

A Comprehensive Plating System for Stable
Fixation of Osteotomies Around the Knee

TOMOFIX[®] Osteotomy System

Surgical Technique



Table of Contents

Introduction	TOMOFIX® Osteotomy System	2
	AO Principles	4
	Indications	5
	Clinical Cases	6

Surgical Technique	Medial High Tibia	9
	Lateral High Tibia	19
	Lateral Distal Femur	24

Product Information	Implants	29
	Instruments	34
	Set List	38

MR Information

The TomoFix Osteotomy 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 TomoFix Osteotomy System in the MR environment is unknown. Scanning a patient who has this device may result in patient injury.

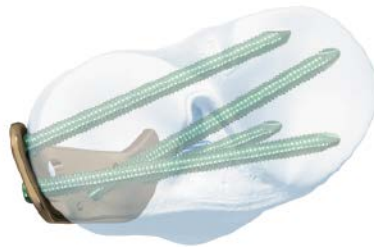
TOMOFIX® Osteotomy System. A comprehensive plating system for stable fixation of osteotomies around the knee.

The TOMOFIX® Osteotomy System provides stable fixation of osteotomies close to the knee, and consists of five plates designed for specific parts of the anatomy: TOMOFIX Medial High Tibia Plate, TOMOFIX Medial High Tibia Plate, small, TOMOFIX Lateral High Tibia Plate, TOMOFIX Lateral Distal Femur Plate, and TOMOFIX Medial Distal Femur Plate.

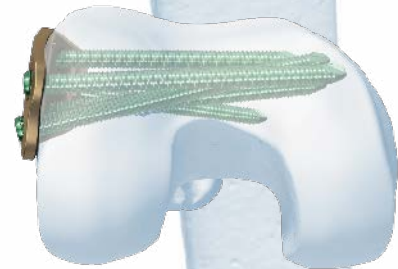
All of the plates in the TOMOFIX Osteotomy System are designed according to Locking Compression Plate (LCP®) System Principles. The fixed-angle locking holes provide multiple fixed-angle constructs throughout the plate, improving retention of screws in the plate and in cortical bone. Dynamic compression can be achieved by eccentric insertion of 4.5 mm titanium cortex screws in the dynamic compression unit (DCU) portion of the hole. The plates are available in titanium, range in length from 102 mm to 141 mm, and accept 5.0 mm titanium locking screws and 4.5 mm titanium cortex screws.



TOMOFIX Medial High Tibia Plate

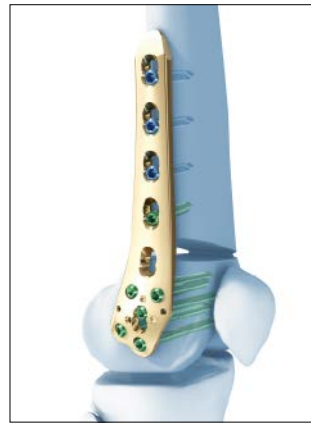
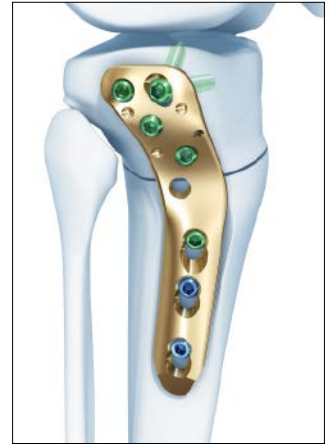


TOMOFIX Lateral High Tibia Plate



TOMOFIX Lateral Distal Femur Plate

- Plates are anatomically contoured, eliminating the need for intraoperative contouring and minimizing soft tissue irritation
- Long shaft to support and deflect forces in the diaphysis
- Plates have tapered ends allowing submuscular plate insertion
- Locking screws create a fixed-angle construct, providing angular stability
- Spacers reduce plate-to-bone contact. Reduced plate-to-bone contact may minimize disruption of the periosteal blood supply



AO Principles

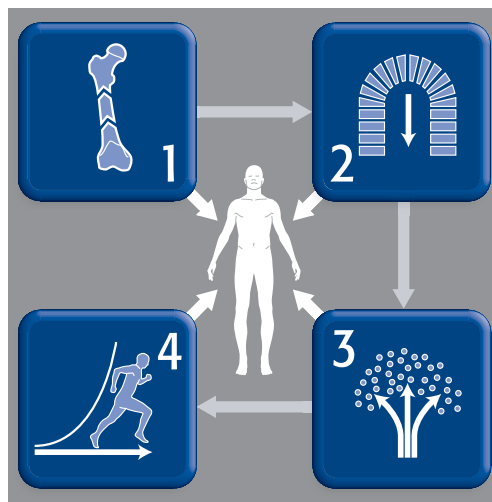
In 1958, the AO formulated four basic principles, which have become the guidelines for internal fixation.^{1,2}

Anatomic reduction

Fracture reduction and fixation to restore anatomical relationships.

Early, active mobilization

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



Stable fixation

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

Preservation of blood supply

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

1. Müller ME, Allgöwer M, Schneider R, Willenegger H. *Manual of Internal Fixation*. 3rd ed. Berlin, Heidelberg, New York: Springer-Verlag; 1991.
2. Rüedi TP, RE Buckley, CG Moran. *AO Principles of Fracture Management*. 2nd ed. Stuttgart New York: Thieme; 2007.

Indications

TOMOFIX Osteotomy System

The DePuy Synthes Trauma TOMOFIX Osteotomy System consists of four plates designed for specific parts of the anatomy: TOMOFIX Medial High Tibia Plate, TOMOFIX Lateral High Tibia Plate, TOMOFIX Lateral Distal Femur Plate, and TOMOFIX Medial Distal Femur Plate.

The TOMOFIX Osteotomy System is intended for osteotomies, treatment of bone and joint deformities, fixation of fractures, and malalignment caused by injury or disease, such as osteoarthritis, of the distal femur and proximal tibia.

Specifically,

- The TOMOFIX Medial Proximal Tibia Plates are indicated for open- and closed-wedge osteotomies, fixation of fractures, and malalignment caused by injury or disease, such as osteoarthritis, of the medial proximal tibia
- The TOMOFIX Lateral Proximal Tibia Plates are indicated for open- and closed-wedge osteotomies, fixation of fractures, and malalignment caused by injury or disease, such as osteoarthritis, of the lateral proximal tibia
- The TOMOFIX Lateral Distal Femur Plates are indicated for open- and closed-wedge osteotomies, fixation of fractures, and malalignment caused by injury or disease, such as osteoarthritis, of the lateral distal femur
- The TOMOFIX Medial Distal Femur Plates are indicated for closed-wedge osteotomies, fixation of fractures, and malalignment caused by injury or disease, such as osteoarthritis, of the medial distal femur

Case 1

Open-wedge high tibia valgus osteotomy (HTO)

48-year-old woman with medial gonarthrosis.

Case studies are not necessarily predictive of results in other cases. Results in other cases may vary.



Preoperative



Postoperative, AP



Postoperative, lateral



6 months postoperative



Following implant removal (15 months postoperative)

Case 2

Open-wedge high tibia valgus osteotomy (HTO)

23-year-old man, with posttraumatic medial, chondral gonarthrosis, medial meniscopathy, varus-morphotype.



Preoperative



Postoperative, AP



Postoperative, lateral



3 months postoperative



Following implant removal (12 months postoperative)



Case 3
Closed-wedge high tibia valgus
osteotomy (HTO)

52-year-old woman with
medial gonarthrosis.



