

ACUMED®



ACU-LOC® 2  
Volar Distal Radius  
Plating System

# Acu-Loc® 2 Volar Distal Radius Plating 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 original Acu-Loc® Volar Distal Radius Plate has been a market leader in fracture fixation since its introduction in 2004. Acumed® offered an innovative solution for repairing intra-articular fractures, malunions and nonunions of the distal radius by designing the first truly anatomic volar plate.

Developed in conjunction with our accomplished surgeon design team, Acumed® introduces the Acu-Loc® 2 Volar Distal Radius (VDR) Plating System as the next generation in plating fixation. The system presents several new plate options, a unique two piece locking compression screw, innovative instrumentation for fracture management and improved plate placement tools.

## Acu-Loc® 2 Surgeon Design Team

**William B. Geissler, M.D.**

University of Mississippi

**Daniel J. Brown, FRCS**

Royal Liverpool University Hospital

**David S. Ruch, M.D.**

Duke University Medical Center

## Indication-Specific Plate Designs Include:



### Acu-Loc® 2 VDR Plates:

Comprised of ten plates, these distally fitting silver plates offer maximum coverage for complex intra-articular fractures.



### Acu-Loc® 2 Proximal VDR Plates:

This gold plate family includes ten plates and is designed for surgeons who prefer a more proximal plate placement.



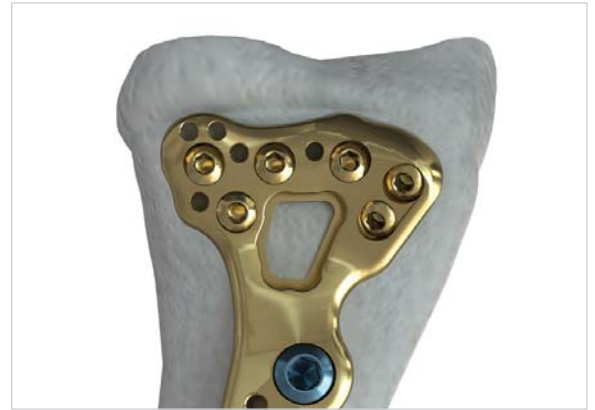
**Distal Radius Fragment Specific (DRFS) Plates:** Six fragment specific plates are designed to independently address fractures of the intermediate and radial columns.

## Contents

Introducing the System	2
System Features	3
Acu-Loc® 2 Proximal Plate Features	4
Plate Placement Options	5
Acu-Loc® 2 VDR Plate Options	6
Screw and Peg Options	6
Acu-Loc® 2 Extension Plate Features	7
Instrumentation	8
Frag-Loc® Compression Screw Reference Chart	9
Frag-Loc® Surgical Technique	10
Acu-Loc® 2 Reference Chart	12
Acu-Loc® 2 Surgical Technique	13
KickStand Posts	16
Clinical Cases	17
Distal Radius Fragment Specific Plates	18
Distal Radius Fragment Specific Surgical Technique	19
Ordering Information	22

## Acu-Loc® 2 System Features

**Two Plate Families** give the surgeon the ability to choose between distally or proximally fitting plates. The anatomically designed Acu-Loc® 2 VDR Plate families assist in restoring the original geometry of the patient's anatomy. Our goal was to design a plate system that closely replicates the anatomical contours of the distal radius in order to maximize support and accurately reduce the fracture. The Acu-Loc® 2 Proximal VDR Plate family was designed to provide maximum support for the articular surface from a more proximal placement.



**Optimized Plate Design** allows for ideal support of the radial and intermediate distal radius columns. Converging ulnar screws, new suture and additional K-wire holes were added to all plates for improved support of the volar ulnar lip and lunate facet. The plate window offers fracture visualization as well as access to metaphyseal comminution, utilizing the Fragment Reduction Tool for articular reconstruction.



**Advanced Instrumentation** helps with plate placement and fracture reduction. New tools such as the plate positioning handle and radiolucent targeting guides with embedded radiopaque positioning posts help guide the surgeon during plate placement. For support with corrective osteotomies, KickStand Posts aid in plate angulation relative to the dorsally displaced distal radius.



**Two-Piece Compression Screw Technology** is designed to reduce difficult dorsal fragments. The Frag-Loc® is a revolutionary two-piece locking fixation device that provides compression between dorsal and volar fracture fragments through a small dorsal incision.



# Acu-Loc® 2 Plate Features



## Plate Placement Options

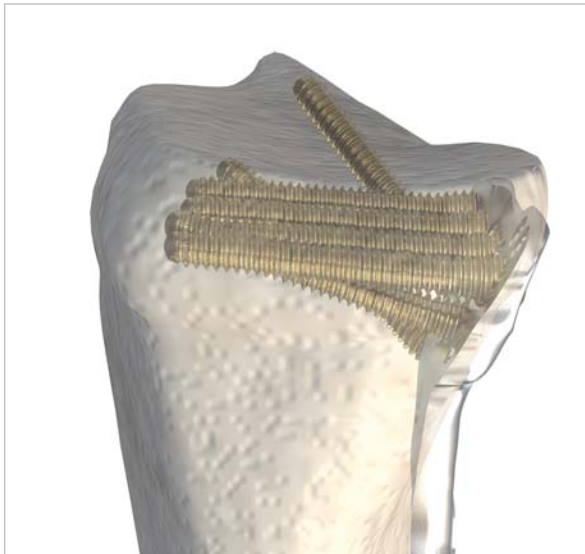
The Acu-Loc® 2 System offers two plating options for volar plate placement. The standard Acu-Loc® 2 Plate is designed to closely replicate the anatomical contours of the distal radius and assists in restoring the original geometry. The Acu-Loc® 2 Proximal Plate is designed to sit more proximally than the standard Acu-Loc® 2 Plates.



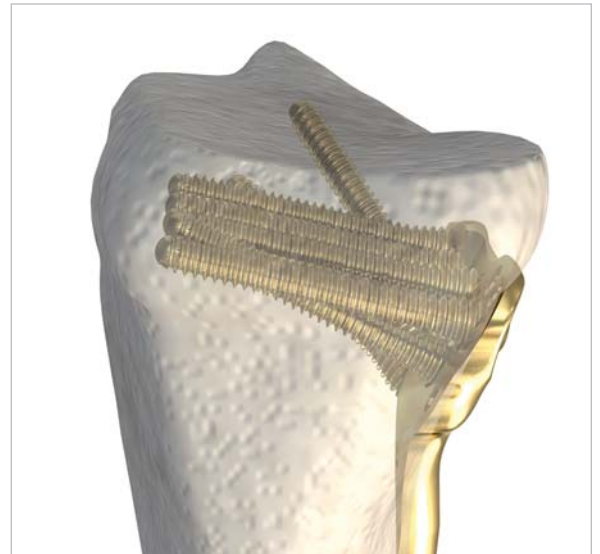
Acu-Loc® 2 VDR Plate



Acu-Loc® 2 Proximal VDR Plate



Lateral view of the Acu-Loc® 2 VDR Plate showing screw trajectory



Lateral view of the Acu-Loc® 2 Proximal VDR Plate showing screw trajectory

# Acu-Loc® 2 VDR Plate Options

## Acu-Loc® 2 VDR Plates



## Acu-Loc® 2 Proximal VDR Plates



## Screw and Peg Options

There are four types of 2.3 mm screws that can be used in any of the distal plate screw holes including the Frag-Loc® Compression Screw (see page 9 for information). The smooth screw heads are designed to sit at the plate's surface and minimize soft tissue and tendon irritation.



