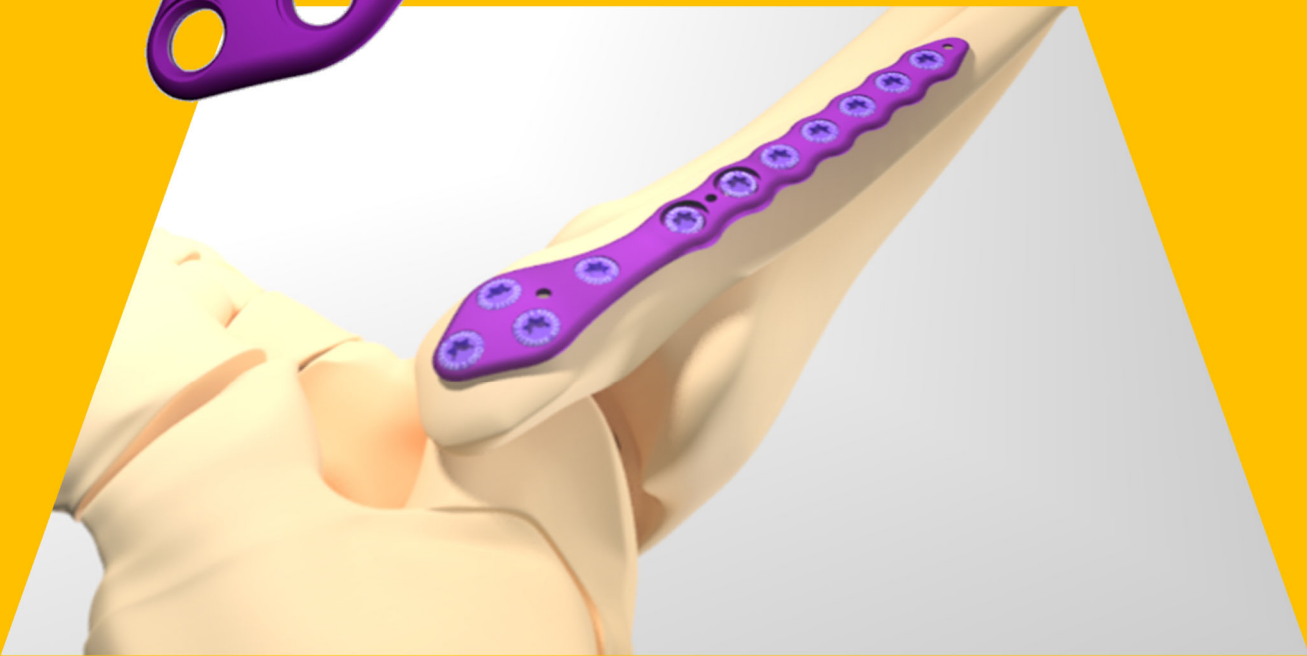




# GEO Distal Fibula Plating System

## Operative Technique



# The GEO Distal Fibula Plating System

## Features and Benefits

The GEO Distal Fibula Plating System consists of a variety of plate lengths and associated instrumentation designed to facilitate optimal sizing, placement, and efficiency.

- **Anatomic plate design**

The GEO Distal Fibula plates are 1.5mm thick and are anatomically contoured and beveled to maintain a low profile. The plates are available in four lengths and two types – with deep-bore syndesmosis fixation holes and with standard syndesmosis screw holes.

All GEO Distal Fibula plates are universal and can be used on either the left or right side.

- **Pre-sterilized packaging, single use instrumentation**

All GEO implants and instruments are packaged pre-sterilized and are single-use only, eliminating the cleaning and sterility concerns or issues typically associated with standard autoclave steri-trays. The GEO Plating System Instruments are compatible with all GEO Extremity Plating System (EPS) implants and provide components that are new, sterile, and readily available in a convenience kit.

