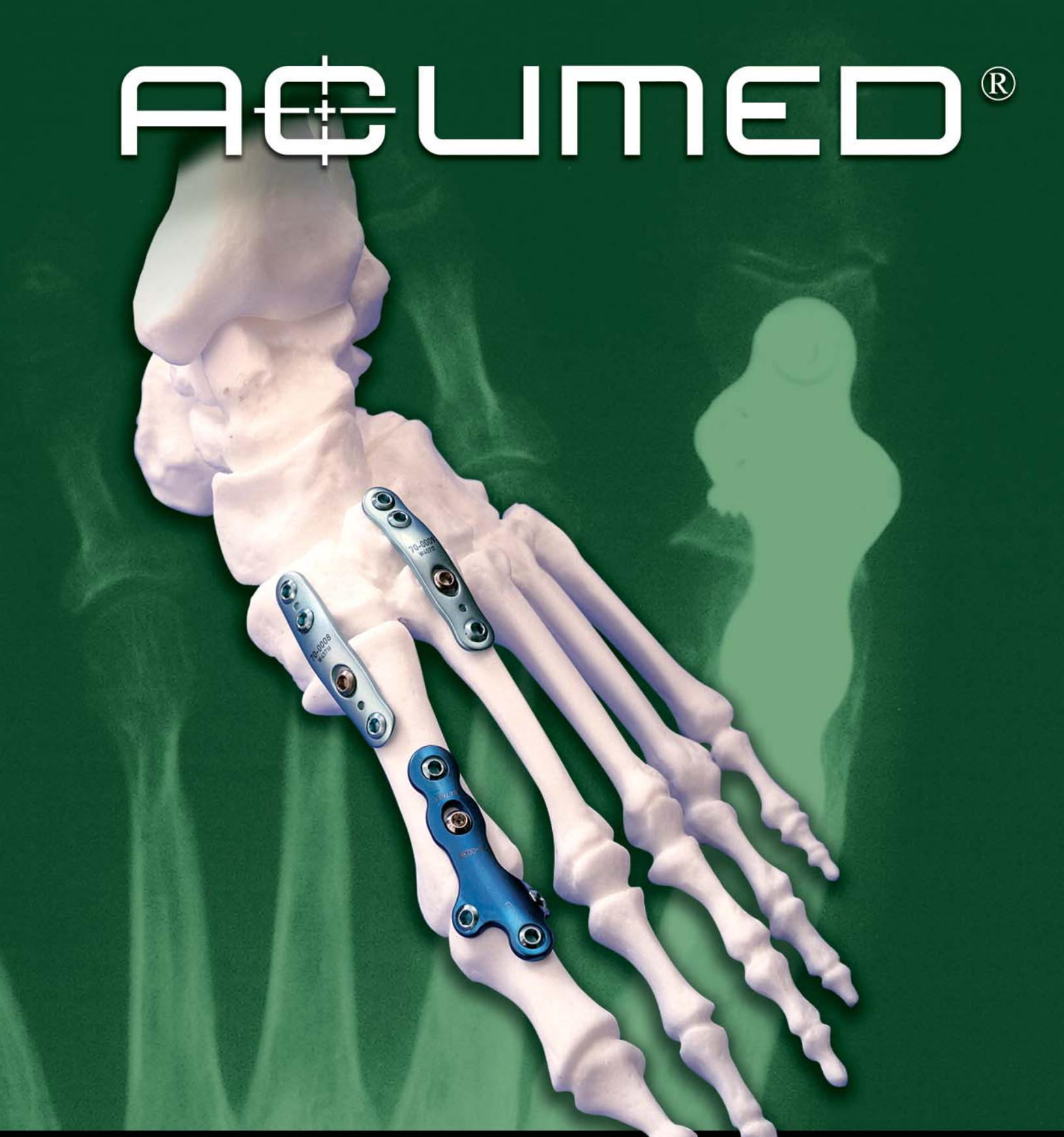
ACUMED®



LOCKING FOREFOOT/ MIDFOOT PLATES

LOCKING FOREFOOT / MIDFOOT PLATES

Since 1988 Acumed has been designing solutions to the demanding situations facing orthopedic surgeons, hospitals and their patients. Our strategy has been to know the indication, design a solution to fit and deliver quality products and instruments.

Acumed's Locking Forefoot/ Midfoot Plating System is the first step in the upgrade of our Lower Extremity Congruent Plating System. Designed to address both reconstruction and acute fractures (trauma) of the foot and ankle, our systems offer indication-specific plates that restore the anatomic geometry of the forefoot, midfoot, hindfoot and ankle enabling an early return to normal activities for the patient.

Acumed Lower Extremity

We are a dedicated team, focused on delivering solutions for lower extremity indications. Please let us know how we can work with you to help improve your patients' outcomes.

www.acumed.net • (888) 627.9957

Stepping forward with locking technology

Acumed has taken locking technology one step further with the forefoot and midfoot plating system. Engineered with a new counterbore design, the locking screws "disappear" down into the plate. By adding this technology to the anatomically contoured, low profile plates, we've provided yet another innovative solution that truly steps ahead of the rest.

