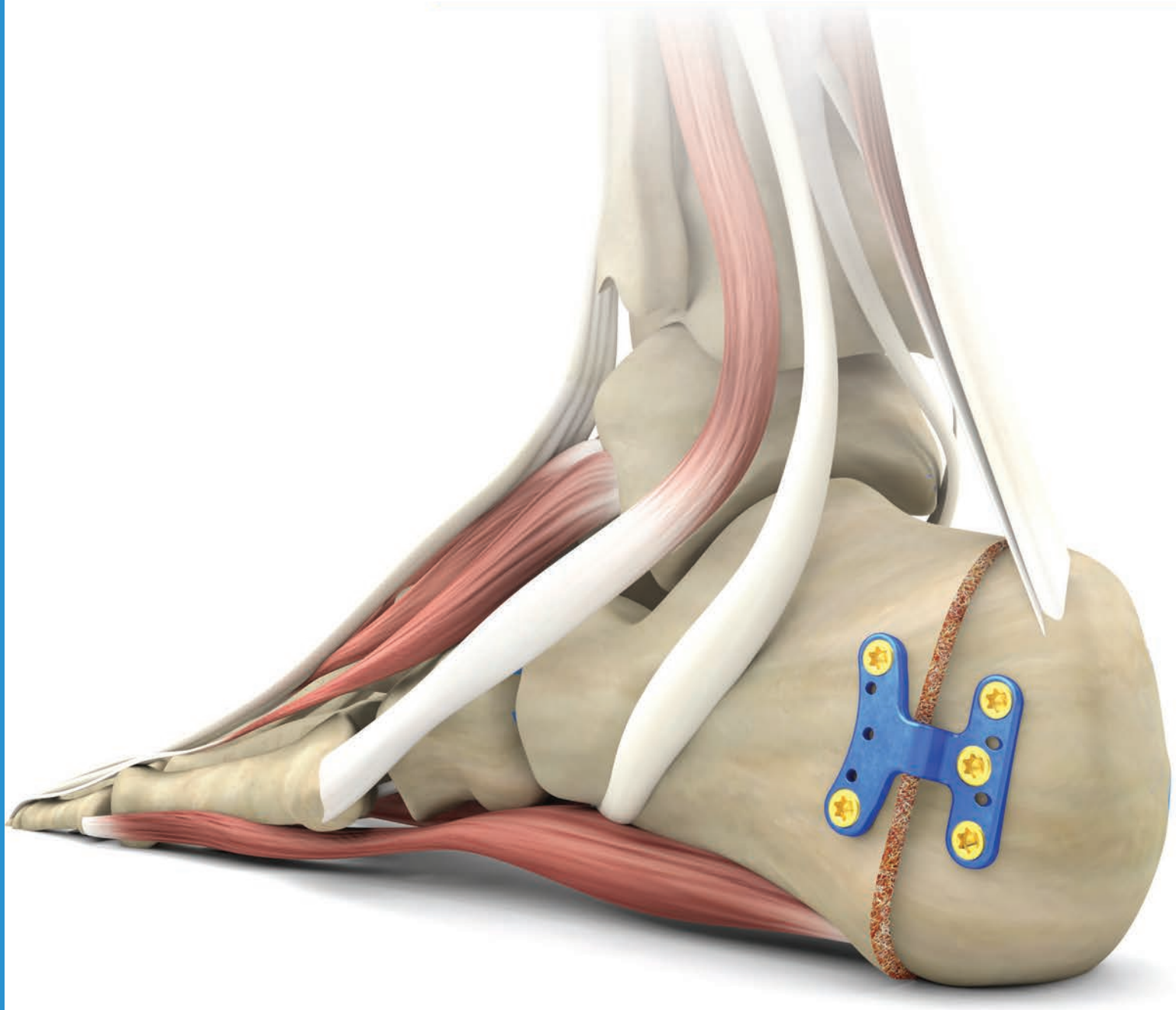
merete®

MetaStep™ Calcaneus



Surgical Technique and Ordering Information

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Description

The MetaStep™ Calcaneus plate is a step plate made of TiAl6V4 (DIN EN ISO 5832-3) and is used to correct acquired flatfoot. The plate is available in different step heights (0 mm - 12 mm) to be selected depending on the severity of the condition. In order to ensure sufficient stability of the calcaneus correction, the MetaStep™ Calcaneus plate is screwed into place using five fixed-angle DIA3.8 mm MetaFix™ LS screws.

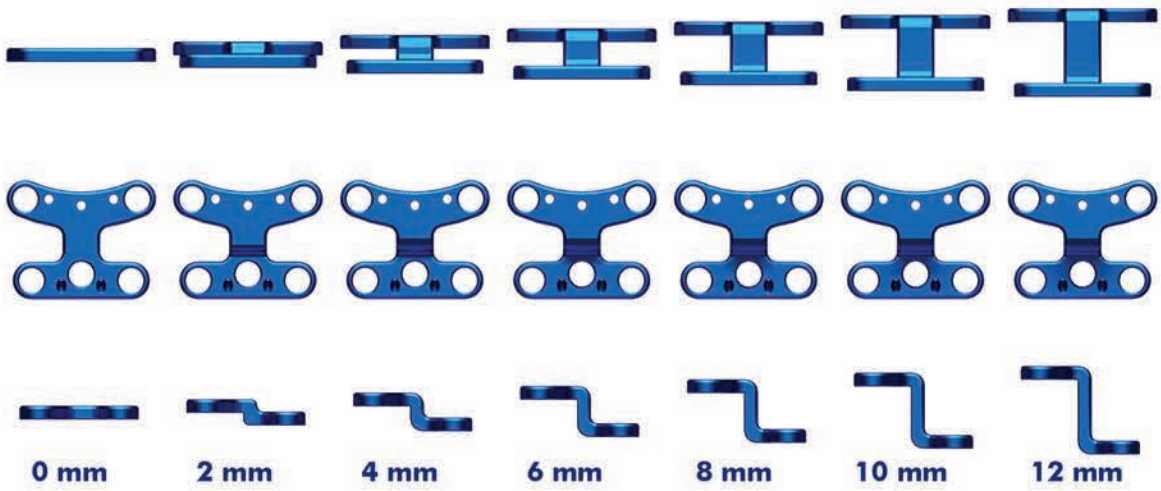


Figure 1 MetaStep™ Calcaneus plate

Indications

- Acquired adult flatfoot deformity (AAFD) or tibialis posterior tendonitis
- Post-traumatic rearfoot deformities (varus, valgus)
- Pes cavus deformities
- Other (additive) calcaneus osteotomies (e.g., upper ankle joint endoprosthetics)

Contraindications

- Infection
- Inadequate skin, bone or neurovascular condition (diabetes, advanced osteoporosis)
- Inflammatory changes to skin and soft tissue
- Peripheral circulation disorders
- Known allergies and/or hypersensitivity to foreign bodies
- Patients displaying insufficient readiness to cooperate during the treatment phase

Surgical Technique

The surgical technique presented here merely serves as an example to illustrate the basic procedure during implantation. Merete, the manufacturer of this medical device, does not stipulate that this or any other technique must be used on any particular patient. Selecting appropriate operational techniques for a particular patient is the responsibility of the operating physician.

