OMNI[™] Mini Plating System



Omni Mini Surgical Technique Guide Featuring SlotLock[®]



OmniTM Mini Plating System

Implant Overview

Plate Styles



Straight SlotLock Plate



T-shaped SlotLock Plate

Dogbone SlotLock Plate



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L-shaped SlotLock Plate



X-shaped Plate



Plate Thickness:

1.2mm



Navicular Post SlotLock Plate



Navicular Grid Plate



5th Metatarsal Hook SlotLock Plate



Customer Service: 973.588.8980 www.extremitymedical.com

Slot Lock[®]

A novel **locking compression slot** that provides sustained and greater peak compression

*Compatible with locking and nonlocking screws







Post Technology

The PlantarFiX Post Technology allows the surgeon to place a compression screw through the post using a Targeting Guide for precise placement.

*This feature is applicable to the Navicular Post Plate only.



Indication Specific Solutions

Navicular Post Plate

Anatomically contoured

Post compatible

Compression across stress fractures

SlotLock

5th Metatarsal Hook Plate

Anatomically contoured

Reproducible guide system

Z-shaped for optimal lag screw placement

SlotLock

Navicular Grid Plate

Anatomically contoured

Various screw placement locations

3

Instrument Overview



Reusable Instruments



Indications for use:

The Omni Foot and Ankle Plating System is intended for use in internal fixation of arthrodeses, osteotomies, fractures and non-unions of the small bones of the foot & ankle including the fore-, mid-, and hind foot and ankle applications.

Drill Guide Options

Omni Mini plate holes allow screws to be placed within a 30° cone of angulation. Both the Fixed Angle Drill Sleeve and the Variable Angle Drill Guide allow for this variable angle placement of screws.

For placement of screws, drill with the appropriate drill size through the desired Drill Sleeve/Guide to the desired depth. Match the color of the drill to the color of the sleeve/guide. Measure the screw length with the Depth Gauge, and place the screw with the appropriate Solid Driver.



Fixed Angle Drill Sleeve



Variable Angle Drill Guide

Instrument Utilization Guide

	Screw Size/Type	Drill Size	Drill Guide Color	Driver Size
communite	2.3mm locking	1.5mm	Blue & Sllver	Т8
()	2.3mm non-locking	1.5mm	Blue & Silver	Т8
	2.8mm locking	2.0mm	Green & Gold	Т8
	2.8mm non-locking	2.0mm	Green & Gold	Т8
	2.8mm locking*	2.0mm	Green & Gold	Т10

*compatible with Post hole only

General Surgical Technique Guide with SlotLock

STEP 1: Exposure and Reduction

A surgical incision is made to expose the fusion or fracture site based on pre-operative surgical planning and surgeon preference.

Once the surgical site is exposed, the proper reduction must be performed to prepare for fixation. The system has the following reduction tools available: 1.1/1.6mm Compressor, 1.1/1.6mm Distractor, and Curved/ Pointed Bone Reduction Forceps.

If a fusion is being done, a Fenestrating Drill is also available for additional preparation.

STEP 2: Plate Positioning

Once the surgical site has been adequately prepared, align and provisionally pin the joint with a 1.6mm Guidewire to maintain reduction.

Place the plate flush to the surface of the bone in the desired position. Pin the plate to the bone with a 1.6mm Olive Wire (Smooth or Threaded). Alternatively, the <u>short</u> 1.6mm Smooth Olive Wires can be used.

Screw Size/Type	Drill Size	Drill Guide Color	Driver Size
2.3mm locking/ non-locking	1.5mm	Blue & Silver	Т8
2.8mm locking/ non-locking	2.0mm	Green & Gold	Т8

2.3mm Solid Plate Screws

commune)

2.3mm non-locking Range: 8-30mm

2.3mm locking Range: 8-30mm

2.8mm Solid Plate Screws

2.8mm non-locking Range: 8-34mm

2.8mm locking Range: 8-34mm

STEP 3: Screw Placement

Note: All plate holes can accept either 2.3mm or 2.8mm locking screws or non-locking screws.

It is recommended to insert the first two plate screws on the opposite side of the joint/fracture compared to the SlotLock hole, if being utilized.



SlotLock Technique

STEP 4: SlotLock Screw Placement

If compression is desired, use the compression side of the Compression Drill Guide when placing a screw in the SlotLock holes.



Place the Compression Drill Guide into the SlotLock hole of the plate with the handle oriented away from the fusion/fracture site. Drill using the appropriate drill bit and measure the screw length with the AOstyle Depth Gauge.

