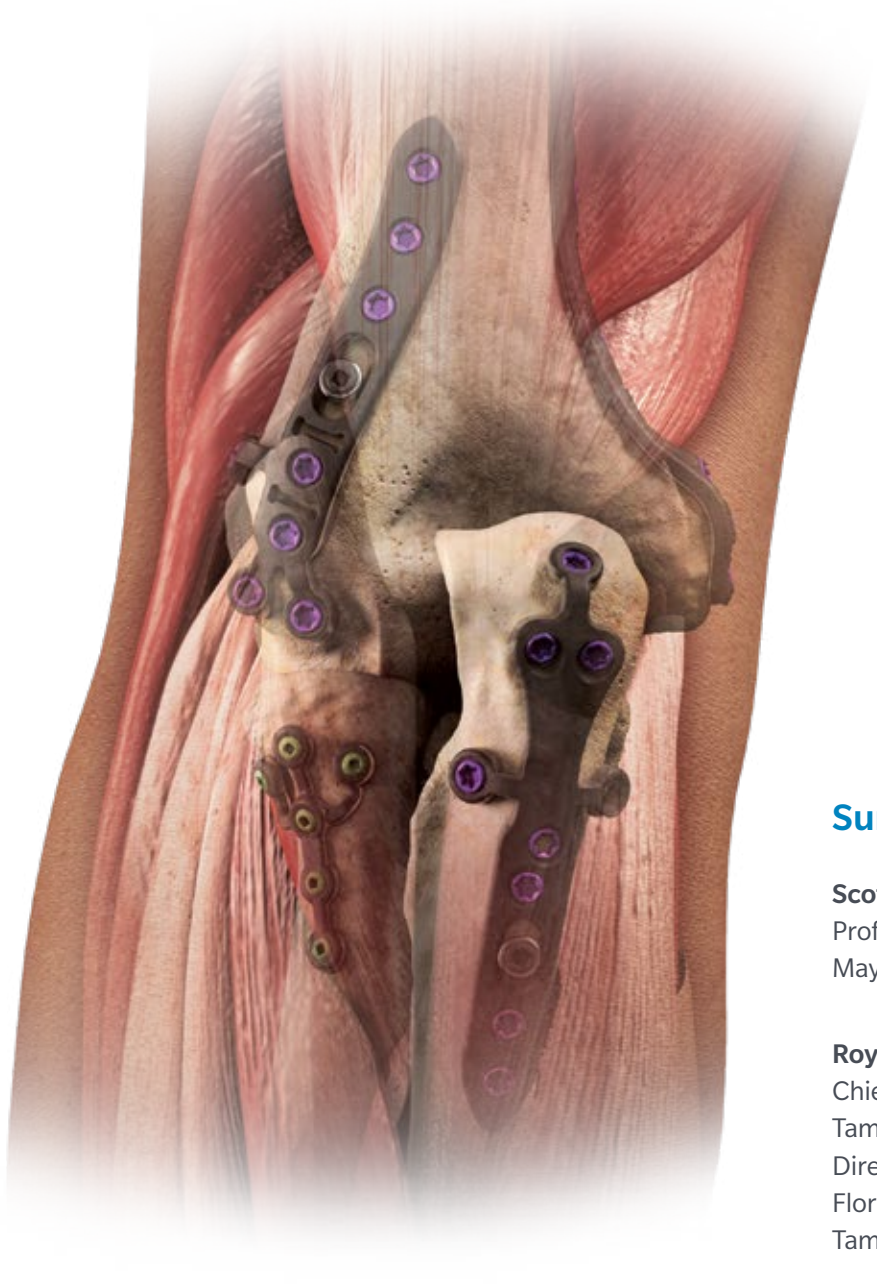
ZIMMER BIOMET
Your progress. Our promise.™

A.L.P.S.™ Elbow Fracture Plating System

Surgical Technique

Table of Contents



Surgeon Design Team

Scott Steinmann, M.D.
Professor of Orthopedic Surgery
Mayo Clinic Rochester, Minnesota

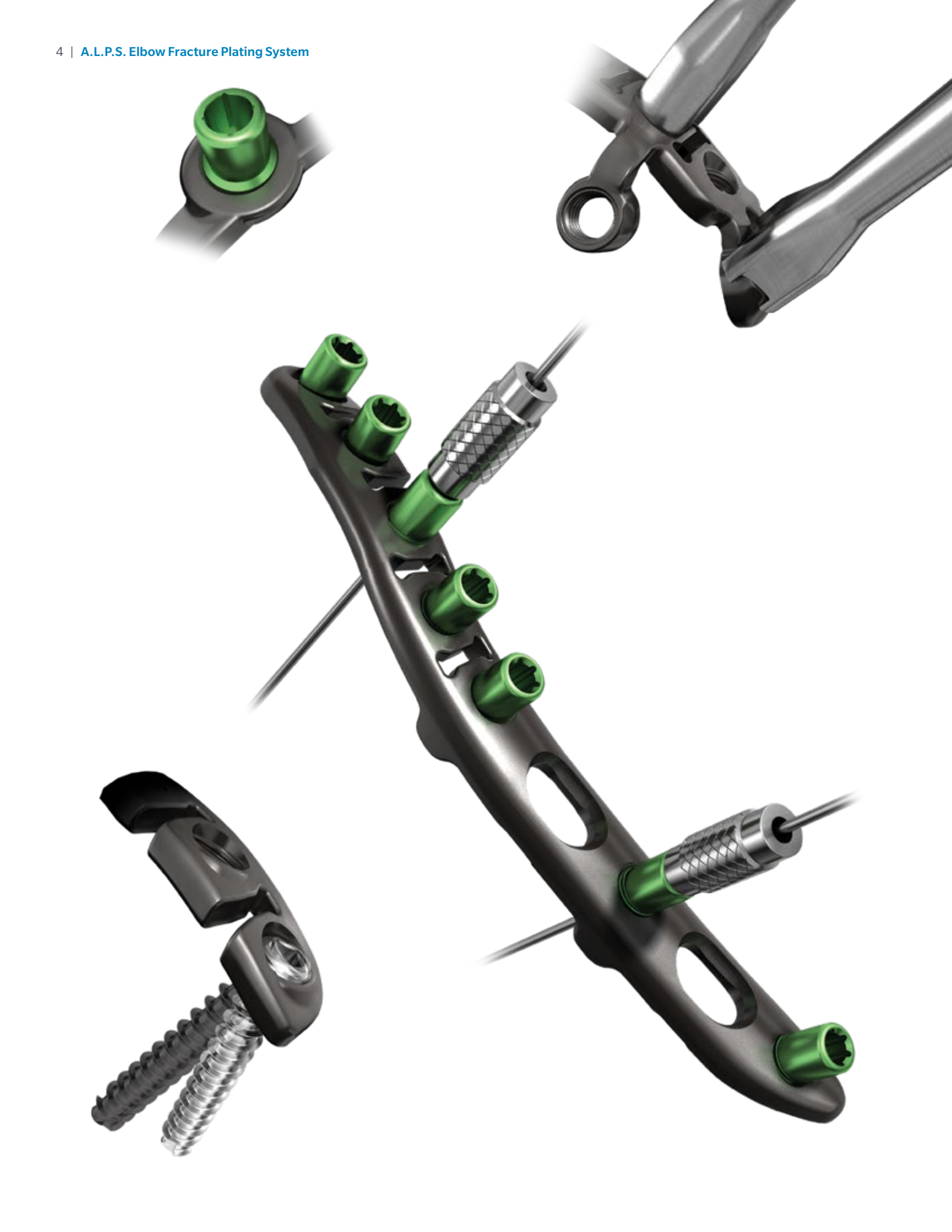
Roy Sanders, M.D.
Chief, Department of Orthopaedics,
Tampa General Hospital
Director, Orthopaedic Trauma Services,
Florida Orthopaedic Institute
Tampa, Florida

Michael Wich, M.D.
Deputy Head, Department of Trauma
and Orthopaedic Surgery
Unfallkrankenhaus Berlin
Berlin, Germany

Low Profile Anatomically Contoured Elbow Plates

- Low profile plate is designed to help minimize discomfort and soft tissue irritation.
- Engineered from TiMAX® for strength, biocompatibility and a smooth implant surface.
- Contoured plates mimic the anatomy of the distal humerus, olecranon, radial head and coronoid.
- Available in small and large sizes to best match anatomy.
- Bullet tip is designed to minimize soft tissue disruption during insertion.
- Low profile F.A.S.T. Guide® inserts for percutaneous application.
- Adapters available for fixed angle K-wire placement for provisional fixation.

The A.L.P.S. Elbow Plating System features an extensive set of anatomically contoured implants to address a wide array of fractures around the elbow. The anatomic design of each plate is designed to match the natural anatomy of the specified location. However, in-situ contouring is available for fine adjustment for patient modification.



F.A.S.T. Guide Insert Technology

- Pre-loaded and disposable F.A.S.T. Guide inserts facilitate accurate drilling and reduce intraoperative assembly, saving time in the OR.

F.A.S.T. Tabs® Technology

- Enables in-situ contouring for true plate-to-bone conformity.

Provisional Fixation

- K-wire placement through provisional fixation holes for immediate and secure plate positioning.

The A.L.P.S. Elbow Plating System comes pre-loaded with Fixed Angle Screw Targeting Guides – F.A.S.T. Guide inserts – that direct the trajectory of the drill through the screw hole in the plate. Additionally, F.A.S.T. Tabs technology allows for in-situ contouring for anatomy specific modification, while provisional fixation holes allow the plate to be securely positioned with K-wires.

Locking, Non-Locking and Multi-Directional Locking Screw Options

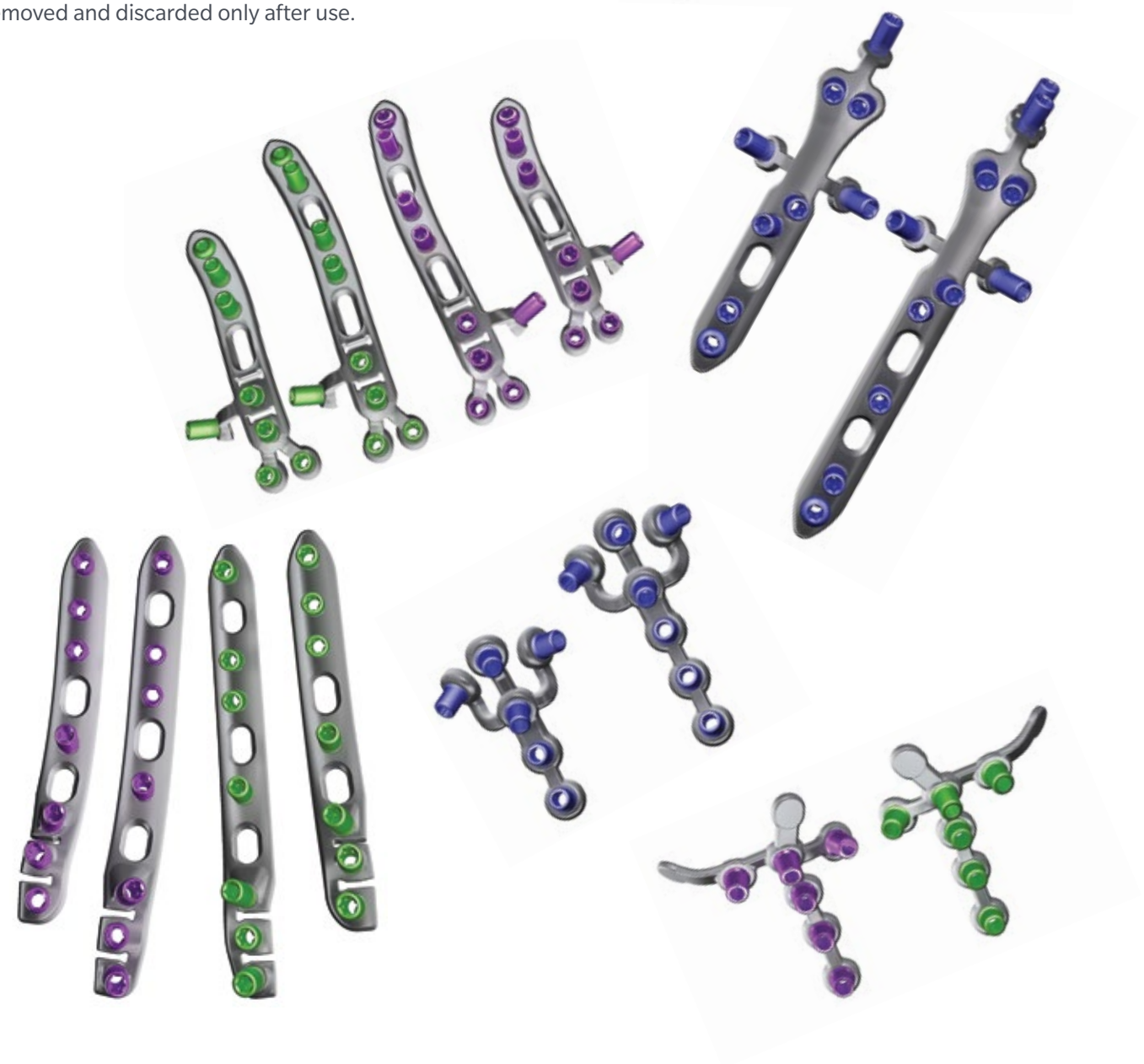
- Choose locking, non-locking, or multi-directional locking screws according to need.
- Tapered, threaded screws lock into position when tightened to establish a fixed angle construct for strong fixation or when bone quality is poor and optimal screw purchase is required.
- Multi-directional locking screws (MDS) allow for up to a 25 degree cone of angulation and lock into the plate by creating their own thread.
- Low profile non-locking screws provide the same profile as locking screws.
- Slotted holes allow for axial compression.

Particularly helpful in challenging fracture cases, the interlocking screw construct of the Elbow Plates provides both versatility and strength. The addition of the MDS screw technology allows the target and capture of fragments for optimum fixation. With the added feature of the low profile non-locking screw, whichever screw option is chosen allows the plate profile to be maintained for minimal soft tissue disruption.

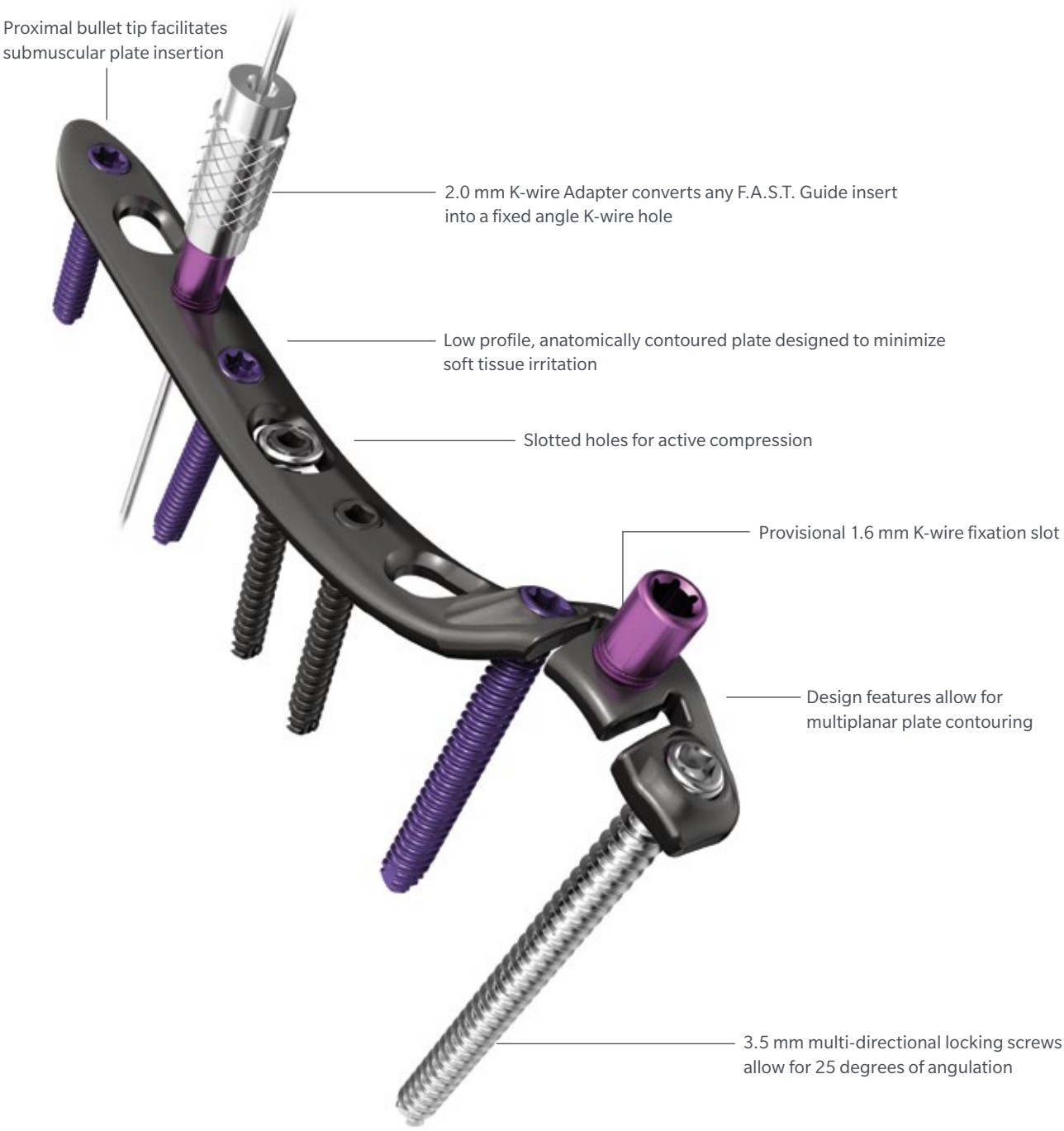
Introduction

The A.L.P.S. Elbow Plating System is a comprehensive system designed to address fractures around the elbow. The system includes anatomically contoured plates including Medial, Lateral, Posterior Lateral, Olecranon, Proximal Radial Head, and Coronoid designs. All plates have TiMAX surface treatment benefits of increased fatigue strength compared to 316L Electropolished Stainless Steel, Type I Anodized titanium, and machined titanium.[1] F.A.S.T. Guide inserts incorporating flexible plating technology have been inserted into all implants for fast drilling as well as in-situ contouring to allow for a true anatomic fit.

