



MetaFix™ Plantar BG10



**Surgical Technique and
Ordering information**

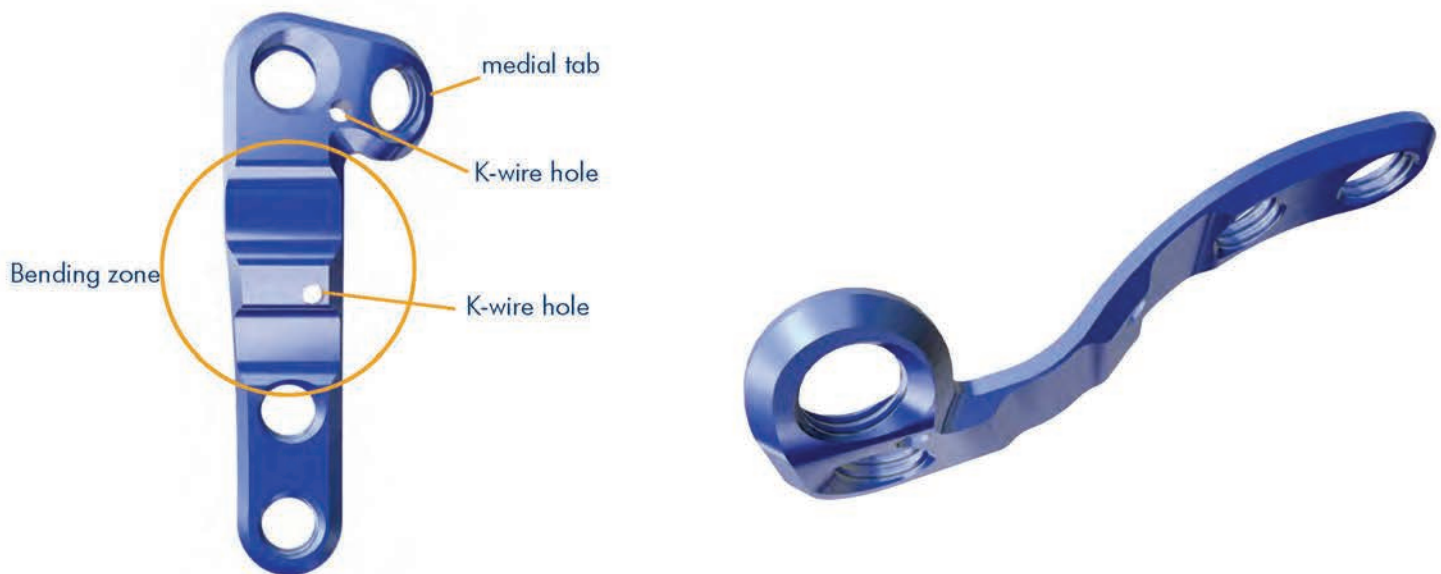
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Description

The MetaFix™ Plantar BG10 system developed by Dr. Bernd Gaudin, is a user-friendly locking plate implantation system which ensures Lapidus arthrodesis stability.

- The plantar plate and dorsal tension screw help stabilise the arthrodesis according to Lapidus
- The plate's plantar placement creates a tension-band effect which allows a rapid return to weight bearing and mobilisation
- Soft-tissue plate coverage, for example via abductor hallucis
- The plate's proximal medial tab allows simple initial fixation using a unidirectional locking screw, making the remaining screws easier to install
- Correction of medium and large intermetatarsal-angle at the apex, even after unsuccessful corrections around the shaft
- High primary stability due to locking system
- Low-profile, anatomically shaped, side-specific plates in two sizes: standard and small
- Proven Merete MetaFix™ basic instrument set
- MetaFix™ LS DIA 3.0 mm and DIA 3.5 mm screws supplemented dorsal by the Merete® PCS compression screw
- All implants made of TiAl6V4 ELI



Intended Use

The MetaFix™ Plantar BG10 can be used for adult and pediatric patients. Indications for use include fixation of fresh fractures, revision procedures, joint fusion and reconstructions of small bones of the feet.