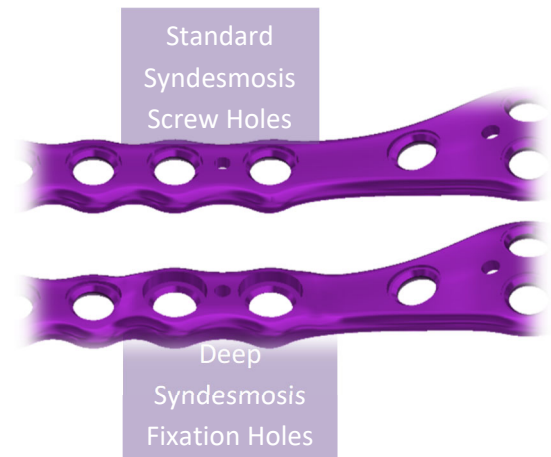
- **Plate screws**

GEO fixed angle locking, and non-locking, cortical screws are available in 2.7mm and 3.5mm diameter, and 4.0mm diameter non-locking screws are available with cancellous threads. All screws are sterile packaged and available in the GEO CART® with certain diameters and lengths available in multi-packs. All GEO plate screws can utilize the same drill bit for increased procedural efficiency.

- **GEO CART®**

Because GEO implants, instrument kits, and individual instrument packages are housed in the GEO CART®, the correct implant size, all the necessary instruments, and additional implant types are immediately available, sterile, and ready to use.

All GEO implant and instrument packages are labeled for quick identification so there is no delay in retrieving the exact item needed. All instrument kits identify the specific implant type and are color code matched for convenient and quick selection.



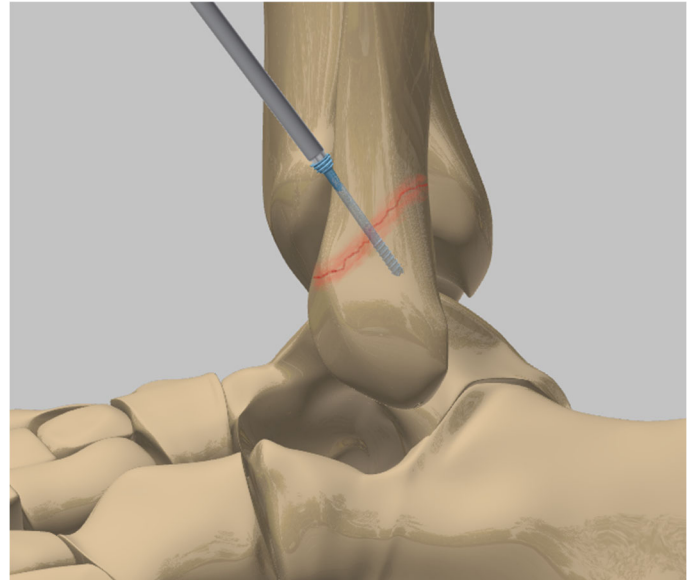
# OPERATIVE TECHNIQUE

With the patient in a supine position, make an incision on the lateral aspect of the fibula, or posteriolateral where greater soft tissue coverage can improve wound closure. Dissect to expose the fracture and distal tibia appropriate to the size of the plate. As preferred, a subperiosteal or extraperiosteal approach proximal to the fracture may be used.

## STEP 1

### Fracture Reduction and compression with Optional Bone Screw

Reduce and temporarily maintain the fracture with forceps or a lobster claw clamp. As needed, open one individually packaged and pre-sterilized GEO Bone Screw kit according to the desired screw diameter. Insert the guide wire, drill, and measure for the length of screw required. Insert a GEO cannulated headless or headed bone screw to achieve compression and fracture reduction.



