

For Capital and Subcapital Fractures of the Ulna

# 2.0 mm LCP<sup>®</sup> Distal Ulna Plate

Surgical Technique



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## MR Information

The 2.0 mm LCP Distal Ulna Plate System has not been evaluated for safety and compatibility in the MR environment. It has not been tested for heating, migration or image artifact in the MR environment. The safety of the 2.0 mm LCP Distal Ulna Plate System in the MR environment is unknown. Scanning a patient who has this device may result in patient injury.

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 Image intensifier control

## 2.0 mm LCP® Distal Ulna Plate.

For capital and subcapital fractures of the ulna.

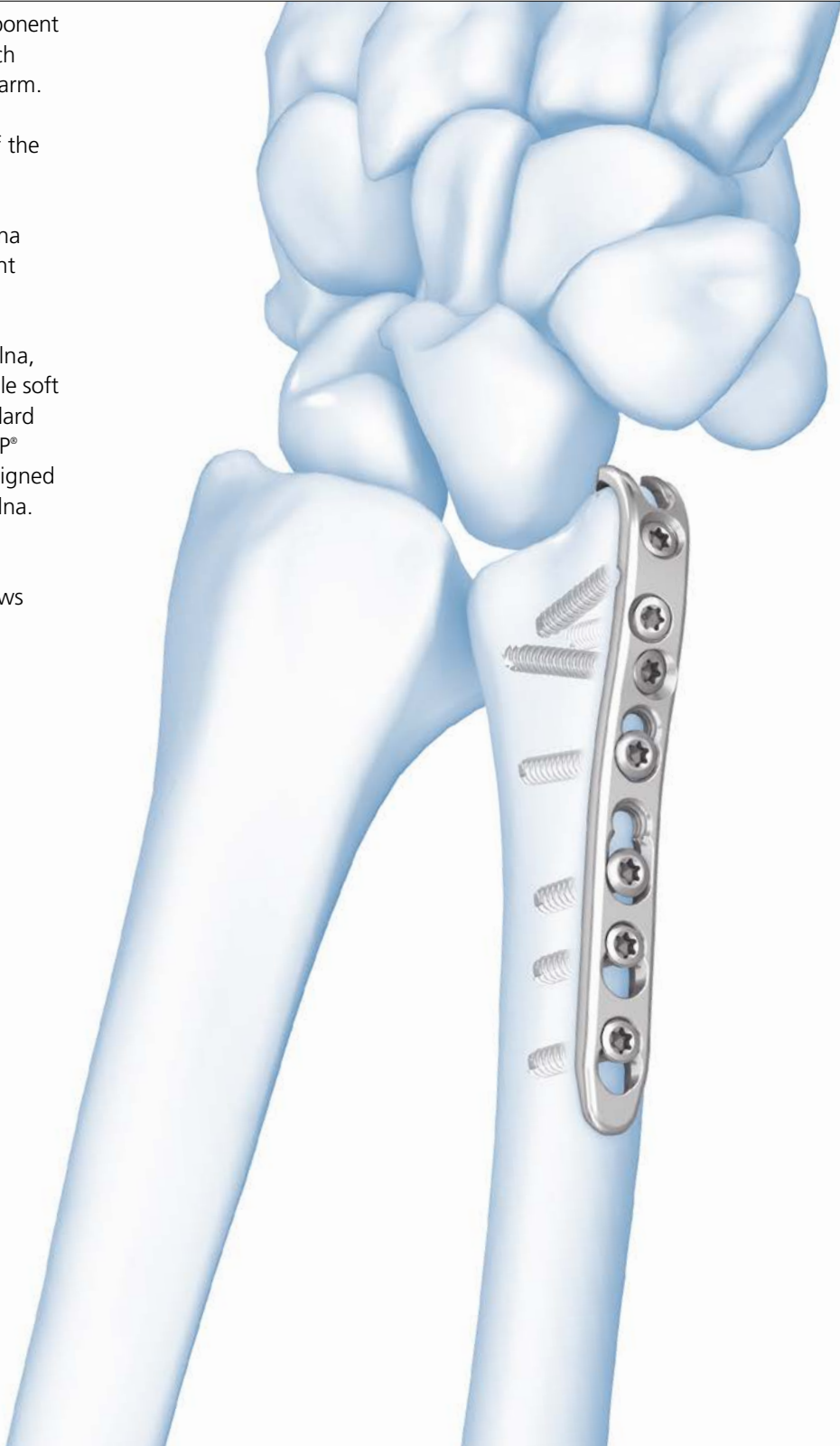
The distal ulna is an essential component of the distal radioulnar joint, which helps provide rotation to the forearm. The distal ulnar surface is also an important platform for stability of the carpus and, beyond it, the hand.