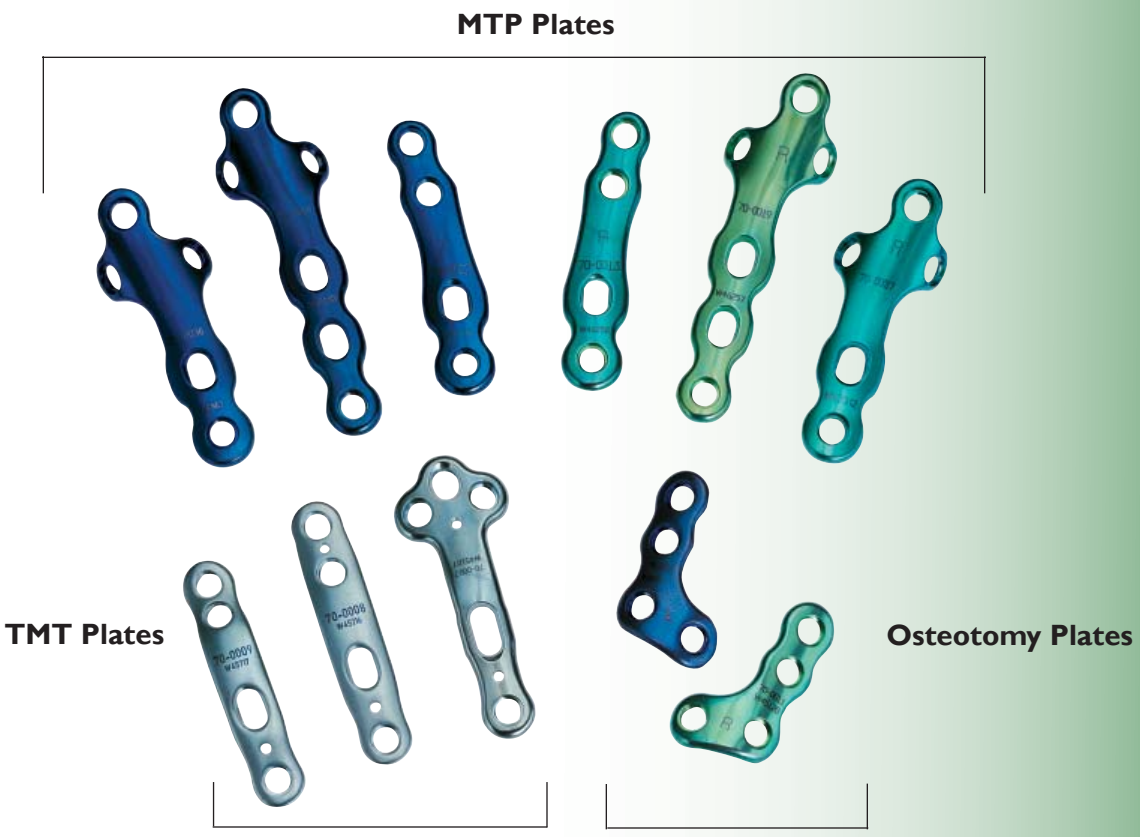
Surgeons will now have the choice of placing 2.7 and 3.5mm locking and non-locking cortical screws or 4.0mm cancellous screws, based on the patient's bone quality. Each plate has locking capabilities both distally and proximally.

Our indication-specific plates allow surgeons to choose various constructs based on their patients' needs. With the new locking technology, we are introducing our new Primary MTP Plate as well as our new 2nd/3rd Ray TMT Plate. Acumed will continue to offer and expand our indication solutions by responding to continuous surgeon feedback.

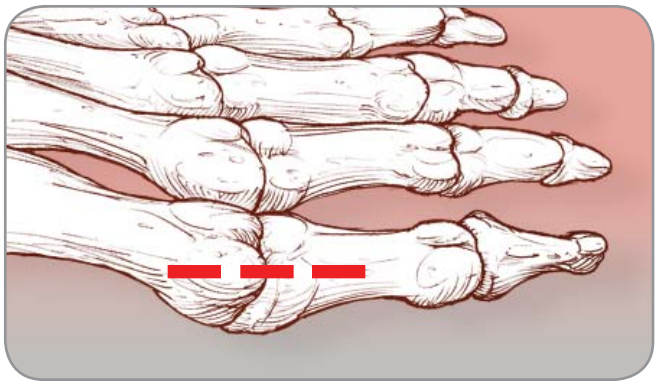
Pre-contoured Plates eliminate the need for the surgeon to bend the plates to match the anatomy of the patient. Based on multiple cadaveric and clinical trials, the MTP plates are pre-contoured with 9° of dorsiflexion and 11° of lateral rotation to help restore the functional angle of the metatarsalphalangeal joint after fusion.

Indication-specific Plates allow the surgeon to choose the construct based on patient needs. With an expanding line of MTP (primary, revision, dorsal only), 1st Metatarsal Osteotomy, and TMT plates (2nd/3rd Ray, Medial, Dorsal medial), OR time can be effectively minimized.

Acumed's Locking Technology incorporates a new counterbore design, which allows the locking screws to "disappear" down into the plate. With an innovative blend of anatomic construct, strength and an overall lower profile, Acumed will continuously deliver these solutions for challenging indications.

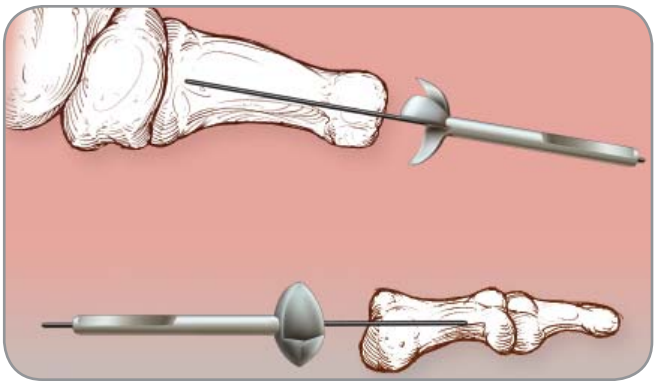


This section offers Acumed's suggested method for implanting the MTP Plate. For specific questions not addressed here, please contact your local Acumed representative or Acumed by phone at (888) 627.9957 or on the web at www.acumed.net.



Step 1: Bone Preparation
Prepare bone surfaces for optimal fusion position. Mark both sides of the joint to establish rotational alignment and flatten the dorsal surface of both the metatarsal and proximal phalanx.

Note: The MTP plates are pre-contoured with 9° of dorsiflexion and 11° of lateral rotation.



Step 2: Metatarsal and Phlangeal Preparation
Use Acumed's cannulated Small Joint Reamer System (concave/convex reamers), to denude the cartilage down to bleeding subchondral bone. Alternately, a burr or rongeur can be used. The goal is to maximize the surface contact between the metatarsal head and the proximal phalanx.

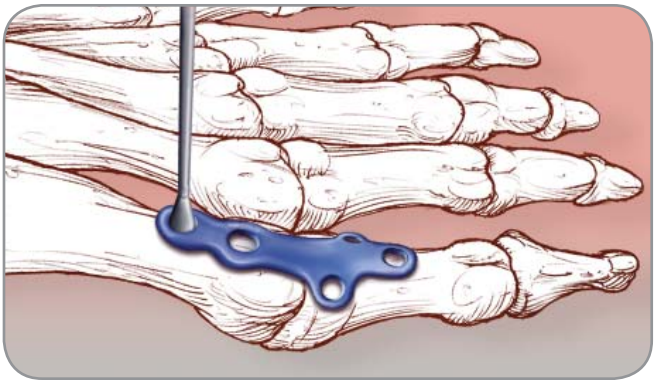
Note: See inset for additional details regarding our reamer system.