Indications

- Medium to severe Hallux valgus
- Hallux rigidus
- Arthrosis of Tarsometatarsal-joint I
- Revision after failed Keller procedure
- Revision after failed arthroplasty

Contraindications

- Osteoarthritis
- Primary chronic Polyarthritis
- Osteoporotic bone

Surgical Technique

The surgical technique presented here is intended as an example illustrating the basic implantation procedure. Merete Medical GmbH, 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. Merete Medical GmbH is not responsible for any decisions regarding which operational technique should be used on an individual patient.

Use only the tools included when implanting the MetaFix™ Plantar BG10 plate. MetaFix™ implants are single-use products and may not be reused.

▶ Accessing and displaying joints

Mark the point of incision: medial above the first metatarsal to approx. 2 cm proximal to the tarsometatarsal joint (Fig. 1).



Figure 1 Mark the incision

Prepare the lateral release: perform the incision, then uncover and open the joint capsule to reveal the first metatarsophalangeal joint. Remove the exostosis and smooth the edges, for example with a milling cutter (Fig. 2).

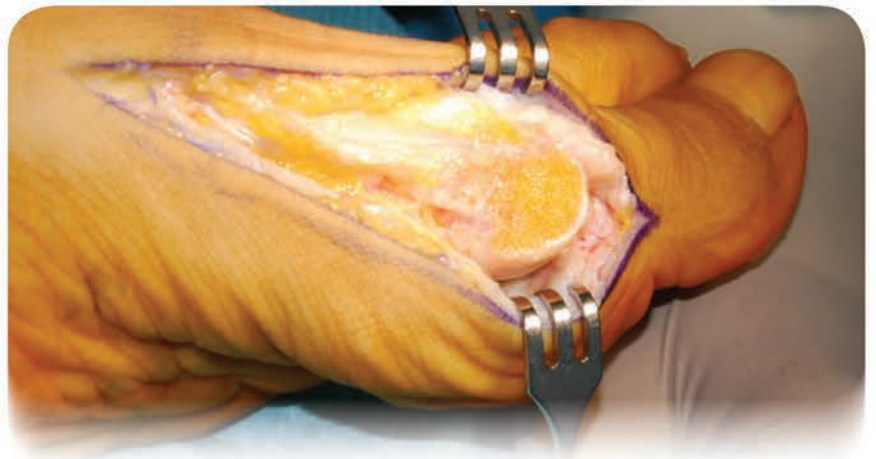


Figure 2 MT-I head, remove Exostosis

▶ Performing the osteotomy

Insert an orientation K-wire (Ref. CK10215) into the central part of the first metatarsal. Set the K-wire at a right angle to the MT-I axis, parallel to the tread surface (Fig. 3 and Fig. 4).

