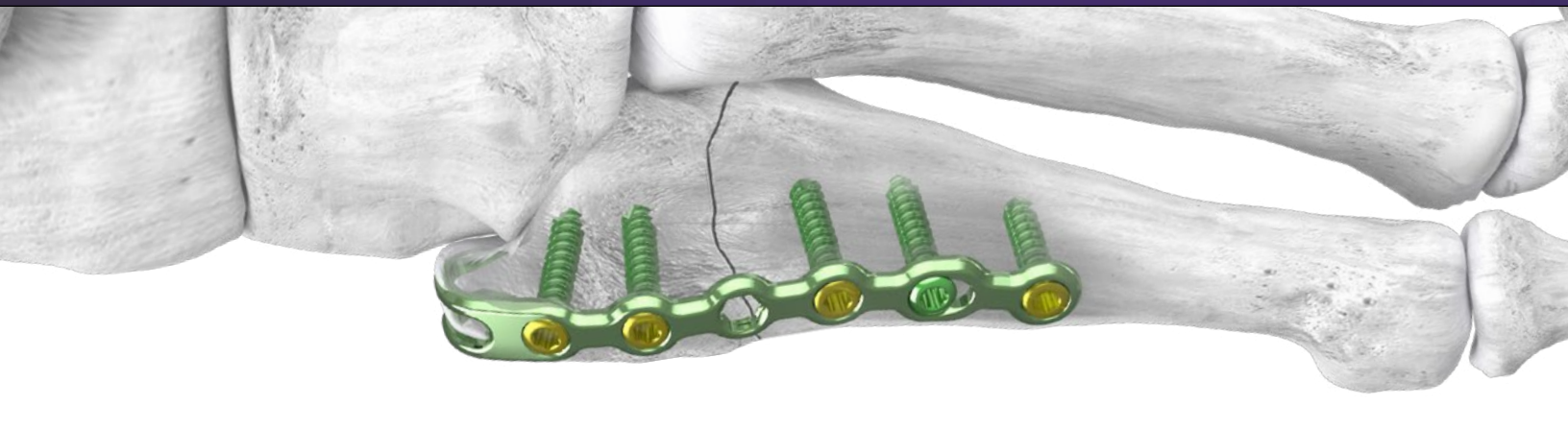
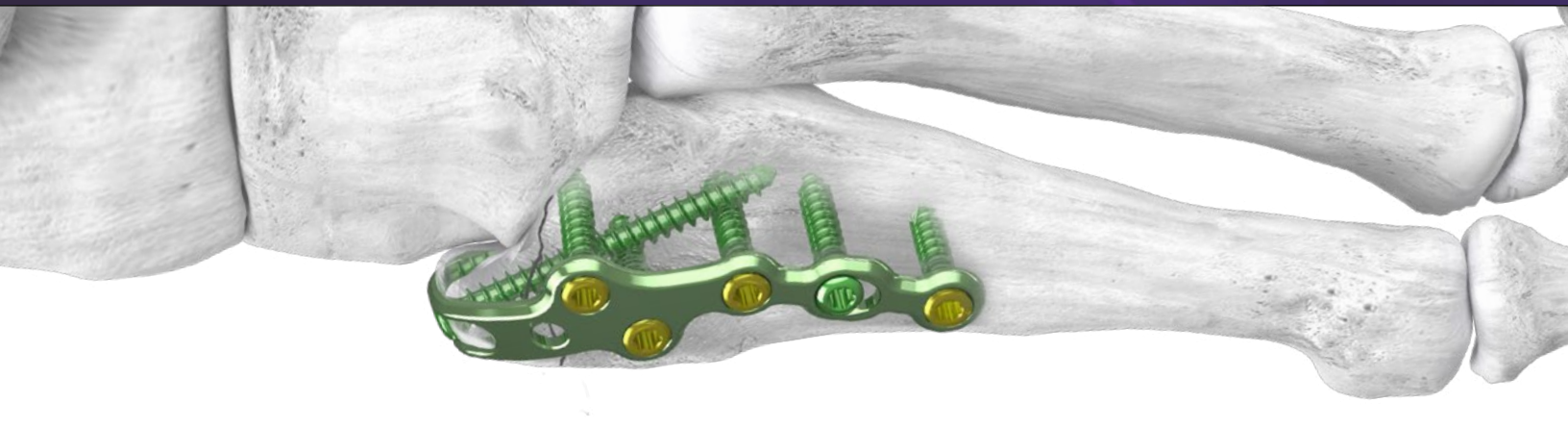




SURGICAL TECHNIQUE GUIDE

5th Metatarsal Fracture

PRODUCT DESCRIPTION

The Baby Gorilla® Plating System offers an extensive line of 65 unique mini-plates for use in a multitude of procedures. Some plates in the system are “universal” in application where they may be used in multiple areas of the foot. Other anatomically specific plates are provided that require minimal manipulation to achieve the necessary fixation, including the 5th metatarsal fracture plates shown in this surgical technique guide. System-specific instrumentation is designed to address foot and ankle fracture reduction and joint preparation, while also easing insertion of Ø2.0 mm and Ø2.5 mm plating screws.