Note: The arrow on the Drill Guide indicates the direction of compression.



Insert the screw into slot using a T8 Driver and **the Torque Limiting Handle** to avoid overtightening.

Note: The Torque Limiting Handle is a calibrated device which is routinely serviced by Extremity Medical.



Torque Limiting Handle, Ratcheting (Black)



Continue to advance the screw into bone through the slot.



The screw head contacts the slot ramp and begins to compress the joint or fracture.

The screw head locks into the slot to hold compression across the joint or fracture.

Continue to advance the screw until torque limit of the Torque Limiting Handle is reached.



Fill the remaining screw holes.

Navicular Post Plate Surgical Technique



STEP 1: Provisionally pin the plate

After exposure and reduction of the joint, provisionally pin the Navicular Post Plate in place with olive wires.

Note: Avoid using SlotLock hole to provisionally pin.

STEP 2: Insert first screw

Prior to inserting the post, it is recommended to insert the first screw in the hole next to the post hole to secure the plate in place. Follow Step 3 in the "General Surgical Technique Guide with SlotLock" for screw insertion.





STEP 3: Drill for Post

Remove Olive Wire from the position closest to the Post. Place the Post Drill Guide in the post hole of the plate. Drill with the Post Drill to the desired depth, based on the drill depth calibration lines.

Note: The PlantarFiX Posts are available in 12 and 16mm lengths. This technique demonstrates the use of a 16mm Post.

STEP 4: Post Insertion

Insert and lock the PlantarFiX Post into the plate using a T15 Driver. The proximal end of the Post locks into the plate in the same manner as a locking screw.





STEP 5: Post Adjuster

The plantar side of the PlantarFiX Post rotates 360 degrees to allow for flexibility of Lag (Compression) Screw placement. Place the Post Adjuster into the head of the Post and rotate it until the black laser line is oriented toward the desired trajectory of the 3.5mm Headed or Headless Cannulated Compression Screw. This will rotate the plantar-side hole of the Post into position for the Targeting Guide.

STEP 6: Targeting Guide Placement

The Targeting Guide is keyed with the PlantarFiX Post which couples the distal hole of the Post with the Targeting Guide. Place the Targeting Guide into the Post.

Ensure that one of the laser marks on the Targeting Guide is in-line with the top of the Post:

- 16mm = top line
- 12mm = bottom line

Rotate the Guide to the desired trajectory of Lag Screw placement.

Place the 2.5mm Drill Sleeve into the Targeting Guide.



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Remove the Drill Sleeve and Wire Guide, leaving only the Targeting Guide and Guidewire in place. Advance the Cannulated Depth Gauge over the Guidewire and through the Targeting Guide down to bone to measure for the length of the Lag Screw.



STEP 10: Insert Lag Screw

Insert the Lag Screw over the Guidewire using the T15 Driver, and advance until compression is achieved.

For this step, the Targeting Guide can be removed (as shown), or the screw can be placed through the Targeting Guide if preferred.





STEP 11: SlotLock Screw Insertion

If SlotLock is being utilized for additional compression, insert the screw into SlotLock after the Post and Lag Screw are inserted. Follow Step 4 in "General Surgical Technique Guide with SlotLock".

After compression is achieved though SlotLock, retighten Lag Screw to accomodate additional compression.

STEP 12: Insert remaining plate screws

Fill the remaining plate holes with 2.3mm or 2.8mm (locking or non-locking) screws.



5th Metatarsal Hook Plate Surgical Technique



STEP 1: Provisionally Pin Drill Guide 1

After exposing and reducing the joint, provisionally pin the **Hook Plate Drill Guide 1** in place with olive wires.

STEP 2: Predrill for Hook Holes

Use the 1.5mm Drill Bit to predrill for the two hook holes on the proximal side of the guide.



Predrill for first hook.



Predrill for second hook.



STEP 3: Reference Guidewire Placement

Place a 1.4mm Guidewire into the center hole of Drill Guide 1. This Guidewire will serve as a reference wire for Guide 2 once Guide 1 is removed.

STEP 4: Remove Guide 1

Remove the Olive Wires and slide Drill Guide 1 off the reference wire, leaving only the 1.4mm Guidewire in place.



STEP 5: Drill Guide 2 Assembly and Placement

Use the screw knob to attach Drill Guide 2 to the 5th Metatarsal Hook Plate.



