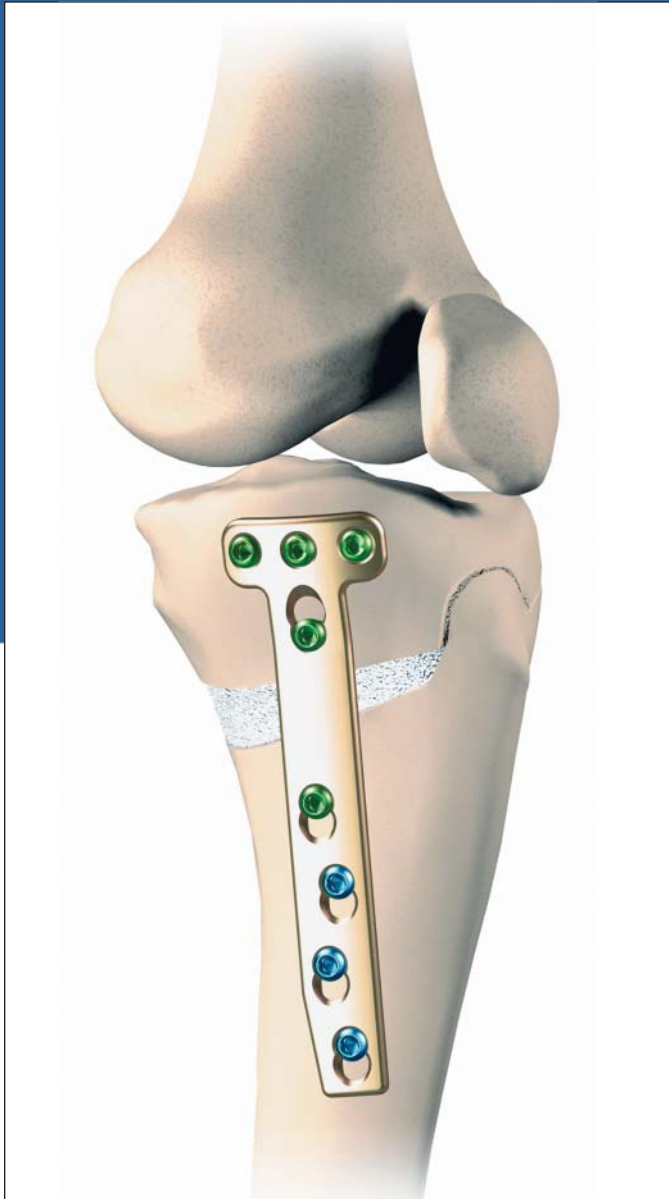


# Tomofix™ Osteotomy System with chronOS™ option

## Technique Guide



**SYNTHES**® *Original Instruments and Implants of the Association  
for the Study of Internal Fixation — AO ASIF*

# Tomofix and chronOS

## Tomofix Osteotomy System

The Synthes TomoFix Osteotomy System provides stable fixation of osteotomies close to the knee, and is particularly effective in open-wedge osteotomies.

## Indications

- Open- and closed-wedge osteotomies of the
  - Medial proximal tibia
  - Lateral proximal tibia
  - Lateral distal femur
- Treatment of bone and joint deformities
- Malalignment caused by injury or disease such as osteoarthritis



## chronOS Wedges

chronOS wedges are well suited for osteotomies of the proximal tibia due to the material's excellent osteoconductive properties.

## chronOS Indications

chronOS is indicated for use as a bone void filler for voids or gaps that are not intrinsic to the stability of the bony structure. chronOS is indicated for use in the treatment of bony defects created surgically or through traumatic injury.

chronOS is intended to be gently packed or placed into bony voids or gaps of the skeletal system (i.e. the extremities, spine and pelvis). Following placement in the bony void or gap, the calcium phosphate scaffold resorbs and is replaced with bone during the healing process.



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# AO Principles of Internal Fixation

In 1958, the AO ASIF (Association for the Study of Internal Fixation) formulated four basic principles<sup>1</sup> which have become the guidelines for internal fixation. Those principles, as applied to the Synthes TomoFix Osteotomy System, are:

## Anatomic Reduction

Facilitates restoration of the articular surface by exact screw placement using threaded drill sleeves.

## Stable Fixation

Locking screws create a fixed-angle construct, providing angular stability.

## Preservation of Blood Supply

Tapered ends on the plates allow submuscular plate insertion.

## Early Mobilization

Plate features combined with AO technique create an environment for bone healing, expediting a return to optimal function.

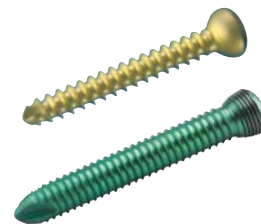
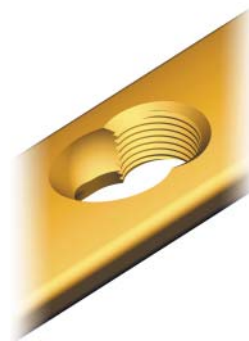
1. M.E. Müller, M. Allgöwer, R. Schneider, and H. Willenegger: *AO Manual of Internal Fixation*, 3rd Edition. Berlin: Springer-Verlag. 1991.

# Features and Benefits of TomoFix

TomoFix encompasses AO ASIF principals of internal fixation while using Locking Compression Plate (LCP) technology.

## Combi Holes

- The Combi holes in the LCP plate combine a Dynamic Compression Unit (DCU) hole with a locking screw hole.
- The 5.0 mm Titanium Locking Head Screw, with its threaded conical head, creates a locked, fixed-angle screw-plate construct.
- In the Dynamic Compression Unit (DCU) portion of the hole, dynamic compression can be achieved by eccentric insertion of 4.5 mm Titanium Cortex Screws. This portion of the hole is not suitable for the locking screw.



## Fixed-Angle Locking Holes

- Feature round threaded holes.
- Provide multiple fixed-angle fixation in the metaphyseal region.
- Accept 5.0 mm Titanium Locking Head Screw (with threaded conical head).

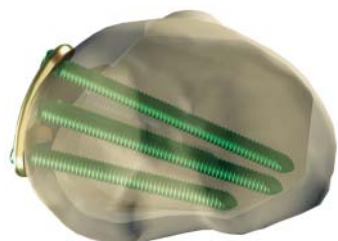


## Stability

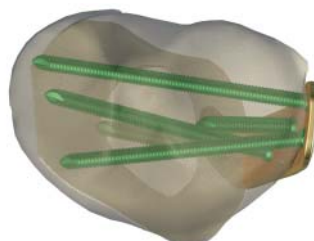
The plate strength, in combination with the angular and axial stability of locking screws, ensures maximum stability of the osteotomy and optimum support of the articular surfaces. This maintains the correction until consolidation occurs, and allows early mobilization.

## Anatomical Shape

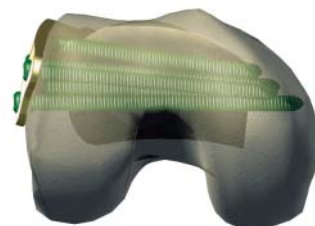
The plates are anatomically precontoured, eliminating the need for intraoperative contouring and minimizing soft-tissue irritation.