Small Joint Reamer System

The goal is to produce joint surfaces that are congruent to promote a strong union.

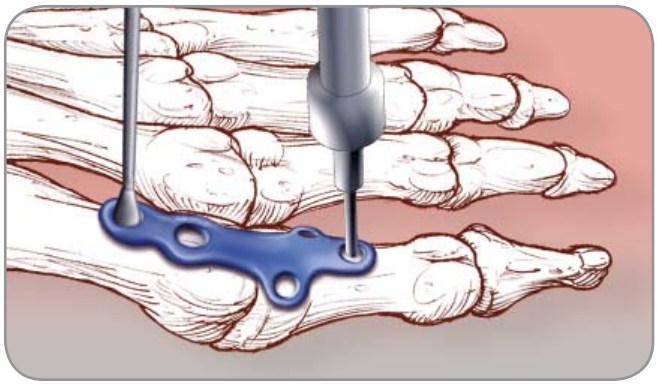
The keys are to properly locate the .059" guide wires (WS-1505ST) and properly size the reamers (16mm & 20mm pairs included, other sizes are available in the full reamer system). Insert guide wire antegrade down the central axis of the phalanx. After placing the appropriate convex reamer over the guide wire, use power to ream the distal fragment until the proximal end is denuded of cartilage.

Insert second guide wire retrograde into the metatarsal head. Begin at the central axis and travel volarly at the desired angle of flexion. After placing the appropriate concave reamer over the guide wire, use power to ream the metatarsal head until it is denuded of cartilage.



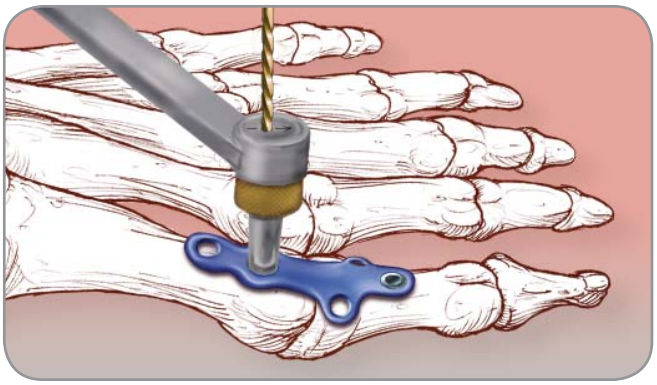
Step 3: Plate Placement and Positioning
Select the appropriate plate for either the left or right foot and for the type of procedure (primary, revision, or dorsal plate with interfragmentary screw). Secure the plate to the metatarsal with a plate tack (PL-PTACK) driven through the most proximal hole.

Note: The MTP plates are pre-contoured to match the anatomy. If bending is required to match specific patient anatomy or other factors, use the plate benders provided (PL-2040 & PL-2045) and bend in one direction only. DO NOT BEND IN BOTH DIRECTIONS. If the locking holes are bent the locking screws may not lock into the plate.



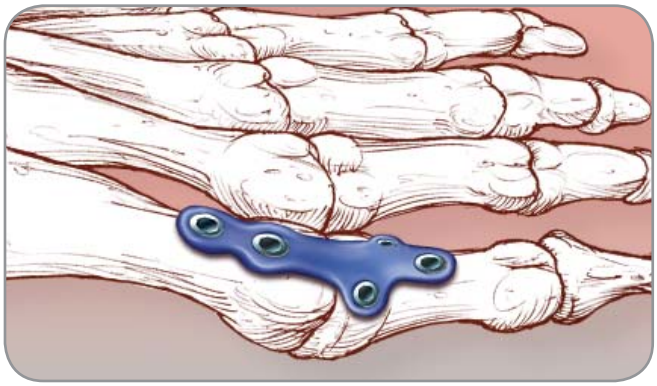
Step 4: Initial Screw Placement
Place selected locking drill guide (MS-LDG27 or MS-LDG35) into the distal hole of the plate and drill through both cortices. Use the depth gauge (MS-9022) to determine the screw length. Choose the appropriate size screw and insert into the bone. A non-locking cortical screw can be used initially to pull the plate to the bone.

Note: Select the screw diameter based upon the patient's bone quality. The 2.0mm drill (MS-DC5020) is used for the 2.7mm screws, and the 2.8mm drill (MS-DC28) is provided for the 3.5mm and the 4.0mm screws.



Step 5: Compression of Fusion Site
Place the gold end of the offset drill guide (PL-2095) into the plate's compression slot with the arrow on the guide pointing toward the fusion site. Drill and measure for screw length. Insert the appropriate size non-locking screw to apply 1mm of compression to the fusion site.

Note: For hard bone, 2.7mm and 3.5mm bone taps (MS-LTT27 & MS-LTT35) are recommended.

