ACUMED®

ULNAR SHORTENING PLATE

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Since 1988 Acumed has been designing solutions to the demanding situations facing orthopedic surgeons, hospitals and their patients. Our strategy has been to know the indication, design a solution to fit, and deliver quality products and instruments.

Acumed's Ulnar Shortening Plate is designed to offer an anatomic, low-profile plate with built-in osteotomy reference guides and a simplified surgical technique.

The reference guides on the plate help facilitate the creation of the osteotomy, as well as show the amount of shortening achieved.

The plate offers locking screws, which thread into the plate and sit below the plate surface when fully seated. The interfragmentary lag screw is placed through a scalloped slot in the center of the plate and angles across the osteotomy, helping to compress and maximize fixation.

The elimination of technically demanding cutting guides, lag guide assembly and reduction devices simplifies the surgical technique and reduces operating time.

Designed in conjunction with Dr. William Geissler, MD the low-profiled ulnar shortening plate fits the volar anatomy of the ulna. The plate widens as the distal portion of the ulna widens, giving the plate more strength and allowing the overall fixation to be held firmly until the bone heals. The sides are smooth minimizing soft tissue irritation and patient discomfort.

The plate is designed to keep the screw heads as low profile as possible, reducing soft tissue irritation. The interfragmentary lag screw has the option to be placed in two locations through a scalloped slot and hold the osteotomy securely closed. The plate offers the option to lock up to three screws distally and one hole proximally.

Indications for an ulnar shortening osteotomy include:

- Ulnar Impaction Syndrome due to ulnar-positive variance.
- DRUJ incongruity due to shortening of the radius.
- Traumatic and degenerative tears of the TFCC associated with positive ulnar variance.

Built-in Osteotomy Guide

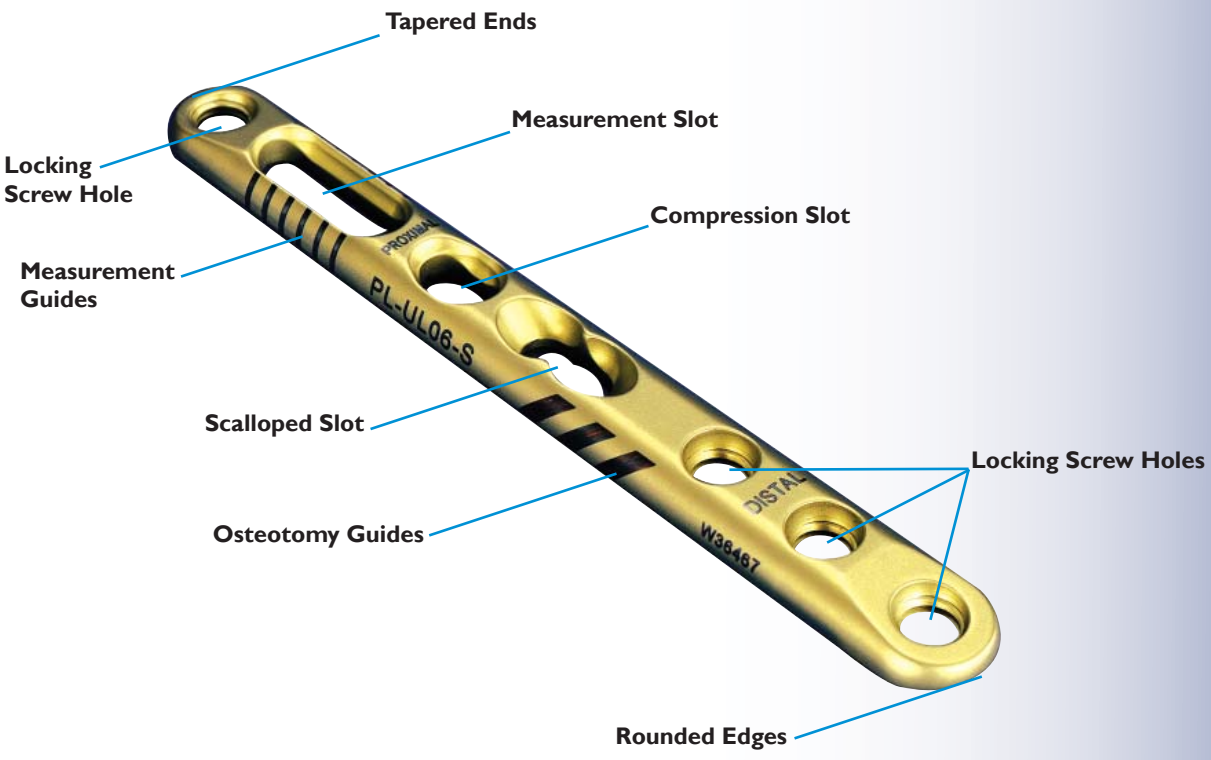
Reference guides on the side of the plate help provide alignment of the saggital saw and facilitate creating a precise osteotomy as well as reference the amount of shortening desired. Each oblique mark represents two millimeters of shortening and the perpendicular lines, near the reduction slot, are spaced at two millimeters giving a reference of shortening obtained from the osteotomy, reducing the use of x-ray to determine shortening.