Preoperative



Postoperative



3 months postoperative

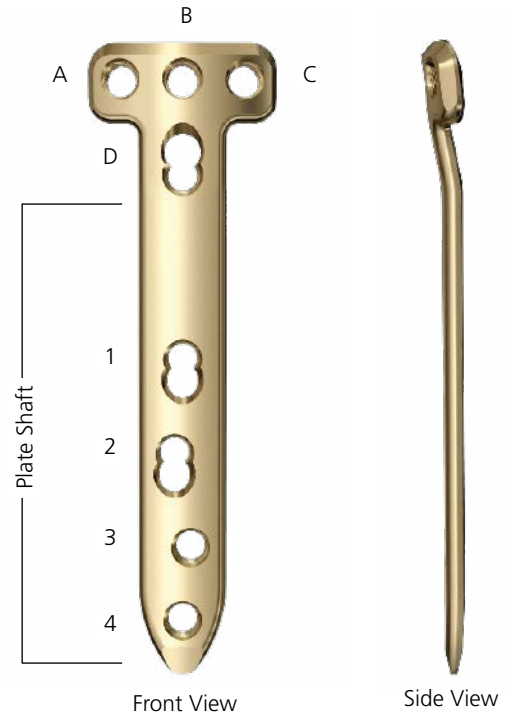


3 months postoperative

Surgical Technique—Medial High Tibia Osteotomy

TOMOFIX Medial High Tibia Plate (440.834)

- Three Combi holes (1, 2 and D) provide the flexibility of axial compression and locking capability.
- Holes 3, 4, A, B and C accept locking screws.



1

Attach drill guides to plate

Instruments

312.926	TOMOFIX Guiding Block, for Medial High Tibia
323.042	4.3 mm Threaded LCP Drill Guide

Place the TOMOFIX Guiding Block for medial high tibia against the top side of the plate. Push the guiding block as far as possible toward the proximal end of the plate (Figures 1 and 2).

Thread the first 4.3 mm threaded LCP Drill Guide into the center proximal plate hole B (Figure 3). Thread the two remaining 4.3 mm threaded LCP Drill Guide(s) into the adjacent proximal plate holes A and C (Figure 4).

Remove the guiding block.



Figure 1



Figure 2



Figure 3



Figure 4

2

Install spacers

Instrument

413.309	5.0 mm Titanium Spacer
---------	------------------------

Place 5.0 mm titanium spacers into Combi hole D and locking hole 3 or locking hole 4.



3

Determine osteotomy position

Plan osteotomy type and position. The TOMOFIX Medial Proximal Tibial Head Plate is suitable for both opening- and closing-wedge osteotomies.

Mark the osteotomy position by placing two parallel 2.5 mm Kirschner wires along the osteotomy plane. For closing wedge osteotomies, the definition of a proximal and a distal osteotomy plane is necessary in order to form a wedge. The wires must end exactly at the opposite cortex. The osteotomy should end approximately 15 mm before the opposite cortex in order to leave a bony hinge (important for the next step). Use fluoroscopic control to check correct insertion of the Kirschner wires.

The following illustrations show examples of opening-wedge osteotomies.

Note: When placing two wires, it is important to ensure that there is sufficient space for all plate screws.

4

Biplanar osteotomy

Perform osteotomy according to the preoperative plan. Kirschner wires serve as a guide for the saw blade. Transverse osteotomy should run across the posterior two thirds of the bone, leaving the ventral third intact for performing a second, ascending osteotomy in the coronal plane (biplanar technique).

Protect anatomical structures dorsal to posterior bone surface with a Hohmann retractor. Perform the entire sawing procedure slowly, with very little pressure and constant cooling of the saw blade by irrigation. When the planned depth is achieved in the posterior two thirds of the bone, perform the anterior ascending saw cut with a thin saw blade. The ascending cut consists of a complete osteotomy including the opposite cortex.



Note: After performing the osteotomy, close the osteotomy carefully by applying continuous pressure to the lateral lower limb while stabilizing the knee joint region (closing-wedge osteotomy), or open the osteotomy by using one of the techniques described in the following section (Opening the Osteotomy). This may take several minutes.

Precautions:

- To maintain the inclination of the tibial slope, the wires must run at the same angle to the tibial plateau. Performing the ascending osteotomy cut parallel to the anterior cortex of the tibial shaft (at a resulting angle of around 110° to the transverse osteotomy cut) is supposed to ensure good bony contact in the area of the ascending cut, after opening the osteotomy.
 - During the dissection, make sure that the dermal branches of the saphenous nerve are not damaged.
 - Observe caution with the neurovascular structures. Saw slowly in full control since the blade could deviate into the back of the knee.
 - Always use sharp saw blades, as the use of a blunt saw blade may lead to heat necrosis of the bone and surrounding soft tissue.
 - An osteotomy of the distal femur may be carried out only if the neurovascular structures are protected with a blunt retractor. Otherwise there is a high risk of injuring these virtual structures.
-



5

Opening the osteotomy

After performing the osteotomy, open and adjust the correction using the TOMOFIX Osteotomy Chisels or the TOMOFIX Bone Spreader.

Option A: Chisels

Instrument

397.992 – TOMOFIX Osteotomy Chisels
397.995

Insert an osteotomy chisel into the osteotomy up to the lateral bone bridge. The insertion depth corresponds with the cutting depth; mark it on the first osteotomy chisel. Then gently insert (by slowly hammering, if necessary) a second osteotomy chisel distal to the first chisel about 10 mm shallower than the first chisel. If necessary, continue with subsequent chisels between the first two chisels to gradually spread open the osteotomy until the desired opening height is reached. Open the osteotomy slowly over a period of several minutes to prevent fracturing the lateral cortex.

Option B: Bone spreader

Instruments

324.052 3.5 mm Torque Limiting Screwdriver
395.000 TOMOFIX Bone Spreader
399.097 Bone Spreader with 8 mm blade, medium handle

Alternatively, the TOMOFIX Bone Spreader can be used for opening and measuring the osteotomy gap in degrees. Insert the spreader gently into the osteotomy site until the tip of the instrument reaches the hinge point of the osteotomy. Use a 3.5 mm hexagonal screwdriver to open the bone spreader and the osteotomy. The osteotomy depth can be read from the scale on the spreader blade. When the desired correction has been achieved, remove the TOMOFIX Bone Spreader and insert the 8 mm adjustable bone spreader into the open wedge to maintain the correction.



Note: When opening the osteotomy, take special care not to put too much strain on the lateral hinge, to prevent it from breaking.

Opening the osteotomy *continued*

Instrument

395.001 TOMOFIX Osteotomy Gap Measuring Device

If desired, the TOMOFIX Gap Measuring Device can be used to measure the height of the open wedge in millimeters. Insert the gap measuring device into the open wedge until the device is gripped. Move the slider toward the gap, until the slider reaches the near cortex. The height of the open wedge can be confirmed in millimeters on the scale of the device.

Precaution: The control and the fine adjustment of the osteotomy must always occur with the leg in full extension. Always monitor the osteotomy with the image intensifier in two planes. Check the tibial slope for possible changes. Avoid malrotation and medial and lateral destabilization.



6

Determine plate position

Center the plate, with the 4.3 mm threaded LCP Drill Guide(s) installed, over the osteotomy and place onto the bone. The three holes in the head and the most proximal Combi hole on the shaft should be positioned proximal to the correction gap. The solid midsection of the plate should be placed over the osteotomy.



7

Secure plate to bone

Instruments

310.430	4.3 mm Drill Bit
324.052	3.5 mm Torque Limiting Screwdriver
324.168	2.0 mm TOMOFIX Guide Sleeve

Note: If the first screw to be inserted is a locking screw, it is important to provisionally hold the plate securely on the bone. Otherwise, the plate and screw may rotate simultaneously when locking the screw, possibly causing soft-tissue damage. When removing the plate, it is strongly recommended to manually unlock all screws first and then remove them. Always use the torque limiting screwdriver to lock the locking screws.

Perform a secure temporary fixation of the plate. Insert the 2.0 mm TOMOFIX Guide Sleeve into the middle threaded LCP Drill Guide and insert a Kirschner wire.

- The K-wire will aid in positioning the screw, which should be parallel to the articular surface. The wire also allows confirmation of screw position under radiographic imaging.

