Exclusively foot & ankle Paragon 28®

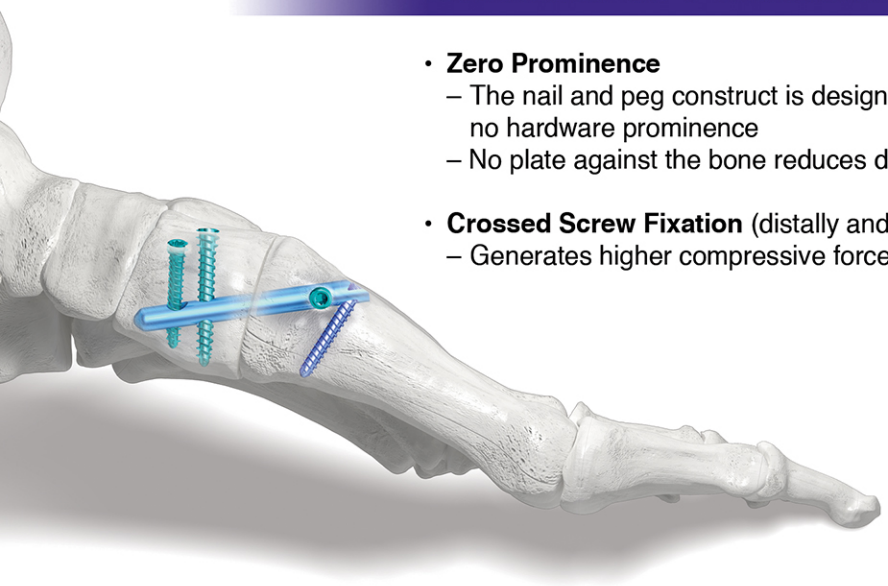
PHANTOM™ INTRAMEDULLARY NAIL

Phantom™ Lapidus Nail System

The Phantom Lapidus Nail was developed to allow surgeons an intermedullary option to correct hallux valgus at the 1st TMT joint.

The titanium alloy rod accepts threaded pegs and a locking screw and mates with instrumentation and guides intended to facilitate placement of the nail into a highly vascularized environment with no soft tissue irritation.

Benefits of Phantom™ Lapidus Nail



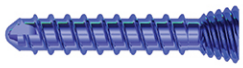
- **Zero Prominence**
  - The nail and peg construct is designed to be positioned below the bone surface allowing for no hardware prominence
  - No plate against the bone reduces damage to the periosteum
- **Crossed Screw Fixation** (distally and proximally)
  - Generates higher compressive force than screws placed through a plate
- **Intermedullary and Structurally Sound**
  - Capable of accepting greater forces across the fusion site without migration at the fusion site
- **Instrumentation to Facilitate Drilling and Placement**
  - Helps to ensure accurate positioning of the nail in a highly vascularized environment
  - Allows for appropriate amount of compression to be achieved to drive healing

Implant Offerings and Components

Phantom™

12 Unique Configurations

PHANTOM™ INTRAMEDULLARY NAIL						
Lengths (2mm Increments)	38-40 mm	42-44 mm	46-48 mm	50-52 mm	54-56 mm	58-60 mm

PHANTOM™ INTRAMEDULLARY NAIL	 **Lapidus Intermedullary Nail Threaded Pegs**	 **Lapidus Intramedullary Nail Locking Screws**
Diameter	3.5 mm	3.5 mm
Lengths	10-46 mm (2 mm Increments)	10-26 mm (2 mm Increments)
Intended Use	Inserts into the three most proximal holes of nail	Inserts into the most distal hole of nail

