

LCP Metaphyseal Plate for distal medial tibia

Anatomically contoured metaphyseal plate

Surgical Technique

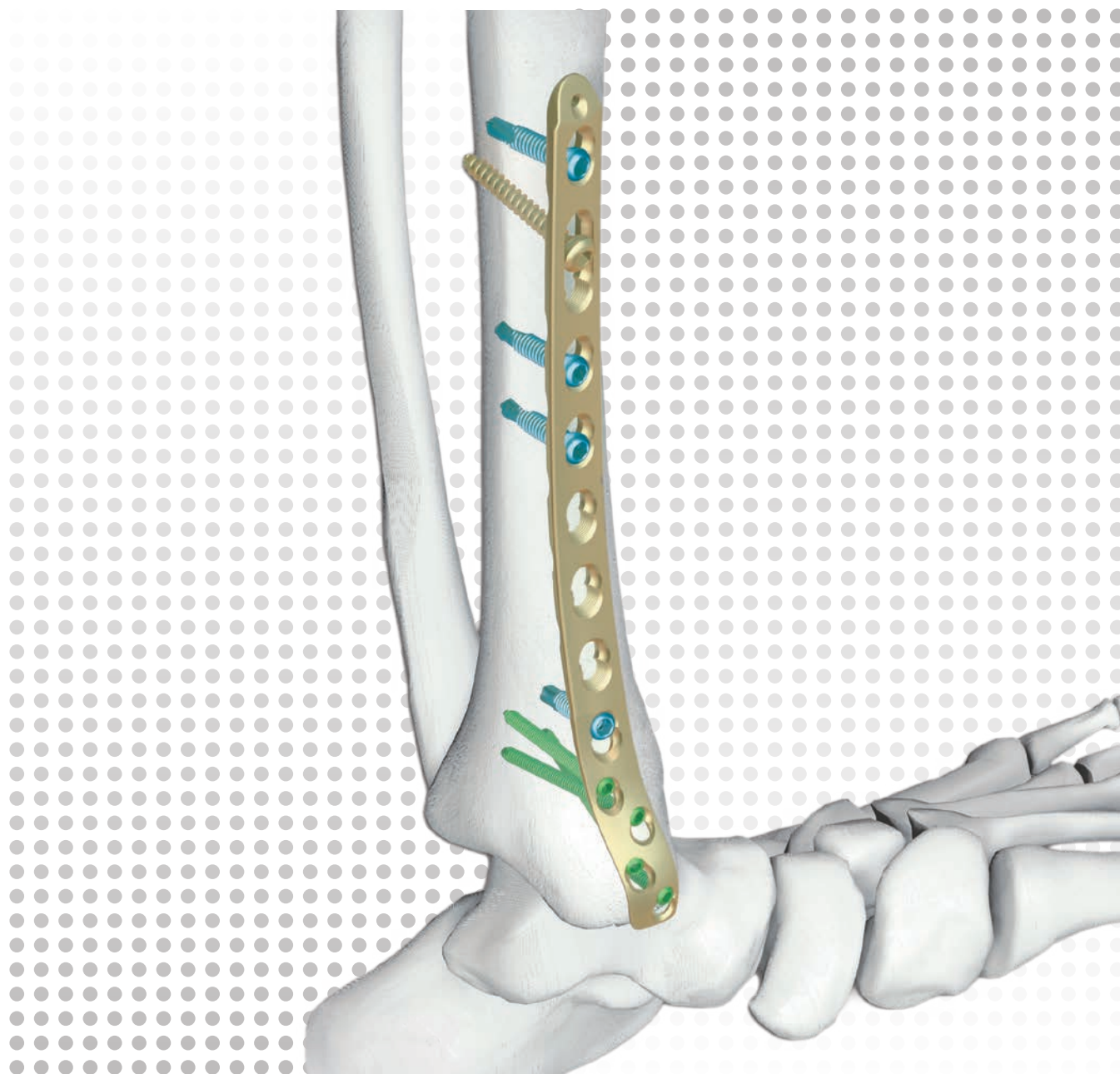


 Image intensifier control

This description alone does not provide sufficient background for direct use of DePuy Synthes products. Instruction by a surgeon experienced in handling these products is highly recommended.

