

Compression that doesn't quit.



Dorsal Insertion. Plantar Tension.

- In a MTP fusion, use of a staple allows compression to be efficiently applied dorsally through the main incision.
- The industry-leading compression of the compatible HiMax[®] staple is strong dorsally and concentrates at the approximate midline of the staple leg. Perhaps most importantly, compression has been shown to radiate 10mm distal to the ends of the staple legs to maintain a plantar tension band.



Pressure map resulting from 18x18 HiMax[®] staple compressing a sensor between two sawbone blocks

25% More Bone Apposition The average contact surface area of the MTP joint¹ is 38mm². Lag screws reduce this contact area by approximately 25%.



The Strongest Staples

The CrossRoads HiMax[®] Staple System endeavors to be the most comprehensive Nitinol[™] portfolio available, and features the strongest compression (27 lbs. average) on the market. To ensure a consistent surgical experience, our staples provide uniform compression regardless of size.



Max Compressive Force

1.Ahn, et al. Kinematics and contact characteristics of 1st MPJ. FAI. Mar, 1997

The Continuous Compression System

DynaForce[®] Staple Compression Plates[™] have a patented design that allows the insertion of a powerful nitinol staple to provide compression instead of a lag screw. This provides these primary advantages:

Gap Recovery

Continuous staple compression overcomes space between the fusing bones (i.e. gapping) caused by natural osteoclast resorption or patient non-compliance.

Apposition

Staples do not penetrate the bone interfaces and therefore maximize bone contact.

Speed

Compared to lag screw preparation, inserting a staple is more efficient and can drastically reduce operating time.



How Does the Staple Compress if the Plate is Fixed with Screws?



Non-Locking Screws on Both Sides of the Plate (recommended construct)

The screw holes in Staple Compression Plates[™] allow .75mm of screw micro-movement per side when used with non-locking screws. This allows Staple Compression Plates[™] to close an approximately 1.5mm fusion gap along the entire dorsal to plantar surface.



Non-Locking Screws on One Side of the Plate; Locking Screws on the Other

The non-locking screws will allow .75mm of screw micro-movement on one side of the Staple Compression Plate™ while the locking screws will prevent all movement on the other. This construct can be expected to slightly reduce the gap-closure ability of the Staple Compression Plate™ and allow the closure of a .75mm gap along the entire dorsal to plantar surface.



Locking Screws on Both Sides of the Plate

The use of locking screws on both sides of a Staple Compression Plate[™] creates a rigid construct which allows no micro-movement between the screws and plate. However, the high compression provided by HiMax[®] staples can flex the plate and create a dynamic force for fusion gap closure; however the force will be more plantarly focused.

Surgical Technique



Metatarsal Preparation

Insert a 1.6mm/.062" guidewire in the central aspect of the metatarsal. Place the concave metatarsal reamer over the wire and begin to ream. The reamer should be spinning prior to touching bone. Remove all articular cartilage; exposing bleeding bone.

Note: A small drill bit or k-wire may be used to fenestrate the surface after reaming.



Phalanx Preparation

Insert a 1.6mm/.062" guidewire in the central aspect of the phalanx. Place the convex phalangeal reamer over the wire and begin to ream. The reamer should be spinning prior to touching bone. Remove all articular cartilage; exposing bleeding bone.



Trial and Initial Fixation

Implants may be used as a trial. If an alternate implant is needed after opening the first sterile implant, re-package and discard the unused implant(s) in the EcoPAK container. Place temporary holding wires to secure the plate. Utilize fluoroscopy to confirm proper fit and placement.



Staple Preparation

Take care to align the drill guide with the plate surface and drill for one staple leg with the 3.2mm reamer. Insert a fixation pin to ensure parallel reaming. Ream for the second leg and remove the fixation pin.



Staple Placement

Ensuring the legs are parallel, utilize the inserter to implant the DynaFORCE® staple through the plate until the staple is flush with the plate surface. Rotate the inserter knob counter-clockwise until pressure is released, then rotate the inserter counter-clockwise until the staple releases.

Note: A tamp is available if needed.



Screw Placement

Ream and prepare for screws beginning with distal holes first. Non-Locking screws are recommended, unless bone quality is poor. If locking screws are used, ensure the plate is firmly held to the bone on the opposite end prior to fully locking.





5º DORSAL

7150-5018

18.0mm

43.0mm

1.5mm

Universal

5°

10º DORSAL

7150-1018

18.0mm

43.0mm

1.5mm

Universal

5°

0º DORSAL

7150-0018

18.0mm

43.0mm

1.5mm

Universal

5°

MTP Short

SLOT LENGTH / CLIP SIZE

PART NUMBER

OVERALL LENGTH

THICKNESS

RIGHT/LEFT

VALGUS ANGLE

	18mm	
O.C.	X	D-C
	-50mm-	

:	ΝЛ	тρ	Cton	dard
+	IVI		JIAN	Jaru

N.,	0º DC	ORSAL	5º DO	RSAL	10º DC	DRSAL
PART NUMBER	7R50-0018	7L50-0018	7R50-5018	7L50-5018	7R50-1018	7L50-1018
SLOT LENGTH / CLIP SIZE	18.0mm	18.0mm	18.0mm	18.0mm	18.0mm	18.0mm
OVERALL LENGTH	50.0mm	50.0mm	50.0mm	50.0mm	50.0mm	50.0mm
THICKNESS	1.5mm	1.5mm	1.5mm	1.5mm	1.5mm	1.5mm
VALGUS ANGLE	5°	5°	5°	5°	5°	5°
RIGHT/LEFT	Right	Left	Right	Left	Right	Left



÷	wotoBand	Locking Screws & Non-Locking Screws			
	·	3.0mm LOCKING	3.5mm LOCKING	3.0mm NON-LOCKING	3.5mm NON-LOCKING
	PART NUMBER	15PL-3010 through 15PL-3024	15PL-3510 through 15PL-3524	15NL-3010 through 15NL-3024	1500-3510 through 1500-3524
	SIZE RANGE*	10mm-24mm	10mm-24mm	10mm-24mm	10mm-24mm
	DRIVER	H10 (Hexalobe)	H10 (Hexalobe)	H10 (Hexalobe)	H10 (Hexalobe)
	DRILL SIZE	2.0mm	2.5mm	2.0mm	2.5mm

*2mm increments



	Dimension	HiMax [®] Staple (18x18x18mm)	HiMax® Staple (18x14x14mm)
Part Number		7118-1818	7118-1414
Bridge Width	А	2.7mm	2.7mm
Bridge Thickness	В	1.8mm	1.8mm
Interaxis Length	C	18mm	18mm
Leg Length	D	18mm	14mm
Leg Cross-Sectior (without teeth)	ı E	3.2mm	3.2mm
Reamer Size		3.2mm	3.2mm
Compression		27lbs.	27lbs.

Indications & Risks

The MotoCLIP®/HiMAX® Implant System is indicated for hand and foot bone fragment osteotomy fixation and joint arthrodesis. There are potential risks associated with the use of these devices some of which include: allergic reaction to the implant material, fracture of the implant, soft-tissue complication (e.g., infection at the implant site, prolonged healing), and revision surgery. Refer to IFU for all contraindications, warnings, and risks.

Data on File for All Information & Data Listed

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