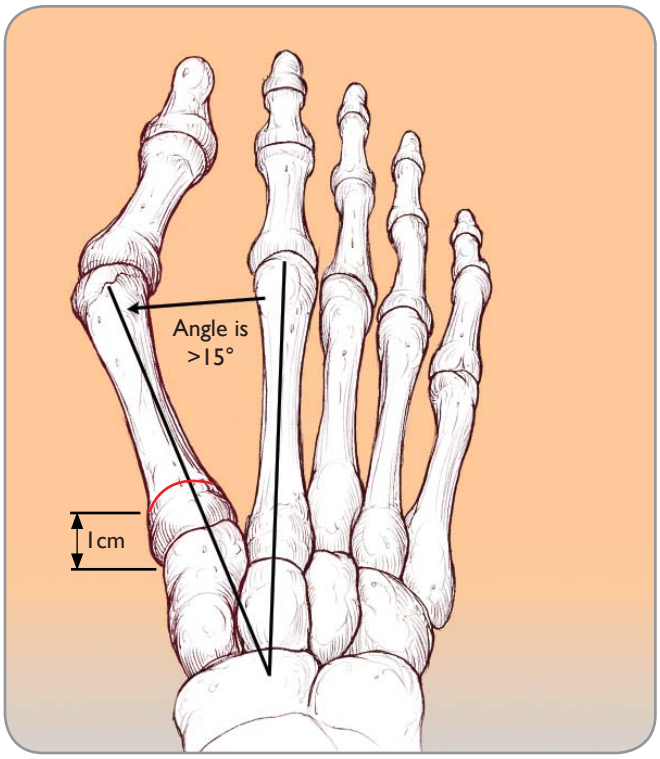


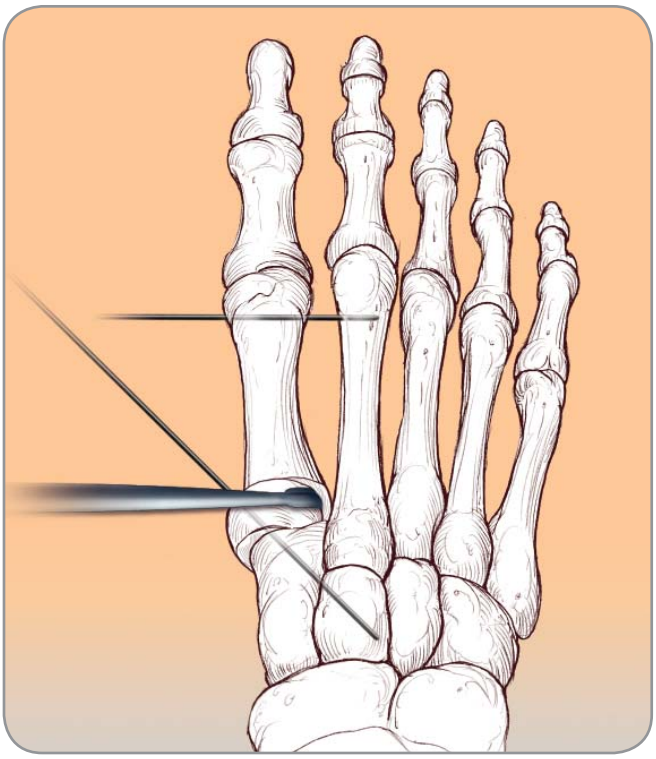
Step 6: Insertion of Remaining Screws
Place selected locking drill guide into the distal medial and lateral holes and drill. Measure and insert locking cortical screws. Remove plate tack from the most proximal hole and use the same screw insertion process. The non-locking cortical screw in the distal hole may be replaced with a locking cortical screw at the surgeon's discretion.

Note: An optional lag screw may be inserted across the joint for additional fixation.

Postoperative Protocol:
The foot is protected with a post-op shoe and dressing. The patient is allowed to proceed with weightbearing activities as tolerated. Usually at six to eight weeks, the fusion site is healed and conventional shoes can be worn as normal.

This section offers Acumed's suggested method for implanting the Osteotomy Plate. For specific questions not addressed here, please contact your local Acumed representative or Acumed by phone at (888) 627.9957 or on the web at www.acumed.net.





Hallux Valgus Correction

The proximal osteotomy of the first metatarsal is used in conjunction with a distal soft tissue correction of the hallux valgus deformity. It is usually indicated when the first metatarsal and second metatarsal angle is greater than 15°.

1st Metatarsal Osteotomy Exposure

The osteotomy site is exposed through a dorsal incision 1.5" to 2" in length over the dorsum of the base of the first metatarsal. Care is taken to preserve the extensor tendons and small cutaneous nerves and vessels in this area. The periosteum over the base of the first metatarsal is opened and elevated, and the first metatarsal joint is identified.

Osteotomy Procedure

The osteotomy is positioned approximately 1cm distal to the first tarsal-metatarsal (TMT) joint, and is made slightly oblique from perpendicular, to allow more room for the placement of the proximal screws. A crescentric oscillating saw is used. The concavity of the osteotomy is positioned facing towards the first TMT joint.

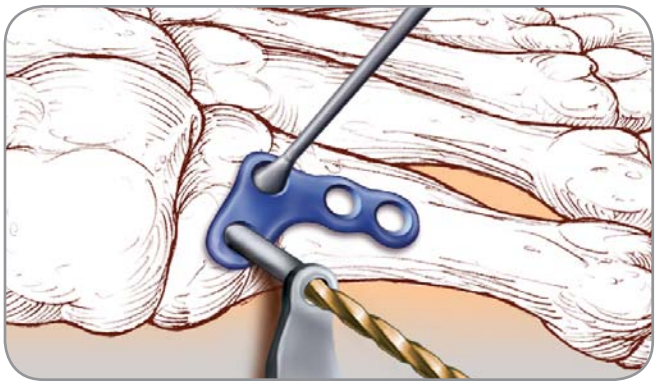
Angle Correction

The angle between the first and second metatarsal is decreased with the aid of Ragnell retractor. The retractor is placed laterally over the proximal fragment pulling the distal end of the proximal fragment into a more medial position while lateral compression is placed across the distal fragment of the first metatarsal. The corrected position of the first metatarsal is then maintained with K-wire fixation as described by James A. Amis, M.D. (Foot and Ankle Int'l, Vol. 20, #11, p.752). A .059" (WS-1505ST). K-wire is placed across the proximal fragment into the medial and middle cuneiform. A second K-wire is placed from the head of the first metatarsal into the second metatarsal. The K-wire fixation allows tentative fixation of this osteotomy so the plate and screws can be attached without having to re-manipulate the osteotomy.

Plate Placement and Positioning

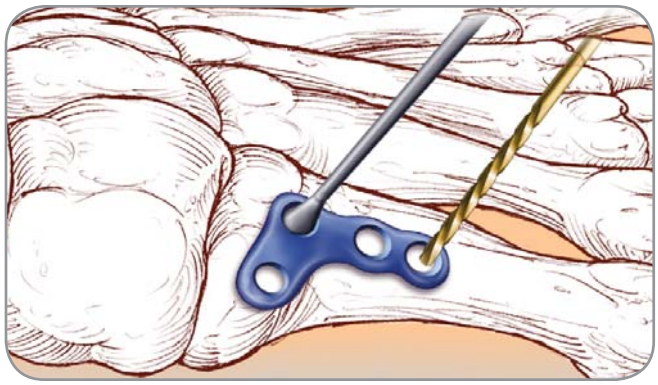
Place the plate, either left or right, over the osteotomy site and secure with a plate tack (PL-PTACK) or .045" guide wire (WS-1106ST) through the proximal lateral hole.