Incision and osteotomy

Make an arc -shaped skin incision starting around 1 cm in front of the Achilles tendon and running distally plantar to below the lateral malleolus tip. Dissect additional tissue dorsally along the peroneal tendon to expose the bone, conserving the nervus suralis.

Figure 2 Calcaneus incision

After exposing the calcaneus, place the saw template (Ref. FH14100) in such a way that the planned osteotomy can be marked on the calcaneus straight edge. Screwing on a drill guide (Ref. FH10049) makes it easy to place the saw template on the calcaneus and reposition it. After determining the correct angle of osteotomy, affix the saw template to the calcaneus using two laterally inserted DIA2 mm K-wires (Ref. CK56120). We recommend inserting a Steinmann Nail (Ref. FH14106) so that the dorsal fragment can be repositioned easily following the osteotomy.

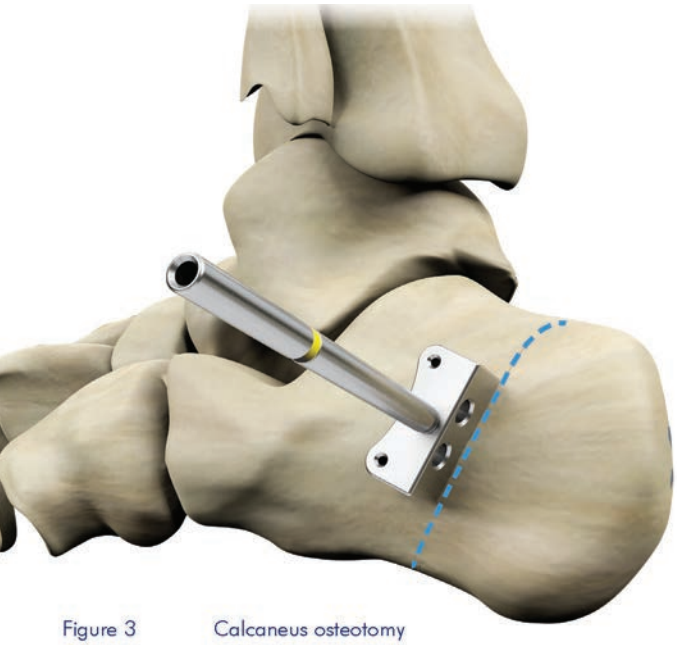


Figure 3 Calcaneus osteotomy

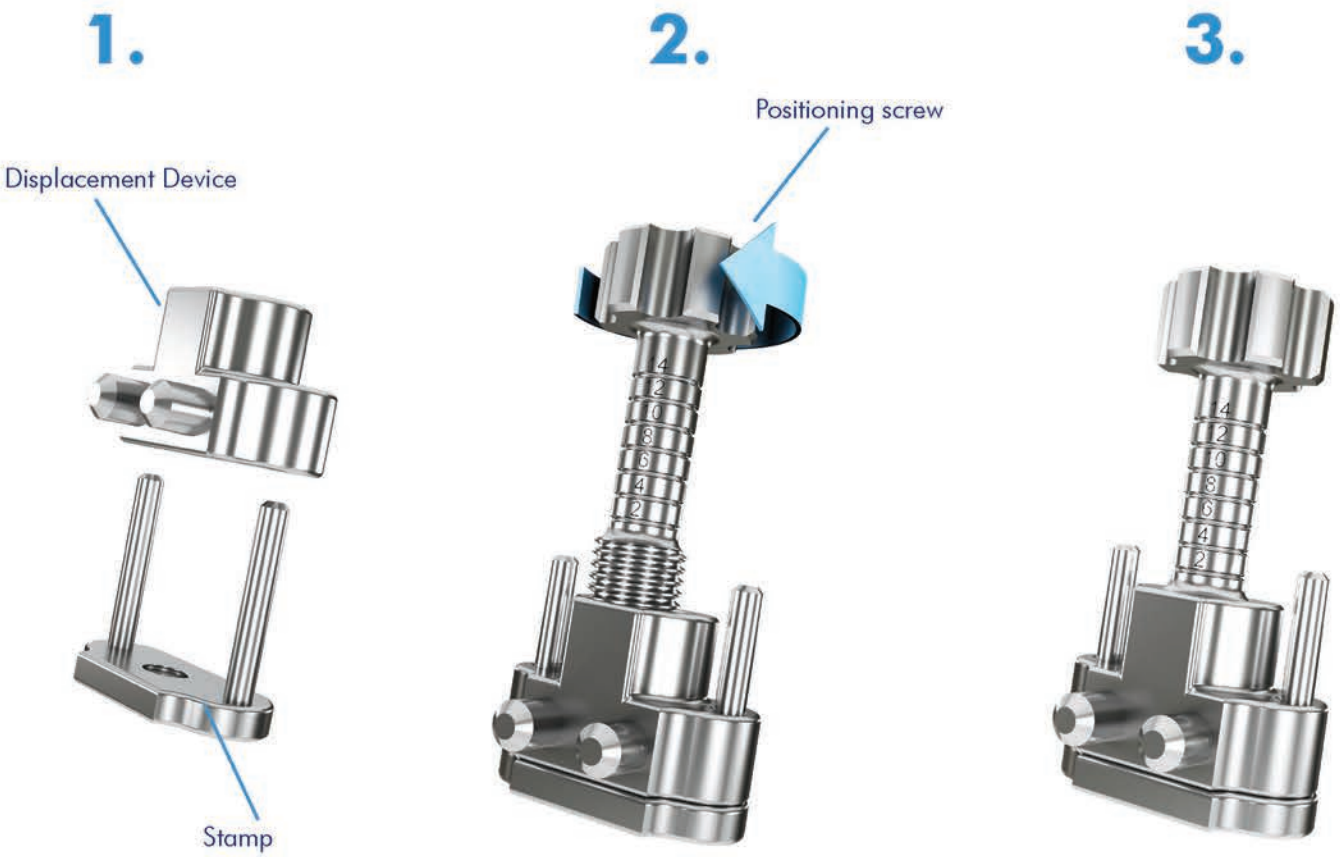
Use an oscillating saw to cut through the calcaneus from the dorsal proximal to the plantar distal ends at a 45° angle to the stepping surface of the foot. Use a Hohmann retractor to protect the dorsal and plantar soft tissue structures.
The osteotomy is created behind the peroneal tendon and at least 1 cm in front of the A.T.E.O.