Low Profile Plate Design

The plate is designed to fit the anatomy of the volar aspect of the ulna minimizing the possibility of soft tissue irritation and patient discomfort. The low profile heads of the locking screws sit flush with the plate and the bi-cortical non-locking screw heads are rounded to help maintain the low profile design.

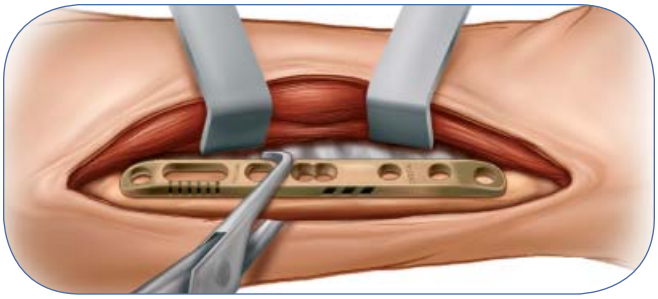
Simplified Surgical Technique

The plate, along with the built-in guides, helps make the surgical technique simple and enables the surgeon to eliminate technically demanding instrumentation and reduce operating time. The screws inserted in the plate stabilize the ulna and help maintain rotational alignment while creating the osteotomy.



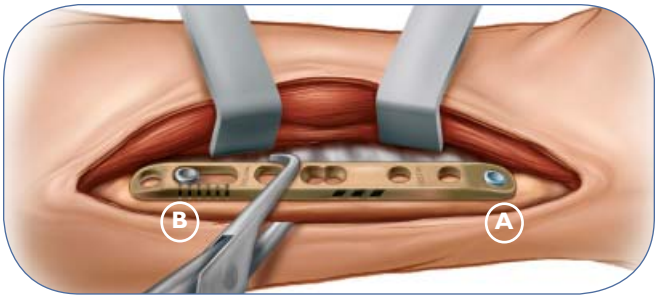
SURGICAL TECHNIQUE

ULNAR SHORTENING PLATE



Step 1:

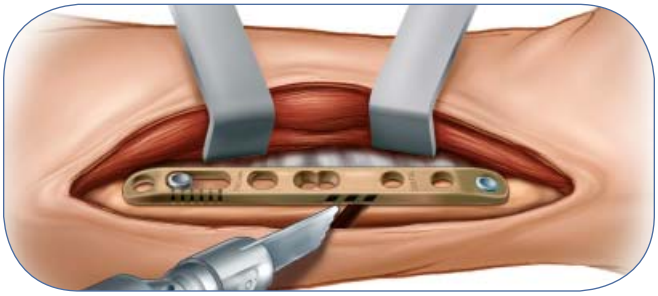
Determine the amount of ulnar variance by preoperative x-rays. After exposing the volar side of the ulna, place the plate 3-5cm proximal to the distal end of the ulna. Secure the plate to the volar surface with one or more clamps. Make sure the proximal and distal orientation of the plate is correct, as noted by the laser marks on the plate.



