

BIOLOGICALLY ORIENTED PROSTHESES

BIOPRO

Lesser MPJ Hemi Implant

Surgical Technique



Contents

Table of contents

Indications & Contraindications	1
Implant Specifications	2-3
Surgical Technique	4-8
Postoperative Suggestions	9
Implant Ordering	10
Instrument Overview	11

Indications & Contraindications

Indications for use:

1. Arthritic degradation of the metatarsophalangeal joint that has resulted in disabling pain, limited motion, and loss of the normal ambulatory function of the forefoot.
2. Degenerative arthritis
3. Rheumatoid arthritis
4. Bunion deformity associated with arthritis of the metatarsophalangeal joint.

Contra-indications:

1. A general health problem that might pose a significant threat to the life of the patient if subjected to a major surgical procedure.
2. An active infection or a previous infection of the lower extremity that has not been quiescent for at least six months.
3. A local or systemic infection.
4. Significant deficiency in the vascular supply to the extremity.
5. Severe structural deficiency of the sub-chondral bone that may result in insufficient support for the prosthesis.
6. A condition of the toe which may lend itself to a more conservative procedure.
7. Severe compromise of the supporting muscles or ligaments about the toe.
8. Foreign body sensitivity to metals including cobalt chrome. Where material sensitivity is suspected, appropriate tests should be made prior to implantation.

Precautions and Handling

- Inspect the sterile blisters used for the implants prior to use. Sterilization cannot be assured, and implants should not be used if blister or seal is damaged.
- Implants are single use devices.
- Do not autoclave implants.
- Exercise caution while threading the impactor tip into the handle to avoid cross-threading, as this can result in damage or the failure of the impactor tip.

Potential Complications and Adverse Effects

- Allergic reactions to metal
- Delayed healing
- Loosening or migration of the implant
- Subluxation or dislocation of implant resulting in reduced range of motion
- Bone fracture by trauma or improper surgical technique
- Pain due to bone remodeling or reaction to implant components

Contact surgeon if a change in performance or pain level is noticed.

MR Safety Information

Cobalt Chrome devices have been evaluated for safety and compatibility in the MR environment and are MR conditional. Contact BioPro for MR parameters.

Implant Specifications

Description

The BioPro® Lesser MPJ Hemi Implant is a low profile, press-fit implant designed to replace the articular surface of the proximal phalanx in a painful, arthritic lesser metatarsophalangeal (MTP) joint. The implant offers restoration of motion and pain relief, with a minimal bone resection technique.

Material

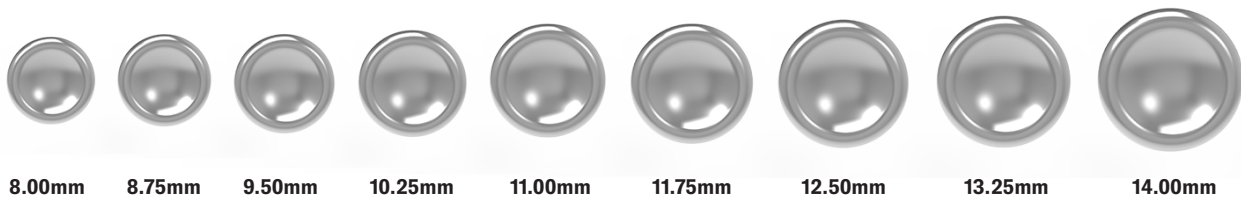
Manufactured from Cobalt Chrome, a highly biocompatible and durable material.