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IMPLANT OFFERINGS

5th Metatarsal Fracture 8 Hole Compression Plates

- Available in left or right options
- Designed to anatomically fit the 5th metatarsal with the option to be used for:
 - Jones Fractures
 - Revision Jones Fractures
 - 5th Metatarsal Shaft Fractures

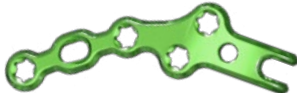


Left Plate



Right Plate

5th Metatarsal Avulsion Fracture Hook Plates



Left Plate



Right Plate

Jones Fracture 6 Hole Hook Plate



Left Plate



Right Plate

FEATURED INSTRUMENTS

5 Hole Plate Pre-Drill Guide



Left Plate



Right Plate

6 Hole Plate Pre-Drill Guide



Left Plate



Right Plate

Hook Screw Drill Guide



Threaded Knob for Pre-Drill Guides



Single Tamp



Double Tamp



OTHER BABY GORILLA® “UNIVERSAL” OPTIONS FOR 5TH METATARSAL FRACTURES



T Plates

- 13 plate options



Straight Plates

- 8 plate options



L Plates

- 21 plate options



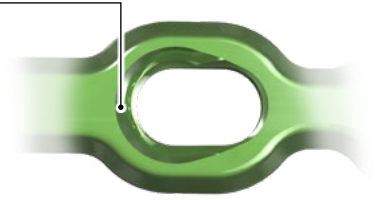
Y Plates

- 7 plate options

BABY GORILLA[®] PLATE TECHNOLOGY

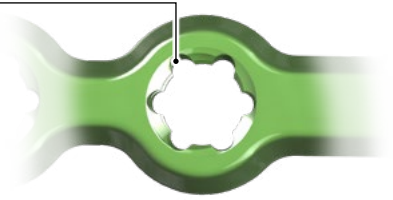
RAMPED COMPRESSION SLOT

Available in most plates for compression capability. Specific plates built with a compression slot to provide compression capability. Either the Ø2.0 or Ø2.5 mm non-locking screw can be inserted into the compression slot eccentrically.



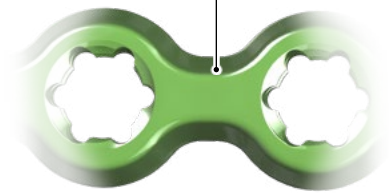
6 SCALLOP HOLES

Initiates threading of the locking screw head into the plate, while allowing for off-axis locking capability.



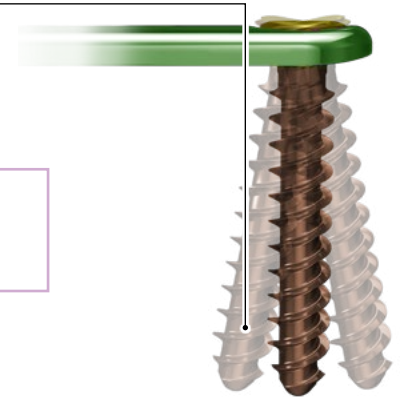
IN-LINE PLATE HOLE SCALLOPS

Provides an advantage in bending strength of the plate to help prevent bending from occurring through a scallop.



VARIABLE ANGLE LOCKING

Creates a locked screw construct up to 15° in every screw hole (with the exception of the compression slot).



TIP: In areas where soft tissue irritation may be a problem over the plate, it is advised to avoid variable angle locking, as the screw head may be proud following insertion.

TAPERED SCREW HEAD

Creates a lag effect to allow locking screws to lag and contour the plate to bone. Do not have to rely solely on non-locking screws for this application.



HEXALOBE DRIVE

Designed to maximize surface contact and torque transmission between the driver and screw, thus helping to reduce screw head stripping.

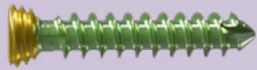


BLUNT TIP DESIGN

Helps minimize soft tissue irritation in bicortical fixation.



SCREW OFFERING AND INSTRUMENTATION MATRIX

	Ø2.0 mm Screws	Ø2.5 mm Screws
Locking:		
Non-locking:		
Screw Lengths:	1 mm increments 8-20 mm 2 mm increments 22-40 mm	1 mm increments 8-20 mm 2 mm increments 22-40 mm 5 mm increments 45-50 mm
Drill Size:	 Ø1.3 mm	 Ø1.6 mm
Driver Size:	 HX-7	 HX-7
Locking Drill Guide Size:	 Ø2.0 mm, Ø2.5 mm	 Ø2.0 mm, Ø2.5 mm
Centering Drill Guide Size:	 Ø2.0 mm	 Ø2.5 mm
Compression Slot Drill Guide Size:	 Ø2.0, Ø2.5 mm	 Ø2.0, Ø2.5 mm
Cone/Straight Easy Guide Size:	 Ø2.0 mm, Ø2.5 mm	 Ø2.0 mm, Ø2.5 mm
Over Drill Size:	 Ø2.0 mm	 Ø2.5 mm
Double Ended Drill / Over Drill Guides:	 Ø2.0 mm, Ø2.5 mm	 Ø2.0 mm, Ø2.5 mm

