

Toe Arthroplasty Solutions

MTP Implant Systems

Product Brochure



Motion in Every Step

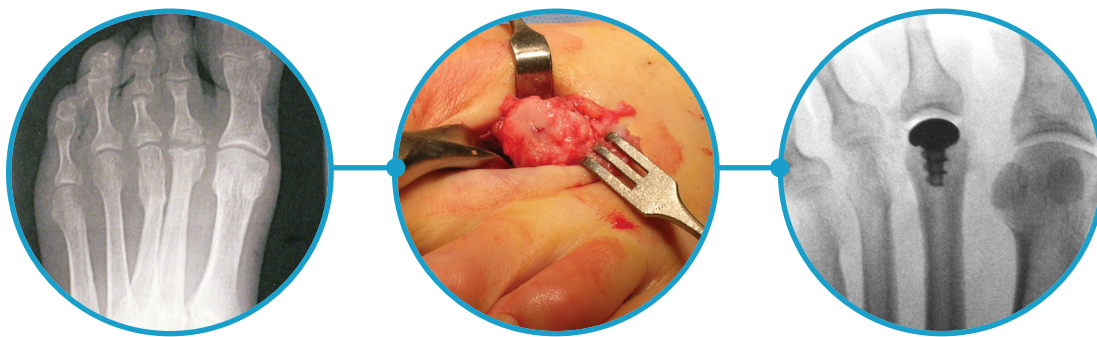
MTP Implant Systems

HemiCAP

Lesser Metatarsal Restoration

Lesser Metatarsal Hemiarthroplasty

Restore Congruency

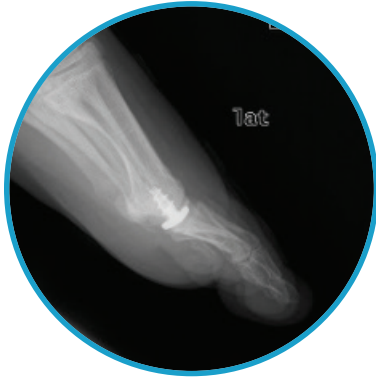


- Specifically designed for the lesser metatarsals
- Proven fixation provides a stable implant
- Minimal bone removal maintains future options
- Anatomic Inlay maintains the length of the 2nd metatarsal

"The Arthrosurface HemiCAP metatarsal head resurfacing implant technique is easy to perform and is minimally invasive with a low learning curve."

"This procedure allows removal of the diseased bone but at the same time requires minimal resection of subchondral bone and it preserves enough viable bone stock for an appropriate metatarsal parabola and for future treatment options if needed."

Goecker RM. Lesser metatarsal head resurfacing procedure for Freiberg's infraction. Podiatry Institute Update, chapter 2, 2010, pp. 5-10. 16.

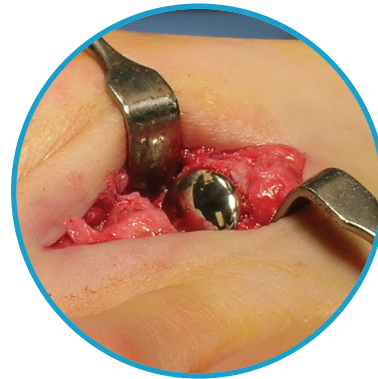


Proven 4th Generation Threaded Fixation versus “Push and Pray” Implants

The 7mm threaded taper post, morse taper interlock and inlay design provides optimal fixation in the metatarsal bone and reduces shear forces that may cause loosening.

Restores a Smooth Articulation

Resurfacing the metatarsal head with a HemiCAP® provides a smooth articulating surface.



Maintains the Length of the 2nd Metatarsal

The system is designed to only resurface the damaged 2nd metatarsal head without removing any extra bone.

