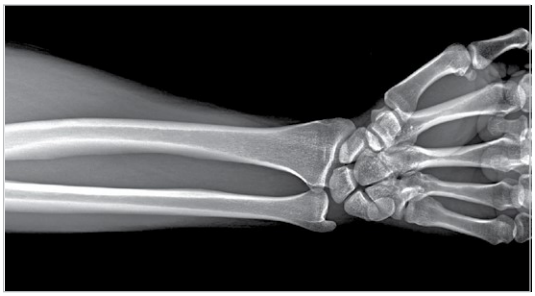
ACUMED®

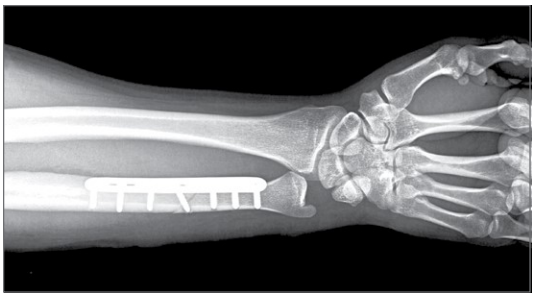
Osteotomy System Brochure

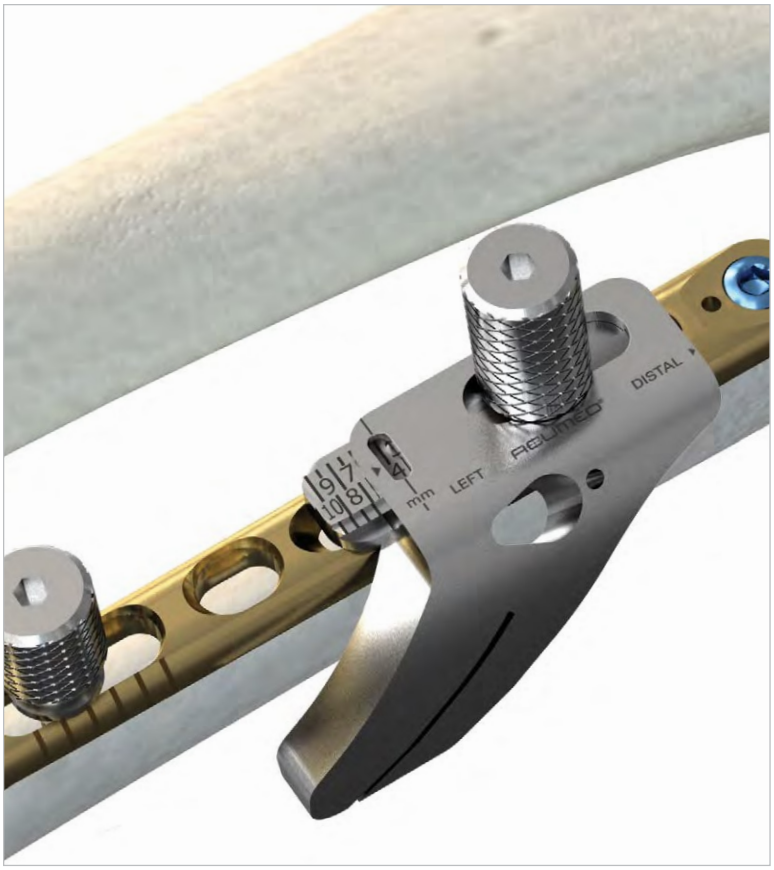
Osteotomy System

Acumed® is a global leader of innovative orthopaedic and medical solutions.

We are dedicated to developing products, service methods and approaches that improve patient care.







The Acumed® Osteotomy System features the Ulnar Shortening Plate which is designed to offer an anatomic, low-profile plate with built-in osteotomy reference lines and a simple cutting guide.

The reference lines on the plate help facilitate the creation of the osteotomy, when a "free hand cut" is preferred.