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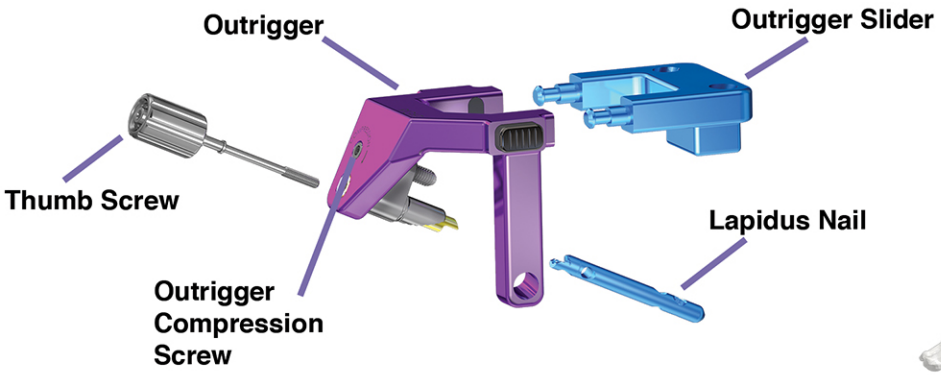
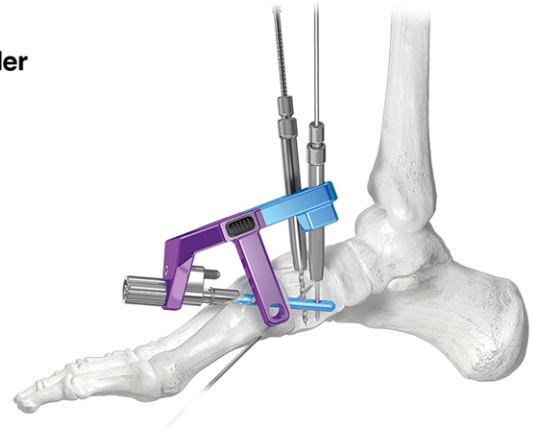
PHANTOM™ INTRAMEDULLARY NAIL

Phantom™ Lapidus Nail Assembly and Insertion

Assembly of Outrigger and Nail



Drilling and Placement of Nail



Phantom Lapidus Nail Science

Load vs. Displacement

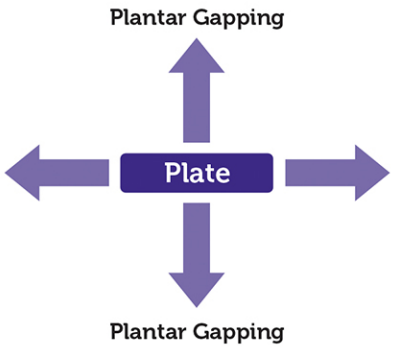
Internal bench testing was completed to assess the stiffness of three different constructs at the 1st TMT Joint: Dorsal Plate, Medial Plate, and IM Nail.

Direction of Forces

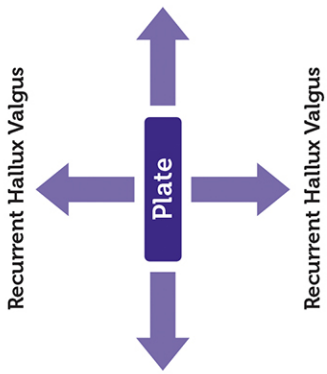
Dorsal plating is strongest in a horizontal direction and weakest in a vertical direction. Lacking compression in this vertical direction has been shown to result in plantar gapping following dorsal placement of the plate.

Medial plating is strongest in a vertical direction and weakest in a horizontal direction. The lack of compression horizontally has been shown to result in recurrent hallux valgus as the first metatarsal may redirect medially following placement of the plate.