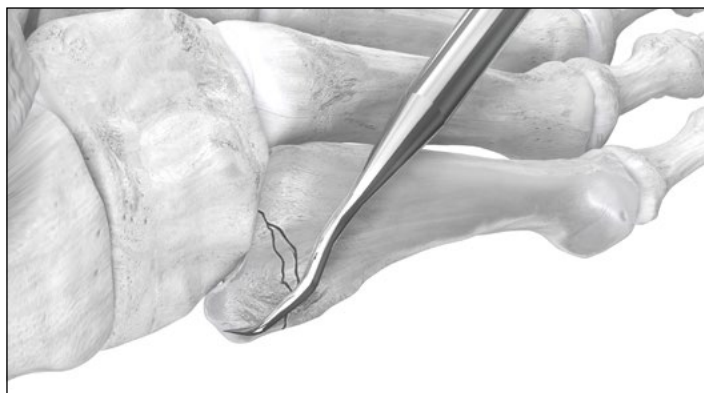
INCISION AND EXPOSURE



Pre-operative radiographs can be used for procedure planning. Patient is positioned such that the foot is placed near the end of the table, or in lateral decubitus, based on surgeon preference.

A longitudinal incision is made over the lateral aspect of the 5th metatarsal encompassing the base of the 5th metatarsal and fracture site. Identify and protect the sural nerve. Soft tissue dissection is carried down until the fracture site is visible and adequate exposure of the 5th metatarsal tuberosity is achieved for plate fit.

FRACTURE REDUCTION



The fracture site can be refreshed and cleared using a curette provided in the Baby Gorilla[™] Case. A dental pick (shown), lobster claw clamp and pointed reduction forcep are provided for fracture reduction.



Temporary stabilization of the fracture site can be performed at this time using a K-wire, if preferred.

PLATE SELECTION AND INSERTION

A 5 Hole 5th Metatarsal Avulsion Fracture Hook Plate is recommended for a 5th metatarsal avulsion fracture. The hooks on the plate can be placed with or without drilling. If drilling is not performed, the plate can be inserted by threading a locking drill guide onto the plate and pushing or manually tamping the hooks of the plate into the base of the 5th metatarsal (not shown).

Place the threaded knob into the 5 Hole Pre-Drill Guide by rotating the knob in a clockwise direction.



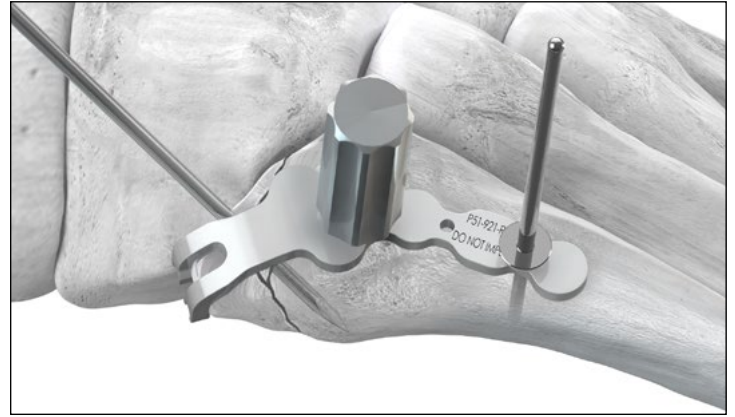
TIP: Pre-drilling is recommended in comminuted fractures or in very hard or soft bone.