*TomoFix medial high tibia*



*TomoFix lateral high tibia*

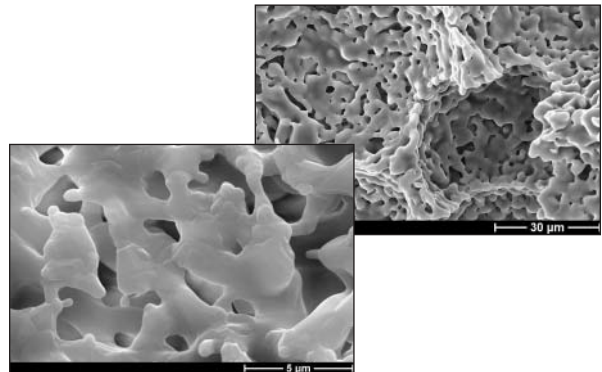


*TomoFix lateral distal femur*

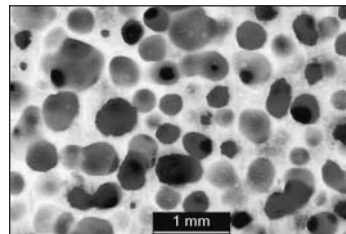
# Features and Benefits of chronOS

chronOS wedges are made from  $\beta$ -tricalcium phosphate ( $\beta$ -TCP). This material, which resorbs and is replaced by bone during the healing process, contains calcium and phosphorous, two of the main mineral constituents of bone. chronOS is ideal for many bone void filler applications.

- Osteoconductive material
- Fully synthetic—no risk of disease transmission
- Biocompatible
- Porous structure can be perfused with patient's own blood or blood products and bone marrow aspirate
- Resorbed and replaced by new bone within 6 to 18 months
- Radiopaque to enable visualization of implant position
- Can be used alone or combined with autogenous bone graft in large volume defects
- Can be trimmed and sculpted to better fit specific voids
- Semicircular wedge shape is ideal for use in open wedge osteotomies. Available in 3 sizes (7°, 10° or 13° angle)

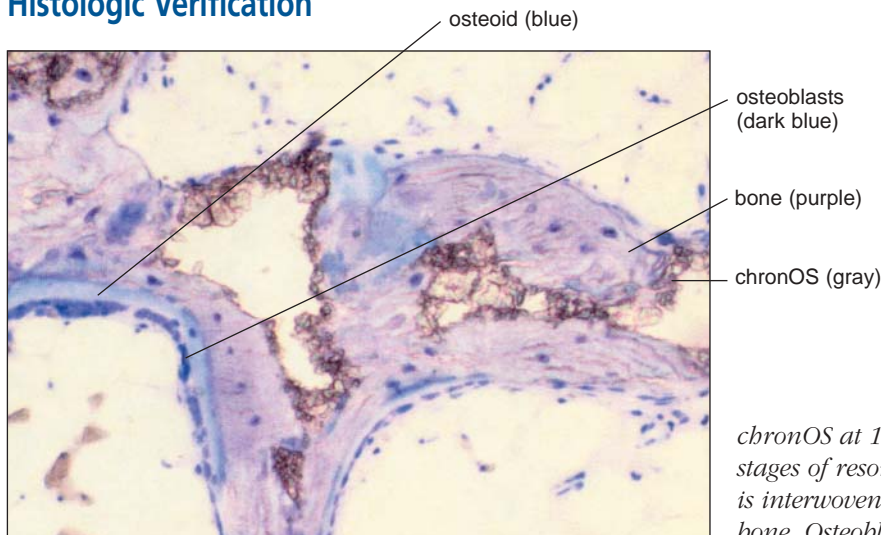


Microstructure



Macrostructure

## Histologic Verification



*chronOS at 12 weeks, in the advanced stages of resorption. The remaining material is interwoven with osteoid and mineralized bone. Osteoblasts and osteoid seams are visible.*

# Case Examples

## Case 1 Open-wedge high tibia valgus osteotomy (HTO), without bridging graft.

48-year-old woman with medial gonarthrosis.



*Preoperative*



*Postoperative, AP*



*Postoperative, lateral*



*6 months postoperative*



*Following implant removal (15 months postoperative)*



## Case Examples (continued)

### Case 2 Open-wedge high tibia valgus osteotomy (HTO), without bridging graft.

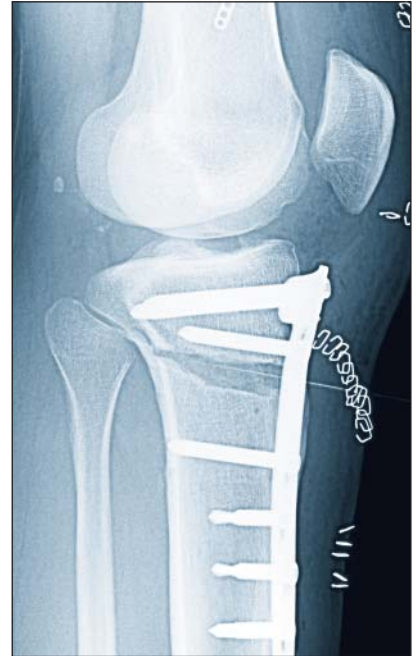
23-year-old man, with posttraumatic medial, chondral gonarthrosis, medial meniscopathy, varus-morphotype.



*Preoperative*



*Postoperative, AP*



*Postoperative, lateral*



*3 months postoperative*



*Following implant removal (12 months postoperative)*



## Case Examples (continued)

**Case 3** Open-wedge high tibia valgus osteotomy (HTO), with chronOS wedge.  
30-year-old male.



*6 weeks*



*3 months*



*6 months*



*12 months*

## Case Examples (continued)

### Case 4 Closed-wedge high tibia valgus osteotomy (HTO).

52-year-old woman with medial gonarthrosis.