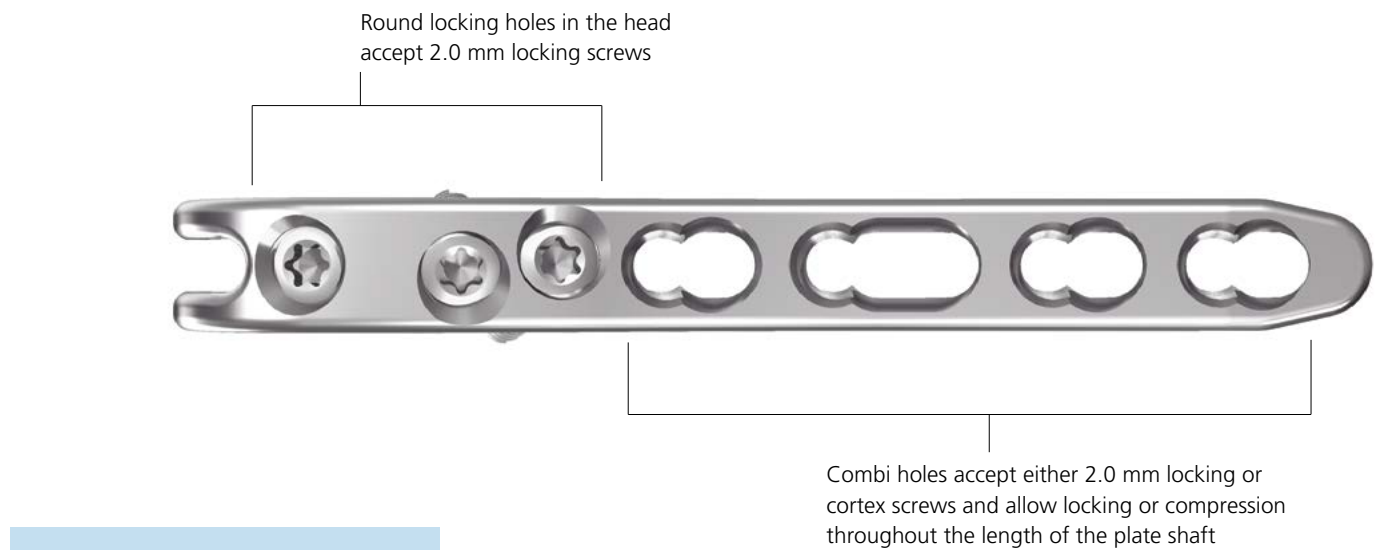
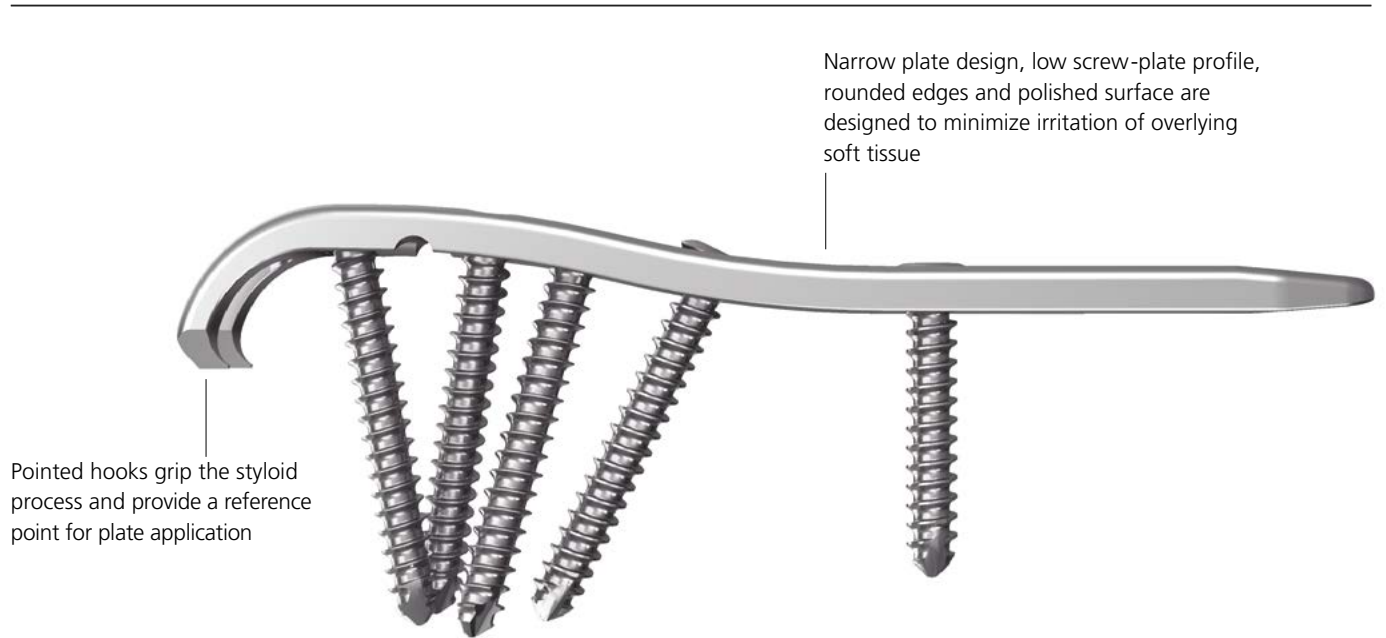
Unstable fractures of the distal ulna therefore threaten both movement and stability of the wrist.