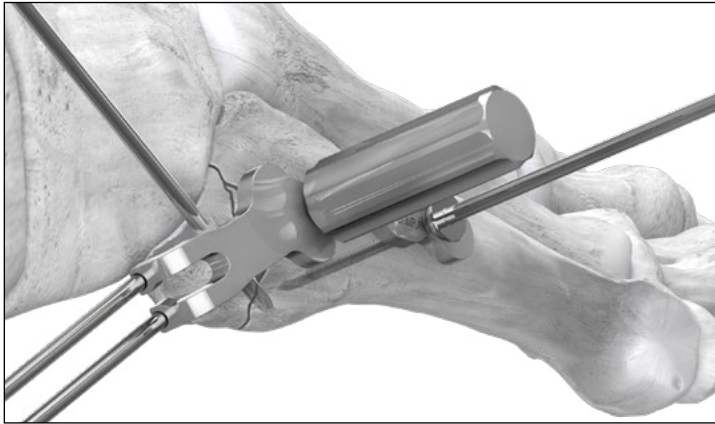
PLATE SELECTION AND INSERTION



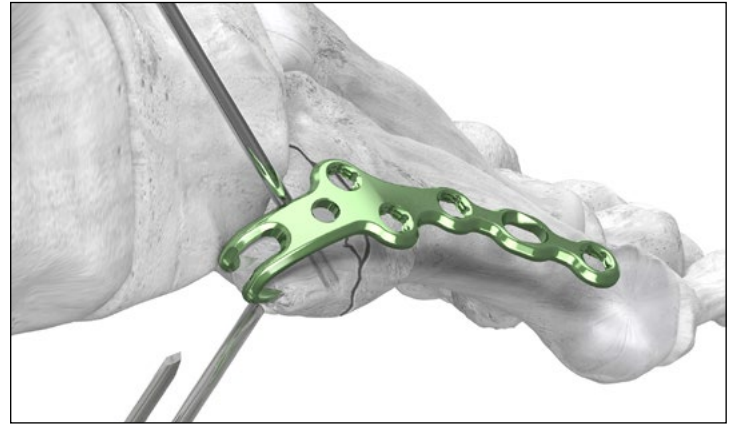
Place the pre-drill guide on the tuberosity to match intended plate position. Hook placement is just plantar to the peroneus brevis insertion, with the plate curvature following the lateral curvature of the 5th metatarsal.



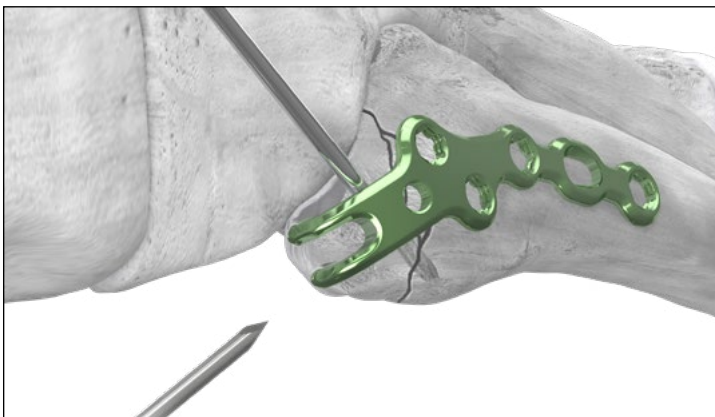
Secure the pre-drill guide with an olive wire, if preferred.



Using 1.6 mm K-wires, pre-drill holes in the K-wire guides of the pre-drill guide for the hook arms.



Remove the olive wire from the pre-drill guide and slide the pre-drill guide off the K-wires. Remove the K-wires one at a time, while replacing the first K-wire removed with the first hook.



Removal of the second K-wire is performed while filling the second hole with the second hook.



If desired, an olive wire may be placed into any circular hole of the plate. Confirm plate size and placement using fluoroscopy.

PERMANENT FIXATION



Retrieve the Compression Slot Drill Guide. Place the drill guide into the compression slot with the arrow pointing towards the fracture site.



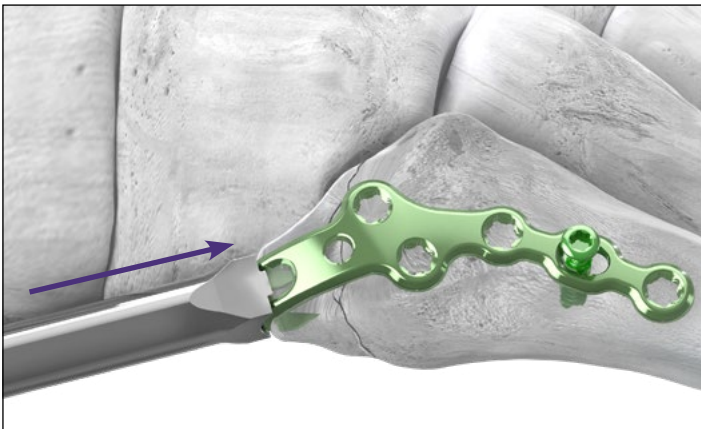
Drill through the compression drill guide eccentrically and distal from the fracture using the drill sized to desired screw diameter.



Measure screw length. Insert a non-locking screw into the compression slot, stopping before the screw neck reaches the plate to remove any temporary fixation or olive wires.



Complete screw insertion into the compression slot. Confirm plate and screw position using fluoroscopy.

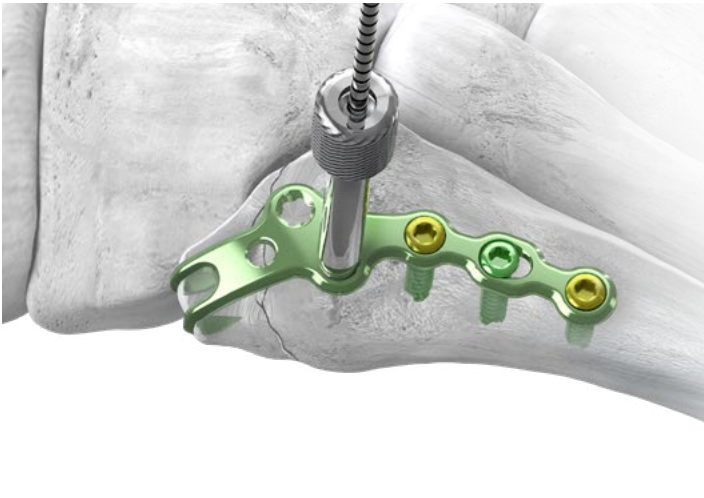


While maintaining pressure on the hooks with the tamp, tighten and fully seat the compression screw in the compression slot once better hook position is achieved.



