

# Optimotion Implants

## Blue Total Knee System

### Surgical Technique Guide

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***Before using this product, read the following information thoroughly.***

## Introduction

The Optimotion™ Blue Total Knee Arthroplasty (TKA) System is a total knee replacement system designed for patients suffering from disabling joint disease of the knee resulting from a multitude of factors including primary osteoarthritis, posttraumatic osteoarthritis, autoimmune mediated arthritis (rheumatoid), and avascular necrosis. Optimotion™ Blue is a contemporary, fixed bearing, TKA system designed with features to enhance both cemented and porous implant fixation. The system includes **Femoral Components, Tibial Trays, Tibial Inserts, and Patella** implants. All of the implants are sized to fit a wide range of the skeletally mature patient population. The cruciate retaining (CR) **Femoral Component** options include both cemented and uncemented (porous) options. The cobalt chrome alloy porous **Uncemented Femoral Component** options have a porous sintered bead cobalt chrome coating. The **Tibial Tray** options include a non-porous **Cemented Tibial Tray** made from titanium alloy and a porous **Uncemented Tibia Tray** made by an additive manufacturing (AM) process from the same titanium alloy. The **Uncemented Tibia Tray** has an integrated ultra-porous titanium alloy bone apposition surface which is designed to be used with or without bone cement. The **Tibial Trays** can be assembled with or without a **Tibial Stem** (made from titanium alloy) depending on surgeon preference. The system offers modular **Tibial Inserts** that are either asymmetric CR or symmetric Highly Congruent (HC) CR and symmetric **Patella Components** that allow surgeons to adjust for a patient's size, bone quality and stock, as well ligament laxity and stability.

## Features

Advanced Porous Additive Manufactured (AM) Technology: The **Uncemented Tibial Trays** and **Uncemented Femoral Components** have porous coatings on the majority of the bone contacting surfaces to maximize interface coverage for biological fixation. The **Uncemented Tibial Tray** is additively manufactured (AM) to include an Ultra-Porous Technology. The AM Ultra-Porous Technology of irregularly shaped random interconnected pores create a three-dimensional porous shape.

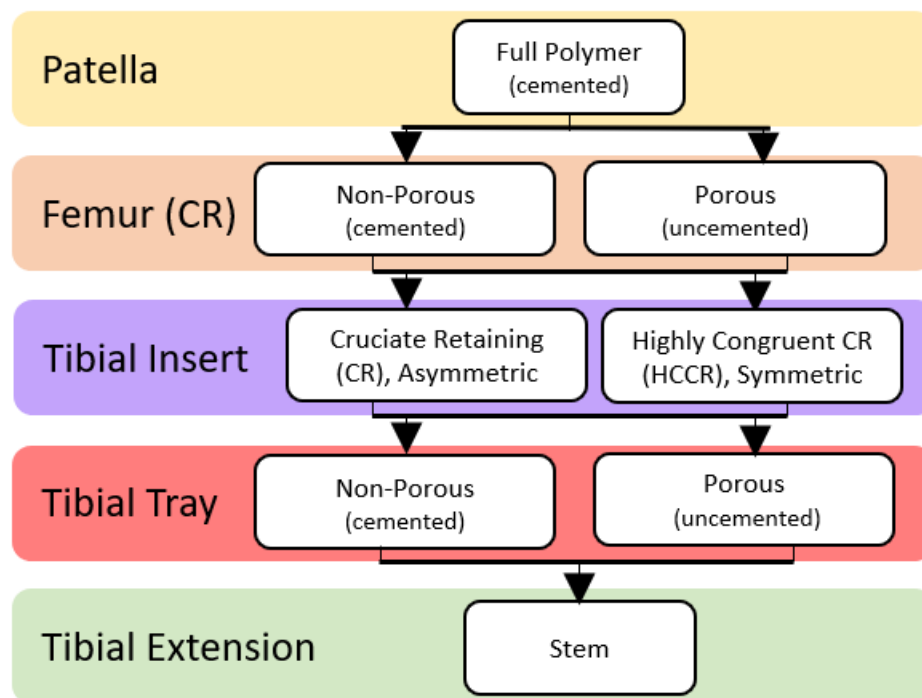
Advanced Polymer Bearing Surface Technology: The **Tibial Inserts** and the **Patella Components** are machined from compression molded, highly cross-linked, Vitamin-E enhanced, Ultra High Molecular Weight Polyethylene (UHMWPE).