Ordering Information

Instrumentation System

9000-3000	Instrument Kit, 12mm Toe HemiCAP
7007-1200	2.0mm Guide Pin for Metatarsal Implants

Metatarsal Articular Components

9122-1015	1.0mm x 1.5mm Offset
9122-1020	1.0mm x 2.0mm Offset
9122-1520	1.5mm x 2.0mm Offset
9122-1525	1.5mm x 2.5mm Offset
9122-2025	2.0mm x 2.5mm Offset
9122-2030	2.0mm x 3.0mm Offset
9070-0013	Taper Post, 7.0mm x 13mm

HemiCAP DF

First Metatarsal Restoration

1st MTP Hemiarthroplasty with Proven Results



The HemiCAP DF has a rock solid fixation



Unique metatarsal based design



Proven clinical history with over 45,000 MTP implants performed

"The surgical treatment of late-stage hallux rigidus with metatarsal head resurfacing allows for low risk and excellent outcomes at long-term follow-up point."

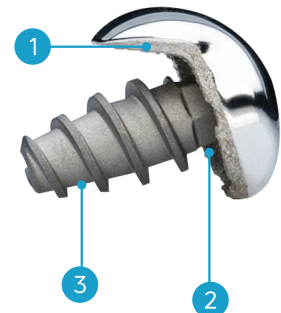
Hilario H, Garrett A, Motley T, Suzuki S, Carpenter B.

Ten-Year Follow-Up of Metatarsal Head Resurfacing Implants for Treatment of Hallux Rigidus.
J Foot Ankle Surg. 2017 Sep - Oct;56(5):1052-1057

Rock Solid Fixation

Screw based fixation provides a stable implant

1. Ti Plasma spray undercoating with line to line bone to implant fit
2. Morse Taper interlocks the two components
3. Bead blasted screw surface provides superior fixation

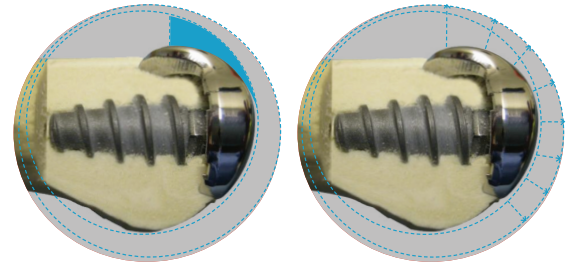


4. BOSS™ Toe Fixation Post provides immediate rigid fixation where there was a large distal bone void or cyst sometimes caused by failed synthetic cartilage implants. The mid-body revolved ring on the fixation component also provides enhanced stability.



Unique Design

- **Dual implant curvatures** improve dorsal roll-off
- **Super smooth** articulating CoCr surface
- **Conical fixation** optimizes bone-screw interface
- **Standardized thread pitch** for precise depth adjustment



Proven Results

- Over 10 years of MTP clinical history
- Over 35,000 MTP implants

Ordering Information

Instrumentation System	
9000-3002	Instrument Kit, ToeMotion
9CR9-211	Drill, 10.0mm, BOSS, Disposable, Sterile
7007-1200	2.0mm Guide Pin for Metatarsal Implants

Metatarsal Articular Components	
9M52-1535	1.5mm x 3.5mm Offset
9M52-1545	1.5mm x 4.5mm Offset
9M52-2535	2.5mm x 3.5mm Offset
9M52-2545	2.5mm x 4.5mm Offset
9095-0018	Taper Post, 9.5mm x 18mm (for metatarsal only)
9CRS-D200	Taper Post, BOSS (for metatarsal only)
9070-0013	Taper Post, 7.0mm x 13mm

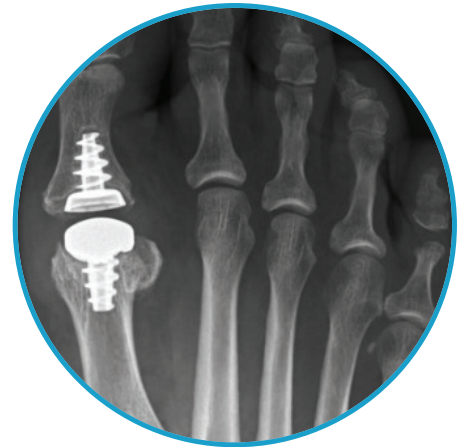
ToeMotion

Total Toe Restoration

Total Toe Arthroplasty

Articulation. Fixation. Preservation.