## STEP 2

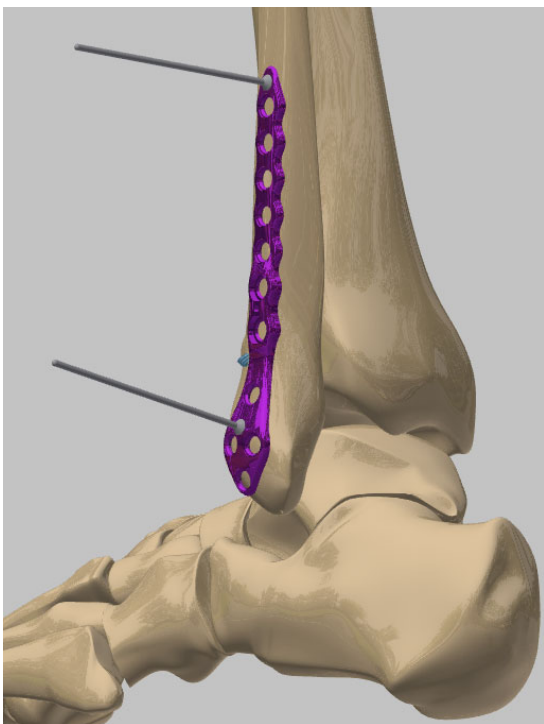
### Secure the Plate

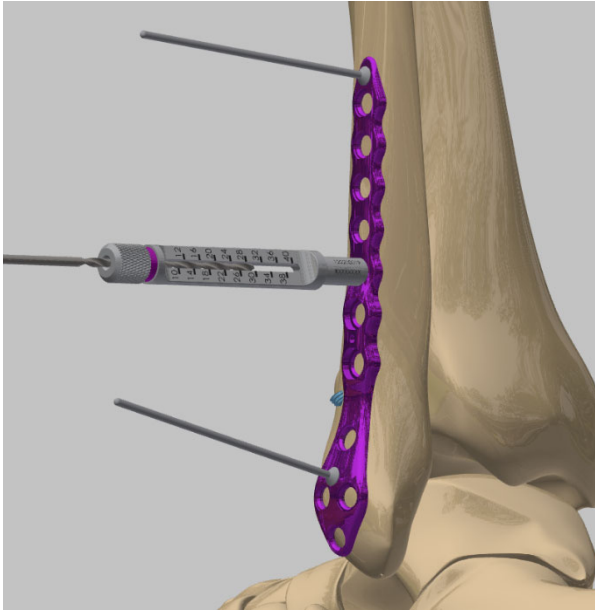
Select the appropriate length GEO distal fibula plate. Using the plate tacks provided in the pre-sterilized GEO EPS Plate Instrument Kit, pin the plate to the bone and confirm plate placement.

The GEO Fibula plates accept all GEO EPS plate screw diameters with fixed angle locking or non-locking heads.

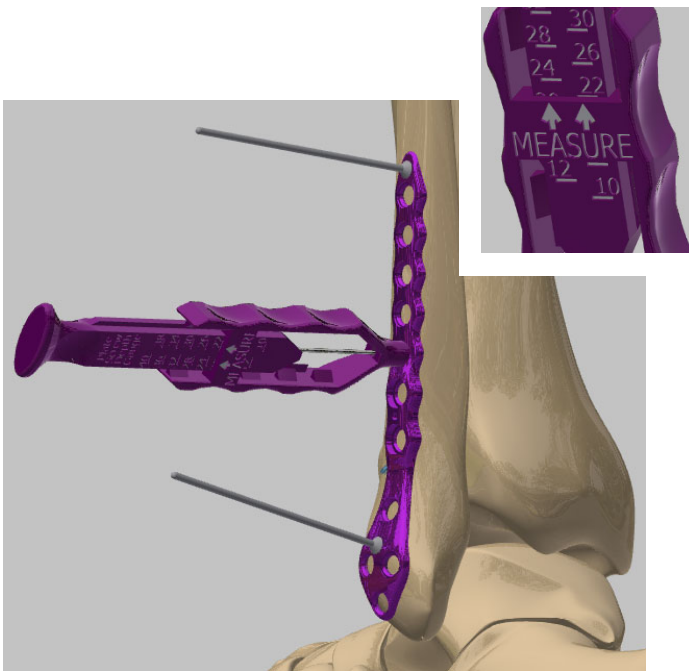
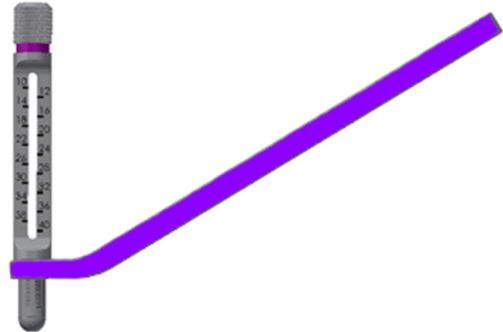
Plate benders are available to contour the plate as needed.

Note: Drill guides, drill bit, and screwdriver tip used with the GEO Fibula plates, and all GEO Extremity Plate System (EPS) Plates and screws, are identified by purple color bands.

