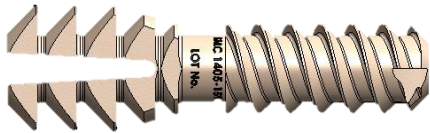


# Treace Medical Concepts Hammertoe Fixation System



## Surgical Technique Intramedullary Hammertoe Fixation

# Intramedullary Hammertoe Fixation

The Treace Medical Concepts (TMC) Hammertoe Fixation System is composed of a variety of hammertoe PEEK implant sizes. The correct hammertoe PEEK implant size selection for the procedure is extremely important, and preoperative consideration of the proper fixation option will increase the potential for surgical success.

## 1. *Surgical Approach*

Make an incision over the dorsal aspect of the proximal interphalangeal (PIP) joint. Prepare the site so that there is direct visualization of the articular surfaces of the middle and proximal phalanges.

## 2. *Joint Preparation*

Resect the subchondral bone and cartilage from the head of the proximal phalanx and base of the middle phalanx. Note the amount of resection to avoid shortening of the digit.

Optional: Plantarflexion can be added by making an angled sagittal cut on the proximal phalanx. Note the angle of the cut relative to the size of the patient anatomy and implant size. This is to ensure the implant remains within the intramedullary canal and can achieve complete apposition. Note: It may not be possible to utilize the guidewire for metatarsophalangeal (MTP) joint stabilization with this option (step 7).

## 3. *Drill the Proximal Phalanx*

Insert the guidewire central to the long axis of the proximal phalanx. If an angled sagittal cut is made, insert the guidewire perpendicular to the cut surface. Slide the cannulated drill over the guidewire and manually drill clockwise until the depth marker line is concealed. Remove the drill and guidewire from the proximal phalanx.

## 4. *Tap the Middle Phalanx*

Insert the guidewire central to the long axis of the middle phalanx. Advance through the distal phalanx until the guidewire exits the toe. Ensure enough guidewire is exposed through the base of the middle phalanx to guide the tap. Slide the cannulated tap over the guidewire and manually advance clockwise until the depth marker line is concealed. Remove the tap by rotating counterclockwise.

## 5. *Implant Insertion into the Middle Phalanx*

Load the threaded portion of the hammertoe PEEK implant onto the guidewire within the middle phalanx. Next, advance the manual driver over the guidewire and onto the barbed segment of the implant until it is fully seated into the driver. Advance the threaded segment of the implant clockwise into the middle phalanx until the distal surface of the driver touches bone and the flats of the driver are facing direct dorsal. Ensure all threads are in bone and the smooth center span of the implant remains exposed. This will confirm the correct orientation of the implant prior to inserting into the proximal phalanx.

Caution: Avoid excessive force when inserting the implant into the intramedullary canal.

## 6. *Implant Insertion into the Proximal Phalanx*

Withdraw the guidewire distally until the proximal tip is completely void from the barbed portion of the hammertoe PEEK implant. Compress the barbed segment of the implant manually or with forceps and insert into the pre-drilled proximal phalanx. Firmly apply axial compression to the joint so that the bone surfaces are fully apposed. Advance the guidewire proximally through the barbed portion of the implant. This will further deploy the barbed segments into the proximal phalanx. Remove the guidewire or continue to step 7.

Caution: If the guidewire does not advance far enough proximally to deploy the barbed segments of the hammertoe PEEK implant, distraction of the joint may occur.

Caution: Avoid excessive force when inserting the implant into the intramedullary canal.

7. *(Optional) MTP Joint Stabilization*

This step is optional and at the surgeon's discretion. If MTP joint stabilization is desired, continue to drive the guidewire across the MTP joint and into the metatarsal to the desired depth. The guidewire may be left implanted for the initial recovery period. Cut and cap the end of the K-wire external to the toe.

*Removal Instructions*

Should removal of the implant(s) be required, expose the arthrodesis site for access with general instrumentation. Remove the optional implantable guidewire, where present, with general instrumentation. For the hammertoe PEEK implant, distract the joint space until the barbed end of the implant becomes exposed. Using surgical forceps, grasp the proximal side of the implant, compress the barbs, and remove it from the proximal phalanx. Then, back the implant out of the middle phalanx by turning counterclockwise. If tissue or bone growth prevents access or removal of the hammertoe PEEK implant, a powered saw may be used to cut through the PEEK implant only. The implant can then be removed by generally available surgical instrumentation.