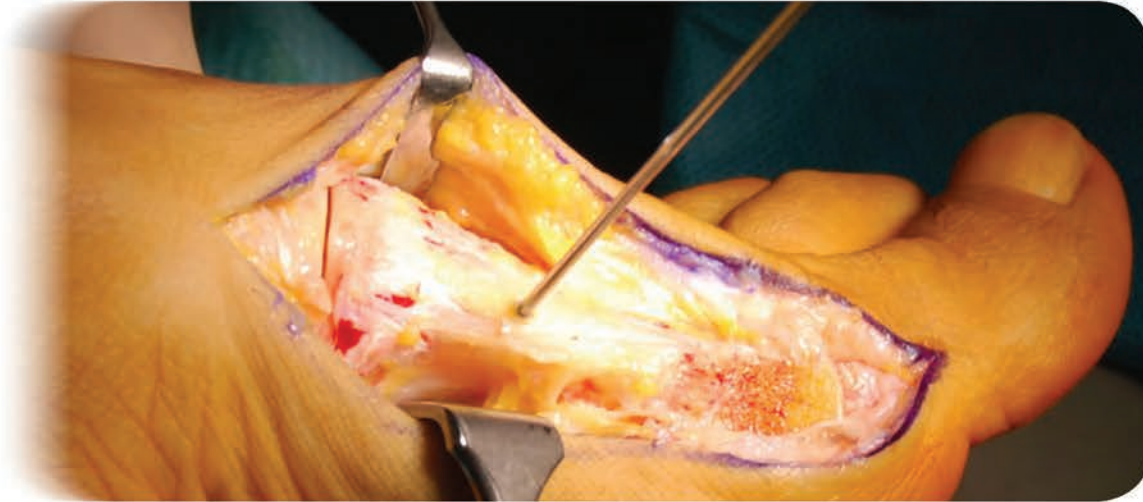


Figure 3 K-wire for orientation

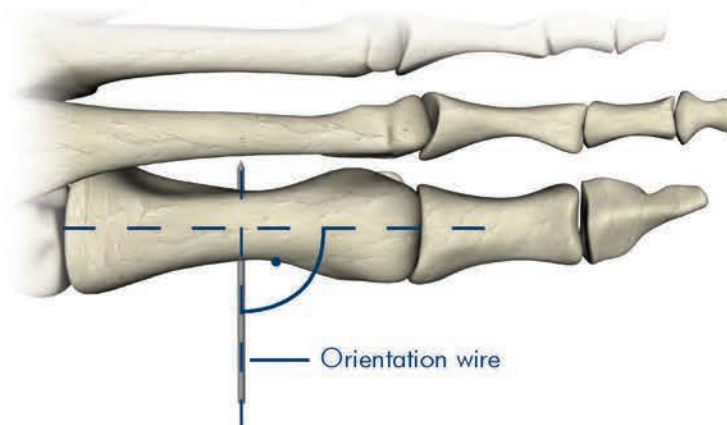


Figure 4 Orientation wire extends at right angles to the MT-I axis

Resect the articular surfaces of the first metatarsal and the cuneiform bone, using the orientation wire as a guide.

1. With slightly opened angle towards lateral
2. With slightly opened angle towards plantar (approx. 4° to the plantarisation)

If plantar angle is approx. 4° , no additional plantarisation of the first metatarsal is needed.

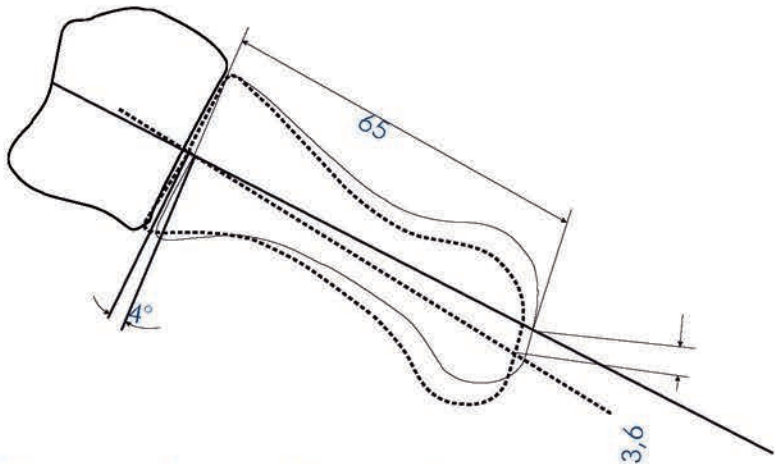


Figure 6 Plantarisation of the Metatarsal I

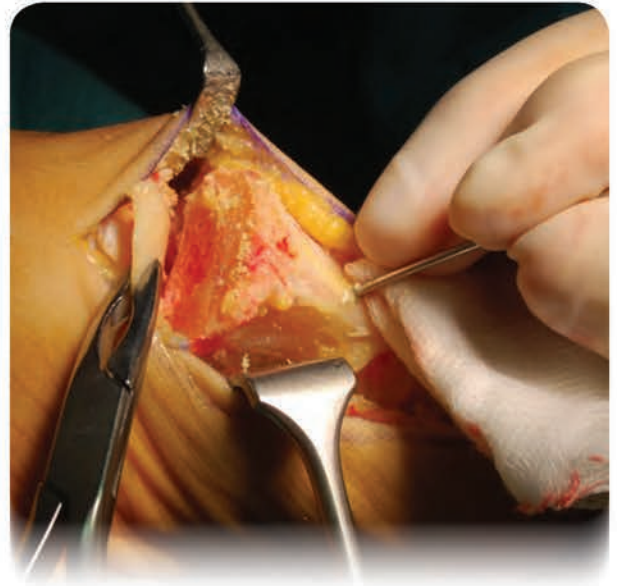


Figure 5 Osteotomy surfaces after osteotomy



Figure 7 Temporarily fixed osteotomy

Use the K-wire to perform a temporary fixation of the osteotomy from proximal dorsal to lateral plantar (Fig. 7).