Modularity of the Implants: The design philosophy of Optimotion™ Blue allows for modularity and interchangeability between the components (Figure 1).

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- There are two types of **Tibial Trays**, cemented and uncemented, both allowing for **Tibial Stems** to be inserted in the distal keel to enhance distal fixation if needed. The **Tibial Trays** are universal and can be used on left or right knees.
- There are two types of **Tibial Inserts**, Cruciate Retaining (CR) and Highly Congruent CR (HCCR). The **CR Tibial Inserts** are available in Left or Right and the **HCCR Tibial Inserts** are universal and can be used on left or right knees. **Tibial Insert** components allow surgeons to adjust for a patient's bone quality and stock as well ligament stability.
- The two types of **Femoral Components**, (cemented and uncemented) all articulate on either the CR or the HCCR **Tibial Inserts** and are available in left and right configurations.



**Figure 1. Optimotion™ Blue Total Knee System Options**

Innovative instruments to assist with lateral approach. Optimotion™ Blue has unique instrument designs compatible with the standard medial parapatellar approach or the lateral subvastus approach to the knee. An **MCL Retractor** helps retract and shield the medial collateral ligament when the tibial bone cuts are made.

Stemmable Tibial Tray. The Optimotion™ Blue **Tibial Trays** offer the ability to attach a wide variety of stem sizes (diameter and length) if extra stability is needed. The **Tibial Stem** can be added in both primary TKA and revision TKA situations.

## System Compatibility

The system includes a broad range of sizes to fit the normal skeletally mature patient population. The system is designed so all of the left or right eight sizes of **Femoral Components** are interchangeable with a one size higher or one size lower **Tibial Tray** and **Tibial Insert** combination. The universally shaped **Tibial Tray** comes in eight sizes. The **CR Tibial Inserts** are offered in left and right bearing surface orientations and four thicknesses. The **HCCR Tibial Inserts** have a universally shaped articulating surface and are also offered in four thicknesses.

		Femoral Size							
		1	2	3	4	5	6	7	8
Insert Size	1	●	●						
	2	●	●	●					
	3		●	●	●				
	4			●	●	●			
	5				●	●	●		
	6					●	●	●	
	7						●	●	●
	8							●	●

Figure 2. Optimotion™ Blue CR Femoral and Insert Size Compatibility

## Limb Positioning

With the patient lying in the supine position, ensure that the hip and knee can move freely and approximately 110° of knee flexion is able to be achieved.

## Surgical Incision, Exposure, and Approaches

### LATERAL APPROACH

When doing the lateral approach, the following sequence of steps must be followed in its entirety. On primary knees, initially preparing for an 11 mm versus a 9 mm tibial resection will make the procedure through this exposure simpler. The primary lateral incision is best made with the knee in flexion at 90 degrees.

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1. Make an incision starting (A) about 5 cm proximal and 2.5cm lateral to the superolateral pole of the patella with the knee in the flexed position and carry the incision distally (B) along the edges of the patella tendon. Distally the incision traverses the interval between the patella tendon and Gerdy's Tubercle (Figure 3).



**Figure 3.**

2. Split the IT band proximally in line with the superficial incision and carry the incision over the lateral edge of the patella and the patella tendon to enter the joint.
3. Release the anterior horn of the lateral meniscus.
4. To further expose the lateral joint, use either a saw blade or an osteotome to osteotomize a sleeve of Gerdy's tubercle leaving approximately two (2) mm of bone thickness attached to the IT band where it inserts at Gerdy's tubercle.
5. Incise the capsular tissue between the tibial tuberosity and Gerdy's tubercle.
6. Elevate Gerdy's tubercle together with the IT band fibers to facilitate closure.
7. By elevating the distal IT band insertion on the tibia together with a thin wafer of bone, the IT band and tibialis anterior muscle become one longitudinal, continuous, stabilizing lateral ligament. This lateral ligament self-adjusts and reattaches to the anterolateral tibia after installation of the TKA components. Osteotomy of Gerdy's tubercle and posterior retraction of the IT band allow for excellent visualization to the lateral tibial plateau.
8. Cutting the Tibia: The knee is then brought into a semi-extended position of 15 to 30 degrees. The ACL is released at this point, as well as the anterior horn of the medial meniscus.

