

SURGICAL TECHNIQUE



Hemi Toe Implant System



"Elegant Solutions for Extremity Challenges"

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K2™ Hemi Toe Surgical Technique

DESCRIPTION

The K2 Hemi Toe Implant System is an anatomically designed, metallic, one-piece surface replacement system for the base of the hallux.

THE K2 HEMI TOE IMPLANT SYSTEM OFFERS THESE UNIQUE FEATURES:

- Anatomically designed implant matches the shape of the resected proximal phalanx.
- Low profile implant minimizes bone resection.
- Groove on the plantar surface of the implant accommodates the FHL tendon to prevent impingement.
- Titanium plasma coated stem encourages bony ingrowth for solid fixation.
- Suture hole allows easy FHL tendon transfer to add flexor power and minimize the potential for hallux hammertoe.
- Simple, precise instrumentation minimizes OR time and allows for reproducible results.



INDICATIONS

The K2 Hemi Toe Implant is indicated for use in cases of painful loss of motion due to:

- Osteoarthritis of the first MPJ
- Trauma
- Hallux rigidus/limitus
- Hallux valgus with degenerative joint disease
- Prior surgery (including the replacement of previously failed implants)



CONTRAINDICATIONS

Any condition that would contraindicate the use of a joint replacement in general, including:

- Infection
- Poor bone quality
- Severe tendon, neurological or vascular deficiencies, or any concomitant disease

STEP
1

EXPOSURE

- Make a **4mm curvilinear incision** over the dorsomedial aspect of the first MPJ (**Figure 1**).
- Obtain optimal exposure by completely releasing the capsular structures around the joint (**Figure 2**).

STEP
2

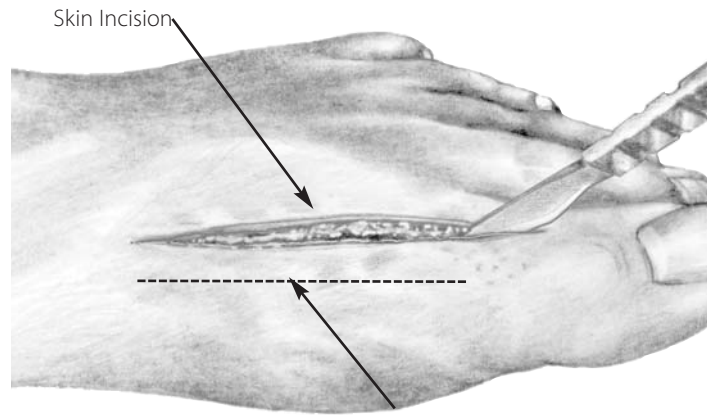
REMODEL METATARSAL HEAD

- Remodel the **Distal Metatarsal Head** by removing the dorsomedial prominence and dorsal exostosis using a power saw, rongeur, burr, or rasp.