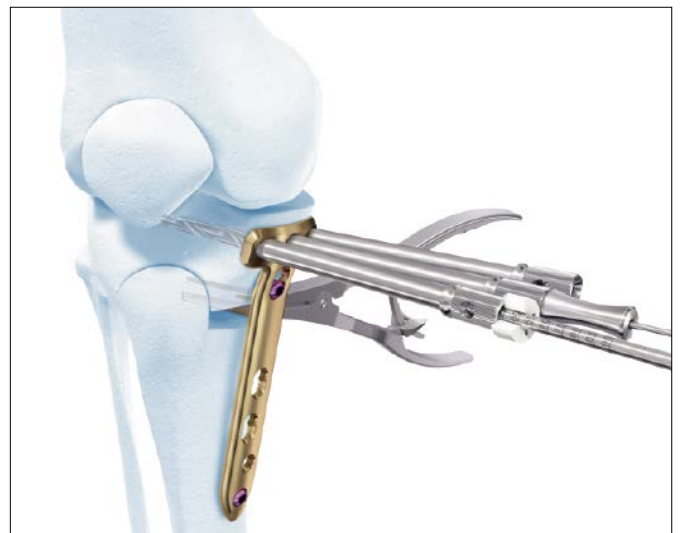
Use the calibrated 4.3 mm drill bit to determine screw lengths for holes A, B and C. To ensure optimal support of the tibia plateau, insert the longest possible fixed-angle self-tapping locking screws.

Note: The calibrated drill bit is read at the bottom of the slider; the point closest to the drill guide.

Precautions:

Be careful not to rotate the plate when unscrewing the drill sleeves.

To ensure sufficient tightening of locking head screws and to reduce the risk of cold welding of the screw head to the plate, locking head screws should always be tightened by hand using a torque limiter.



8

Insert screws into holes 1, 2, 3, 4 and D

Instrument

314.152	3.5 mm Hexagonal Screwdriver Shaft
323.500	5.0 mm/4.5 mm LCP Universal Drill Sleeve

The Combi holes allow use of a lag screw for indirect reduction of the dislocated shaft, and compression of the fractures. Insert a lag screw into hole 1. The spacers maintain adequate distance between the plate and the periosteum, help minimize damage to the blood supply, and allow the pes anserinus to move freely under the plate.

Precautions:

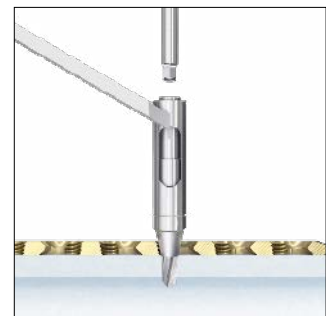
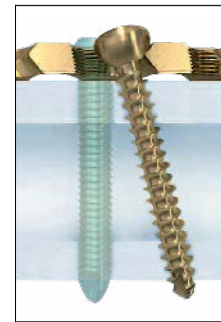
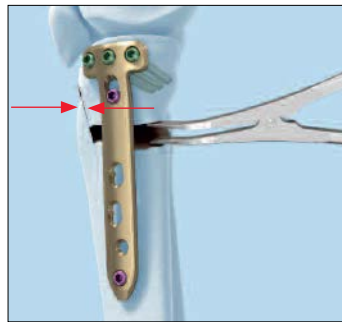
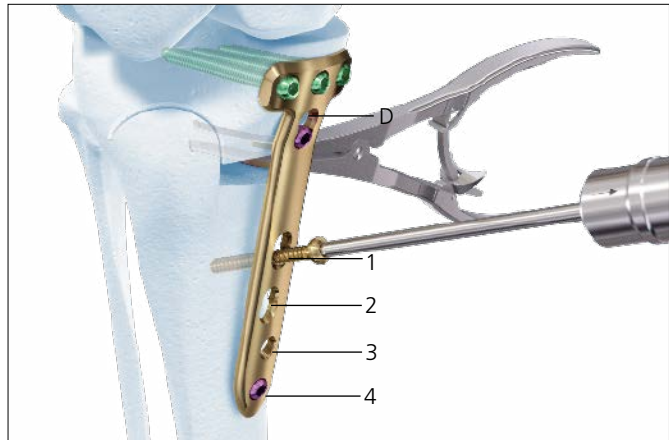
Monitor potential correction loss and the ventral bone contact of the ascending osteotomy. Check the bone axis and, if necessary, make final corrections. Avoid compressing soft tissue.

The cortex screw must be angulated slightly towards distal, to avoid the trajectory of the bicortical locking screw in the the same hole, which is required in the following steps.

Exert special care when tightening the cortex screw to avoid thread stripping and associated damage to the bone.

To secure the shaft portion of the plate onto the tibia, insert unicortical self-drilling locking screws into holes 2 and 3. Replace the lag screw in hole 1 with a bicortical self-tapping locking screw. Remove the spacer in hole 4, and replace it with a unicortical self-drilling locking screw.

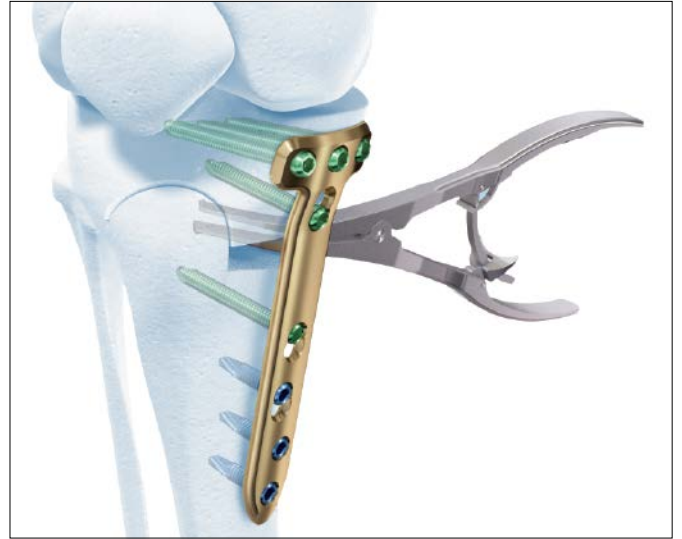
Note: To predrill for locking screws, insert the self-retaining 3.5 mm hexagonal screwdriver shaft into the 3.5 mm hex recess of the 5.0 mm/4.5 mm LCP Universal Drill Sleeve. Center the integral 4.3 mm drill bit in the locking hole to ensure proper engagement of the fixed-angle, self-drilling locking screws.



Replace the spacer in hole D with a self-tapping locking screw of sufficient length, appropriate to the patient's anatomy.

Do not lock the screws with power tools, as their maximum torque is higher than the recommended torque, and completely tightening the screw with power tools could result in damage to the locking screw. Always use the self-retaining 3.5 mm torque limiting screwdriver for final tightening. To prevent damage to the hexagonal recess of the screw, be certain that the screwdriver properly seats in the screwhead.

Precaution: Use the 3.5 mm torque limiting screwdriver, 4 Nm torque limit, for final seating of all locking screws. Do not fully insert any locking screw under power.



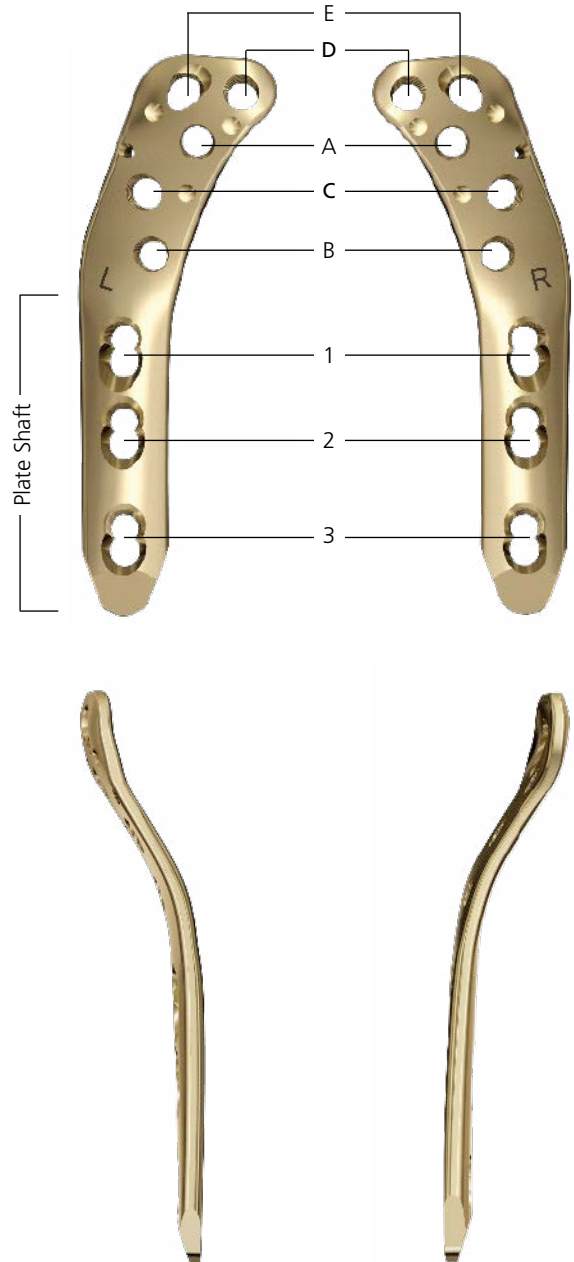
Implant Removal

The TOMOFIX Medial High Tibial Plate does not generally need to be removed. If desired, it should not be removed earlier than complete healing of the gap. To remove the plate, initially loosen all screws manually and then remove them using power tools.