TIP: If adequate compression of the fracture site or plate seating is not achieved through the compression slot, back out the compression screw at least one quarter turn. Tamp the hooks of the plate using either the single hook tamp or double hook tamp to seat the plate on the tuberosity.

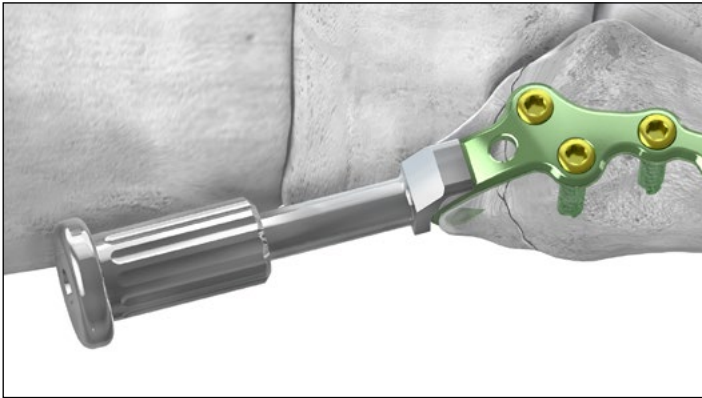
PLATE FIXATION AND COMPRESSION



Fill the remaining plate screw holes as desired. Use of a threaded drill guide is preferred at the two most proximal screw holes if the intent is to put a cross screw through the hooks for additional stabilization. This guide helps to prevent screw interference.

Confirm plate and screw placement using fluoroscopy, if desired.

OPTIONAL CROSS SCREW



Place the hook screw drill guide in between the hooks on the tuberosity.

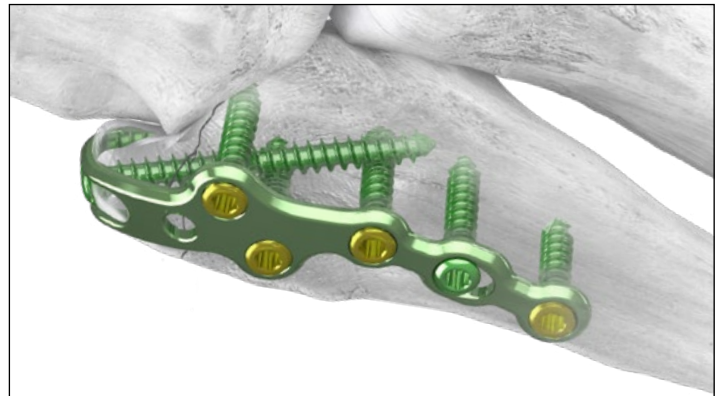


Drill through the hooks to desired length.



Measure the screw length using the depth gauge. Insert selected screw through the hooks.

Confirm position using fluoroscopy.



NOTE: The screw can achieve bi-cortical fixation if sized to cross the medial 5th metatarsal cortex.

CLOSURE

Proceed to incision closure or concomitant procedures at this time.

INCISION AND EXPOSURE



Pre-operative radiographs can be used for procedure planning. Patient is positioned such that the foot is placed near the end of the table, or in lateral decubitus, based on surgeon preference.

A longitudinal incision is made over the lateral aspect of the 5th metatarsal encompassing the base of the 5th metatarsal and fracture site. Identify and protect the sural nerve. Soft tissue dissection is carried down until the fracture site is visible and adequate exposure of the 5th metatarsal tuberosity is achieved for plate fit.

FRACTURE REDUCTION



The fracture site can be refreshed and cleared using a curette provided in the Baby Gorilla™ Case. A dental pick (shown), lobster claw clamp and pointed reduction forcep are provided for fracture reduction.



Temporary stabilization of the fracture site can be performed at this time using a K-wire, if preferred.



NOTE: Bone grafting can be added to a prior non-union site, if needed, prior to fixation.

PLATE SELECTION AND INSERTION

A 6 Hole Jones Fracture Hook Plate is recommended for a Jones Fracture. The hooks on the plate can be placed with or without drilling. If drilling is not performed, the plate can be inserted by threading a locking drill guide onto the plate and pushing or manually tamping the hooks of the plate into the base of the 5th metatarsal (not shown).

Place the threaded knob into the 6 Hole Pre-Drill Guide by rotating the knob in a clockwise direction.