Processing, Reprocessing, Care and Maintenance

For general guidelines, function control and dismantling of multi-part instruments, as well as processing guidelines for implants, please contact your local sales representative or refer to:

<http://emea.depuysynthes.com/hcp/reprocessing-care-maintenance>

For general information about reprocessing, care and maintenance of DePuy Synthes reusable devices, instrument trays and cases, as well as processing of DePuy Synthes non-sterile implants, please consult the Important Information leaflet (SE_023827) or refer to:

<http://emea.depuysynthes.com/hcp/reprocessing-care-maintenance>

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LCP Metaphyseal Plate for distal medial tibia

Anatomically contoured metaphyseal plate

Overview

Anatomically contoured plate

The shape of the plate is contoured to fit the complex shape of the distal part of the bone. A twist of the plate facilitates the fit on the tibia.



LCP combination holes

The LCP combination hole allows an internal fixation using non-locking, locking head screws, or a combination of both.



Plate profile

The distal part of the plate is tapered.

Distal application of the locking head screws

The orientation of the four distal screws allows fixation in the epiphyseal area without penetrating the articulation.

Guiding blocks

The guiding block allows insertion of the drill sleeves in the distal area of the plate. The guiding block can be removed or placed back onto the plate even with drill sleeves in place. If desired, non-locking screws can be inserted before placing the guiding block.

Additional design features

- Bullet nose tip
- The Kirschner wire hole in the bullet nose can be used for temporary fixation.
- The elongated hole in the shaft area of the plate aids plate positioning in the longitudinal axis.

■ Note:

For information on fixation principles using conventional and locked plating techniques, please refer to the LCP Locking Compression Plate Surgical Technique.



Intended Use, Indications and Contraindications can be found in the corresponding system Instructions for Use.

The AO Principles of Fracture Management

Mission

The AO's mission is promoting excellence in patient care and outcomes in trauma and musculoskeletal disorders.

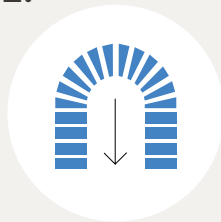
AO Principles^{1,2}

1.



Fracture reduction and fixation to restore anatomical relationships.

2.



Fracture fixation providing absolute or relative stability, as required by the “personality” of the fracture, the patient, and the injury.

3.



Preservation of the blood supply to soft-tissues and bone by gentle reduction techniques and careful handling.

4.



Early and safe mobilization and rehabilitation of the injured part and the patient as a whole.

¹ Müller ME, M Allgöwer, R Schneider, H Willenegger. Manual of Internal Fixation. 3rd ed. Berlin, Heidelberg, New York: Springer. 1991

² Buckley RE, Moran CG, Apivatthakakul T. AO Principles of Fracture Management: 3rd ed. Vol. 1: Principles, Vol. 2: Specific fractures. Thieme; 2017.

Surgical Steps

Implant preparation

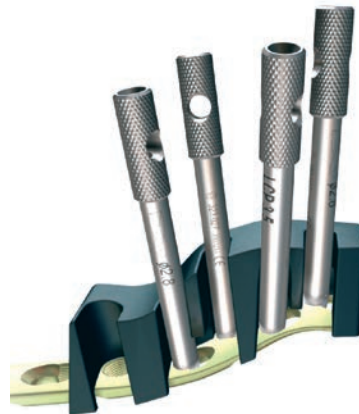
1.

Place the guiding block onto the plate. Thread the LCP Drill Sleeve (323.027) through the guiding block into the plate. If desired, the guiding block can then be removed.



2.

Precise contouring of the plate is unnecessary. Take the screw direction into consideration when plate bending is required.



3.

Use the Guide Sleeve for Kirschner Wires (324.081) and insert the Kirschner wires to determine the direction of the screws or simply to temporarily fix the plate to the bone.

For temporary fixation, a Kirschner wire can also be placed through the hole in the bullet nose.



Plate fixation

1.