2.3 mm bronze smooth locking pegs.  
Sizes options: 8 mm - 28 mm



2.3 mm gold fully threaded locking screws.  
Sizes options: 8 mm - 46 mm



2.3 mm silver non-toggling screws.  
Sizes options: 8 mm - 46 mm



3.5 mm blue proximal locking screws.  
Size options: 8 mm - 18 mm



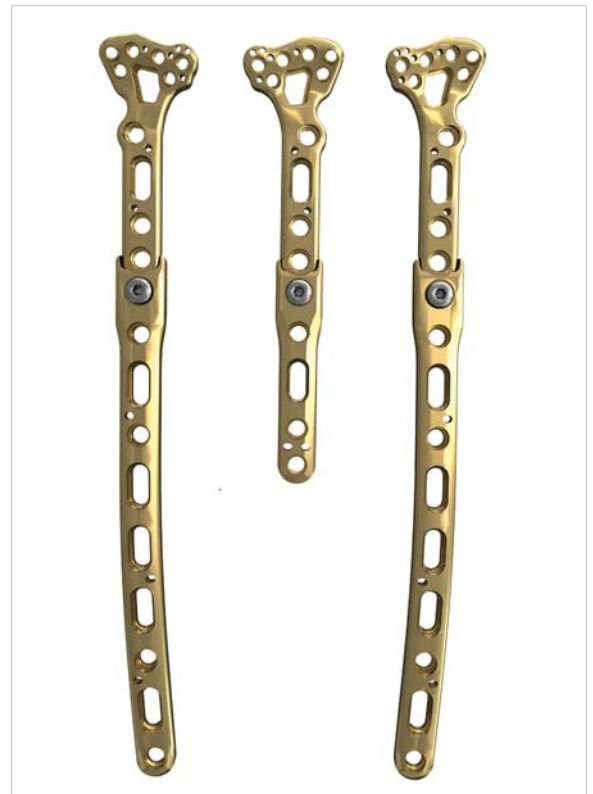
3.5 mm silver nonlocking cortical screws.  
Size options: 10 mm - 18 mm

## Acu-Loc® 2 Extension Plates

A unique feature of the Acu-Loc® 2 VDR Plating System is the ability to extend the lengths of the Acu-Loc® 2 Proximal Plates and provide rigid fixation of segmental fractures in the diaphyseal region of the radius. The Acu-Loc® 2 Extension Plates are rigidly locked with a LinkScrew to the following Acu-Loc® 2 Proximal VDR Plates:

Acu-Loc® 2 Proximal VDR Standard Long Plates  
 Acu-Loc® 2 Proximal VDR Narrow Long Plates  
 Acu-Loc® 2 Proximal VDR Wide Plates

The low-profile plate design minimizes postoperative soft tissue irritation and patient discomfort. Locking and nonlocking screws sit flush with the plate. The proximal plate end is tapered to reduce the risk of secondary bone fracture due to excessive stress concentrations. The plate's limited bone contact undersurface reduces constriction of the blood supply to the periosteum.



### Assembly Steps:

Slide the Acu-Loc® 2 Extension Plate onto the shaft of the Acu-Loc® 2 Proximal Plate.

Using a 2.5 mm hex driver, insert and tighten the LinkScrew into the distal hole of the Extension Plate and lock into both plates.

Assembly can be done prior to plate placement or intraoperatively.



Neutral Extension Plate Shown

### Available Plate Length Combinations

Plate Lengths with Extension	Wide	Narrow Long	Standard Long
Neutral Extension	100 mm	108 mm	108 mm
Long Extension	167 mm	176 mm	176 mm



# Plate Placement Instrumentation

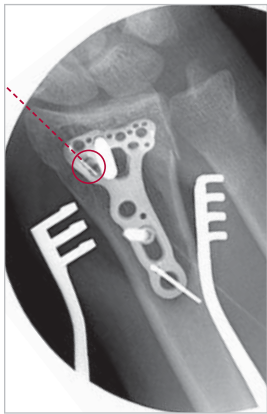


Image A1



Image A2

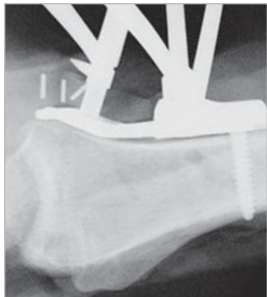


Image B1  
Incorrect

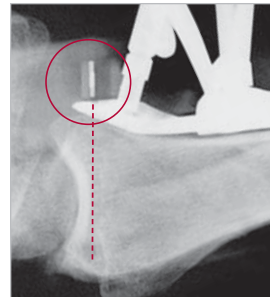


Image B2  
Correct Alignment

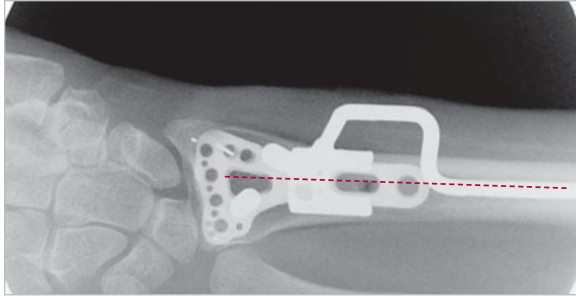


Image C



## Acu-Loc® 2 VDR Targeting Guides

The low-profile radiolucent targeting guides have several features that allow the surgeon to accurately target and insert all distal screws. Radiopaque positioning posts have been integrated into the targeting guides to assist with plate placement under fluoroscopy.

**Styloid Positioning Post: (Image A)** To verify plate placement, a radiopaque styloid post is utilized in an A/P view to project the trajectory of the most distal styloid screw. To align styloid screw placement, position the wrist under fluoroscopy in an A/P view and adjust the plate so that the positioning post targets the styloid tip. This verifies correct trajectory of the styloid screw prior to drilling.

**Distal Screw Placement: (Image B)** To verify plate placement from a lateral view, line up the two parallel radiopaque posts. A single plane is created by the goal posts beneath the subchondral bone, showing trajectory of the distal screw. If the posts do not target into the joint, then the distal screw row will not either. This can be achieved by lifting the hand in neutral rotation so that the forearm is 20° to the OR table.

The distal K-wire holes in the targeting guides and Acu-Loc® 2 VDR plates allow placement of K-wires to also verify plate placement. The K-wire holes are in line with the distal screws of all Acu-Loc® 2 distal radius plates, allowing the surgeon to verify screw placement.

## Plate Positioning Handle

The Plate Positioning Handle (Image C) assists with precise plate placement while minimizing radiation exposure to the surgeon's hands. Under fluoroscopy, the handle should line up with the center of the plate and radial shaft to show a true A/P view. This is used to accurately place the proximal shaft of the plate in alignment with the center axis of the radial diaphysis.

Note: The design of the Acu-Loc® 2 Plate Positioning Handle maintains access to the K-wire holes and 3.5 mm screw slot on the proximal end of the plate.