The size and shape of the distal ulna, combined with the overlying mobile soft tissues, make application of standard implants difficult. The 2.0 mm LCP® Distal Ulna Plate is specifically designed for use in fractures of the distal ulna.

### Features

- Pointed hooks and locking screws in the head
- Anatomically precontoured
- Angular stability





Angled locking screws securely hold the ulnar head

## Indications

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The 2.0 mm LCP Distal Ulna Plate is indicated for fixation of fractures, osteotomies, nonunions, replantations, and fusions of small bones and small bone fragments, particularly in osteopenic bone.

# Clinical Examples

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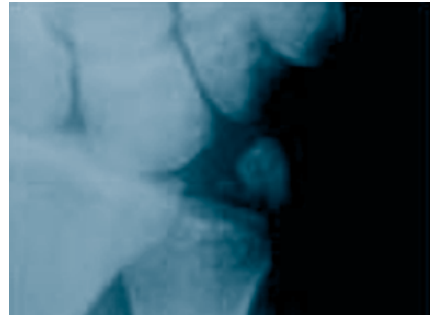
Examples include:

- Fractures of the ulnar head where the articular surface is either displaced, rotated, or tilted
- Comminuted extra-articular fractures of the ulnar neck threatening stable congruency of the distal radioulnar joint

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**Note:** Not all fractures of the distal ulna require internal fixation. Many simple ulnar styloid fractures demand nothing more than symptomatic treatment.

