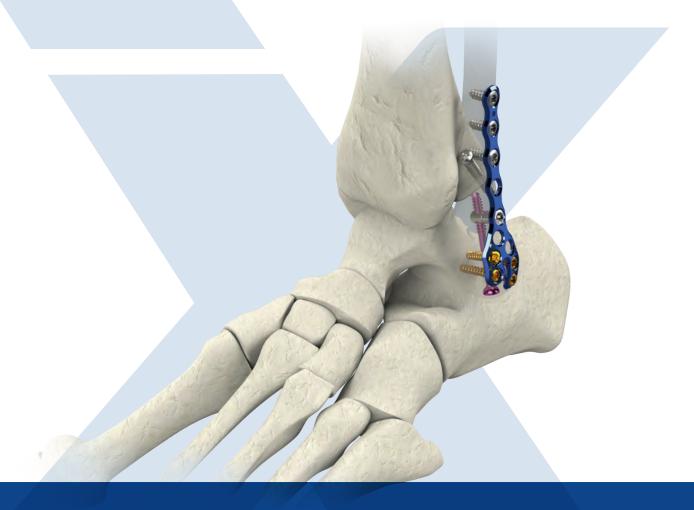
Omni[™] Stable AF

Ankle Fracture System



Omni™ Stable AF Surgical Technique



Real change *starts* here[™]

Omni[™] Stable AF

Ankle Fracture System

Implant Overview

Plate Styles



Lateral Fibula (Left/Right)



Hook Plate



Anterior Tibia



Medial Tibia



Posterior Tibia

(Left/Right)



(Left/Right)



Posterior Tibia



Straight

Screws and Posts



2.8mm Non-Locking, Solid, Plate Screws



2.8mm Locking, Solid, Plate Screws



3.5mm Non-Locking, Solid, Plate Screws



3.5mm Locking, Solid, Plate Screws



12mm, 16mm Stability Posts

4.0mm Syndesmosis Screws (Fully Threaded, Solid, Non-Locking)



4.0mm Cannulated Lag Screws

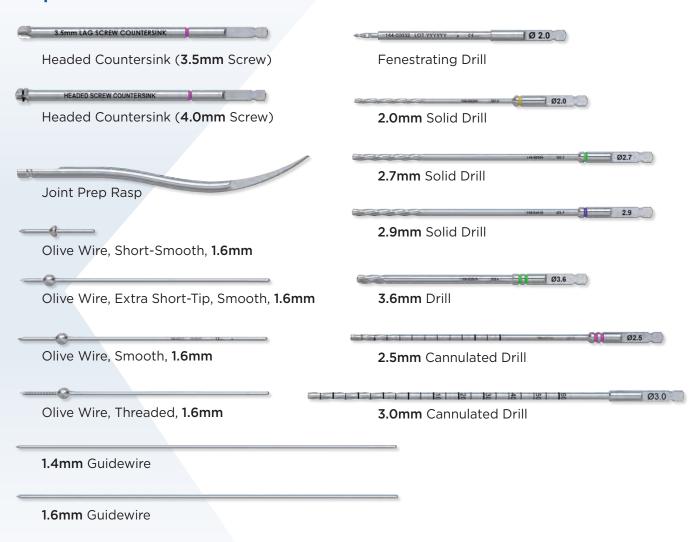


3.5mm Cannulated Lag Screws

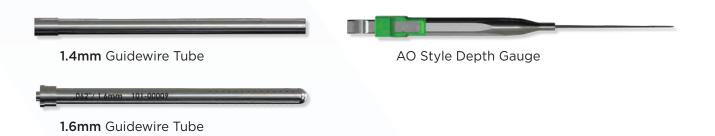
Note: Plates screws are variable angle screws with a 30° Cone of Angulation in the plate.