Surgical Technique—Lateral High Tibia

TOMOFIX Lateral High Tibia Plate

- Hole E accepts 4.5 mm titanium cortex screws or 5.0 mm locking head screws. Holes A, B, C and D accept fixed-angle 5.0 mm locking head screws.
- 1, 2 and 3 are Combi holes in the shaft and provide the flexibility of axial compression or fixed-angle locking.



1

Attach drill guides to plate

Instruments

312.930	TOMOFIX Guiding Block, for Lateral High Tibia, right
312.931	TOMOFIX Guiding Block, for Lateral High Tibia, left
323.042	4.3 mm Threaded LCP Drill Guide

To facilitate insertion of the proximal locking screws, place the appropriate TOMOFIX Guiding Block for the lateral high tibia, right or left, on the proximal part of the plate. The three-point seating ensures correct positioning (Figure 1).

Insert a 4.3 mm threaded LCP Drill Guide through the drill guide of the guiding block into hole A of the plate (1). Tighten the locking nut of the guiding block by turning it clockwise, to lock the drill guide (2) (Figure 2).

Thread a 4.3 mm threaded LCP Drill Guide into an additional proximal plate hole (D or E).



Figure 1



Figure 2

2

Install spacer

Instrument

413.309 5.0 mm Titanium Spacer

Place a 5.0 mm titanium spacer into hole 3.



3

Determine plate position

Instrument

324.168 2.0 mm TOMOFIX Guide Sleeve

Refer to pages 11-13 of this Surgical Technique for osteotomy instructions and precautions.

- After performing the osteotomy, situate the prepared implant parallel to the tibial shaft. To temporarily affix the plate, insert the 2.0 mm TOMOFIX Guide Sleeve through the 4.3 mm threaded LCP Drill Guide and insert the 2.0 mm Kirschner wire. The Kirschner wire helps to determine screw position and length under the image intensifier.



4**Secure plate to bone****Instruments**

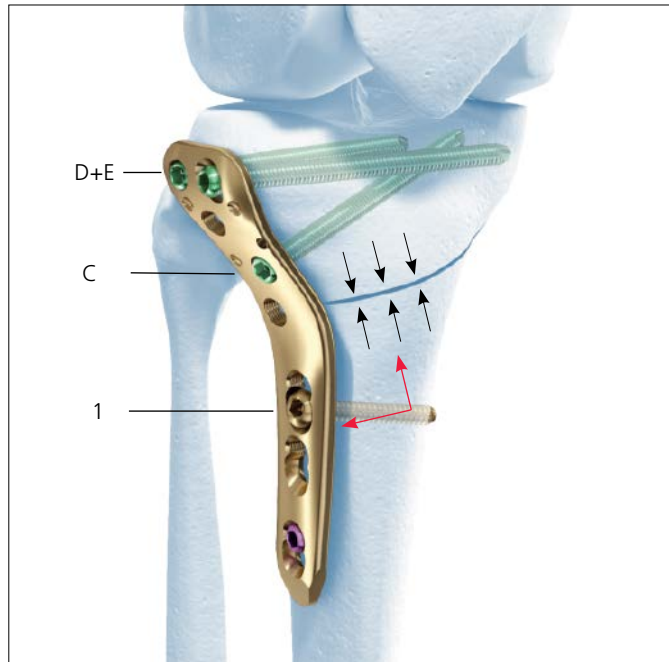
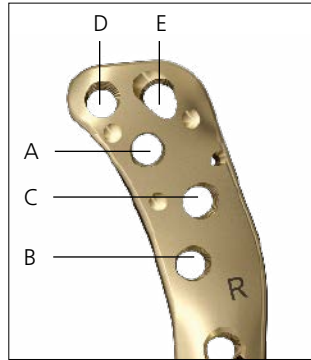
310.430 4.3 mm Drill Bit

324.052 3.5 mm Torque Limiting Screwdriver

Note: If the first screw to be inserted is a locking screw, it is important to provisionally hold the plate securely on the bone. Otherwise, the plate and screw may rotate simultaneously when locking the screw, possibly causing soft-tissue damage. When removing the plate, it is strongly recommended to manually unlock all screws first and then remove them. Always use the 3.5 mm torque limiting screwdriver to lock the locking screws.

Use the calibrated 4.3 mm drill bit to determine screw lengths for holes D and E. To ensure optimal support of the tibia plateau, insert the longest possible fixed-angle self-tapping locking screws. Insert another self-tapping locking screw into hole A or C, as desired.

To compress the osteotomy, insert a 4.5 mm titanium cortex screw into hole 1, angled distally. The spacer maintains adequate distance between the plate and the periosteum and helps minimize damage to the blood supply.

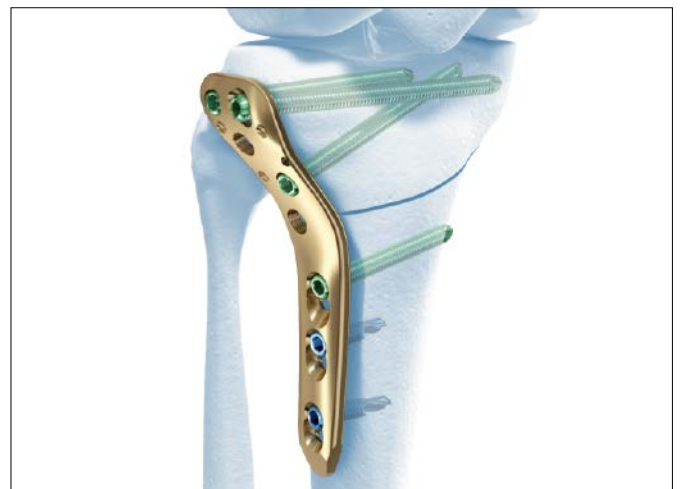
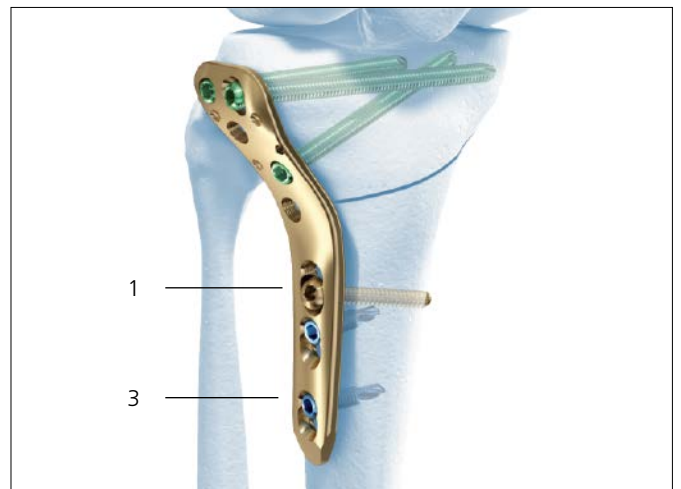
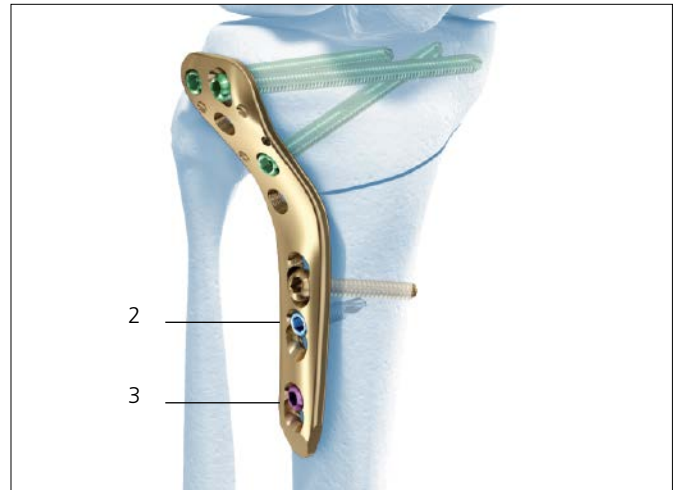


To secure the shaft portion of the plate onto the tibia, insert a unicortical self-drilling locking screw into hole 2. Replace the spacer in hole 3 with a unicortical self-drilling locking screw. Replace the cortex screw in hole 1 with a bicortical self-tapping locking screw.