▶ **Setting the dorsal tension screw**

Perform a precise manual alignment of the first metatarsal, and then secure the correction using two K-wires in the metatarsal head area (Fig. 8). Optional: check with X-ray.

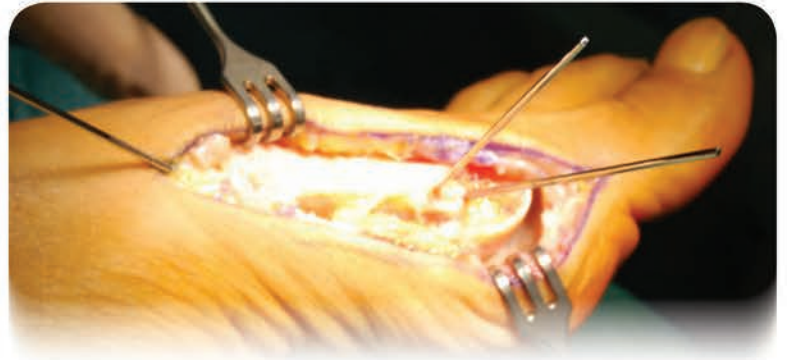


Figure 8 Aligned and fixed MT-I

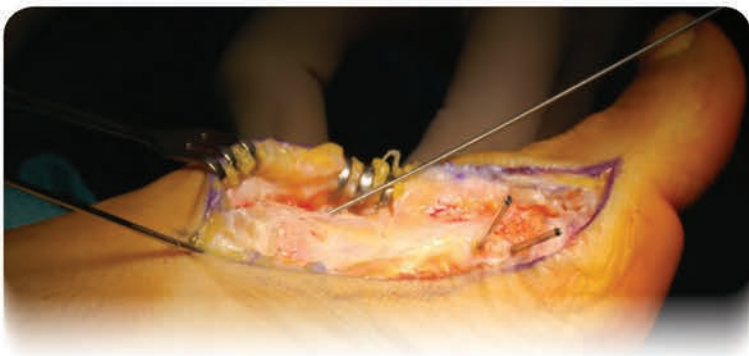


Figure 9 Inserted DIA 1.0 mm guide wire for the dorsal tension screw

Position the DIA 1.0 mm guide wire (CK10215) for the dorsal tension screw (Figs. 9 and 10).

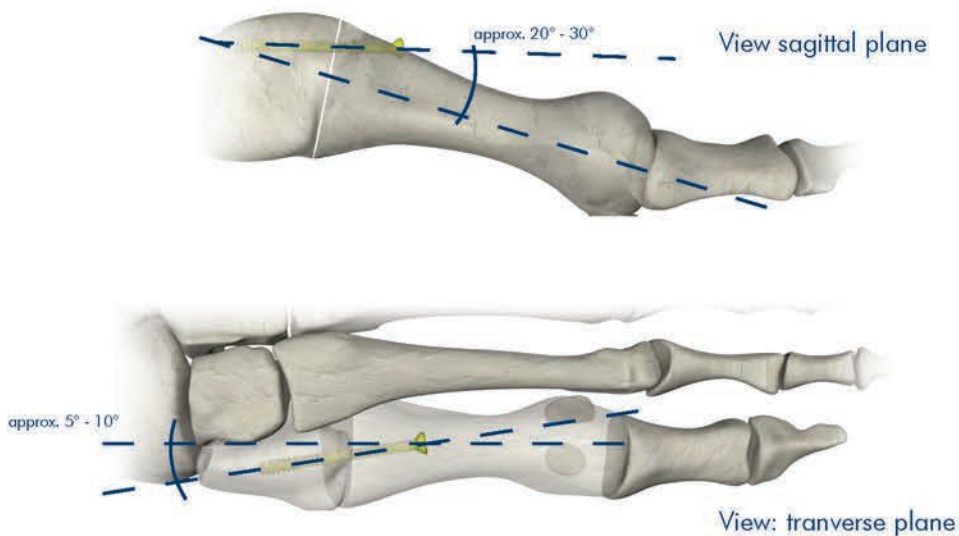


Figure 10 Location of the dorsal tension screw

Drill over the K-wire using a cannulated 2.0 mm drill (Ref. FH11020) (Fig. 11); measure length (Fig. 12), and insert the Merete® Cannulated PCS (Ref. FH30134 - FH30140, DIA 3.0 mm) (Fig. 13). Before tightening the tension screw, remove the proximal K-wire.