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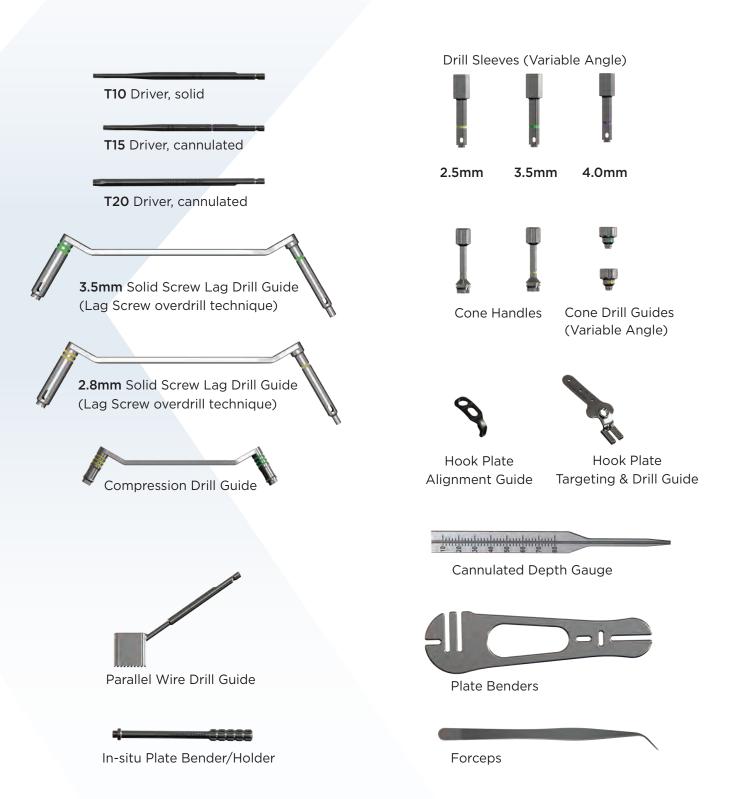
Disposable Instruments



General Instruments







Post Instruments



Omni Stable AF Surgical Technique Guide

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.

This surgical technique guide illustrates implantation techniques for the lateral fibula plate. The implantation technique for each plate within this system follows the same operative instructions as outlined below for distal fibula and tibial fractures.

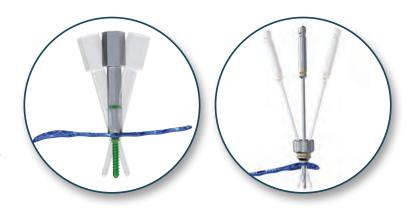
For all fracture patterns, patient positioning, exposure, incision, and dissection are left up to the surgeon's preference and discretion.

General Instructions

Placement of Plate Screws

Omni plate holes allow screws to be placed within a 30° cone of angulation. Both the Standard Drill Sleeves and the Cone Style Drill Guides allow for this variable angle placement of screws.

Drill with the appropriate size drill through the respective Drill Sleeve or Guide to the desired depth. Match the color of the drill to the color of the guide. Measure screw length with the AO-style Depth Gauge, and place the plate screw with the TIO Solid Driver.



Screw Size	Drill Size	Drill Guide Colors	Driver Size
2.8mm (Locking/Non-Locking)	2.0mm (Solid)	Yellow	T10
3.5mm (Locking/Non-Locking)	2.7mm (Solid)	Green	T10

Compression Slots

Plates with compression slots can generate compression by drilling the most distal aspect of the slot. Place the Compression Drill Guide in the slot with the handle oriented away from the plate. Drilling in this manner will create an eccentric hole for a non-locking screw.

Note: the arrow on the drill guide shows the direction of the compression.

A neutral (non-compression) screw can also be placed in any slot. To do this, orient the Compression Drill Guide in the slot with the handle over the plate.



STEP 1. Exposure

A straight lateral or posterolateral surgical incision is made to expose the fracture of the fibula based upon the fracture pattern and pre-operative surgical planning. If a posterior malleolar fragment is planned to be stabilized via a posterolateral approach, a floppy lateral position with posterolateral incision can be considered.

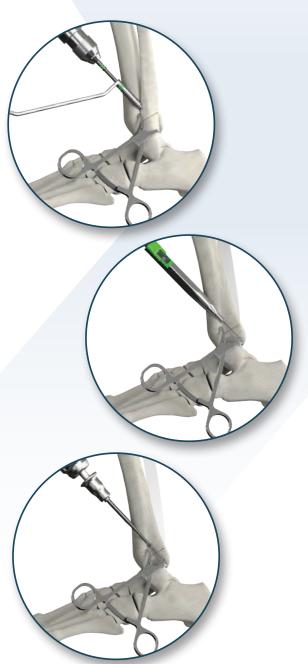
STEP 2. Fracture Reduction

The fracture site is cleared and refreshed. Fracture reduction is performed and temporary stabilization is achieved by placing a guidewire, and/or utilizing the system's reduction tools as per the surgeons' preference. The system has the following reduction tools available: Weber Clamps, Lobster Clamps, Curved/Pointed Bone Reduction Forceps, Straight/Pointed Bone Reduction Forceps, a Periarticular Clamp, Cannulated Ball Spike, and a Hintermann Compression/Distractor.