Designed in conjunction with William B. Geissler, M.D., the low-profile Ulnar Shortening Plate is designed to keep the screw heads as low as possible. The interfragmentary lag screw may be placed in one of two locations through the scalloped slot and is intended to compress the osteotomy securely. The plate offers the option to lock up to three screws distally and one 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

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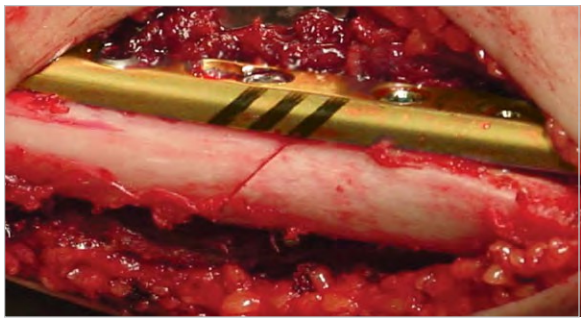
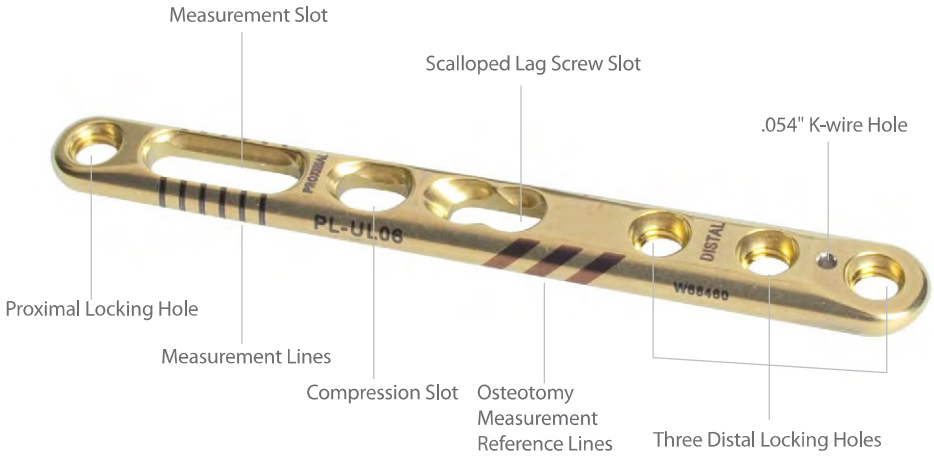
Built-in Osteotomy Reference Guides

Measurement reference lines on the side of the plate visually display the amount of shortening preferred. Each 40° oblique laser line and spacing in between represents 2 mm of shortening. The perpendicular lines near the measurement slot, are spaced 2 mm apart as well, however the lines are designed to indicate the shortening obtained from the osteotomy.





Advanced Instrumentation

The reduction clamp utilizes a speed-lock wheel designed to maintain a hands free compression of the osteotomy. The multipurpose temporary reduction peg is partially threaded to help ensure that the far cortex is not tapped prior to it being replaced by a screw. The peg is designed to stabilize the ulna and help maintain rotational alignment while creating the osteotomy prior to being used with the reduction clamp.

Cutting Guide Features

Osteotomy Guide Assembly Instructions

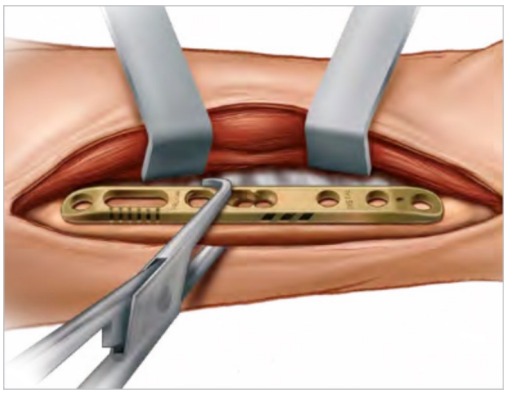
The Acumed® cutting guide offers the ability to make adjustments needed to perform the first and second cuts without the need for numerous guides. Additionally, allowing continuous adjustment from 1 mm to 10 mm, the Acumed® cutting guide resects the amount desired.

1 Ensuring that the laser marked arrows are aligned, slide the bottom plate (80-0420) into the chosen cutting guide (80-0418 or 80-0419). Ensure that the bottom plate is completely engaged into the cutting guide.

Note: The subsequent technique is for a volar approach with the cutting guide. If a medial approach is taken then the opposite cutting guide can be used. Be sure the cutting slot lines up with the angled measurement reference lines on the plate.