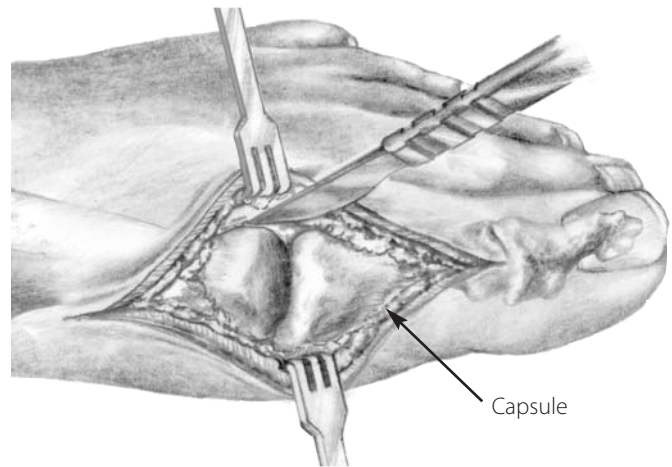
STEP
3

RESECT PROXIMAL PHALANX

- The **Cutting Guide** has two scales marked on it to **facilitate right and left procedures**.
- When the scale on the cutting guide is set to 0 mm, the amount of bone resected is exactly the amount replaced by the K2 Hemi Toe Implant, approximately 2 mm.
- The left scale is distal, labeled “↓L-DORSAL” and reads **upside down** when holding the Cutting Guide correctly.
- The right scale is proximal, labeled “↓R-DORSAL” and will read **right side up** when holding the Cutting Guide correctly.
- **Adjust the Cutting Guide** to the appropriate depth.
- Place the stem of the Cutting Guide between the proximal phalanx and the distal metatarsal, so that the **Guide rests on the dorsal surfaces** of the metatarsal head and the proximal phalanx (**Figure 3**).



(FIG. 1)



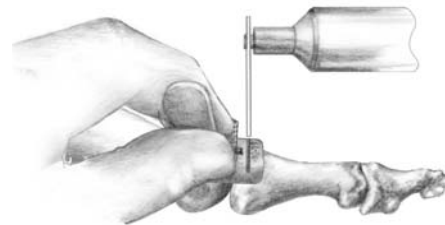
(FIG. 2)



(FIG. 3)

RESECT PROXIMAL PHALANX (CONT.)

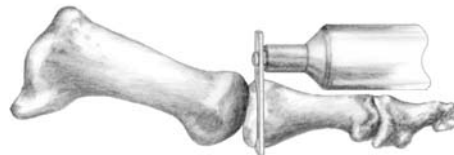
- **Mark** the site of the resection on the dorsal surface of the proximal phalanx (**Figure 4A**).
- **Remove** the Cutting Guide (**Figure 4B**).
- **Complete** the perpendicular resection (**Figure 4C and Figure 4D**).



(FIG. 4A)



(FIG. 4B)



(FIG. 4C)

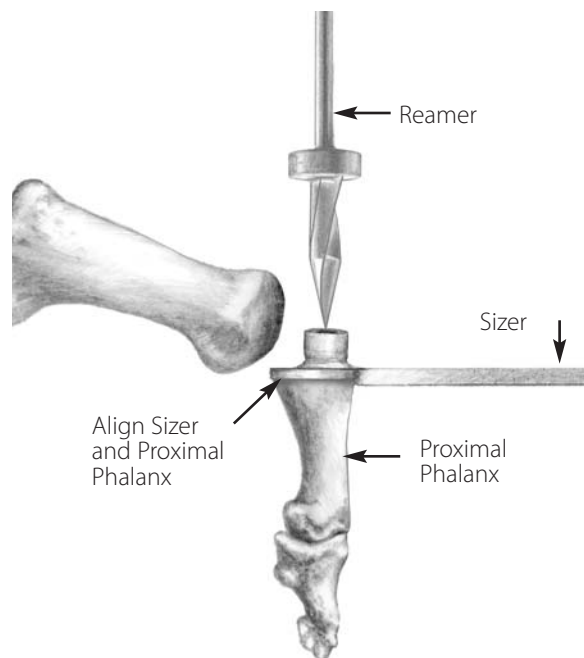


(FIG. 4D)

STEP 4

SIZE AND REAM PROXIMAL PHALANX

- Plantar-flex the proximal phalanx and place the Sizer/Drill Guide over the profile of the proximal phalanx (**Figure 5**).
- Choose the size that is at **least as wide** as the profile of the phalanx or slightly larger.
- Align the plantar surface of the Sizer with the plantar surface of the profile of the proximal phalanx.
- Use the **Reamer** to drill the medullary canal (**Figure 5**).
- The Reamer is **advanced until it abuts** the Sizer/Drill Guide.