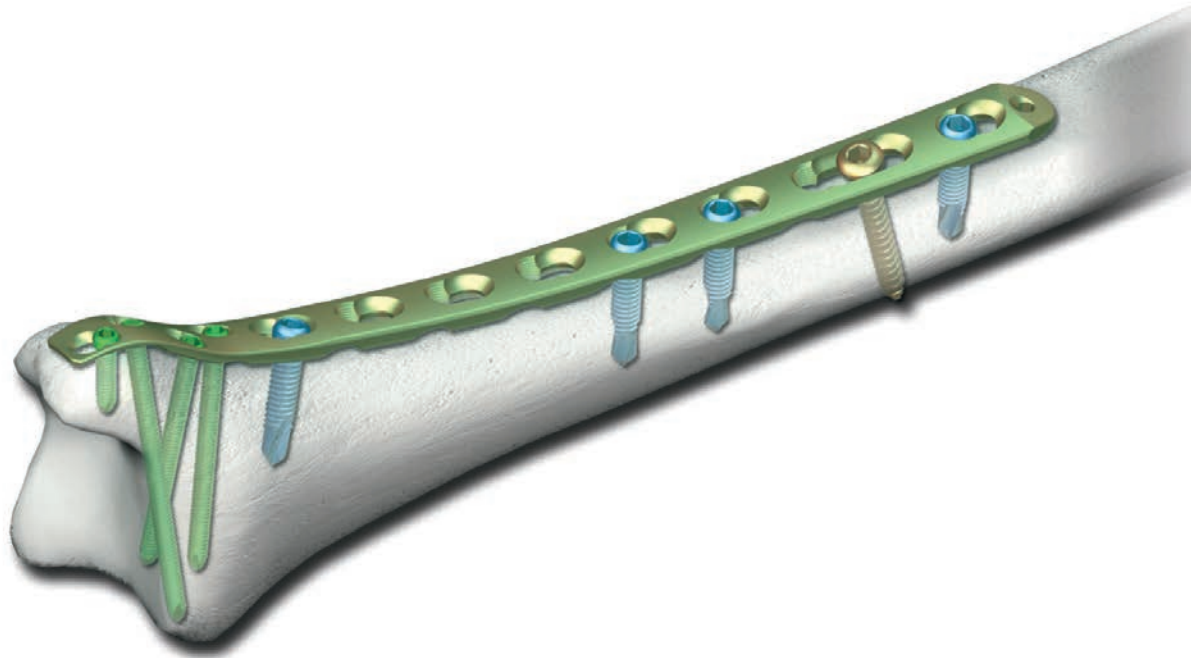
Use the LCP Metaphyseal Plate for distal medial tibia according to the LCP Principles; see LCP Application notes.

2.

For correct insertion and locking of the locking head screws in this distal part of the plate, use the appropriate guiding block and LCP drill sleeves. For the distal part of the plate, use 3.5 mm locking head screws, 3.5 mm cortex screws, 4.0 mm cancellous bone screws, or a combination of all three.

3.

For the shaft of the plate, use 5.0 mm locking head screws, 4.5 mm cortex screws or a combination of both.



Implant removal

Unlock all screws from the plate, then remove the screws completely from the bone. This prevents simultaneous rotation of the plate when unlocking the last locking screw.

If a screw cannot be removed with the screwdriver (e.g. if the hexagonal or Stardrive recess of the locking screw is damaged or if the screw is stuck in the plate), use the T-Handle with Quick-Coupling (311.440) to insert the conical Extraction Screw (309.520 or 309.521) into the screw head, and unscrew the screw in a counter-clockwise direction.