To place a lag screw, use a standard over-drilling technique for fully threaded screws. The system provides a drill guide and drills to over-drill for a solid, fully threaded 3.5mm screw (3.6mm for the near fragment and 2.7mm for the far fragment).

Note: Most AO 44B simple spiral lateral malleolar fractures can be reduced directly with a Weber clamp. Once anatomical reduction is verified with C-Arm images, a lag screw can be placed across the fracture site and then followed by plate fixation.

AO 44C suprasyndesmotic fractures can be multifragmentary. In order to avoid too much periosteal stripping of the wedge fragments, bridge plating techniques can be used with an open surgical approach. Accurate restoration of fibular length, alignment, and rotation is critically verified with an image intensifier. Reduce the fracture with the provided pointed bone reduction forceps or lobster clamp forceps.

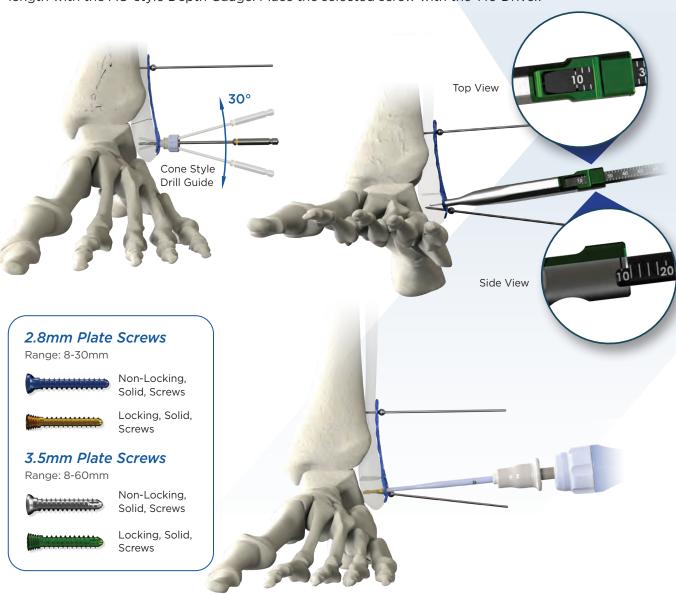


STEP 3. Plate Positioning

Once the fracture has been adequately reduced and temporarily stabilized, position the fibula plate such that the curvature of the plate nestles smoothly over the lateral surface of the fibula. The plate is then provisionally held with 1.6mm Olive Wires (threaded or smooth) or 1.6mm Guidewires. It is recommended to fixate the plate with one wire through the most proximal pin hole and 1-2 wires through the distal pin holes of the plate. Position of the plate should be carefully evaluated with fluoroscopy.

STEP 4. Screw Placement

It is recommended to insert the most distal plate screw first, followed by one of proximal plate screws to prevent plate rotation. Insert the balance of the plate screws as desired. All plate holes can accept either 2.8mm or 3.5mm locking screws or non-locking screws. Once the plate is secured, thread the Drill Guide into the plate at the desired angle (within the 30° cone). Drill for the screws with the appropriate size solid drill through the dedicated Drill Guide. Measure screw length with the AO-style Depth Gauge. Place the selected screw with the T10 Driver.



Screw Size	Drill Size	Drill Guide Colors	Driver Size
2.8mm (Locking/Non-Locking)	2.0mm (Solid)	Yellow	T10
3.5mm (Locking/Non-Locking)	2.7mm (Solid)	Green	T10

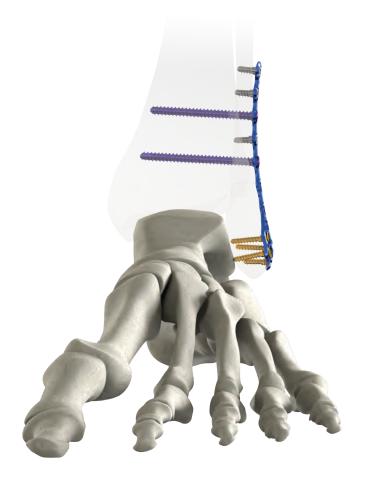
STEP 5. Syndesmotic Screw Option

To allow for the placement of a syndesmosis screw, this system provides a 4.0mm Solid Screw option (up to 60mm in length). These solid, fully threaded screws can be placed through either a compression slots or standard locking hole in the plate. Utilizing the 4.0mm Drill Sleeve (purple), or Cone Style Guide (green), drill a pilot hole for the desired screw targeting the center of the tibia with the 2.9mm drill. These screws have a 30° cone of angulation for flexible placement.