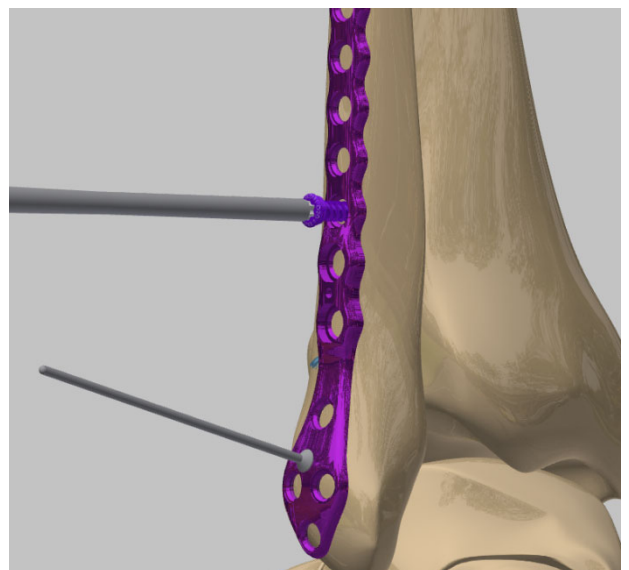




For locking screw insertion, thread the locking drill guide into the desired plate hole threads, and drill using the solid AO drill bit. Both instruments are included in the kit. If inserting non-locking screws, a non-locking drill guide is provided in the plate instrument kit. For increased safety, a non-locking drill guide handle is provided separately. It simply threads onto the non-locking drill guide.



Measure for the appropriate screw length using either the laser mark on the drill against the drill guide rule, or with the separate hook-style depth gauge, also included in the plate kit. Place the nose end of the depth gauge into the plate hole and slide the ruler up until the wire hook catches on the surface of the far cortex. Use the marking on the ruler, as shown, to determine the appropriate length screw.



Using the T-15 Hexalobe AO driver tip included in the kit, insert the desired screws, and tighten fully.

Remove the plate tacks.

## STEP 3

### Syndesmosis Fixation

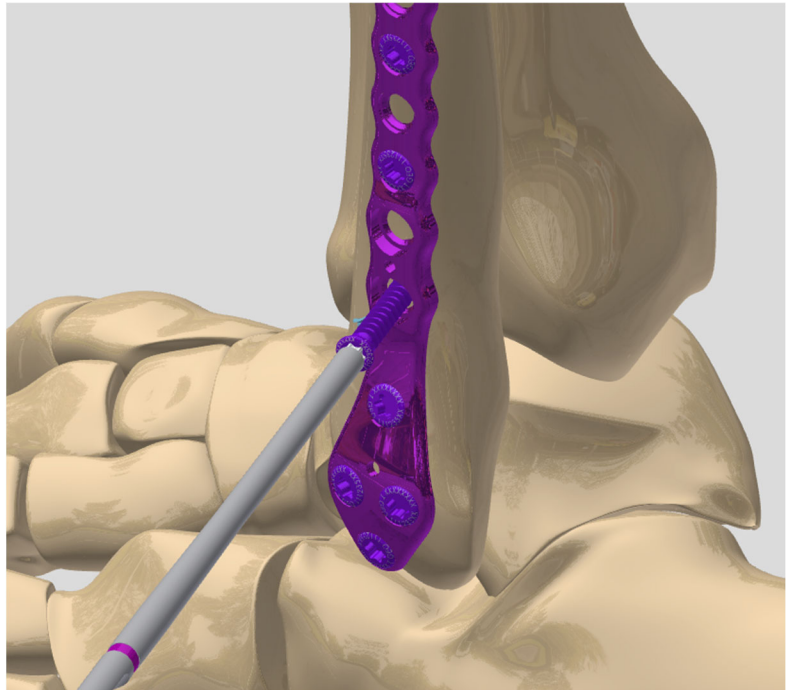
If syndesmosis screw fixation is necessary, it is recommended to use the GEO Distal Fibula Plate with the standard syndesmosis screw holes, however both plate types will accommodate GEO non-locking screws for syndesmosis fixation.

Use a Tenaculum clamp to reduce the syndesmosis. With the non-locking drill guide, drill through one, or both if desired, of the plate holes designed for syndesmotic fixation.

GEO 3.5mm cortical and 4.0mm diameter cancellous non-locking screws are available in lengths up to 60mm for syndesmosis fixation.

A separate GEO Instrument Kit, also available in the GEO Cart, for longer plate screws includes the drill guide, drill bit, and depth gauge required for inserting plate screws above 40mm.

Note that the drill bit, drill guides, and hook-style depth gauge to be used with the plate screws longer than 40mm have a double purple band to distinguish them from the standard plate screw instruments.