## Plate Positioning Handle Assembly:

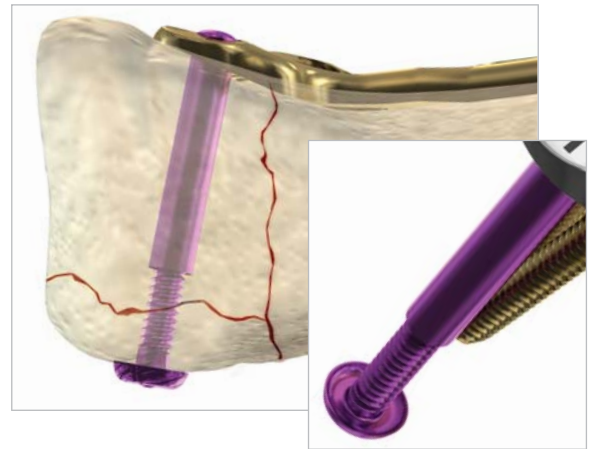
- The Locking Bolt is threaded into the left side of the keyhole of the Plate Positioning Handle base.
- Once engaged, the Locking Bolt toggles to fit left and right plates.
- Thread the Locking Bolt into the most distal 3.5 mm locking hole on the shaft of any Acu-Loc® 2 Plate.



# Frag-Loc® Compression Screw Instrument Reference Chart

The Frag-Loc® Compression Screw is a unique two part cannulated compression screw designed to reduce dorsal fragments to the Acu-Loc® 2 VDR Plates, DRFS Volar Lunate Suture Plate, Acu-Loc® VDR Plates, and Acu-Loc® EX Plates. The unique undersurface geometry of the screw head allows for sub-osseous purchase into the dorsal fragment while minimizing hardware prominence.

The Frag-Loc® Compression Screw may only be used for measured screw lengths of **16-24 mm**. It is recommended that a second 2.3 mm screw be placed in an adjacent screw hole to prevent rotation of the dorsal bone fragment.



Frag-Loc® 2.5 mm Drill Guide  
80-0730



.035" Guide Wire  
WS-0906ST



Frag-Loc® 2.5 mm Drill  
80-0724



Frag-Loc® 1.5 mm  
Cannulated Driver  
80-0758



Heiss Retractor  
80-0756



Frag-Loc® Compression Sleeve  
30-0370



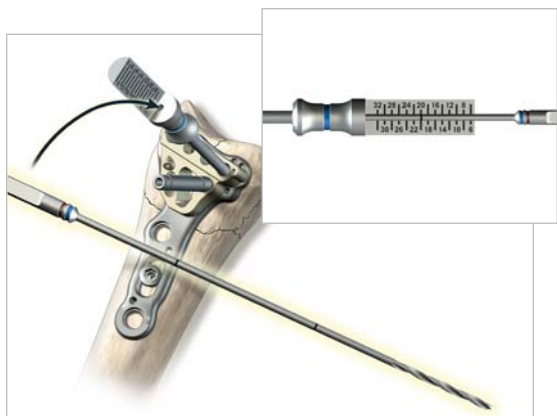
Frag-Loc® Depth Gauge  
80-0726



Frag-Loc® Compression Screw  
30-0371

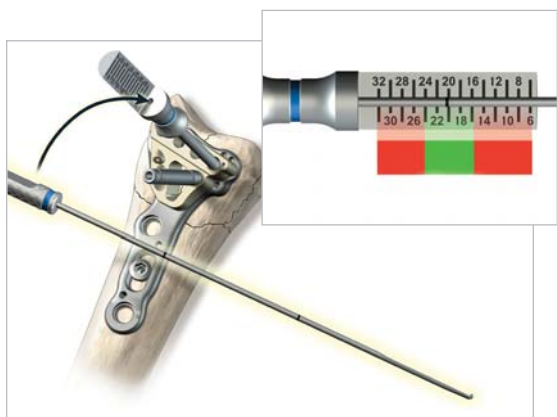


# Frag-Loc® Surgical Technique



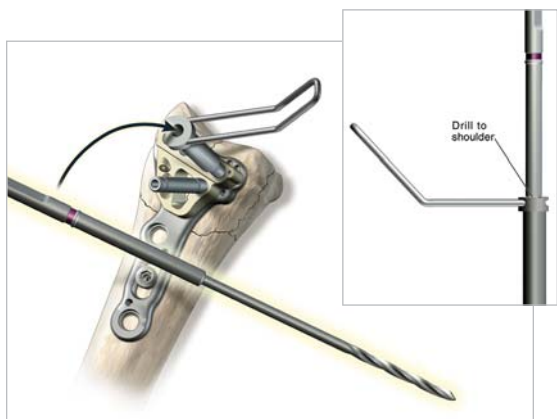
# 1

- Drill bicortically, using 2.0 mm drill.



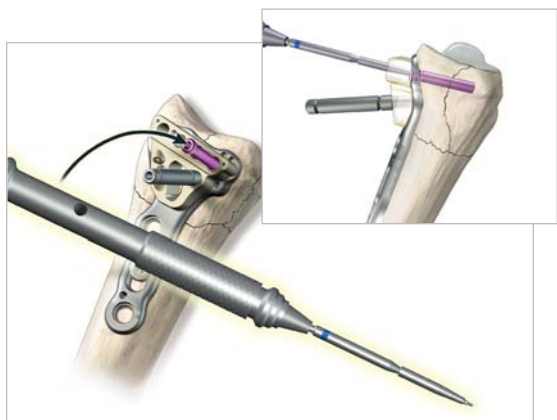
# 2

- Measure screw length using Depth Probe.
- **16-24 mm OK to use Frag-Loc®**
- CAUTION: Do not use Frag-Loc® outside of 16-24 mm range.



# 3

- Drill using 2.5 mm Frag-Loc® step drill.
- Shoulder of drill must stop against top of drill guide.



# 4

- Insert the Frag-Loc® Compression Sleeve into plate using silver driver handle with 1.5 mm driver tip.

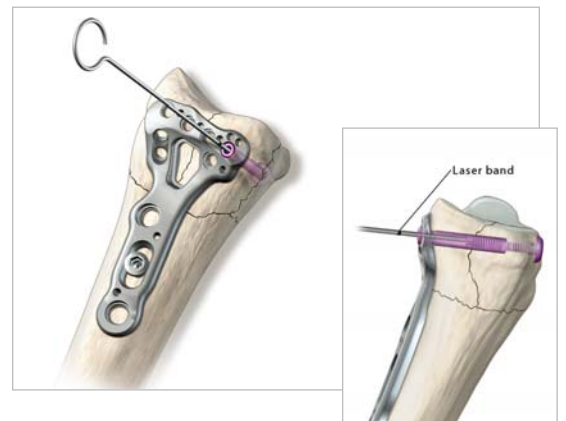
- 5** · Insert .035" guide wire through Frag-Loc® Compression Sleeve and dorsal skin.



- 6** · Make a small incision dorsally over the guide wire and use Heiss Retractor to maintain clearance of soft tissue and tendons.
- Drive the Frag-Loc® Compression Screw over .035" guide wire using 1.5 mm fuschia cannulated driver.
  - Tighten the Frag-Loc® Compression Screw into Frag-Loc® Compression Sleeve until desired compression is achieved.
  - Ensure Frag-Loc® Compression Screw head is seated flush with bone and that tendons are clear of screw head.



- 7** · Remove targeting guide.
- **Check Frag-Loc® thread engagement using Frag-Loc® Depth Gauge.** The depth gauge ensures that the minimum amount of threads are engaged into the Frag-Loc® Compression Sleeve.
  - A visible laser band on the depth gauge ensures acceptable Frag-Loc® thread engagement.
  - If depth gauge laser band is not visible, tighten Frag-Loc® Compression Screw one revolution and recheck. Repeat until laser band is visible.