Note: The 1st Metatarsal Osteotomy plates are pre-contoured to match the anatomy. If bending is required to match specific patient anatomy or other factors, use the plate benders provided (PL-2040 & PL-2045) and bend in one direction only. DO NOT BEND IN BOTH DIRECTIONS. If the holes are bent, locking screws may not lock into the plate.



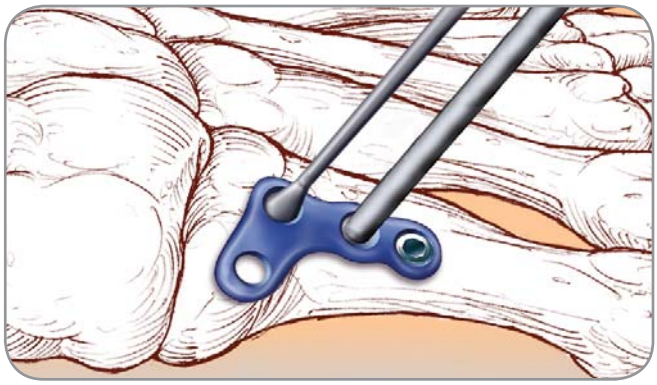
Step 1: Initial Screw Placement
Place selected locking drill guide (MS-LDG27 or MS-LDG35) into the proximal medial hole and drill through both cortices. If screw angulation is desired, a standard drill guide (PL-2118 or PL-2196) can be used to tilt the drill up to 10°. Note that locking cortical screws cannot be used if this procedure is followed. Use the depth gauge (MS-9022) to determine screw length and insert screw.

Note: Select the screw diameter based upon the patient's bone quality. The 2.0mm drill (MS-DC5020) is used for the 2.7mm screws, and the 2.8mm drill (MS-DC28) is provided for the 3.5mm and 4.0mm screws.



Step 2: Optional Compression of Osteotomy Site
Without using the drill guide, place the drill at the distal end of the most distal screw hole. As the non-locking screw head makes contact with the plate, the distal fragment will be drawn towards the proximal fragment causing minor interfragmental compression. Otherwise, place selected locking drill guide into the most distal screw hole and use the same screw insertion process.

Note: For hard bone, 2.7mm and 3.5mm bone taps (MS-LTT27 & MS-LTT35) are recomended.

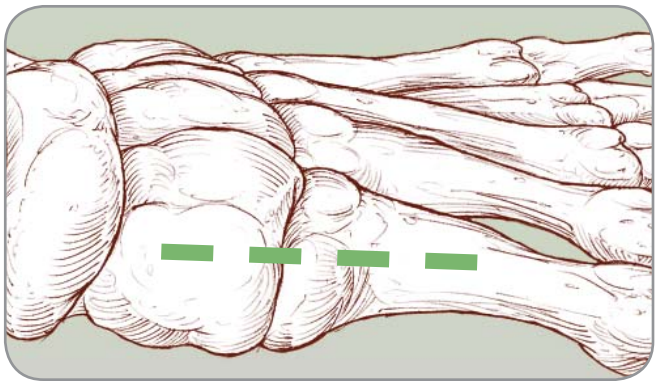


Step 3: Insert Remaining Plate Screws
Place selected locking drill guide into the second most distal hole and drill. Measure and insert locking cortical screws. Remove plate tack from the proximal lateral hole and use the same screw insertion process. Finally, the non-locking cortical screw in the proximal medial hole may be replaced with a locking cortical screw at the surgeon's discretion.

Step 4: Optional Bone Graft for Osteotomy Site
The wound is irrigated. Bone graft material can be used for the distal soft tissue procedure from the excised medial extosis. This is usually placed at the lateral aspect of the osteotomy. The wound is then closed with appropriate closure.

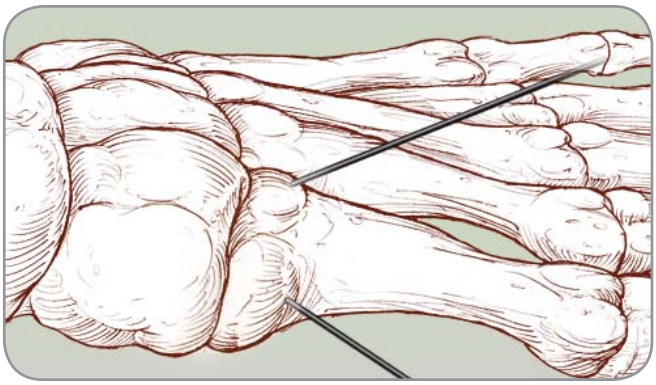
Postoperative Protocol:
The foot is protected with a post-op shoe and dressing. The patient is allowed to proceed with weightbearing activities as tolerated. Usually at six to eight weeks the osteotomy is healed and conventional shoes can be resumed.

This section offers Acumed's suggested method for implanting the Locking TMT Plate for both reconstruction and trauma. For specific questions not addressed here, please contact your local Acumed representative or Acumed at (888) 627.9957.



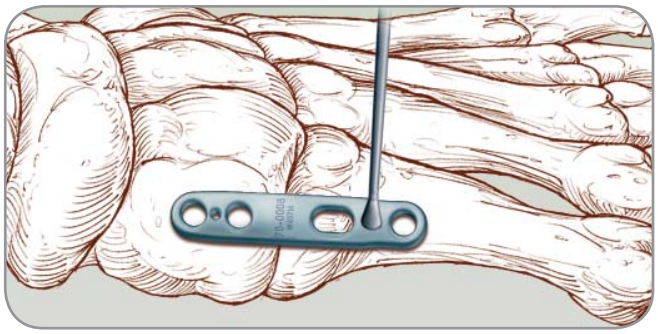
Step 1: Exposure
The first TMT joint is exposed through a medial incision. Carry dissection down to expose the anterior tibilalis tendon, which is protected. A portion of the tendon may need to be elevated from the medial cuneiform and metatarsal; however, this should be minimized. The joint is exposed medially then dorsally and plantarly, carefully avoiding the extensor hallux longus tendon at the dorsal aspect of the joint.

Note: Image intensification is recommended during this procedure to confirm reduction and placement of hardware.