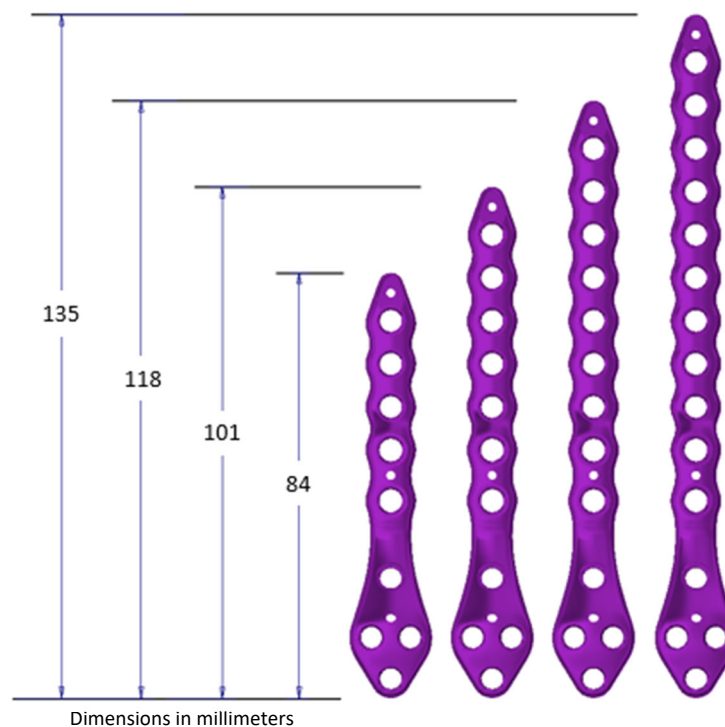


Note: Removal of the syndesmosis screws is recommended after the syndesmosis has healed.

# Distal Fibula Plates

GEO Distal Fibula Plates are part of the GEO Extremity Plating System (EPS) family. For convenience and ease of use, all GEO EPS plates are compatible with all GEO EPS plate screws and instruments. When selecting screws to use with the fibula plate, be sure to look for the EPS designation on the label. Screw color will match plate color.

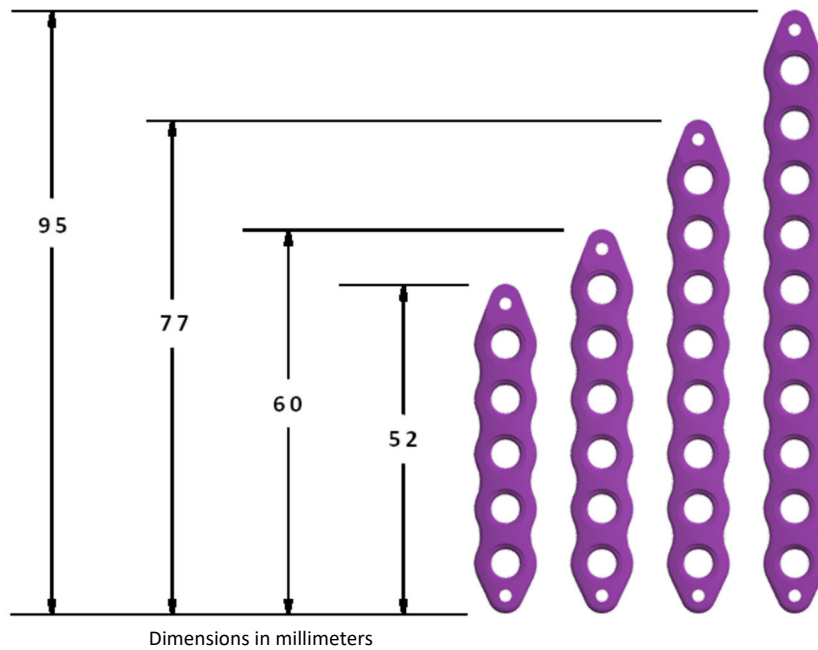
Size	Deep Syndesmosis Fixation Holes	Standard Syndesmosis Screw Holes	Part Number
5 Hole	X		12660005
		X	12660105
7 Hole	X		12660007
		X	12660107
9 Hole	X		12660009
		X	12660109
11 Hole	X		26600011
		X	12660111



# Straight Fibula Plates


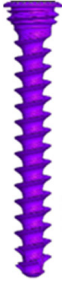


GEO Straight Fibula Plates are part of the GEO Extremity Plating System (EPS) family. For convenience and ease of use, all GEO EPS plates are compatible with all GEO EPS plate screws and instruments. When selecting screws to use with the fibula plate, be sure to look for the EPS designation on the label. Screw color will match plate color.