Note:
We recommend using a long saw blade due to the height of the saw template.

Figure 4 Calcaneus incision

Assembling the displacement device

To assemble the complete displacement device, push the stamp (Ref. FH14102) into the displacement device (Ref. FH14101) (1.). Then screw the positioning screw (Ref. FH14103) into the displacement device (2.). When screwing in the positioning screw, make sure that the stamp is lightly pressed against the displacement device. An audible "CLICK" will indicate that the positioning screw has been fully screwed in.



Notes on disassembly:
To disassemble the displacement device, turn the positioning screw one complete rotation to detach the stamp from the displacement device. After that, remove the stamp from the positioning screw, then unscrew the displacement device and the positioning screw apart.

Calcaneus repositioning and temporary fixation

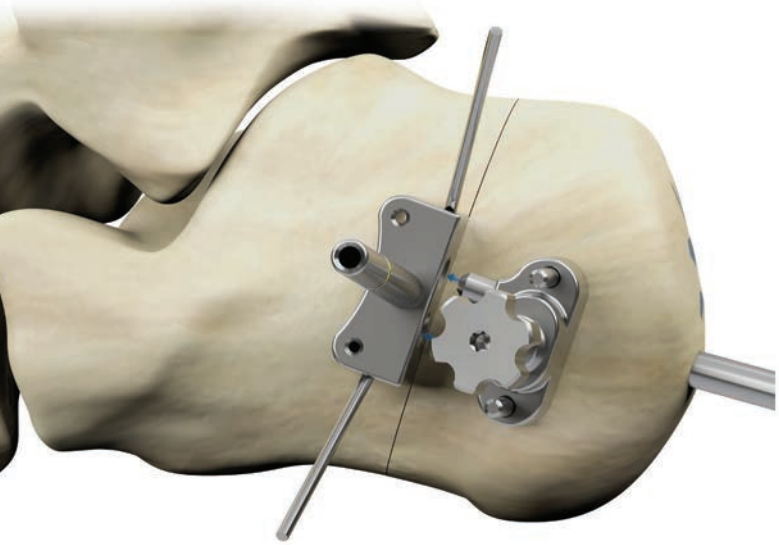


Figure 5 Attaching the displacement device

To reposition the calcaneus, attach the positioner to the straight edge of the saw template (Fig. 5 and Fig. 6).

Mobilize the dorsal fragment, then screw in the positioning screw to push it in the medial direction until it reaches the desired correction position (Fig. 7). The positioning screw can be screwed in either manually or using a Hex screwdriver (AI14325). Repositioning by as much as 50% of the width of the calcaneus is not uncommon. Avoid, at all costs, a deliberate proximalization of the Achilles tendon-supporting part of the heel bone. Read the scale on the positioning screw to determine the bridge size needed for the plate.

Note:
Repositioning may create a gap between the osteotomized fragments. If this occurs, use a plate with a bridge size 2 mm smaller than the repositioning value indicated on the scale.
(Ex.: Repositioning value: 14; bridge size needed: 12 mm)

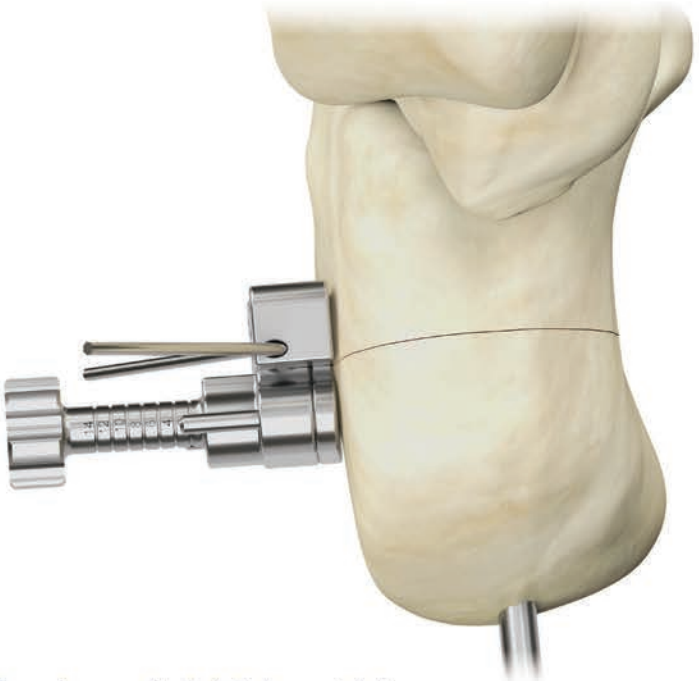


Figure 6 Attached displacement device

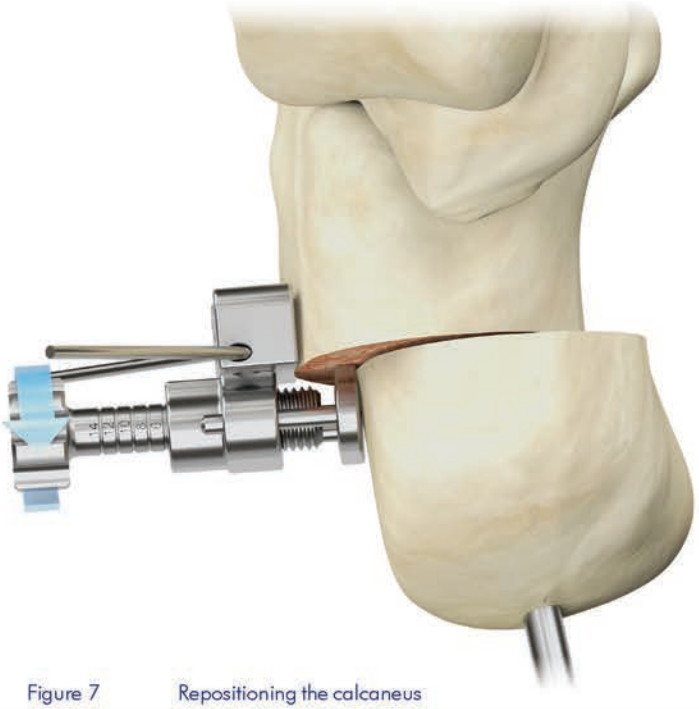


Figure 7 Repositioning the calcaneus

Once the desired correction has been achieved, insert two DIA1.4 mm K-wires (Ref. CK14207) into the saw template to mark where the bore holes will go (Fig. 8). Then stabilize the osteotomy temporarily using two K-wires (Fig. 9). Once fixation is complete, loosen the entire apparatus by pulling the DIA2.0 mm K-wires, then remove it via the DIA1.4 mm K-wires (Fig. 10).