Step 2:

Thread the 3.5mm locking drill guide (MS-LDG35) in the most distal hole in the plate (A) and drill bi-cortically using a 2.8mm drill (MS-DC28). Remove the drill and guide, measure for length and insert a 3.5mm locking screw.

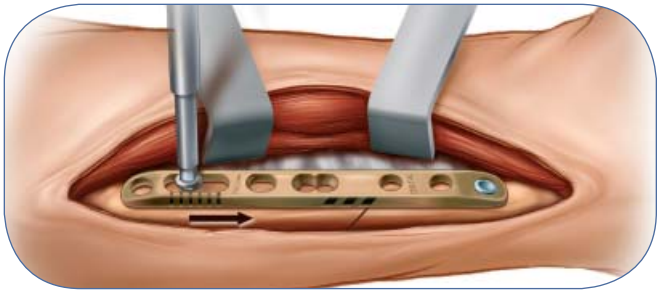
In the proximal end of the measurement slot (B) use a 2.8mm non-locking guide (PL-2196) and drill bi-cortically and perpendicular to the plate with a 2.8mm drill. Measure for length and insert a non-locking 3.5mm screw.



Step 3:

Using the 45° reference marks as a guide, create the osteotomy angled at least 45° perpendicular to the plate. Start the osteotomy at the most distal laser mark. Create the osteotomy to the determined amount of shortening and excise the bone wafer.

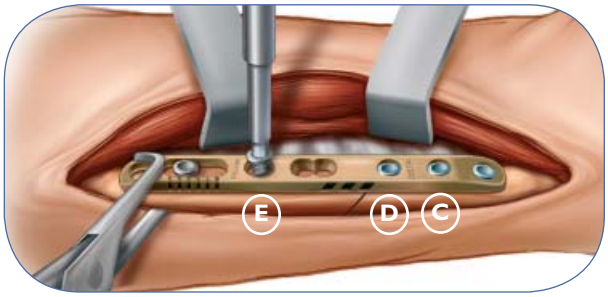
Note: Each laser mark guide and space is 2mm wide. Additionally, the kerf of the blade should be taken into consideration when creating the osteotomy.



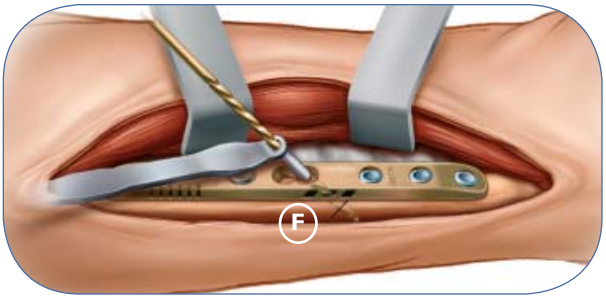
Step 4:

Slightly loosen the measurement slot screw, reduce the osteotomy gap, provisionally hold the reduction with reduction forcepts (PL-CL04) and tighten the measurement screw. The perpendicular reference marks on the side of the plate are placed at 2mm increments and represent the amount of reduction achieved.

Note: If the gap does not close, make sure there is no bone left in the osteotomy site near the plate. If this occurs the proximal and distal ends of the bone may be rotated under the plate to remove any bone blocking reduction.

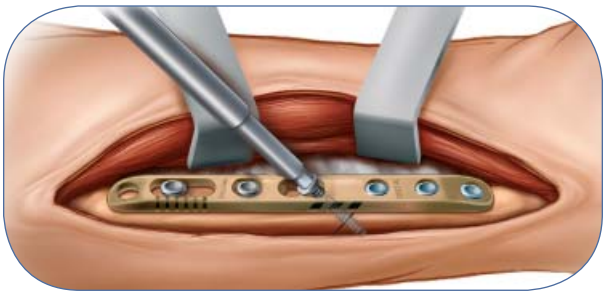


Step 5:
Place screws in the second (C) and third (D) most distal locking holes. Thread in the 3.5mm locking drill guide, drill using a 2.8mm drill, measure and insert 3.5mm locking screws. This helps prevent the distal portion of the bone wedging the plate away from the bone during final reduction.
If further compression is desired, the next hole distally (E) is an offset slot. Loosen the screw in the measurement slot and further compress the osteotomy. While holding the compression, drill the offset slot in compression mode with a 2.8mm drill, measure and insert a 3.5mm non-locking bi-cortical screw. Tighten the measurement screw. Determine that the desired amount of shortening has been achieved by x-ray.