Measure for the screw length with the AO-Style Depth Gauge and insert the screw with the T10 driver.

Bicortical fixation is not required for the syndesmotic screw; however, it is strongly recommended. Drive the selected screw through the syndesmosis hole until fully seated in the plate and verify syndesmotic fixation utilizing fluoroscopy. Closing and postoperative protocol are at the discretion of the surgeon.

WARNING: Screws placed across the syndesmosis have a higher probability of fatigue failure due to the repetitive motion across the syndesmosis.



Post Placement (Option)

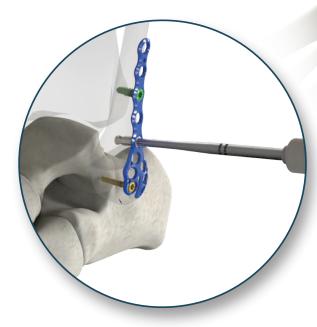
This system includes an unique Post implant which can mate an intramedullary screw to the plate construct. This implant acts as a metal cortex for the threads of the screw and provides additional stability in the plane orthogonal to the standard plate screws for the patients with poor bone quality and/or segmental bone loss.

Note: to limit compression, place screw fixation through the plate above and below the fracture prior to placing the post/screw construct.

If compression is desired, initially place screw fixation only on the same side of the fracture line as the Post. Then apply partially threaded screw through the post. Finally lock down the far side of the fracture fragment with plate screws.

Place the Post Drill Guide in the desired hole of the plate, typically above the fracture line. Drill with the Post Drill to the desired depth. Measure the length of the Post off of the calibration on the Post Drill/Post Drill Guide. The Posts are available in 12 and 16mm lengths.

Insert and lock the Post into the plate with the T15 Driver. The proximal end of the Post locks into the plate in the same manner as the locking screws.



The hole of the Post rotates 360° to allow for flexible screw placement. Place the Post Adjuster into the head of the Post. Rotate the Post Adjuster until the black laser line is oriented towards the desired trajectory for the 3.5mm Cannulated Compression Screw. This will rotate the hole of the Post into position for the Targeting Guide.



Targeting the Post

The Targeting Guide keys with the Post coupling the 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:

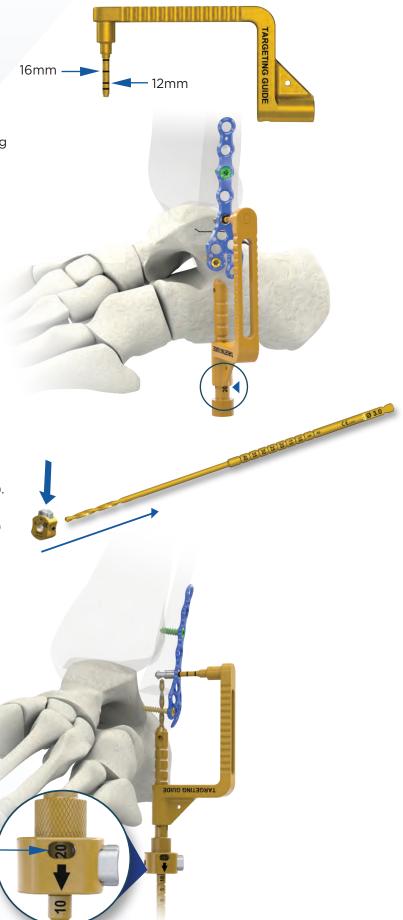
- 16mm Post= 3rd line from bottom
- 12mm Post= 2nd line from bottom

Rotate the Guide to the desired position for the Compression Screw placement and insert the Drill Sleeve.

The next step requires drilling to create the desired trajectory for the Compression Screw. This is done prior to placing the Guidewire for the Cannulated Screw.

Adjust the Drill Guide down to bone, then read the measurement outside of the barrel (circled). Use this measurement to set the length of the self-stop button on the 2.5mm Solid Drill (gold) prior to drilling. Prior to drilling, attach the Drill Stop to the 2.5mm Solid Gold Drill by pressing the button of the Drill Stop and sliding it up the shaft of the drill up to the measured length (arrow towards the AO quick connect portion of the drill). Drill to the positive stop. This will create a path that stops directly in front of the hole of the Post, allowing for consistent placement of the Guidewire through the Post hole (next step).