Note: The pre-assembled F.A.S.T. Guide inserts are NOT to be removed prior to sterilization. They should be removed and discarded only after use.



Medial Plate



Medial Plate Specifications

Length	88 mm	97 mm	127 mm	166 mm
Width	10.9 mm	10.9 mm	10.9 mm	10.9 mm
Thickness	2.5 mm	2.5 mm	2.5 mm	2.5 mm

Elbow Trials: The 3.5 mm Elbow trials will use the 2.7 mm locking drill guide 2142-07-027 as the trial holder.

Lateral Plate

Lateral Plate Specifications

Length	64 mm	85 mm	103 mm	142 mm
Width	9.7 mm	10.7 mm	10.7 mm	10.7 mm
Thickness	2.4 mm	2.4 mm	2.5 mm	2.5 mm

Elbow Trials: The 3.5 mm Elbow trials will use the 2.7 mm locking drill guide 2142-07-027 as the trial holder.

Posterior Lateral Plate

Posterior Lateral Plate Specifications

Length	74 mm	94 mm	148 mm
Width	10.7 mm	10.7 mm	10.7 mm
Thickness	3.5 mm	3.5 mm	3.5 mm

Elbow Trials: The 3.5 mm Elbow trials will use the 2.7 mm locking drill guide 2142-07-027 as the trial holder.

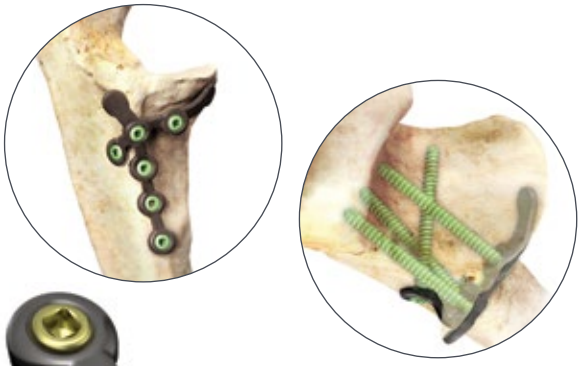
Olecranon Plate

Olecranon Plate Specifications

Overall Length	79 mm	104 mm	154 mm	194 mm
Shaft Width	10.7 mm	10.7 mm	10.7 mm	10.7 mm
Thickness	2.5 mm	2.5 mm	2.5 mm	2.5 mm

Elbow Trials: The 3.5 mm Elbow trials will use the 2.7 mm locking drill guide 2142-07-027 as the trial holder.

Coronoid and Proximal Radial Plates



Threaded holes for 2.5 mm locking and non-locking screws

Paddle for buttressing the sublime tubercle

Paddle for buttressing the coronoid process

Suture point for fixation of capsule

Coronoid Plate Specifications	
Length	37.2 mm
Width	28 mm
Thickness	1.5 mm

Multiplanar trajectories

Dual radial curvatures designed for maximum fit

Proximal Radial Plate Specifications	Small	Large
Length	29 mm	36.5 mm
Width	17.5 mm	18 mm
Thickness	1.5 mm	1.5 mm

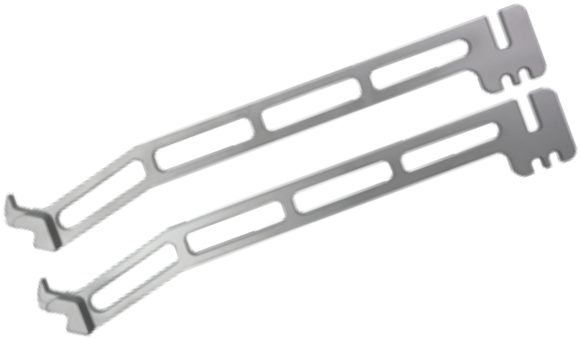
Elbow Trials: The 2.5 mm Elbow trials (Proximal Radius and Coronoid) will use the existing plate holder 2312-07-012.

A.L.P.S. Elbow Long Plates

A.L.P.S. Elbow Plates Module (2312-18-110)

F.A.S.T. Guide Inserts

A.L.P.S. Elbow System Tray (2312-18-100)



Long Plate Benders

Product Information

The longer A.L.P.S. Elbow Plates are housed in a separate tray module (2312-18-110). The long implant module replaces the 2.5 mm Caddy (2312-18-106) in the A.L.P.S. Elbow System Tray (2312-18-100).

F.A.S.T. Guide Inserts

Extended shaft sections of long plates do not have pre-assembled F.A.S.T. Guides. User can assemble F.A.S.T. Guide (2312-18-016) onto threaded holes at their discretion for use as drill guides. F.A.S.T. Guide will be provided on a wireform dispenser. Also, a threaded drill guide (2142-07-027) is provided in the tray as an alternate. **The F.A.S.T. Guide inserts are NOT to be used to bend the shaft of the longer plates. Refer to contouring section in Appendix A below.**

Contouring for Long Implants

The long plate benders (2312-18-001) are used to contour the shaft portion of the long implants. Benders consist of 3 bending features: the foot, the slot, and the planar bending feature (teeth).

A.L.P.S. Elbow Trials

The A.L.P.S. Elbow Trials are designed to aid in the selection of the correct size implant. The trials are manufactured from color anodized titanium alloy (Left = Lime; Right = Rose; Bilateral = Blue). The A.L.P.S. Elbow trials match the shape of the implant but are not designed to be bent. The trials can be used for selecting the elbow implants found below.

Trials are provided for the shorter length of a particular plate family. For example, the Distal Humeral Lateral Right Trial (2312-18-200) can be used for either the 7 hole plate or 9 hole plate.

To position the trials:

- For the Lateral, Posterior Lateral, and Medial Distal Humerus and Olecranon trials, use the 2.7 mm locking drill guide (2142-07-027)
- For the Coronoid and Proximal Radius trials, use the Plate holder (2312-07-012).

Note: The A.L.P.S. Elbow trials cannot be implanted.

Sterile Plate Catalog No.	Non-Sterile Plate Catalog No.	Trial Catalog No.	Trial Descriptions
Lateral Plates			
8513-18-200	1312-18-200	2312-18-200	Distal Humerus Lateral Right 7 Hole Trial
8513-18-201	1312-18-201	N/A	N/A
8513-18-202	1312-18-202	2312-18-202	Distal Humerus Lateral Left 7 Hole Trial
8513-18-203	1312-18-203	N/A	N/A

Posterior Lateral Plates			
8513-18-300	1312-18-300	2312-18-300	Distal Humerus Posterior Lateral Right 9 Hole Trial
8513-18-301	1312-18-301	N/A	N/A
8513-18-302	1312-18-302	2312-18-302	Distal Humerus Posterior Lateral Left 9 Hole Trial
8513-18-303	1312-18-303	N/A	N/A

Proximal Radius Plates			
8513-18-400	1312-18-400	2312-18-400	Proximal Radius Plate Trial
8513-18-401	1312-18-401	N/A	N/A

Coronoid Plates			
8513-18-500	1312-18-500	2312-18-500	Coronoid Plate Right Trial
8513-18-501	1312-18-501	2312-18-501	Coronoid Plate Left Trial

Olecranon Plates			
8513-18-600	1312-18-600	2312-18-600	Olecranon Plate 10 Hole Trial
8513-18-601	1312-18-601	N/A	N/A

Medial Plates			
8513-18-700	1312-18-700	2312-18-700	Distal Humerus Medial Right 9 Hole Trial
8513-18-701	1312-18-701	N/A	N/A
8513-18-702	1312-18-702	2312-18-702	Distal Humerus Medial Left 9 Hole Trial
8513-18-703	1312-18-703	N/A	N/A

Screw Specification

2.5 mm Locking Screw:

- Self tapping tip minimizes the need for pre-tapping and eases screw insertion
- 1.3 mm Square driver to maximize torque delivery
- Triple lead thread on screw head is designed to reduce possible cross threading
- Tapered threads are designed to reduce potential of screw backout
- Available in lengths of 14 – 40 mm
- Screw uses a Drill Bit F.A.S.T. 2.0 mm (FDB20)

2.5 mm Non-Locking Screw:

- Self tapping tip minimizes the need for pre-tapping and eases screw insertion
- 1.3 mm Square drive to maximize torque delivery
- Available in lengths of 14 – 40 mm
- Screw uses a Drill Bit F.A.S.T. 2.0 mm (FDB20)

3.5 mm Locking Cortical Screw:

- Large core diameter and shallow thread pitch for bending and shear strength
- Self tapping tip minimizes the need for pre-tapping and eases screw insertion
- Tapered screw head helps ensure alignment of the screw head into the plate hole
- Tapered threaded head is designed to minimize screw back-out and construct pullout
- T-15 drive
- Available in lengths of 10 – 70 mm
- Screw uses a 2.7 mm Drill Bit (2142-27-070)

3.5 mm Low Profile Non-Locking Screw:

- Low profile head design reduces prominence beyond the plate
- Self tapping tip minimizes the need for pre-tapping and eases screw insertion
- 2.2 mm Square drive to maximize torque delivery
- Available low profile washer converts screw head to traditional non-locking screw head size for use in active compression holes
- Screw uses a 2.5 mm Drill Bit (8290-29-070) and can be inserted in any of the threaded holes in the plate
- Available in lengths of 14 – 75 mm

Active Compression Conversion Washer:

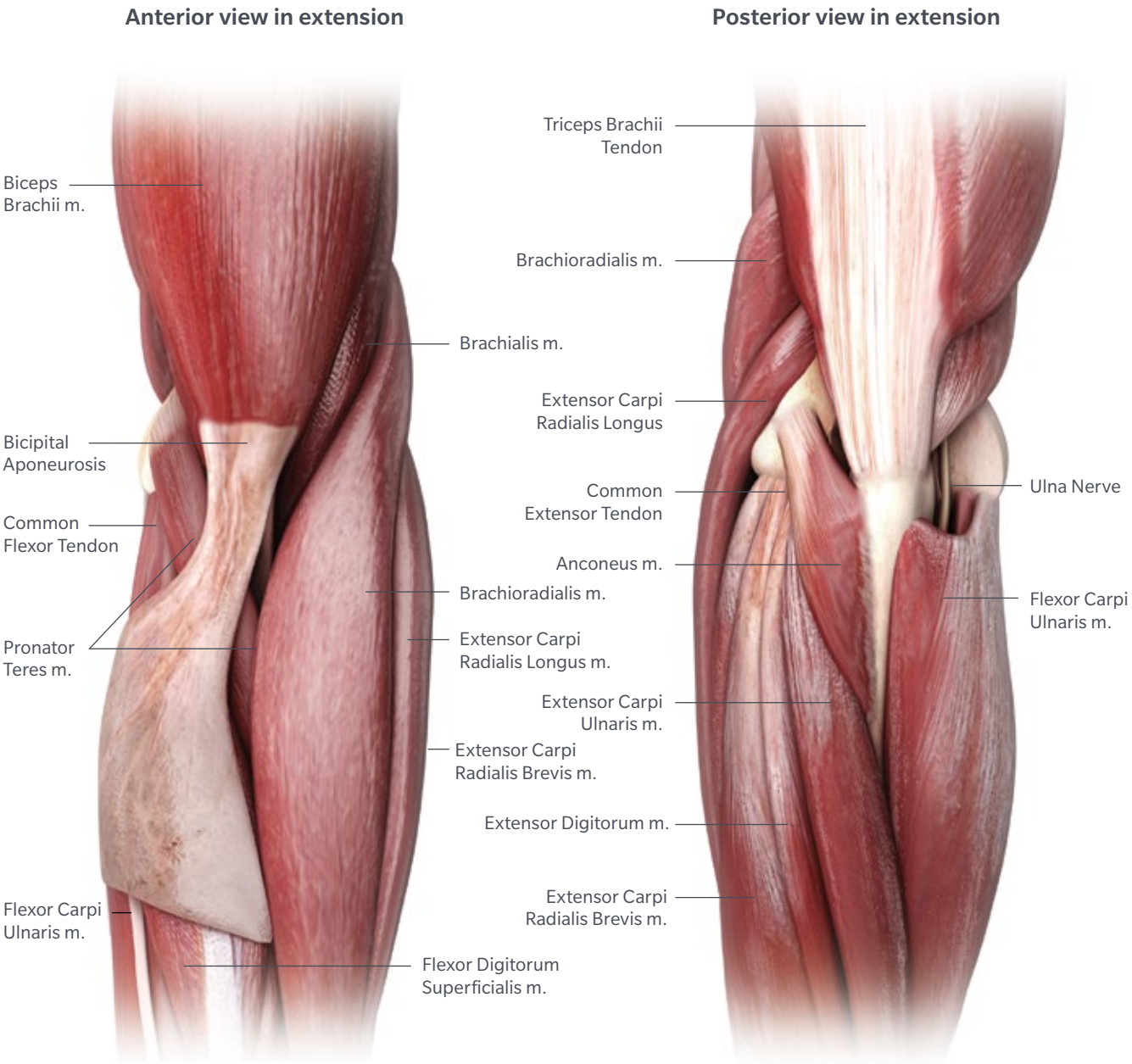
- Cobalt chrome washer designed to snap onto the head of low profile 3.5 mm non-locking screw
- Washer converts low profile screw head into a standard profile non locking screw
- Allows for active compression in the oblong slots

Note: The washer is for use ONLY with the 3.5 mm Low Profile Non-Locking Screw

3.5 mm Locking Multi-Directional Screw:

- Cobalt chrome screw with large core diameter
- Multi-Directional capability offers a 25 degree cone of angulation
- Creates own thread in plate to help provide strong and stable construct
- Self tapping tip minimizes the need for pre-tapping and eases screw insertion
- 2.2 mm square drive
- Available in lengths of 20 – 60 mm
- Screw uses a 2.7 mm Drill Bit (2142-27-070)

Anatomy – Soft Tissue of the Elbow



Anatomy – Bones of the Elbow

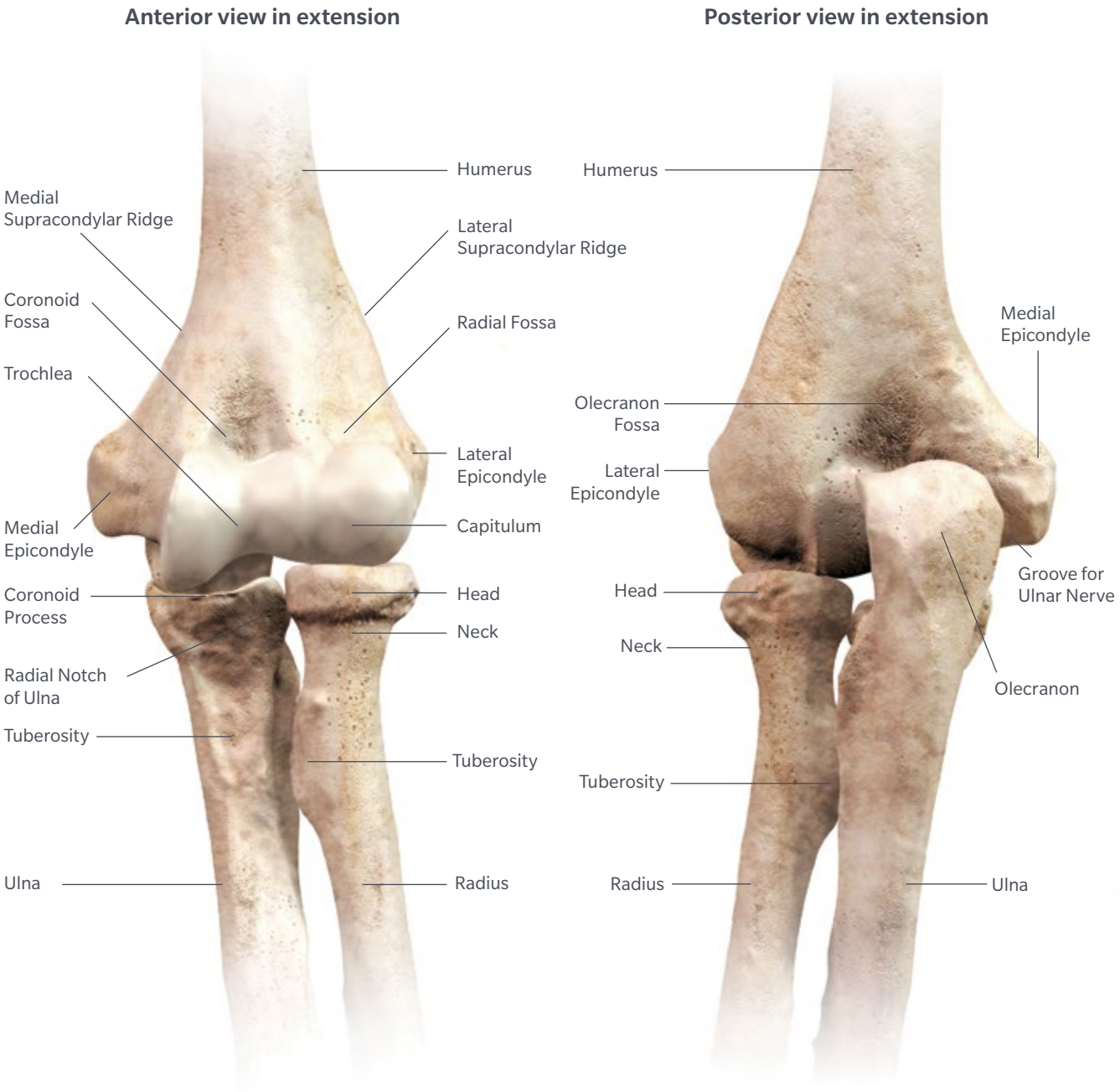


Figure 1
The supine position with the arm across the chest.

Figure 2
The prone position with the forearm extended laterally to the side of the operating table.

Patient Positioning

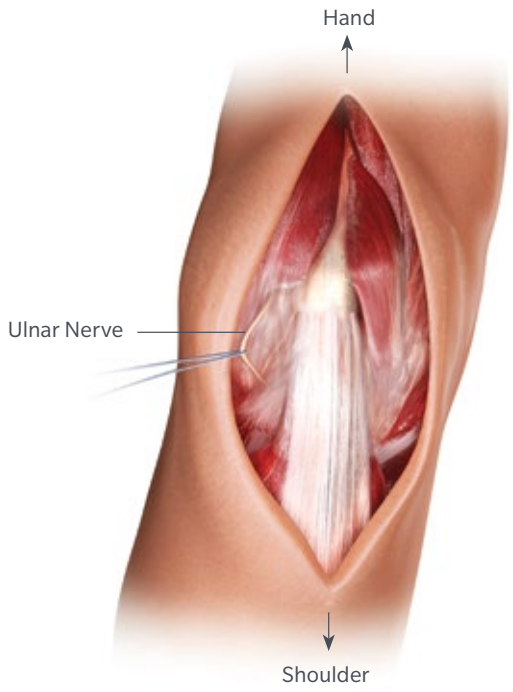
For treatment of distal humerus and/or olecranon fractures, the patient may be placed in either the supine, lateral or prone positions, depending on surgeon preference.