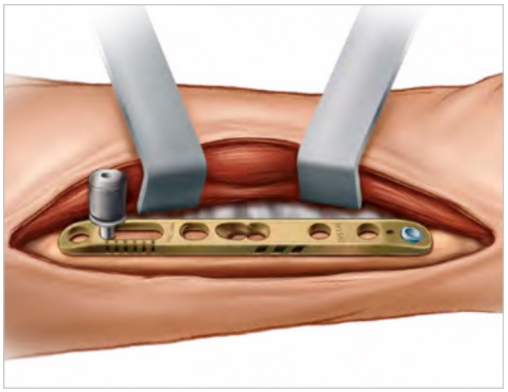
2 Slide the bottom plate distal enough so that the locking bolt (80-0421) can be inserted through both pieces.

1 Determine the amount of ulnar variance by preoperative X-rays. After exposing the volar side of the ulna, place the plate 3-5 cm 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.



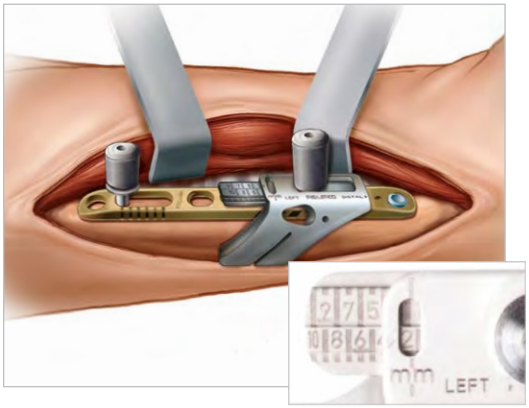
2 Drill the most distal locking hole using the threaded drill guide (80-0384) and 2.8 mm drill (80-0387) and insert the proper length 3.5 mm light blue locking screw (COL-3XX0). In the proximal end of the measurement slot, drill bicortically and perpendicular to the plate and insert the temporary reduction peg (80-0422) with a 2.5 mm hex driver.

Option: Predrill the two remaining distal locking holes in the same manner with the threaded drill guide but DO NOT INSERT SCREWS. This optional step can also occur after the osteotomy has been achieved based on surgeon preference.

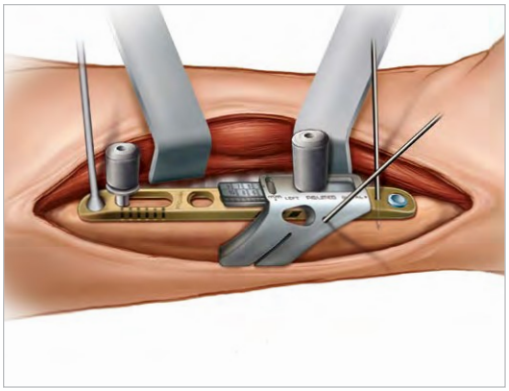


3 Remove the clamp and insert the pre-assembled cutting guide so that the locking bolt is inserted into the third most distal locking hole closest to the lasered reference lines. The cutting slot on the cutting guide will be aligned with the angled laser lines on the plate.

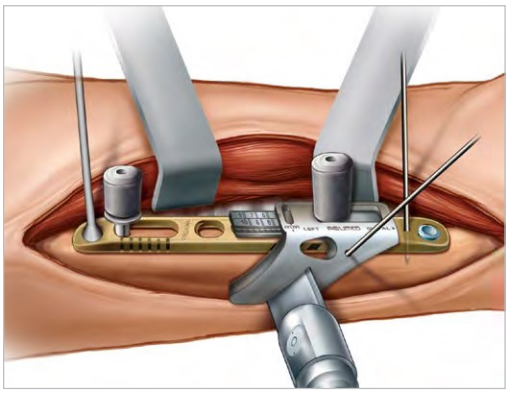
Osteotomy with Guide



4 Set the cutting guide to the 1 mm mark in the measurement window and firmly tighten the locking bolt (80-0421) with a 2.5 mm hex driver.



5 For additional rotational stability, a plate tack (PL-TACK) may be inserted into the proximal locking hole and a .054" K-wire can be inserted into the K-wire hole in the distal end of the plate. A second .054" K-wire may be inserted through the cutting guide and into the bone for additional stability.



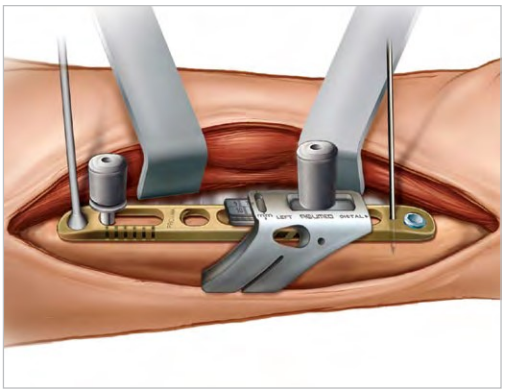
6 Insert the saw blade in the cutting guide slot and make the first cut. Generously irrigate the osteotomy.