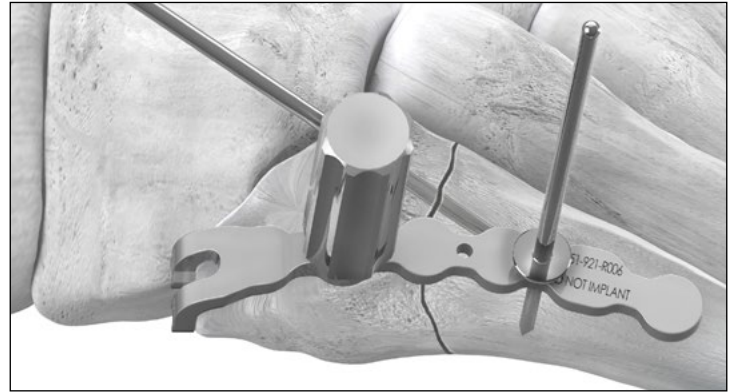
TIP: Pre-drilling is recommended in comminuted fractures or in very hard or soft bone.



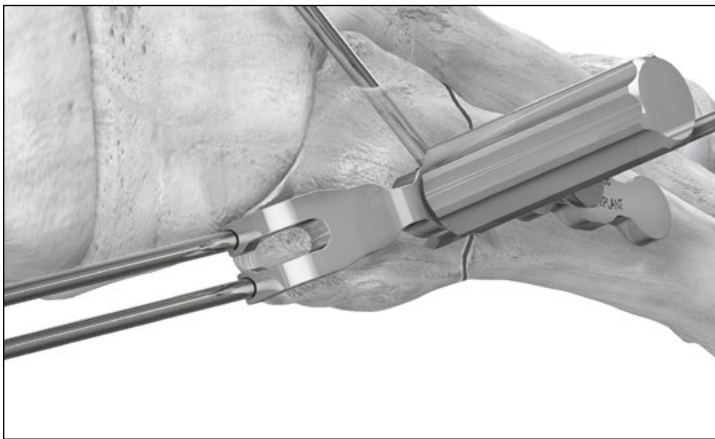
PLATE SELECTION AND INSERTION



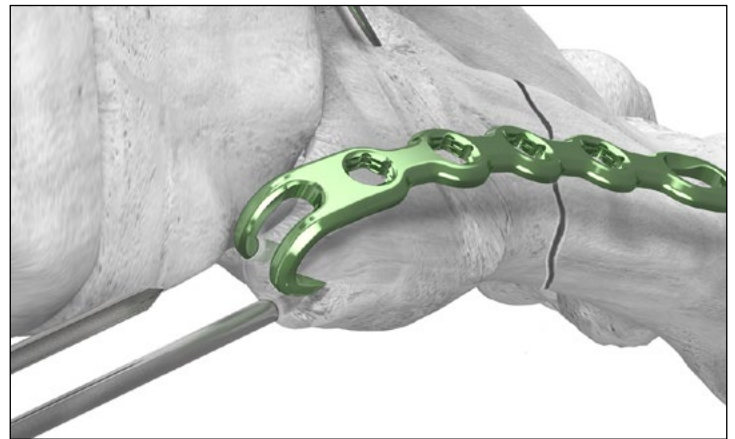
Place the pre-drill guide on the tuberosity to match intended plate position. Hook placement is just plantar to the peroneus brevis insertion, with the plate curvature following the lateral curvature of the 5th metatarsal.



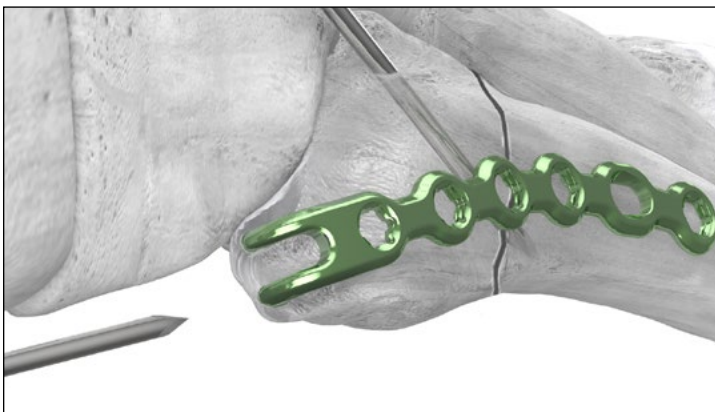
Secure the pre-drill guide with an olive wire, if preferred.



Using Ø1.6 mm K-wires, pre-drill holes in the K-wire guides of the pre-drill guide for the hook arms.



Remove the olive wire from the pre-drill guide and slide the pre-drill guide off of the K-wires. Remove the K-wires one at a time, while replacing the first K-wire removed with the first hook.

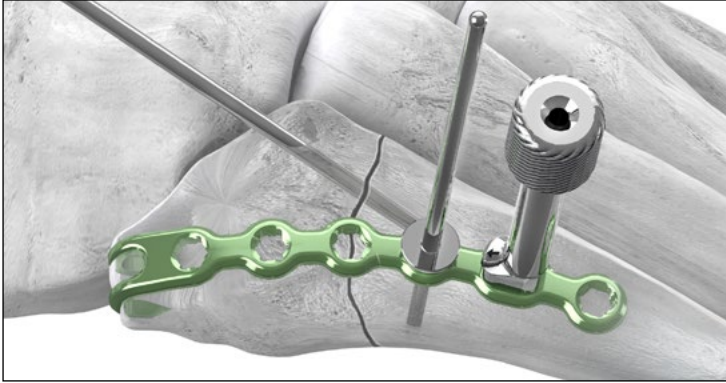


Removal of the second K-wire is performed while filling the second hole with the second hook.