***This is an overview of steps for cutting the proximal tibia bone using the lateral approach. More details on the use of the instruments referred to in this section are in the [Tibial Preparation](#) section.***

9. The **MCL Retractor** (Figure 4) must be placed distal to the anterior horn of the medial meniscus and deep to the MCL to avoid cutting the MCL.

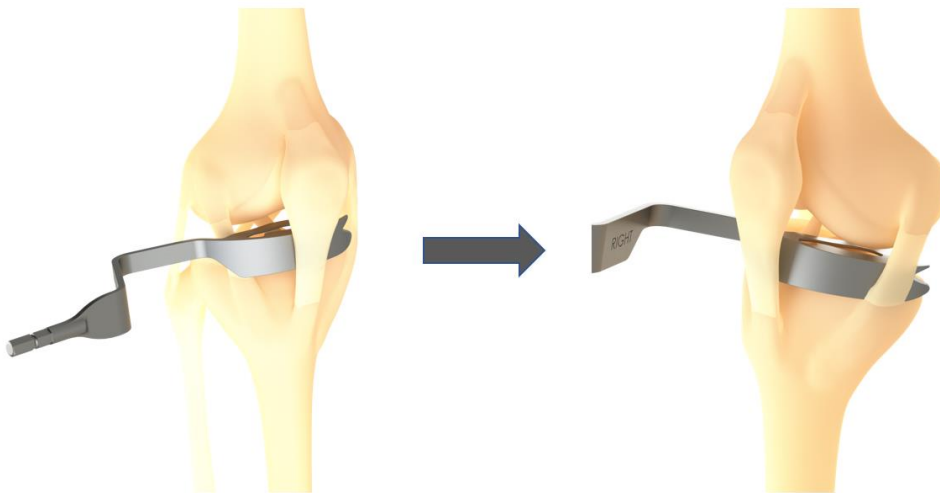
# Optimotion Implants<sup>®</sup> Blue Total Knee System

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**Figure 4. MCL Retractor**

10. Guide the MCL Retractor around the posterior tibial plateau, ensuring the MCL Retractor is deep to and protecting the MCL during the resection process (Figure 5).



**Figure 5. MCL Retractor Positioning**

11. Place additional retractors by the PCL to sublax the tibia forward.
12. Cut the lateral tibial plateau bone. Slide the cutting slot in the **Tibial Extramedullary Cutting Guide** medially to guide the saw blade to cut the rest of the tibia.
  - a. The resected tibial bone segments can then be removed after releasing the remaining posterior horns of both the menisci.
  - b. Gap balancing is done at this point at 0 and 90 degrees with either the **Dynamic Gap Balancing Gage** or the block **Gap Gages**.

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13. There are two **Extramedullary Cutting Guide Proximal Rods**, one is set to 0°slope and the second to 3°slope according to surgeon preference.
14. Cutting the Patella: The patella is flipped 90 degrees to expose the articular surface. The **Patella Clamp** is applied, and the appropriate measuring stylus is used to determine patella resection. Slots on either side of the **Patella Clamp** allow for the patella cut to be made.

***This is an overview of steps for preparing the femoral bone using the lateral approach, more details on the use of the instruments referred to in this section are shown in the [Femoral Preparation](#) section.***

15. Place the retractors in the medial gutters and flex the knee to deliver the femur for preparation.
16. Once the femur cut is complete, bring the knee into extension and gently pull to expose the joint. Then carefully resect the medial meniscus with a sharp knife.
17. A PCL retractor and a conventional medial retractor are placed and the knee is slowly brought into flexion subluxing the tibia forward gently while displacing the lateral edge of the patella tendon medial to the medial tibial plateau. This will expose the tibial plateau for preparation.
18. The tibia preparation can then be finished and prepared as described in the **Tibial Preparation** section below.
19. Insertion of final components must be done in reverse as follows:
  - a. Insert the **Tibia Tray** component, with **Tibial Stem** attached (if needed).
  - b. Insert the **Tibial Insert**.
  - c. Insert the **Femoral Component**.
  - d. Insert the **Patella** implant.