The ToeMotion® System restores mobility and maintains native biomechanics using a dual curved HemiCAP® DF and a new modular tray-style phalangeal implant with a threaded baseplate. Fourth generation fixation components provide stable constructs on both sides of the joint.

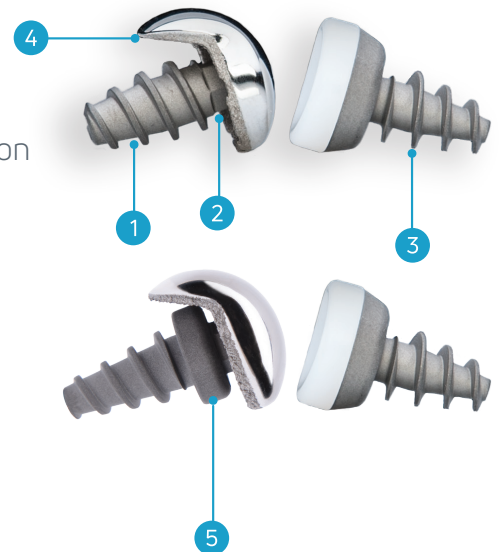


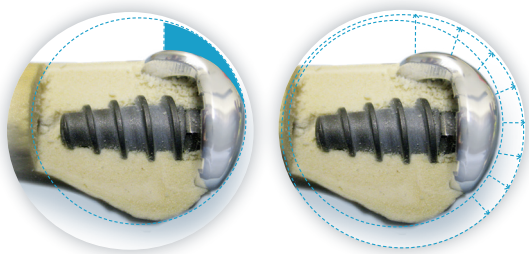
- Inlay arthroplasty provides stability and preserves bone
- Rock-solid fixation with morse taper interlock
- Long-term clinical history with over 45,000 MTP implants performed
- Single tray system with multiple implant options

Rock Solid Fixation

Designed to address the primary failure mode of MTP implants-loosening

1. Bead blasted MTP screw surface provides superior fixation
2. Morse Taper / Conical fixation interlocks the two components
3. 4th generation threaded metatarsal and phalangeal fixation
4. Ti Plasma spray undercoating with line to line bone to implant fit
5. BOSS™ Toe Fixation Post provides immediate rigid fixation where there was a large distal bone void or cyst caused by failed synthetic cartilage implants. The mid-body revolved ring on the fixation component also provides enhanced stability.

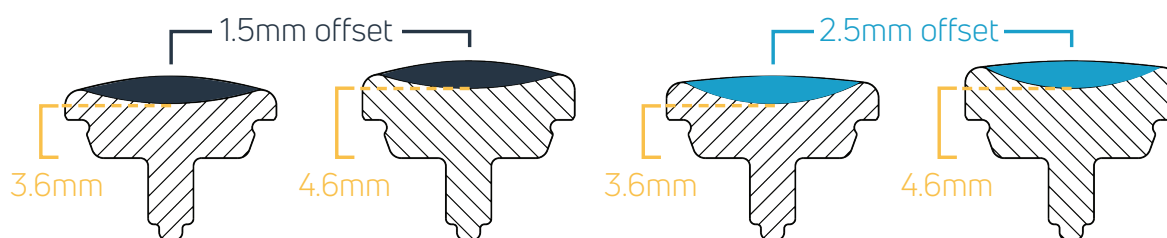




Unique Design

Engineered to reproduce the unique kinematics of the MTP joint

- Poly inserts available with multiple offsets & thicknesses
- Standardized thread pitch for precise depth adjustment
- Dual MTP implant curvatures improves dorsal roll-off



