, remove the sleeve from the glenoid using the Pin Puller.

4b. Coracoid transfer (Fig 4b)

Pull on the blue/white cobraid suture from the P portal to transfer the coracoid bone graft. There must be no resistance when pulling. Introduce the Bone Grasper through the (S) portal, and use it to adjust the rotation of the graft in order to be flush with the glenoid surface. (Check for a smooth pulley by alternating pulls on the two suture loops).

Miny Guedes, 15/11/2020

9.11



Suture Retriever



Bone Grasper



1-hole Round
ENDOBUTTON®

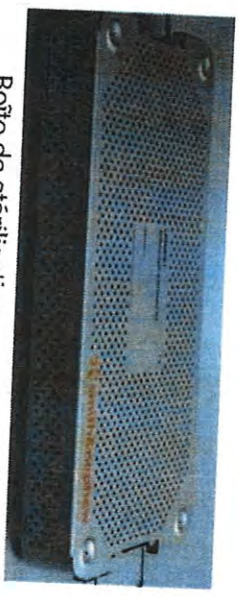


Pin Puller

KIT DE BRISTOW LATARJET - BUTEE SOUS ARTHRO

smith&nephew

Instrumentation:



Boîte de stérilisation



Ecarteur à nerf



Pince à coracoïde



G. M.

Ring Guide / Stracker



Guide broche 1.2mm + mandrin



Guide (court)
+ Mandrin pour guide



Guide (long)
+ Mandrin pour guide



X3 ELITE Switching Stick Ref 3801



Kopija tikra

9.9



Figure 13

Glenoid drilling – inferior hole

A 2.7mm drill can be used with the corresponding offset drill guide (**Figure 13**) selected from the measurement taken off the inferior hole in the coracoid as shown in **Figure 10**. This will ensure that the inferior aspect of the graft is placed flush or slightly medial to the articular surface of the glenoid. The spade of the drill guide is placed flush on the glenoid to orient the drill hole at a 10° divergent angle from the glenoid articular surface. The inferior drill hole is generally placed at the approximate 4:30 clock face position on the glenoid face (right shoulder).

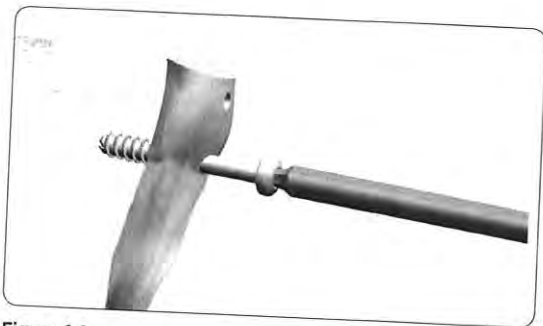


Figure 14

Graft placement

Using a depth gauge, screw length is determined by measuring the 1) thickness of the coracoid via the prepared drill hole, and 2) adding the depth of the prepared hole in the glenoid. The selected flat head screw can be attached to the tapered hex driver for security. The screw is inserted part way through the coracoid to facilitate control of the graft with the driver (**Figure 14**). The graft can be fixed to the anterior glenoid as shown in **Figure 15** and tightened with slight compression. A coracoid grasper can help facilitate control of the graft as well.



Figure 15

Graft alignment

Rotate the graft around the inferior screw to adjust for flush placement of the superior portion relative to the native glenoid articular surface as shown in **Figure 16**. Palpate the graft and glenoid surface for confirmation of proper alignment. The inferior screw may be tightened additionally to prevent movement while drilling the superior glenoid hole. Alternatively a k-wire can provide provisional fixation.



Figure 16

9.12. Gręzimo rinkinys: pakuoje 1 suvaržuotas 2 mm gręžtas ir 2 praudimo rentovent 2,8 mm.

IMPLANTS:

Ref :71934993

LPPR : 3138160



Ref 71934989

LPPR : 3197753



 smith&nephew

Consommables:

Suture Retrifer

013593



T-FIX RCG STERILE PAC (2mm Drill & (2) 2.8 mm Sleeves)

014771

Sexv drill short

EU000649



Lame de scie réciproquante EU000610



Râpe

EU000634



Broche 1.5mm (Biceptor)

72202189



Surgical Technique



(FIG C)

Tie the PDS Suture coming from the North portal to the blue/white cobraid suture attached to the white suture loop bundle of the ROUND ENDOBUTTON 2 HOLE with SZ3/4 SUTURE LOOP (Do not tie the PDS to the blue/white cobraid suture which is attached to the button)

Pull the PDS suture from the South portal to draw the white suture bundle and then the button into the hole in the coracoid. (FIG C)

Retrieve the PDS and white suture loop through the North Portal. Retrieve the blue SZ0 on the coracoid button through the South Portal.