### MEDIAL APPROACH

A standard anterior mid-line incision can also be utilized with the Optimotion™ Blue Total Knee System.

1. If the medial parapatellar approach is selected, a straight midline skin incision, extending above and below the patella is applied to begin the exposure.
2. Any previous medial incision can be used or incorporated to decrease the risk of skin slough.
3. The capsular exposure is then approached by utilizing a longitudinal medial parapatellar incision, typically extending upward to a level of one third of the rectus femoris or vastus medians and downward to the medial side of the origin of patellar tendon on the tibial tuberosity.

Femoral Preparation

DISTAL FEMORAL CUT

Connect the **Femoral Drill** to the **Femoral IM Rod Handle** and establish an IM canal. The entry point is approximately one (1) cm anterior to the PCL attachment on the femur and slightly medial to the midline. Establish the IM canal with the **Femoral Drill** (Figure 6).

Attach the **Femoral IM Rod Handle** to the **Femoral IM Rod** and then slide the **Femoral Angular Alignment Guide** onto the **Femoral IM Rod** (Figure 7).

The **Femoral Angular Alignment Guide** is designed for either left or right knee and may be set to various varus/valgus cut angles 0-9 degrees on each side (Figure 8).

Pull back on the black knob of the **Femoral Angular Alignment Guide** and place it in the appropriate notch.



Figure 6



Figure 7



Figure 8



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The **Distal Femoral Cut Block** is attached to the **Distal Femoral Alignment Guide** and the assembly is attached to **Femoral Angular Alignment Guide**. The **Distal Femoral Alignment Guide** also allows for various femoral resection segments. Nine (9) mm is the default distal femoral resection, but by turning handle in the positive (+) or negative (-) direction the resection depth is adjustable from 4mm through 14mm. The **Femoral Angular Alignment Guide** must touch at least one of the femoral condyles to ensure adequate resection (Figure 9).

Once the desired valgus alignment and distal femoral resection is positioned the **Distal Femoral Cut Block** is secured with two 3.2mm Pins and an oblique 3.2 mm Pin. Then, the **Femoral Angular Alignment Guide**, **Distal Femoral Alignment Guide**, and the **Femoral IM Rod** are extracted. The **Distal Femoral Cut Block** can be also adjusted +2 mm by moving the guide to engage with 3.2mm Pins from the "0" parallel pin holes to the "+2" parallel pin holes (Figure 10).

*Note: The 3.2mm pins are not an orderable Optimotion Implants catalog number. The recommended diameter specification: 3.2mm+0mm/-0.1mm. The diameter must not exceed 3.2mm in order to prevent interference with the mating instruments.*

The saw blade slot in the **Distal Femoral Cut Block** is meant for a 0.050 inch (1.33mm) thick saw blade.

Use a 1.33mm oscillating sawblade through the slots in the **Distal Femoral Cut Block** to cut the distal femur (Figure 11).



Figure 9



Figure 10



Figure 11



### FEMORAL SIZING

The universal posterior referenced **Femoral Sizer** is applied to the distal femur with the two posterior condylar pads touching each posterior condyle in the femur (Figure 12).

The **Femoral Sizer** is a posterior referencing design. It is applied to the distal cut of the femur. The sizer is secured with one or two pins in two available holes above the **Femoral Sizer Disc**. Sizing is done with the **Stylus** touching the tip of the anterior lateral femur for the appropriate size of the femur implant. The size of the femur is read off of the slot on either side. If the size is between two numbers, then the size larger is used.

Using the **Femoral Sizer Disc**: The disc allows for increasing the flexion gap 0mm, -1mm, -2mm, or decreasing the flexion gap +1 or +2mm relative to the measured size. Identify the flexion gap desired first. Set the gap with the arrow to the desired rotation for the **Femoral Chamfer Cut Block**. Up to 7 degrees of rotation can be performed either way. Secure the rotation of the **Femoral Sizer Disc** by tightening the **Knob** to prevent rotation of the sizer disc during drilling.