Recommendation: screw length 34 mm



Figure 11 Drilling through the double drill guide / tissue protection

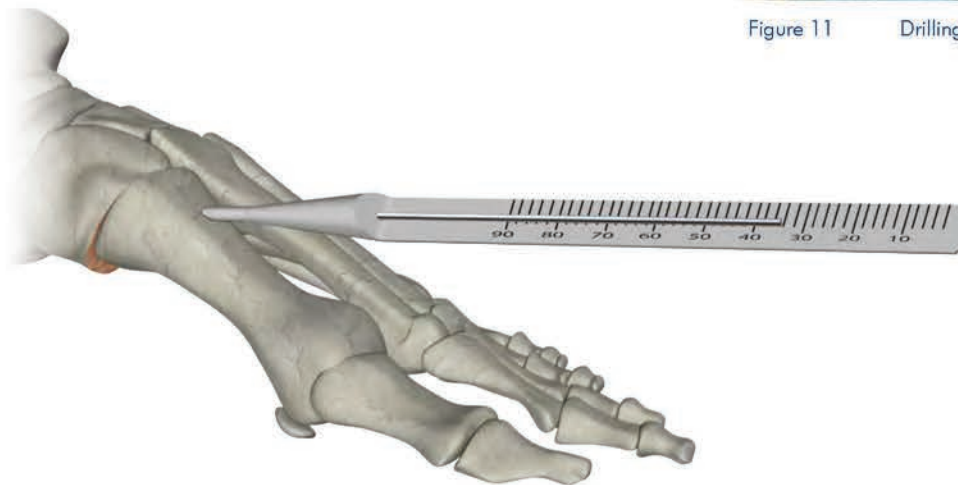


Figure 12 Determine the screw length



Figure 13 Screwing in the tension screw Merete® Cannulated PCS

▶ **Implanting the MetaFix™ plate**

- Setting and adjusting

Select either the MetaFix™ Plantar BG10 or MetaFix™ Plantar BG10s plate. Screw the short drill sleeve DIA 2.5 mm (Ref. FH10048) into the proximal plantar bore (Figure 14). Position the plate, adjusting it to the anatomy if necessary by bending it using the bending pliers (Ref. FH10905 and FH10906) (Fig. 15).

Note:
Bending of plates

When utilizing the bending instruments, the following guidelines should be adhered to:

- *Ensure that the threaded holes are not distorted during bending*
- *Plates should only be bent in one direction. Do not re-bend plates.*

Note:
The short drill sleeve serves not only as a drill sleeve, but to assist with manual stabilisation and orientation of the plate.

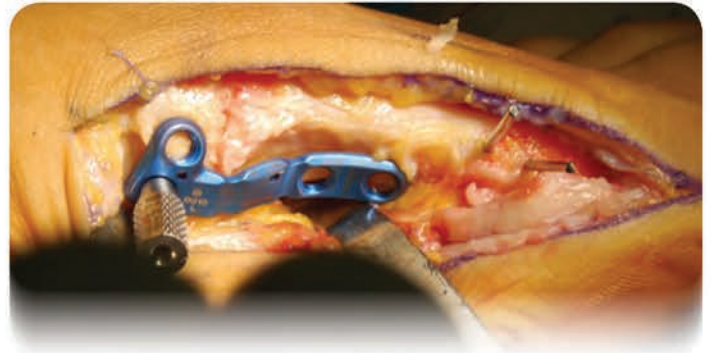


Figure 14 Applied plate with a short drill sleeve to check the plate size



Figure 15 Intraoperative adjusting the plate with the bending pliers

- Temporarily fixation of the plate using one or two K-wires.

Insert a K-wire through the distal K-wire bore.