*Preoperative*



*Postoperative*



*3 months postoperative*

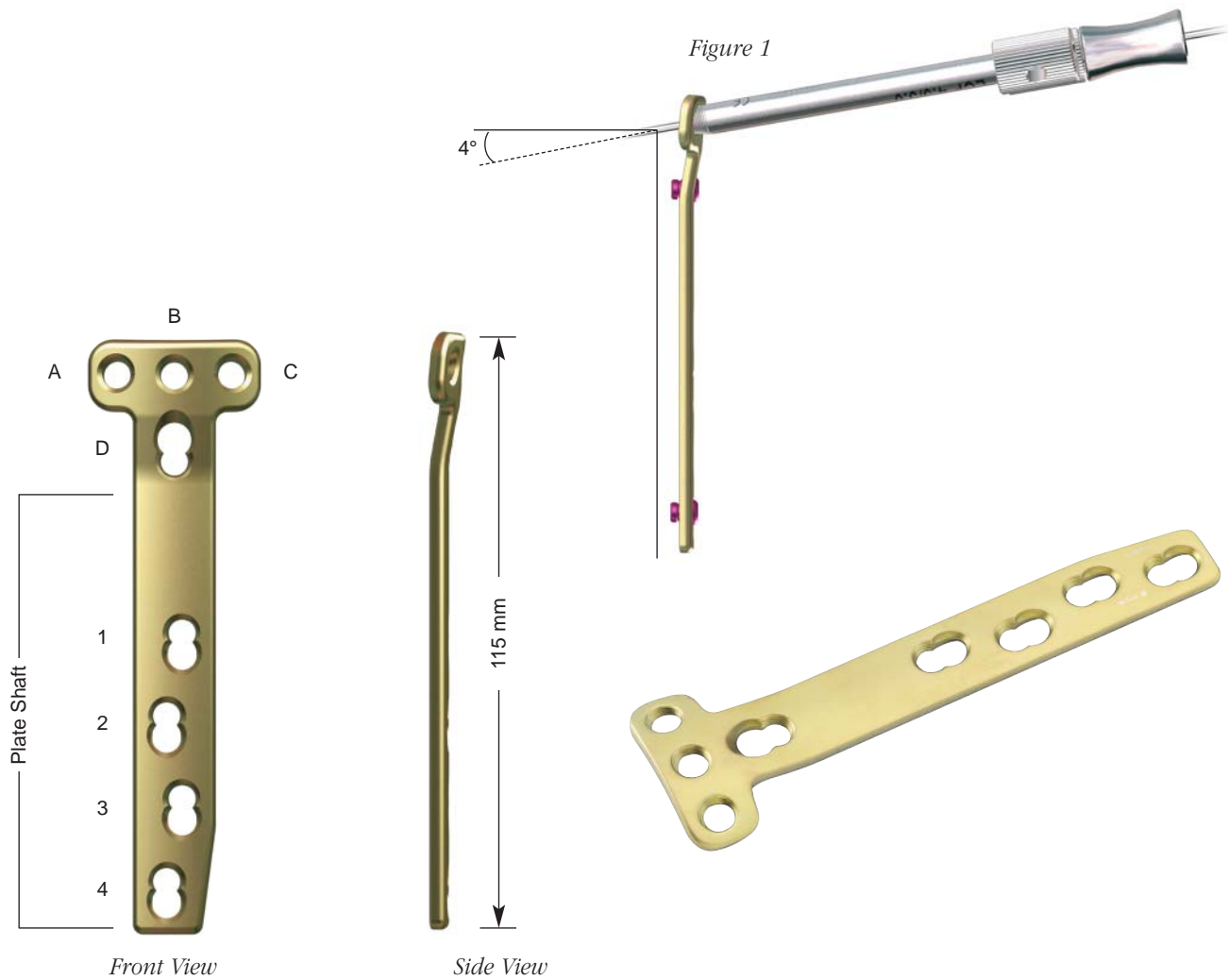


*3 months postoperative*

# Implants

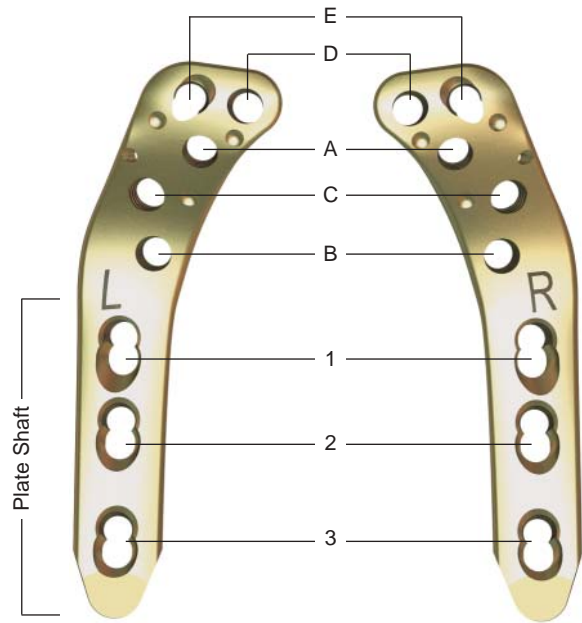
## Tomofix Medial High Tibia Plate [440.834]

- Precontoured to fit the medial proximal tibia. The proximal screws are angled at  $4^\circ$  (Fig. 1) 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.
- Five Combi holes (1, 2, 3, 4 and D) provide the flexibility of axial compression and locking capability.
- Holes A, B, and C accept locking screws.
- Made of commercially pure titanium.



## Tomofix Lateral High Tibia Plate, left [440.853] and right [440.843]

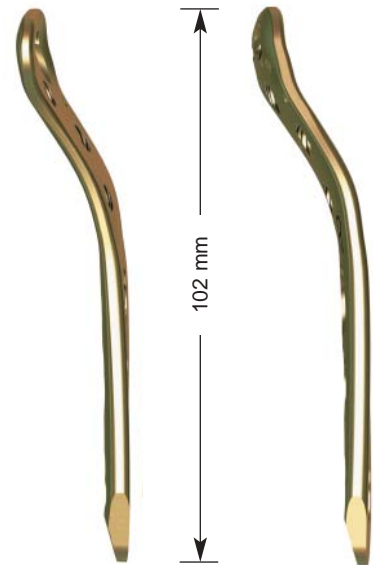
- Precontoured to fit the anatomy of the lateral proximal tibia.
- Plate thickness between 3.1 mm and 4.5 mm ensures the strength necessary to sustain the osteotomy, without causing soft-tissue irritation. The tapered end facilitates minimally invasive insertion.
- Hole E accepts 4.5 mm Titanium Cortex 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.