Implants

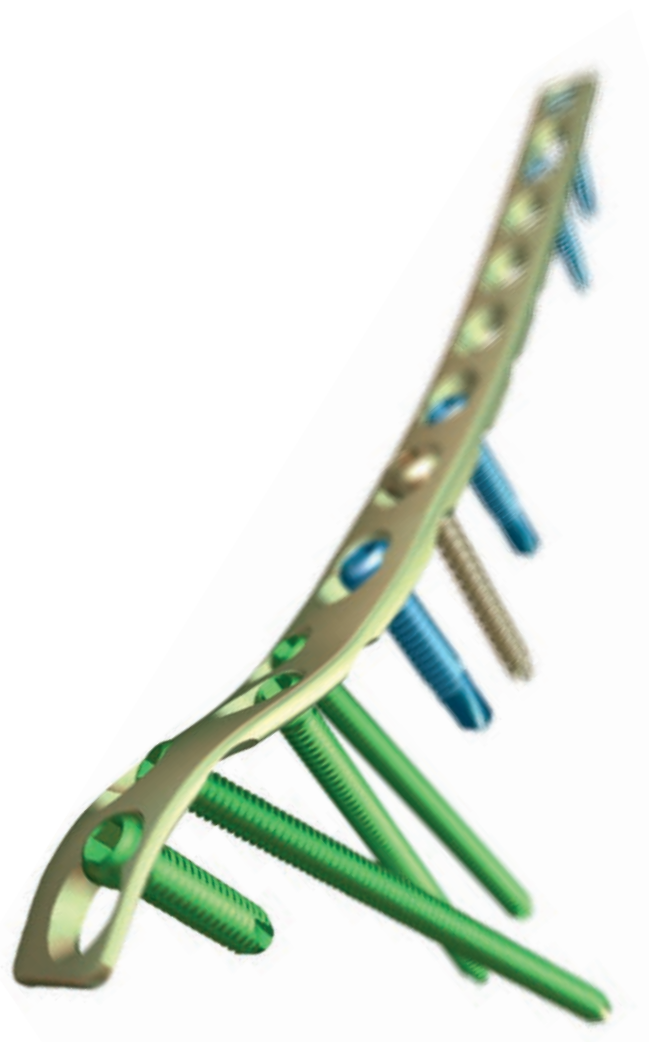
Plates

LCP Metaphyseal Plate for distal medial tibia, right

St. Steel	Titanium	Holes	Length
224.768	424.768	4+4 holes	123 mm
224.769	424.769	4+5 holes	141 mm
224.770	424.770	4+6 holes	159 mm
224.771	424.771	4+7 holes	177 mm
224.772	424.772	4+8 holes	195 mm
224.773	424.773	4+9 holes	213 mm
224.774	424.774	4+10 holes	231 mm
224.776	424.776	4+12 holes	267 mm
224.778	424.778	4+14 holes	303 mm
224.780	424.780	4+16 holes	339 mm
224.782	424.782	4+18 holes	375 mm
224.784	424.784	4+20 holes	411 mm

LCP Metaphyseal Plate for distal medial tibia, left

St. Steel	Titanium	Holes	Length
224.808	424.808	4+4 holes	123 mm
224.809	424.809	4+5 holes	141 mm
224.810	424.810	4+6 holes	159 mm
224.811	424.811	4+7 holes	177 mm
224.812	424.812	4+8 holes	195 mm
224.813	424.813	4+9 holes	213 mm
224.814	424.814	4+10 holes	231 mm
224.816	424.816	4+12 holes	267 mm
224.818	424.818	4+14 holes	303 mm
224.820	424.820	4+16 holes	339 mm
224.822	424.822	4+18 holes	375 mm
224.824	424.824	4+20 holes	411 mm



LCP Metaphyseal Plate for distal medial tibia Set

171.250	LCP Metaphyseal Plate for distal medial tibia Set with contents, stainless steel
171.255	LCP Metaphyseal Plate for distal medial tibia Set with contents, titanium
671.205	SYNCASE for LCP Metaphyseal Plate for distal medial tibia Set, consisting of:
671.206	Case for LCP Metaphyseal Plate for distal medial tibia Plates
671.207	Lid to SYNCASE for LCP Metaphyseal Plate for distal medial tibia

Implants contained in the LCP Metaphyseal Plate for distal medial tibia Set 171.250

St Steel	Designation	Units
224.768– 224.784	LCP Metaphyseal Plate for distal medial tibia, right	1 each
224.808– 224.824	LCP Metaphyseal Plate for distal medial tibia, left	1 each

Implants contained in the LCP Metaphyseal Plate for distal medial tibia Set 171.255

Titanium	Designation	Units
424.768– 424.784	LCP Metaphyseal Plate for distal medial tibia, right	1 each
424.808– 424.824	LCP Metaphyseal Plate for distal medial tibia, left	1 each

Instruments contained in the LCP Metaphyseal Plate for distal medial tibia Set

Item no.	Designation	Units
312.936	Aiming Block for LCP Metaphyseal Plate, for distal tibia, right	1
312.937	Aiming Block for LCP Metaphyseal Plate, for distal tibia, left	1



All plates are available sterile packed. For sterile implants add suffix "S" to article number.