# Acu-Loc® 2 Instrument Reference Chart



2.0 mm Drill  
80-0318



2.8 mm Drill  
80-0387



Ratcheting Driver Handle  
80-0663



Silver Driver Handle  
MS-2210



Depth Gauge  
80-0623



.054" Guide Wire  
WS-1406ST



Targeting Guide  
Locking Bolt  
80-0682



Drill Guide for  
2.0 mm Drill  
MS-DG23



2.8 mm Drill  
Guide  
80-0384



2.5 mm Hex Driver Tip  
HPC-0025



Targeting  
Guide



1.5 mm Hex  
Driver Tip  
80-0728



2.0 mm/2.8 mm Drill Guide  
PL-2118



## OPTIONAL INSTRUMENTS

KickStand Post  
80-0731



Plate Positioning  
Handle  
80-0729



Fragment  
Reduction Tool  
80-0725



Depth Probe  
MS-DRPB



.054" K-wire  
Guide  
80-0688



Positioning Handle  
Locking Bolt  
80-0738



2.0 mm Drill Guide  
80-0249



Plate Tack  
PL-PTACK



## OPTIONAL INSTRUMENTS NOT PICTURED:

2.3 mm Screw Sleeve 80-0727

3.5 mm Screw Sleeve MS-SS35

Periosteal Elevator 6 mm Flat Edge  
80-0693

Bone Reduction Forceps 6 3/4" 80-0723

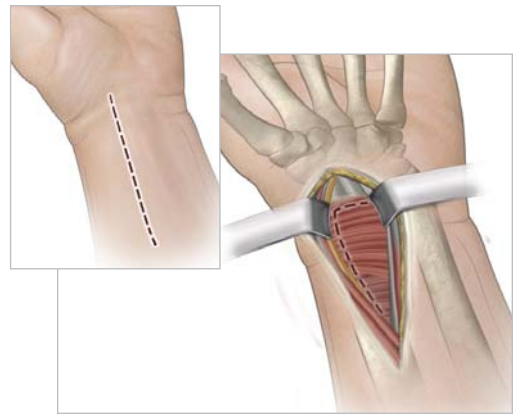
8" Bone Reduction Forceps MS-1280

15 mm Hohman Retractor  
(Baby Bennett) MS-46827

Sharp Hook PL-CL06

## 1 EXPOSURE

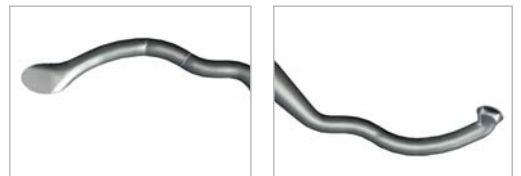
The patient's forearm is supinated to expose the surgical site. To maximize exposure, a towel is placed under the wrist, supporting it in extension. Make a longitudinal incision approximately six centimeters in length just radial to the FCR tendon to protect against injury to the palmar cutaneous branch of the median nerve. The sheath is opened and the FCR tendon is retracted radially to protect the radial artery. The FPL is identified by passive flexion/extension of the thumb interphalangeal joint and is retracted ulnarly to protect the median nerve. Next, the pronator quadratus is identified by its transverse fibers and is released radial to ulnar to expose the fracture site.



## 2 FRACTURE REDUCTION

The brachioradialis may need to be released from its insertion on the radial styloid to facilitate reduction and visualization of the fracture. Reduce the fracture using manual techniques; provisional stability can be achieved with K-wires and evaluated under fluoroscopy.

**Fragment Reduction Tool:** A unique tool designed specifically for distal radius surgery can be used for articular reconstruction. A broad mallet and narrow thin tip provide the ability to lift and position articular fracture fragments through the plate window when possible.

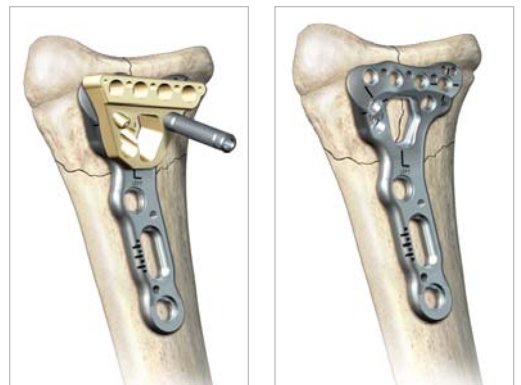


## 3 PLATE PLACEMENT

The plate is made to sit along the distal aspect of the radius to support articular fracture fragments. Once the appropriately sized plate is selected, attach the corresponding targeting guide using the locking bolt. The cannulated locking bolt is threaded into the proximal ulnar 2.3 mm screw hole.

**The plate should be placed parallel to the radial shaft.**

**Note:** The Plate Positioning Handle can be utilized at this time for plate placement. (Please refer to Page 8 for assembly and technique)



# Acu-Loc 2<sup>®</sup> Surgical Technique

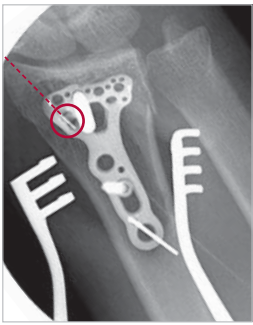


Image A1



Image A2

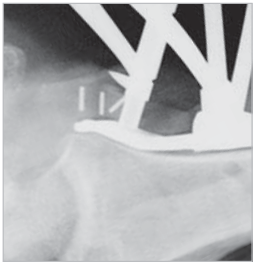


Image B1  
Incorrect

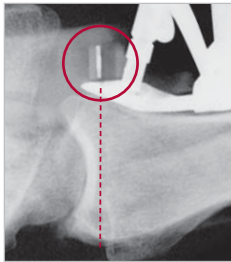
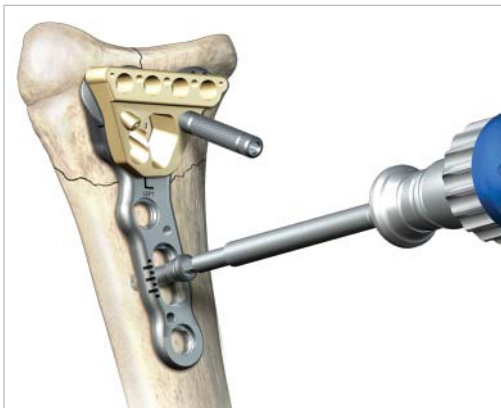


Image B2  
Correct Alignment

**Styloid Positioning Post: (Image A)** To confirm A/P plate placement, a radiopaque positioning post is utilized in an A/P view to project the trajectory of the most distal styloid screw. To evaluate styloid screw placement, position the wrist under fluoroscopy in an A/P view and adjust the plate so that the positioning post targets the styloid tip. This verifies correct trajectory of the styloid screw prior to drilling.

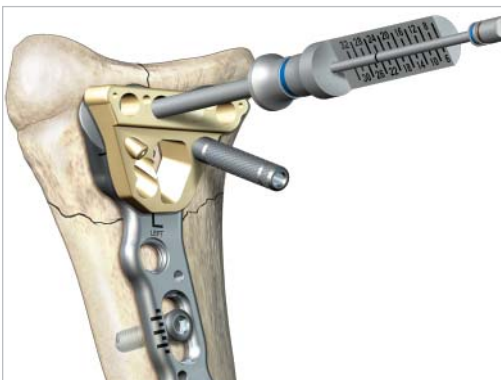
**Note:** The K-wire can also be used to verify screw trajectory by inserting the K-wire guide into the bone through the targeting guide K-wire holes.