*Left plate*



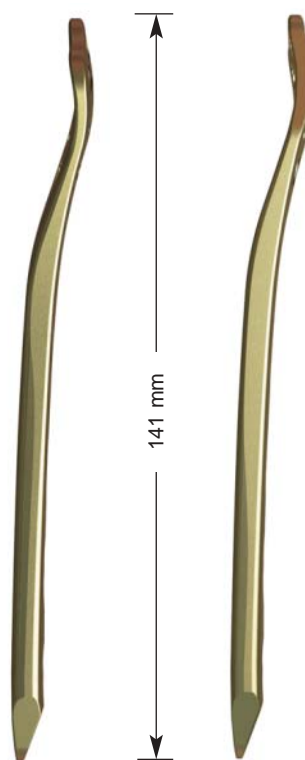
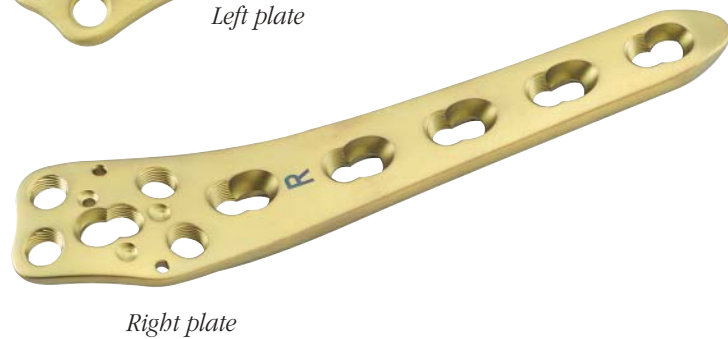
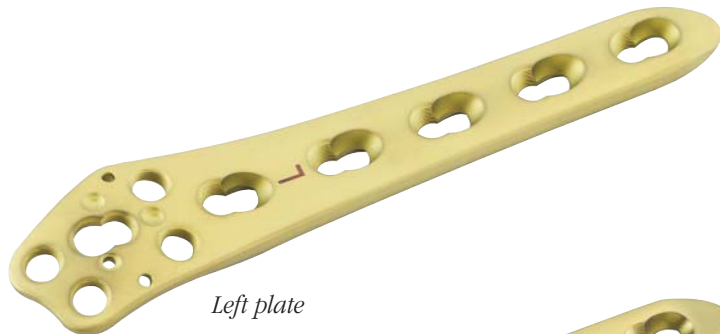
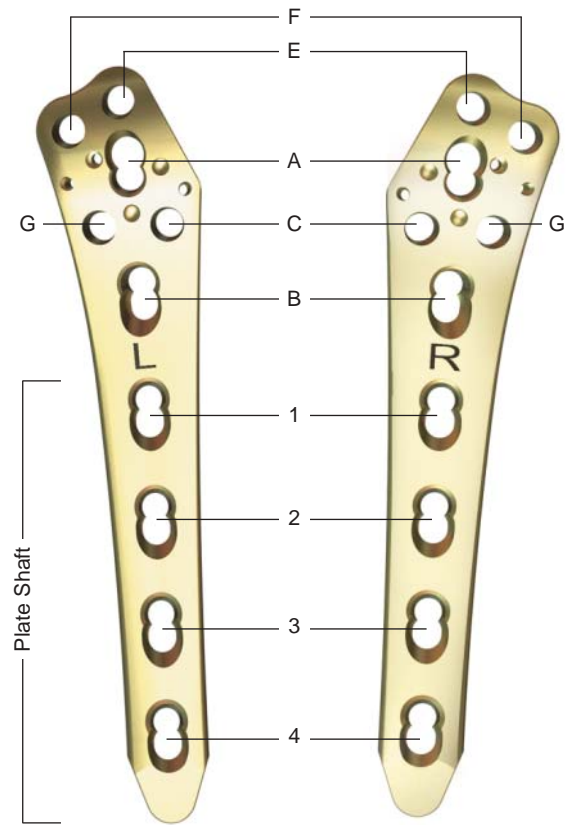
*Right plate*



# Implants (continued)

## 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.



## chronOS Semicircular Wedges

- $\beta$ -tricalcium phosphate
- Standardized pores (100  $\mu\text{m}$ –500  $\mu\text{m}$ )
- 70% porous
- The uniform, three-dimensional pore structure of chronOS provides a matrix for the ingrowth of bone.
- Supplied sterile
- Three sizes:

<b>Angle</b>	<b>Approximate Height</b>
7°	7.0 mm
10°	10.0 mm
13°	13.0 mm



# Instruments

## Tomofix Guiding Block for Medial High Tibia [312.926]

Ensures correct location and threading of the 4.3 mm Threaded LCP Drill Guide [323.042] into the proximal holes of the TomoFix Medial High Tibia Plate [440.834].



Left [312.931]



Right [312.930]

## Tomofix Guiding Blocks for Lateral High Tibia, left [312.931] and right [312.930]

Ensure correct location and threading of the 4.3 mm Threaded LCP Drill Guide [323.042] into the proximal holes of the TomoFix Lateral High Tibia Plates, left [440.853] and right [440.843].

The locking nuts can be removed for cleaning.



Left [312.933]



Right [312.932]

## Tomofix Guiding Blocks for Lateral Distal Femur, left [312.933] and right [312.932]

Ensure correct location and threading of the 4.3 mm Threaded LCP Drill Guide [323.042] into the distal holes of the TomoFix Lateral Distal Femur Plates, left [440.874] and right [440.864].

The locking nuts can be removed for cleaning.



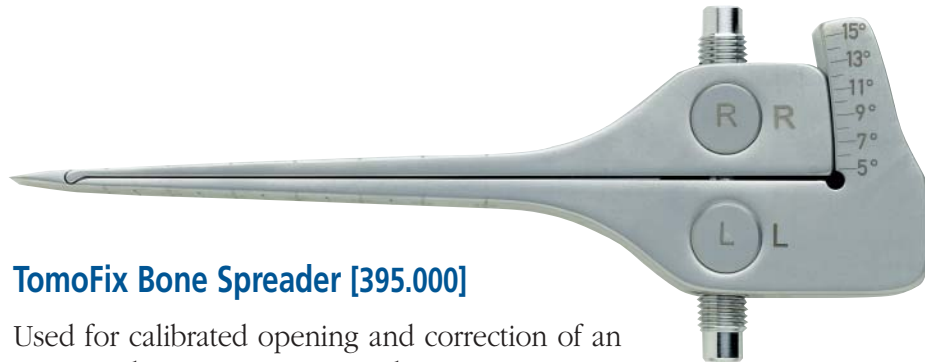
### **2.0 mm TomoFix Guide Sleeve [324.168]**

Centers Kirschner wires up to 2.0 mm in diameter in the threaded LCP drill guides, to control the orientation of the screw axis and provide temporary fixation of the plate.



### **Bone Spreader with 8 mm blade, medium handle, soft ratchet [399.097]**

Adjusts the correction and maintains the gap during an open wedge osteotomy.



### **TomoFix Bone Spreader [395.000]**

Used for calibrated opening and correction of an open wedge osteotomy procedure. Correction is indicated through measurement in degrees.



### **TomoFix Osteotomy Gap Measuring Device [395.001]**

Measures the gap or height of open wedge osteotomies.

# 4.5 mm/5.0 mm LCP Standard Instruments

The instruments below are specifically used in Combi hole applications.



## 5.0 mm/4.5 mm LCP Universal Drill Sleeve [323.500]

- Used with a 3.2 mm drill bit to drill neutral or compression holes for 4.5 mm cortex screws.
- An integral 4.3 mm drill bit is used to pre-drill the cortex for 5.0 mm locking screws.
- The retaining cap on the drill bit has a left-handed thread; turn it clockwise to disassemble for cleaning.



## 4.3 mm Drill Bit, quick coupling [310.430]

Used to pre-drill the hole for the 5.0 mm locking screw.



## 3.5 mm Hexagonal Screwdriver Shaft, self-retaining [314.152]

Used to implant the 5.0 mm locking screws.  
Not for final tightening.

## 4.3 mm Threaded LCP Drill Guide [323.042]

Centers the 4.3 mm drill bit in a fixed-angle locking hole of the TomoFix plate, ensuring correct insertion of self-tapping locking screws, optimal angular stability, and soft tissue protection.



## 3.5 mm Torque Limiting Screwdriver, self-retaining [324.052]

Used to lock the 5.0 mm locking screws, to obtain optimal tightening, and to prevent excessive tightening.