Screws

Locking Screw Stardrive® Ø 5.0 mm, self-tapping, Stainless Steel or Titanium

X12.201– X12.221	Locking Screw Stardrive Ø 5.0 mm, self-tapping, length 14–60 mm
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Locking Screw Stardrive® Ø 3.5 mm, self-tapping, Stainless Steel or Titanium

X12.101– X12.125	Locking Screw Ø 3.5 mm, self-tapping, length 10–65 mm
or	
X13.010– X13.060	Locking Screw Ø 3.5 mm, self-tapping, length 10–60 mm



Cortex Screw Ø 3.5 mm, self-tapping, Stainless Steel or Titanium

0X.200.010–	Cortex Screw Stardrive Ø 3.5 mm,
0X.200.060	self-tapping, length 10–60 mm
or	
X04.810– X04.860	Cortex Screw Ø 3.5 mm, self-tapping, length 10–60 mm



Cortex Screw Ø 4.5 mm, self-tapping, Stainless Steel or Titanium

X14.814	Cortex Screw Ø 4.5 mm, self-tapping, length 14 mm
X14.860	Cortex Screw Ø 4.5 mm, self-tapping, length 60 mm

X=2 Stainless Steel
X=4 Titanium

All screws are available sterile packed. For sterile implants add suffix "S" to article number.

**Cancellous Bone Screw Ø 4.0 mm, fully threaded,
Stainless Steel or Titanium**

X06.010– X06.060	Cancellous Bone Screw Ø 4.0 mm, fully threaded, length 10–60 mm
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**Cancellous Bone Screw Ø 4.0 mm,
Stainless Steel or Titanium**

X07.010– X07.060	Cancellous Bone Screw Ø 4.0 mm, length 10/5–60/16 mm
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X=2 Stainless Steel, X=4 Titanium

All screws are available sterile packed. For sterile implants add suffix "S" to article number.

Implants: Kirschner Wires

X92.160	Kirschner Wire Ø 1.6 mm with trocar tip, length 150 mm, Stainless Steel or Titanium
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X92.200	Kirschner Wire Ø 2.0 mm with trocar tip, length 150 mm, Stainless Steel or Titanium
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492.710	Kirschner Wire Ø 1.6 mm with threaded tip, length 150/5 mm, Titanium Alloy (TAV)
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X=2 Stainless Steel, X=4 Titanium

All Kirschner wires are available sterile packed. For sterile implants add suffix "S" to article number.

Instruments

**Aiming Block for LCP Metaphyseal Plate,
for distal tibia**

312.936	right
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312.937	left
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X=2 Stainless Steel

X=4 Titanium

All screws are available sterile packed. For sterile implants add suffix "S" to article number.

MRI Information

Torque, Displacement and Image Artifacts according to ASTM F 2213, ASTM F 2052 and ASTM F 2119

Non-clinical testing of worst case scenario in a 3 T MRI system did not reveal any relevant torque or displacement of the construct for an experimentally measured local spatial gradient of the magnetic field of 3.69 T/m. The largest image artifact extended approximately 169 mm from the construct when scanned using the Gradient Echo (GE). Testing was conducted on a 3 T MRI system.

Radio-Frequency-(RF-)induced heating according to ASTM F 2182

Non-clinical electromagnetic and thermal testing of worst case scenario lead to peak temperature rise of 9.5 °C with an average temperature rise of 6.6 °C (1.5 T) and a peak temperature rise of 5.9 °C (3 T) under MRI Conditions using RF Coils (whole body averaged specific absorption rate [SAR] of 2 W/kg for 6 minutes [1.5 T] and for 15 minutes [3 T]).

▲ Precautions:

The above mentioned test relies on non-clinical testing. The actual temperature rise in the patient will depend on a variety of factors beyond the SAR and time of RF application. Thus, it is recommended to pay particular attention to the following points:

- It is recommended to thoroughly monitor patients undergoing MR scanning for perceived temperature and/or pain sensations.
- Patients with impaired thermoregulation or temperature sensation should be excluded from MR scanning procedures.
- Generally, it is recommended to use a MR system with low field strength in the presence of conductive implants. The employed specific absorption rate (SAR) should be reduced as far as possible.
- Using the ventilation system may further contribute to reduce temperature increase in the body.

Not all products are currently available in all markets.
This publication is not intended for distribution in the USA.
Intended use, Indications and Contraindications can be found in the corresponding system Instructions for Use.
All Surgical Techniques are available as PDF files at www.depuysynthes.com/ifu



Synthes GmbH
Eimattstrasse 3
4436 Oberdorf
Switzerland
Tel: +41 61 965 61 11

www.depuysynthes.com