In the supine position, the arm is placed across the chest. The surgeon stands on the side of the patient closest to the fracture with the patient brought to the very edge of the table. Inclining the table 20 to 30 degrees away from the operating surgeon will help keep the arm positioned across the chest (Figure 1).

After sterile preparation and drape, the arm is placed across a small bolster which can help maintain the position and flexion of the proximal forearm. For optimum exposure, the arm should accommodate over 100 degrees of flexion. The surgeon stands facing the elbow and is ready to begin the procedure.

The prone position can also be used. An arm board is placed parallel to the table to extend the table laterally, and a bolster is placed on the arm board to adjust for height. The elbow and forearm are positioned over the bolster. The forearm may be wrapped to prevent swelling of the dependent hand.

This position requires more involvement of the anesthesia team, but for surgeons that are comfortable with this position it can provide good operative exposure and gravitational aid in reduction of the fracture fragments (Figure 2).



Step 1

Initial incision.

Step 2

Prepare for olecranon plate fixation prior to creating osteotomy.

Exposing the Distal Humerus through an Olecranon Osteotomy

Step 1

The incision starts approximately 10 cm proximal to the tip of the olecranon and approximately 10 cm distal to the tip of the olecranon. Full thickness skin flaps are elevated (Step 1). Incise the medial and lateral joint capsule to visually identify and mark the central aspect of the greater sigmoid notch. This area is typically devoid of cartilage.

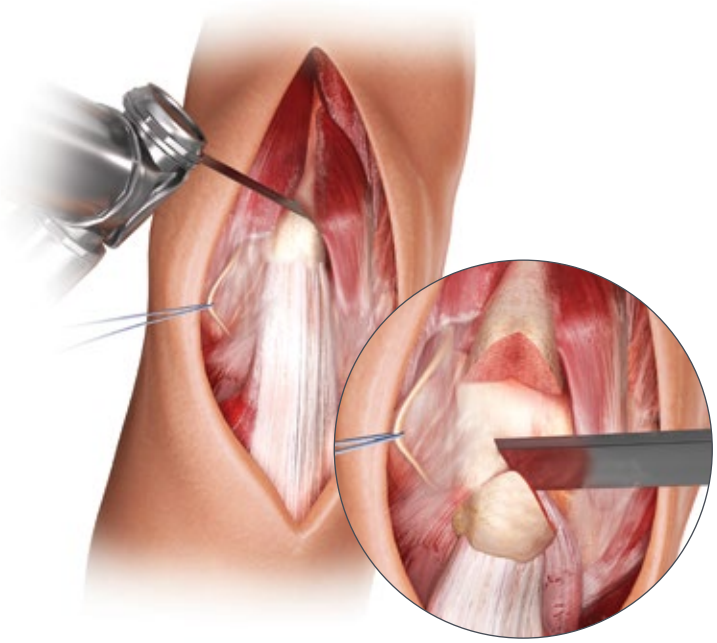
The ulnar nerve should be identified in the cubital tunnel, isolated and mobilized to protect it before the osteotomy is performed.

An osteotomy of the olecranon is performed to expose the distal humerus. This can be a chevron type or straight transverse osteotomy. In this technique, a chevron osteotomy is used to gain exposure to the distal humerus. The point of the chevron osteotomy should face the wrist to maximize bone on the olecranon fragment.

Step 2

The olecranon plate multiplanar side arms should be removed if the plate will be used specifically for olecranon osteotomy fixation. When removing the arms, they should be broken off by bending toward the underside of the plate so that any rough edges are left underneath the plate.

The plate is positioned on the intact olecranon. A K-wire is drilled (using a K-wire Adapter placed in the F.A.S.T. Guide inserts) through the home run screw hole of the plate. A distal K-wire through the plate can also be used to secure the plate to the bone. Then drill and insert the twin proximal olecranon 3.5 mm locking screws. These screws and the K-wire are then removed and the plate is removed. These screw and K-wire holes will serve as reference points for anatomic reduction and fixation of the olecranon osteotomy later in the procedure.



Step 3

The posterior two-thirds of the olecranon is cut with a saw. The osteotome is then used as a lever to break off the articular surface of the olecranon.

Step 4

At the end of the procedure, the olecranon osteotomy is repaired with a plate.

Exposing the Distal Humerus through an Olecranon Osteotomy (cont.)

Step 3

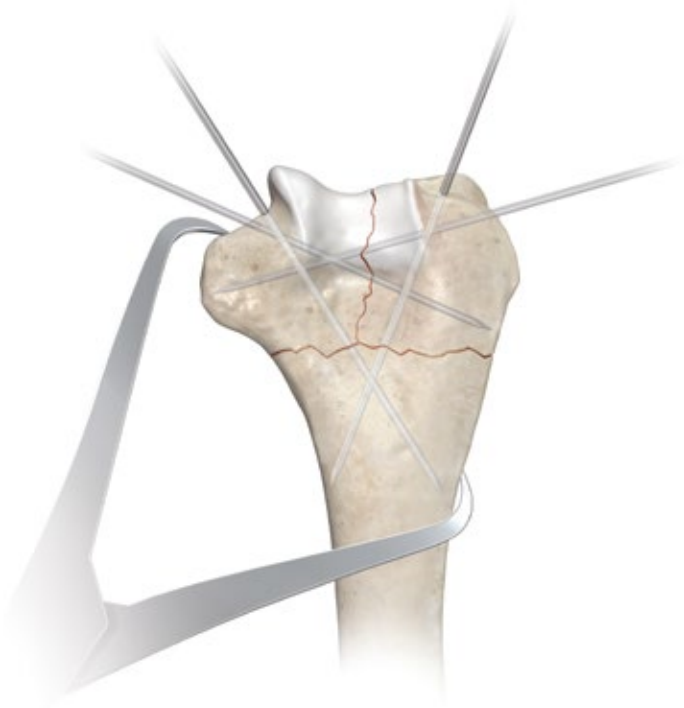
A standard chevron or transverse osteotomy is then performed. This should be done under full visualization of the olecranon articular surface to be sure the trajectory of the osteotomy enters the bare area. If the osteotomy is performed too distal, reduction may be more difficult. If the osteotomy is performed too proximal, exposure of the distal humerus may be poor.

The osteotomy is performed using a narrow sawblade. The osteotomy is completed with an osteotome. Use the osteotome as a lever to allow for interdigitation of the rough edges at the end of the procedure, allowing for optimum fragment reduction and fixation.

Step 4

At the end of the procedure, when the olecranon osteotomy is ready to be reduced, placing the twin 3.5 mm Locking Screws in the proximal fragment first will allow the plate to be used as a handle to aid in reduction. Once satisfactory reduction is obtained, follow the steps described in the Olecranon Fracture Fixation section (Pages 39-40) to complete fixation of the olecranon osteotomy.

Step 1
Fragment reconstruction.



Step 2
K-wire placement.

Distal Humerus Fracture Reduction

Step 1

The first step to reduction is to identify the major fracture fragments and develop a plan for reassembly of the fracture. Typically, the best approach is to reassemble from distal to proximal reducing the articular surface first.

When placing K-wires or isolated lag screws for provisional fixation, care should be taken to place them in the area of the bone that will not interfere with plates or screws. If a segment of the distal humerus is missing or comminuted, a bone graft may be positioned to maintain the proper width of the distal humerus.

Note: The most important fragments to assemble accurately are the anterior trochlea and the capitellum. The anterior and medial aspect of the distal humerus is most important for stability whereas fracture fragments of the posterior trochlea and posterior aspect of the capitellum can be sacrificed if significant comminution has taken place (Step 1).

Step 2

Once the distal segment of the humerus containing the articular surface has been reconstructed, this fracture construct can be connected to the humeral shaft using K-wires. Often two K-wires may be needed to cross the fracture site to gain stability and preliminary reduction of the fracture (Step 2).

Figure 1
Medial and Lateral plates.

Figure 2
Medial and Posterior Lateral plates.

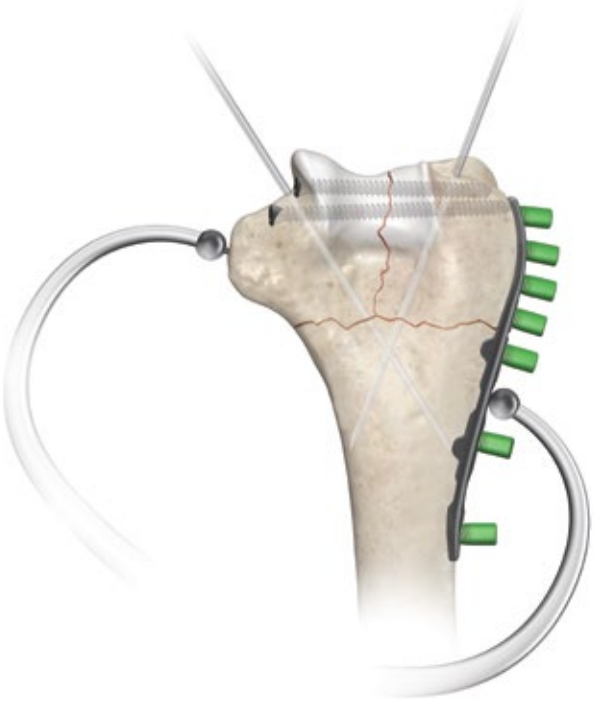
Figure 3

Humeral Fracture Plate Selection and Screw Placement

Once reduction and/or ORIF of the articular surface with isolated lag screws is accomplished, and satisfactory reduction of the shaft component of the fracture is achieved, plates can then be positioned on either the medial and lateral columns or on the posterior lateral aspect of the humerus (Figures 1 and 2).

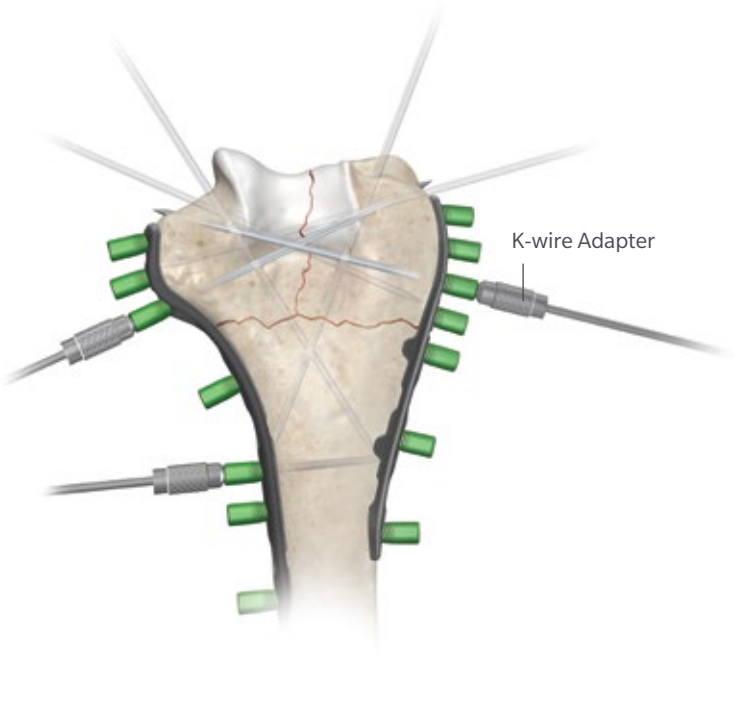
Note: When applying the Medial and Lateral plates, there is an increased chance of hitting screws with the drill bit when drilling towards the side with screws already inserted.

Multi-directional screws are available to assist in avoiding other screws that are already placed (Figure 3).



Step 1

The first plate is held in place with the Large Reduction Clamp. Note: Isolated lag screws may be used to reduce the articular surface.



Step 2

Alternatively, a K-wire is inserted through the distal F.A.S.T. Guide inserts.

Humeral Fracture Plate Fixation

Determine, and place first, the plate which will gain best initial stability. The placement technique is the same for Medial, Lateral and Posterior Lateral plates.

The less involved fragment can often be reduced better anatomically than the more comminuted side. This allows the more comminuted side to be built off of the more stable side to limit the possibility of non-anatomic angulation.

Step 1

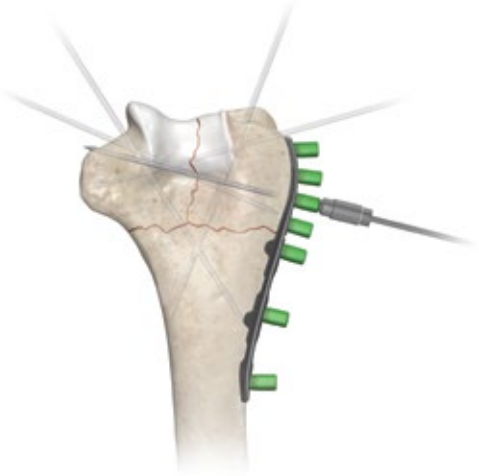
The first plate is placed onto the condyle manually and then one of the Large Reduction Clamps (1920) and 13577) may be used to hold this in position (Step 1). Often it is possible to place both column plates in a parallel fashion and use the large fracture Reduction Clamp to secure both plates at once to the distal humerus.

Step 2

Alternatively, the plates may be secured to the bone by using K-wire Adapters (2312-18-007) and inserting fixed angle 2.0 mm K-wires (14179-6) through the F.A.S.T. Guide inserts in the proximal and distal segments of the plates (Step 2).

Step 3

During placement it is possible to bend the plate slightly for optimal fit.



Step 4a

Apply plate to the bone and insert a K-wire through the distal 3rd position to verify its position.

Step 4b

Posterior Lateral Plate

Humeral Fracture Plate Fixation (cont.)

Step 3

During placement it is possible to contour the plate for optimal fit by using the Plate Benders (2312-18-003 and 2312-18-004). The plate can be further contoured if needed in-situ (Step 3).

Note: For further information on plate contouring refer to Appendix A on pages 41-42 and 44-45 for long plates.

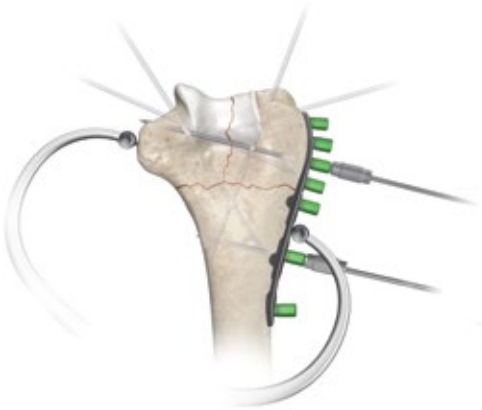
Step 4a

Apply the plate to the bone and insert a K-wire through the distal 3rd position and verify that it exits on the opposite condyle (Step 4).

Step 4b – Posterior Lateral Plate

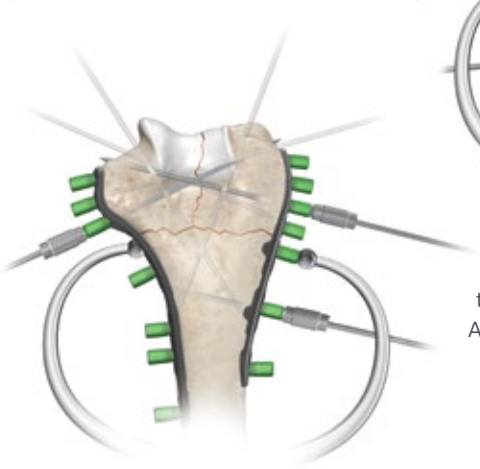
The plate is designed to be placed in the area of the posterior lateral epicondyle. Implantation of the plate should not impinge on the articulating surface. Select the most appropriate size to fit the individual.

Once the fracture has been reduced using the surgeon's preferred method, the posterior lateral plate can be secured to the bone by using K-wire Adapters (2312-18-007) and inserting fixed angle 2.0 mm K-wires (14179-6) through the F.A.S.T. Guide inserts in a hole distal and proximal to the fracture. This will stabilize the plate to the bone (Step 4b).



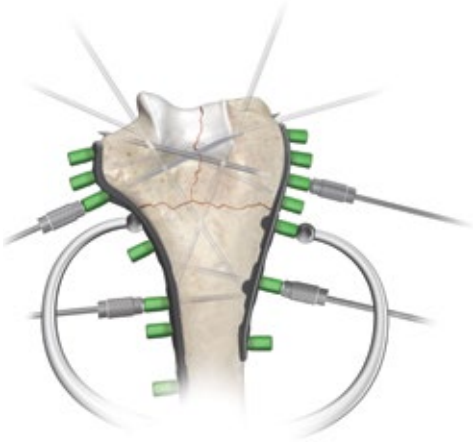
Step 5

Use the Large Reduction Clamp to compress the plate to the bone. A 2.0 mm K-wire is inserted through a K-wire Adapter in the most proximal hole in the plate.



Step 6

Apply the medial plate to the bone and insert a K-wire through the distal 3rd position to verify its position.



Step 7

Use the Large Reduction Clamp to compress the plate to the bone. A 2.0 mm K-wire is inserted through a K-wire Adapter in the most proximal hole in the plate.

Humeral Fracture Plate Fixation (cont.)

Step 5

Use the Large Reduction Clamp to compress the plate to the bone.

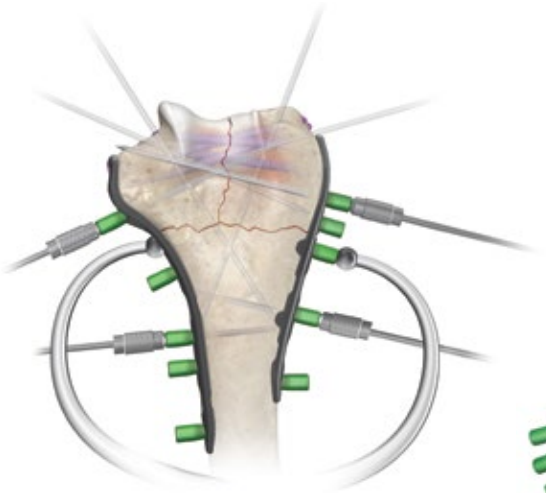
A 2.0 mm K-wire is inserted through a K-wire Adapter in the most proximal hole in the plate. This will stabilize the plate to the bone. Once inserted, the distal aspect of the plate can be contoured in-situ for optimal fit (Step 5).