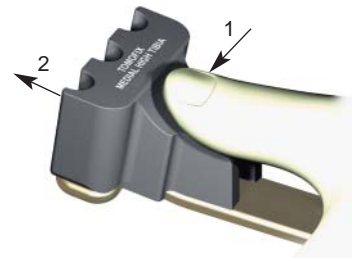
# Surgical Technique—Medial High Tibia

## 1 Attach the drill guides to the plate

Place the TomoFix Guiding Block for Medial High Tibia [312.926] against the top side of the plate. Push the guiding block as far as possible towards the proximal end of the plate.

Thread the first 4.3 mm Threaded LCP Drill Guide [323.042] into the center proximal plate hole B. Thread the two remaining 4.3 mm Threaded LCP Drill Guides into the adjacent proximal plate holes A and C.

Remove the guiding block.



## 2 Install spacers

Place 5.0 mm Titanium Spacers [413.309] into proximal Combi hole D and distal Combi hole 3. If desired, the distal 5.0 mm Titanium Spacer may be placed in hole 4.



# Surgical Technique—Medial High Tibia

## 3 Determine plate position

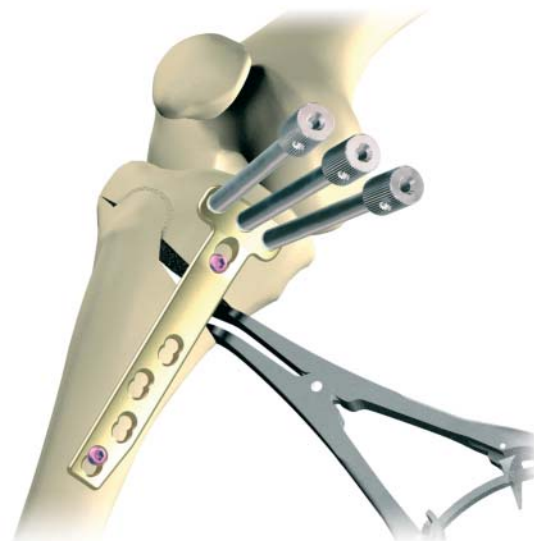
After performing the osteotomy, open and adjust the correction using the TomoFix Bone Spreader [395.000]. Insert the spreader gently into the osteotomy site until the tip of the instrument reaches the hinge point of the osteotomy. Use a 3.5 mm hexagonal screwdriver to open the bone spreader and the osteotomy.

**Optional:** If desired, the TomoFix Gap Measuring Device [395.001] can be used to measure the height of the open wedge osteotomy.



When the desired correction has been achieved, remove the TomoFix Bone Spreader and insert the 8 mm adjustable bone spreader [399.097] to maintain the correction.

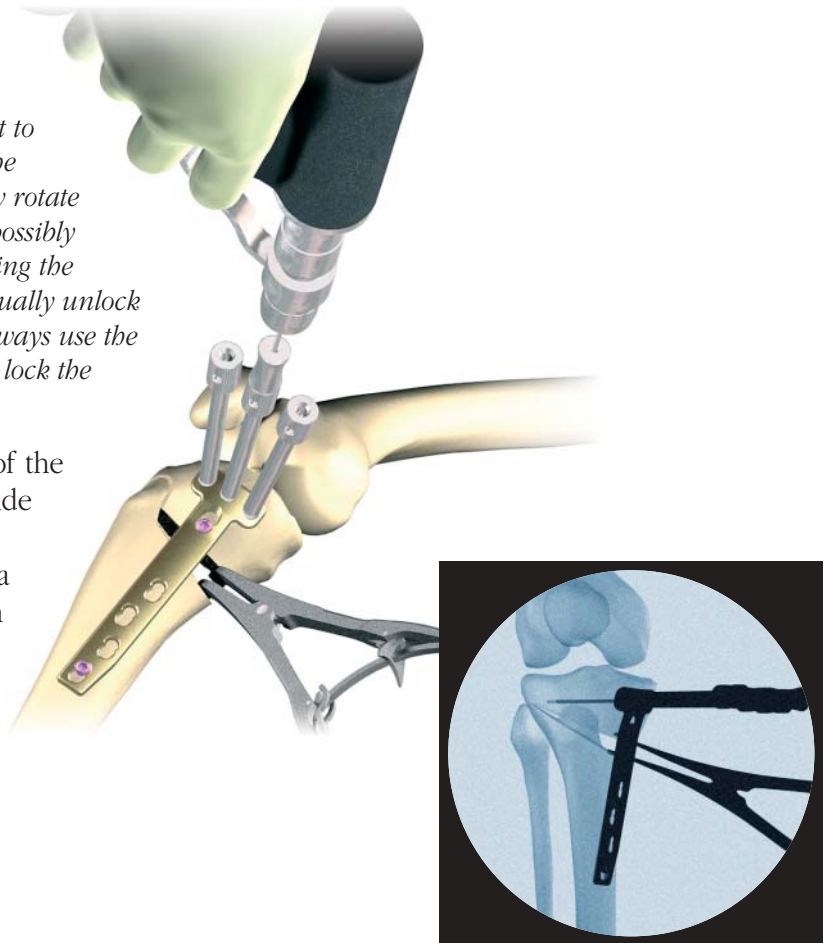
Center the plate, with the 4.3 mm Threaded LCP Drill Guides installed, over the osteotomy and place onto the bone. The three holes in the head and the most proximal Combi hole on the shaft should be positioned proximal to the correction gap.



#### 4 Secure plate to bone

**Important:** 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 [324.052] to lock the locking screws.

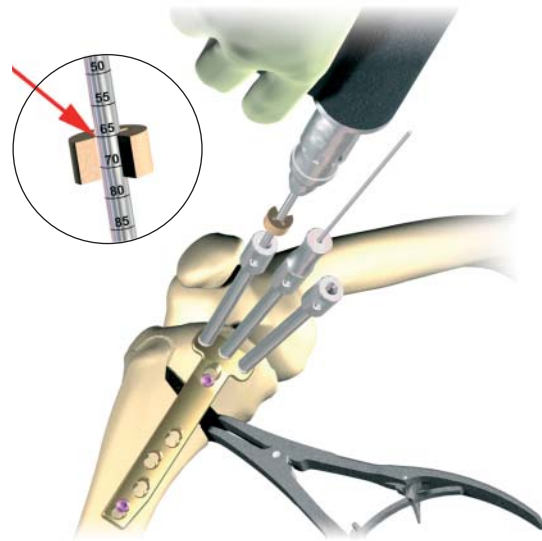
Perform a secure temporary fixation of the plate. Insert the 2.0 mm TomoFix Guide Sleeve [324.168] into the middle Threaded LCP Drill Guide and insert a Kirschner wire. The K-wire will aid in positioning the screw, which should be parallel to the articular surface. The wire also allows confirmation of screw position under radiographic imaging.