Ordering Information

Metatarsal Articular Components		Proximal Phalanx Articular Components	
9M52-1535	1.5mm x 3.5mm Offset	9P15-PA01	Phalangeal Insert, 1.5 mm Offset - 01 (3.6 mm Thick)
9M52-1545	1.5mm x 4.5mm Offset	9P15-PA02	Phalangeal Insert, 1.5 mm Offset - 02 (4.6 mm Thick)
9M52-2535	2.5mm x 3.5mm Offset	9P15-PB01	Phalangeal Insert, 2.5 mm Offset - 01 (3.6 mm Thick)
9M52-2545	2.5mm x 4.5mm Offset	9P15-PB02	Phalangeal Insert, 2.5 mm Offset - 02 (4.6 mm Thick)
9095-0018	Taper Post, 9.5mm x 18mm (for metatarsal only)	9P15-S180	Fixation Component, Phalangeal Implant
9CRS-D200	Taper Post, BOSS (for metatarsal only)		
Instrumentation System			
9000-3002	Instrument Kit, ToeMotion		
9CR9-211	Drill, 10.0mm, BOSS, Disposable, Sterile		
7007-1200	2.0mm Guide Pin for Metatarsal Implants		

BOSS

Toe Fixation Post

Toe Fixation

When synthetics fail, preserve motion with the BOSS!

- Immediate Rigid Fixation in Cases with Metaphyseal Bone Loss
- Fills the 10mm Distal Bone Void Left Behind
- Maintains Stability & Preserves Motion
- Preserves Length and Mechanical Axis
- Specifically Engineered Fixation for Distal Bone Voids



Special Considerations For Cartiva Revision

Preoperative Considerations

In order to ensure best results when replacing a Cartiva implant with an Arthrosurface DF or ToeMotion equipped with the BOSS screw, it is important to consider a few key points before the surgery:

- Pre-revision xrays should be carefully assessed for 1st and 2nd metatarsal length to maintain the parabola, as well as elevatus of the 1st ray if present in order to plan for proper joint decompression and alignment.
- Severe sesamoid arthritic issues/hypertrophic sesamoid issues may exist as a result of previous procedures. These conditions may mask the benefit of the BOSS™ Toe Fixation Component. This should be carefully assessed by the surgeon and discussed with the patient.
- Any degenerative changes that have occurred to the metatarsal head or phalangeal base will have to be considered. Impact of the Cartiva implant on bone, soft, or connective tissues or any issues with the surgical wound site should be carefully assessed. Surgeon should be confident that adequate tissue quality exists to support

the BOSS™ Toe Fixation component and allow for effective wound closure. There are various lengths of the Arthrosurface Fixation Components that can be available, as well as bone void fillers and cement that may be needed.

- Since this will be a revision, you should expect to encounter a significant amount of scar tissue with adhesions of the joint capsule to the metatarsal head. Having adhesion barrier products or amniotic tissues available can help prevent this during the postoperative recovery period.
- Patient should be infection free for previous 6 months.

Technique Considerations

- Fluoroscopy is highly recommended for this procedure.
- Carefully preserve the joint capsule to ensure the implant will be completely covered and the joint protected
- Ensure full circumferential release of the metatarsal head from the sesamoid apparatus as well as the joint capsule. Adhesions can occur from all sides of the metatarsal, therefore generous use of the McGlamry Elevator will assist in freeing up these tissues. Perform aggressive soft tissue releases along lateral, medial and plantar margins of the joint to facilitate restoration of range of motion. Pay particular attention to freeing adhesions impacting sesamoid movement.
- Upon removal of Cartiva SCI implant, examine the temporary bone void. It may be necessary to address bone void with a bone void filler prior to BOSS™ Toe Fixation technique steps. Carefully assess whether bone void volume is excessive, is beyond BOSS™ Toe Fixation component area, or is not located generally along mechanical axis.
- Guide Pin placement coaxial to 1st ray mechanical axis is critical. Confirm Guide Pin placement with fluoroscopy in both lateral and AP planes before proceeding with BOSS™ Toe Fixation procedure steps.
- Utilize the BOSS™ Toe Fixation Reamer to prepare implant bed for BOSS™ Toe Fixation component. Run Reamer at full speed and gradually contact bone