For maximum stability, insert three locking screws into the proximal part of the osteotomy, and be sure to use all of the plate holes in the shaft. The first screw inserted on the distal part of the correction must be a bicortical locking screw, while it is sufficient for the two most distal screws to be unicortical locking screws.

Do not lock the screws with power tools, as their maximum torque is higher than the recommended torque, and completely tightening the screw with power tools could result in damage to the locking screw. Always use the self-retaining 3.5 mm torque limiting screwdriver for final tightening. To prevent damage to the hexagonal recess of the screw, be certain that the screwdriver seats properly in the screwhead.

Precaution: Use the 3.5 mm torque limiting screwdriver, 4 Nm torque limit, for final seating of all locking screws. Do not fully insert any locking screw under power.



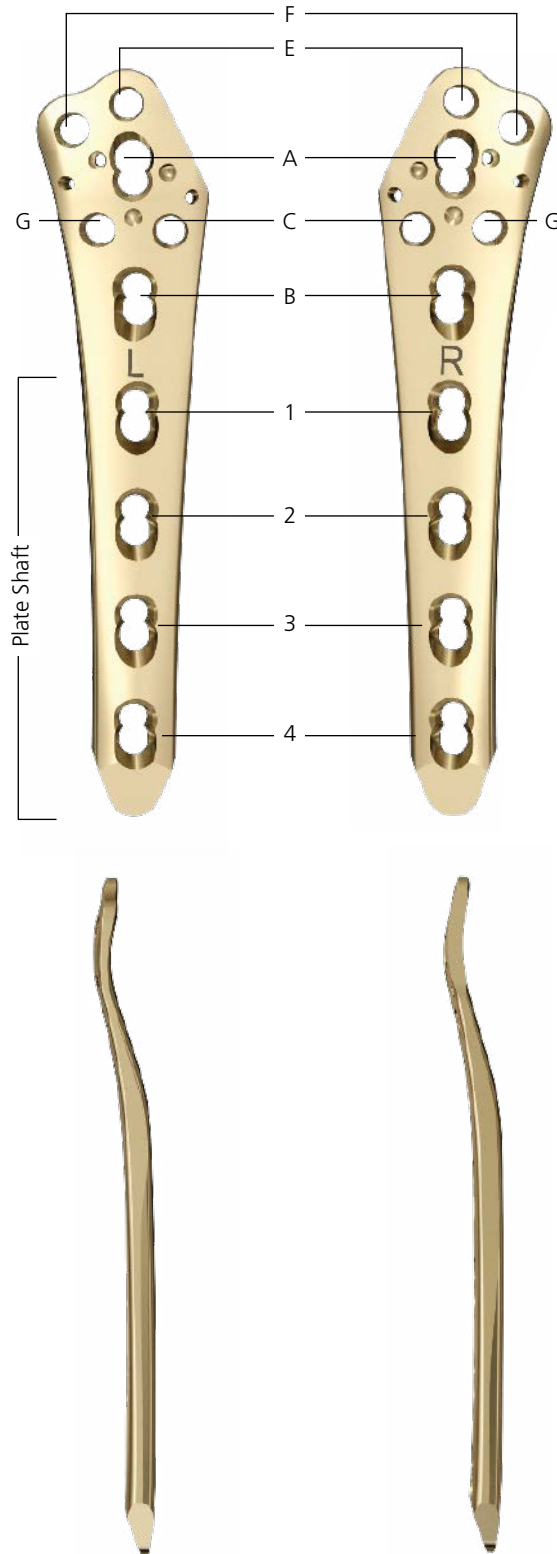
Implant removal

The TOMOFIX Lateral High Tibial Plate does not generally need to be removed. If desired, it should not be removed earlier than complete healing of the gap. To remove the plate, initially loosen all screws manually and then remove them using power tools.

Surgical Technique—Lateral Distal Femur

TOMOFIX Lateral Distal Femur Plates, left (440.874) and right (440.864)

- Holes A, B, and 1 through 4 are Combi holes and provide the flexibility of axial compression or fixed-angle locking.
- Holes C, E, F and G are fixed-angle locking holes.



1**Attach drill guides to plate****Instruments**

312.932	TOMOFIX Guiding Block, for Lateral Distal Femur, right
312.933	TOMOFIX Guiding Block, for Lateral Distal Femur, left
323.042	4.3 mm Threaded LCP Drill Guide

Place the appropriate TOMOFIX Guiding Block for the lateral distal femur, left or right, on the proximal part of the plate. The three-point seating ensures correct positioning (Figure 1).

Insert a 4.3 mm threaded LCP Drill Guide through the drill guide of the guiding block into hole A (1). Tighten the locking nut of the guiding block by turning it clockwise, to lock the drill guide (2) (Figure 2).

Thread another 4.3 mm threaded LCP Drill Guide into an additional plate hole (F or E).



Figure 1



Figure 2

2

Install spacer

Instrument

413.309 5.0 mm Titanium Spacer

Place a 5.0 mm titanium spacer into hole 4.



3

Determine plate position

Instrument

324.168 2.0 mm TOMOFIX Guide Sleeve

Refer to pages 11-13 of this Surgical Technique for osteotomy instructions and precautions.

- After performing the osteotomy, adjust the prepared implant parallel to the femoral shaft. To temporarily affix the plate, insert the guide sleeve for 2.0 mm Kirschner wires into the threaded LCP Drill Guide, then insert the 2.0 mm Kirschner wire. The Kirschner wire helps to determine screw position and length under image intensification.



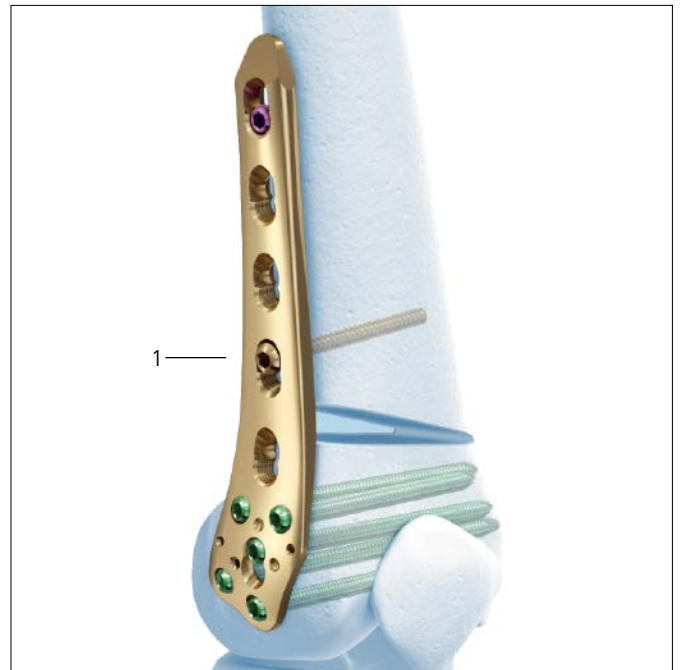
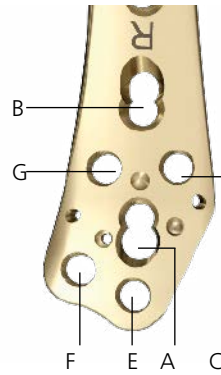
4**Secure plate to bone****Instruments**

310.430	4.3 mm Drill Bit
324.052	3.5 Torque Limiting Screwdriver

Note: If the first screw to be inserted is a locking screw, it is important to provisionally hold the plate securely on the bone. Otherwise, the plate and screw may rotate simultaneously when locking the screw, possibly causing soft-tissue damage. When removing the plate, it is strongly recommended to manually unlock all screws first and then remove them. Always use the 3.5 mm torque limiting screwdriver to lock the locking screws.