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Displaced articular surface



Rotated articular surface



Tilted articular surface

# Approach

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## Required set

01.111.120 Modular Mini Fragment LCP Instruments and Implants Set

or

01.111.140 Titanium LCP Modular Mini Fragment Instruments and Implants Set

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## 1

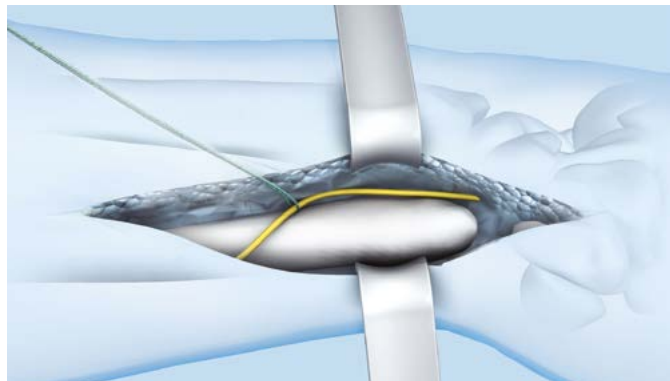
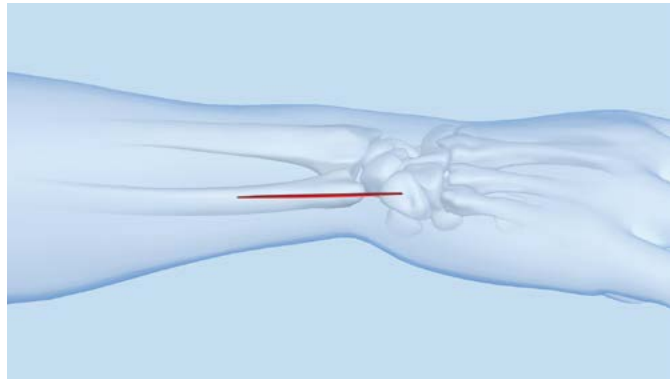
### Approach

The ideal insertion site for this implant is located toward the ulnar styloid and between the flexor carpi ulnaris and extensor carpi ulnaris tendons.

Make a longitudinal skin incision over the palpable ulna, taking care to avoid the dorsal sensory branch of the ulnar nerve, which crosses the bone at this level.

Once the distal shaft of the ulna is visible, subperiosteal dissection will allow the fracture fragments to be visualized and reduced.

Gently retract the dorsal sensory branch of the ulnar nerve.



# Reduce Fracture and Position Plate

## 2

### Contour plate (optional)

#### Instrument

329.12      Bending Pliers, for 1.5 mm and 2.0 mm plates

If necessary, contour the plate using the flat-nosed pliers.

#### Notes

- The plate holes have been designed to accept some degree of deformation. The undercut helps to ensure that the threaded holes will not be distorted with typical contouring. Significant distortion of the threaded holes will reduce locking effectiveness.
- If possible, the plate should not be cut since the resulting sharp edges can irritate the overlying soft tissues.

**Precaution:** The plate features pointed hooks which should be handled with care.



## 3

### Reduce fracture and position plate

#### Instruments

292.622\*      1.1 mm Threaded Guide Wire, 150 mm

292.623\*      1.1 mm Non-Threaded Guide Wire, 150 mm

Expose and clean the fracture. Secure the pointed hooks of the distal ulna plate around the tip of the ulnar styloid, as a reference guide.



\* Also available



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### 3. Reduce fracture and position plate continued

In simple fractures of the ulnar neck, apply the plate to the subcutaneous border of the distal ulna, securing points of fixation in both the head and the shaft.