Implant Variations

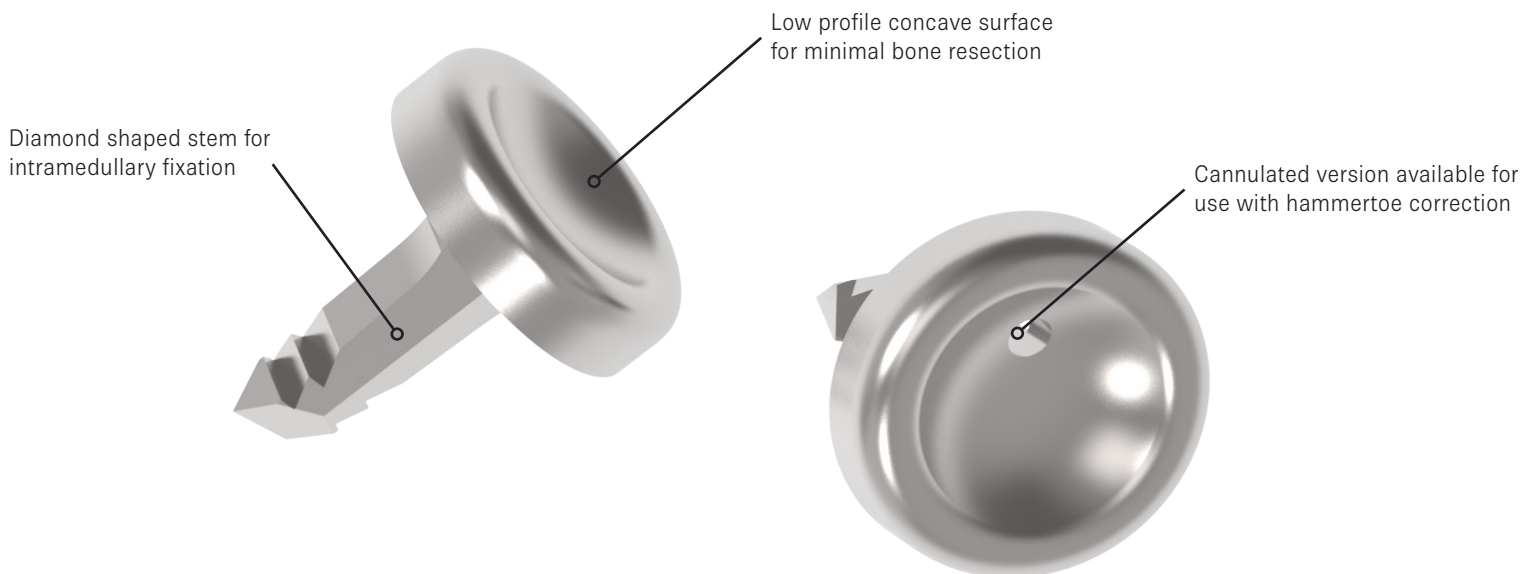
Cannulated implants allow a k-wire to be temporarily passed through the metatarsal head to stabilize the entire digit when performed in conjunction with a hammertoe correction.

Sizing

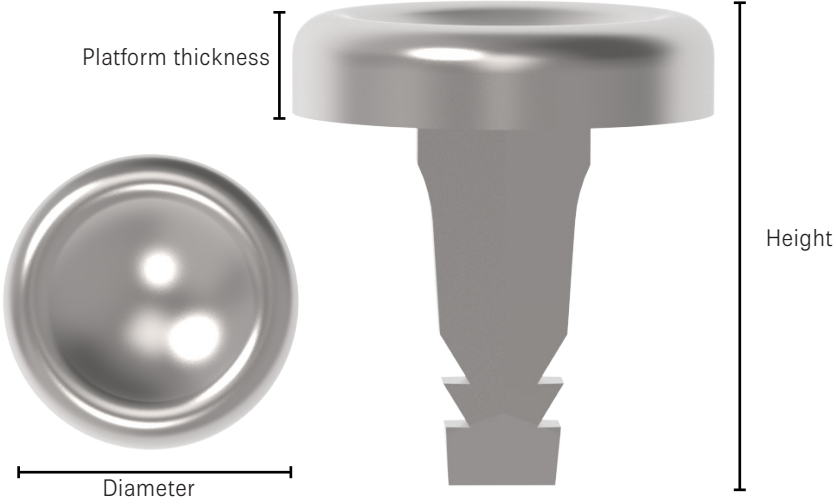
Available in nine standard sizes, the profile thickness remains the same across all sizes.



Features



Implant Specifications



DIAMETER	HEIGHT	PLATFORM THICKNESS
8.00mm	7.1mm	2.0mm
8.75mm	7.1mm	2.0mm
9.50mm	7.1mm	2.0mm
10.25mm	8.5mm	2.0mm
11.00mm	8.5mm	2.0mm
11.75mm	8.5mm	2.0mm
12.50mm	9.7mm	2.0mm
13.25mm	9.7mm	2.0mm
14.00mm	9.7mm	2.0mm