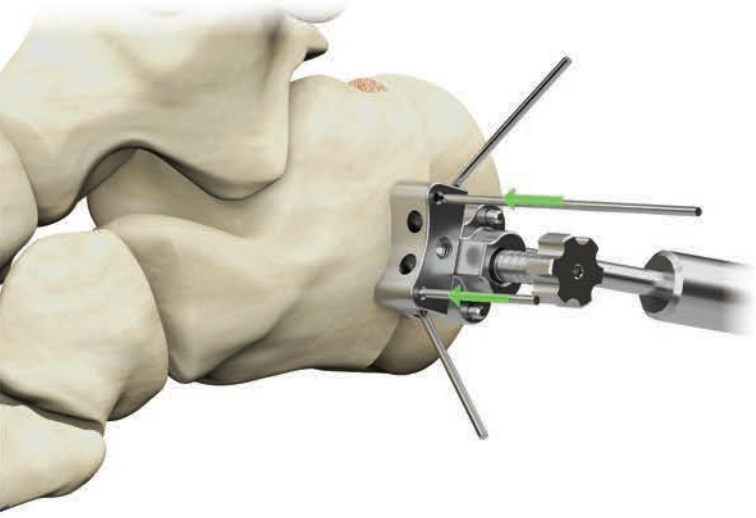


Figure 8 Inserting the marking wires

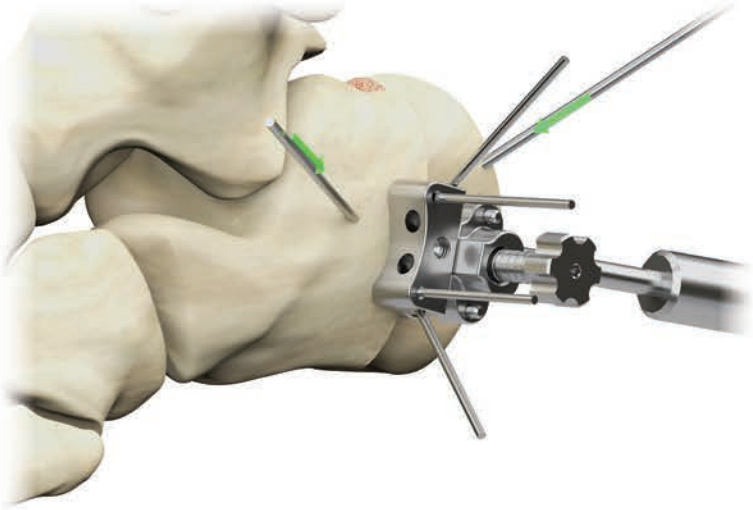


Figure 9 Temporary osteotomy stabilization

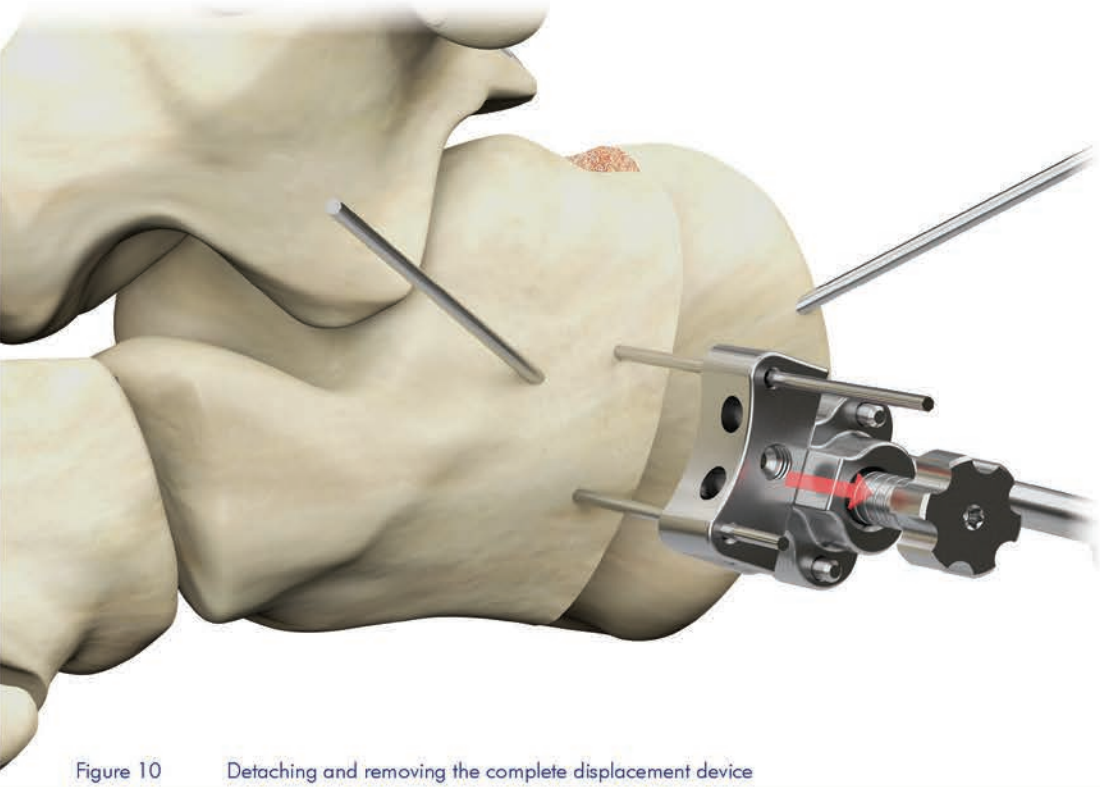


Figure 10 Detaching and removing the complete displacement device

Use the proximal screw holes to slide the MetaStep™ Calcaneus plate over the two marking wires (Fig. 11), then attach it by inserting additional DIA1.4 mm K-wires (Ref. CK14207) through the corresponding bore holes (Fig. 12).