Use the calibrated 4.3 mm drill bit to determine screw lengths for holes C, E, F and G and insert four self-tapping locking screws.

Opening the correction gap can break the far cortex, therefore, use a cranially ascending lag screw in hole 1. To achieve reduction and compression of the osteotomy, insert a 4.5 mm titanium cortex screw into hole 1, angled proximally. The spacer will maintain adequate distance between the plate and the periosteum. This helps minimize damage to the periosteal blood supply.



4. Secure plate to bone continued

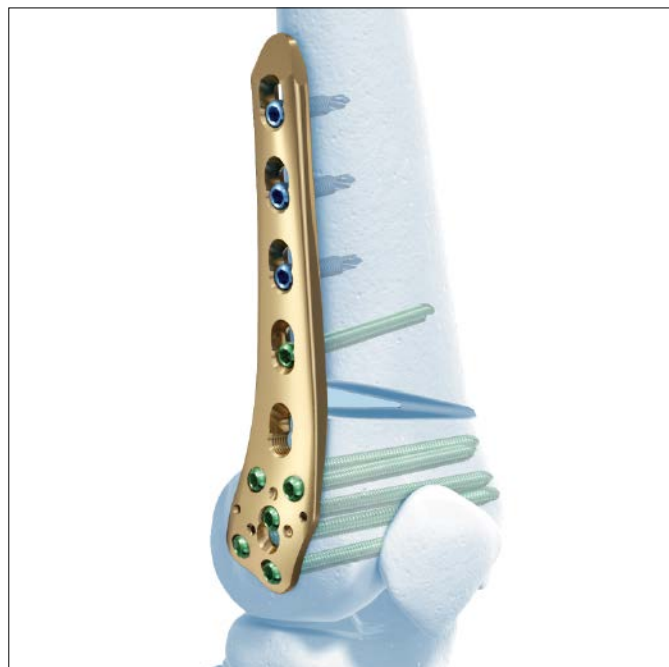
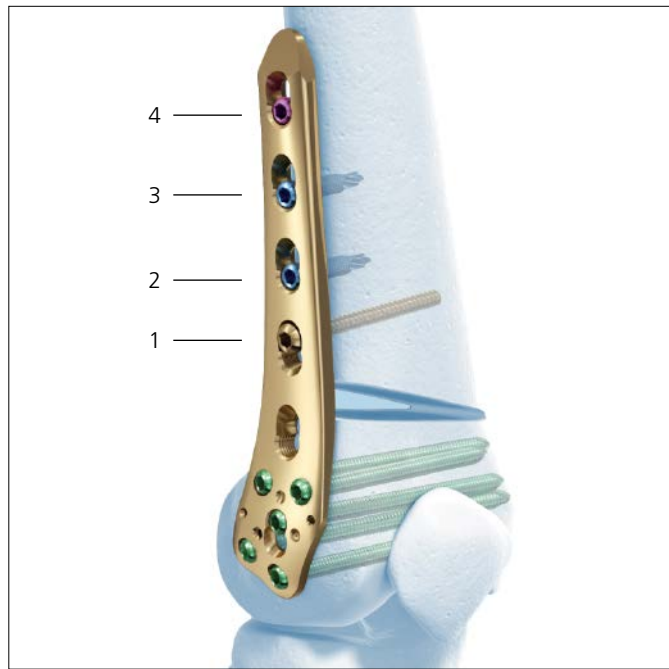
To secure the shaft portion of the plate onto the femur, insert unicortical self-drilling locking screws into holes 2 and 3. Replace the 4.5 mm titanium cortex screw in hole 1 with a bicortical self-tapping locking screw. Remove the spacer in hole 4, and replace it with a unicortical self-drilling locking screw.

For maximum stability, insert four locking screws distal to the correction gap, and be sure to use all of the plate holes in the shaft. The first screw inserted proximal to the correction must be a bicortical locking screw, while it is sufficient for the three most proximal screws to be unicortical locking screws.

Precaution: Use the 3.5 mm torque limiting screwdriver, 4 Nm torque limit, for final seating of all locking screws. Do not fully insert any locking screw under power.

Implant removal

Generally, the TOMOFIX Femoral Plate should not be removed earlier than 12 months after surgery. To remove the plate, first loosen all screws manually and then remove them using power tools.

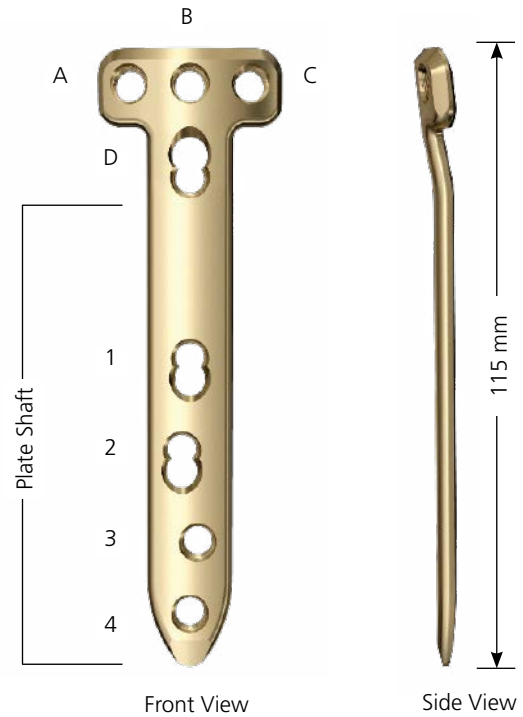


Refer to TOMOFIX Medial Distal Femur Surgical Technique Guide, for medial distal femur surgical technique instructions.

Implants

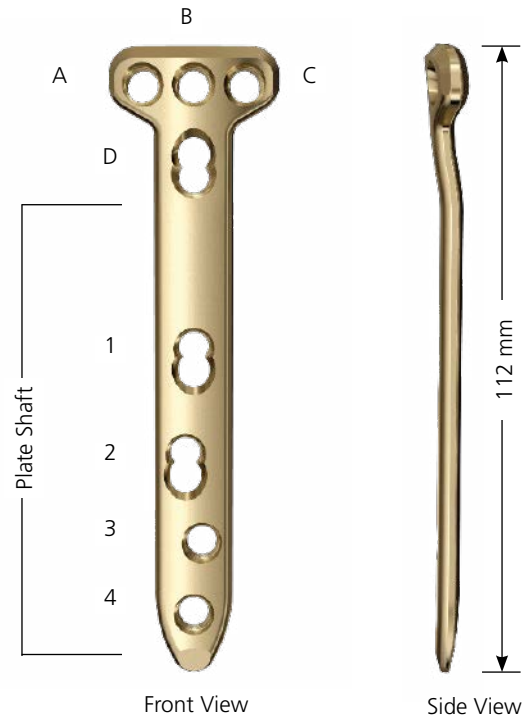
TOMOFIX Medial High Tibia Plate (440.834)

- Precontoured to fit the medial proximal tibia.
The proximal screws are angled for better purchase in the tibial plateau.
- The solid midsection provides the strength necessary to sustain the osteotomy. The tapered end facilitates minimally invasive insertion.
- Three Combi holes (1, 2 and D) provide the flexibility of axial compression and locking capability
- Holes 3, 4, A, B and C accept locking screws
- Made of commercially pure titanium