Once rotation and any adjustments to posterior resection are made, then two drill holes are made through the **Femoral Sizer** to fit the **Femoral Chamfer Cut Block** (Figure 13). Make sure the pin 3.2 mm drills through the correct numbered flexion gap holes (see fig or animation). For example, if the desired flexion gap is 0 then drill for the universal cut block holes through the holes marked 0.

Remove the **Femoral Sizer** and apply the appropriate **Femoral Chamfer Cut Block**.

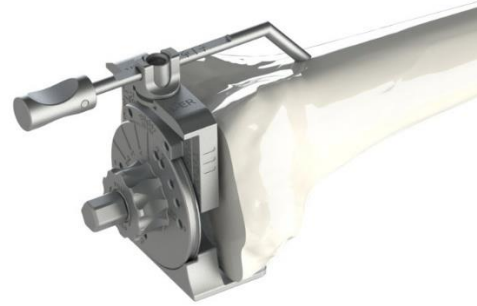


Figure 12



Figure 13

FEMORAL CUT BLOCK

Once the parallel pegs in the appropriate sized **Femoral Chamfer Cut Block** are aligned with the drilled holes above, the **Femoral Chamfer Cut Block** is impacted into place against the distal femoral cut surface with a Mallet (Figure 14).

Use the **Angel Wing**, or an equivalent Blade sizer or “batwing” (Figure 15) to double check the potential run-out of the anterior resection cut to prevent notching of the anterior femur.

The **Femoral Chamfer Cut Block** is secured with two converging 3.2mm Pins once the block is flush with the distal femur (Figure 16).

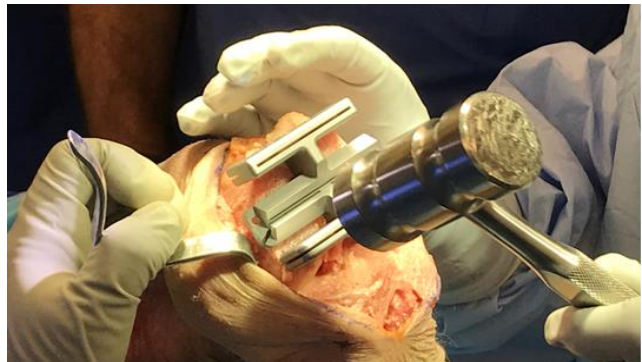


Figure 14



Figure 15



Figure 16

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Use a 1.33mm oscillating sawblade through the slots in the **Femoral Chamfer Cut Block** to cut the anterior, posterior, anterior chamfer, posterior chamfer cuts in the distal femur (Figure 17). The thickness of the sawblade is important to ensure the cuts are well controlled via the guide slots throughout the procedure.

The 3.2mm Pins are removed, the **Femoral Chamfer Cut Block** is removed, and the resected bone segments are then extracted.

The **Curved Osteotome** can then be used to remove the excessive osteophytes in the posterior femoral condyles (Figure 18).