Step 6

The medial plate is now positioned on the bone (Step 6).

Step 7

Use the Large Reduction Clamp to compress the medial plate to the bone, and repeat Step 5 (Step 7).



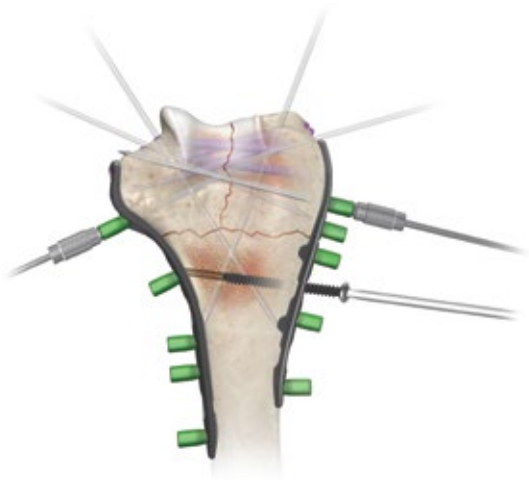
Step 8a

Insert the distal screws to secure the distal fragment.

The screw insertion should alternate from one side to the other side.

Step 8b

Posterior Lateral Plate



Step 9a

If axial compression of the fracture is needed through the plate, the proximal K-wire is removed and a low profile Non-Locking screw with a washer is inserted in the active compression slot.

Humeral Fracture Plate Fixation (cont.)

Step 8a

Insert the distal screws to secure the distal fragment.

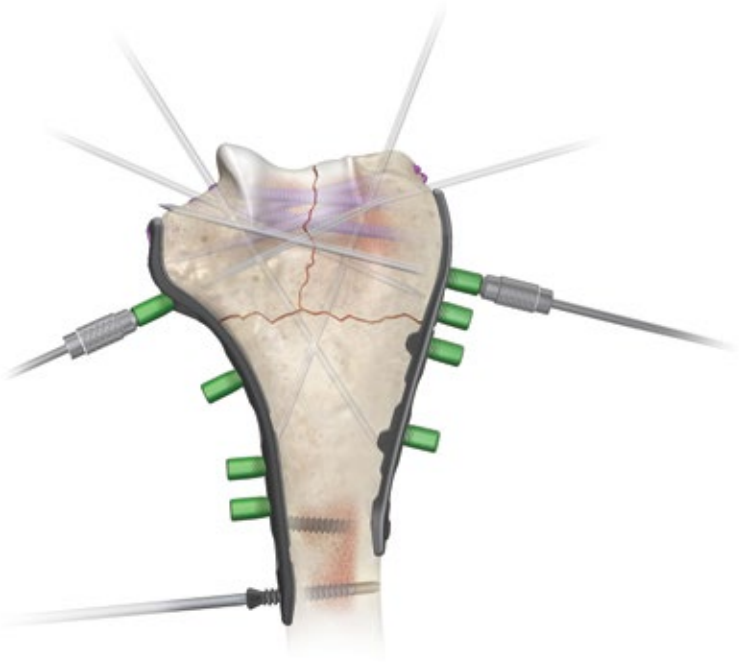
The screw insertion should alternate from one side to the other side.

Step 8b – Posterior Lateral Plate

Insert the distal screws to secure the distal fragment. The screw insertion should continue proximally to secure the capitulum to the plate. The distal condylar screws should be placed as long as possible, without exiting the opposite cortex. Use fluoroscopy to confirm that the screw placement is not violating the articulating surface.

Step 9a

If axial compression of the fracture is needed through the plate, the proximal K-wire is removed and a low profile Non-Locking screw with a washer is inserted in the active compression slot (Step 9a).



Step 9b

If compression at the fracture site was achieved with a clamp, the proximal screws can be filled with Locking or Non-Locking screws.

Step 10

Non-Locking, Locking or Multi-Directional screws are used to fill the remaining screw holes.

Humeral Fracture Plate Fixation (cont.)

Step 9b - Alternative method

If compression at the fracture site was achieved with a clamp, the proximal screw holes may be filled with Locking or Non-Locking screws (Step 9b).

It is recommended to use a Non-Locking screw in the most proximal screw holes to facilitate an optimal transition of stress from plate construct to the unplated bone.

See Appendix B on pages 46-49 for screw insertion.

The distal screws should be placed as long as possible, ideally exiting the opposite column. It is not recommended to use short locking screws as the goal is to attempt to incorporate as many fracture fragments as possible reaching the opposite column.

Step 10

Non-Locking, Locking or Multi-Directional Screws may now be used to fill the remaining screw holes (Step 10).

Specific instructions on inserting screws can be found in Appendix B pages 46-49.

The supine position with the arm across the chest.

Step 1

Direct posterior approach for radial head exposure.

Step 2

The Kocher interval approach, through the interval between the anconeus and the extensor carpi ulnaris muscles.

Exposing the Radial Head

Patient Positioning

The patient is placed in the supine position with the arm placed across the chest.

Step 1

The radial head may be approached from either a direct posterior skin incision (Step 1) in which a flap is raised to expose the radiocapitellar joint area or through a direct lateral approach. If there is a concurrent coronoid fracture or significant medial instability a single posterior incision is recommended.

Additionally, a posterior incision is placed through a watershed area between the medial and lateral cutaneous nerves and to avoid potential surgical trauma to these sensory nerves.

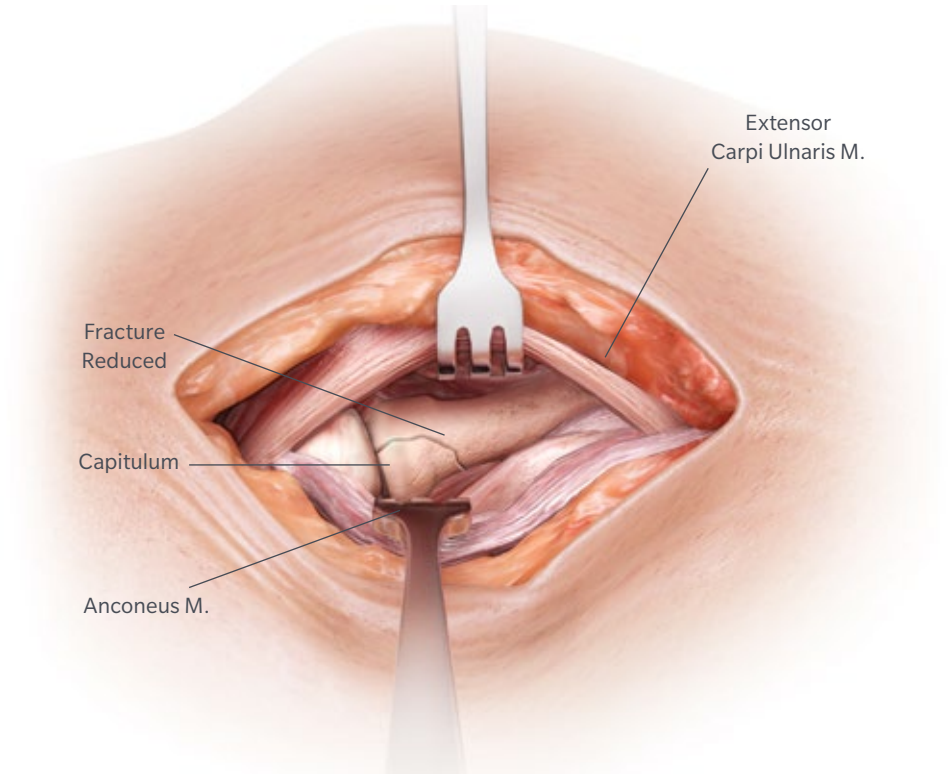
After the radiocapitellar area is exposed either through a direct lateral or posterior incision, there are two potential avenues of approach to the radial head.

Step 2

The most common approach is the Kocher interval approach which is through the interval between the anconeus and the extensor carpi ulnaris muscles. This approach avoids the radial nerve and its branches, and it is fairly easy to define (Step 2).

Note: A potential disadvantage is that the Anconeus/Extensor Carpi Ulnaris interval will put the surgical approach directly over the lateral ulnar collateral ligament which is the main stabilizer of the lateral side of the elbow.

If the surgical approach is carried straight through the anconeus/extensor carpi ulnaris interval into the joint, the lateral ulnar collateral ligament can be violated. The proper approach using the Kocher interval is to develop the interval between the anconeus and the extensor carpi ulnaris and then elevate anteriorly the extensor carpi ulnaris off of the lateral ulnar collateral ligament until the equator or midpoint of the radiocapitellar joint is exposed.



Step 3

Exposure of the radial head fracture.

Exposing the Radial Head (cont.)

Step 2 (cont.)

To preserve the integrity of the lateral ulnar collateral ligament complex, the capsule should be incised horizontally at the equator of the radiocapitellar joint.

Note: If the capsular incision is placed further posterior in the radiocapitellar joint, then potential violation of the lateral ulnar collateral ligament might occur.

Step 3

Once the radiocapitellar joint has been well exposed and the area of the posterior interosseous nerve protected, adequate exposure of the radial head fracture may be undertaken (Step 3).

If the fracture involves only a wedge of the radial head with the majority of the radial head intact, a buried 2.5 mm Non-Locking screw may be used to reduce and hold the small fragment.

In many fractures, the fracture occurs at the neck level with additional comminution of the radial head itself. In this situation, the radial neck area is often compressed and this needs to be elevated and fixed.

In addition to the Kocher interval approach, a more direct approach to the radial head that has recently become popular is a direct split of the common extensor tendon directly over the equator of the radiocapitellar joint. This incision is carried directly through the extensor digitorum communis to the level of the radiocapitellar joint capsule, and the capsule at this point of the equator of the radiocapitellar joint is incised to expose the radial head and neck. Fixation of the radial head and neck fracture is commenced as described previously.

Step 1

The plate is positioned using the Fragment Plate Holder.

Step 3

Drill through the F.A.S.T. Guide inserts with the 2.0 mm Drill Bit.

Step 2

The Plate Benders are used to tailor the plate to the individual patient anatomy.

Step 4

Remove the F.A.S.T. Guide inserts with the 1.3 mm Square Screwdriver.

Radial Head Fracture Fixation

Step 1

Use the Fragment Plate Holder (2312-07-012) to position the plate appropriately on the radial head. The plates are designed to be placed in the area of the radial neck that should not impinge on the proximal radioulnar joint and off the articular surface of the radial head (Step 1).

Step 2

Two sizes of proximal radial plates are available, small and large. Select the most appropriate size to fit the individual. Use the supplied 2.5 Plate Benders (2312-18-005) to tailor the fit of the plate to the individual anatomy of the patient (Step 2).

Note: For further information on plate bending refer to Appendix A on page 43.

Note: For small individuals the distal hole of the plate can be broken off to limit the distal exposure needed for plate fixation. It is recommended that a minimum of two screws be placed into the radial shaft.

The radial head and neck is then elevated and reduced into its normal position, and the plate is positioned. The first screw can be applied into the shaft region to hold the plate in place. Screw selection will allow for either a Non-Locking or Locking screw to be placed through the plate. The standard Locking screw placed through the plate will provide good stability for the fracture construct.

Step 3

Drill through the F.A.S.T. Guide inserts with the 2.0 mm Drill Bit (FDB20) (Step 3).

Step 4

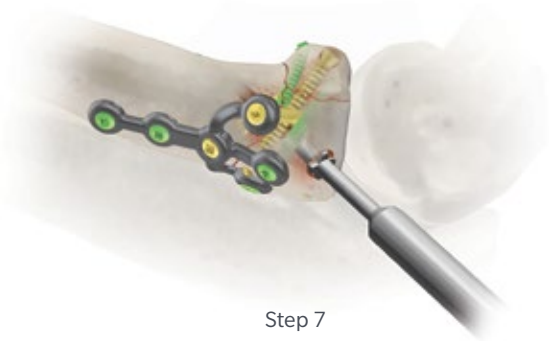
Remove the F.A.S.T. Guide inserts with the 1.3 mm Square Screwdriver (2312-18-012) (Step 4).

Step 5

Measure the drilled hole by taking a direct reading from the NON-L line on the Depth Gauge.

Step 6

Insert the 2.5 mm Non-Locking Screw with the 1.3 mm Square Driver coupled to the Quick Connect Handle.



Step 7

The 2.5 mm Counterbore can be used to create a recess where the screw head will sit below the level of the cortex.

Radial Head Fracture Fixation (cont.)

Step 5

Measure the drilled hole by taking a direct reading from the NON-L line on the Depth Gauge (2142-35-100) (Step 5).

Note: When measuring for a Locking screw, the Depth Gauge is used through the F.A.S.T. Guide inserts and measured off of the LOCK line. When inserting a Non-Locking screw, the F.A.S.T. Guide inserts is removed and the screw is measured off of the NON-L line.

Step 6

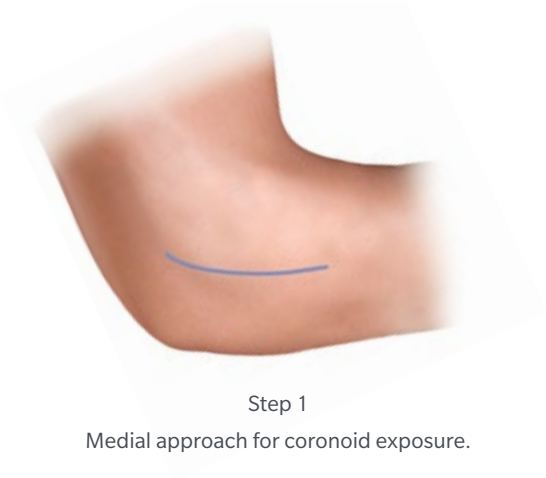
Insert the 2.5 mm Non-Locking Screw with the 1.3 mm Square Driver coupled to the Quick Connect Handle (QCH) (Step 6). The remaining screws (Locking or Non-Locking) can now be placed starting with the radial head region.

Note: The plate should rest distal to the articular surface of the radial head surface and be positioned by hand in neutral rotation. The nonarticular region of the radial head and neck will now be facing laterally toward the surgeon.

Step 7

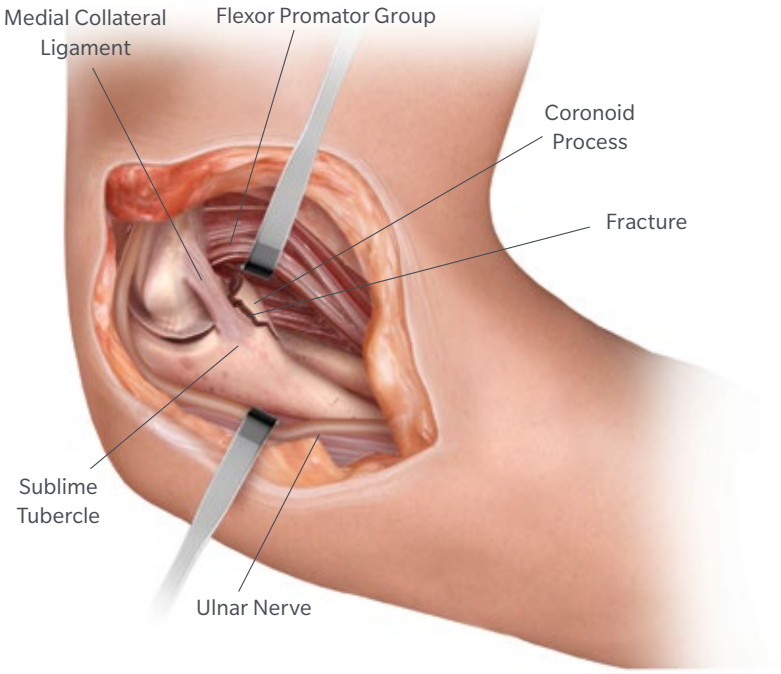
Small wedge fractures of the radial head will need to be fixed with a screw placed outside the plate. These screws should be placed through the radial head into the distal far cortex in an oblique fashion. It is not uncommon for one or two screws to be placed in this fashion, buried deep to the articular cartilage, for optimal fixation. The 2.5 mm Counterbore (2312-18-014) can be used to create a recess where the screw head will sit below the level of the cortex (Step 7).

The supine position with the arm across the chest.



Step 1

Medial approach for coronoid exposure.



Step 2

Gently retract the ulnar nerve posteriorly.

Exposure of the Coronoid

If greater than 15 - 20% of the coronoid is fractured, internal fixation may be considered. The coronoid may potentially be approached from the lateral side if the radial head is significantly fractured and needs to be excised in preparation for radial head replacement. Through the void in the radial head, the coronoid can often be visualized and with posteriorly directed screws (usually at least two screws), the coronoid may be secured.

In those cases when the radial head is not fractured or only partially fractured, it is recommended to approach the coronoid from the medial side.

Patient Positioning

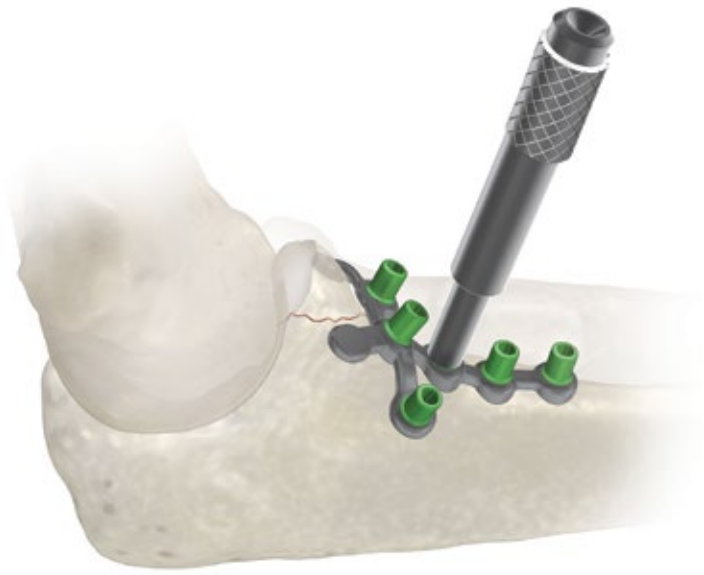
The patient is placed in the supine position with the arm placed across the chest.