**Distal Screw Row Positioning Posts: (Image B)** To confirm M/L plate placement, and K-wire placement, line up the two parallel radiopaque posts in an M/L view. A single plane is created by the goal posts beneath the subchondral bone, showing the trajectory of the distal screw row. If the aligned goal posts do not target into the joint, then the distal screw row will not either. This M/L fluoroscopic view can be achieved by lifting the hand in neutral rotation so that the forearm is 20° to the surgical table. The K-wire holes are also in line with the posts and distal screws of all Acu-Loc<sup>®</sup> 2 distal radius plates, allowing the surgeon to verify screw placement. The plate's position is then secured proximally with a .054" K-wire or plate tack and distally with a .054" K-wire.



## 4 PROXIMAL SCREW PLACEMENT

The first screw to be placed is a 3.5 mm nonlocking cortical screw through the slot in the plate. Using the 2.8 mm drill and the drill guide, drill to the far cortex. Drill depth is then measured with the depth gauge. Insert a silver 3.5 mm nonlocking screw. The screw may need to be downsized after the plate has been reduced down to the bone.



## 5 DISTAL SCREW HOLES

Utilizing the radiopaque positioning posts in the targeting guide, the position of the plate relative to the radio-carpal articular surface can be fine tuned by sliding the plate proximally or distally under fluoroscopy. If the radiopaque posts don't target the joint, the distal K-wires and 2.3 mm screws will not either. To further assess the position of the distal 2.3 mm screws relative to the radio-carpal articular surface, place a .054" K-wire through the one of the K-wire holes in the targeting guide closest to the joint and assess its location under fluoroscopy.

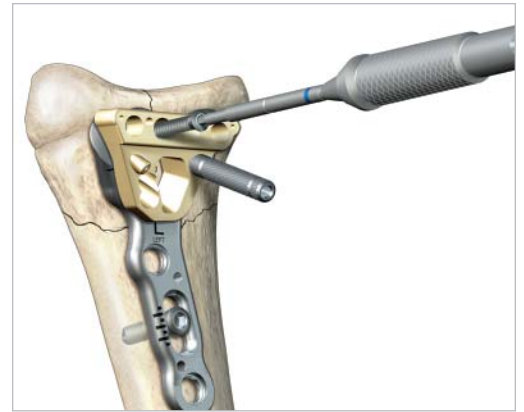
Upon satisfactory reduction and anatomic fit, insert the drill guide into one of the distal screw holes and drill using the 2.0 mm drill. Measure screw length by using the laser mark on the drill or depth probe against the scale on the drill guide.

**Note:** Screw insertion of the proximal ulnar 2.3 mm hole should be performed after all other distal 2.3 mm screws are placed. Drilling can be performed through the locking bolt. Remove the locking bolt and utilize the drill guide and depth probe to measure screw length.

# Distal Radius Fractures

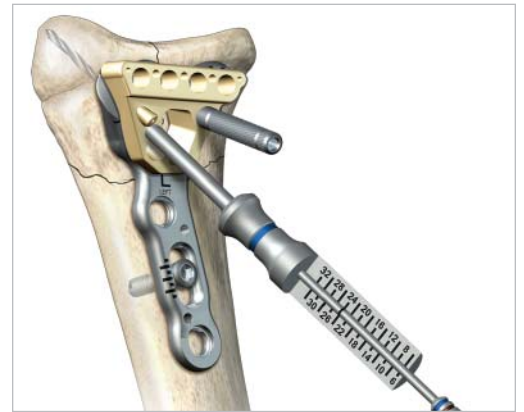
**Distal Screw Options:** There are four options of 2.3 mm screws that can be used distally: Fully Threaded Locking Screws (gold), Smooth Locking Pegs (bronze), Non-Toggling Screws (silver), and the Frag-Loc® Compression Screw (see page 9 for information). All 2.3 mm screws are inserted using the 1.5 mm driver tip, screw sleeve and silver driver handle.

**Note:** An individual Locking Drill Guide is available in the system as an alternative for drilling the distal holes. Screw length can be read using the depth probe.



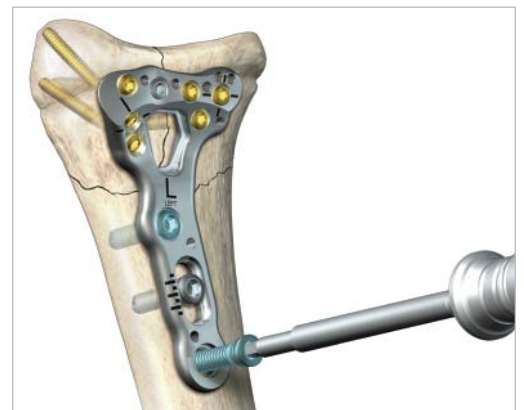
**Styloid Screw Placement:** The radial styloid screws are designed to specifically target and support the radial styloid. Insert the drill guide into either styloid hole located in the dual slot on the back of the targeting guide and continue the same screw measurement and placement process for both styloid screws.

**Note:** It is recommended that the entire distal row and the two radial styloid holes be filled with screws.



## 6 PROXIMAL SCREW PLACEMENT

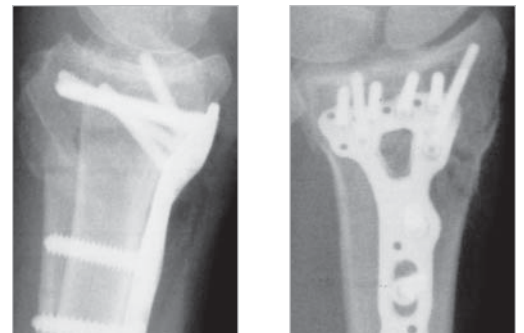
Insert the threaded drill guide into the screw hole distal to the slot, drill with the 2.8 mm drill and measure with the depth gauge. Insert the proper length 3.5 mm blue locking screw using the 2.5 mm driver tip, sleeve and blue driver handle. Take care that the screw does not exit the bone dorsally. Using the same process, drill and place the final locking screw.



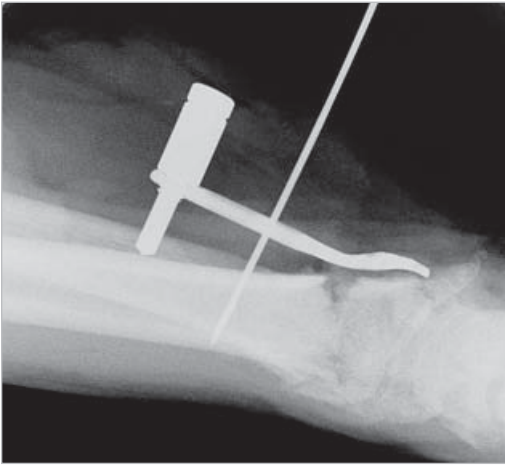
## 7 CLOSING AND POST-OP PROTOCOL

Perform a thorough radiographic evaluation checking fragment reduction, alignment and screw placement. Verify that there is not a gap between the bone and the plate in the lateral view and that the distal screws have not penetrated the radiocarpal joint. Close the wound and support the wrist according to bone quality and stability.

Allow for early functional use of the hand and start immediate finger range of motion and forearm rotation postoperatively.



## Acu-Loc® 2 KickStand Posts



With the introduction of the next generation of distal radius fixation, the Acu-Loc® 2 System offers a variety of innovative instrumentation. The KickStand Posts are threaded plate posts designed to assist with distal radius volar tilt correction by lifting the proximal end of the plate away from the radial shaft to form a stable platform with which to achieve distal screw fixation.