Surgical Technique

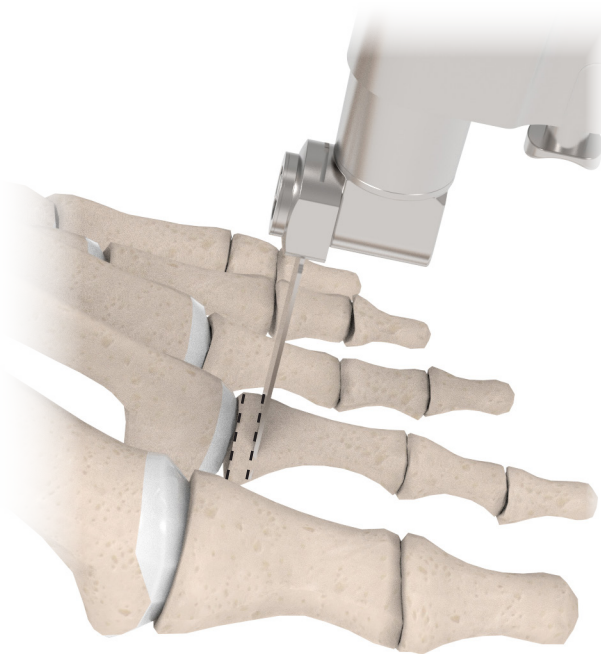


Step One:

Locate the metatarsalphalangeal joint by dorsiflexing and in particular, plantarflexing the proximal phalanx on the head of the metatarsal. Once located, an incision is made through the skin and the superficial fascia layer and retracted both medially and laterally.

Important Note

Utilizing a sharp blade, the capsular and periosteal tissues are dissected from the base of the proximal phalanx; dorsally, medially, laterally and plantarly. Care is taken to avoid damaging the articular surface of the metatarsal head at this time. The long flexor tendon to the toe must be avoided and not damaged during the dissection.



Step Two:

Using a power saw, a section is cut transversely through the base of the proximal phalanx from dorsal to plantar, again preserving the long flexor tendon. Ensure the resection is made perpendicular to the long axis of the phalanx and parallel with the articulating surface. Care is taken not to resect too much bone. The resected base is dissected free from its soft tissue attachments and removed from the surgical site.

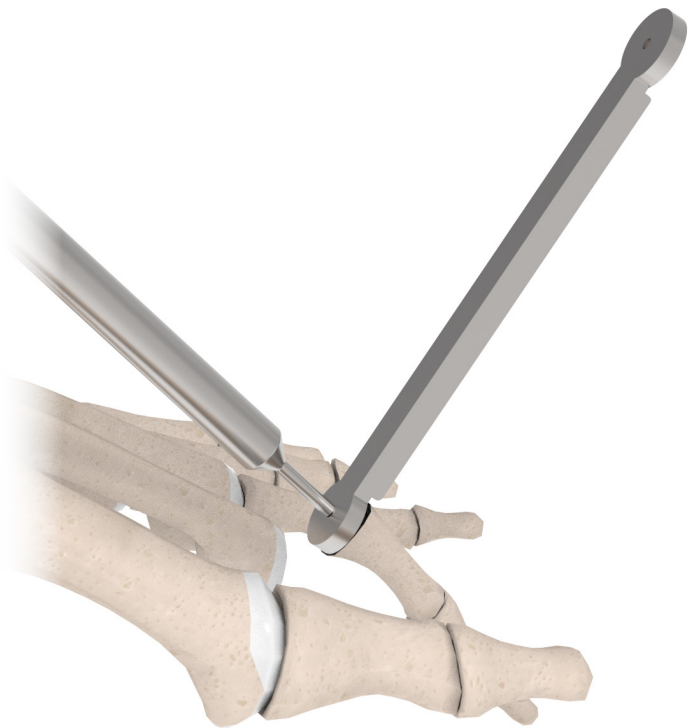
Important Note

Only resect approximately 2mm of bone.



Step Three:

The implant is sized using the provided templates. The template should be slightly larger than the proximal phalanx.



Step Four:

A temporary hole is made with the trial punch, through the center hole in the template.



Step Five:

Next, the appropriately sized trial is inserted into the base of the proximal phalanx, in the hole created by the trial punch.