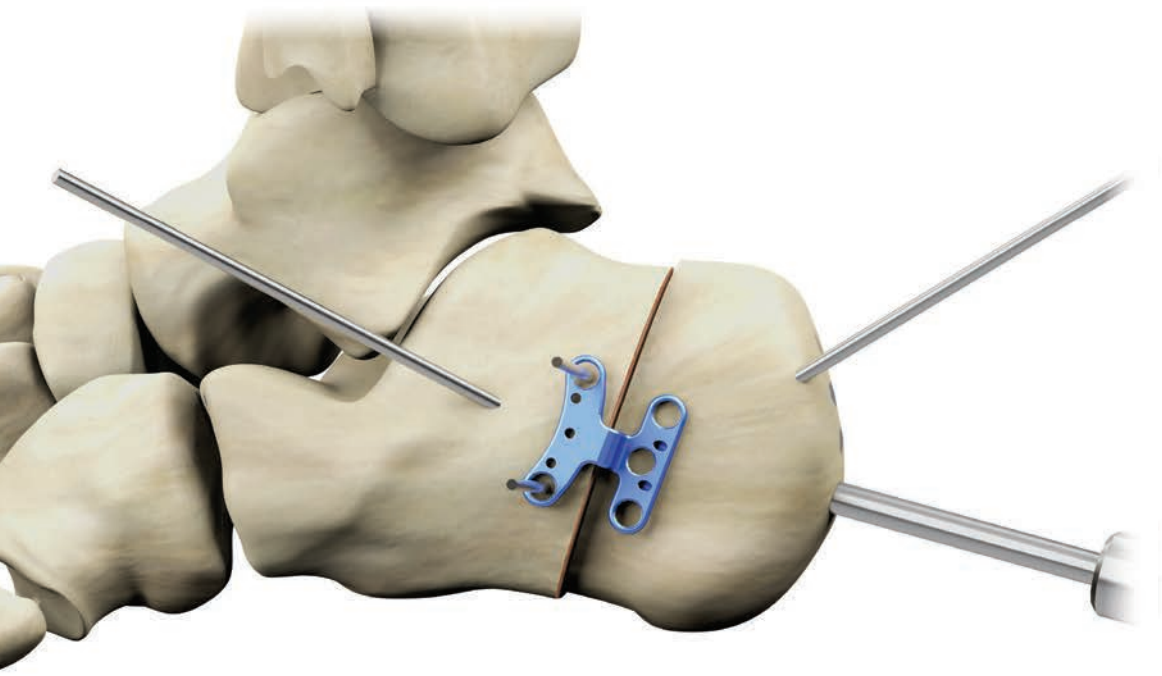


Figure 11 Placing the calcaneus plate

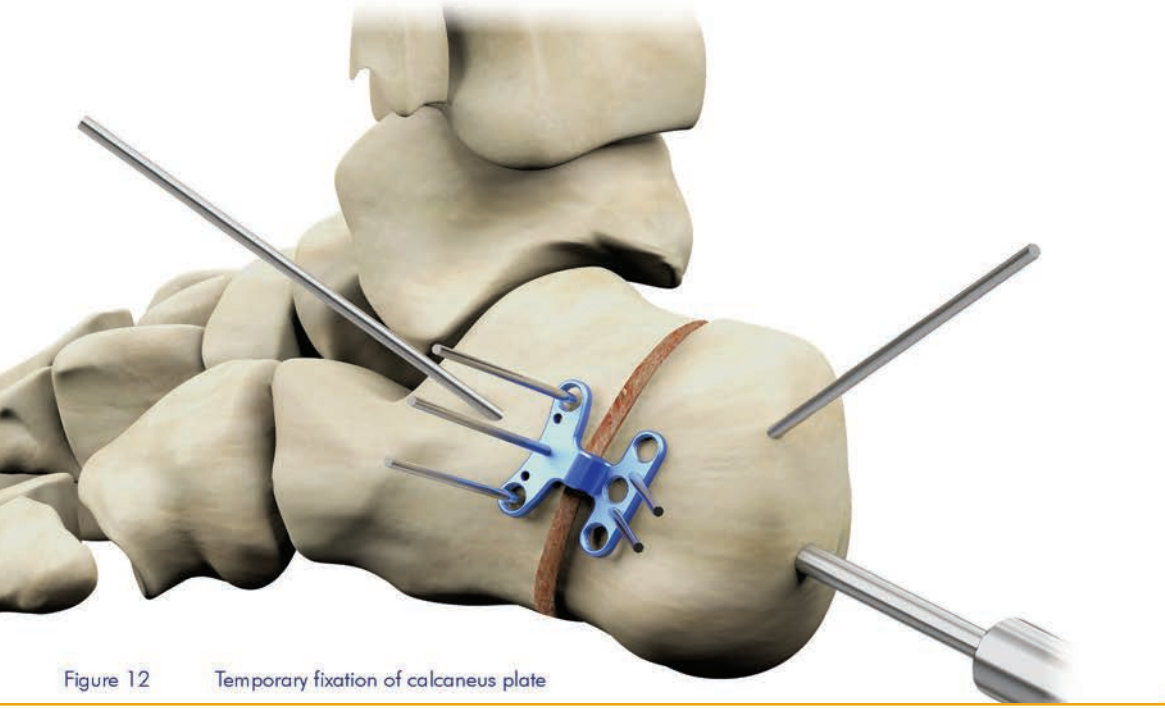
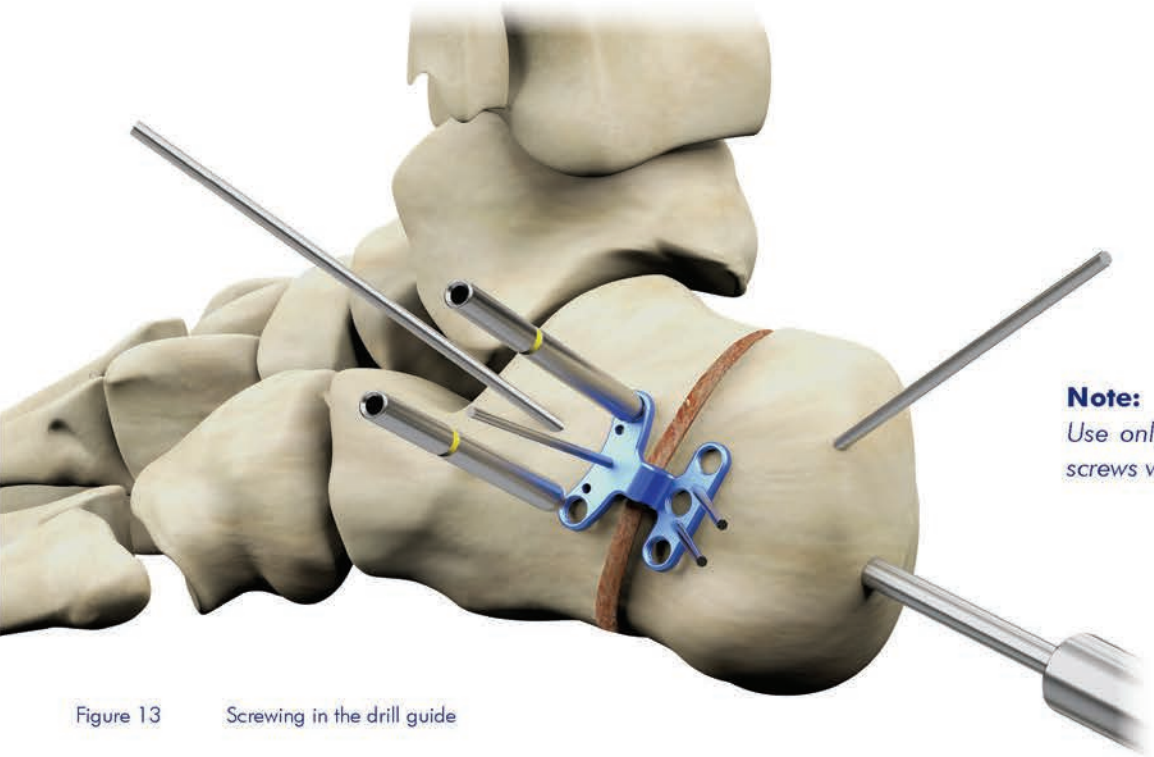