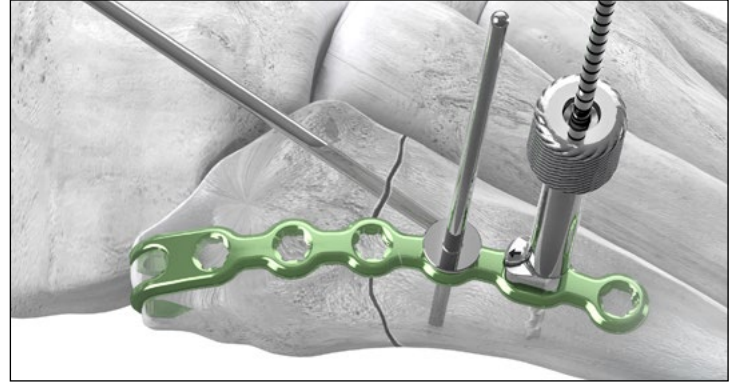


If desired, an olive wire may be placed into any circular hole of the plate. Confirm plate size and placement using fluoroscopy.

PERMANENT FIXATION



Retrieve the Compression Slot Drill Guide. Place the drill guide into the compression slot with the arrow pointing towards the fracture site.



Drill through the compression drill guide eccentrically and distal from the fracture using the drill sized to desired screw diameter.



Measure screw length. Insert a non-locking screw into the compression slot, stopping before the screw neck reaches the plate to remove any temporary fixation or olive wires.



Complete screw insertion into the compression slot.

Confirm plate and screw position using fluoroscopy.



TIP: If adequate compression of the fracture site or plate seating is not achieved through the compression slot, back out the compression screw at least one quarter turn. Tamp the hooks of the plate using either the single hook tamp or double hook tamp to seat the plate on the tuberosity.



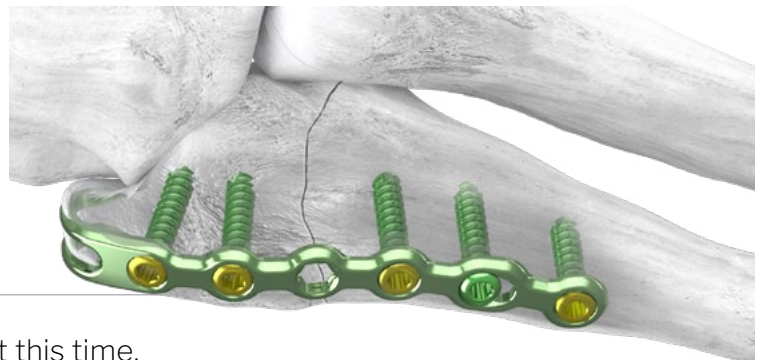
While maintaining pressure on the hooks with the tamp, tighten and fully seat the compression screw in the compression slot once better hook position is achieved.

Fill the remaining plate screw holes as desired.

Confirm plate and screw placement using fluoroscopy, if desired.

CLOSURE

Proceed to incision closure or concomitant procedures at this time.



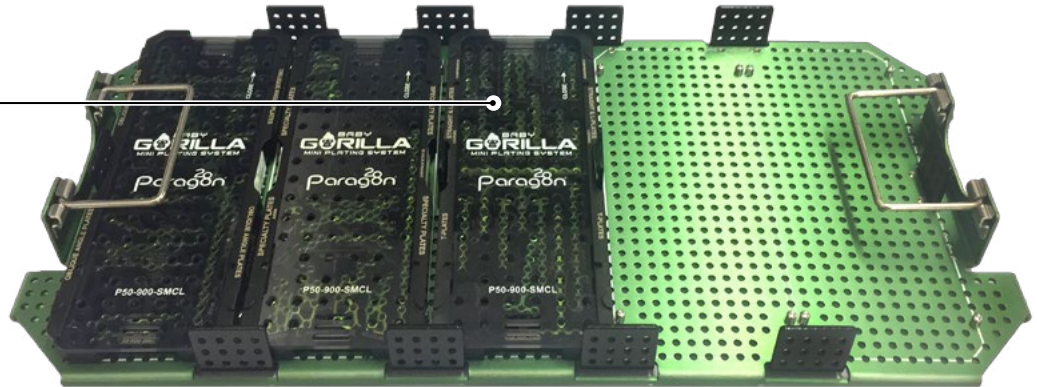
BABY GORILLA® CADDY AND CASE SYSTEM

BABY GORILLA® CADDIES

All caddy options include:

BABY GORILLA® ADDITIONAL CADDIES

The Baby Gorilla® Case comes standard with additional Baby Gorilla® Plate Caddies that may be needed for procedures.