Measurement



Guidewire Placement

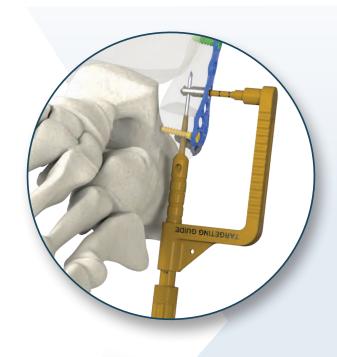
Remove the drill. Thread the Wire Guide into the Drill Sleeve and advance a 1.4mm Guidewire through and 5mm past the Post. Confirm Guidewire positioning and placement with fluoroscopy.

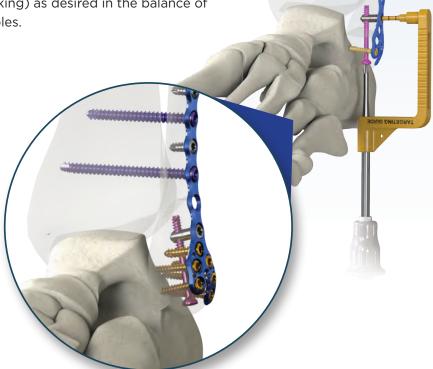
Remove the Drill Sleeve and Wire Guide.

Advance the Cannulated Depth Gauge over the Guidewire and through the Targeting Guide down to bone to measure for the length of the 3.5mm Cannulated Compression Screw. If desired, Countersink for the 3.5mm Screw prior to placing the screw.

Insert the Compression Screw over the Guidewire advancing it through the Post until desired fixation is achieved. The screw can be placed through the Targeting Guide as depicted, or the Targeting Guide can be removed during this process.

Insert 2.8mm or 3.5mm Plate Screws (Locking or Non-Locking) as desired in the balance of the plate holes.





Hook Plate Insertion Steps

The Hook plates are designed to be used on the lateral or the medial malleolus and are designed to treat distal or comminuted malleolus fractures. These plates also utilize 2.8mm and 3.5mm locking and non-locking screws in all locking holes. The plate also features a compression slot to allow for dynamic compression.

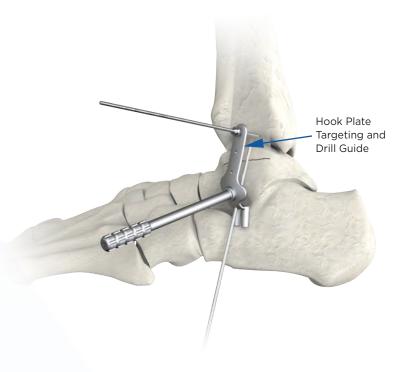


Reduce the fracture and fix temporarily with a Guidewire and/or reduction clamp.

Use the Hook Plate Targeting and Drill Guide to trial the plate position. This guide will enable you to prepare holes for hook placement and also deliver a 1.4mm Guidewire in preparation for placing a 3.5mm Lag Screw between the two hooks of the plate.

The In-Situ Plate Bender/Holder can be threaded into the targeting guide and act as a handle for placement.

Note: The Hook Plate Targeting and Drill Guide - represents the exact geometry of the Hook Plate.



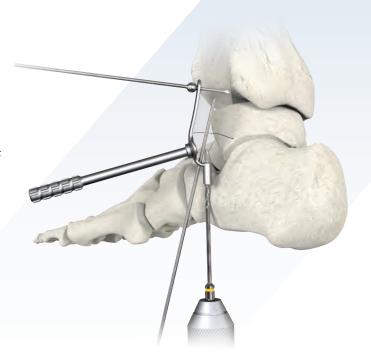
Provisionally fixate the Hook Plate Targeting Guide to the bone with Olive Wires. It is recommended to fixate the Hook Plate Targeting Guide in 2-3 locations to ensure it does not move during the drilling step.

Use the most distal hole in the Guide to place a guidewire in the slot between the Drill Guide holes. A 3.5mm cannulated lag screw will be placed over this wire.



Once the position of the guide and wire has been verified, drill through the Hook Targeting Guide slots approximately 3-5mm with the 2.0mm solid drill. This prepares holes to accept the plate hooks.

Note: Creating a vertical cut into the ligaments (deltoid in medial and calcaneal fibular on lateral side) assists with the plate's ability to sit flush on the bone.