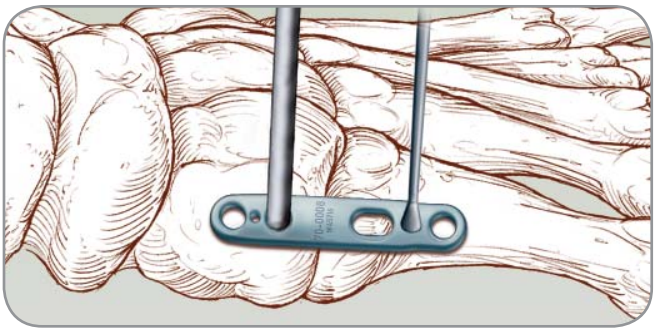
Step 2: TMT Joint Preparation
Gain access to the first TMT joint and perform joint preparation in the standard fashion with thorough removal of all articular cartilage and preparation of subchondral bone. Confirm the correct positioning of the metatarsal and cuneiform, and provisionally fix the joints involved with K-wires placed superiorly and inferiorly to allow for the plate.

Note: If interfragmentary lag screw fixation is desired to supplement the plate, it should be placed first, and typically oriented from the plantar aspect of the metatarsal base proximally into the medial cuneiform, as the plate sits dorso-medially. Lag screw fixation may also occur through the plate's slot.



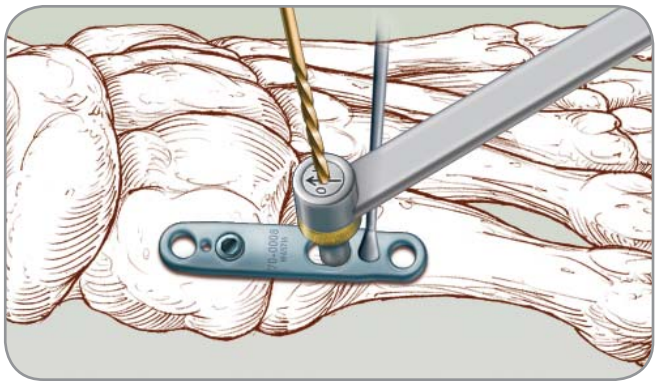
Step 3: Plate Placement and Positioning
Apply the plate to the dorsal medial aspect of the TMT joint, and secure with a plate tack (PL-PTACK) or .045" K-wire (WS-1106ST) through the distal K-wire hole.

Note: The TMT plates are pre-contoured to match the anatomy. If bending is required to match specific patient anatomy or other factors, use the plate benders provided (PL-2040 & PL-2045) and bend in one direction only. DO NOT BEND IN BOTH DIRECTIONS.



Step 4: Initial Screw Placement
Place selected locking drill guide (MS-LDG27 or MS-LDG35) into the distal medial cuneiform hole and drill if locking screw is desired. According to the surgeon's preference, the screw can be placed across one, two or all three cuneiforms for stability. Use the depth gauge (MS-9022) to determine screw length. Choose the appropriate size screw and insert into the bone.

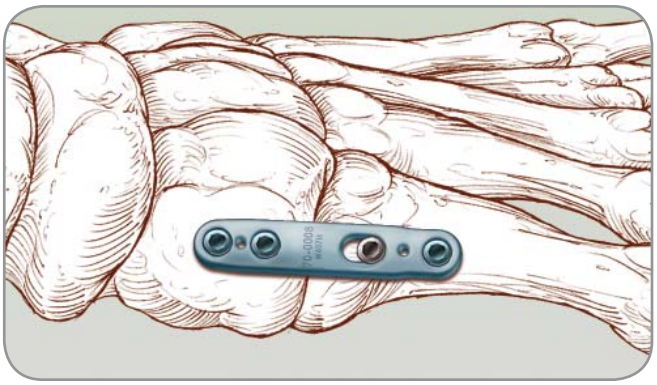
Note: Select the screw diameter based upon the patient's bone quality. The 2.0mm drill (MS-DC5020) is used for the 2.7mm screws, and the 2.8mm drill (MS-DC28) is provided for the 3.5mm and 4.0mm screws.



Step 5: Compress Fusion Site

Place the gold end of the offset drill guide (PL-2095) into the plate's compression slot with the arrow on the guide pointing toward the fusion site. Drill and measure for screw length. Insert appropriate size non-locking screw to apply 1mm of compression to the fusion site.

Note: If using the plate's slot for a trans-articular lag screw, the lag screw should be placed first from the first metatarsal to the medial cuneiform.



Step 6: Insert Remaining Screws

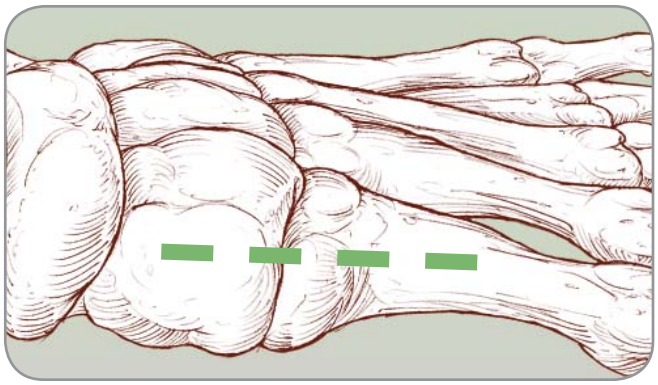
Remove the plate tack from the distal K-wire hole. Place selected locking drill guide into the distal metatarsal hole and drill if locking screw is desired. Measure and insert locking cortical screws. Follow the same process for the proximal cuneiform hole. Following irrigation, close the wound with interrupted 4-0 nylon or praline suture.

Note: For additional fixation, a longer cortical screw may be used to cross into the other cuneiforms. This may also stabilize any intercuneiform disruptions.

Postoperative Protocol:

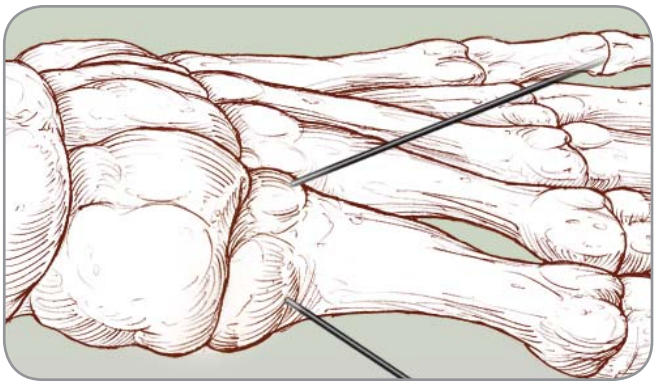
The foot is placed in a neutral plantigrade position with a well-padded dressing incorporating below-knee plaster splints. This is typically changed at 7-14 days, with sutures removed after 10-14 days or once wound healing is complete. For reconstructive purposes, a short leg, non-weightbearing cast is then applied for an additional four weeks for a total non-weightbearing period of six weeks. If there is evidence of union based on plain readiographs, weightbearing is initiated at this time in a short-leg walking cast.