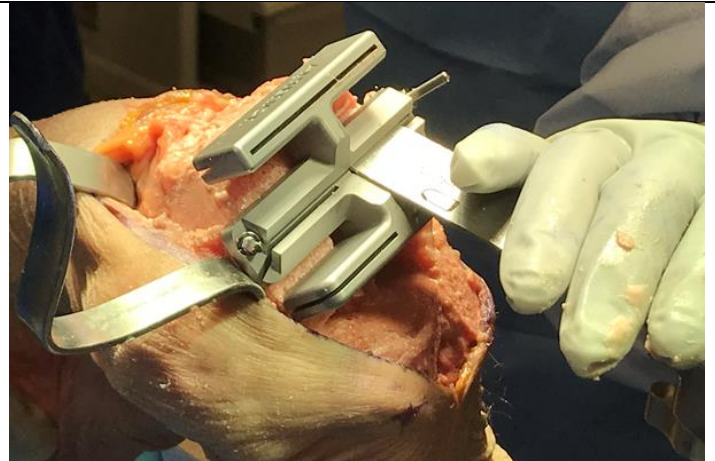


Figure 17

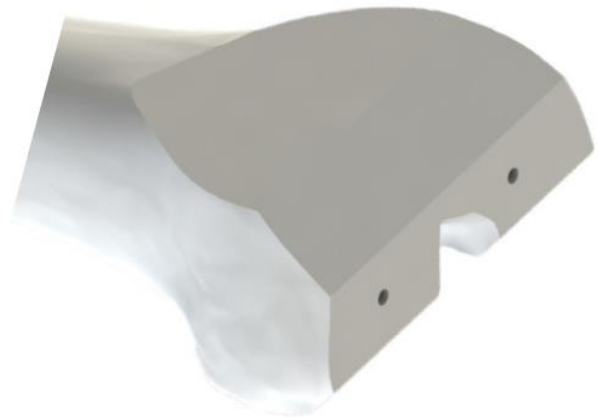


Figure 18

**FEMORAL PREPARATION**

Once the femoral size has been established a **Universal Femoral Trial** is attached to the **Femoral Impactor** (Figure 19) and impacted into place.

The **Femoral Trial** can be used for either left or right femurs and for range of motion trialing on CR or HCCR **Tibial Insert Trials**.

Drill holes in the distal femoral bone with the **Patella Drill** through the holes in the **Femoral Trial** to establish the location of the **Femoral Component** peg holes (Figure 20).

After the appropriately sized **Tibial Tray Template**, **Tibial Insert Trial**, and **Patella Trial** are in place later in the procedure, the **Femoral Trial** will be re-attached to the femur to assess the range of motion, the tibiofemoral articulation, and the patella tracking (Figure 21).



**Figure 19**



**Figure 20**



**Figure 21**

**CR FEMORAL COMPONENT**

If a **CR Femoral Component** is used with bone cement, apply bone cement to the distal femoral cuts and insert the **CR Femoral Component** using the **Femoral Impactor** (Figure 22A).

If a porous **Uncemented CR Femoral Component** is used without bone cement, do not apply bone cement, and insert the **Femoral Component** using the **Femoral Impactor**. A **Femoral Driver with Impactor Handle** may be used optionally to impact and complete placement of **Uncemented CR Femoral Component** (Figure 22B).

The **Femoral Impactor** is also used to remove the **Femoral Component** when needed. To remove the **Femoral Component**, first loosen the **Femoral Component** from the bone with an osteotome, then connect the side tabs in the **Femoral Impactor** in the slots in the sides of the **Femoral Component** and tighten down the tightening knob to secure the **Femoral Impactor** (Figure 22A). Apply extraction force to the **Femoral Impactor** to remove the **Femoral Component** from the bone. The back side of the strike head of the **Femoral Impactor** can be impacted with a mallet to assist in the **Femoral Component** removal.



**Figure 22**

**Tibial Resection and Bone Preparation**

**TIBIAL CUT GUIDE ALIGNMENT**

The Optimotion™ Blue tibial resection is aligned by using extramedullary alignment with the aid of the **Extramedullary Guide (EM Guide)**.

Assemble the **EM Guide**, the **EM Guide-Resection Guide Connector**, and the **Tibial Resection Guide** (Figure 23).

The **EM Guide-Resection Guide Connector** has 0° and 3° slopes. The **EM Guide** is in the neutral



**Figure 23**



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position when the **EM Guide-Resection Guide Connector** is parallel to the long axis of the tibial bone.

The **Tibial Resection Guide** is universal and can be attached for left or right knees. The **Tibial Stylus** (4mm-9mm OR 2mm-11mm) is re-attachable and can be placed on the medial or the lateral side of the **Tibial Resection Guide** (Figure 24).

Center the Ankle Clamp of the **EM Guide** over the center of the ankle. This is usually the second metatarsal.

Adjustments can be made at the Ankle Clamp of the **EM Guide** to adjust for slope or the varus-valgus tilt by unlocking the adjustment screw and tightening the adjustment screws in the Ankle Clamp (Figure 25).