Figure 12 Temporary fixation of calcaneus plate

Inserting MetaFix™ LS screws

Use drill guide for DIA 2.9 mm drill bits (Ref. FH10049) to pre-drill the screw holes. Remove the marking wires, and then screw the drill guides into the corresponding screw holes (Fig. 13). Then drill the screw holes through the drill guide using a DIA 2.9 mm drill (Ref. FH10009) (Fig. 14).



Note:
Use only MetaFix™ LS 3.8 mm fixed-angle screws with the MetaStep™ Calcaneus plate.

Figure 13 Screwing in the drill guide

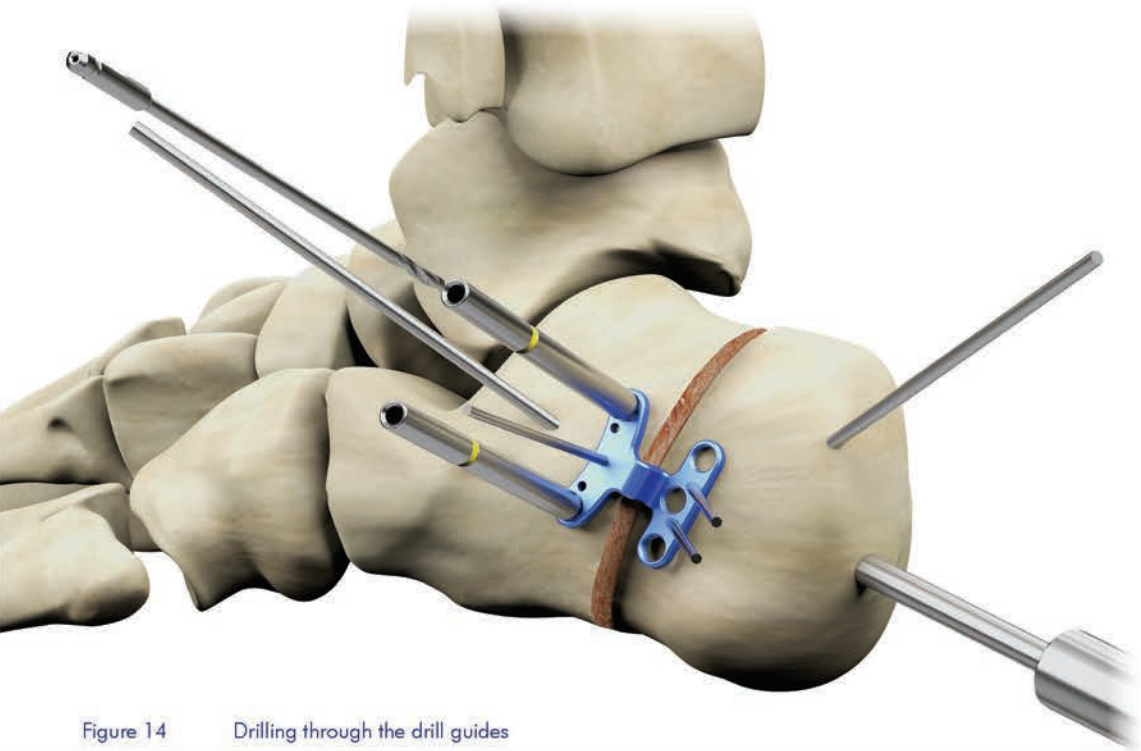


Figure 14 Drilling through the drill guides

After pre-drilling the holes, use a depth gauge (Ref. AI00301) to determine the proper screw length (Fig. 15). Then screw in the MetaFix™ LS 3.8 mm screws.