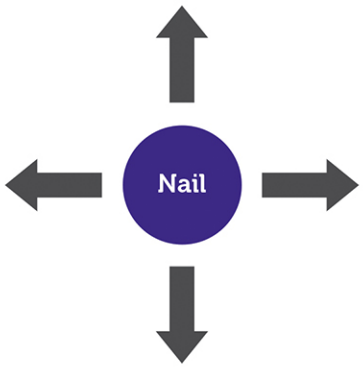
Intramedullary nails show the same strength regardless of direction. The Phantom Lapidus Nail is designed to resist both recurrent hallux valgus and plantar gapping.[1]



Dorsal Plating



Medial Plating



IM Nail

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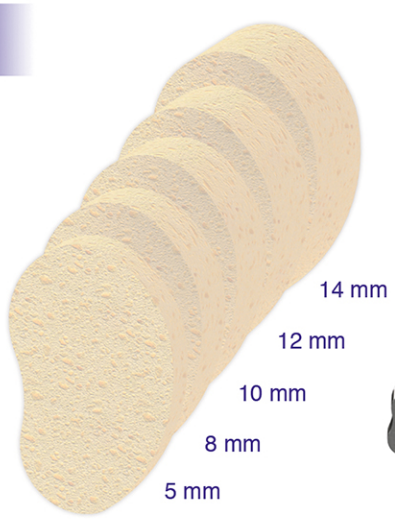
PRESERVE™ LAPIDUS GRAFT

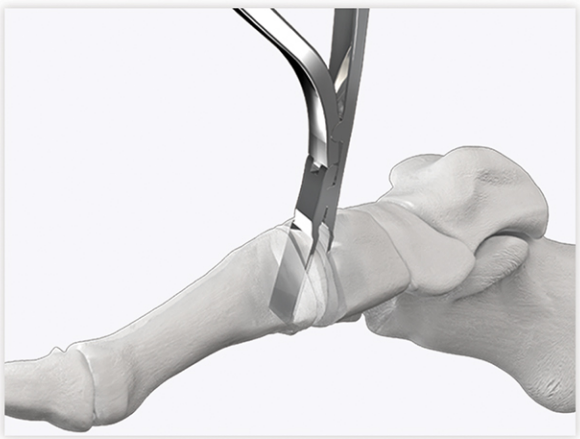
- Patented shape features both dorsal to plantar and medial to lateral taper allowing for biplanar correction
- Donor harvest site is density matched specific to Lapidus indication for strength demands and blood flow requirements
- Aseptically processed without gamma irradiation or hydrogen peroxide to help preserve the native mechanical advantages of human bone and the osteoinductivity of the environment in which the graft is being implanted



Lapidus Trial Sizers

LAPIDUS NIPPER

- Patent pending instrument specifically designed to aid in removal of the two bone fragments created after sagital saw cartilage resection of the 1st TMT Joint
- Osteotome jaw designed to aid in completion of saw cut
- Sharp toothed jaw helps to release remaining soft tissue attachments
- Osteotome jaw and sharp toothed jaw clamp together allowing for extraction of fragment with less disruption of surrounding tissue
- Long jaws designed to grasp around entire bone fragment from dorsal to plantar



Lapidus Nipper inserted into the 1st TMT joint space

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PHANTOM™
INTRAMEDULLARY NAIL

SUBCHONDRAL PERFORATING DRILL AND JOINT PREPARATION CHISEL

- Denuding cartilage at the fusion site has been shown to increase the likelihood of fusion[3-6]
- Use of K-wires creates a greater amount of heat transfer during preparation of the bone than a drill[2]
- The Subchondral Perforating Drill allows for controlled perforation of the subchondral plate of the bone creating channels in the bone for migration of cells to the fusion site

References

1 Test Report (TR-17060501) on file at Paragon 28

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4 Yu GV. The curettage technique for major rearfoot fusions. In: Camasta CA, Vickers NS, Ruch JA (eds): The Podiatry Institute Reconstructive Surgery of the Foot and Leg, Update '93, Podiatry Institute, Tucker, GA, 1993, pp. 260–237.

5 Coetzee JC, Wickum D. The Lapidus procedure: a prospective cohort outcome study. Foot Ankle Int. 2004; 25(8):526–531.

6 Patel S, Ford LA, Etcheverry J, Rush SM, Hamilton GA. Modified Lapidus arthrodesis: rate of nonunion in 227 cases. J Foot Ankle Surg. 2004; 43(1):37–42.

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