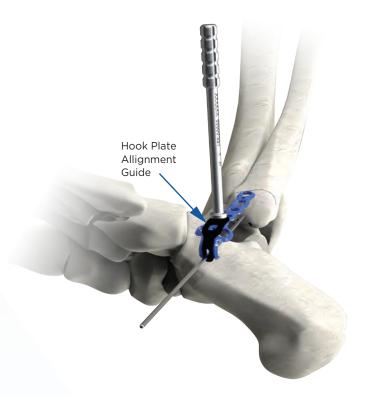


Once the pilot holes have been created for the hooks, remove the olive wires and Targeting Guide, leaving the 1.4mm Guidewire in place.



Attach the Hook Plate Alignment Guide (black) to the plate with the In-Situ Plate Bender/Holder.

Slide the plate/Hook Plate Alignment Guide construct over the 1.4mm Guidewire taking care to insert the plate's hook prongs into the pre-drilled pilot holes.

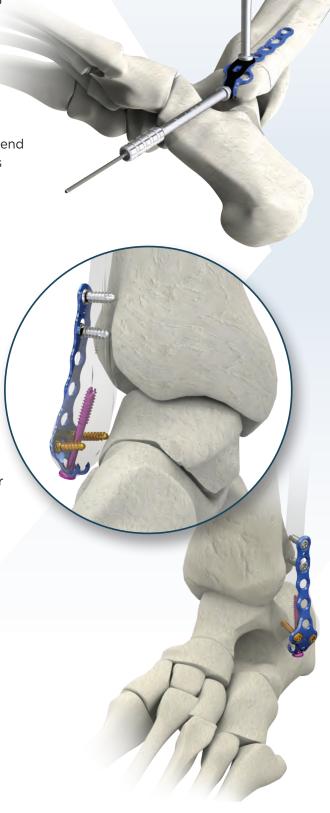


Once the pilot holes are located, a second In-Situ Plate Bender/Holder can attach to the distal portion of the plate by sliding the holder over the 1.4mm Guidewire and threading into the plate. This can be used to insert the plate into the pilot holes.

Once the hooks have been fully seated, apply temporary fixation to the proximal end of the plate and remove the plate holders and alignment guide.

At this point, standard plate fixation procedures can be followed.

The lag screw can be placed over the 1.4mm Guidewire using standard lag screw placement techniques (measure with depth gauge, drill, implant). All other plate screw holes can be filled using the standard Omni technique either before or after the lag screw is placed.



Removal Instructions

If the plate and screws need to be removed, make an incision over the Plate. Use the appropriate screwdriver (see chart in screw section) to remove each screw. Once the screws are removed, the plate can be removed. If the removal of a Post is required, remove the 3.5mm Cannulated Lag Screw and then the subsequent Post from the plate/bone with the T15 Cannulated Driver. The plate can be removed after removing the screws in the plate.

Anatomic Plate Design Options



Omni[™] AF System Components

Plates

Part #	Plates
155-11501	Lateral Fibula Plate, 11 Holes (5 Proximal), Left
155-11502	Lateral Fibula Plate, 11 Holes (5 Proximal), Right
155-11701	Lateral Fibula Plate, 13 Holes (7 Proximal), Left
155-11702	Lateral Fibula Plate, 13 Holes (7 Proximal), Right
155-12501	Posterior Fibula Plate, 9 Holes (5 Proximal), Left
155-12502	Posterior Fibula Plate, 9 Holes (5 Proximal), Right
155-12701	Posterior Fibula Plate, 11 Holes (7 Proximal), Left
155-12702	Posterior Fibula Plate, 11 Holes (7 Proximal), Right
155-13300	Hook Plate, 5 Holes (3 Proximal)
155-13500	Hook Plate, 7 Holes (5 Proximal)
155-14200	Straight Plate, 2 Holes
155-14400	Straight Plate, 4 Holes
155-14600	Straight Plate, 6 Holes
155-14800	Straight Plate, 8 Holes
155-14100	Straight Plate, 10 Holes
155-14120	Straight Plate, 12 Holes
155-21300	Posterior Tibia Plate, Y-Shape, 5 Holes (3 Proximal)
155-21500	Posterior Tibia Plate, Y-Shape, 7 Holes (5 Proximal)
155-23301	Posterior Tibia Plate, L-Shape, 5 Holes
	(3 Proximal), Left
155-23302	Posterior Tibia Plate, L-Shape, 5 Holes
	(3 Proximal), Right
155-23501	Posterior Tibia Plate, L-Shape, 7 Holes
	(5 Proximal), Left
155-23502	Posterior Tibia Plate, L-Shape, 7 Holes (5
	Proximal), Right
155-24500	Anterior Tibia Plate, 15 Holes (5 Proximal)
155-24700	Anterior Tibia Plate, 17 Holes (7 Proximal)
155-25500	Medial Tibia Plate, 9 Holes (5 Proximal)
155-25700	Medial Tibia Plate, 11 Holes (7 Proximal)