Note: The cutting slot is .027" (.68 mm) wide. The saw blade used must be thinner than the cutting slot and should allow for a minimum cutting depth of 25 mm in order to pass through the guide and bone. Saw blades smaller then .5 mm may be too thin and can increase the chance of an unparallel cut. If the kerf of the blade does not clear the slot, it may be inserted by sliding the shaft of the blade through the open-end of the cutting slot.

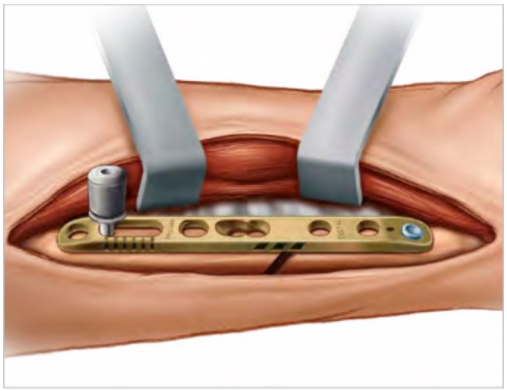
7 Remove the K-wire inserted into the cutting guide and loosen the locking bolt just enough to slide the cutting guide to the number corresponding to the amount of shortening preferred. Firmly retighten the locking bolt with the 2.5 mm hex driver.

Make sure that both sides of the ulna are re-aligned and re-insert the K-wire through the cutting guide into the bone. Make the 2nd cut.

Note: The numbers on the bottom plate are designed to correspond to the preferred amount of bone to be resected, i.e. the "4" signifies 4 mm of resection.

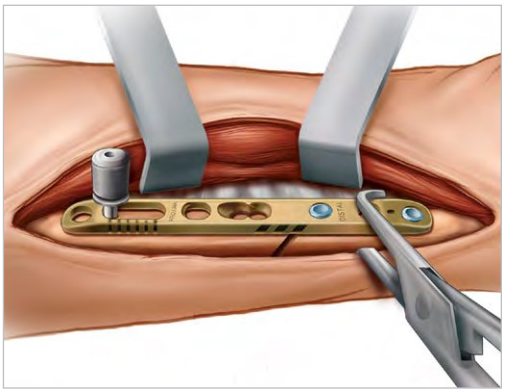


8 Remove both K-wires, the cutting guide and plate tack. Slightly loosen (DO NOT REMOVE) the temporary reduction peg in the measurement slot and excise the bone wafer.



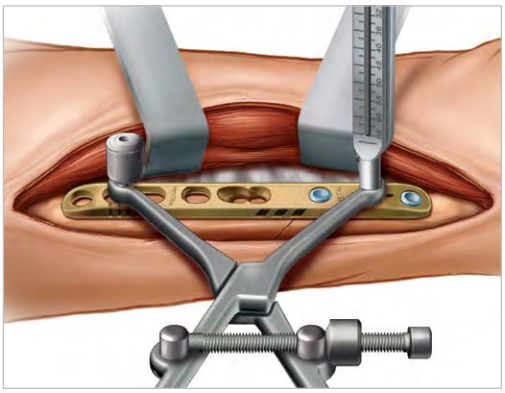
9 Place a bone clamp over the distal portion of the ulna and plate to reduce the gap in between them. In the third most distal locking hole closest to the osteotomy, drill using the threaded drill guide (80-0384) and 2.8 mm drill (80-0387) if predrilling was not preformed in STEP 2.

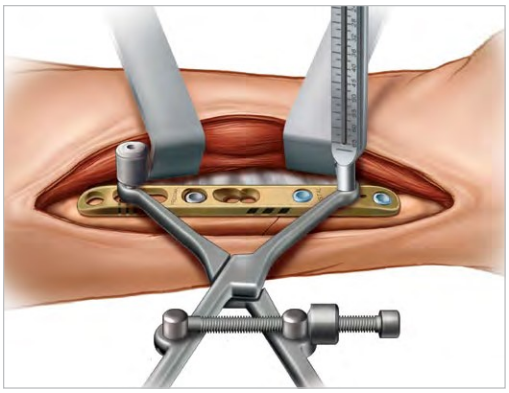
Insert the proper length 3.5 mm locking screw or nonlocking screw. Remove the bone clamp and place the threaded drill guide into the second distal locking hole.