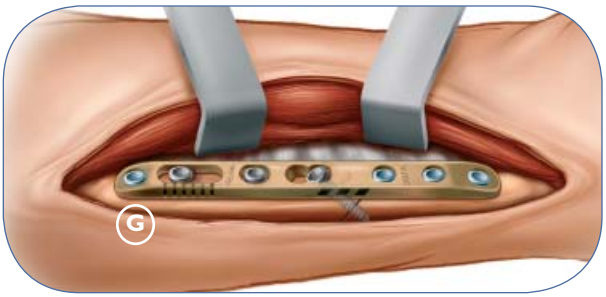


Step 6:
In the scalloped slot (F), drill across the osteotomy using a 3.5mm / 2.8mm drill guide (PL-2196). Drill a glide hole in the near cortex with the 3.5mm end of the drill guide, then place the 2.8mm side in the 3.5mm glide hole and drill the far cortex with the 2.8mm drill. The proximal or distal portion of the slot may be used depending on the osteotomy location and desired interfragmentary screw placement.

Note: If the angle of the drill is more than 45 degrees, when drilling, you risk hitting the distal locking screw.

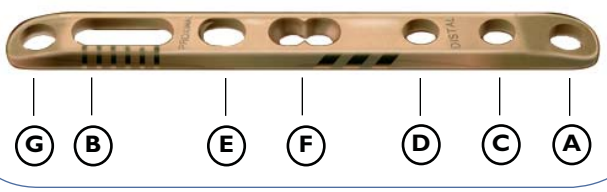


Step 7:
Measure for the interfragmentary screw length then insert a 3.5mm non-locking screw to hold the reduction of the osteotomy.



Step 8:
Thread in the 3.5mm locking drill guide in the most proximal locking hole (G), drill using a 2.8mm drill, measure and insert a 3.5mm locking screw.

Screw Insertion Order



ORDERING INFORMATION

Note: The Ulnar Shortening Osteotomy Plate can be used with the following Acumed systems: Locking Clavicle Plate, Congruent Locking Elbow Plate and Acu-loc® Distal Radius Plate. Additional instrumentation and implants may be required in each of these systems. The following is a recommended list of implants and instrumentation.

Ulnar Shortening Osteotomy Plate	
Ulnar Shortening Plate	PL-UL06-S

3.5mm Locking Cortical Screws	
3.5mm x 8mm Locking Cortical Screw	COL-3080
3.5mm x 10mm Locking Cortical Screw	COL-3100
3.5mm x 12mm Locking Cortical Screw	COL-3120
3.5mm x 14mm Locking Cortical Screw	COL-3140
3.5mm x 16mm Locking Cortical Screw	COL-3160
3.5mm x 18mm Locking Cortical Screw	COL-3180

3.5mm Non-locking Cortical Screws	
3.5mm x 10mm Cortical Screw	CO-3100
3.5mm x 12mm Cortical Screw	CO-3120
3.5mm x 14mm Cortical Screw	CO-3140
3.5mm x 16mm Cortical Screw	CO-3160
3.5mm x 18mm Cortical Screw	CO-3180
3.5mm x 20mm Cortical Screw	CO-3200

Instrumentation	
2.5mm Driver Tip	HPC-0025
2.8mm Quick Release Drill	MS-DC28
3.5mm Quick Release Drill	MS-DC35
Reduction Forceps with Serrated Jaw	PL-CL04
Hohman Retractor	MS-46827
2.8mm / 3.5mm Thin Drill guide (Lag)	PL-2196
Drill Guide for 3.5mm Locking Screws	MS-LDG35
Large Cannulated Quick Release Driver Handle	MS-3200

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Distributed by:

CPS00-10-01
Effective: 1/2007