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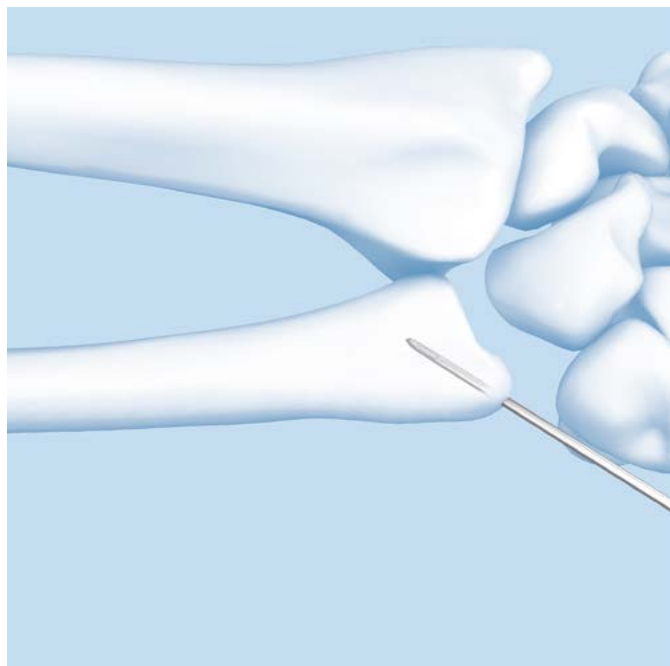
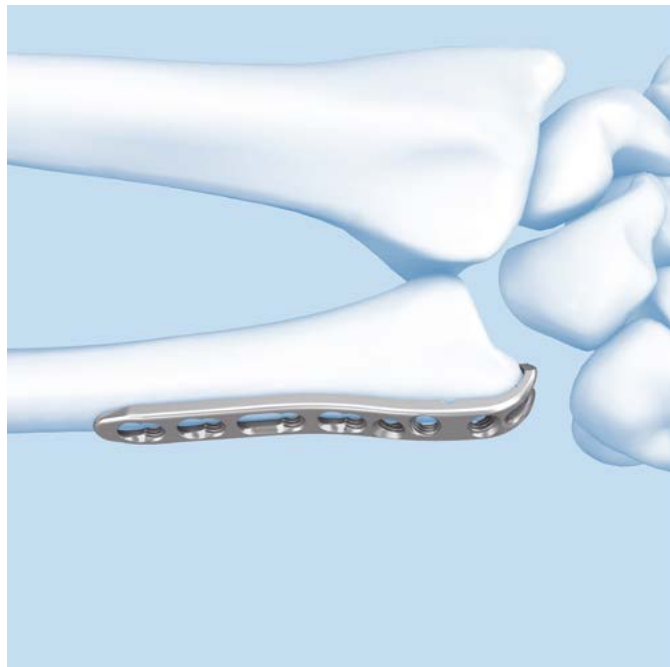
**Note:** It may be necessary to temporarily stabilize the fracture with a transtyloid 1.1 mm guide wire. The wire should be inserted between the distal hooks of the temporarily applied plate.

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**Precaution:** The head of the distal ulna is often fragile. Caution should be exercised if using pointed reduction forceps, since the force of this instrument may cause further comminution of the ulnar head. Much of the reduction will be performed indirectly.

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Complete exposure of the ulnar head should not be performed because this will detach essential soft tissue stabilizers.



# Fix Plate Distally

## 4

### Fix plate distally

#### Instruments

310.507	1.5 mm Drill Bit with Depth Mark, mini quick coupling, 96 mm
311.01	Handle, with mini quick coupling
313.842*	2.0 mm Screwdriver Blade, self-retaining, StarDrive, short
or	
313.843	2.0 mm Screwdriver Blade, self-retaining, StarDrive, long
319.006	Depth Gauge, for 2.0 mm and 2.4 mm cortex screws, measures up to 50 mm
323.034	1.5 mm Threaded Drill Guide, with depth gauge

Secure the drill guide in the desired hole. Pre-drill the hole with the 1.5 mm drill bit through the drill guide, and measure screw length directly from the gauge. Remove the drill bit and drill guide.

Alternatively, screw length may be measured with the depth gauge.



\* Also available

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4. Fix plate distally continued

Insert the appropriate length 2.0 mm locking screw.



# Adjust Length and Complete Fixation

## 5

### Adjust length and complete fixation

Multiple options for screw insertion in the distal portion of the plate allow a wide range of fracture patterns to be securely stabilized.