Step 1

In this situation with an isolated coronoid fracture, a medial approach is most efficient for operative exposure. Similar to a radial head fracture, either a direct posterior skin incision with elevation of a medial skin flap or a direct medial approach may be done to expose the coronoid (Step 1).

Step 2

After the skin incision, identify the ulnar nerve. This is then released in-situ to help positively identify it throughout the procedure and also to decompress it in case of post-operative swelling. Once the ulnar nerve is decompressed, exposure of the coronoid is achieved through the interval between the two heads of the flexor carpi ulnaris. It is easier to expose the coronoid by gently elevating the musculature of the flexor pronator group from the ulna from a distal to proximal direction.



Step 1

The plate is positioned using the Fragment Plate Holder.

Coronoid Fracture Fixation

While exposing the coronoid it is important to gently retract the ulnar nerve posteriorly (Step 2, previous page). As the soft tissue is elevated from the ulna from a distal to proximal direction, the sublime tubercle can be easily palpated and identified as the insertion site of the medial collateral ligament. The elevation of the flexor pronator group is continued in a distal to proximal direction, elevating the musculature off of the medial collateral ligament, allowing exposure of the capsule of the joint and coronoid. The entire flexor pronator origin does not need to be released for exposure of the coronoid, only a small posterior portion.

The joint capsule which is anterior to the medial collateral ligament can be excised. This will allow for good visualization of the coronoid for accurate reduction and fixation. The medial collateral ligament is preserved and only a small area of the origin of the flexor pronator group needs to be elevated to gain adequate exposure.

It should be noted that while elevating the musculature off of the ulna, care should be taken to identify any major branches of the ulnar nerve and protect them during exposure of the coronoid.

With the coronoid exposed, the appropriate plate is selected (right or left). It should be noted that the very medial edge of the ulna at the sublime tubercle makes a sharp almost 90-degree angle.

The plate will be placed at the apex of this significant angle on the ulna.

Step 1

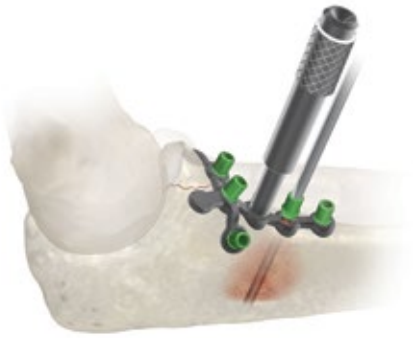
Use the Fragment Plate Holder (2312-07-012) to position the plate appropriately on the coronoid fracture (Step 1).

Step 2

The plate is bent and fine tuned for the individual patient.

Step 3

Drill through the F.A.S.T. Guide inserts with the 2.0 mm Drill Bit.



Step 4

Remove the F.A.S.T. Guide inserts using the 1.3 mm Square Screwdriver.

Coronoid Fracture Fixation (cont.)

Step 2

Due to individual anatomic variations in patients, the plate will need to be bent and fine tuned for the individual patient (Step 2).

Note: For further information on plate bending refer to Appendix A on page 43.

Screw selection will allow for either a 2.5 mm Non-Locking or Locking screw to be placed through the plate. In most situations, the standard Locking screw placed through the plate will provide good stability for the fracture construct.

One of the middle screws in the plate may be placed first for preliminary fixation of the implant.

Step 3

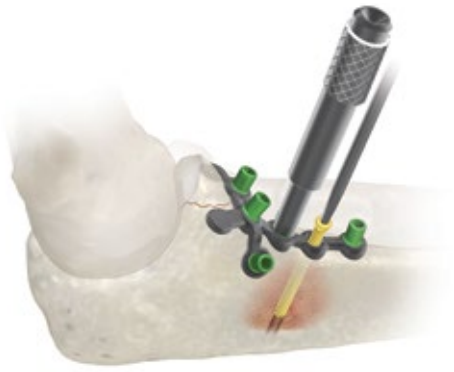
Drill through the F.A.S.T. Guide inserts with the 2.0 mm Drill Bit (FDB20) (Step 3).

Step 4

Remove the F.A.S.T. Guide inserts using the 1.3 mm Square Screwdriver (2312-18-012) (Step 4).

Step 6

Measure the drilled hole by taking a direct reading from the NON-L line.



Step 7

Insert the 2.5 mm Non-Locking screw with the 1.3 mm Square Driver coupled to the Quick Connect Handle.

Step 8

All screw holes should be filled to fully anchor the plate for optimal fixation.

Coronoid Fracture Fixation (cont.)

Step 6

Measure the drilled hole by taking a direct reading from the NON-L line on the depth gauge (2142-35-100) (Step 6).

Step 7

Insert the 2.5 mm Non-Locking Screw with the 1.3 mm Square Driver coupled to the Quick Connect Handle (QCH) (Step 7).

Progressive screws are then placed. Locking screws do not require bicortical fixation through the posterior aspect of the ulna but should be placed deep enough for accurate and stable fixation of the coronoid fracture. It should be noted that the most proximal screw holes in the plate are angled to help avoid intra-articular penetration of screws.

The most lateral tab on the plate should be checked to be sure it is bent down and acting as a buttress on the very lateral aspect of the coronoid.

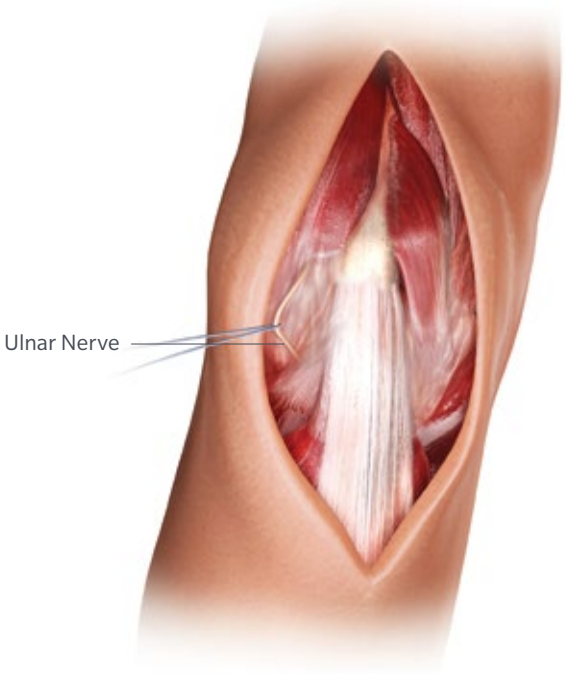
In a similar fashion, the very medial tab should be checked to be sure it is buttressing on the very medial aspect of the coronoid in the area of the sublime tubercle and the medial collateral ligament.

Fluoroscopic views should be taken to be sure there is no penetration of the screws into the joint, and similar to the radial head plate, the plate can be shortened by breaking off any unneeded segments of the plate.

Step 8

All screw holes should be filled to fully anchor the plate for optimal fixation (Step 8).

After placement of the plate has been accomplished, the elevated portion of the flexor pronator group is allowed to fall back together. The ulnar nerve is checked to be sure that it is unhindered, and the wound closed in standard fashion.



Step 1
Identification of the ulnar nerve.

Exposure of the Olecranon

The exposure for an olecranon fracture follows a standard posterior incision. Depending on the surgeon's preference, the incision can be curved slightly laterally or medially over the tip of the olecranon itself. Once the skin incision is made, the fracture site is often quite evident.

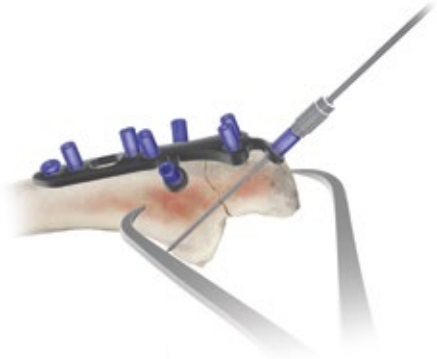
Step 1

Elevation of the medial skin flap should be performed to accurately identify the ulnar nerve (Step 1). The ulnar nerve does not necessarily need to be released in situ or transposed but the area of the ulnar nerve should be recognized and protected throughout the procedure.

The olecranon fracture should be opened slightly and irrigated to remove any loose bone or hematoma. Examination of the articular surface of the humerus may be performed if damage to the cartilage of the distal humerus is suspected.

Option 1

The more proximal prong on the clamp is used over the tip of the olecranon to reduce the fracture in place and a 2.0 mm K-wire is placed in an oblique fashion across the fracture site.



Option 2 - Step 1

If no additional compression is needed, insert a K-wire through the home-run screw hole to cross the osteotomy site and secure the reduction.

Option 2 - Step 2

Insert the 3.5 mm locking screws with the T-15 Driver.

Olecranon Fracture Fixation

Reduction of the Olecranon

The olecranon fracture may be reduced using the surgeon's preferred method. Described are two options that may be considered.

Option 1: Clamp and K-wire combination

A drill or K-wire is used to create a small hole in either the lateral or medial cortex, 3 - 4 cm distal to the fracture site. This small hole in the ulna serves as a point where a prong of the clamp can grab on to the distal fragment. The opposite clamp prong is placed on the proximal fragment and the clamp is closed to reduce fragments. A 2.0 mm K-wire is then drilled in an oblique fashion lateral to medial, across the fracture site and to secure the reduction. Care should be taken to place the K-wire out of the way of the plate.

Option 2: Reduction through the plate

The fracture is reduced and a clamp is placed to hold the reduction as described in Option 1.

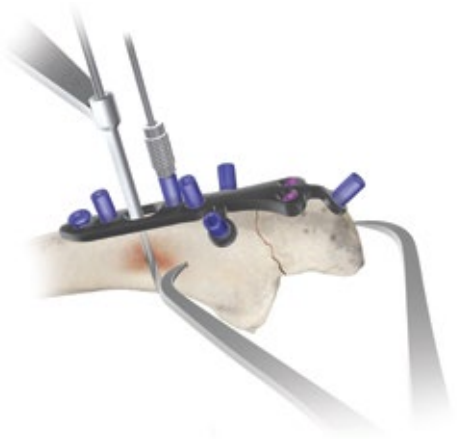
Step 1

The plate is then positioned on the fracture site.

A K-wire is drilled (using a K-wire Adapter placed in the F.A.S.T. Guide inserts) through the home-run screw hole of the plate. The home-run screw hole may need to be contoured with the plate benders (2312-18-008) for optimal trajectory. An additional K-wire is then drilled into the distal fragment of the ulna.

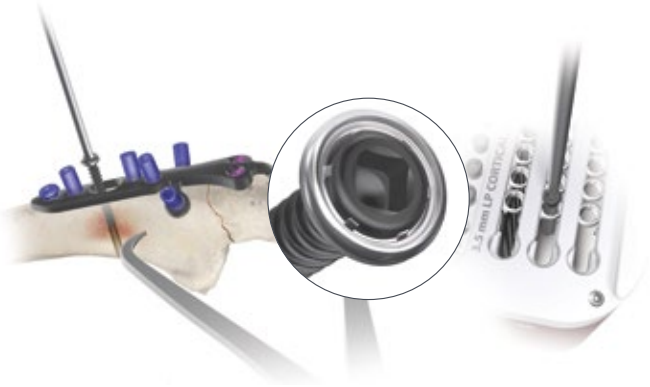
Step 2

The twin proximal olecranon 3.5 mm Locking screws are inserted with the T-15 Driver coupled to the 2.0 Nm Torque-limiting Screwdriver Handle (2141-18-001) or Bi-Directional Torque Limiting Power Adapter (2312-18-020). Remove the K-wire from the home-run screw hole.



Step 3

Compression screw insertion preparation.



Step 4

A low profile 3.5 mm screw with a low profile washer is inserted by hand.

Arms can be broken off with the Plate Benders if not necessary.

Step 5a

Step 5

Fill screws in the shaft and coronoid area.

Olecranon Fracture Fixation (cont.)

Step 3

Drill the hole through the oblong active compression slot using the 2.7 mm Drill Bit (2142-27-070).

For very osteoporotic bone, use the 2.5 mm Drill Bit (8290-29-070).

Note: The K-wire is removed just before the 3.5 mm Compression Screw engages in the slot.

Step 4

The 3.5 mm low profile Non-Locking screw should be inserted into the Conversion Washer (1312-18-000) to allow it to perform active compression in the plate slot. If the Conversion Washer is not used, the screw head will not be wide enough to engage the plate slot.

Insert the 3.5 mm Compression screw using the 2.2 mm Square Driver (8163-01-000). Remove the K-wirein the distal portion of the ulna just before the head of the Compression screw engages with the compression slot.

Step 5

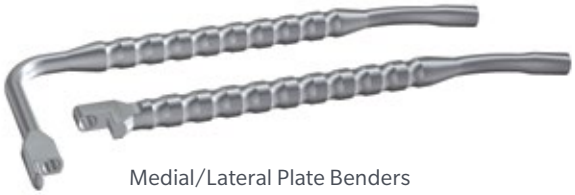
Insert a Compression screw through the home-run screw hole, and fill screws in the shaft and coronoid area as needed. Multiplanar arms may be contoured or broken off with the plate benders, (2312-18-008) if not thought to be necessary (Step 5a). Care should be taken when placing screws through the multiplanar side arms so that the appropriate length is selected, to avoid damage to the radial head.

Note: Arms should be broken off in the direction of the underside of the plate to prevent rough edges coming into contact with soft tissue.

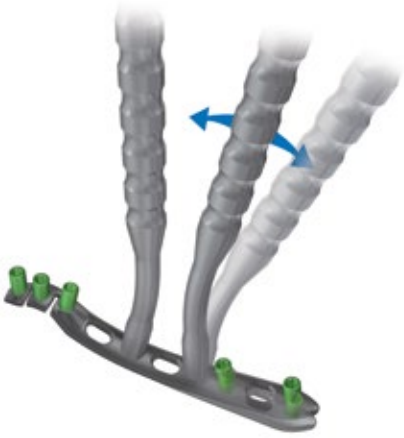
Note: The plate may be bent and fine tuned for the individual patient. For further information on plate bending refer to Appendix A on page 42.

Appendix A
Contouring for Medial and Lateral Plates

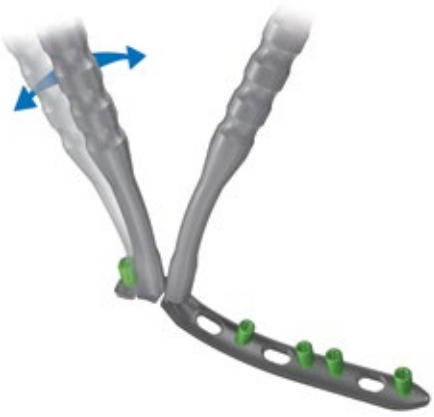
Note: The benders are not intended to work with the shorter, rounder low profile F.A.S.T. Guide inserts. The benders are to be used only with the tall F.A.S.T. Guide inserts to contour the plate.



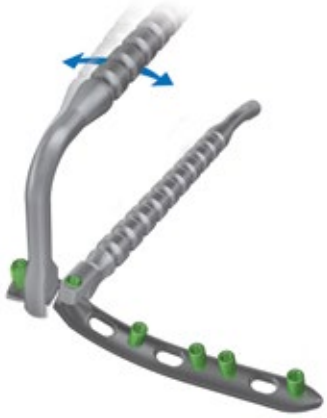
Medial/Lateral Plate Benders



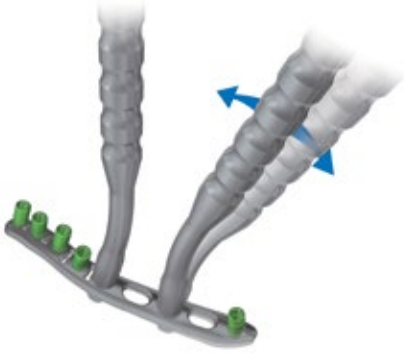
1. Medial plate bent through a slot.



2. Distal end of medial plate bent towards medial condyle.

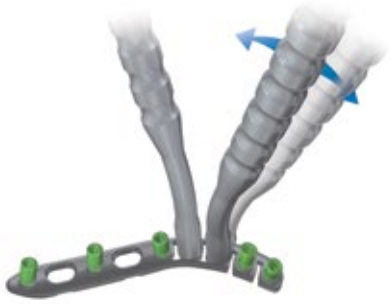


3. Planar bend at distal end of medial plate.



4. Lateral plate bent through a slot.

5. Planar bend at distal end of lateral plate.



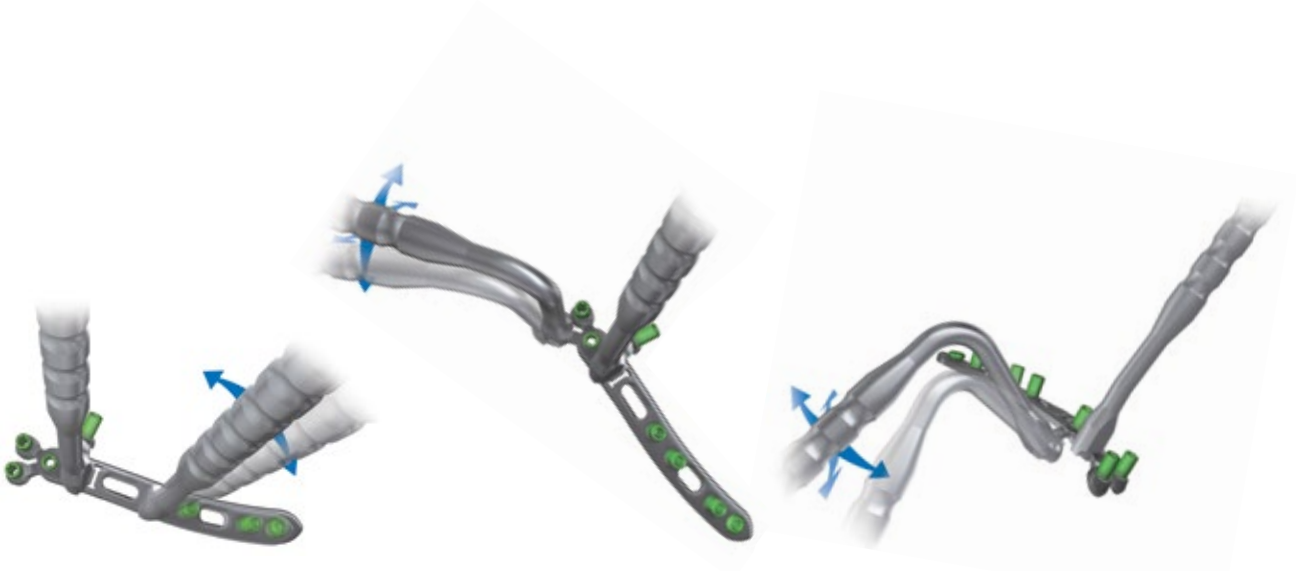
6. Distal end of lateral plate bent towards lateral condyle.