Posts

Part #	Posts
144-42112	Post - 12mm
144-42116	Post - 16mm

Screws

Part #	3.5mm Cannulated Screws
144-35220	Cannulated Lag Screw - 3.5 x 20mm
144-35225	Cannulated Lag Screw - 3.5 x 25mm
144-35230	Cannulated Lag Screw - 3.5 x 30mm
144-35235	Cannulated Lag Screw - 3.5 x 35mm
144-35240	Cannulated Lag Screw - 3.5 x 40mm
144-35245	Cannulated Lag Screw - 3.5 x 45mm
144-35250	Cannulated Lag Screw - 3.5 x 50mm

Screws

Part #	4.0mm Cannulated Screws
148-40120	Cannulated Lag Screw - 4.0 x 20mm
148-40125	Cannulated Lag Screw - 4.0 x 25mm
148-40130	Cannulated Lag Screw - 4.0 x 30mm
148-40135	Cannulated Lag Screw - 4.0 x 35mm
148-40140	Cannulated Lag Screw - 4.0 x 40mm
148-40145	Cannulated Lag Screw - 4.0 x 45mm
148-40150	Cannulated Lag Screw - 4.0 x 50mm

Part #	4.0mm Fully Threaded Syndesmosis Screws
155-40040	Solid Screw, Non-Locking, 4.0 x 40mm
155-40045	Solid Screw, Non-Locking, 4.0 x 45mm
155-40050	Solid Screw, Non-Locking, 4.0 x 50mm
155-40055	Solid Screw, Non-Locking, 4.0 x 55mm
155-40060	Solid Screw, Non-Locking, 4.0 x 60mm

Part #	Solid Plate Screws
144-28008	Solid Non-Locking Screw - 2.8 x 8mm
144-28010	Solid Non-Locking Screw - 2.8 x 10mm
144-28012	Solid Non-Locking Screw - 2.8 x 12mm
144-28014	Solid Non-Locking Screw - 2.8 x 14mm
144-28016	Solid Non-Locking Screw - 2.8 x 16mm
144-28018	Solid Non-Locking Screw - 2.8 x 18mm
144-28020	Solid Non-Locking Screw - 2.8 x 20mm
144-28022	Solid Non-Locking Screw - 2.8 x 22mm
144-28024	Solid Non-Locking Screw - 2.8 x 24mm
144-28026	Solid Non-Locking Screw - 2.8 x 26mm
144-28028	Solid Non-Locking Screw - 2.8 x 28mm
144-28030	Solid Non-Locking Screw - 2.8 x 30mm
144-28108	Solid Locking Screw - 2.8 x 8mm
144-28110	Solid Locking Screw - 2.8 x 10mm
144-28112	Solid Locking Screw - 2.8 x 12mm
144-28114	Solid Locking Screw - 2.8 x 14mm
144-28116	Solid Locking Screw - 2.8 x 16mm
144-28118	Solid Locking Screw - 2.8 x 18mm
144-28120	Solid Locking Screw - 2.8 x 20mm
144-28122	Solid Locking Screw - 2.8 x 22mm
144-28124	Solid Locking Screw - 2.8 x 24mm
144-28126	Solid Locking Screw - 2.8 x 26mm
144-28128	Solid Locking Screw - 2.8 x 28mm
144-28130	Solid Locking Screw - 2.8 x 30mm
144-35008	Solid Non-Locking Screw - 3.5 x 8mm
144-35010	Solid Non-Locking Screw - 3.5 x 10mm
144-35012	Solid Non-Locking Screw - 3.5 x 12mm
144-35014	Solid Non-Locking Screw - 3.5 x 14mm
144-35016	Solid Non-Locking Screw - 3.5 x 16mm
144-35018	Solid Non-Locking Screw - 3.5 x 18mm
144-35020	Solid Non-Locking Screw - 3.5 x 20mm
144-35022	Solid Non-Locking Screw - 3.5 x 22mm