Slide Drill Guide 2 and Hook Plate assembly over the reference wire. The reference wire serves to align the hooks precisely with the predrilled hook holes that were created using Drill Guide 1.

STEP 6: Hook Plate Tamp

Slide the cannulated Hook Plate Tamp over the reference wire. Tamp until the plate is fully seated on the bone, and the plate hooks are fully within the predrilled holes. Slide tamp off the reference wire and remove the reference wire.



STEP 7: Guidewire Placement for Lag Screw using Guide 2

Screw the Hook Plate Wire Guide into the Guide 2 Drill Barrel, as shown below.

Place a 1.4mm Guidewire through the Hook Plate Wire Guide to set the trajectory of the Lag Screw. If the plate is not sitting flush against the bone, an Olive Wire can be inserted in a distal plate hole (except SlotLock hole) to keep the plate fixed.

Note: If 1.4mm Guidewire position is not placed as desired when using Guide 2, see alternative method for Lag Screw placement on Page 22.



Note: If the wire has difficulty penetrating near cortex upon insertion, the user may predrill with the 2.5mm Drill first to create an entry point for the wire.

STEP 8: Measure for Lag Screw

Remove the Hook Plate Wire Guide from Guide 2, then unscrew and remove Guide 2 from the plate.

Advance the Cannulated Depth Gauge over the Guidewire down to bone to measure for the length of the 3.5mm Compression Screw.



STEP 9: Drill for Lag Screw Use the 2.5mm Cannulated Drill to predrill for the lag screw until the desired depth.

STEP 10: Countersink for Lag Screw

Slide the Headed Compression Screw Countersink over the reference wire, and countersink into bone until the line is reached. It is recommended to avoid screw head prominence.





STEP 11: Insert Lag Screw

Insert the Headed Lag Screw over the Guidewire using the T15 Driver, and advance until compression is achieved.

Remove the guidewire.



STEP 12: SlotLock for Additional Compression

Once the lag screw has been inserted, the surgeon has the option to utilize SlotLock for additional compression.

Follow Step 4 in the "General Surgical Technique Guide with SlotLock" section of this guide.

Once compression is achieved through SlotLock, retighten the Lag Screw to accomodate additional compression.

STEP 13: Fill Remaining Plate Screw Holes

Fill the remaining plate screw holes with 2.3mm or 2.8mm (locking or non-locking) screws.



Alternative Method for Lag Screw Insertion

If the lag screw trajectory provided by Drill Guide 2 is not preferred, follow Steps 1-6 of the "5th Metatarsal Hook Plate Surgical Technique" and then proceed with the following freehand technique.

After tamping the hooks into bone, remove Drill Guide 2 from the plate.



Use the 1.4mm side of the 3.5mm Screw Wire and Drill Guide to insert a 1.4mm Guidewire in the optimal lag screw trajectory, based on the surgeon's discretion.

Remove the 3.5mm Screw Wire and Drill Guide. Use the Depth Gauge for Cannulated Screws to measure the length of the lag screw.





Use the 2.5mm side of the 3.5mm Screw Wire and Drill Guide to drill for the lag screw until the desired depth.



Remove the 3.5mm Screw Wire and Drill Guide and countersink with the Headed Compression Screw Countersink. Countersinking is recommended to avoid screw head prominence.

Continue following Steps 11-13 for lag screw and remaining plate screw insertion.

Removal Instructions

General Removal Technique

Clear tissue in-growth from the screw.

Remove all 2.3mm/2.8mm locking and non-locking plate screws with a T8 Driver by turning the driver counter-clockwise. If removing the 2.8mm Post hole locking screw (144-281XX), use a T10 Driver.

Then remove the plate.

Navicular Post Plate Removal Technique

Clear tissue in-growth from the screw.

Remove all 2.3mm/2.8mm locking and non-locking plate screws with a T8 Driver. Before removing the PlantarFiX Post, remove the 3.5mm Compression Screw with the T15 Driver. Then proceed to remove the Post with a T15 Driver.

Then remove the plate.

5th Metatarsal Hook Plate Removal Technique

Clear tissue in-growth from the screw.

Remove all 2.3mm/2.8mm locking and non-locking plate screws with a T8 Driver. Remove the 3.5mm Compression Screw with a T15 Driver.

Then remove the plate.