Six different KickStand Post angles are offered to assist with corrective osteotomies and dorsally displaced fractures. Five of the KickStand Posts are offered in finite increments of 5, 10, 15, 20 and 25° osteotomy angles. A fully threaded option for fractures allows for volar tilt correction between 5 and 30°.

During an osteotomy, the desired angular correction of the volar aspect of the distal radius determines which KickStand Post is selected. A 10° KickStand Post will place the proximal portion of the plate 10° off of the radial shaft (and will allow for a total volar tilt adjustment of 10°). The chosen KickStand Post is threaded into the locking hole just proximal of the adjustment slot of the Acu-Loc® 2 Plate prior to plate placement.



KickStand Post 5° 80-0718



KickStand Post 10° 80-0719



KickStand Post 15° 80-0720



KickStand Post 20° 80-0721



KickStand Post 25° 80-0722



KickStand Post 5-30° 80-0731

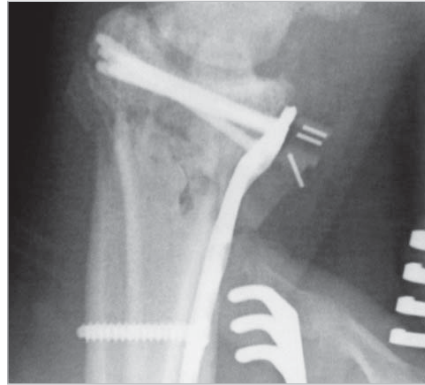


## ACU-LOC® 2 STANDARD VOLAR PLATE



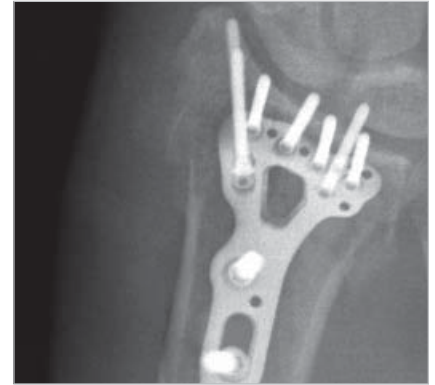
### Preoperative Image

26-year-old male s/p fall on outstretched arm sustaining a comminuted intra-articular unstable fracture of the distal radius.



### Intraoperative Image

The patient underwent open reduction internal fixation through a volar approach with the Acu-Loc® 2 distal radius plate.



### Postoperative Image

## FRAG-LOC® COMPRESSION SCREW WITH ACU-LOC® VOLAR PLATE



### Preoperative Image M/L

85-year-old, right hand dominant female who sustained a ground level fall on an outstretched arm. She sustained a Frykman IV, Melone class I closed distal radius fracture that had three intra-articular components. The ulnar column component was split transversely. The Frag-Loc® Compression Screw was ideal for this type of fracture that is classified as unstable.



### Postoperative Image

The patient underwent open reduction internal fixation of her comminuted distal radius fracture. The Frag-Loc® Compression Screw was used to compress and stabilize an unstable comminuted intermediate column fragment.



### Postoperative Image and Outcome

The patient was admitted post-operatively to a skilled nursing facility that did not offer hand therapy. Despite this, her wrist supination and pronation at six weeks was 50°. Wrist flexion was 45° and wrist extension was 30°. She complained of no wrist pain. There was no tenderness to palpation on physical examination.



The Distal Radius Fragment Specific (DRFS) Plates are designed to independently address the inherent challenges of complex fractures. Fragment-specific plating is based on the three column theory that separates the ulnar and radial sides of the distal radius from the distal ulna. The three column theory corresponds with the most common distal radius fracture patterns and enables anatomic reconstruction of intra-articular fracture fragments.

DRFS Plates include all the improvements of the Acu-Loc® 2 Plating System and offer several additional benefits.

- **Customizable Approach:** The modular nature of the plates allows compression of fracture fragments from multiple directions. The placement of two distal radius plates with a 70-90° angle between them increases the stability of the construct and can address complex fractures that can be a challenge for a single plate.
- **Streamlined Surgery:** The Acu-Loc® 2 Plating System tray provides quick and easy access to all implants and instruments.



## RADIAL STYLOID PLATE

The Divergent Radial Styloid Plate buttresses the radial column. Two unicortical distal screws diverge to provide subchondral bone support with one screw targeting the dorsal rim of the sigmoid notch and the other targeting the volar rim.

## DORSAL PLATES

Used for stabilizing fracture patterns that involve the dorsal lunate facet of the distal radius and the sigmoid notch, the Dorsal Lunate Plate provides support to the lunate facet. The Dorsal Rim Buttress Plate is positioned on the dorsal ulnar side of the radius and extends radially to support dorsal rim comminution and the radial styloid. A screw can be inserted ulnar-to-radial for further radial styloid support.

Note: If the long ulnar-to-radial styloid screw is desired, the 2.0 mm Locking Drill Guide (80-0592) must be inserted into the Dorsal Rim Buttress Plate prior to placing the plate on the bone.



## VOLAR LUNATE SUTURE PLATE

The Volar Lunate Suture Plate supports the volar ulnar corner of the radius. Sutures may be placed through the volar capsule and suture holes in the plate for fixation of these very small, but clinically important, bone fragments.



## Surgical Techniques by William B. Geissler, M.D.

## General DRFS Surgical Technique

### GENERAL TECHNIQUE

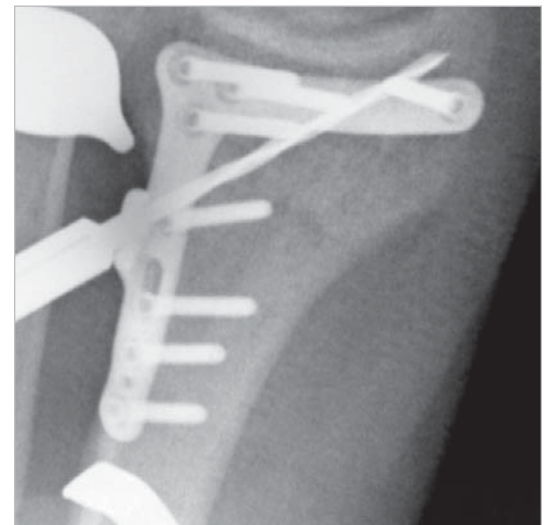
Once a DRFS Plate is positioned, an initial 2.3 mm non-toggling screw is placed into the slot on the proximal end of the plate utilizing a 2.0 mm drill and 1.5 mm hex driver. Screw length is determined for the plate slot by utilizing the black depth gauge (80-0623). The plate position is evaluated under fluoroscopy.

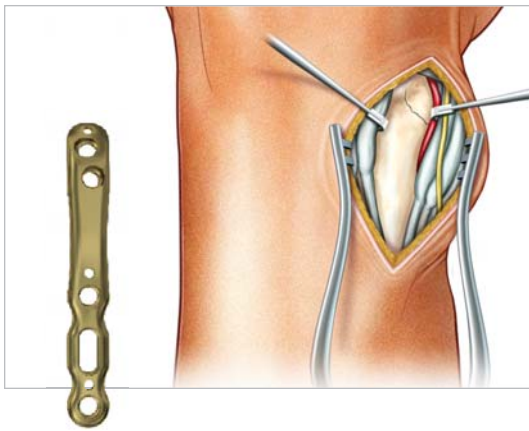
There are three types of 2.3 mm screws that can be used in any of the threaded screw holes of the DRFS Plates (See Page 6). Screw length can be measured by using the laser mark on the drill or depth probe against the scale on the locking drill guide.