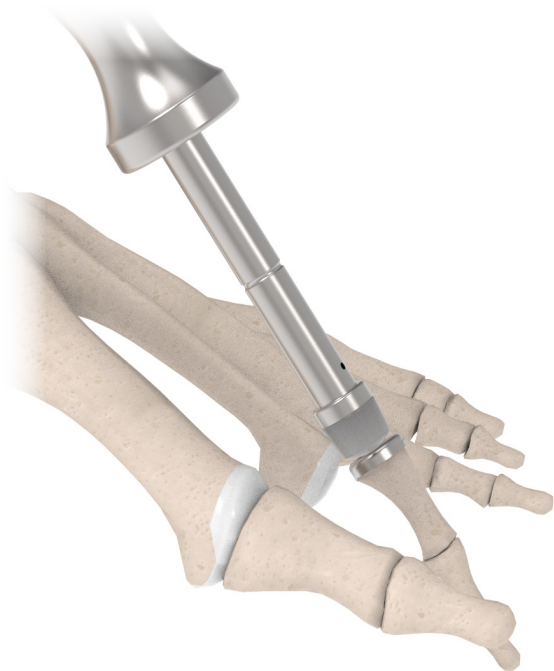
The joint is now placed through range of motion. If there is any impedance to the motion, the metatarsal head may need to be remodeled.

Step Six:

The implant trial is removed, and an accommodation for the implant stem is made with a 2-3mm osteotome.

Important Note

An osteotome is not included in the set. If the patient has soft cancellous bone, the final implant can typically be implanted right over the trial hole.



Step Seven:

The proper implant is now inserted. Utilize the impactor fitted with the appropriately sized impactor tip to ensure the implant is completely seated against the phalanx.

Important Note

The instrument kit includes a holder bracket to make handling of small Trials and Implants easier. To utilize it, thread the large impactor tip onto the impactor handle, leaving a small gap between the tip and the end of the handle. Slide the holder bracket over the impactor tip in between the gap, then finish tightening the impactor tip. The trial or implant may now be placed between the holder bracket and impactor tip for security while inserting it into the phalanx.





Again, a check is made to assure proper range of motion.

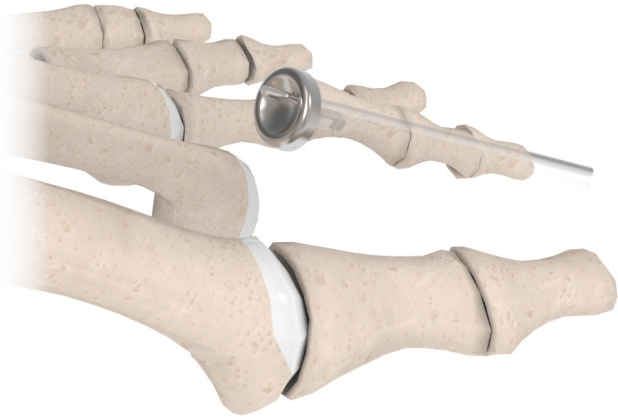
If using the standard implant, restoration of the joint is now complete. The subcutaneous tissue and skin are re-approximated and sutured with suture material of the surgeon's preference.

[Cannulated Technique Continued]

Cannulated Version Only

If you are utilizing a cannulated version of the implant then begin by preparing the IP joint(s) for fusion.

Insert a 0.045" (1.1mm) k-wire into the cannulation of the implant and drive the k-wire through all three phalanges, ensuring the IP joint(s) is properly positioned for fusion, and out the end of the digit. Ensure sufficient k-wire is exposed to mount the wire driver.



Mount the wire driver on the distal end of the k-wire, driving the wire further distally until the end point is just below the surface of the Lesser MPJ Implant.

Position the MPJ in the desired position for stability and drive the k-wire through the metatarsal head to the desired depth within the metatarsal.

Once IP joint fusion is achieved, remove the k-wire distally.