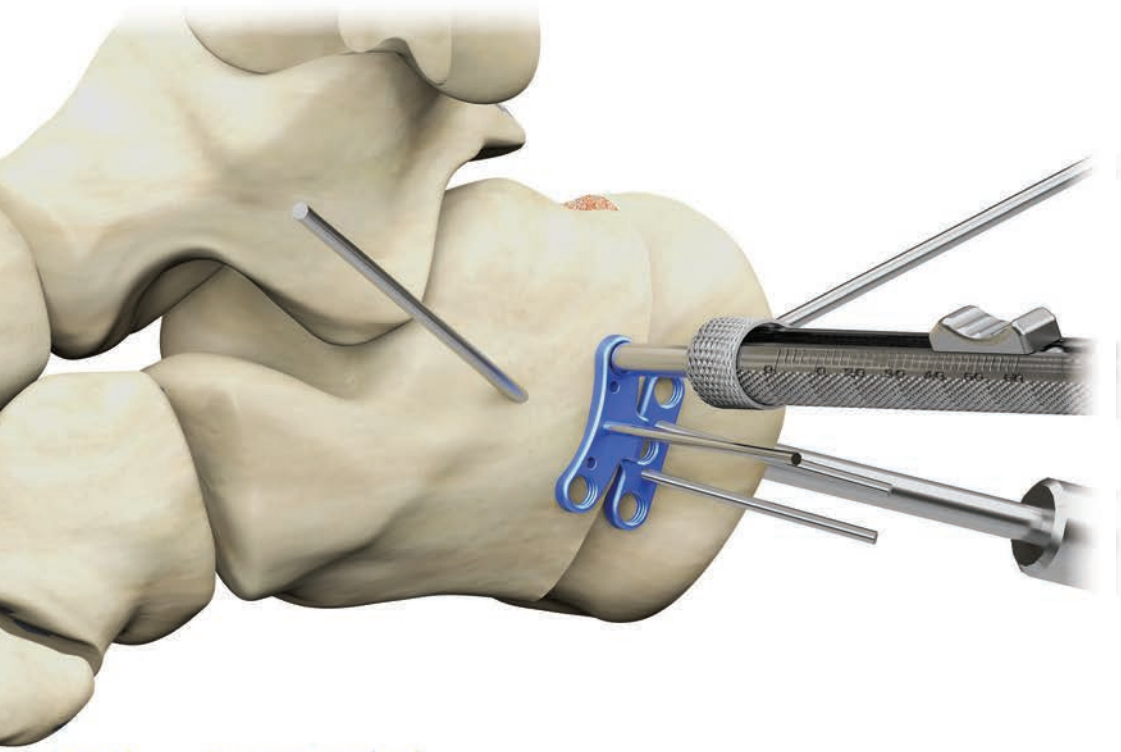


Figure 15 Determining screw length

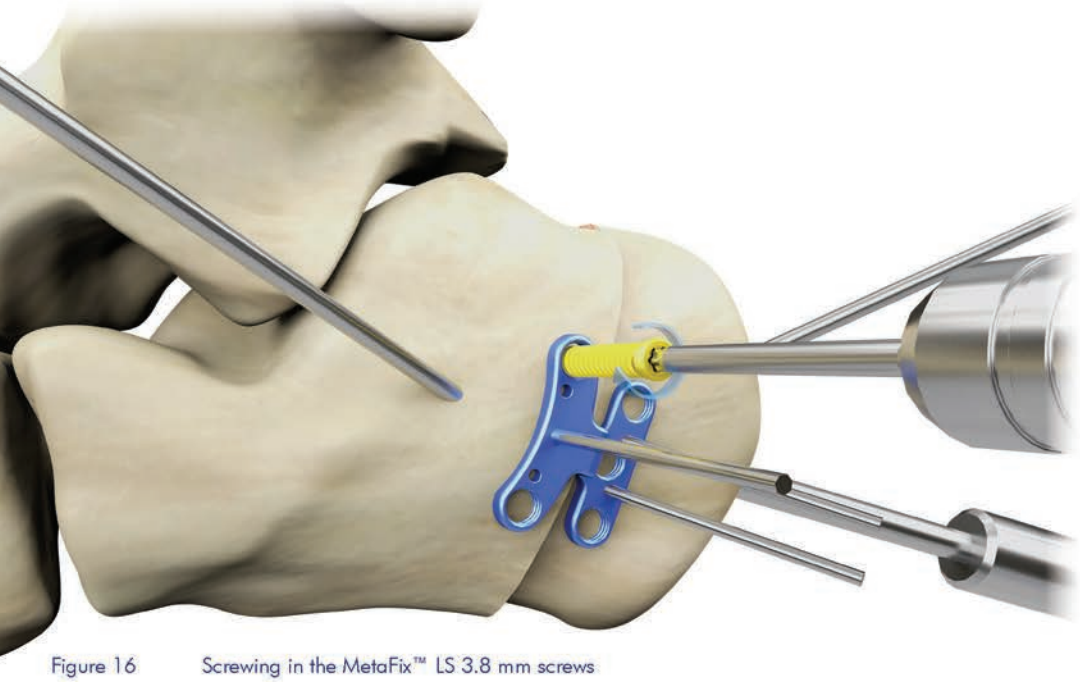


Figure 16 Screwing in the MetaFix™ LS 3.8 mm screws

Insert additional MetaFix™ LS screws using the same procedure (Fig. 13 onward). The Steinmann nail and all K-wires can be removed once all five screws have been inserted. Finish by closing the wound.