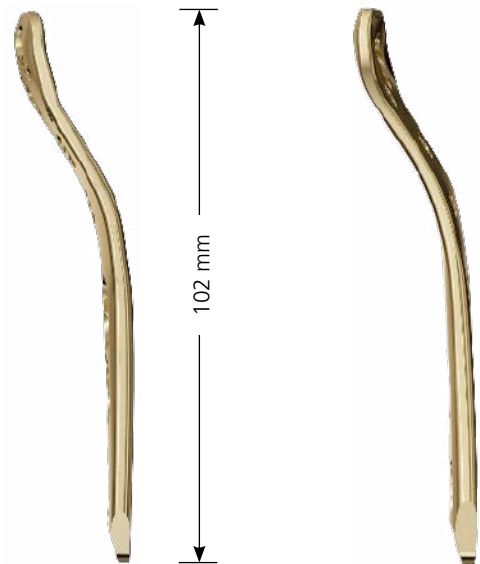
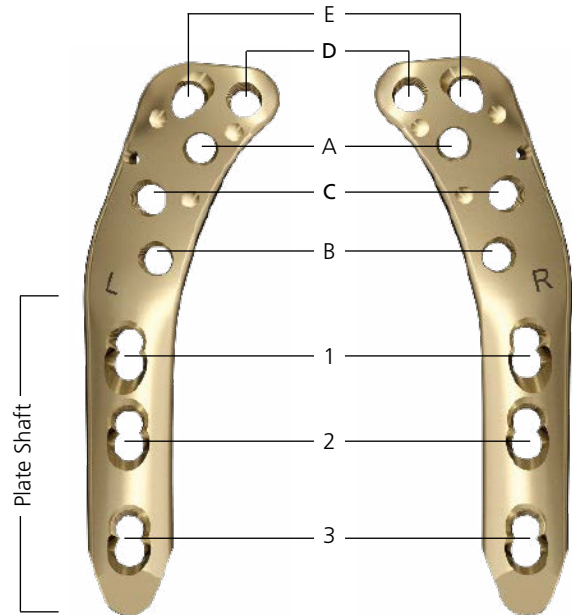
TOMOFIX Medial High Tibia Plate, small (440.831)

- Precontoured to fit the medial proximal tibia. The proximal screws are angled for better purchase in the tibial plateau.
- The solid midsection provides the strength necessary to sustain the osteotomy. The tapered end facilitates minimally invasive insertion.
- Three Combi holes (1, 2 and D) provide the flexibility of axial compression and locking capability
- Holes 3, 4, A, B and C accept locking screws
- Made of commercially pure titanium



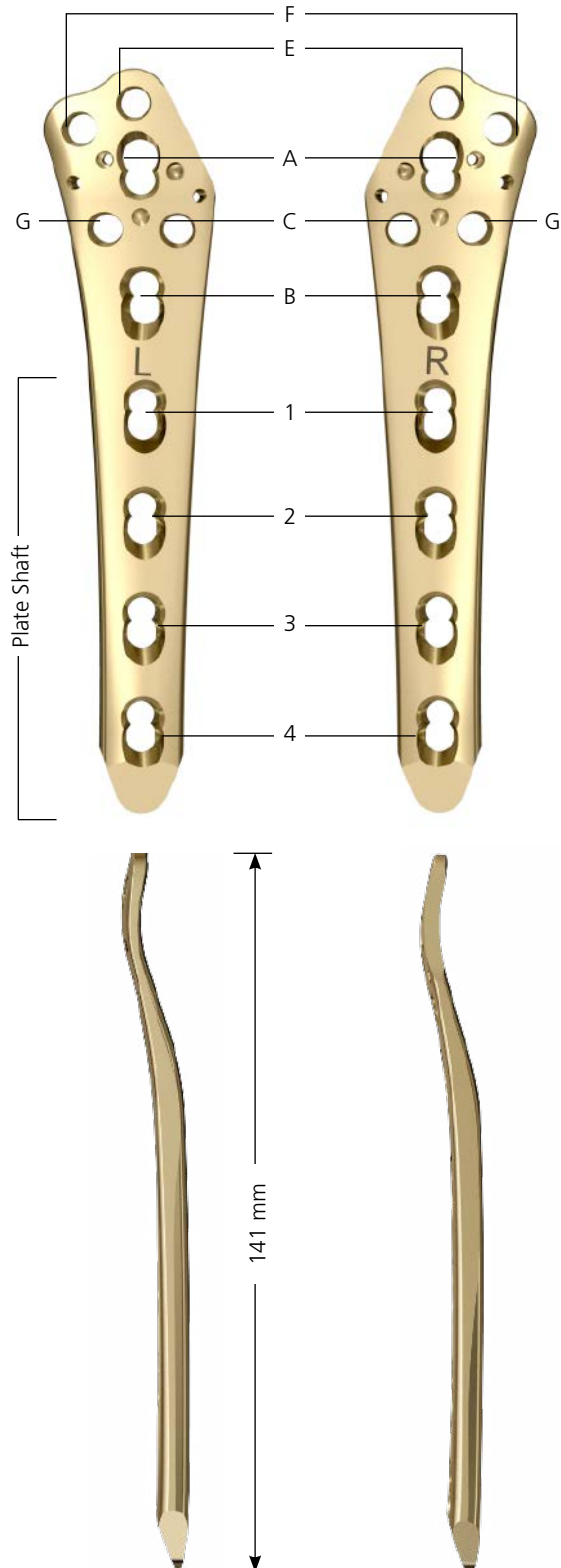
TOMOFIX Lateral High Tibia Plate, left (440.853) and right (440.843)

- Precontoured to fit the anatomy of the lateral proximal tibia
- Plate thickness between 3.1 mm and 4.5 mm ensures the strength necessary to sustain the osteotomy, without causing soft-tissue irritation. The tapered end facilitates minimally invasive insertion.
- Hole E accepts 4.5 mm titanium cortex screws or 5.0 mm locking head screws. Holes A, B, C and D accept fixed-angle 5.0 mm locking head screws.
- Three Combi holes in the shaft provide the flexibility of axial compression or fixed-angle locking
- Made of Ti-6Al-7Nb



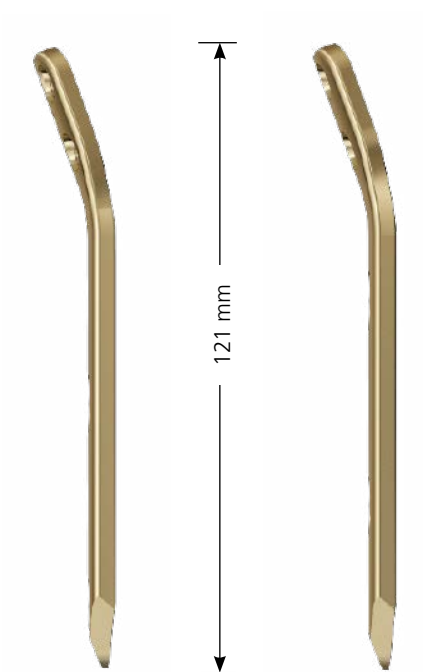
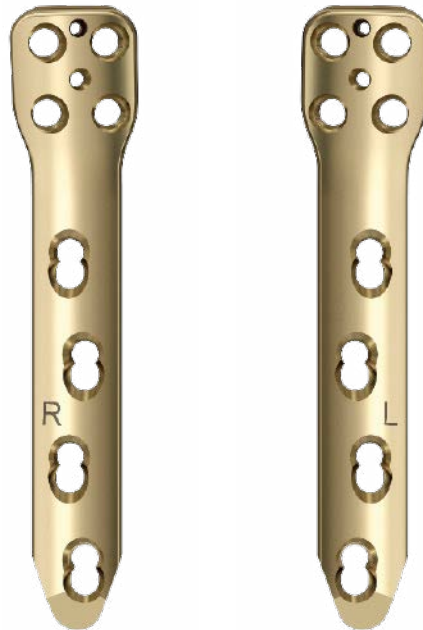
TOMOFIX Lateral Distal Femur Plates, left (440.874) and right (440.864)

- Precontoured to fit the lateral distal femur
- The tapered end facilitates minimally invasive insertion
- Holes A, B, and 1 through 4 are Combi holes and provide the flexibility of axial compression or fixed-angle locking
- Holes C, E, F and G are fixed-angle locking holes
- Made of Ti-6Al-7Nb



TOMOFIX Medial Distal Femur Plate, left (440.895) and right (440.885)*

- Precontoured to fit the medial distal femur
- Tapered end facilitates insertion
- Combi holes provide the flexibility of axial compression and locking capability
- Fixed-angle locking holes provide multiple fixed-angle constructs throughout the plate, improving the retention of the screws in the plate and in cortical bone
- Made of commercially pure titanium



* To learn more about the TOMOFIX Medial Distal Femur Plate and its surgical technique, please refer to the *TOMOFIX Medial Distal Femur Plate Technique Guide*.