Note: All bending features are designed to withstand a maximum total of 30 degrees of manipulation.

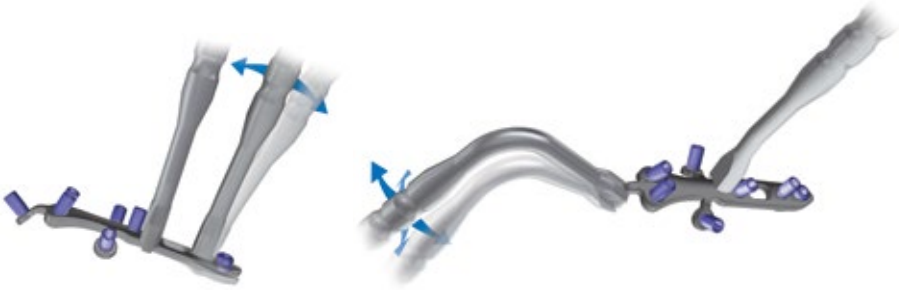
Appendix A
Contouring for Posterior Lateral and Olecranon Plates

Note: The benders are not intended to work with the shorter, rounder low profile F.A.S.T. Guide inserts. The benders are to be used only with the tall F.A.S.T. Guide inserts to contour the plate.

Posterior Lateral/Olecranon Plate Benders



1. Posterior lateral plate bent through a slot.
2. Planar bend applied to posterior lateral plate.
3. Lateral tab of posterior lateral plate bent toward the bone.



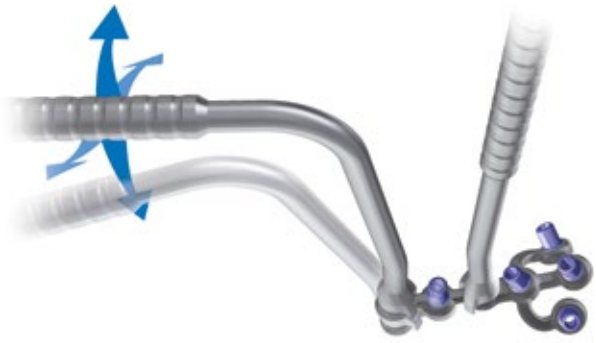
4. Olecranon plate bent through a slot.
5. Planar bend applied to olecranon plate.
6. If necessary, the benders can be used to break off the arms of the olecranon plate.

Appendix A
Contouring for Coronoid and Radius Plates

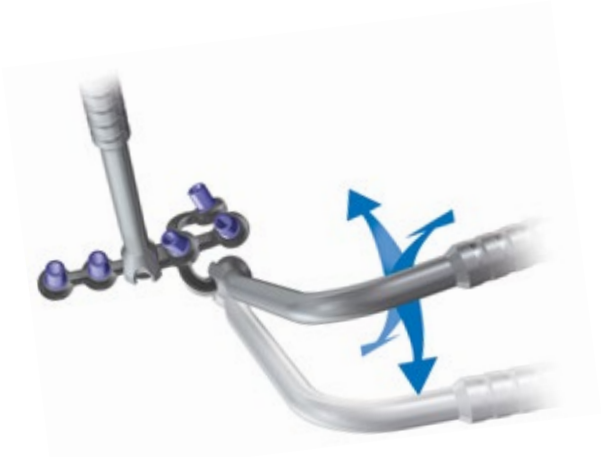
Coronoid/Radius Plate Benders

1. Planar bend applied to coronoid plate.

2. Lateral tab of coronoid plate bent toward the bone.



3. Planar bend applied to the shaft of proximal radius plate.



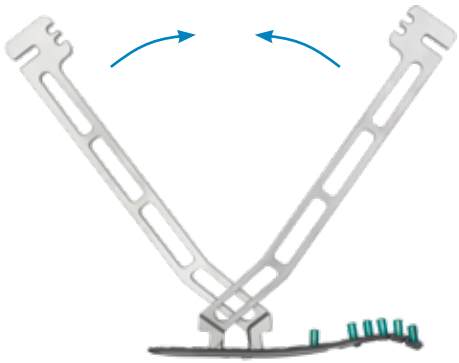
4. Planar bend applied to the arms of proximal radius plate.

Appendix A
Concave/Convex Contouring for Long Plates

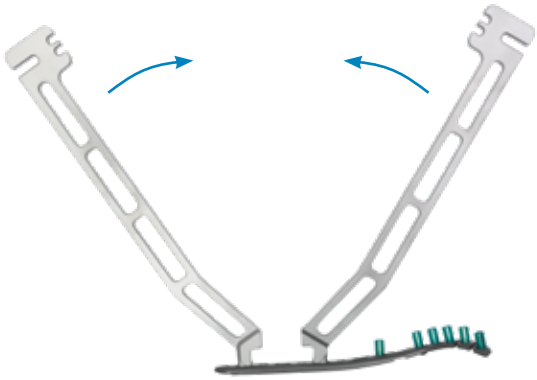
The long plate benders are used to contour the shaft portion of the long implants. Benders consist of three bending features: the foot, the slot, and the plantar bending feature (teeth).

Using the "feet" of the benders the plates can be contoured to conform to the patient's unique anatomic needs. The foot of the bender is placed inside the slotted section of the plate and engaged on the underside of the plate. The benders can be used either facing or opposing each other to create concave or convex bends. **When creating convex bends there must be at least one empty slot in-between benders to ensure there is no thread deformation of locking hole.**

Bender "Feet"



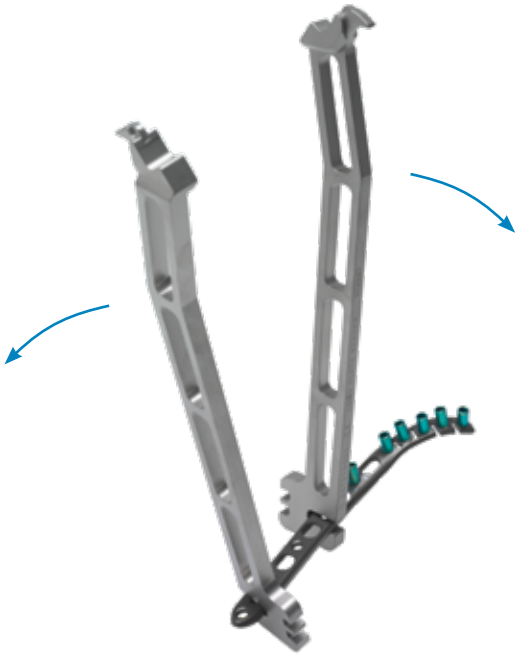
Concave Bend



Convex Bend

Appendix A
Axial Contouring for Long Plates

Using the "slot" of the benders the plates can be contoured to in the axial direction. Insert plate into "slots" and rotate benders away from each other to impart twist.

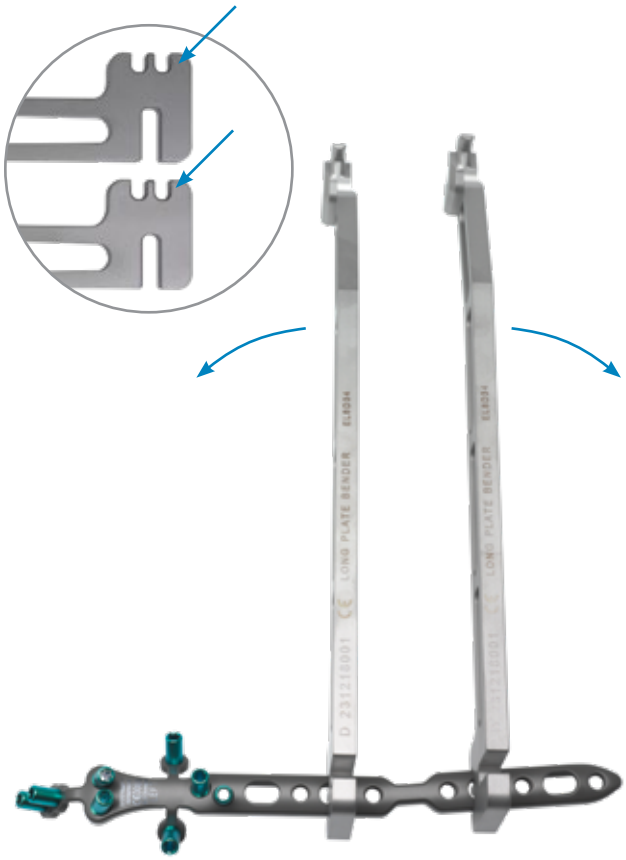


Axial Bend

Planar Contouring for Long Plates – Olecranon ONLY

The longer olecranon plates are left and right specific to meet the needs of ulnar anatomy. There is a contouring feature built into the longer olecranon plates to allow the plate to be curved to match the patient's anatomy while maintaining strength.

To apply planar bend, use "teeth" of the benders. Insert "teeth" of benders to slots adjacent to waist feature of olecranon plates; pull benders away from one another to impart planar bend.



Planar Bend

Appendix B
Non-Locking Screw Insertion

Step 1

Remove the F.A.S.T. Guide inserts using the T-15 Driver.

Step 2

Drill through both cortices with the 2.7 mm Drill Bit.

Step 3

Take a direct reading from the NON-L line.

Step 4

Insert by hand using the Black Ratchet Handle with the 2.2 mm Square Driver.

Step 1

If Non-Locking Screws are to be used, the F.A.S.T. Guide inserts are removed using the T-15 Driver (2142-15-070) (Step 1).

Step 2

Insert the Drill Guide into the screw hole and drill through both cortices with the 2.7 mm Drill Bit (2142-27-070) (Step 2).

Step 3

Measure the drilled hole by taking a direct reading from the NON-L line on the Depth Gauge (2142-35-100) (Step 3).

Step 4

The screw is inserted by hand using the Black Ratchet Handle (8261-66-000) with the 2.2 mm Square Driver (8163-01-000) (Step 4).

Appendix B
Non-Locking Screw Insertion (Compression Mode)

Step 1

Drill through both cortices with the 2.7 mm Drill Bit.

Step 2

Take a direct reading from the NON-L line.

Step 3

Engage the appropriate 3.5 mm Low Profile Non-Locking screw with the 2.2 mm Square Driver.

Step 4

Insert by hand using the Black Ratchet Handle with the 2.2 mm Square Driver.

If the compression hole is to be used, a low profile Non-Locking screw must be used in conjunction with a low-profile washer. This will convert the low-profile screw to a standard profile Non-Locking screw.

Step 1

Insert the Drill Guide into the screw hole and drill through both cortices with the 2.7 mm Drill Bit (2142-27-070). Drill eccentricly in the slot furthest away from the fracture (Step 1).

Step 2

Measure the drilled hole by taking a direct reading from the NON-L line on the Depth Gauge (Step 2).

Step 3

Engage the appropriate 3.5 mm low profile Non-Locking screw with the 2.2 mm Square Driver (8163-01-000). Once engaged, the screw is placed through the Low Profile Washer (1312-18-000), which is in the cartridge, and pressure applied until an audible click is heard. Once the assembly is mated correctly, the screw can be advanced into the compression hole of the plate. Slide the screw down the cartridge remove and insert into the active compression slot (Step 3).

Step 4

The screw is inserted by hand using the Black Ratchet Handle (8261-66-000) with the 2.2 mm Square Driver (8163-01-000) (Step 4).

Note: The washer is for use ONLY with the 3.5 mm low profile Non-Locking screw.

Appendix B
Locking Screw Insertion

Step 1

Drill through the F.A.S.T. Guide inserts with the 2.7 mm Drill Bit.Slide the Measuring Drill Sleeve to the top end of the F.A.S.T. Guide inserts insert and read the measurement of the Locking Screw length from the proximal end.

Step 2

Remove the F.A.S.T. Guide inserts using the T-15 Driver.

Step 3

Insert the 3.5 mm Locking Screw with the T-15 Driver coupled to the 2.0 Nm Torque-Limiting Screwdriver Handle or Bi-Directional Torque Limiting Power Adapter.

Step 1

Slide the Measuring Drill Sleeve (8163-01-005) onto the 2.7 mm Drill Bit 2142-27-070). Drill through the F.A.S.T. Guide inserts until the far cortex is reached. Slide the Measuring Drill Sleeve onto the top end of the F.A.S.T. Guide inserts and read the measurement of the Locking Screw length from the proximal end of the Drill Measuring Sleeve (Step 1).

Note: If a second method of measurement is desired, remove the F.A.S.T. Guide inserts, then measure the drilled hole by taking a direct reading from the LOCK line on the Depth Gauge.

Step 2

Remove the F.A.S.T. Guide inserts using the T-15 Driver (2142-15-070) (Step 2).

Step 3

Insert the 3.5 mm locking screw with the T-15 Driver (2142-15-070) coupled to the 2.0 Nm Torque-Limiting Screwdriver Handle (2141-18-001) or Bi-Directional Torque Limiting Power Adapter (2312-18-020) (Step 3).

Once the screw is seated, an audible click will be heard from the driver noting that the screw is fully seated.

Appendix B
Multi-Directional Screw Insertion (MDS)

Step 1

Remove the F.A.S.T. Guide inserts using the T-15 Driver.

Step 2

Drill using the 2.7 mm Drill Bit through the Drill Guide.

Step 3

Take a direct reading from the LOCK line.

Step 4a

Insert the MDS screw under power using the 2.2 mm Square Driver coupled to the Torque Limiting Power Adapter.

Step 1

The MDS screw is inserted by removing the F.A.S.T. Guide inserts using the T-15 Driver (2142-15-070) or the Short T-15 Driver (2312-18-021) (Step 1).

Step 2

Drill using the 2.7 mm Drill Bit (2142-27-070). The drill bit can be angled up to a 25 degree cone of angulation and still have the screw lock into the plate (Step 2).

Step 3

Measure the drilled hole with the Depth Gauge (2142-35-100) by taking a direct reading from the LOCK line on the Depth Gauge (Step 3).

Step 4 (diagram not shown)

Insert the 3.5 mm MDS screw with the 2.2 mm Square Driver (8163-01-000) coupled to the 2.0 Nm Torque-Limiting Screwdriver Handle (2141-18-001).

Step 4a

Alternatively, the screw may be inserted under power using the 2.2 mm Square Driver (8163-01-000) coupled to the Torque Limiting Power Adapter (2312-18-020) (Step 4a).

Once the screw is seated, an audible click will be heard from the driver noting that the screw is fully seated.

Appendix C
Screw Removal

Step 1

Step 2

Note: Plate screws will often compete for space in a tight area, and the screws can often interdigitate with each other. This is especially relevant with the three distal screws on the Lateral and Medial plates (Step 1).

Therefore, it is important to remove the screws in reverse order (last in, first out), to limit breaking the heads from the screws.

If the order of the screw placement is not known, the following procedure is recommended (Step 2):

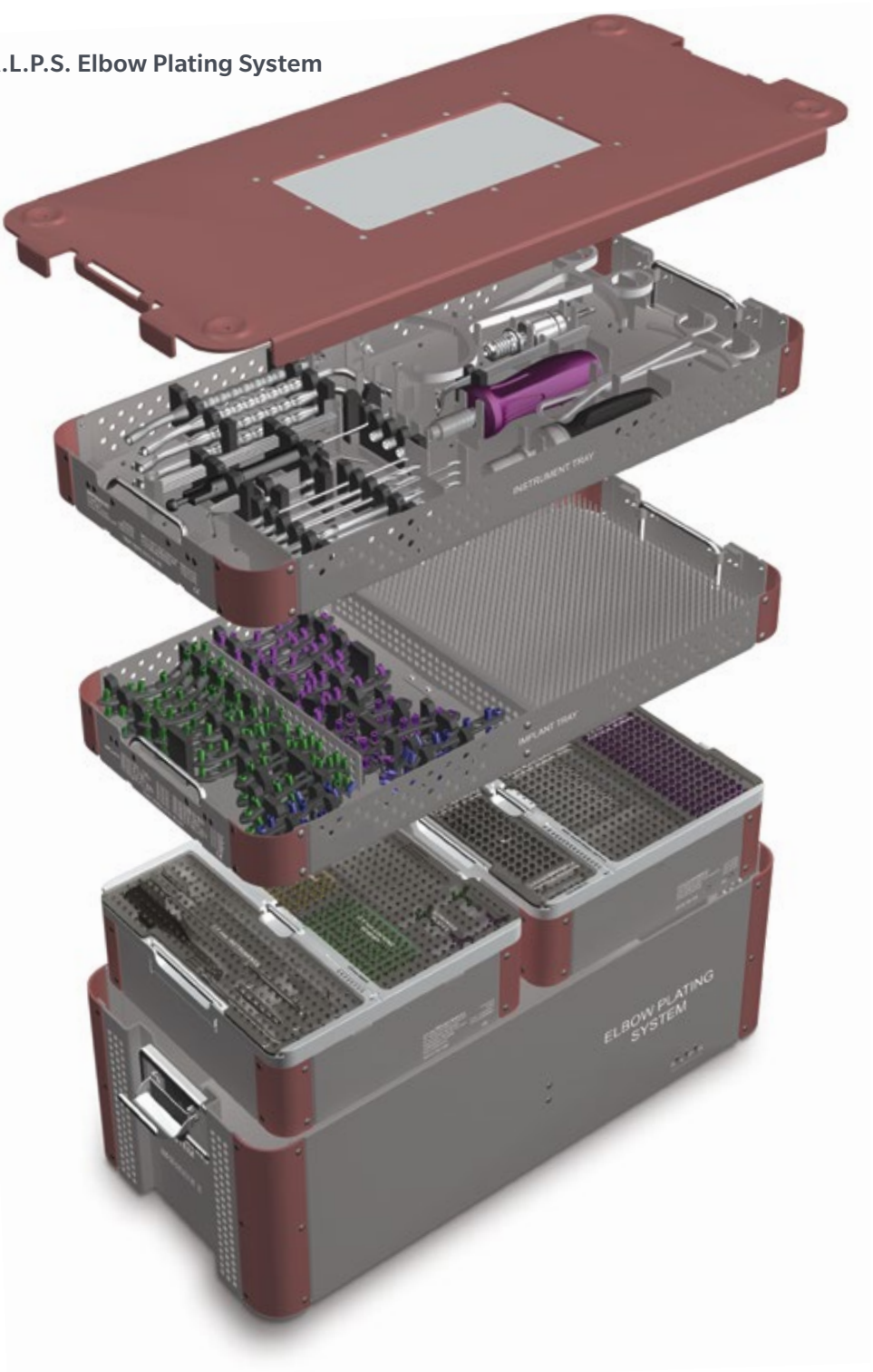
1. Attempt to remove a screw. If it stalls within a turn or two, retighten using the Bi-Directional Torque Limiting Power Adapter.