The 2.0 mm Locking Drill Guides (80-0249) from the 2.3 mm screw caddy can be used for all locking holes on the plates EXCEPT for the ulnar-to-radial styloid screw on the Dorsal Rim Buttress Plate, which may require screws greater than 32 mm in length (See Dorsal Rim Buttress Plate Placement for drill guide information, page 21).

### IMPORTANT

- The 2.3 mm bone tap should be used on the proximal holes of the DRFS Plates where more cortical bone is present, making screw insertion difficult and increasing the risk of screw breakage. This is especially important in younger patients who may have thicker cortical bone in this region.
- Due to the multi-plate approach, screws from one DRFS Plate may collide with screws from another DRFS Plate. Use the longest screw possible where appropriate.





## INCISION AND DISSECTION

The Divergent Radial Styloid Plate may be inserted by one of two approaches. The plate may be placed on the dorsal radial aspect of the radial styloid utilizing the standard dorsal approach.

Alternatively, the plate may be inserted through an incision between the first and second extensor compartments. Blunt dissection is performed to protect the terminal branches of the dorsal sensory branch of the radial nerve. After the branch is identified and protected, the interval between the first and second compartments is opened and the tendons are elevated.

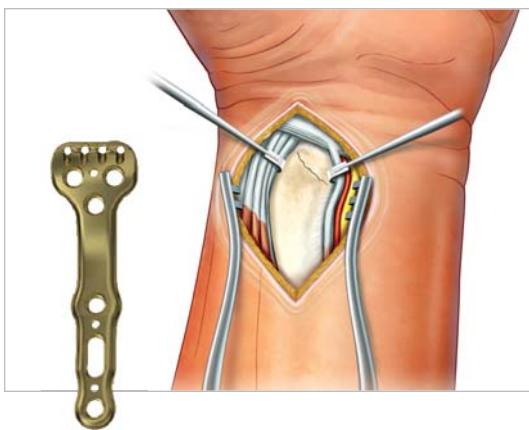


## PLATE PLACEMENT

The plate is designed to sit under the first dorsal compartment tendons.

**NOTE:** To find the screw angles more easily, place the 2.0 mm locking drill guide in line with the laser band next to the hole.

# Volar Lunate Suture Plate Surgical Technique



## INCISION AND DISSECTION

The Volar Lunate Suture Plate may be inserted through a standard volar flexor carpi radialis approach (Refer to Page 13).

Alternatively, the volar ulnar corner of the distal radius may be approached through an incision placed between the flexor tendons and the ulnar neurovascular bundle. An incision is made in line with the ring finger starting at the distal volar crease and extending proximally. Dissection is carried down to the level of the fascia, which is open in line with the incision. The ulnar neurovascular bundle is identified along the ulnar aspect of the approach and is retracted ulnarly. The flexor tendons are retracted radially to expose the volar ulnar corner.



## PLATE PLACEMENT

The Volar Lunate Suture Plate is aligned with the medial border of the radial shaft.

If suture is needed to address small distal fragments, a suture is passed through the capsule supporting the small articular fragments and through the distal suture holes in the plate. If necessary, a .045" K-wire can be used to drill through the bone in order to pass suture through the articular fragment.

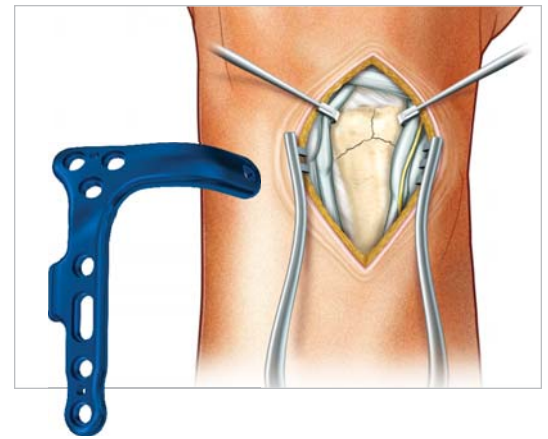
# Dorsal Lunate Plate and Dorsal Rim Buttress Plate Surgical Technique

## INCISION AND DISSECTION

A 6 cm incision is made in line with the long finger starting just distal to Lister's tubercle and extending proximally. Blunt dissection is carried down to protect the dorsal sensory branch of the radial nerve. The extensor pollicis longus tendon is identified distal in the wound and is released through the third dorsal compartment. The tendon may be retracted radially or ulnarly depending on the fracture pattern.

The second and fourth dorsal compartments are then subperiosteally elevated to expose the dorsum. The fourth dorsal compartment is elevated ulnarly to the border of the distal radial ulnar joint.

Additional dissection is needed proximal to the DRUJ to accommodate the Dorsal Rim Buttress Plate ulnar-to-radial styloid screw which extends from just proximal to the DRUJ to the radial styloid. The second dorsal compartment is elevated from ulnar to radial to the level of the brachioradialis.



## DORSAL RIM BUTTRESS PLATE PLACEMENT

If it is determined that the long ulnar-to-radial styloid screw is needed, the 2.0 mm drill guide (80-0592) should be threaded into the plate prior to plate placement on bone. The ulnar-to-radial styloid screw hole is located on the angled plate tab next to the slot on the plate shaft.

The plate is initially positioned on the dorsal ulnar side of the radius. The buttress portion of the plate should be parallel to the radial inclination.



## MINIMALLY INVASIVE TECHNIQUE

Alternatively, the Dorsal Lunate Plate may be inserted through a small incision directly over the fifth compartment. An incision is made in line with the ring finger centered over the distal radius.

The interval between the fourth and fifth dorsal compartments is then elevated to expose the dorsal ulnar corner of the radius.

**NOTE:** Keep in mind that the distal holes on the dorsal plates that support the lunate facet are not perpendicular to the plate, but are angled toward the volar ulnar corner of the distal radius.



# Ordering Information

## Acu-Loc® 2 Plates

Acu-Loc® 2 VDR Plate Standard, Left	70-0356
Acu-Loc® 2 VDR Plate Standard, Right	70-0357
Acu-Loc® 2 VDR Plate Narrow, Left	70-0358
Acu-Loc® 2 VDR Plate Narrow, Right	70-0359
Acu-Loc® 2 VDR Plate Wide, Left	70-0360
Acu-Loc® 2 VDR Plate Wide, Right	70-0361
Acu-Loc® 2 VDR Plate Standard Long, Left	70-0368
Acu-Loc® 2 VDR Plate Standard Long, Right	70-0369
Acu-Loc® 2 VDR Plate Narrow Long, Left	70-0370
Acu-Loc® 2 VDR Plate Narrow Long, Right	70-0371
Acu-Loc® 2 VDR Proximal Plate Standard, Left	70-0350
Acu-Loc® 2 VDR Proximal Plate Standard, Right	70-0351
Acu-Loc® 2 VDR Proximal Plate Narrow, Left	70-0352
Acu-Loc® 2 VDR Proximal Plate Narrow, Right	70-0353
Acu-Loc® 2 VDR Proximal Plate Wide, Left	70-0354
Acu-Loc® 2 VDR Proximal Plate Wide, Right	70-0355
Acu-Loc® 2 VDR Proximal Plate Standard Long, Left	70-0372
Acu-Loc® 2 VDR Proximal Plate Standard Long, Right	70-0373
Acu-Loc® 2 VDR Proximal Plate Narrow Long, Left	70-0382
Acu-Loc® 2 VDR Proximal Plate Narrow Long, Right	70-0383
Acu-Loc® 2 VDR Extension Plate, Neutral	70-0364
Acu-Loc® 2 VDR Extension Plate Long, Left	70-0365
Acu-Loc® 2 VDR Extension Plate Long, Right	70-0366
Acu-Loc® 2 VDR Plate Extension Link Screw	30-0093