Selected Instruments

03.108.030 Alignment Rod



03.108.031 Stand for Alignment Rod (large)



03.108.032 Small Stand for Alignment Rod



310.430 4.3 mm Drill Bit, quick coupling, 221 mm



312.924 TOMOFIX Guiding Block, for Medial High Tibia, small



312.926 TOMOFIX Guiding Block, for Medial High Tibia



312.930 TOMOFIX Guiding Block, for Lateral High Tibia, right



312.931 TOMOFIX Guiding Block, for Lateral High Tibia, left



312.932 TOMOFIX Guiding Block, for Lateral Distal Femur, right



312.933 TOMOFIX Guiding Block, for Lateral Distal Femur, left



314.152 3.5 mm Hexagonal Screwdriver Shaft,
self-retaining



323.042 4.3 mm Threaded LCP Drill Guide



323.500 5.0 mm/4.5 mm LCP Universal Drill Sleeve,
with 4.3 mm Drill Bit



324.052 3.5 mm Torque Limiting Screwdriver,
self-retaining



324.168 2.0 mm TOMOFIX Guide Sleeve



395.000 TOMOFIX Bone Spreader



395.001 TOMOFIX Osteotomy Gap Measuring Device



TOMOFIX Osteotomy Chisels

- 397.992 10 mm width
- 397.993 15 mm width
- 397.994 20 mm width
- 397.995 25 mm width



399.097 Bone Spreader with 8 mm blade, medium handle, soft ratchet



413.309 5.0 mm Titanium Spacer, 2 mm



TOMOFIX Instrument and Implant Set (01.108.000)

Graphic Case

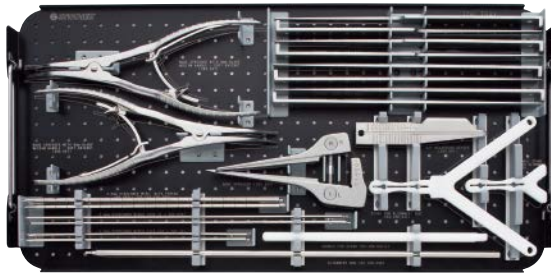
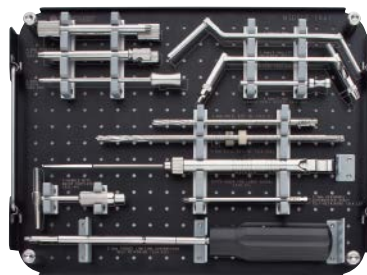
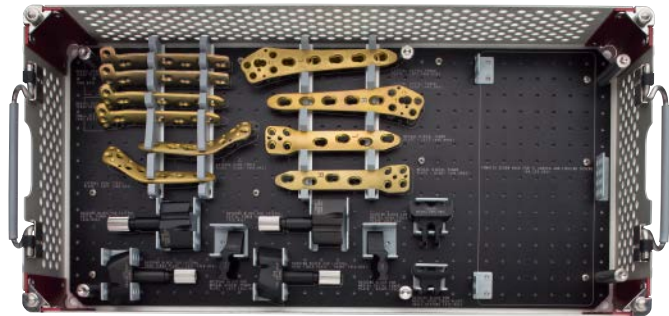
60.120.050 TOMOFIX Instrument and Titanium Implant Set Graphic Case

Instruments

02.108.200 3.0 mm Drill Tip Guide Wire with Threads, 230 mm, 10 ea.
 03.108.030 Alignment Rod
 03.108.031 Stand for Alignment Rod
 03.108.032 Small Stand for Alignment Rod
 292.699 2.0 mm Kirschner Wire, threaded spade point tip, 280 mm, 10 ea.
 310.243 2.5 mm Drill Tip Guide Wire, 200 mm, trocar point, 10 ea.
 310.31 3.2 mm Drill Bit, quick coupling, 145 mm, 2 ea.
 310.430 4.3 mm Drill Bit, quick coupling, 221 mm, 2 ea.
 311.44 T-Handle, with quick coupling
 312.46 4.5 mm/3.2 mm Double Drill Sleeve
 312.48 4.5 mm/3.2 mm Insert Drill Sleeve

 TOMOFIX Guiding Blocks
 312.924 for Medial High Tibia, small
 312.926 for Medial High Tibia
 312.930 for Lateral High Tibia, right
 312.931 for Lateral High Tibia, left
 312.932 for Lateral Distal Femur, right
 312.933 for Lateral Distal Femur, left
 312.934 for Medial Distal Femur, right
 312.935 for Medial Distal Femur, left

 314.152 3.5 mm Hexagonal Screwdriver Shaft, self-retaining, 2 ea.
 319.10 Depth Gauge, for large screws
 323.042 4.3 mm Threaded LCP Drill Guide, 4 ea.
 323.500 5.0 mm/4.5 mm LCP Universal Drill Sleeve, with 4.3 mm Drill Bit
 324.052 3.5 mm Torque Limiting Screwdriver, self-retaining



324.168 2.0 mm TOMOFIX Guide Sleeve
 395.000 TOMOFIX Bone Spreader
 395.001 TOMOFIX Osteotomy Gap Measuring Device

For detailed cleaning and sterilization instructions, please refer to www.synthes.com/cleaning-sterilization or sterilization instructions, if provided.

Instruments continued

	TOMOFIX Osteotomy Chisels	440.831	Titanium TOMOFIX Medial High Tibia Plate, small, 4 holes, 112 mm, 2 ea.
397.992	10 mm width	440.834	Titanium TOMOFIX Medial High Tibia Plate, 4 holes, 115 mm, 2 ea.
397.993	15 mm width	440.843	Titanium TOMOFIX Lateral High Tibia Plate, 3 holes, right, 102 mm
397.994	20 mm width, 2 ea.	440.853	Titanium TOMOFIX Lateral High Tibia Plate, 3 holes, left, 102 mm
397.995	25 mm width	440.864	Titanium TOMOFIX Lateral Distal Femur Plate, 4 holes, right, 141 mm
399.097	Bone Spreader with 8 mm blade, medium handle, soft ratchet	440.874	Titanium TOMOFIX Lateral Distal Femur Plate, 4 holes, left, 141 mm
413.309	5.0 mm Titanium Spacer, 2 mm, 3 ea.	440.885 [◇]	Titanium TOMOFIX Medial Distal Femur Plate, 4 holes, right, 121 mm

Implants

5.0 mm Titanium Locking Head Screws, self-tapping, 3 ea.

	Length (mm)		Length (mm)
413.324	24	413.346	46
413.326	26	413.348	48
413.328	28	413.350	50
413.330	30	413.355	55
414.332	32	413.360	60
415.334	34	413.365	65
413.336	36	413.370	70
413.338	38	413.375	75
413.340	40	413.380	80
413.342	42	413.385	85
413.344	44	413.390	90

413.426 5.0 mm Titanium Locking Head Screw, self-drilling, 26 mm, 6 ea.

4.5 mm Titanium Cortex Screws, self-tapping, 2 ea.

	Length (mm)		Length (mm)
414.824	24	414.840	40
414.826	26	414.842	42
414.828	28	414.844	44
414.830	30	414.846	46
414.832	32	414.848	48
414.834	34	414.850	50
414.836	36	414.852	52
414.838	38		

[◇] Available nonsterile or sterile-packed. Add "S" to catalog number to order sterile product.

Also Available

292.21	2.0 mm Kirschner Wire with trocar point, 285 mm, 10/pkg.
292.76	2.5 mm Kirschner Wire with 15 mm thread trocar point, 200 mm, 10/pkg.
321.12	Articulated Tension Device, with gauge, span 20 mm
511.771	Torque Limiting Attachment, 4 Nm

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

Synthes USA, LLC
1101 Synthes Avenue
Monument, CO 80132

To order (USA): 800-523-0322

To order (Canada): 855-946-8999

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

www.depuysynthes.com