4.5 mm 90° Cannulated LC-Angled Blade Plates

Stainless Steel and Titanium

TECHNIQUE GUIDE
4.5 mm 90° Cannulated LC-Angled Blade Plate
Instrument and Implant Sets
Stainless Steel [105.446] or Titanium [145.446]

For use in the proximal humerus and distal tibia

Warning: This device is not approved for screw fixation to the posterior elements (pedicles) of the cervical, thoracic, or lumbar spine. See package insert for details.
Features

The 4.5 mm 90° Cannulated LC-Angled Blade Plate provides stable fracture fixation and rotational control.

The most proximal hole permits insertion of an oblique 4.5 mm lag screw into the far cortex for more stable fixation in the humeral head.

The three proximal holes accept 4.5 mm Cortex or 6.5 mm Cancellous Bone Screws.

These compression holes allow 4.5 mm Cortex Screws to be angled for lag screw fixation of additional fragments.

Cannulation of blade accepts a 2.0 mm guide wire allowing accurate determination of plate placement and blade length.

Limited contact plate design reduces the plate-to-bone contact area and optimizes bone healing.
**Technique** *(shown for proximal humerus and distal tibia)*

1. **Reduce the fracture**
   Reduce the fracture to restore anatomic alignment and rotation. Confirm reduction under image intensification.

2. **Insert the guide wire**
   Place the 4.5 mm 90° Cannulated LC-Angled Blade Plate Drill Guide [332.401] on the bone at the intended position of the blade plate as determined during preoperative planning.

   Insert a 2.0 mm Threaded Guide Wire, 230 mm long [292.65], through the 2.0 mm hole (middle hole) in the drill guide. This orients the blade at 90° to the shaft of the bone*. The tip of the guide wire should engage the subchondral bone. Confirm placement under image intensification.

3. **Drill the near cortex**
   Remove enough of the near cortex to allow plate insertion by using a 4.5 mm Drill Bit [310.44] through the holes adjacent to the guide wire.

   Remove additional cortical bone to allow the plate to lie flush by using a 3.2 mm Drill Bit [310.31] through the angled holes in the drill guide.

   Remove the drill guide.

* **Note**: *If the plate is contoured, the orientation between the side plate and blade may not remain 90°. It is recommended that the guide wire be inserted without the drill guide (free hand) approximating the new angle of the blade.*
4 Measure for blade length

With the drill guide removed, use the measuring device* [319.21] to determine the length of the guide wire in the bone. Choose a blade length at least 5 mm shorter than this measurement. Using the 4.5 mm Cannulated Drill Bit [310.69] over the guide wire, drill the near cortex.

* Note: A 230 mm long guide wire must be used for accurate measurement with this measuring device.

5 Insert the blade plate

For proximal humerus:

Insert the 4.5 mm 90° Cannulated LC-Angled Blade Plate over the guide wire. The blade will chisel through a portion of the near cortex and displace a small amount of cancellous bone*. Remove the guide wire.

Place an oblique lag screw through the most proximal plate hole to engage the far cortex. Use 4.5 mm Cortex and 6.5 mm Cancellous Bone Screws to fix the plate to the bone and stabilize the fracture.

* Note: If the plate does not fit flush to the bone, additional cortical bone below the guide wire can be removed with a chisel.

Additional instruments for plate insertion

The Inserter/Extractor Handle [332.402] can be used with the Small Slotted Hammer [332.403] to aid insertion. Light mallet blows are recommended in the proximal humerus to avoid over-insertion or disruption of the fracture.

Insertion technique for the distal tibia is shown on the following page.
**Technique (continued)**

5 **Insert the blade plate (continued)**

**For distal tibia:**
Attach the Inserter/Extractor Handle to the 4.5 mm 90° Cannulated LC-Angled Blade Plate. Insert the plate over the guide wire. Use the Small Slotted Hammer for rotational control while using a mallet to advance the plate with light blows to the insertion handle. The blade will chisel through a portion of the near cortex and displace a small amount of cancellous bone. Remove the guide wire.

Place an oblique lag screw through the most distal plate hole to engage the far cortex. Use 4.5 mm Cortex and 6.5 mm Cancellous Bone Screws to fix the plate to the bone and stabilize the fracture.

**Implant Removal**
Remove all screws from the plate. Attach the Inserter/Extractor Handle as close to the blade as possible on the 4.5 mm 90° Cannulated LC-Angled Blade Plate. Use light blows with the Small Slotted Hammer on the Inserter/Extractor Handle to remove the plate.
4.5 mm 90° Cannulated LC-Angled Blade Plate Instrument and Implant Set—Stainless Steel [105.446] or Titanium [145.446]*

**Implants**

4.5 mm 90° Cannulated LC-Angled Blade Plates
11.7 mm blade width

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<th>Stainless Steel</th>
<th>Titanium</th>
<th>Plate Holes</th>
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**Instruments**

- 292.65 2.0 mm Threaded Guide Wire, 230 mm, 10 ea.
- 310.69 4.5 mm Cannulated Drill Bit, 233 mm, 2 ea.
- 319.21 Cannulated Screw Measuring Device (for 7.0 mm Cannulated Screws)
- 329.905 Bending Template, 5 holes
- 329.908 Bending Template, 8 holes
- 329.912 Bending Template, 12 holes
- 332.401 4.5 mm Drill Guide for 90° Cannulated LC-Angled Blade Plate
- 332.402 Inserter/Extractor Handle for 90° Cannulated LC-Angled Blade Plate
- 332.403 Small Slotted Hammer

**Also Available**

- 305.081 4.5 mm 90° Cannulated LC-Angled Blade Plate Instrument Tray

*Basic Screw Set [105.11] or [145.13] and Basic Instrument Set [115.04] are needed when implanting the 4.5 mm Cannulated LC-Angled Blade Plates.

Implants are available nonsterile or sterile-packed. Add S to catalog number to order sterile product. All implants are available in 316L stainless steel or titanium.