This section offers Acumed's suggested method for implanting the Locking TMT Plate for both reconstruction and trauma. For specific questions not addressed here, please contact your local Acumed representative or Acumed at (888) 627.9957.



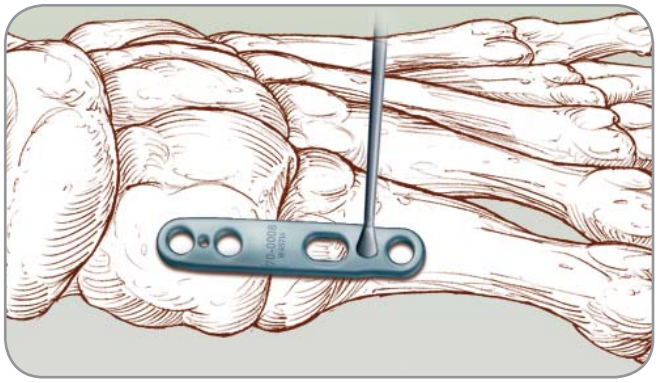
Step 1: Exposure
The first TMT joint is exposed through a medial incision. Carry dissection down to expose the anterior tibilalis tendon, which is protected. A portion of the tendon may need to be elevated from the medial cuneiform and metatarsal; however, this should be minimized. The joint is exposed medially then dorsally and plantarly, carefully avoiding the extensor hallux longus tendon at the dorsal aspect of the joint.

Note: Image intensification is recommended during this procedure to confirm reduction and placement of hardware.



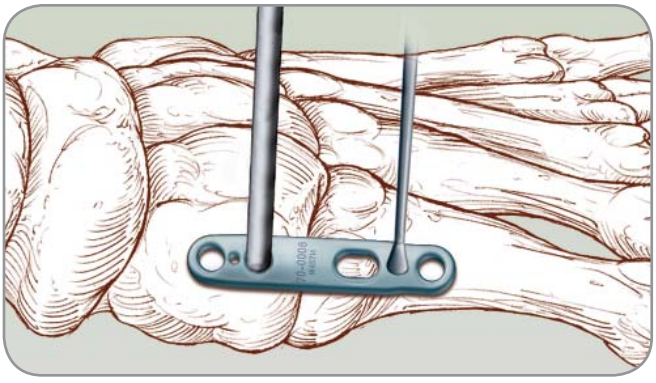
Step 2: TMT Joint Preparation
Reduce joint by aligning anatomic landmarks and fix provisionally with .045" K-wires (WS-1106ST) placed superiorly and inferiorly across the joint to allow room for the plate.

Note: Definitive fracture stabilization of intra-articular fragments can be performed with intrafragmentary screw fixation.



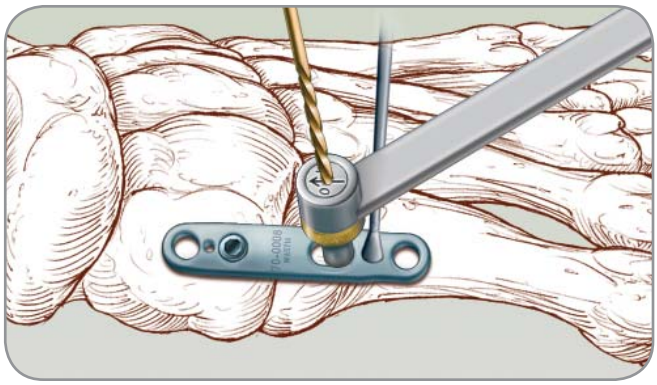
Step 3: Plate Placement and Positioning
Apply the plate to the dorsal medial aspect of the TMT joint, and secure with a plate tack (PL-PTACK) or .045" guide wire through the distal K-wire hole.

Note: The TMT plates are pre-contoured to match the anatomy. If bending is required to match specific patient anatomy or other factors, use the plate benders provided (PL-2040 & PL-2045) and bend in one direction only. DO NOT BEND IN BOTH DIRECTIONS.

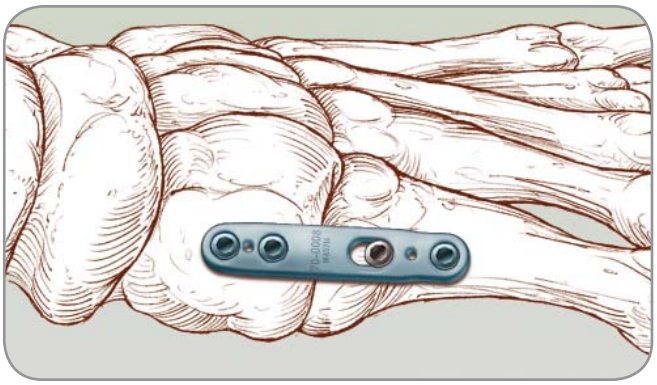


Step 4: Initial Screw Placement
Place selected screw-in locking drill guide (MS-LDG27 or MS-LDG35) into the distal medial cuneiform hole and drill to engage the second metatarsal bone if locking screw is desired. This may be placed in a lag fashion. Use the depth gauge (MS-9022) to determine screw length. Choose the appropriate screw and insert into the bone.

Note: Select the screw diameter based upon the patient's bone quality. The 2.0mm drill (MS-DC5020) is used for the 2.7mm screws, and the 2.8mm drill (MS-DC28) is provided for the 3.5mm and the 4.0mm screws.