Note: This is very important, as this screw may be interdigitated with another screw, which may cause difficulty during removal. It is critical to retighten the screw prior to moving on to the next screw as described in Step 2, otherwise both screws will be difficult to remove.

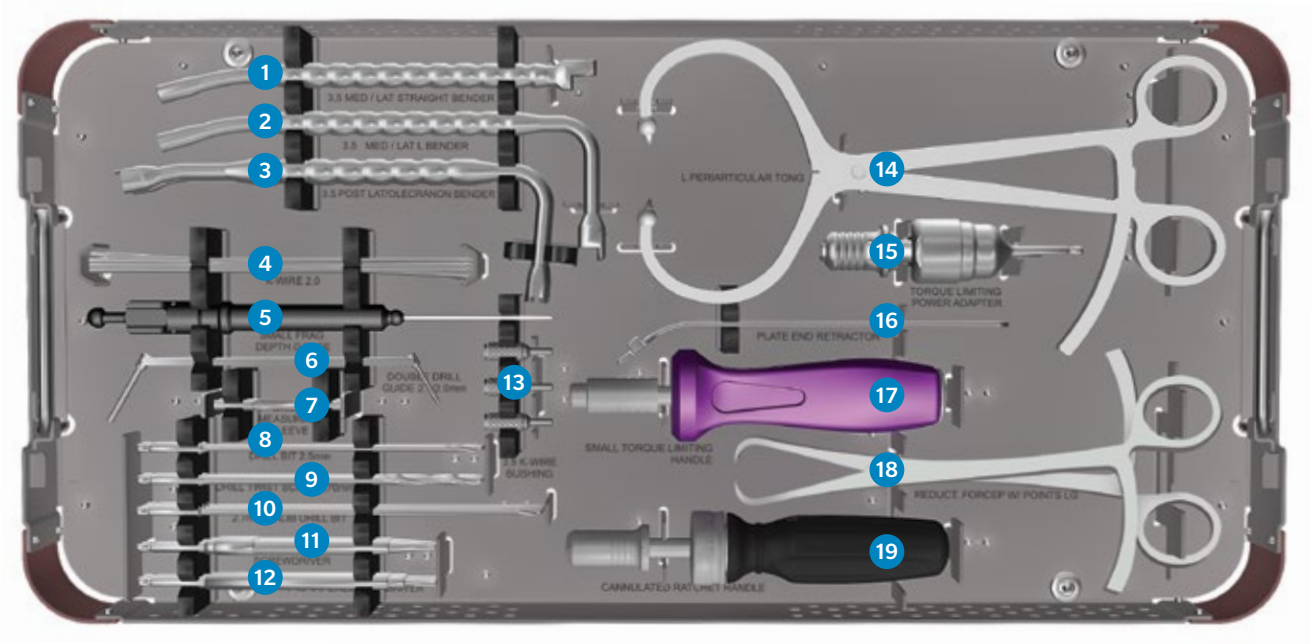
2. Move on to the next screw and repeat Step 1.
3. Keep moving from one screw to the next until all have been removed.

Instrument Trays

The A.L.P.S. Elbow Plating System



Instrument Trays

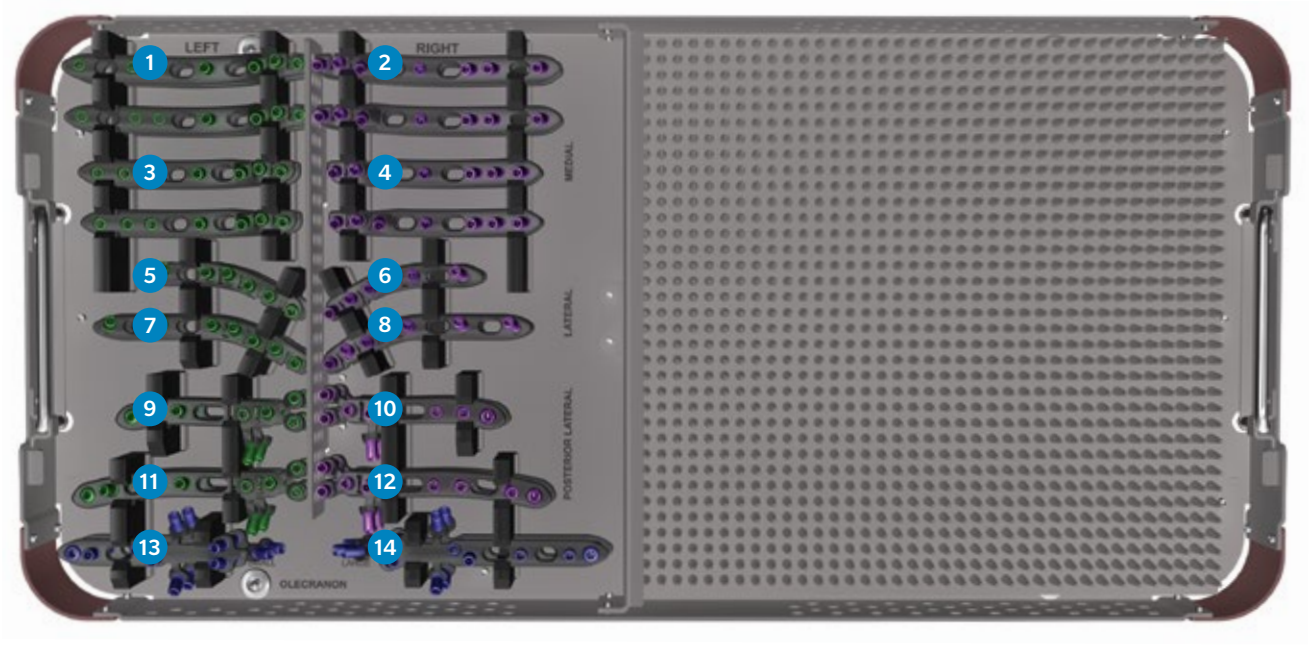


Instrument Tray

Non-Sterile

1.	2312-18-003	3.5 Medial/Lateral Straight Bender
2.	2312-18-004	3.5 Medial/Lateral L Bender
3.	2312-18-008 (2)	3.5 Post. Lateral/Olecranon Bender
4.	14179-6 (12)	2.0 mm K-wire
5.	2142-35-100	Small Frag Depth Gauge
6.	9399-99-435	Double Drill Guide 2.7/2.0mm
7.	8163-01-005 (2)	Drill Measuring Sleeve
8.	8290-29-070 (2)	Drill Bit 2.5 mm
9.	8290-32-070 (2)	Drill Twist S-Couple 3.5 x 70 mm
10.	2142-27-070 (3)	2.7 mm Calibrated Drill Bit
11.	8163-01-000 (2)	2.2 mm Square Screwdriver
12.	2142-15-070 (2)	T-15 Tapered Driver
13.	2312-18-007 (3)	2.0 mm K-wire Adapter
14.	1920.	Periarticular Reduction Instrument Lg
15.	2312-18-020	2.0 mm Torque Limiting Power Adapter
16.	2142-13-567	Plate End Retractor
17.	2141-18-001	Small Torque Limiting Handle
18.	13577 (2)	Reduction Forcep W/Points Lg
19.	8261-66-000	Cannulated Ratchet Handle
NP.	2312-18-021	T-15 Tapered Driver Short (Optional Instrument)

Non-Sterile Implants



Non-Sterile Implant Tray

Medial Plates

1.	1312-18-703 (4)	10 Hole - Left
2.	1312-18-701 (4)	10 Hole - Right
3.	1312-18-702 (4)	9 Hole - Left
4.	1312-18-700 (4)	9 Hole - Right

Lateral Plates

5.	1312-18-202 (2)	7 Hole - Left
6.	1312-18-200 (2)	7 Hole - Right
7.	1312-18-203 (2)	9 Hole - Left
8.	1312-18-201 (2)	9 Hole - Right

Posterior Lateral Plates

9.	1312-18-302 (2)	9 Hole - Left
10.	1312-18-300 (2)	9 Hole - Right
11.	1312-18-303 (2)	11 Hole - Left
12.	1312-18-301 (2)	11 Hole - Right

Olecranon Plates

13.	1312-18-600 (2)	10 Hole - Small
14.	1312-18-601 (2)	13 Hole - Large

*Special Order

Non-Sterile Long Plate Module

Medial Plates

1312-18-704	13 Hole - 127 mm Right
1312-18-707	13 Hole - 127 mm Left
1312-18-705	17 Hole - 166 mm Right
1312-18-708	17 Hole - 166 mm Left

Lateral Plates

1312-18-204	11 Hole - 103 mm Right
1312-18-207	11 Hole - 103 mm Left
1312-18-205	15 Hole - 142 mm Right
1312-18-208	15 Hole - 142 mm Left

Posterior Lateral Plates

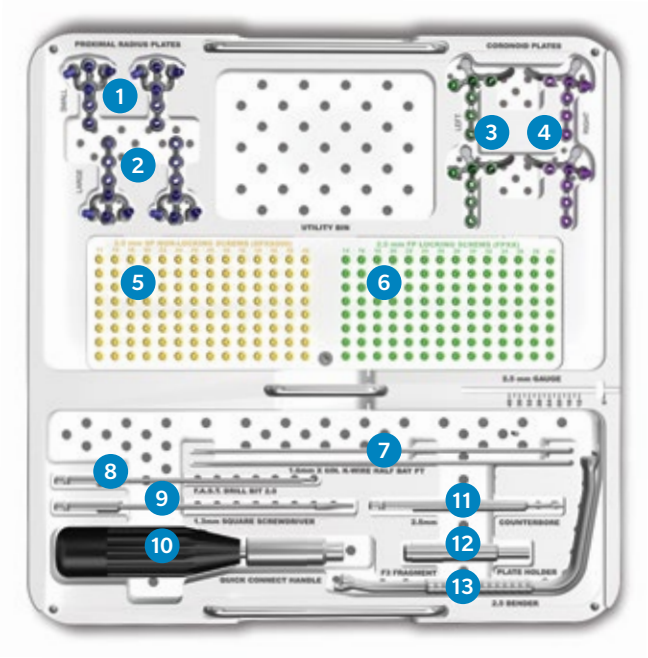
1312-18-305	17 Hole - 148 mm Right
1312-18-308	17 Hole - 148 mm Left
1312-18-800	21 Hole - 210 mm Right
1312-18-803	21 Hole - 210 mm Left
1312-18-801	25 Hole - 250 mm Right
1312-18-804	25 Hole - 250 mm Left

Olecranon Plates

1312-18-604	17 Hole - 154 mm Right
1312-18-607	17 Hole - 154 mm Left
1312-18-606	21 Hole - 194 mm Right*
1312-18-609	21 Hole - 194 mm Left*

Instruments - Non-Sterile

2312-18-016	Short F.A.S.T. Guide inserts (10)
2312-18-001	Long Plate Bender (2)
2142-07-027	2.7 mm Locking Drill Guide (1)



Non-Sterile 2.5 mm Implant Module

Proximal Radius Plates

1. 1312-18-400 (2) Small
2. 1312-18-401 (2) Large

Coronoid Plates

3. 1312-18-501 (2) Left
4. 1312-18-500 (2) Right

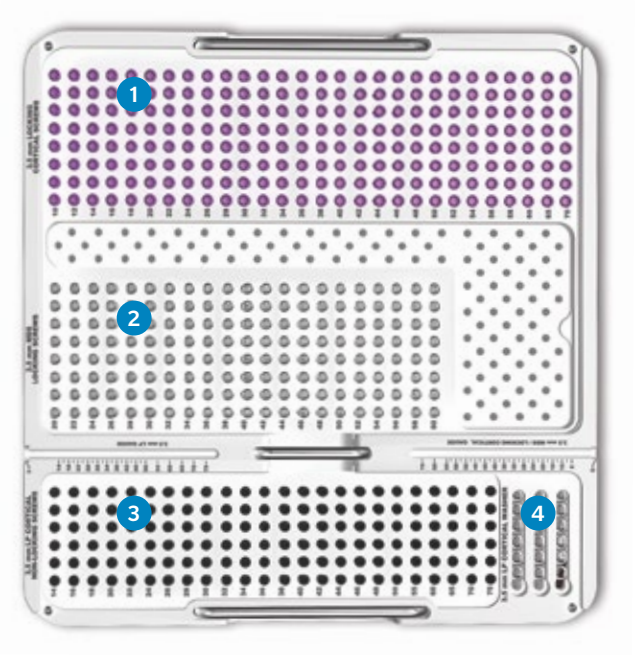
5. 2.5 mm Non-locking Screw

SP14000	Peg Screw 2.5 x 14 mm
SP16000	Peg Screw 2.5 x 16 mm
SP18000	Peg Screw 2.5 x 18 mm
SP20000	Peg Screw 2.5 x 20 mm
SP22000	Peg Screw 2.5 x 22 mm
SP24000	Peg Screw 2.5 x 24 mm
SP26000	Peg Screw 2.5 x 26 mm
SP28000	Peg Screw 2.5 x 28 mm
SP30000	Peg Screw 2.5 x 30 mm
SP32000	Peg Screw 2.5 x 32 mm
SP34000	Peg Screw 2.5 x 34 mm
SP36000	Peg Screw 2.5 x 36 mm
SP38000	Peg Screw 2.5 x 38 mm
SP40000	Peg Screw 2.5 x 40 mm

6. 2.5 mm Locking Screw

FP14	Peg Full Thread 2.5 x 14 mm
FP16	Peg Full Thread 2.5 x 16 mm
FP18	Peg Full Thread 2.5 x 18 mm
FP20	Peg Full Thread 2.5 x 20 mm
FP22	Peg Full Thread 2.5 x 22 mm
FP24	Peg Full Thread 2.5 x 24 mm
FP26	Peg Full Thread 2.5 x 26 mm
FP28	Peg Full Thread 2.5 x 28 mm
FP30	Peg Full Thread 2.5 x 30 mm
FP32	Peg Full Thread 2.5 x 32 mm
FP34	Peg Full Thread 2.5 x 34 mm
FP36	Peg Full Thread 2.5 x 36 mm
FP38	Peg Full Thread 2.5 x 38 mm
FP40	Peg Full Thread 2.5 x 40 mm

7. 14425-6 (12) 1.6 mm x 6 in. K-wire Half Bay
8. FDB20 (2) F.A.S.T. Drill Bit 2.0
9. 2312-18-012 (2) 1.3 mm Square Screwdriver
10. QCH Quick Connect Handle
11. 2312-18-014 2.5 mm Counterbore
12. 2312-07-012 Fragment Plate Holder
13. 2312-18-005 (2) 2.5 mm Bender



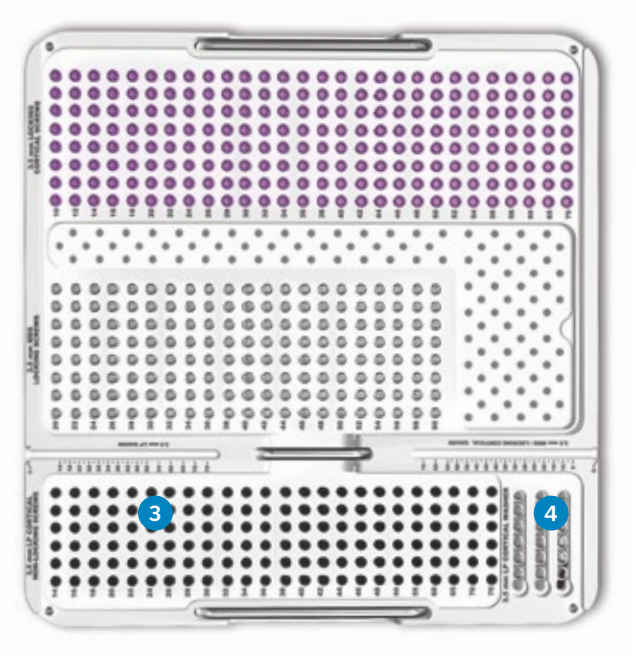
Non-Sterile 3.5 mm Screw Module

1. 3.5 mm Locking Cortical Screw

8161-35-010	3.5 mm Cortical Locking Screw 10 mm
8161-35-012	3.5 mm Cortical Locking Screw 12 mm
8161-35-014	3.5 mm Cortical Locking Screw 14 mm
8161-35-016	3.5 mm Cortical Locking Screw 16 mm
8161-35-018	3.5 mm Cortical Locking Screw 18 mm
8161-35-020	3.5 mm Cortical Locking Screw 20 mm
8161-35-022	3.5 mm Cortical Locking Screw 22 mm
8161-35-024	3.5 mm Cortical Locking Screw 24 mm
8161-35-026	3.5 mm Cortical Locking Screw 26 mm
8161-35-028	3.5 mm Cortical Locking Screw 28 mm
8161-35-030	3.5 mm Cortical Locking Screw 30 mm
8161-35-032	3.5 mm Cortical Locking Screw 32 mm
8161-35-034	3.5 mm Cortical Locking Screw 34 mm
8161-35-036	3.5 mm Cortical Locking Screw 36 mm
8161-35-038	3.5 mm Cortical Locking Screw 38 mm
8161-35-040	3.5 mm Cortical Locking Screw 40 mm
8161-35-042	3.5 mm Cortical Locking Screw 42 mm
8161-35-044	3.5 mm Cortical Locking Screw 44 mm
8161-35-046	3.5 mm Cortical Locking Screw 46 mm
8161-35-048	3.5 mm Cortical Locking Screw 48 mm
8161-35-050	3.5 mm Cortical Locking Screw 50 mm
8161-35-052	3.5 mm Cortical Locking Screw 52 mm
8161-35-054	3.5 mm Cortical Locking Screw 54 mm
8161-35-056	3.5 mm Cortical Locking Screw 56 mm
8161-35-058	3.5 mm Cortical Locking Screw 58 mm
8161-35-060	3.5 mm Cortical Locking Screw 60 mm
8161-35-065	3.5 mm Cortical Locking Screw 65 mm
8161-35-070	3.5 mm Cortical Locking Screw 70 mm

2. Multi-Directional Screw

8163-35-020	3.5 mm Multi-Directional Screw 20 mm
8163-35-022	3.5 mm Multi-Directional Screw 22 mm
8163-35-024	3.5 mm Multi-Directional Screw 24 mm
8163-35-026	3.5 mm Multi-Directional Screw 26 mm
8163-35-028	3.5 mm Multi-Directional Screw 28 mm
8163-35-030	3.5 mm Multi-Directional Screw 30 mm
8163-35-032	3.5 mm Multi-Directional Screw 32 mm
8163-35-034	3.5 mm Multi-Directional Screw 34 mm
8163-35-036	3.5 mm Multi-Directional Screw 36 mm
8163-35-038	3.5 mm Multi-Directional Screw 38 mm
8163-35-040	3.5 mm Multi-Directional Screw 40 mm
8163-35-042	3.5 mm Multi-Directional Screw 42 mm
8163-35-044	3.5 mm Multi-Directional Screw 44 mm
8163-35-046	3.5 mm Multi-Directional Screw 46 mm
8163-35-048	3.5 mm Multi-Directional Screw 48 mm
8163-35-050	3.5 mm Multi-Directional Screw 50 mm
8163-35-052	3.5 mm Multi-Directional Screw 52 mm
8163-35-054	3.5 mm Multi-Directional Screw 54 mm
8163-35-056	3.5 mm Multi-Directional Screw 56 mm
8163-35-058	3.5 mm Multi-Directional Screw 58 mm
8163-35-060	3.5 mm Multi-Directional Screw 60 mm



Non-Sterile 3.5 mm Screw Module (cont.)