Through the North-West portal use the MOTORIZED SAW to osteotomize the coracoid process (15 to 20 mm). Assist this with traction on the earlier placed PDS (around the conjoined tendon) which is exiting through the South portal. (FIG D)



(FIG D)

9. 13



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Surgical Technique



9. 13

(FIG E)



(FIG F)



(FIG G)



(FIG H)

Step 2 Glenoid Preparation and Drilling

Through the North-West portal, detach the anterior labrum using a COVATOR® 20 COBLATION® Device (Smith & Nephew).

Through the same portal, pass a PDS suture through the labrum at the 5 o'clock position and retrieve through the West portal, pulling the labrum away from the glenoid neck

Using the MOTORIZED RASP, abrade the glenoid neck between 3 and 6 o'clock. (FIG E)

Through the West portal drill an anchor hole at the 3 o'clock position and insert a SUTUREFIX ULTRA S suture anchor (Smith & Nephew) to be used later for the labrum repair.

Using switching sticks, move the scope to the North-West portal.

Put a switching stick in the Posterior portal and slide the SHORT HALF-PIPE METAL CANNULA down it.

Remove the switching stick and slide the GLENOID GUIDE down the cannula and then remove the cannula.

Place the GLENOID GUIDE flush to the glenoid surface at the 5 o'clock position (in a right shoulder), with the tip of the hook 5mm medial to the glenoid rim. (FIG F)

Using the second 2.8mm DRILL-TIPPED K-WIRE housed in the DRILL SLEEVE drill from posterior to anterior through the guide.

When 2/3 of the way through the glenoid, release the BULLET from the GLENOID GUIDE and advance the drill until the drill and sleeve are visible from the anterior glenoid.

Remove the K-WIRE and the BULLET, leaving the DRILL SLEEVE in place. Reintroduce the K-WIRE into the DRILL SLEEVE for additional stability (FIG G)

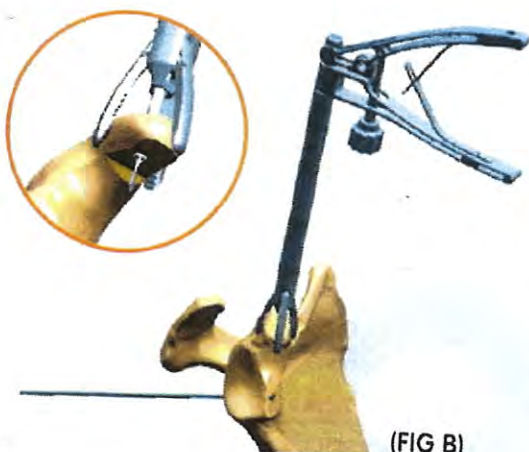
Before removing the GLENOID GUIDE, slide the HALF-PIPE METAL CANNULA under the guide

Remove the GLENOID GUIDE (Leaving the HALF-PIPE METAL CANNULA) and replace with the POSTERIOR SUBSCAPULARIS SPREADER (ensuring the spreader is closed at this stage) (FIG H)

Surgical Technique



(FIG A)



(FIG B)

Step 1 Coracoid preparation, drilling and osteotomy

Through the North-West portal use a COBLATION® device (AMBIENT® MEGAVAC® 90, Smith & Nephew) to open the rotator interval and identify the coracoid process.

Continue the dissection of the sub-coracoid space.

Release the coracohumeral ligament attachments, remove the subscapularis bursa (4.5mm ORBIT INCISOR PLUS, Smith & Nephew) and release the coracoacromial ligament from the lateral side of the coracoid.

Through the North portal release the pectoralis minor from its medial side. Take care not to completely devascularize the coracoid graft by limiting pectoralis release to no further than the tip of the coracoid process.

Through the North-West portal, introduce the MOTORISED RASP, and abrade the under surface of the coracoid process to create a flat surface

(FIG A)

Establish the South, East and West portals

Through the South portal use an ACCU-PASS® Suture Shuttle (Smith & Nephew) to pass and retrieve a PDS around the conjoined tendon. Clip out of the way with Kelly forceps.

Introduce the CORACOID DRILLING GUIDE through the North portal and grasp the coracoid perpendicular to its surface. To achieve this, the guide must be tilted 45° medially (FIG B)

Drill using the 2.8mm DRILL-TIPPED K-WIRE housed in the DRILL SLEEVE until both exit the inferior surface of the coracoid

Tip

Slightly bend the K-WIRE before placing in the sleeve to prevent it from falling out of the sleeve

Remove the K-WIRE and replace with a PDS suture. Pass the PDS through the coracoid (superior to inferior) and retrieve through the South portal.

Remove the DRILL SLEEVE using the PIN PULLER.
Remove the CORACOID GUIDE