10 Place the reduction clamp (80-0423) around the reduction peg and threaded drill guide. Reduce the osteotomy gap with the reduction clamp and tighten the speed-lock wheel on the clamp to maintain reduction hands-free.

Note: If the gap does not close, examine and remove any excess bone in the osteotomy site near the plate. If excess bone is present in the osteotomy site, the proximal and distal ends of the bone may be rotated under the plate to remove any bone blocking reduction.





11 While holding the compression, drill the proximal end of the compression slot with a 2.8 mm drill, measure and insert a 3.5 mm nonlocking bicortical screw. Ensure that the preferred amount of shortening has been achieved by X-ray.

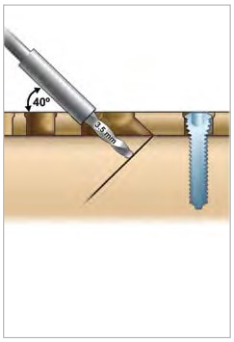


Figure 1

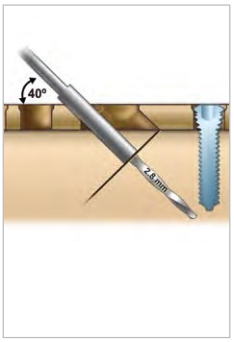
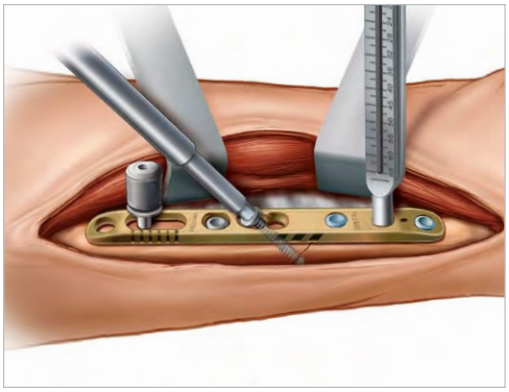


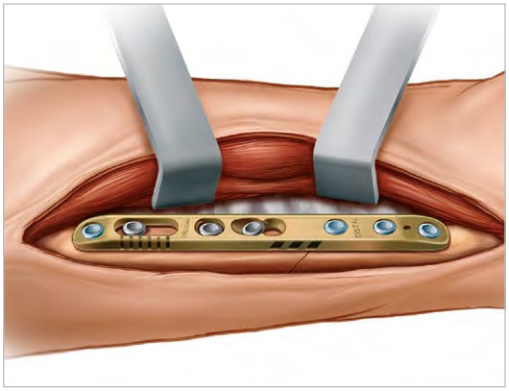
Figure 2

12 In the scalloped lag screw slot using a 3.5 mm drill and the 3.5 mm/2.8 mm drill guide (PL-2196), drill a glide hole in the near cortex at an angle across the osteotomy site (Figure 1). Although the proximal or distal portion of the slot may be used depending on the osteotomy location and preferred interfragmentary screw placement, the proximal slot is preferred. Next, place the 2.8 mm end of the drill guide into the 3.5 mm glide hole and use a 2.8 mm drill to drill the far cortex (Figure 2).

Note: If the angle of the drill is too shallow, the drill may collide with the adjacent screw.

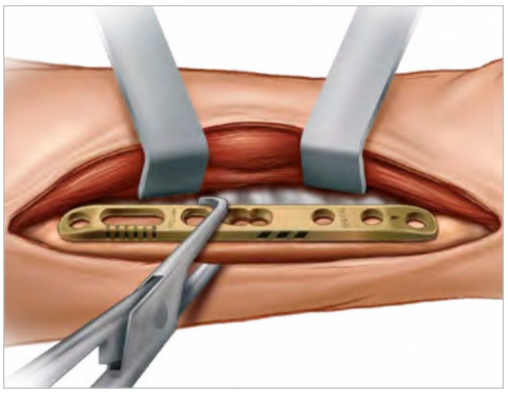


13 Measure and insert a nonlocking 3.5 mm screw into the scalloped lag screw slot. Remove the reduction clamp. Drill the second distal locking hole before removing the threaded drill guide. Measure and insert a locking screw into the remaining distal locking hole.