BOSS

Toe Fixation

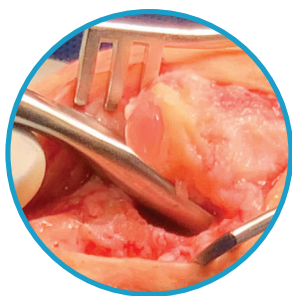
Technique Considerations (*continued*)

surface to prevent bone chipping. The depth of ream indicator allows the surgeon to control for surgical concerns such as 1st ray shortening (ream to the "0" indicator) or joint decompression (ream to the "2" or "3" indicator).

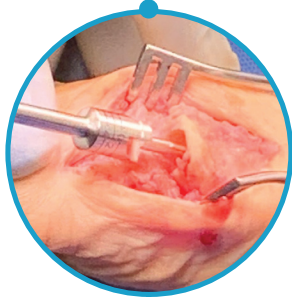
- Gradually and carefully advance BOSS™ Toe Fixation component, frequently checking depth using the plastic Trial Cap. Use care to not overtighten and strip the BOSS™ Toe Fixation component threads.
- Confirm BOSS™ Toe Fixation component placement with fluoroscopy before proceeding with the HemiCAP® DF or ToeMotion® procedure.
- Confirm final HemiCAP® DF implant placement with fluoroscopy, observing sesamoid tracking. Address plantar metatarsal surface at implant margin to ensure smooth sesamoid tracking.
- Ensure 80-90 degrees of total joint range of motion without crepitus prior to joint capsule closure. If this is not obtained, double check for soft tissue adhesions, bone prominences, or consider further decompression on the metatarsal head or phalangeal base.

Closure Considerations

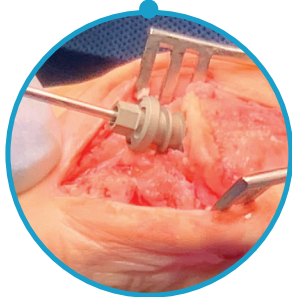
- Protective capsule closure is necessary to prevent adhesion of skin or tendon structures. If soft tissue coverage over implant is compromised, a biologic dressing is recommended to prevent adhesion of skin to implant or extensor tendon to implant.
- Skin closure can be best obtained by using interrupted suture techniques that will allow for flexion and extension of the joint early in the post operative period, and prevent restriction of motion from running suture techniques. Nylon or Prolene suture is recommended for skin closure as running absorbable stitch may be more likely to dehisce.
- The use of Vancomycin (or similar) placed on subcutaneous and skin surfaces when closing to decrease incidence of postoperative infection is recommended.



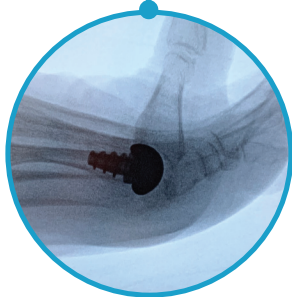
1. Upon removal of Cartiva SCI implant, examine the temporary bone void.



2. Utilize the BOSS™ Toe Fixation Reamer to prepare implant bed for BOSS™ Toe Fixation component.



3. Gradually and carefully advance BOSS™ Toe Fixation component. Use care to not overtighten and strip the BOSS™ Toe Fixation component threads.



4. Confirm final HemiCAP® DF implant placement with fluoroscopy, observing sesamoid tracking. Ensure 80-90 degrees of total joint range of motion without crepitus prior to joint capsule closure.

Ordering Information

Instrument Trays

9CR9-2100	10.0mm BOSS Disposable Drill
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Metatarsal Articular Components

9CRS-D100	Taper Post, BOSS, 10.0mm x 20.0mm
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9CRS-D200	Taper Post, BOSS, 10.0mm x 18.5mm
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www.arthrosurface.com | Restore. Recover. Renew | Move Freely | Preserve Motion

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