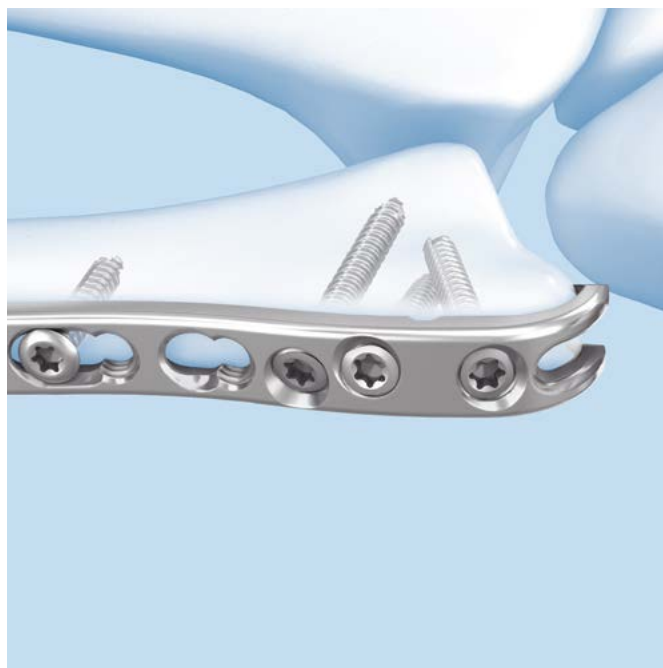
#### **Option 1**

In fractures which require length adjustment, place one or two 2.0 mm locking screws in the ulnar head to securely fix the implant distally. Place a 2.0 mm cortex screw in the oblong hole of the shaft, and obtain the correct length of reduction. Use a combination of cortex and locking screws in the surrounding holes to stabilize the fracture securely, as dictated by bone quality.



#### **Option 2**

In the case of unstable fractures of the base of the ulnar styloid, a 2.0 mm locking screw can be applied through the most distal hole in the plate. A locking screw does not need to reach the far cortex for stable fixation.



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5. Adjust length and complete fixation continued

**Option 3**

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**Instrument**

314.67.96\*\* 1.5 mm/2.0 mm Cruciform Screwdriver Blade, with holding sleeve

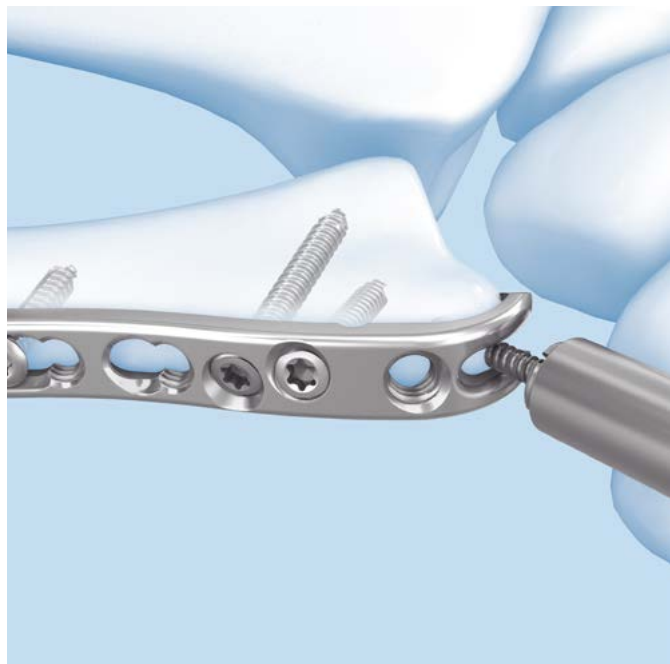
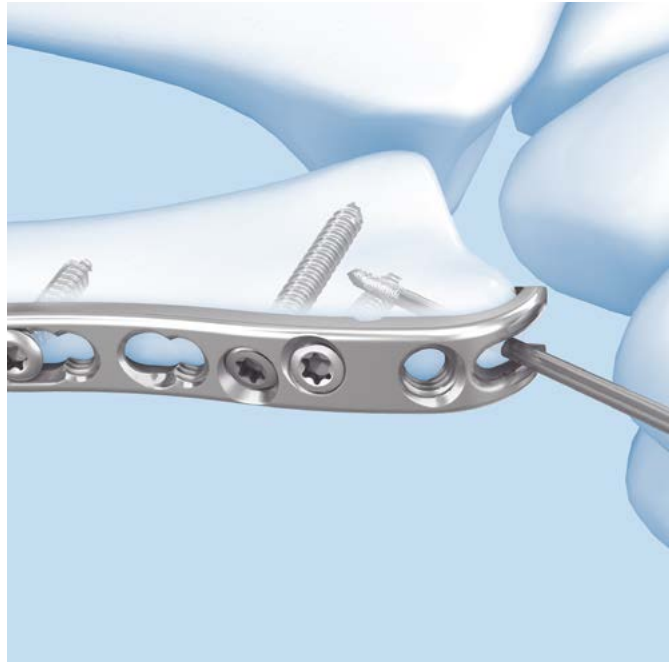
or