Size	Part Number
5 Hole	12661005
6 Hole	12661006
8 Hole	12661008
10 Hole	12661010

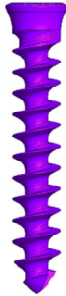


# Plate Screws


As part of the GEO Extremity Plating System (EPS), the following EPS screws can be used with all fibula Plates.

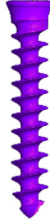
Diameter	Length	Part Number	Diameter	Length	Part Number
<b>Fixed Angle Locking Cortical (EPS)</b>					
2.7 mm 	10 mm	11122710	3.5 mm 	10 mm	11123510
	12 mm	11122712		12 mm	11123512
	14 mm	11122714		14 mm	11123514
	16 mm	11122716		16 mm	11123516
	18 mm	11122718		18 mm	11123518
	20 mm	11122720		20 mm	11123520
	22 mm	11122722		22 mm	11123522
	24 mm	11122724		24 mm	11123524
	26 mm	11122726		26 mm	11123526
	28 mm	11122728		28 mm	11123528
	30 mm	11122730		30 mm	11123530
	32 mm	11122732		32 mm	11123532
	34 mm	11122734		34 mm	11123534
	36 mm	11122736		36 mm	11123536
38 mm	11122738	38 mm	11123538		
40 mm	11122740	40 mm	11123540		
<b>Non-Locking Cortical (EPS)</b>					
2.7 mm 	10 mm	11022710	3.5 mm 	10 mm	11023510
	12 mm	11022712		12 mm	11023512
	14 mm	11022714		14 mm	11023514
	16 mm	11022716		16 mm	11023516
	18 mm	11022718		18 mm	11023518
	20 mm	11022720		20 mm	11023520
	22 mm	11022722		22 mm	11023522
	24 mm	11022724		24 mm	11023524
	26 mm	11022726		26 mm	11023526
	28 mm	11022728		28 mm	11023528
	30 mm	11022730		30 mm	11023530
	32 mm	11022732		32 mm	11023532
	34 mm	11022734		34 mm	11023534
	36 mm	11022736		36 mm	11023536
38 mm	11022738	38 mm	11023538		
40 mm	11022740	40 mm	11023540		



Diameter	Length	Part Number
<b>Non-Locking Cancellous (EPS)</b>		
4.0 mm 	10 mm	11034010
	12 mm	11034012
	14 mm	11034014
	16 mm	11034016
	18 mm	11034018
	20 mm	11034020
	22 mm	11034022
	24 mm	11034024
	26 mm	11034026
	28 mm	11034028
	30 mm	11034030
	32 mm	11034032
	34 mm	11034034
	36 mm	11034036
	38 mm	11034038
40 mm	11034040	

**Extended Length EPS Screws**

Diameter	Length	Part Number
<b>Non-Locking Cortical (EPS)</b>		
3.5 mm 	42 mm	11023542
	44 mm	11023544
	46 mm	11023546
	48 mm	11023548
	50 mm	11023550
	55 mm	11023555
	60 mm	11023560

Diameter	Length	Part Number
<b>Non-Locking Cancellous (EPS)</b>		
4.0 mm 	42 mm	11034042
	44 mm	11034044
	46 mm	11034046
	48 mm	11034048
	50 mm	11034050
	55 mm	11034055
	60 mm	11034060

# Instrument Kits

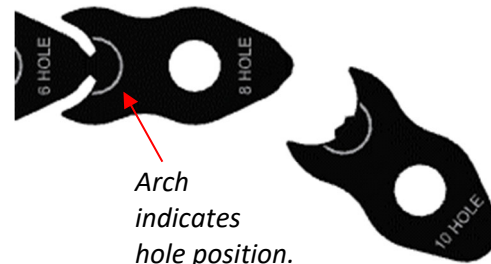
For Use With	Part Number	Kit Components
All GEO Plates. For Screws lengths up to 40mm	70120001	Locking Drill Guide
		Non-Locking Drill Guide
		Hook-Style Depth Gauge
		Drill Bit
		T-15 Hexalobe Driver Tip
		Plate Tack (2 in kit)
		Trocar K-wire
All GEO Plates. For Screw lengths from 40mm to 60mm	70120002	XL Locking Drill Guide
		XL Non-Locking Drill Guide
		XL Hook-Style Depth Gauge
		Drill Bit
Single Use Fibula Plate Templates (Non-Implantable)  Includes all 4 Distal Fibula Plate lengths and one snap-off straight fibula plate template.	71270003	

The Straight Fibula Plate Template snaps off to create the footprint of the desired Straight Fibula Plate.