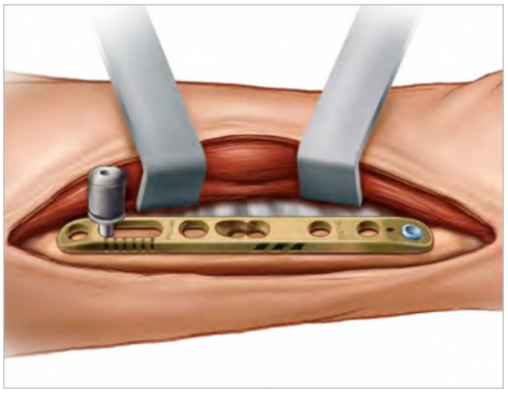
14 Remove the temporary reduction peg. Measure and replace with a 3.5 mm nonlocking screw. Drill, measure and insert a locking 3.5 mm screw in the remaining proximal locking hole.

1 Determine the amount of ulnar variance by preoperative X-rays. After exposing the volar side of the ulna, place the plate 3-5 cm 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.



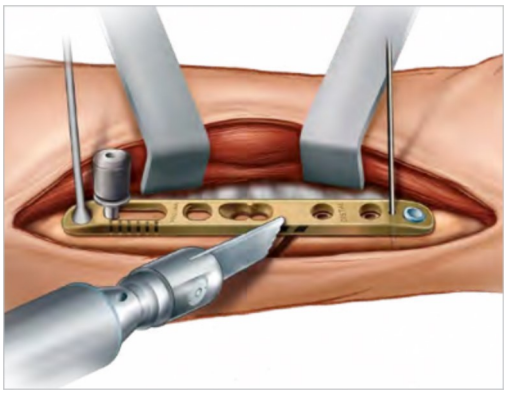
2 Drill the most distal locking hole using the threaded drill guide (80-0384) and 2.8 mm drill (80-0387) and insert the proper length 3.5 mm light blue locking screw (COL-3XX0). In the proximal end of the measurement slot, drill bicortically perpendicular to the plate and insert the temporary reduction peg (80-0422) with a 2.5 mm hex driver.

Option: Predrill the two remaining distal locking holes in the same manner with the threaded drill guide but DO NOT INSERT SCREWS. This optional step can also occur after the osteotomy has been achieved based on surgeon preference.



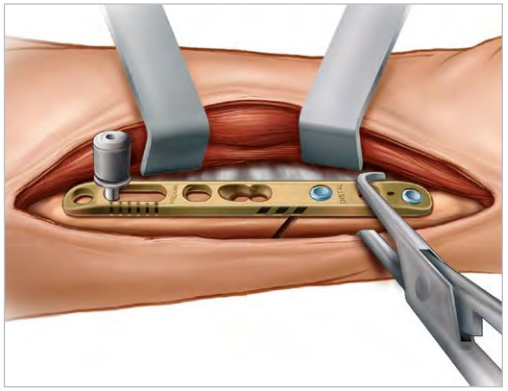
3 Using the 40° reference marks as a visual guide, start the osteotomy at the most distal laser mark. Generously irrigate the osteotomy. Create the osteotomy to the determined amount of shortening and excise the bone wafer. A .054" K-wire in the distal end of the plate and a plate tack in the proximal end may be used for additional stability.

Note: Each 40° reference line and space is 2 mm wide.

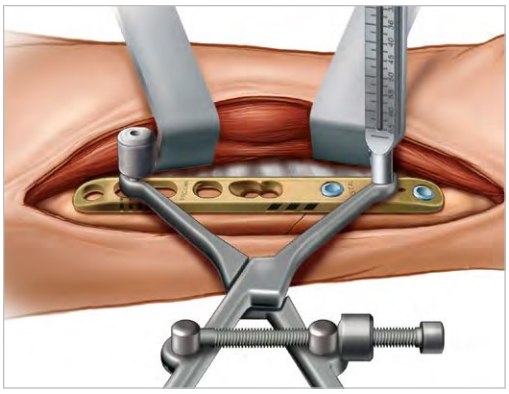


4 Examine and remove any excess bone in the osteotomy site near the plate. If excess bone is present in the osteotomy site, the proximal and distal ends of the bone may be rotated under the plate to remove any bone blocking the reduction.