## DRFS Plates

Divergent Radial Styloid Plate	70-0331
Volar Lunate Suture Plate	70-0334
Dorsal Rim Buttress Plate, Right	70-0335
Dorsal Rim Buttress Plate, Left	70-0336
Dorsal Lunate Plate, Right	70-0337
Dorsal Lunate Plate, Left	70-0338

## 2.3 mm Screw Instrumentation

1.5 mm Hex Driver Tip, Locking Groove	80-0728
2 mm Quick Coupler Surgibit Drill	80-0318
2.3 mm Bone Tap	80-0362

## 2.3 mm Locking Cortical Pegs

2.3 mm x 8 mm Locking Cortical Peg	CO-S2308
2.3 mm x 10 mm Locking Cortical Peg	CO-S2310
2.3 mm x 12 mm Locking Cortical Peg	CO-S2312
2.3 mm x 14 mm Locking Cortical Peg	CO-S2314
2.3 mm x 16 mm Locking Cortical Peg	CO-S2316
2.3 mm x 18 mm Locking Cortical Peg	CO-S2318
2.3 mm x 20 mm Locking Cortical Peg	CO-S2320
2.3 mm x 22 mm Locking Cortical Peg	CO-S2322
2.3 mm x 24 mm Locking Cortical Peg	CO-S2324
2.3 mm x 26 mm Locking Cortical Peg	CO-S2326
2.3 mm x 28 mm Locking Cortical Peg	CO-S2328

## 2.3 mm Locking Cortical Screws

2.3 mm x 8 mm Locking Cortical Screw	CO-T2308
2.3 mm x 10 mm Locking Cortical Screw	CO-T2310
2.3 mm x 12 mm Locking Cortical Screw	CO-T2312
2.3 mm x 14 mm Locking Cortical Screw	CO-T2314
2.3 mm x 16 mm Locking Cortical Screw	CO-T2316
2.3 mm x 18 mm Locking Cortical Screw	CO-T2318
2.3 mm x 20 mm Locking Cortical Screw	CO-T2320
2.3 mm x 22 mm Locking Cortical Screw	CO-T2322
2.3 mm x 24 mm Locking Cortical Screw	CO-T2324
2.3 mm x 26 mm Locking Cortical Screw	CO-T2326
2.3 mm x 28 mm Locking Cortical Screw	CO-T2328
2.3 mm x 30 mm Locking Cortical Screw	CO-T2330
2.3 mm x 32 mm Locking Cortical Screw	CO-T2332
2.3 mm x 34 mm Locking Cortical Screw	CO-T2334
2.3 mm x 36 mm Locking Cortical Screw	CO-T2336
2.3 mm x 38 mm Locking Cortical Screw	CO-T2338
2.3 mm x 40 mm Locking Cortical Screw	CO-T2340
2.3 mm x 42 mm Locking Cortical Screw	CO-T2342
2.3 mm x 44 mm Locking Cortical Screw	CO-T2344
2.3 mm x 46 mm Locking Cortical Screw	CO-T2346

## 2.3 mm Non-Toggling Cortical Screws

2.3 mm x 8 mm Non-Toggling Cortical Screw	CO-N2308
2.3 mm x 10 mm Non-Toggling Cortical Screw	CO-N2310
2.3 mm x 12 mm Non-Toggling Cortical Screw	CO-N2312
2.3 mm x 14 mm Non-Toggling Cortical Screw	CO-N2314
2.3 mm x 16 mm Non-Toggling Cortical Screw	CO-N2316
2.3 mm x 18 mm Non-Toggling Cortical Screw	CO-N2318
2.3 mm x 20 mm Non-Toggling Cortical Screw	CO-N2320
2.3 mm x 22 mm Non-Toggling Cortical Screw	CO-N2322
2.3 mm x 24 mm Non-Toggling Cortical Screw	CO-N2324
2.3 mm x 26 mm Non-Toggling Cortical Screw	CO-N2326
2.3 mm x 28 mm Non-Toggling Cortical Screw	CO-N2328
2.3 mm x 30 mm Non-Toggling Cortical Screw	CO-N2330
2.3 mm x 32 mm Non-Toggling Cortical Screw	CO-N2332
2.3 mm x 34 mm Non-Toggling Cortical Screw	CO-N2334
2.3 mm x 36 mm Non-Toggling Cortical Screw	CO-N2336
2.3 mm x 38 mm Non-Toggling Cortical Screw	CO-N2338
2.3 mm x 40 mm Non-Toggling Cortical Screw	CO-N2340
2.3 mm x 42 mm Non-Toggling Cortical Screw	CO-N2342
2.3 mm x 44 mm Non-Toggling Cortical Screw	CO-N2344
2.3 mm x 46 mm Non-Toggling Cortical Screw	CO-N2346

## 3.5 mm Cortical Screws

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 18 mm Cortical Screw	CO-3180

## 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 Screw Instrumentation

2.5 mm Quick Release Hex Driver	HPC-0025
2.8 mm x 5" Quick Release Drill	80-0387

## Frag-Loc® Screws

Frag-Loc® Compression Sleeve	30-0370
Frag-Loc® Compression Screw	30-0371

## Frag-Loc® Instrumentation

Frag-Loc® 2.5 mm Drill	80-0724
.035" x 5.75" ST Guide Wire	WS-0906ST
Frag-Loc® 1.5 mm Cannulated Driver Assembly	80-0758

## General Instrumentation

Plate Tack	PL-PTACK
.054" Guide Wire	WS-1406ST
1.5 mm Easyouts	80-0598
2.5 mm Easyouts	80-0600

These implants are available nonsterile or sterile-packed. Add -S to product number for sterile products. To order, contact your local Acumed® Representative.



The Acu-Loc® 2 Wrist Plating System also contains the Acu-Loc® Dorsal Plates, Acu-Loc® VDU Plates and Acu-Loc® EX Plates. For more information regarding these products, please refer to the Acu-Loc® Wrist Plating System Brochure and Surgical Technique, HNW00-01.



**ACUMED®**

5885 NW Cornelius Pass Road  
Hillsboro, OR 97124  
(888) 627-9957  
[www.acumed.net](http://www.acumed.net)

Distributed by:

HNW00-06-C  
Effective: 7/2011  
© 2011 Acumed® LLC  
US patents pending.

These materials contain information about products that may or may not be available in any particular country or may be available under different trademarks in different countries. The products may be approved or cleared by governmental regulatory organizations for sale or use with different indications or restrictions in different countries. Products may not be approved for use in all countries. Nothing contained on these materials should be construed as a promotion or solicitation for any product or for the use of any product in a particular way which is not authorized under the laws and regulations of the country where the reader is located. Specific questions physicians may have about the availability and use of the products described on these materials should be directed to their particular local sales representative. Specific questions patients may have about the use of the products described in these materials or the appropriateness for their own conditions should be directed to their own physician.