# Surgical Technique—Medial High Tibia (continued)

## 4 Secure plate to bone (continued)

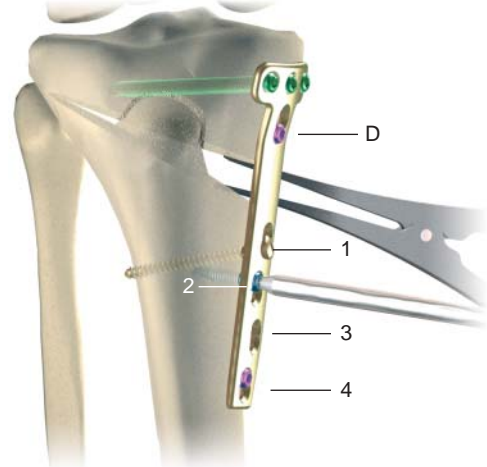
Use the calibrated 4.3 mm Drill Bit (310.430) to determine screw lengths for holes A, B and C. To ensure optimal support of the tibia plateau, insert the longest possible fixed-angle self-tapping locking screws.



## 5 Insert screws into holes 1, 2, 3, 4 and D.

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.

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.

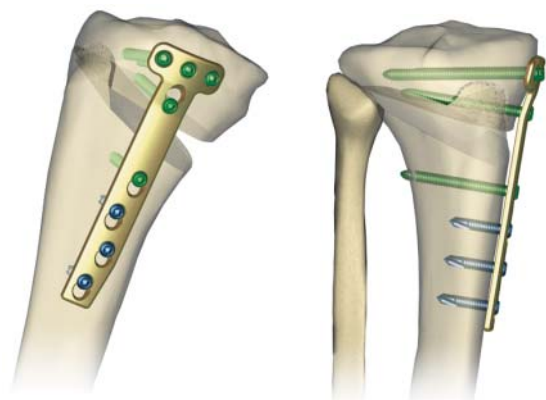


**Note:** To predrill for locking screws, insert the self-retaining 3.5 mm Hexagonal Screwdriver Shaft [314.152] into the 3.5 mm hex recess of the 5.0 mm/ 4.5 mm LCP Universal Drill Sleeve. Center the 4.3 mm drill bit in the locking portion of the Combi hole to ensure proper engagement of the fixed-angle, self-drilling locking screws.

Replace the spacer in hole D with a self-tapping locking screw of sufficient length, appropriate to 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 [324.052] for final tightening. To prevent damage to the hexagonal recess of the screw, be certain that the screwdriver properly seats in the screw head.

**Note:** Use the 3.5 mm Torque Limiting Screwdriver [324.052], 4 Nm torque limit, for final seating of all locking screws. Do not fully insert any locking screw under power.



# Optional Surgical Technique—Medial High Tibia

## Optional—Filling of the osteotomy gap with chronOS wedge

After stable fixation is achieved, an open wedge osteotomy can be filled with chronOS. The semi-circular wedges have been specially designed for open wedge osteotomies. The maximum wedge height in millimeters corresponds to the wedge angle in degrees. Determine the size of the chronOS osteotomy wedge to be used by measuring the osteotomy gap in millimeters or in degrees. Select a wedge that matches (or is larger than) the size of the correction gap. Perfuse the chronOS wedge with blood or bone marrow aspirate to ensure optimal remodeling.

Trim the perfused chronOS wedge to match the diameter of the gap, using a scalpel, saw, chisel or a Lindenmann reamer.

Place the chronOS wedge into the osteotomy gap, seating it firmly in the cortical bone. Remove any projecting chronOS material and insert it into the tapered end of the osteotomy gap.

### The individual steps:

- Measure the osteotomy gap.
- Select the appropriate chronOS wedge.
- Perfuse the chronOS wedge with blood or bone marrow aspirate.
- Adapt the size.
- Place the chronOS wedge into the cortical bone of the osteotomy gap.
- Remove any projecting chronOS material and insert the fragments into the tapered end of the osteotomy gap.



# Surgical Technique—Lateral High Tibia

## 1 Attach the drill guides to the plate

To facilitate insertion of the proximal locking screws, place the appropriate TomoFix Guiding Block for the Lateral High Tibia, right [312.930] or left [312.931], on the proximal part of the plate. The three-point seating ensures correct positioning.

Insert a threaded 4.3 mm Threaded LCP Drill Guide [323.042] 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).

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



## 2 Install spacer

Place a 5.0 mm Titanium Spacer [413.309] into hole 3.



## 3 Determine plate position

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 [324.168] 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.

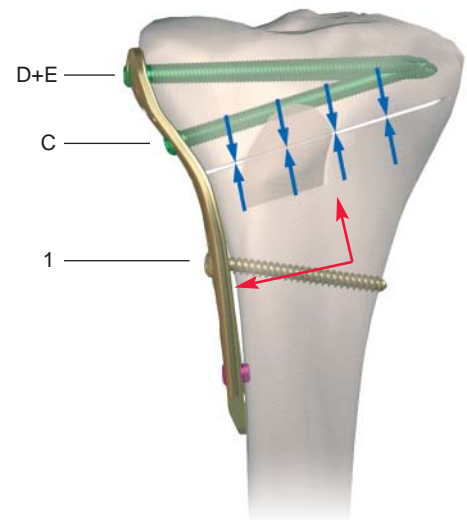
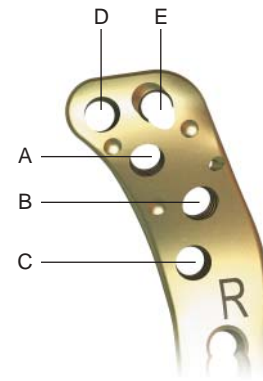


#### 4 Secure plate to bone

**Important:** 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 [324.052] to lock the locking screws.

Use the calibrated 4.3 mm Drill Bit [310.430] 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.



## Surgical Technique—Lateral High Tibia (continued)

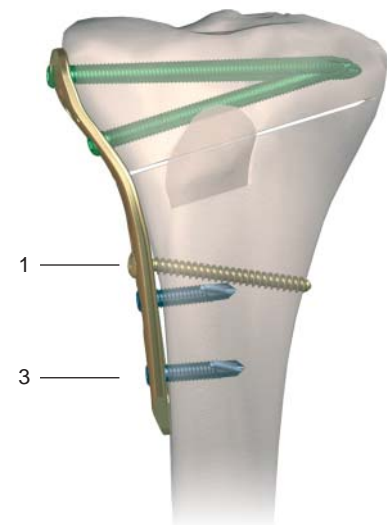
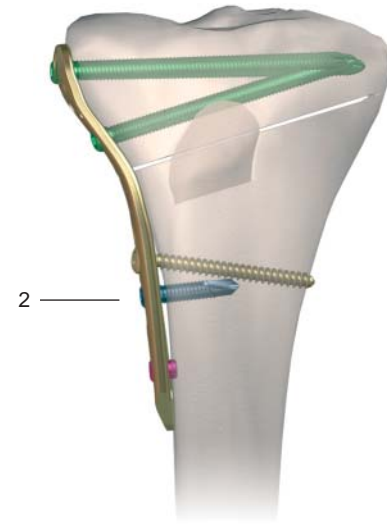
### 4 Secure plate to bone (continued)

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 [324.052] for final tightening. To prevent damage to the hexagonal recess of the screw, be certain that the screwdriver seats properly in the screw head.