BABY GORILLA® INSTRUMENTS CADDY

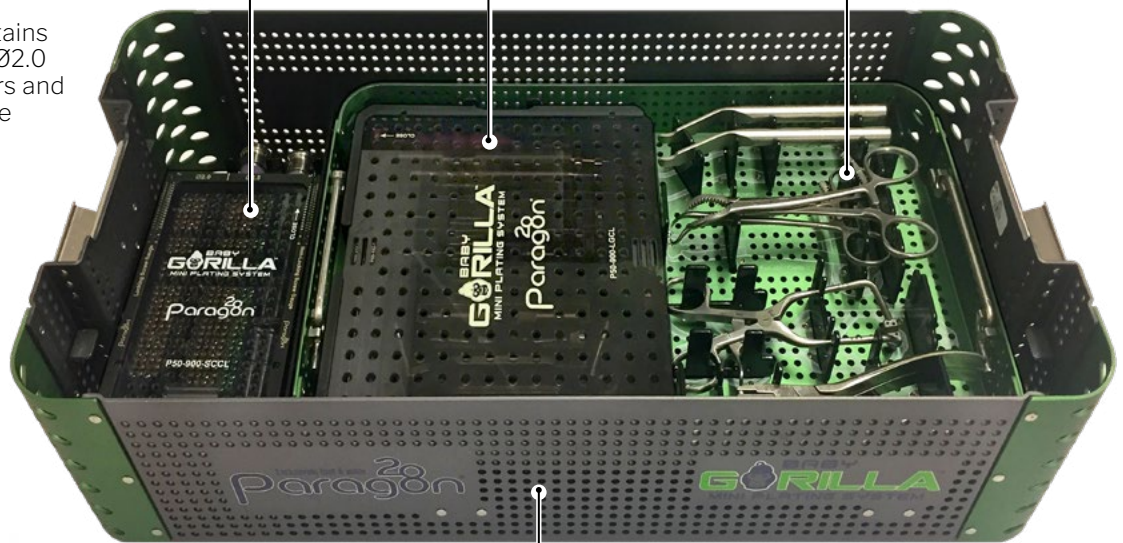
Drill guides, threaded bar plate benders, drills, overdrills, forceps, K-wire ruler, book hook, depth gauge, K-wires and olive wires are located within the Baby Gorilla Instruments Caddy.

BABY GORILLA® INSTRUMENT TRAY

The plate bending pliers, San Gio Baby Bennetts, lobster claw, bone reduction clamp, Wurapa distractor and Wurapa compressor are all located within the Baby Gorilla Instruments Tray.

BABY GORILLA® SCREW CADDY

The Baby Gorilla Screw Caddy contains locking and non-locking screws in Ø2.0 mm and Ø2.5 mm diameters. Drivers and holding sleeves are contained in the screw caddy.



BABY GORILLA® SCREW OPTIONALITY

The Baby Gorilla® screw length options for both locking and non-locking are as follows:

Ø2.0 mm	1 mm increments, 8-20 mm	
Ø2.0 mm	2 mm increments, 22-40 mm	
Ø2.5 mm	1 mm increments, 8-20 mm	
Ø2.5 mm	2 mm increments, 22-40 mm	
Ø2.5 mm	5 mm increments, 45-50 mm	

BABY GORILLA® CASE

The ultra-mini AO Ratchet handle and mini streamline AO handle are located under the screw caddy. The plate cutter, periosteal elevator, rasp, curettes and osteotomes are located within the Baby Gorilla Case, under the Instruments Tray.

Refer to www.paragon28.com/ifus for the complete and most current instructions for use document.

INSTRUCTIONS FOR USE: BABY GORILLA®/GORILLA® PLATING SYSTEM

Indications, Contraindications, Warnings and Precautions relevant to the Baby Gorilla®/Gorilla® Plating System are contained in the Instructions for Use document of the Baby Gorilla®/Gorilla® Plating System P51-IFU-3001.

A patient with the Paragon 28® Baby Gorilla®/Gorilla® Plating System may be safely scanned under the following conditions. Failure to follow these conditions may result in injury to the patient.	
Name/Identification of Device	Paragon 28® Baby Gorilla®/Gorilla® Plating System
Nominal value(s) of Static Magnetic Field [T]	1.5 T or 3 T
Maximum Spatial Field Gradient [T/m and gauss/cm]	30 T/m (3000 gauss/cm)
RF Excitation	Circularly Polarized (CP)
RF Transmit Coil Type	Whole body transmit coil, Head RF transmit-receive coil
Operating Mode	Normal Operating Mode
Maximum Whole Body SAR [W/kg]	2.0 W/kg (Normal Operating Mode)
Limits on Scan Duration	2.0 W/kg whole body average SAR for 60 minutes of continuous RF (a sequence or back to back series/scan without breaks)
MR Image Artifact	The presence of this implant may produce an image artifact
If information about a specific parameter is not included, there are no conditions associated with that parameter.	

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