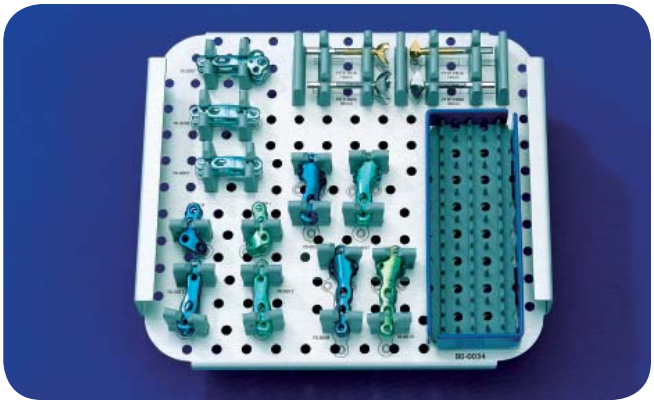
Step 5: Trauma Stabilization
Place the green end of the offset drill guide (PL-2095) into the compression slot of the plate to drill the hole neutral. The second metatarsal bone can be engaged if necessary for additional stabilization. Use the depth gauge and insert the appropriate size screw.

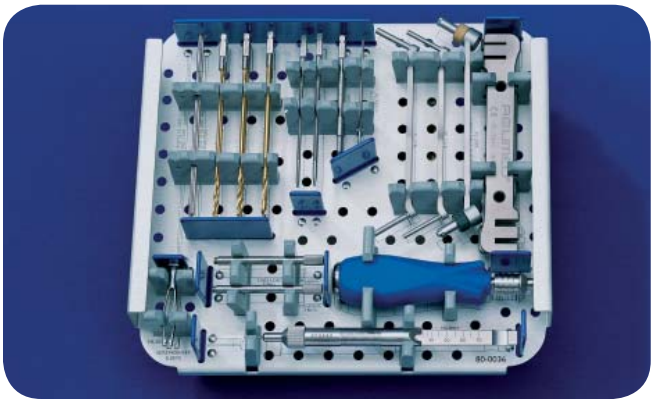


Step 6: Insert Remaining Screws
Remove the plate tack from the distal K-wire hole. Place selected locking drill guide into the distal metatarsal hole and drill if a locking screw is desired. Measure and insert locking cortical screws. Follow the same process for the proximal cuneiform hole. Following irrigation, close the wound with interrupted 4-0 nylon or praline suture.

Note: For additional fixation, a longer cortical screw may be used to cross into the other cuneiforms. This may also stabilize any intercuneiform disruptions.

Postoperative Protocol:
The foot is placed in a neutral plantigrade position with a well-padded dressing incorporating below-knee plaster splints. This is typically changed at 7-14 days, with sutures removed after 10-14 days or once wound healing is complete. For trauma applications, the patient is advanced to a removable boot at approximately two weeks postop to allow ankle and hindfoot motion. Weightbearing is protected for 8-12 weeks in trauma applications depending upon particular injury pattern.





Introducing our Modular Tray

In an effort to improve efficiency and ease-of-use on the OR back table, Acumed has taken the first steps to introduce a modular tray system.

At the top level, the screw caddy's lid can be easily removed while still in the tray, thus saving valuable space. Two pairs of Acumed's most popular small joint reamers have been added to the Locking Forefoot/Midfoot Plate insert for easier access and usage. At the middle level, the streamlined instruments, clear labeling, and additional spots for commonly used components are all incorporated. A bonus area at the bottom level will be able to accommodate Acumed's other plates, screws and instrument caddies.

Acumed will continue to introduce additional plate systems for the lower extremity as we stride forward to meet surgeon needs.

Forefoot/Midfoot Plates	
5-Hole TMT Plate	70-0007
4-Hole TMT Plate	70-0008
4-Hole 2nd/3rd Ray TMT Plate	70-0009
1st Metatarsal Osteotomy Plate, Left	70-0010
1st Metatarsal Osteotomy Plate, Right	70-0011
4-Hole Dorsal MTP Plate, Left	70-0012
4-Hole Dorsal MTP Plate, Right	70-0013
6-Hole Revision MTP Plate, Left	70-0018
6-Hole Revision MTP Plate, Right	70-0019
5-Hole Primary MTP Plate, Left	70-0036
5-Hole Primary MTP Plate, Right	70-0037

Locking Screws	
Locking Cortical Screw, 2.7x8mm to 30mm	COL-2080 to 2300
Locking Cortical Screw, 2.7x34mm	COL-2340
Locking Cortical Screw, 2.7x40mm	COL-2400
Locking Cortical Screw, 3.5x8mm to 30mm	COL-3080 to 3300
Locking Cortical Screw, 3.5x34mm	COL-3340
Locking Cortical Screw, 3.5x40mm	COL-3400

Non-Locking Screws	
Cortical Screw, 2.7x8mm to 30mm	CO-2708 to 2730
Cortical Screw, 2.7x34mm	CO-2734
Cortical Screw, 2.7x40mm	CO-2740
Cortical Screw, 3.5x8mm to 30mm	CO-3080 to 3300
Cortical Screw, 3.5x34mm	CO-3340
Cortical Screw, 3.5x40mm	CO-3400
Cortical Screw, 4.0x12mm to 30mm	CA-4120 to 4300
Cortical Screw, 4.0x34mm	CA-4340
Cortical Screw, 4.0x40mm	CA-4400

Bonus	
Locking Foot Plate System Screw Blanks	80-0013

Kit Includes	
Instrumentation Kit	80-0043
Locking Forefoot/Midfoot X-Ray Template	90-0001
Locking Foot Plate System Tray Assy.	80-0033
.059" SS Guide Wire, 6"	WS-1505ST
.045" SS Guide Wire, 6"	WS-1106ST
2.0mm Quick Release Drill	MS-DC5020
2.8mm Quick Release Drill	MS-DC28
3.5mm Quick Release Drill	MS-DC35
2.7mm Long Tap Tip	MS-LTT27
3.5mm Long Tap Tp	MS-LTT35
2.5mm Quick Release Driver Tip	HPC-0025
Plate Tack	PL-PTACK
2.0/2.8mm Narrow Drill Guide	PL-2118
2.8/3.5mm Narrow Drill Guide	PL-2196
2.8mm Offset Drill Guide	PL-2095
Plate Bender	PL-2040
Plate Bender, Large	PL-2045
Screw Sleeve	MS-SS35
2.7mm Locking Drill Guide	MS-LDG27
3.5mm Locking Drill Guide	MS-LDG35
Quick Release Driver Handle	MS-3200
6-70mm Depth Gauge, 2mm increments	MS-9022
16mm Concave Joint Reamer	MTP-F016
20mm Concave Joint Reamer	MTP-F020
16mm Convex Joint Reamer	MTP-M016
20mm Convex Joint Reamer	MTP-M020

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