**Note:** Use the 3.5 mm Torque Limiting Screwdriver [324.052], 4 Nm torque limit, for final seating of all locking screws. Do not fully insert any locking screw under power.



# Surgical Technique—Lateral Distal Femur

## 1 Attach the drill guides to the plate

Place the appropriate TomoFix Guiding Block for the Lateral Distal Femur, left [312.933] or right [312.932], on the proximal part of the plate. The three-point seating ensures correct positioning.

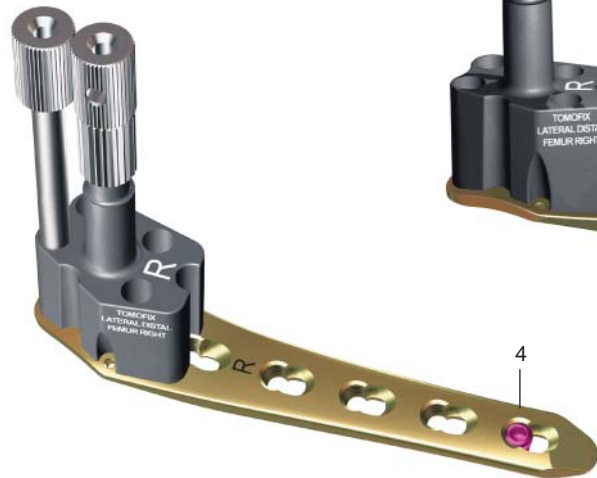
Insert a 4.3 mm Threaded LCP Drill Guide [323.042] through the drill guide of the guiding block into hole A (1). Tighten the locking nut of the guiding block by turning it clockwise, to lock the drill guide (2).

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



## 2 Install spacer

Place a 5.0 mm Titanium Spacer [413.309] into hole 4.



## 3 Determine plate position

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 [324.168] 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.



# Surgical Technique—Lateral Distal Femur (continued)

## 4 Secure plate to bone

**Important:** 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 [324.052] to lock the locking screws.

Use the calibrated 4.3 mm Drill Bit [310.430] 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 blood supply.

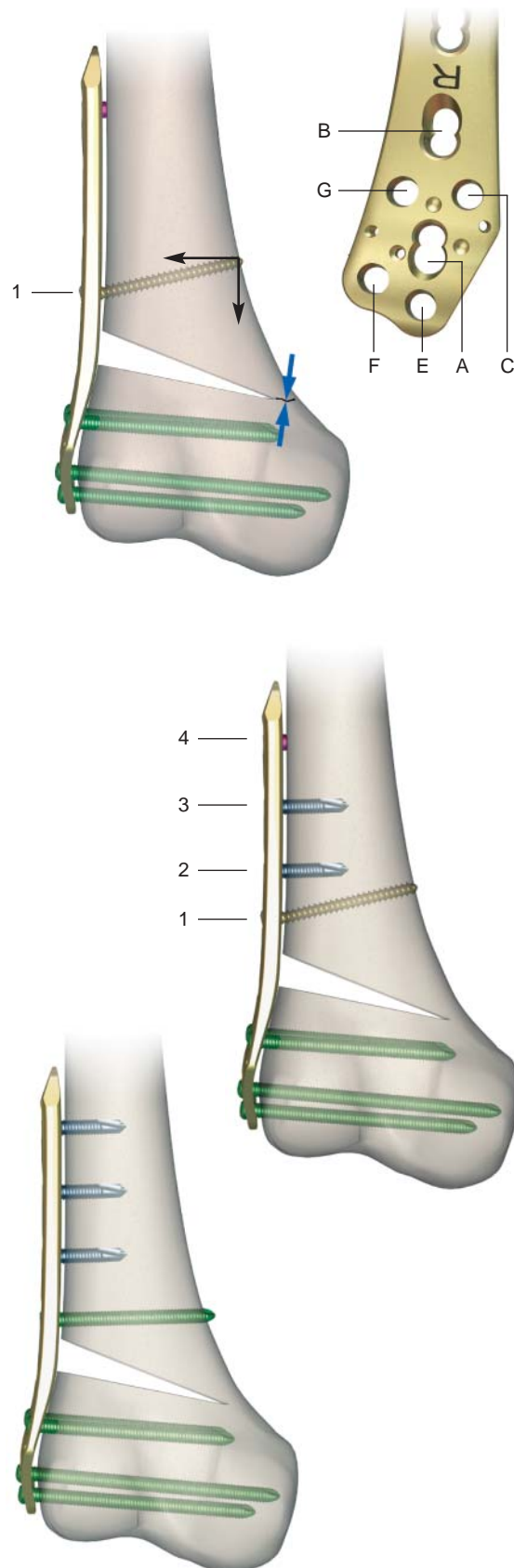
To secure the shaft portion of the plate onto the femur, insert unicortical self-drilling locking screws into holes 2 and 3. Replace the 4.5 mm Titanium Cortex Screw in hole 1 with a bicortical self-tapping locking screw. Remove the spacer in hole 4, and replace it with a unicortical self-drilling locking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

**Note:** Use the 3.5 mm Torque Limiting Screwdriver [324.052], 4 Nm torque limit, for final seating of all locking screws. Do not fully insert any locking screw under power.