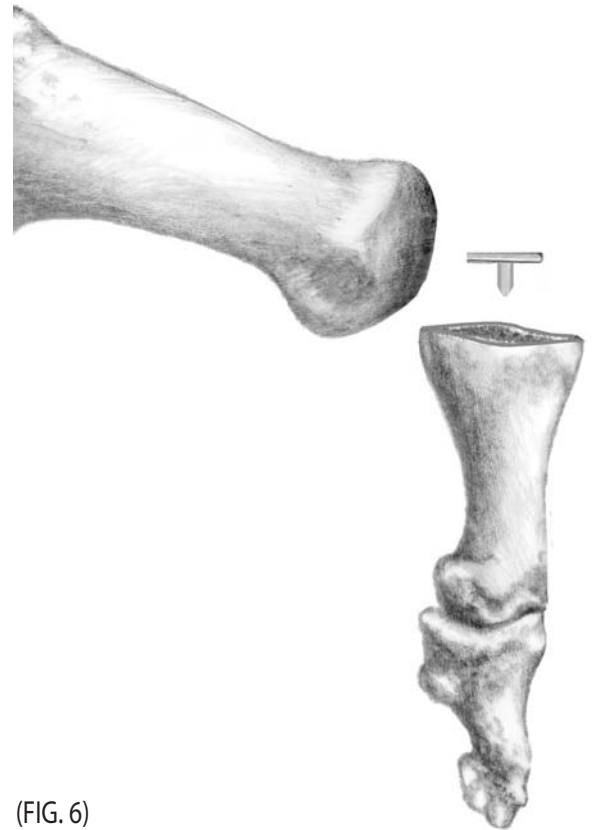


(FIG. 5)

STEP
5

TRIAL IMPLANT INSERTION

- Select the appropriate size Trial Implant and **insert into the reamed hole (Figure 6).**
- Make sure the trial implant **covers the profile** of the proximal phalanx **or is slightly larger.**
- **Reduce** the joint and check for range of motion.
- If the joint is too tight, return to **Step 2** and further decompress the joint.

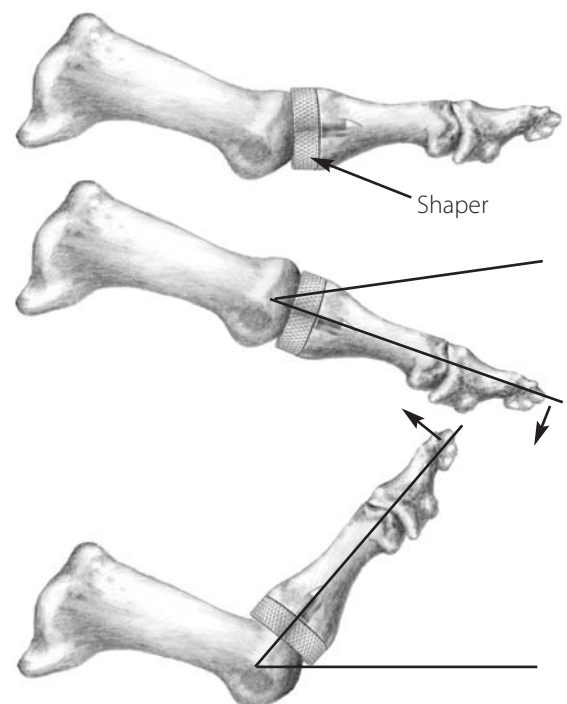


(FIG. 6)

STEP
6

RE-SHAPE METATARSAL HEAD (OPTIONAL)

- Remove the Trial Implant and insert the **corresponding sized Shaper** into the reamed hole of the proximal phalanx.
- Articulate the phalanx through a **full range of motion** to remove loose cartilage and bone (**Figure 7**).
- **Do not apply excessive pressure** to the phalanx. The intention is to remove only the cartilage and bone that would otherwise be worn down by the metal implant post-operatively.