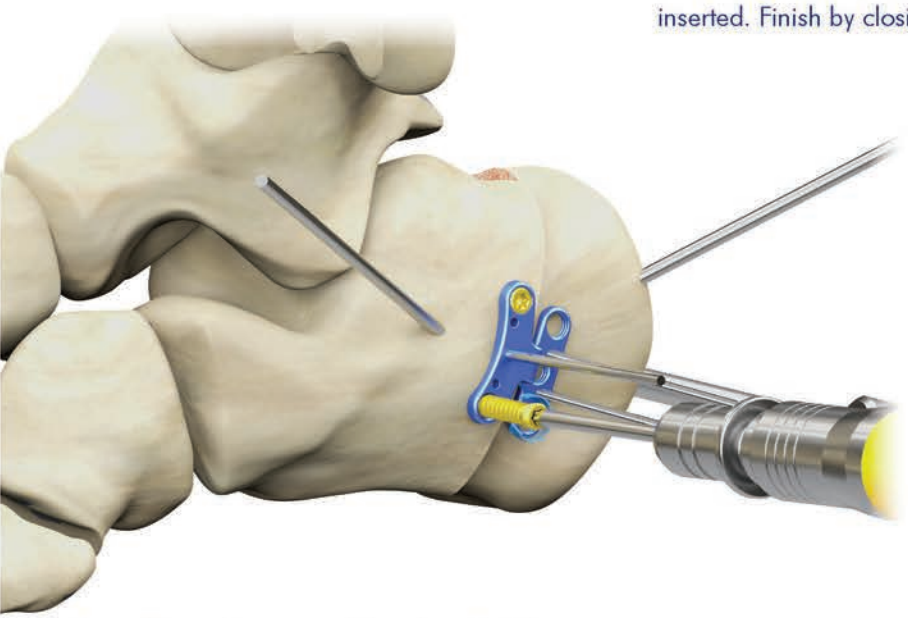


Figure 17 Screwing in additional MetaFix™ LS screws

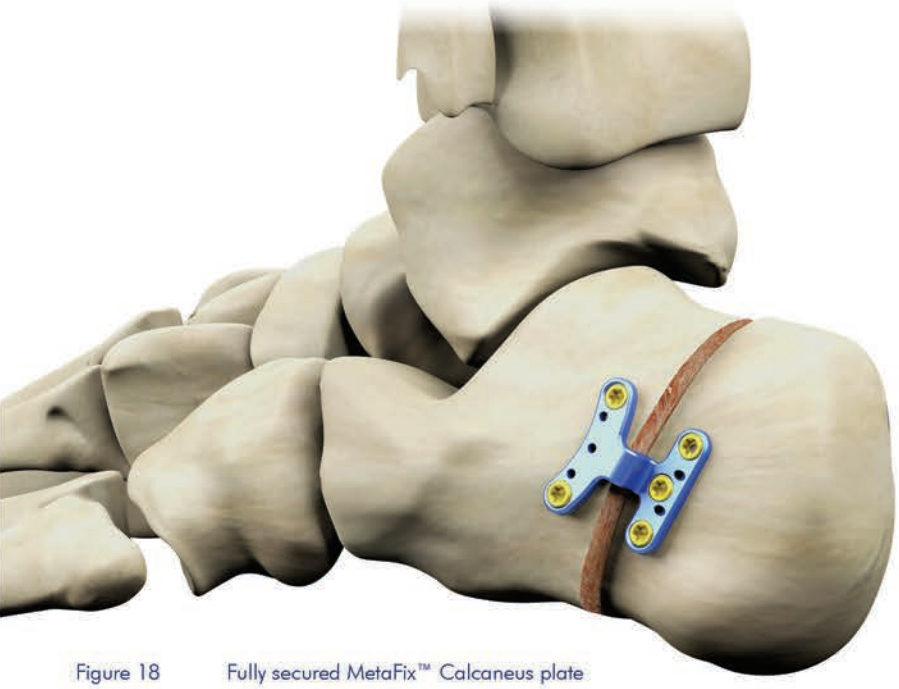


Figure 18 Fully secured MetaFix™ Calcaneus plate

Ordering Information

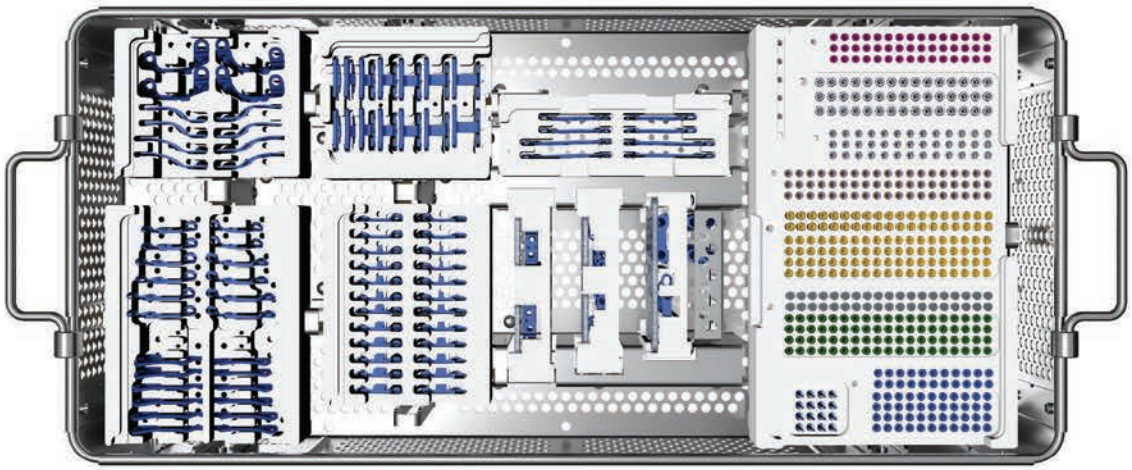
▶ Implants

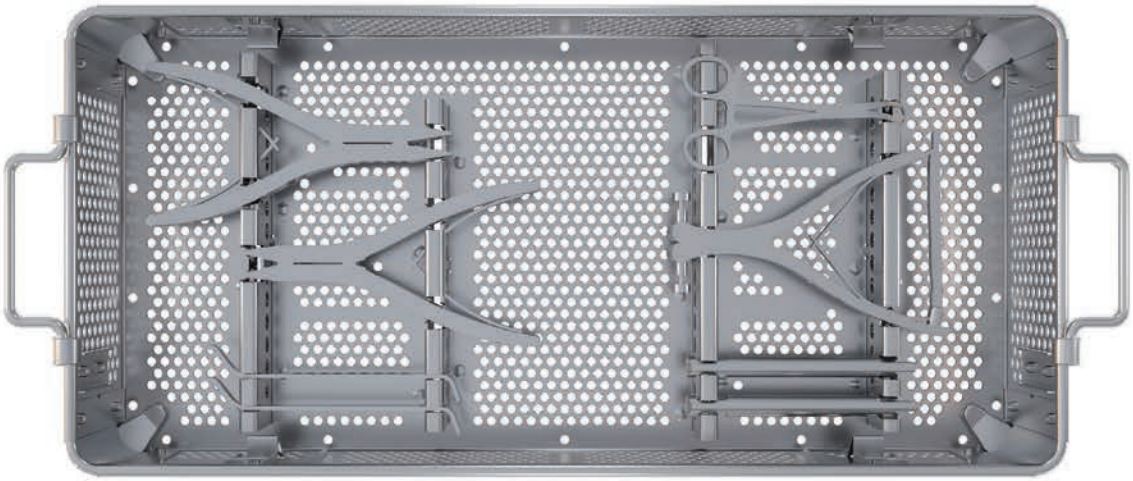
MetaStep™ Calcaneus plate

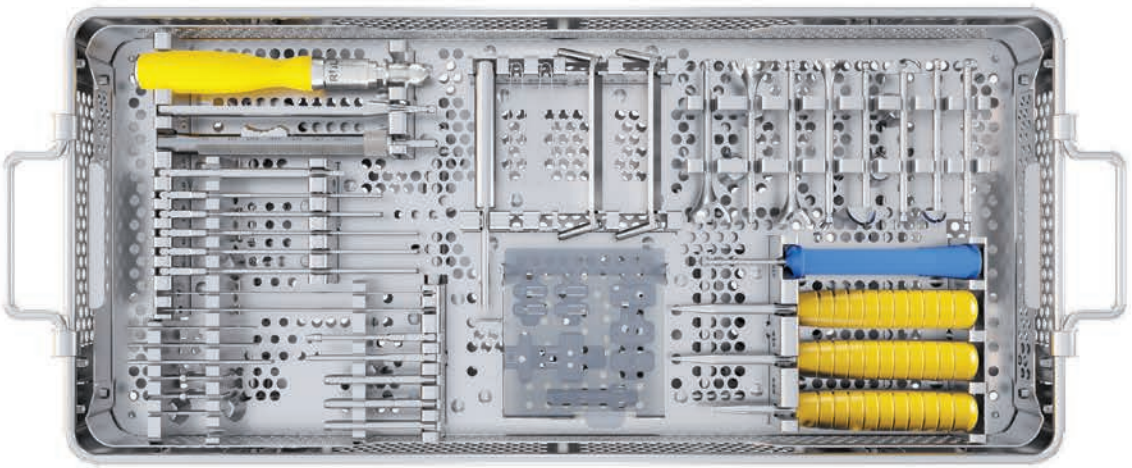
Step heights		Ref.
0		FH14000
2		FH14002
4		FH14004
6		FH14006
8		FH14008
10		FH14010
12		FH14012

Instruments

Ref.	Name
FH95500	Foot & Ankle Tray







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HDB0126-0118

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