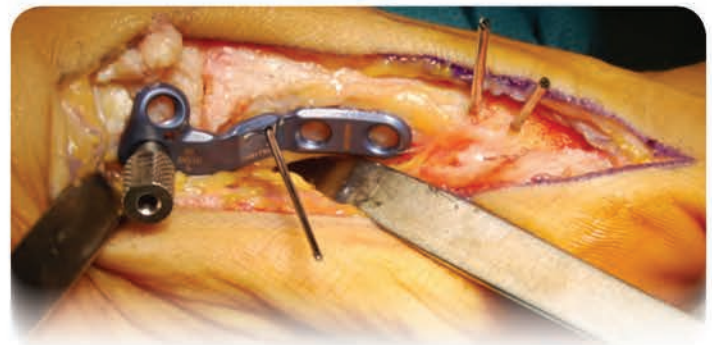


Figure 16 Temporarily fixed plate

- Screwing the plate on

Screw the DIA 2.5 mm drill guide (Ref. FH10046) into the proximal medial threaded hole. After drilling using the DIA 2.5 mm drill (Ref. FH10004), twist out the drill guide and measure the proper screw length. Twist in DIA 3.5 mm MetaFix™ LS screws (Ref. FH35012 - FH35026) (Fig. 17 to Fig. 20).

Note:
It is suggested to use DIA 3.5 mm MetaFix™ LS screws (Ref. FH35012 - FH 35026) in the proximal holes and DIA 3.0 mm MetaFix™ LS screws (Ref. FH 30012 - FH30026) in the distal ones. For increased fixation stability/strength use DIA 3.5 mm MetaFix™ LS screws only.



Figure 17 Screwing in the drill sleeve proximally



Figure 18 Drilling of the medial tap



Figure 19 Determine the screw length

Note:

Placement of Locking Screws

- The screw and the screwdriver should be exactly aligned with the axis of the screw hole. The screw should easily thread and lock into the plate.
- Do not use much force when tightening the screws. If resistance is met, slightly back out screw, realign screw and screw driver and turn the screw in again. The screw head should end up flush to the plate.
- For screw length measurements indicated with odd numbers, round up to ensure bi-cortical placement of the locking screw.

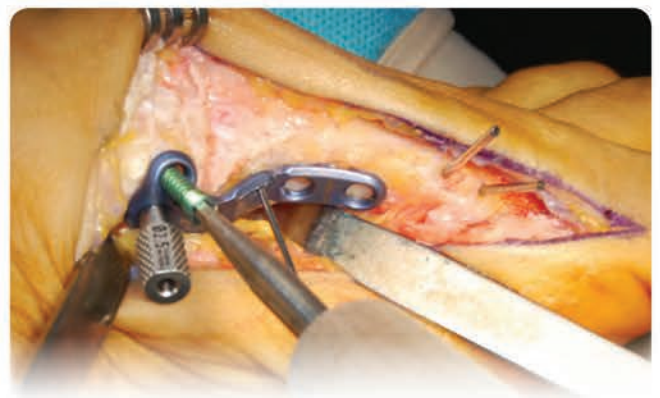


Figure 20 Screwing in of the first screw

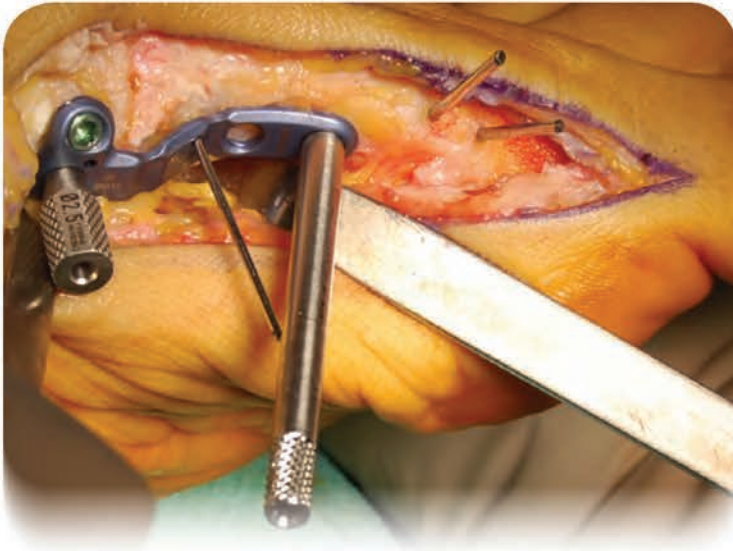


Figure 21 DIA 2.0 mm drill sleeve in the distal plate hole

Twist a DIA 2.0 mm drill sleeve into the distal hole. Pre-drill using a DIA 2.0 mm diameter drill. With hard bones, use a DIA 2.5 mm drill bit on the first corticalis. Then determine the correct screw length and screw in a DIA 3.0 mm MetaFix™ LS screw (Fig. 21 and Fig. 22).