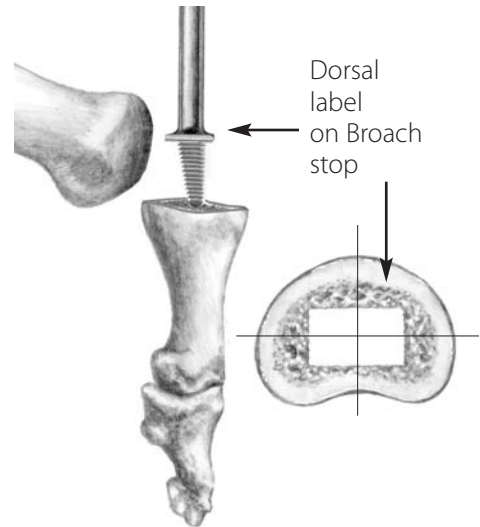


(FIG. 7)

**STEP
7**

BROACH PROXIMAL PHALANX

- Remove the shaper and **align the Broach by utilizing the dorsal label** on the face of the Broach Stop or shaft (**Figure 8**).
- **Broach the stem hole** by manually cycling the Broach in and out of the reamed medullary canal **until the broach stop abuts the base of the proximal phalanx**.
- If the bone stock is soft, create a smaller stem hole by stopping the broach prior to the Broach Stop abutting the base of the proximal phalanx.
- **Do not allow the Broach to rotate** relative to the proximal phalanx.

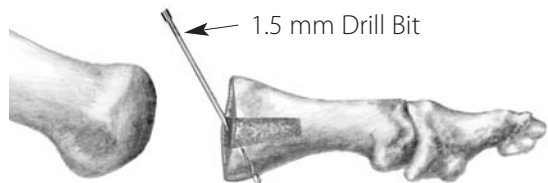


(FIG. 8)

**STEP
8**

DRILL SUTURE HOLE (OPTIONAL)

- Use the **1.5mm Drill Bit** to make a hole going from the plantar most surface of the Broached Stem hole through the plantar surface of the proximal phalanx angled slightly proximal dorsal to distal plantar (**Figure 9**).

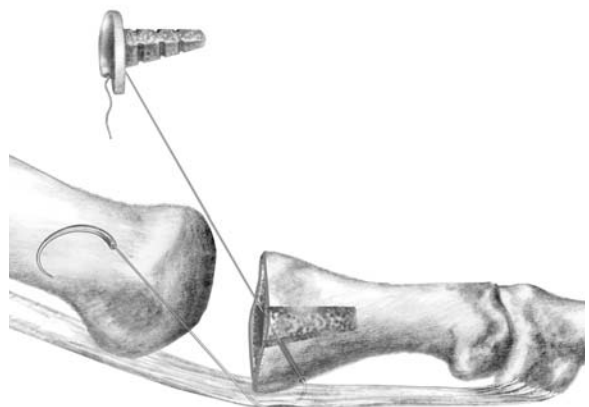


(FIG. 9)

**STEP
9**

PASS SUTURE THROUGH PHALANX AND IMPLANT FOR FHL TRANSFER (OPTIONAL)

- Pass a **2-0 non-absorbable suture on an MO7 needle** through the drilled hole to the plantar lateral aspect of the phalanx and then under the FHL tendon from lateral to medial.
- Open the K2 Hemi Toe Implant that corresponds to the trial implant size that was used in **Step 4**.
- Pass the free end of the suture through the implant from the stem side to the inferior surface of the implant (**Figure 10**).
- Flush the area with copious amounts of irrigating solution and bathe the implant in the irrigating solution.



(FIG. 10)