OMNI Mini Components

Plates

Part #	Description
154-11200	Straight SlotLock Plate, 2 Hole
154-11300	Straight SlotLock Plate, 3 Hole
154-11400	Straight SlotLock Plate, 4 Hole
154-11500	Straight SlotLock Plate, 5 Hole
154-11600	Straight SlotLock Plate, 6 Hole
154-11700	Straight SlotLock Plate, 7 Hole
154-11800	Straight SlotLock Plate, 8 Hole
154-12400	T-shaped SlotLock Plate, 4 Hole
154-12500	T-shaped SlotLock Plate, 5 Hole
154-12600	T-shaped SlotLock Plate, 6 Hole
154-13410	L-shaped SlotLock Plate, 4 Hole, Right
154-13420	L-shaped SlotLock Plate, 4 Hole, Left
154-13510	L-shaped SlotLock Plate, 5 Hole, Right
154-13520	L-shaped SlotLock Plate, 5 Hole, Left
154-13610	L-shaped SlotLock Plate, 6 Hole, Right
154-13620	L-shaped SlotLock Plate, 6 Hole, Left
154-14510	Dog Bone SlotLock Plate, Short
154-14520	Dog Bone SlotLock Plate, Long
154-15410	X-shaped Plate, Right
154-15420	X-shaped Plate, Left
154-16900	Navicular Grid Plate
154-17610	Navicular Post SlotLock Plate, 1
154-17620	Navicular Post SlotLock Plate, 2
154-18510	5th Metatarsal Hook SlotLock Plate

3.5 Cannulated Compression Screws

Part #	Description
144-35220	Cannulated Compression Screw - 3.5 x 20mm
144-35222	Cannulated Compression Screw - 3.5 x 22mm
144-35224	Cannulated Compression Screw – 3.5 x 24mm
144-35226	Cannulated Compression Screw - 3.5 x 26mm
144-35228	Cannulated Compression Screw – 3.5 x 28mm
144-35230	Cannulated Compression Screw - 3.5 x 30mm
144-35235	Cannulated Compression Screw - 3.5 x 35mm
144-35240	Cannulated Compression Screw - 3.5 x 40mm
144-35245	Cannulated Compression Screw - 3.5 x 45mm
144-35250	Cannulated Compression Screw - 3.5 x 50mm

3.5 Headless Compression Screws, Cannulated

Part #	Description
154-35116	Headless Compression Screw, Cannulated - 3.5 x 16mm
154-35118	Headless Compression Screw, Cannulated - 3.5 x 18mm
154-35120	Headless Compression Screw, Cannulated - 3.5 x 20mm
154-35122	Headless Compression Screw, Cannulated - 3.5 x 22mm
154-35124	Headless Compression Screw, Cannulated - 3.5 x 24mm
154-35126	Headless Compression Screw, Cannulated - 3.5 x 26mm
154-35128	Headless Compression Screw, Cannulated - 3.5 x 28mm
154-35130	Headless Compression Screw, Cannulated - 3.5 x 30mm
154-35135	Headless Compression Screw, Cannulated - 3.5 x 35mm
154-35140	Headless Compression Screw, Cannulated - 3.5 x 40mm
154-35145	Headless Compression Screw, Cannulated - 3.5 x 45mm
154-35150	Headless Compression Screw, Cannulated - 3.5 x 50mm