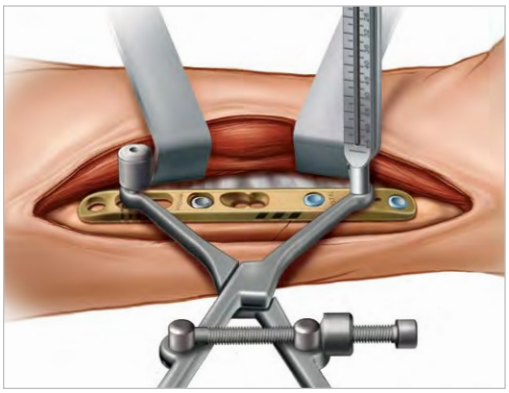
Place a bone clamp over the distal portion of the ulna and plate to reduce the gap in between them. In the third most distal locking hole closest to the osteotomy, drill using the threaded drill guide (80-0384) and 2.8 mm drill (80-0387) if predrilling was not preformed in STEP 2. Insert a locking or bicortical nonlocking screw.



Osteotomy without Guide



5 Remove the bone clamp and place the threaded drill guide into the second distal locking hole. Slightly loosen the reduction peg in the measurement slot. Place the reduction clamp (80-0423) around the reduction peg and threaded drill guide. Reduce the osteotomy gap with the reduction clamp and tighten the speed-lock wheel on the clamp to maintain reduction hands-free.



6 While holding the compression, drill the proximal end of the compression slot with a 2.8 mm drill, measure and insert a 3.5 mm nonlocking bicortical screw. Ensure that the preferred amount of shortening has been achieved by X-ray.

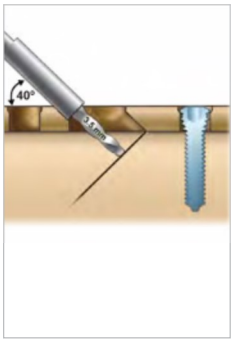


Figure 1

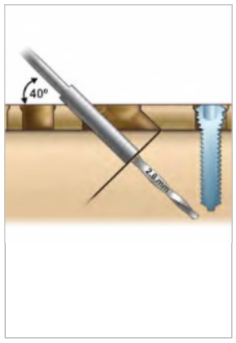
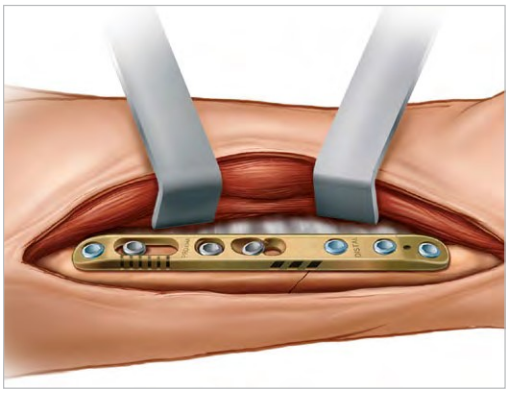


Figure 2

7 In the scalloped slot, using a 3.5 mm drill and the 3.5 mm/2.8 mm drill guide (PL-2196), drill a glide hole in the near cortex at an angle across the osteotomy site (Figure 1). Next, place the 2.8 mm end of the drill guide into the 3.5 mm glide hole and use a 2.8 mm drill to drill the far cortex (Figure 2). Measure and insert a nonlocking screw. The proximal or distal portion of the slot may be used depending on the osteotomy location and preferred interfragmentary screw placement. The most proximal hole is preferred.

Note: If the angle of the drill is too shallow, the drill may collide with the adjacent screw.



8 Remove reduction clamp and drill the second distal locking hole before removing the threaded drill guide. Measure and insert a locking screw into the remaining distal locking hole. Remove the temporary reduction peg. Measure and replace with a 3.5 mm nonlocking screw. Drill, measure and insert a locking 3.5 mm screw in the remaining proximal locking hole.