**STEP
10**

IMPLANT INSERTION

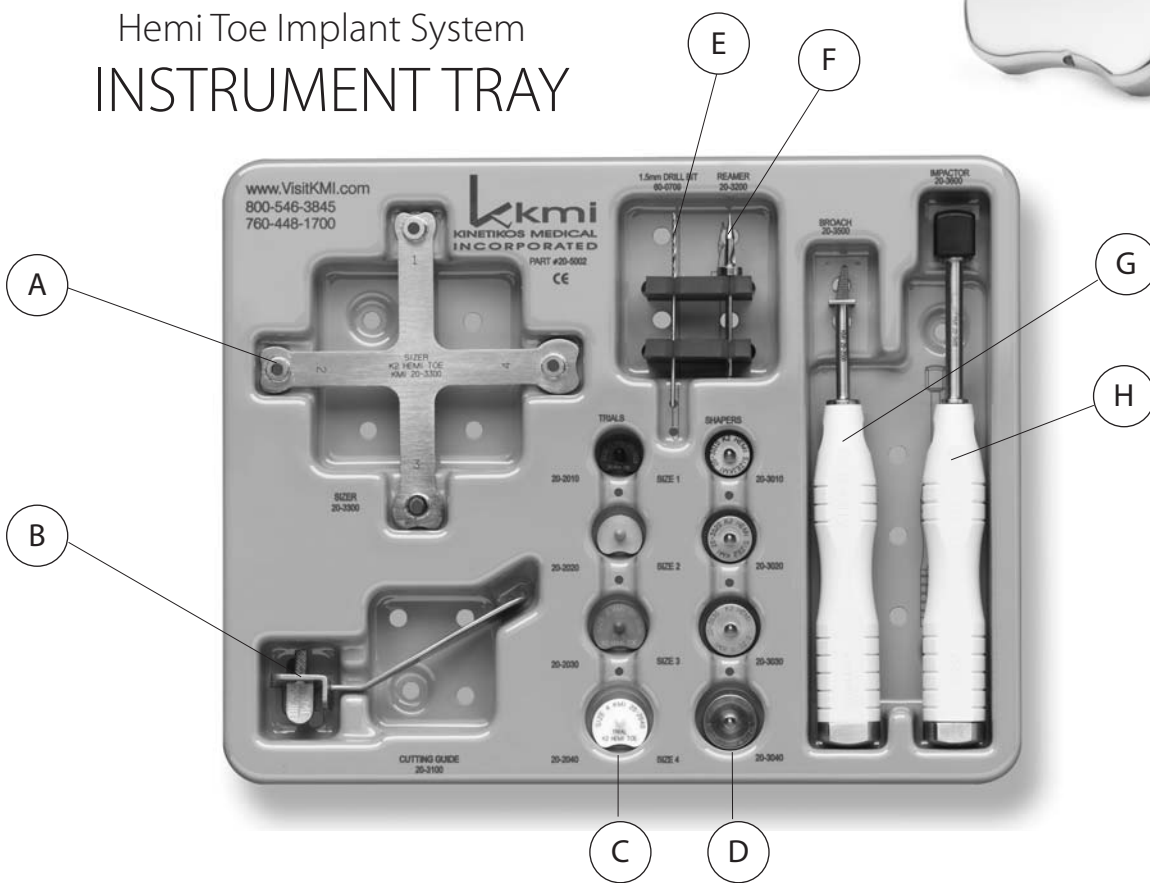
- Slide the Implant down the suture and **place the Stem in the prepared cavity** of the proximal phalanx.
- **Tap the Implant into place** with the impactor.
- Tie off the suture at the inferior aspect of the Implant.
- Close the incision.

POST-OP/FOLLOW-UP

- The foot is kept elevated for 72 hours. Ambulation is in a post-operative shoe and may be increased to tolerance after 72 hours. Passive range of motion begins several days post-op, with active motion on the 1st MPJ beginning in two weeks.



Hemi Toe Implant System INSTRUMENT TRAY



- | | |
|--|--------------------------|
| A Sizer and Drill Guide | E 1.5mm Drill Bit |
| B Cutting Guide | F Reamer |
| C Trial Implants
1, 2, 3, 4 | G Broach |
| D Metatarsal Head Shapers
1, 2, 3, 4 | H Impactor |



Hemi Toe Implant System



FEATURES

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INSTRUMENT SET



PART NO.	DESCRIPTION	SIZE
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Implants

20-1010	K2 Hemi Toe Implant	Size 1
20-1020	K2 Hemi Toe Implant	Size 2
20-1030	K2 Hemi Toe Implant	Size 3
20-1040	K2 Hemi Toe Implant	Size 4

Single Use Instruments

20-3200	Reamer
20-3415	1.5mm Drill Bit

20-6000	Instrument Set
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COMPONENT MATERIALS

- Cobalt Chrome with Titanium Plasma Coated Stem



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