314.667\* 1.5 mm Cruciform Screwdriver Blade, with spring holding sleeve, short

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In fractures where it is necessary to stabilize the tip of the ulnar styloid process, the distal plate hole is left empty. Remove the 1.1 mm wire, which was used for preliminary fixation (see note, Step 3).

Overdrill the near fragment with a 1.5 mm drill bit. Insert a 1.5 mm cortex screw in lag mode between the arms of the distal hooks.



\*\* Part of the Modular Hand System

\* Also available

# Closure and Implant Removal

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- **Note:** Use fluoroscopic imaging to verify that no screws enter either the distal radioulnar or ulnocarpal joints.
- 



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## 6

### Close incision

Use the appropriate method for surgical closure of the incision.

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### Implant removal

To remove locking screws, unlock all screws from the plate, then remove the screws completely from the bone. This prevents rotation of the plate when removing the last locking screw.

# Screws Used with the 2.0 mm LCP Distal Ulna Plate

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## 2.0 mm Locking Screw, self-tapping, with StarDrive Recess

- Creates a locked, fixed-angle screw-plate construct
- Threaded conical head



## 2.0 mm Cortex Screw, self-tapping, with StarDrive Recess

- May be used in the DCU portion of the Combi holes in the plate shaft
- Compresses the plate to the bone or creates axial compression



## Optional screws

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## 1.5 mm Cortex Screws, self-tapping, with cruciform recess

- Used to provide compression or neutral fixation
- Low-profile head sits flush in the plate hole



# Product Information

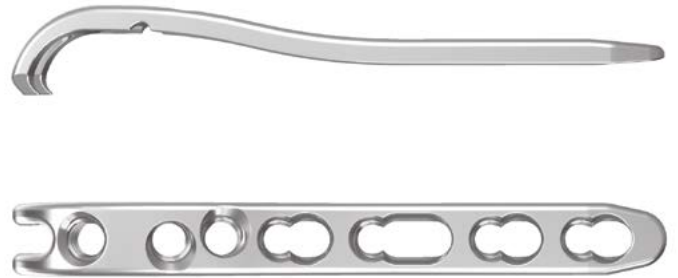
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## 2.0 mm LCP Distal Ulna Plate, sterile

Stainless

Steel	Titanium	Length (mm)	Holes
242.531S	442.531S	46	7

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## Required set

01.111.120 Modular Mini Fragment LCP Instruments and Implants Set

or

01.111.140 Titanium LCP Modular Mini Fragment Instruments and Implants Set

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For detailed cleaning and sterilization instructions, please refer to [www.synthes.com/cleaning-sterilization](http://www.synthes.com/cleaning-sterilization) or sterilization instructions, if provided.

Implant-quality 316L stainless steel or commercially pure (CP) titanium



## Selected Instruments from the LCP Modular Mini Fragment System

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292.622\* 1.1 mm Threaded Guide Wire, 150 mm



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292.623\* 1.1 mm Non-Threaded Guide Wire, 150 mm



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310.507 1.5 mm Drill Bit with Depth Mark, mini quick coupling, 96 mm



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311.01 Handle, with mini quick coupling



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313.843 2.0 mm Screwdriver Blade, self-retaining, StarDrive, long



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314.67.96\*\* 1.5 mm/2.0 mm Cruciform Screwdriver Blade, with holding sleeve



\* Also available

\*\* Part of the Modular Hand System

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319.006      Depth Gauge, for 2.0 mm and 2.4 mm  
Cortex Screws, measures up to 50 mm



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323.034      1.5 mm Threaded Drill Guide, with  
Depth Gauge



### Optional Instrument

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329.12      Bending Pliers, for 1.5 mm and 2.0 mm plates



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