Ordering Information

Ulnar Shortening Plate	
Ulnar Shortening Plate	PL-UL06

Ulnar Shortening Saw Blades	
Osteotomy Saw Blade Hub Style L	80-0739-S
Osteotomy Saw Blade Hub Style S	80-0740-S

3.5 mm Locking Cortical Screws	
3.5 mm x 8 mm Locking Cortical Screw	COL-3080
3.5 mm x 10 mm Locking Cortical Screw	COL-3100
3.5 mm x 12 mm Locking Cortical Screw	COL-3120
3.5 mm x 14 mm Locking Cortical Screw	COL-3140
3.5 mm x 16 mm Locking Cortical Screw	COL-3160
3.5 mm x 18 mm Locking Cortical Screw	COL-3180
3.5 mm x 20 mm Locking Cortical Screw	COL-3200

3.5 mm Cortical Screws	
3.5 mm x 8 mm Cortical Screw	CO-3080
3.5 mm x 10 mm Cortical Screw	CO-3100
3.5 mm x 12 mm Cortical Screw	CO-3120
3.5 mm x 14 mm Cortical Screw	CO-3140
3.5 mm x 16 mm Cortical Screw	CO-3160
3.5 mm x 16 mm Cortical Screw	CO-3180
3.5 mm x 20 mm Cortical Screw	CO-3200

Instrumentation	
Ulnar Shortening Guide Left	80-0418
Ulnar Shortening Guide Right	80-0419
Ulnar Shortening Guide Bottom Plate	80-0420
Ulnar Shortening Locking Bolt	80-0421
Ulnar Shortening Reduction Peg	80-0422
Ulnar Shortening Reduction Clamp	80-0423
2.8 mm Quick Release Drill	80-0387
3.5 mm x 5" Quick Release Drill	MS-DC35
2.8 mm Locking Drill Guide 6-65 mm	80-0384
.054" x 6" Guide Wire	WS-1406ST

Tray	
Instrument Tray	80-0513

The Ulnar Shortening Plate can be used with the following Acumed® systems: Universal Tray and Congruent Locking Elbow Plate. To order, contact your local Acumed® Representative.

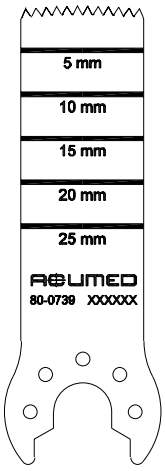
To learn more about the full line of Acumed® innovative surgical solutions, please contact your local Acumed® Sales Representative or call 888-627-9957.

Saw Blade Specifications

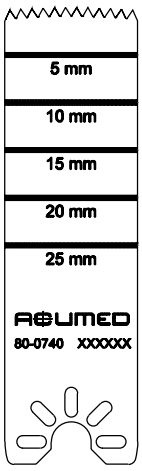
Acumed® offers two sagittal saw blades with the Osteotomy System: Hub Style L (80-0739-S) and Hub Style S (80-0740-S). Each Acumed® saw blade has a thickness of .5 mm (.020") along the shaft and .63 mm (.025") at the cutting edge (kerf).

Note: The use of a generic saw blade with the Osteotomy System must meet meet the following specifications and and is considered the responsibility of the user. The cutting slot is .68 mm (.027") wide. The saw blade used must be thinner than the cutting slot and should allow for a minimum cutting depth of 25 mm in order to pass through the guide and bone. Saw blades smaller then .5 mm may be too thin and can increase the chance of an unparallel cut.

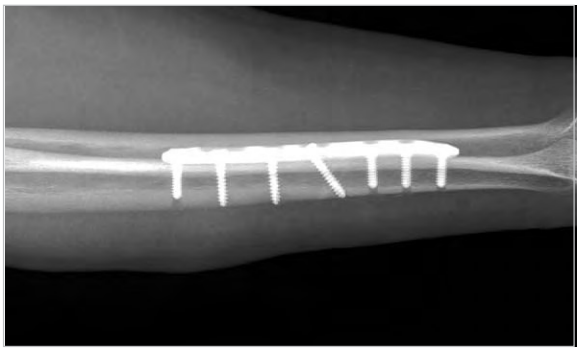
If the kerf of the blade does not clear the slot, it may be inserted by sliding the shaft of the blade through the open-end of the cutting slot.

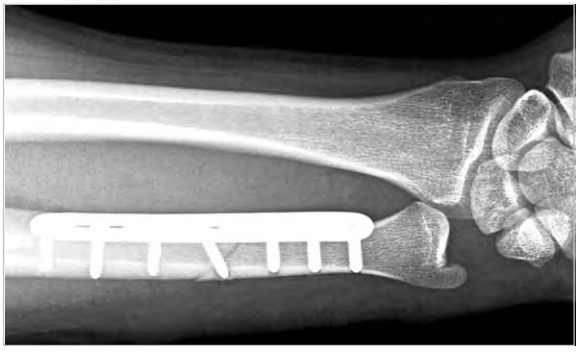


Hub Style L



Hub Style S





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