3. 3.5 mm Low Profile Cortical Screw

1312-18-014	3.5 mm Low Profile Cortical 14 mm
1312-18-016	3.5 mm Low Profile Cortical 16 mm
1312-18-018	3.5 mm Low Profile Cortical 18 mm
1312-18-020	3.5 mm Low Profile Cortical 20 mm
1312-18-022	3.5 mm Low Profile Cortical 22 mm
1312-18-024	3.5 mm Low Profile Cortical 24 mm
1312-18-026	3.5 mm Low Profile Cortical 26 mm
1312-18-028	3.5 mm Low Profile Cortical 28 mm
1312-18-030	3.5 mm Low Profile Cortical 30 mm
1312-18-032	3.5 mm Low Profile Cortical 32 mm
1312-18-034	3.5 mm Low Profile Cortical 34 mm
1312-18-036	3.5 mm Low Profile Cortical 36 mm
1312-18-038	3.5 mm Low Profile Cortical 38 mm
1312-18-040	3.5 mm Low Profile Cortical 40 mm
1312-18-042	3.5 mm Low Profile Cortical 42 mm
1312-18-044	3.5 mm Low Profile Cortical 44 mm
1312-18-046	3.5 mm Low Profile Cortical 46 mm
1312-18-048	3.5 mm Low Profile Cortical 48 mm
1312-18-050	3.5 mm Low Profile Cortical 50 mm
1312-18-055	3.5 mm Low Profile Cortical 55 mm
1312-18-060	3.5 mm Low Profile Cortical 60 mm
1312-18-065	3.5 mm Low Profile Cortical 65 mm
1312-18-070	3.5 mm Low Profile Cortical 70 mm
1312-18-075	3.5 mm Low Profile Cortical 75 mm

4. Low Profile Cortical Washer

1312-18-000	3.5 mm Low Profile Cortical Washer

Sterile Implants

2.5 mm Non-locking Screw, Sterile

1312-12-514	Peg Screw 2.5 x 14 mm
1312-12-516	Peg Screw 2.5 x 16 mm
1312-12-518	Peg Screw 2.5 x 18 mm
1312-12-520	Peg Screw 2.5 x 20 mm
1312-12-522	Peg Screw 2.5 x 22 mm
1312-12-524	Peg Screw 2.5 x 24 mm
1312-12-526	Peg Screw 2.5 x 26 mm
1312-12-528	Peg Screw 2.5 x 28 mm
1312-12-530	Peg Screw 2.5 x 30 mm
1312-12-532	Peg Screw 2.5 x 32 mm
1312-12-534	Peg Screw 2.5 x 34 mm
1312-12-536	Peg Screw 2.5 x 36 mm
1312-12-538	Peg Screw 2.5 x 38 mm
1312-12-540	Peg Screw 2.5 x 40 mm

2.5 mm Locking Screw, Sterile

1312-12-614	Peg Full Thread 2.5 x 14 mm
1312-12-616	Peg Full Thread 2.5 x 16 mm
1312-12-618	Peg Full Thread 2.5 x 18 mm
1312-12-620	Peg Full Thread 2.5 x 20 mm
1312-12-622	Peg Full Thread 2.5 x 22 mm
1312-12-624	Peg Full Thread 2.5 x 24 mm
1312-12-626	Peg Full Thread 2.5 x 26 mm
1312-12-628	Peg Full Thread 2.5 x 28 mm
1312-12-630	Peg Full Thread 2.5 x 30 mm
1312-12-632	Peg Full Thread 2.5 x 32 mm
1312-12-634	Peg Full Thread 2.5 x 34 mm
1312-12-636	Peg Full Thread 2.5 x 36 mm
1312-12-638	Peg Full Thread 2.5 x 38 mm
1312-12-640	Peg Full Thread 2.5 x 40 mm

3.5 mm Low Profile Cortical Screw, Sterile

8512-35-014	3.5 mm Low Profile Cortical 14 mm
8512-35-016	3.5 mm Low Profile Cortical 16 mm
8512-35-018	3.5 mm Low Profile Cortical 18 mm
8512-35-020	3.5 mm Low Profile Cortical 20 mm
8512-35-022	3.5 mm Low Profile Cortical 22 mm
8512-35-024	3.5 mm Low Profile Cortical 24 mm
8512-35-026	3.5 mm Low Profile Cortical 26 mm
8512-35-028	3.5 mm Low Profile Cortical 28 mm
8512-35-030	3.5 mm Low Profile Cortical 30 mm
8512-35-032	3.5 mm Low Profile Cortical 32 mm
8512-35-034	3.5 mm Low Profile Cortical 34 mm
8512-35-036	3.5 mm Low Profile Cortical 36 mm
8512-35-038	3.5 mm Low Profile Cortical 38 mm
8512-35-040	3.5 mm Low Profile Cortical 40 mm
8512-35-042	3.5 mm Low Profile Cortical 42 mm
8512-35-044	3.5 mm Low Profile Cortical 44 mm
8512-35-046	3.5 mm Low Profile Cortical 46 mm
8512-35-048	3.5 mm Low Profile Cortical 48 mm
8512-35-050	3.5 mm Low Profile Cortical 50 mm
8512-35-055	3.5 mm Low Profile Cortical 55 mm
8512-35-060	3.5 mm Low Profile Cortical 60 mm
8512-35-065	3.5 mm Low Profile Cortical 65 mm
8512-35-070	3.5 mm Low Profile Cortical 70 mm
8512-35-075	3.5 mm Low Profile Cortical 75 mm

Low Profile Cortical Washer, Sterile

8512-18-000	3.5 mm Low Profile Cortical Washer

2.7 mm Locking Cortical Screw, Sterile

8563-27-010	2.7 mm Cortical Locking Screw 10 mm
8563-27-012	2.7 mm Cortical Locking Screw 12 mm
8563-27-014	2.7 mm Cortical Locking Screw 14 mm
8563-27-016	2.7 mm Cortical Locking Screw 16 mm
8563-27-018	2.7 mm Cortical Locking Screw 18 mm
8563-27-020	2.7 mm Cortical Locking Screw 20 mm
8563-27-022	2.7 mm Cortical Locking Screw 22 mm
8563-27-024	2.7 mm Cortical Locking Screw 24 mm
8563-27-026	2.7 mm Cortical Locking Screw 26 mm
8563-27-028	2.7 mm Cortical Locking Screw 28 mm
8563-27-030	2.7 mm Cortical Locking Screw 30 mm
8563-27-032	2.7 mm Cortical Locking Screw 32 mm
8563-27-034	2.7 mm Cortical Locking Screw 34 mm
8563-27-036	2.7 mm Cortical Locking Screw 36 mm
8563-27-038	2.7 mm Cortical Locking Screw 38 mm
8563-27-040	2.7 mm Cortical Locking Screw 40 mm
8563-27-042	2.7 mm Cortical Locking Screw 42 mm
8563-27-044	2.7 mm Cortical Locking Screw 44 mm
8563-27-046	2.7 mm Cortical Locking Screw 46 mm
8563-27-048	2.7 mm Cortical Locking Screw 48 mm
8563-27-050	2.7 mm Cortical Locking Screw 50 mm

3.5 mm Locking Cortical Screw, Sterile

8561-35-010	3.5 mm Cortical Locking Screw 10 mm
8561-35-012	3.5 mm Cortical Locking Screw 12 mm
8561-35-014	3.5 mm Cortical Locking Screw 14 mm
8561-35-016	3.5 mm Cortical Locking Screw 16 mm
8561-35-018	3.5 mm Cortical Locking Screw 18 mm
8561-35-020	3.5 mm Cortical Locking Screw 20 mm
8561-35-022	3.5 mm Cortical Locking Screw 22 mm
8561-35-024	3.5 mm Cortical Locking Screw 24 mm
8561-35-026	3.5 mm Cortical Locking Screw 26 mm
8561-35-028	3.5 mm Cortical Locking Screw 28 mm
8561-35-030	3.5 mm Cortical Locking Screw 30 mm
8561-35-032	3.5 mm Cortical Locking Screw 32 mm
8561-35-034	3.5 mm Cortical Locking Screw 34 mm
8561-35-036	3.5 mm Cortical Locking Screw 36 mm
8561-35-038	3.5 mm Cortical Locking Screw 38 mm
8561-35-040	3.5 mm Cortical Locking Screw 40 mm
8561-35-042	3.5 mm Cortical Locking Screw 42 mm
8561-35-044	3.5 mm Cortical Locking Screw 44 mm
8561-35-046	3.5 mm Cortical Locking Screw 46 mm
8561-35-048	3.5 mm Cortical Locking Screw 48 mm
8561-35-050	3.5 mm Cortical Locking Screw 50 mm
8561-35-052	3.5 mm Cortical Locking Screw 52 mm
8561-35-054	3.5 mm Cortical Locking Screw 54 mm
8561-35-056	3.5 mm Cortical Locking Screw 56 mm
8561-35-058	3.5 mm Cortical Locking Screw 58 mm
8561-35-060	3.5 mm Cortical Locking Screw 60 mm
8561-35-065	3.5 mm Cortical Locking Screw 65 mm
8561-35-070	3.5 mm Cortical Locking Screw 70 mm

Sterile Implants & Instruments

Multi-Directional Screw, Sterile

8563-35-020 3.5 mm Multi-Directional Screw 20 mm
8563-35-022 3.5 mm Multi-Directional Screw 22 mm
8563-35-024 3.5 mm Multi-Directional Screw 24 mm
8563-35-026 3.5 mm Multi-Directional Screw 26 mm
8563-35-028 3.5 mm Multi-Directional Screw 28 mm
8563-35-030 3.5 mm Multi-Directional Screw 30 mm
8563-35-032 3.5 mm Multi-Directional Screw 32 mm
8563-35-034 3.5 mm Multi-Directional Screw 34 mm
8563-35-036 3.5 mm Multi-Directional Screw 36 mm
8563-35-038 3.5 mm Multi-Directional Screw 38 mm
8563-35-040 3.5 mm Multi-Directional Screw 40 mm
8563-35-042 3.5 mm Multi-Directional Screw 42 mm
8563-35-044 3.5 mm Multi-Directional Screw 44 mm
8563-35-046 3.5 mm Multi-Directional Screw 46 mm
8563-35-048 3.5 mm Multi-Directional Screw 48 mm
8563-35-050 3.5 mm Multi-Directional Screw 50 mm
8563-35-052 3.5 mm Multi-Directional Screw 52 mm
8563-35-054 3.5 mm Multi-Directional Screw 54 mm
8563-35-056 3.5 mm Multi-Directional Screw 56 mm
8563-35-058 3.5 mm Multi-Directional Screw 58 mm
8563-35-060 3.5 mm Multi-Directional Screw 60 mm

Disposables, Sterile

8295-16-150 1.6 mm Steinman Pin Bayonet Tip
2312-01-301 Drill Bit F.A.S.T. 2.0 mm
2312-18-023 2.7 mm Short F.A.S.T. Guide, Left
2312-18-024 2.7 mm Short F.A.S.T. Guide, Right
2312-18-025 2.7 mm Short F.A.S.T. Guide, Bilateral

Lateral Plates, Sterile

8513-18-200 Distal Humeral Lateral Plate, 7 hole right
8513-18-201 Distal Humeral Lateral Plate, 9 hole right
8513-18-202 Distal Humeral Lateral Plate, 7 hole left
8513-18-203 Distal Humeral Lateral Plate, 9 hole left
8513-18-204 Distal Humeral Lateral Plate, 11 hole right
8513-18-205 Distal Humeral Lateral Plate, 15 hole right
8513-18-207 Distal Humeral Lateral Plate, 11 hole left
8513-18-208 Distal Humeral Lateral Plate, 15 hole left

Posterior Lateral Plates, Sterile

8513-18-300 Distal Humeral Posterior Lateral Plate, 9 hole right
8513-18-301 Distal Humeral Posterior Lateral Plate, 11 hole right
8513-18-302 Distal Humeral Posterior Lateral Plate, 9 hole left
8513-18-303 Distal Humeral Posterior Lateral Plate, 11 hole left
8513-18-305 Distal Humeral Posterior Lateral Plate, 17 hole right
8513-18-308 Distal Humeral Posterior Lateral Plate, 17 hole left
8513-18-800 Distal Humeral Posterior Lateral Plate, 21 hole right
8513-18-801 Distal Humeral Posterior Lateral Plate, 25 hole right
8513-18-803 Distal Humeral Posterior Lateral Plate, 21 hole left
8513-18-804 Distal Humeral Posterior Lateral Plate, 25 hole left

Proximal Radius Plates, Sterile

8513-18-400 Proximal Radius Plate Small
8513-18-401 Proximal Radius Plate Large

Coronoid Plates, Sterile

8513-18-500 Coronoid Plate, Right
8513-18-501 Coronoid Plate, Left

Olecranon Plates, Sterile

8513-18-600 Olecranon Plate Small, 10 Hole
8513-18-601 Olecranon Plate Large, 13 Hole
8513-18-604 Olecranon Plate Right, 17 Hole
8513-18-606 Olecranon Plate Right, 21 Hole
8513-18-607 Olecranon Plate Left, 17 Hole
8513-18-609 Olecranon Plate Left, 21 Hole

Medial Plates, Sterile

8513-18-700 Distal Humeral Medial Plate, 9 hole right
8513-18-701 Distal Humeral Medial Plate, 10 hole right
8513-18-702 Distal Humeral Medial Plate, 9 hole left
8513-18-703 Distal Humeral Medial Plate, 10 hole left
8513-18-704 Distal Humeral Medial Plate, 13 hole right
8513-18-705 Distal Humeral Medial Plate, 17 hole right
8513-18-707 Distal Humeral Medial Plate, 13 hole left
8513-18-708 Distal Humeral Medial Plate, 17 hole left

Non-Sterile Trials

Lateral

2312-18-200 Distal Humeral Lateral Right Plate Trial, 7 Hole
2312-18-202 Distal Humeral Lateral Left Plate Trial, 7 Hole

Posterior Lateral

2312-18-300 Distal Humeral Posterior Lateral Right Plate Trial, 9 Hole
2312-18-302 Distal Humeral Posterior Lateral Left Plate Trial, 9 Hole

Proximal Radius

2312-18-400 Proximal Radius Plate Trial

Coronoid

2312-18-500 Coronoid Plate Right Trial
2312-18-501 Coronoid Plate Left Trial

Olecranon

2312-18-600 Olecranon Plate Trial, 10 Hole

Medial

2312-18-700 Distal Humerus Medial Right Plate Trial, 9 Hole
2312-18-702 Distal Humerus Medial Left Plate Trial, 9 Hole

INDICATIONS

The A.L.P.S. Elbow Plating Systen is indicated for fixaiton of fractures, fusions, osteotomies, and non-unions of the clavicle, humerus, radius, ulna, olecranon, metacarpal, metatarsal, malleolus, tibia and fibula, particularly in osteopenic bone.

CONTRAINDICATIONS

Screws, plates, intramedullary nails, compression hip screws, pins and wires are contraindicated in: active infection, conditions which tend to retard healing such as blood supply limitations, previous infections, insufficient quantity or quality of bone to permit stabilization of the fracture complex and/or fusion of the joints, conditions that restrict the patient's ability or willingness to follow postoperative instructions during the healing process, foreign body sensitivity, and cases where the implant(s) would cross open epiphyseal plates in skeletally immature patients.

ADDITIONAL CONTRAINDICATION FOR ORTHOPAEDIC SCREWS AND PLATES ONLY

Cases with malignant primary or metastatic tumors which preclude adequate bone support or screw fixations, unless supplemental fixation or stabilization methods are utilized.

Reference

1. DVA-107504-DVER. Data on file at Biomet. Mechanical testing not necessarily indicative of clinical performance

Check for country product clearances and reference product specific instructions for use. For complete product information, including indications, contraindications, warnings, precautions, and potential adverse effects, see the package insert and Zimmer Biomet's website.

This technique was prepared in conjunction with a licensed health care professional. Zimmer Biomet does not practice medicine and does not recommend any particular orthopedic implant or surgical technique for use on a specific patient. The surgeon is responsible for determining the appropriate device(s) and technique(s) for each individual patient.

Not for distribution in France.

EC REP **Authorised Representative**
Biomet UK Limited
Waterton Industrial Estate
Bridgend, South Wales
CF31 3XA
United Kingdom

Legal Manufacturer
Biomet Trauma
P.O. Box 587
56 East Bell Drive
Warsaw, Indiana 46581-0587
USA

www.biomet.com

ZIMMER BIOMET
Your progress. Our promise.™

0007.1-GLBL-en-REV0715

CE 0086
CE mark on a surgical technique is not valid unless there is a CE mark on the product label.