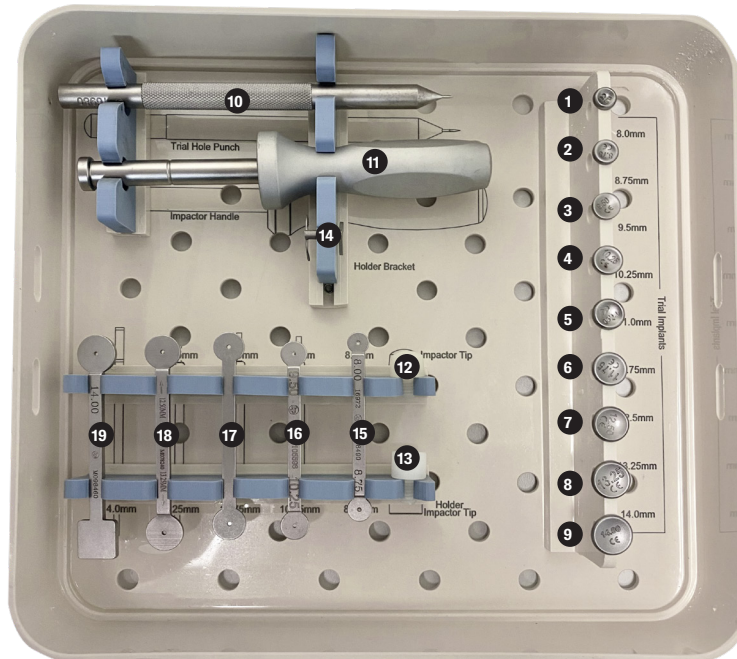
Postoperative Suggestions

- Partial to full weight-bearing is permitted at the discretion of the surgeon. A standard post-operative shoe or wedge shoe is used for the first 3 weeks.
- Dressings are changed for 3 weeks, with sutures usually removed at the 2 week period.
- Passive range of motion (dorsiflexion and plantarflexion) is permitted by the 2nd or 3rd post-operative week.
- Physical therapy and return to soft shoes is usually permitted by the 3rd to 4th post-operative week.

Implant Ordering

Item #	Description	Size
16818	Lesser MPJ Hemi	8.00mm
16867	Lesser MPJ Hemi	8.75mm
16819	Lesser MPJ Hemi	9.50mm
16820	Lesser MPJ Hemi	10.25mm
16821	Lesser MPJ Hemi	11.00mm
16822	Lesser MPJ Hemi	11.75mm
16868	Lesser MPJ Hemi	12.50mm
16869	Lesser MPJ Hemi	13.25mm
16870	Lesser MPJ Hemi	14.00mm
17324	Lesser MPJ Hemi Cannulated	8.00mm
17325	Lesser MPJ Hemi Cannulated	8.75mm
17326	Lesser MPJ Hemi Cannulated	9.50mm
17327	Lesser MPJ Hemi Cannulated	10.25mm
17328	Lesser MPJ Hemi Cannulated	11.00mm
17329	Lesser MPJ Hemi Cannulated	11.75mm
17330	Lesser MPJ Hemi Cannulated	12.50mm
17331	Lesser MPJ Hemi Cannulated	13.25mm
17332	Lesser MPJ Hemi Cannulated	14.00mm

Instrument Overview



Lesser MPJ Hemi Complete Kit - 16979

Location	Item #	Description
1	16963	Lesser MPJ Trial 8.00mm
2	16964	Lesser MPJ Trial 8.75mm
3	16965	Lesser MPJ Trial 9.50mm
4	16966	Lesser MPJ Trial 10.25mm
5	16967	Lesser MPJ Trial 11.00mm
6	16968	Lesser MPJ Trial 11.75mm
7	16969	Lesser MPJ Trial 12.50mm
8	16970	Lesser MPJ Trial 13.25mm
9	16971	Lesser MPJ Trial 14.00mm
10	16980	Trial Punch
11	15259	Impactor Handle
12	15256	Impactor Tip Sm
13	18284	Impactor Tip Flat
14	16977	MPJ Holder Bracket
15	16972	Template 8.00mm/8.75mm
16	16973	Template 9.50mm/10.25mm
17	16974	Template 11.00mm/11.75mm
18	16975	Template 12.50mm/13.25mm
19	16976	Template 14.00mm/Square
	14938	Lesser MPJ Instrument Tray

This page intentionally left blank.

This page intentionally left blank.

BIOLOGICALLY ORIENTED PROSTHESES
BIOPRO

Call us at 1-810-982-7777 to schedule a case today.

This content is provided as an educational tool only and is not meant as medical advice in the usage of specific BioPro products. A healthcare professional must use their professional judgment in making any final determinations in product usage and technique. The product's Instructions for Use, should always be reviewed prior to surgery. Postoperative management is patient-specific and dependent on the treating professional's assessment. Individual results will vary and not all patients will experience the same postoperative activity level or outcomes. This information does not constitute medical, legal, or any other type of professional advice and should not be relied upon as such. It is not to be redistributed, duplicated, or disclosed without the express written consent of BioPro, Inc.



BioPro, Inc.
2929 Lapeer Road, Port Huron, MI 48060, USA
info@bioproimplants.com | 1-810-982-7777
www.bioproimplants.com