1. Start with the complete template







2. Snap off one section at a time until the desired length is achieved.



3. The remaining template sections will provide the corresponding Straight Fibula Plate size.



# Individual Instruments

<p>Non-locking Drill Guide Handle PN: 30120001</p>	
<p>T-15 Hexalobe AO Driver Tip PN: 20019915</p>	
<p>Plate Bender Multi-Pack (2) PN: 71240001</p>	
<p>Single Use AO Driver Handle PN: 20080000</p>	

## GEO Extremity and Fibula Plating System

CAUTION: Federal Law restricts this device to sale by or on the order of a physician.

The preceding procedural overview is specific to GEO products and to be considered as an educational tool for use by licensed medical professionals. Final product usage is to be determined by the medical professional based on their expert opinion, training, clinical experience and appropriate review of medical literature and the product's instructions for use.

### INDICATIONS FOR USE

The GEO Extremity and Ankle Plating System is indicated for use in the stabilization and fixation of fractures or osteotomies, joint fusion, and reconstruction of the bones in the hand, wrist, foot, and ankle. The System can be used in both adult and pediatric patients. Specific examples include:

#### Forefoot

- Arthrodesis of the first metatarsal-cuneiform joint (Lapidus Fusion)
- Metatarsal and phalangeal fractures and osteotomies
- Lesser metatarsal shortening osteotomies (Weil)
- Fifth metatarsal fractures (Jones fracture)
- First Metatarsal Osteotomies (Hallux Valgus)
- First Metatarsal-Phalangeal Joint (MTPJ) Fusion

#### Midfoot and Hindfoot

- LisFranc Arthrodesis
- Lapidus Fusion
- Tarsometatarsal (TMT) Fusions
- Intercuneiform Fusions
- Navicular- Cuneiform (NC) Fusion
- Talo-Navicular (TN) Fusion
- Calcaneo-Cuboid (CC) Fusion
- Medial Column Fusions (including Charcot)
- Lateral Column Fusions (including Charcot)
- Flat Foot (including Evans Osteotomy and Cotton Osteotomy)
- Cuneiform Fracture
- Cuboid Fracture
- Navicular Fracture

#### Ankle

- Lateral Malleolar Fractures
- Syndesmosis Injuries
- Medial Malleolar Fractures and Osteotomies
- Bi-Malleolar Fractures
- Tri-Malleolar Fractures
- Posterior Malleolar Fractures
- Distal Anterior Tibia Fractures
- Pilon Fractures
- Distal Tibia Fractures
- Distal Fibula Fractures
- Medial Malleolar Avulsion Fracture
- Lateral Malleolar Avulsion Fracture
- Supramalleolar Osteotomy
- Fibula Osteotomy

### CONTRAINDICATIONS

- Not intended for attachment or fixation to the posterior elements (pedicles) of the cervical, thoracic or lumbar spine;
- In patients with active local infection or any evidence of infection;
- In patients with suspected or documented metal allergy, intolerance; or sensitivity or allergic reaction to foreign bodies;
- In patients with insufficient quality or quantity of bone to permit stabilization of the arthrodesis;
- In the presence of clinical or functional abnormalities that would preclude the potential of achieving a good outcome for the patient.

## WARNINGS

- GEO implants and instrumentation are SINGLE USE ONLY;
- Reuse could result in failure of the device to perform as intended, transmission of infectious diseases, and/or harm to the patient or user;
- The implant can fail due to excessive load or fatigue;
- A successful result may not be obtained in each case. Corrective surgery may be required;
- Pre-operative, operating procedures, surgical techniques and proper patient selection are important considerations for the successful use of this System.
- Selection of the proper type and size of implant is extremely important. Failure to utilize the appropriate size and shape implant and instrumentation may result in loosening, fracture of the device, bone or both.
- The use of implants for purposes other than indicated may result in implant breakage, injury, reoperation and/or removal;
- Where material sensitivity is suspected, appropriate tests should be made prior to implantation;
- Implants are for temporary fixation until healing is complete and may not withstand weight bearing or unsupported stress.

For full prescribing information, refer to the GEO Distal Fibula Plating System Instructions for Use located on [www.gramercyortho.com](http://www.gramercyortho.com)

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