Solid Plate Screws

Part #	Description
154-23008	Non Locking Screw - 2.3 x 8mm
154-23010	Non Locking Screw - 2.3 x 10mm
154-23012	Non Locking Screw – 2.3 x 12mm
154-23014	Non Locking Screw – 2.3 x 14mm
154-23016	Non Locking Screw – 2.3 x 16mm
154-23018	Non Locking Screw – 2.3 x 18mm
154-23020	Non Locking Screw – 2.3 x 20mm
154-23022	Non Locking Screw - 2.3 x 22mm
154-23024	Non Locking Screw - 2.3 x 24mm
154-23026	Non Locking Screw - 2.3 x 26mm
154-23028	Non Locking Screw - 2.3 x 28mm
154-23030	Non Locking Screw - 2.3 x 30mm
154-23108	Locking Screw - 2.3 x 8mm
154-23110	Locking Screw – 2.3 x 10mm
154-23112	Locking Screw – 2.3 x 12mm
154-23114	Locking Screw - 2.3 x 14mm
154-23116	Locking Screw - 2.3 x 16mm
154-23118	Locking Screw - 2.3 x 18mm
154-23120	Locking Screw - 2.3 x 20mm
154-23122	Locking Screw - 2.3 x 22mm
154-23124	Locking Screw - 2.3 x 24mm
154-23126	Locking Screw - 2.3 x 26mm
154-23128	Locking Screw - 2.3 x 28mm
154-23130	Locking Screw - 2.3 x 30mm
154-28008	Non Locking Screw - 2.8 x 8mm
154-28010	Non Locking Screw – 2.8 x 10mm
154-28012	Non Locking Screw – 2.8 x 12mm
154-28014	Non Locking Screw – 2.8 x 14mm
154-28016	Non Locking Screw – 2.8 x 16mm
154-28018	Non Locking Screw – 2.8 x 18mm
154-28020	Non Locking Screw – 2.8 x 20mm
154-28022	Non Locking Screw – 2.8 x 22mm
154-28024	Non Locking Screw - 2.8 x 24mm
154-28026	Non Locking Screw - 2.8 x 26mm
154-28028	Non Locking Screw - 2.8 x 28mm
154-28030	Non Locking Screw - 2.8 x 30mm
154-28032	Non Locking Screw - 2.8 x 32mm
154-28034	Locking Screw - 2.8 x 9mm
154-20100	Locking Screw - 2.8 x 10mm
154-28110	Locking Screw - 2.8 x 12mm
154-28114	Locking Screw - 2.8 x 14mm
154-28116	Locking Screw - 2.8 x 16mm
154-28118	Locking Screw - 2.8 x 18mm
154-28120	Locking Screw – 2.8 x 20mm
154-28122	Locking Screw - 2.8 x 22mm
154-28124	Locking Screw - 2.8 x 24mm
154-28126	Locking Screw - 2.8 x 26mm
154-28128	Locking Screw - 2.8 x 28mm
154-28130	Locking Screw - 2.8 x 30mm
154-28132	Locking Screw - 2.8 x 32mm
154-28134	Locking Screw - 2.8 x 34mm

Post Hole Screws

Part #	Description	
144-28112	Locking Screw – 2.8 x 12mm	
144-28116	Locking Screw – 2.8 x 16mm	
144-28120	Locking Screw - 2.8 x 20mm	

Compression Posts

Part #	Description
144-42112	Compression Post - 12 mm
144-42116	Compression Post - 16 mm

Screw Washers

Part #	Description	
147-35600	3.5 Screw Washer	

Disposable Instruments

Part #	Description
154-00015	Drill Bit for 2.3mm Screws (1.5mm)
154-00020	Drill Bit for 2.8mm Screws (2.0mm)
144-00017	2.5mm Solid Drill with Stop
144-00018	Post Drill - 4.2mm
144-00025	2.5mm Cannulated Drill
144-00012	Headed Screw Countersink
154-00135	Headless Compression Screw Countersink
144-00032	Fenestrating Drill
144-00014	1.4mm Guidewire
101-00006	1.6mm Guidewire
144-50111	Olive Wire 1.6mm, Smooth
144-61111	Olive Wire 1.6mm, Smooth, Short
144-00011	Olive Wire 1.6mm, Threaded

Reusable Instruments

Part #	Description
154-00008	T8 Driver, Solid
144-00010	T10 Driver, Solid
144-00015	T15 Cannulated Driver
154-00115	Drill Sleeve for 2.3 Screw
154-00120	Drill Sleeve for 2.8 Screw
154-01520	Variable Angle Drill Guide for 2.3/2.8mm Screws
144-00023	Post Drill Guide
154-02315	Compression Drill Guide for 2.3mm Screws
154-02820	Compression Drill Guide for 2.8mm Screws
144-00013	Depth Gauge for Cannulated Screws
154-00003	Depth Gauge for 2.3/2.8mm Screws
144-00026	1.4mm Guidewire Dispenser
101-00009	1.6mm Guidewire Dispenser
144-00020	Targeting Guide
144-00222	2.5mm Drill Sleeve
144-00119	Wire Guide
144-00021	Post Adjuster
154-00100	Ratcheting AO Handle with Impact Cap
154-00060	Torque Limiting Handle, Ratcheting
127-00916	Compressor, 1.1/1.6mm
154-00009	Distractor 1.1/1.6mm
155-00090	Bone Holding Reduction Double Curved Clamp
154-00006	Plate Bending Pliers
144-00002	Grasping Forceps
154-00010	Hook Plate Drill Guide 1
154-00030	Hook Plate Drill Guide 2
154-00040	3.5mm Screw Wire and Drill Guide
154-00050	Hook Plate Tamp
154-00119	Hook Plate Wire Guide

Tray Configuration







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