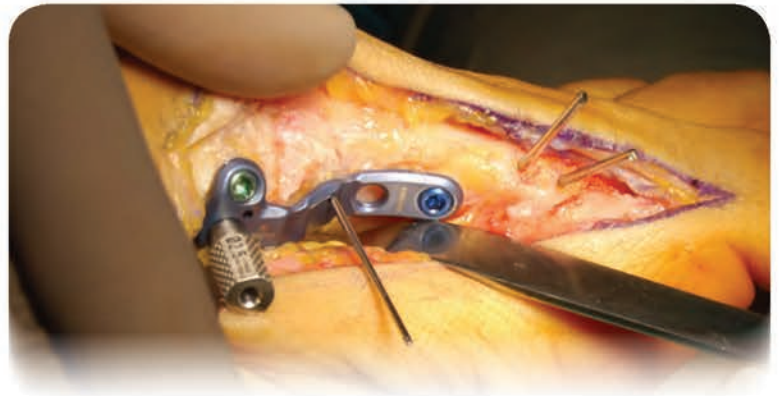


Figure 22 Inserted distal screw

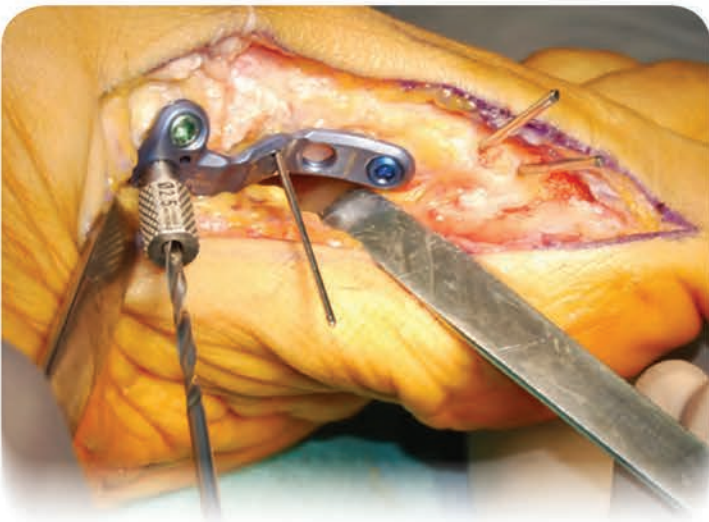


Figure 23 Drill through the short drill sleeve

Next, insert the second proximal plantar screw. Drill through the short drill sleeve, or exchange the short drill sleeve for the long one. Determine the correct screw length and insert a DIA 3.5 mm MetaFix™ LS screw (Fig. 23).



After that, insert the second distal screw (Fig. 24). Tighten all screws.

Figure 24 Screwing in the second distal screw

▶ Wound closure



Close the wound using the standard technique (Fig. 25).

