For Capital and Subcapital Fractures of the Ulna

2.0 mm LCP® Distal Ulna Plate

Surgical Technique
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td></td>
</tr>
<tr>
<td>2.0 mm LCP Distal Ulna Plate</td>
<td>2</td>
</tr>
<tr>
<td>Indications</td>
<td>4</td>
</tr>
<tr>
<td><strong>Surgical Technique</strong></td>
<td></td>
</tr>
<tr>
<td>Clinical Examples</td>
<td>5</td>
</tr>
<tr>
<td>Approach</td>
<td>6</td>
</tr>
<tr>
<td>Reduce Fracture and Position Plate</td>
<td>7</td>
</tr>
<tr>
<td>Fix Plate Distally</td>
<td>9</td>
</tr>
<tr>
<td>Adjust Length and Complete Fixation</td>
<td>11</td>
</tr>
<tr>
<td>Closure</td>
<td>13</td>
</tr>
<tr>
<td>Implant Removal</td>
<td>13</td>
</tr>
<tr>
<td><strong>Product Information</strong></td>
<td></td>
</tr>
<tr>
<td>Implants</td>
<td>14</td>
</tr>
<tr>
<td>Instruments</td>
<td>16</td>
</tr>
</tbody>
</table>

---

**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.

Image intensifier control
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
Pointed hooks grip the styloid process and provide a reference point for plate application.

Narrow plate design, low screw-plate profile, rounded edges and polished surface are designed to minimize irritation of overlying soft tissue.

Round locking holes in the head accept 2.0 mm locking screws.

Combi holes accept either 2.0 mm locking or cortex screws and allow locking or compression throughout the length of the plate shaft.

Angled locking screws securely hold the ulnar head.
Indications

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

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

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

Required set

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.111.120</td>
<td>Modular Mini Fragment LCP Instruments and Implants Set</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>01.111.140</td>
<td>Titanium LCP Modular Mini Fragment Instruments and Implants Set</td>
</tr>
</tbody>
</table>
2 Contour plate (optional)

**Instrument**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>329.12</td>
<td>Bending Pliers, for 1.5 mm and 2.0 mm plates</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>292.622*</td>
<td>1.1 mm Threaded Guide Wire, 150 mm</td>
</tr>
<tr>
<td>292.623*</td>
<td>1.1 mm Non-Threaded Guide Wire, 150 mm</td>
</tr>
</tbody>
</table>

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.
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.

**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.

**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.

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

### Instruments

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

* Also available

Secure the drill guide in the desired hole. Predrill 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.
4. Fix plate distally continued

Insert the appropriate length 2.0 mm locking screw.
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.
5. Adjust length and complete fixation continued

**Option 3**

**Instrument**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>314.67.96**</td>
<td>1.5 mm/2.0 mm Cruciform Screwdriver Blade, with holding sleeve</td>
</tr>
<tr>
<td>or 314.667*</td>
<td>1.5 mm Cruciform Screwdriver Blade, with spring holding sleeve, short</td>
</tr>
</tbody>
</table>

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.
Closure and Implant Removal

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

6
Close incision
Use the appropriate method for surgical closure of the incision.

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**

**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**

**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

Implant-quality 316L stainless steel or Ti-6Al-7Nb alloy
2.0 mm LCP Distal Ulna Plate, sterile

<table>
<thead>
<tr>
<th>Steel</th>
<th>Titanium</th>
<th>Length (mm)</th>
<th>Holes</th>
</tr>
</thead>
<tbody>
<tr>
<td>242.531S</td>
<td>442.531S</td>
<td>46</td>
<td>7</td>
</tr>
</tbody>
</table>

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

For detailed cleaning and sterilization instructions, please refer to 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

292.622*  1.1 mm Threaded Guide Wire, 150 mm

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

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

311.01  Handle, with mini quick coupling

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

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

* Also available
** Part of the Modular Hand System
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

Optional Instrument

329.12  Bending Pliers, for 1.5 mm and 2.0 mm plates
Limited Warranty and Disclaimer: DePuy Synthes products are sold with a limited warranty to the original purchaser against defects in workmanship and materials. Any other express or implied warranties, including warranties of merchantability or fitness, are hereby disclaimed. Please also refer to the package insert(s) or other labeling associated with the devices identified in this surgical technique for additional information.

CAUTION: Federal Law restricts these devices to sale by or on the order of a physician. Some devices listed in this surgical technique may not have been licensed in accordance with Canadian law and may not be for sale in Canada. Please contact your sales consultant for items approved for sale in Canada.

Not all products may currently be available in all markets.

Manufactured or distributed by:
Synthes USA Products, LLC
1302 Wrights Lane East
West Chester, PA 19380
To order (USA): 800-523-0322
To order (Canada): 855-946-8999

Note: For recognized manufacturer, refer to the product label.

www.depuy.synthes.com

© DePuy Synthes 2009–2017. All rights reserved.