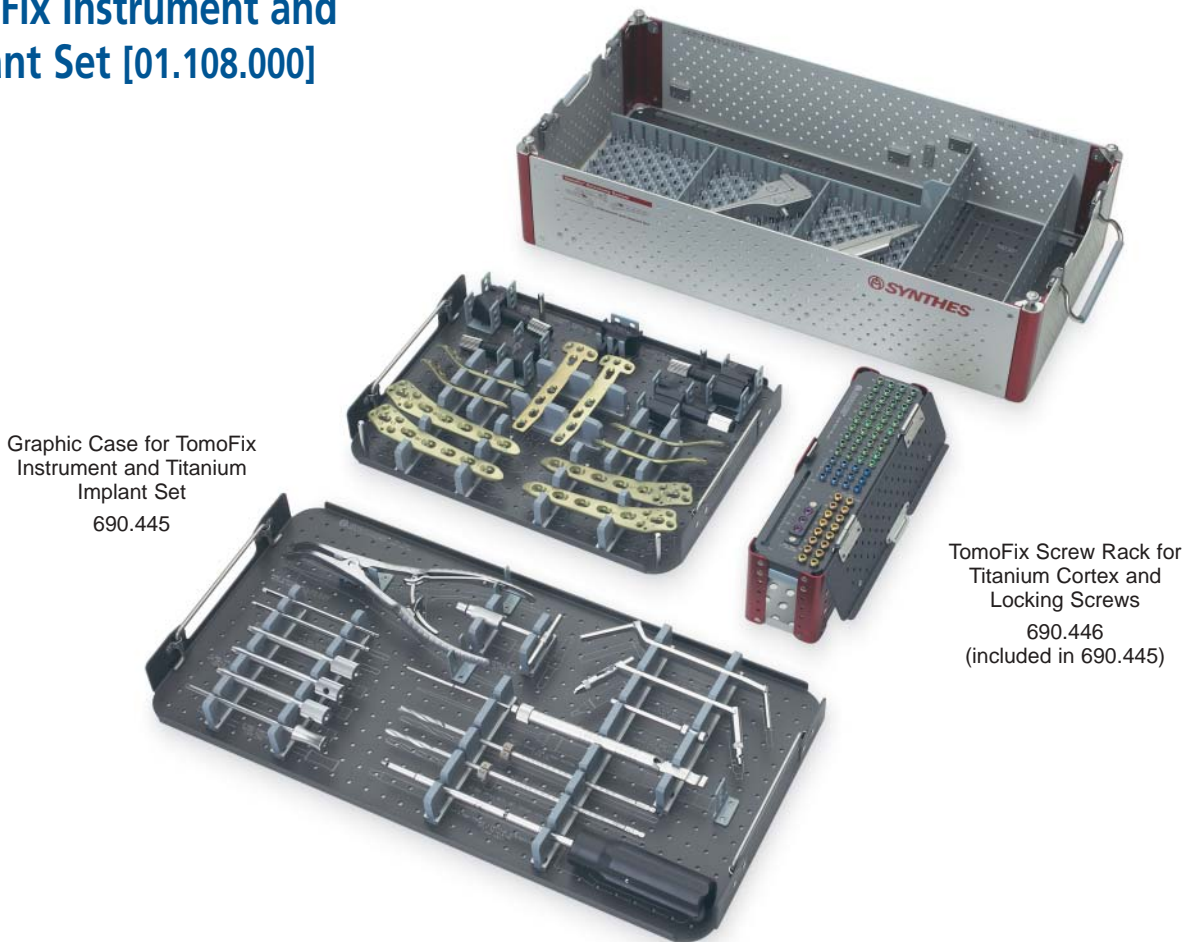
## Optional—Filling the osteotomy gap

Use a semicircular chronOS wedge to fill the osteotomy gap. See detailed technique on page 19.



# TomoFix Osteotomy System

## TomoFix Instrument and Implant Set [01.108.000]



Graphic Case for TomoFix Instrument and Titanium Implant Set  
690.445

TomoFix Screw Rack for Titanium Cortex and Locking Screws  
690.446  
(included in 690.445)

### Instruments

- 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
- 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, 3 ea.
- 323.500 5.0 mm/4.5 mm LCP Universal Drill Sleeve
- 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
- 399.097 Bone Spreader with 8 mm blade, medium handle, soft ratchet

### TomoFix Guiding Blocks

- 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

#### Sterilization Parameters for Set [01.108.000]

This Synthes set with all additionally available items, as marked in the case or module, can be sterilized by the following parameters. For more information, please see graphic case package insert

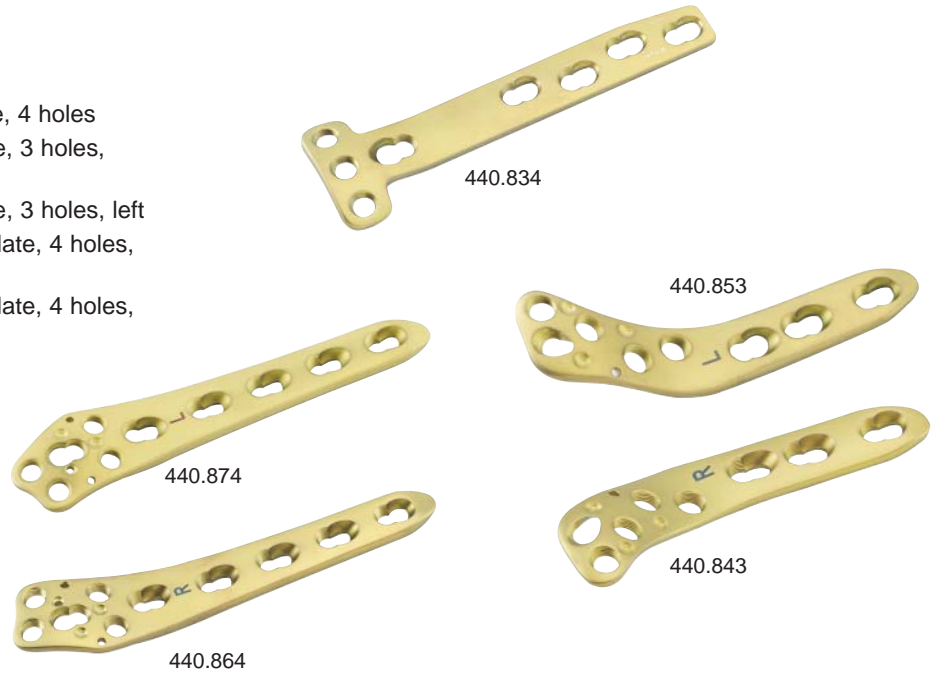
Method	Cycle	Temperature	Exposure Time
Steam	Gravity Displacement (Wrapped)	132°–135°C (270°–275°F)	22 Minutes
Steam	Prevacuum (Wrapped)	132°–135°C (270°–275°F)	8 Minutes

# TomoFix Osteotomy System

## Implants

### Titanium TomoFix Plates, 2 ea.

- 440.834 Medial High Tibia Plate, 4 holes
- 440.843 Lateral High Tibia Plate, 3 holes, right
- 440.853 Lateral High Tibia Plate, 3 holes, left
- 440.864 Lateral Distal Femur Plate, 4 holes, right
- 440.874 Lateral Distal Femur Plate, 4 holes, left



### Spacer

- 413.309 5.0 mm Titanium Spacer, 2 mm, 3 ea.



413.309

### 5.0 mm Titanium Locking Head Screws, self-tapping, 4 ea.

- |         |       |         |       |
|---------|-------|---------|-------|
| 413.340 | 40 mm | 413.365 | 65 mm |
| 413.344 | 44 mm | 413.370 | 70 mm |
| 413.350 | 50 mm | 413.375 | 75 mm |
| 413.355 | 55 mm | 413.380 | 80 mm |
| 413.360 | 60 mm | 413.385 | 85 mm |



413.3xx

### 5.0 mm Titanium Locking Head Screw, self-drilling

- 413.426 26 mm, 10 ea.



413.426

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

- |         |       |         |       |
|---------|-------|---------|-------|
| 414.824 | 24 mm | 414.840 | 40 mm |
| 414.828 | 28 mm | 414.844 | 44 mm |
| 414.832 | 32 mm | 414.848 | 48 mm |
| 414.836 | 36 mm | 414.852 | 52 mm |



414.8xx

## Also Available

- 292.652 2.0 mm Non-Colored Threaded Guide Wire, spade point, 230 mm  
690.446 TomoFix Screw Rack for Titanium 4.5 mm Cortex and 5.0 mm  
Locking Screws

### **chronOS Semicircular Wedges**

Beta-Tricalcium Phosphate, sterile

710.057.97S 7° angle

710.060.97S 10° angle

710.063.97S 13° angle



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