Figure 25 Wound closure



Ordering Information

► Implants

MetaFix™ Plantar BG10

Length 40 mm

| | Ref. |
|-------|---------|
| left | FH01110 |
| right | FH01115 |



MetaFix™ Plantar BG10s

Length 37 mm

| | Ref. |
|-------|---------|
| left | FH01111 |
| right | FH01116 |



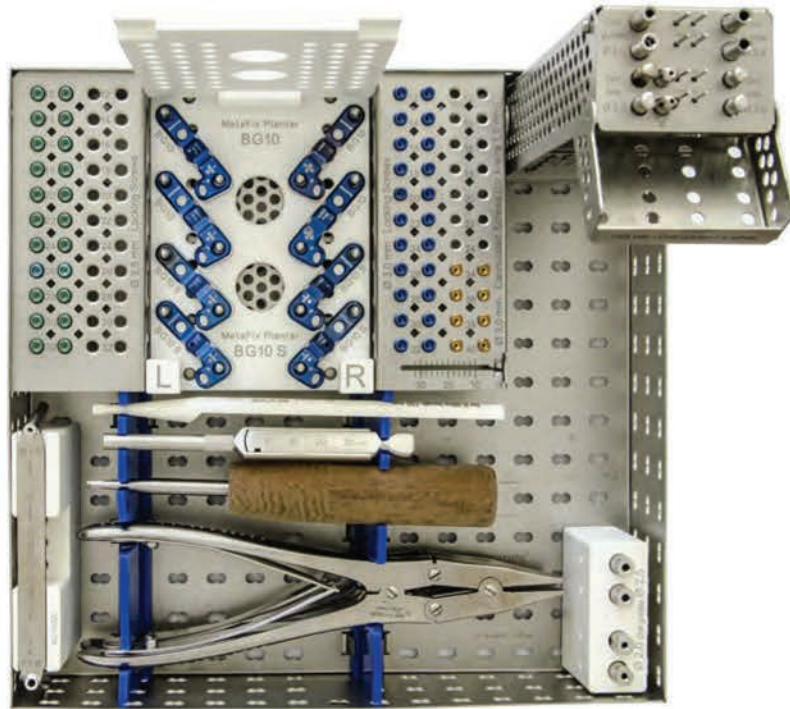
Screws non sterile



| Length | MetaFix™ LS DIA 3.0 mm | MetaFix™ LS DIA 3.5 mm | Merete® Cannulated PCS DIA 3.0 mm |
|--------|---------------------------|---------------------------|--------------------------------------|
| 12 mm | FH30012 | FH35012 | - |
| 14 mm | FH30014 | FH35014 | - |
| 16 mm | FH30016 | FH35016 | - |
| 18 mm | FH30018 | FH35018 | - |
| 20 mm | FH30020 | FH35020 | - |
| 22 mm | FH30022 | FH35022 | - |
| 24 mm | FH30024 | FH35024 | - |
| 26 mm | FH30026 | FH35026 | - |
| 28 mm | FH30028 | FH35028 | - |
| 30 mm | FH30030 | FH35030 | - |
| 32 mm | FH30032 | FH35032 | - |
| 34 mm | - | - | FH30134 |
| 36 mm | - | - | FH30136 |
| 38 mm | - | - | FH30138 |
| 40 mm | - | - | FH30140 |

► Instruments

| Description | Ref. |
|--|---------|
| MetaFix™ Plantar BG10 Tray with Implants and Instruments | FH91100 |



| Qty. | Description | Ref. |
|------|---|----------|
| 2 | Drill Bit DIA 2.0 mm AO connector, cannulated for K-wire DIA 1.0 mm | FH11020 |
| 2 | Drill Bit DIA 2.0 mm, L=150 mm, AO-connector small | FH10003 |
| 2 | Drill Bit DIA 2.5 mm, L=150 mm, AO-connector small | FH10004 |
| 1 | Bending Wrench | FH10905 |
| 1 | Bending Wrench with crosswise slot | FH10906 |
| 2 | Drill Guide for DIA 2.0 mm drill for locking screws | FH10045 |
| 2 | Drill Guide for DIA 2.5 mm drill for locking screws | FH10046 |
| 2 | Short drill guide DIA 2.0 mm for locking screws | FH10047 |
| 2 | Short drill guide DIA 2.5 mm for locking screws | FH10048 |
| 1 | Double drill sleeve for DIA 1.0 mm K-wire / DIA 2.0 mm drill | AC10020 |
| 4 | DIA 1.0 mm K-wire, L=150 mm, Trokar angle tip, round end | CK10215* |
| 4 | DIA 1.4 mm K-wire, L=70 mm, Trokar angle tip, round end | CK14207* |
| 1 | Screwdriver hex 2.5 mm, cannulated for K-wire DIA 1.0 mm and DIA 1.4 mm | AI14225 |
| 1 | Depth gauge 0 - 40 mm | AC00007 |
| 1 | Length gauge 0 - 90 mm for K-wire DIA 1.4 mm L: 150 mm | AC14150 |

* packaging unit 10 pcs.

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