Continued on next page

Screws

Part #	Solid Plate Screws
144-35024	
	Solid Non-Locking Screw - 3.5 x 24mm
144-35026	Solid Non-Locking Screw - 3.5 x 26mm
144-35028	Solid Non-Locking Screw - 3.5 x 28mm
144-35030	Solid Non-Locking Screw - 3.5 x 30mm
144-35035	Solid Non-Locking Screw - 3.5 x 35mm
144-35040	Solid Non-Locking Screw - 3.5 x 40mm
144-35045	Solid Non-Locking Screw - 3.5 x 45mm
144-35050	Solid Non-Locking Screw - 3.5 x 50mm
144-35055	Solid Non-Locking Screw - 3.5 x 55mm
144-35060	Solid Non-Locking Screw - 3.5 x 60mm
144-35108	Solid Locking Screw - 3.5 x 8mm
144-35110	Solid Locking Screw - 3.5 x 10mm
144-35112	Solid Locking Screw - 3.5 x 12mm
144-35114	Solid Locking Screw - 3.5 x 14mm
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144-35124	Solid Locking Screw - 3.5 x 24mm
144-35126	Solid Locking Screw - 3.5 x 26mm
144-35128	Solid Locking Screw - 3.5 x 28mm
144-35130	Solid Locking Screw - 3.5 x 30mm
144-35135	Solid Locking Screw - 3.5 x 35mm
144-35140	Solid Locking Screw - 3.5 x 40mm
144-35145	Solid Locking Screw - 3.5 x 45mm
144-35150	Solid Locking Screw - 3.5 x 50mm
144-35155	Solid Locking Screw - 3.5 x 55mm
144-35160	Solid Locking Screw - 3.5 x 60mm

Instruments

Part #	Disposable Instruments
101-00006	1.6mm Guidewire
155-02010	Drill Bit for 2.8 Screw (2.0mm)
155-02710	Drill Bit for 3.5 Screw (2.7mm)
155-02910	Drill Bit for 4.0 Screw (2.9mm)
144-00011	1.6mm Olive Wire, Threaded
144-00012	Headed Screw Countersink (3.5mm Screw)
148-00012	Headed Screw Countersink (4.0mm Screw)
144-00014	1.4mm Guidewire
144-00018	Post Drill
144-00025	2.5mm Cannulated Drill
118-02030	3.0mm Cannulated Drill
144-00030	Joint Preparation Rasp
144-00032	Fenestrating Drill
144-50111	Olive Wire 1.6mm, Smooth
144-61111	Olive Wire 1.6mm, Smooth, Short
155-50111	Olive Wire 1.6mm, Smooth, Extra Short
155-03510	3.6mm Drill
155-00017	2.5mm Solid Drill with Stop

Instruments

Part #	Reusable Instruments
144-00002	Grasping Forceps
144-00307	Compression Drill Guide for 2.8 and 3.5 screws
144-00010	Solid T10 Driver
101-00010	1.6mm Wire Depth Gauge
144-00015	Cannulated T15 Driver
148-00010	Cannulated T20 Driver
144-00021	Post Adjuster
144-00023	Post Drill Guide
144-00026	1.4mm Guidewire Holder
101-00009	1.6mm Guidewire Holder
144-00027	Plate Bender
144-00031	Hintermann Compressor Distractor
148-02039	AO Ratcheting Handle, Mini
148-00217	Drill Stop
155-00190	Solid Screw Depth Gauge
155-03512	3.5 Variable Angle Screw Drill Guide (cone)
155-02812	2.8 Variable Angle Screw Drill Guide (cone)
155-03515	3.5 Variable Angle Screw Drill Guide Handle
155-02815	2.8 Variable Angle Screw Drill Guide Handle
155-00160	Drill Sleeve for 2.8 Screw
155-00170	Drill Sleeve for 3.5 Screw
155-00200	Drill Sleeve for 4.0 Screw
155-00022	2.5 Beveled Drill Guide
155-00023	2.5 Straight Drill Guide
155-00019	Omni Ankle Threaded Wire Guide
155-00020	Omni Ankle Targeting Guide
155-02820	Solid Screw Lag Drill Guide, 2.8mm
155-03520	Solid Screw Lag Drill Guide, 3.5mm
155-00040	Parallel Wire Drill Guide
155-00050	Hook Plate Targeting and Drill Guide
155-00180	Hook Plate Alignment Guide
155-00060	In-Situ Plate Bender/Holder
155-00070	Weber Clamp
155-00080	Lobster Claw
155-00090	Curved/Pointed Bone Reduction Forceps
155-00100	Short Cannulated Ball Spike
155-00110	Periarticular Clamp (medium)
155-00120	Straight/Pointed Bone Reduction Forceps
155-00130	Bone Picks

NOTES:	

NOTES:

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Ankle Fracture System

Delivering

a smarter approach for fracture **Period.**

Real change *starts* here[™]



Real change *starts* here™

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