The **Tibial Stylus** can alternate between the medial or lateral connecting post on the **Tibial Resection Guide** by releasing the connecting clamp. For a **9mm Tibial Insert** adjust to the following:

- 9mm resection over the lowest point of the unaffected side
- 2mm resection over the lowest point of the affected side

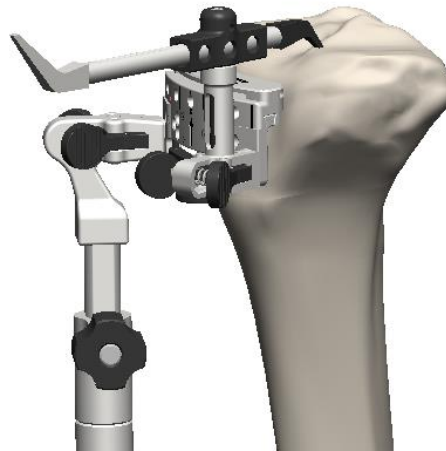


Figure 24

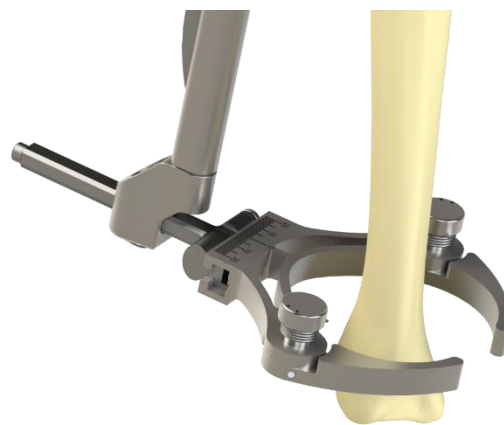


Figure 25

**TIBIAL RESECTION**

Pin the **Tibial Resection Guide** with two 3.2mm pins (Figure 26).

The upper slot of the **Tibial Resection Guide** can be swiveled left or right by depressing the lower lever to obtain the best **Tibial Resection Guide** orientation for the saw blade and alternatively pinned for additional stability (Figure 27).

- Use a 1.33mm saw to cut the tibia through the slot in the **Tibial Resection Guide** (Figure 28).
- Remove the **Tibial Resection Guide**.
- The resected tibial bone segment can then be removed after releasing the remaining posterior horns of both menisci.

**GAP BALANCING**

After cutting the distal femur and proximal tibia, trim any osteophytes and assess the initial ligament balance and extension gap. With the leg in extension, position the **Dynamic Gap Balancing Gage** in the extension gap and adjust the gap (Figure 29).

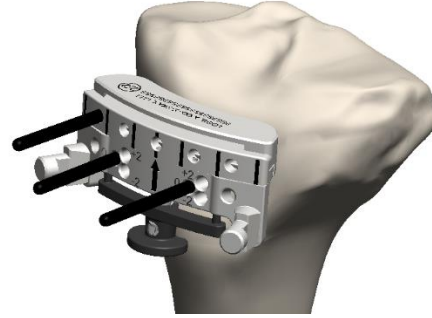


Figure 26

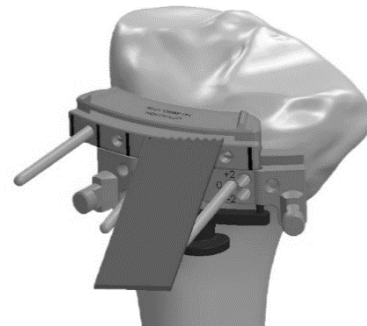


Figure 27

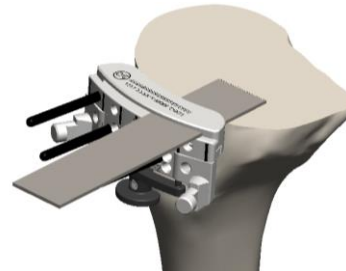


Figure 28



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With the **Dynamic Gap Balancing Gage** in place, the extension gap should be rectangular when the ligaments are equally tensioned and balanced. The plates on the **Dynamic Gap Balancing Gage** are adjusted by rotating the knob to different heights 9 to 19mm.

The measurement on this **Dynamic Gap Balancing Gauge** is in millimeters. The measurement represents the polymer **Tibial Insert** thickness in millimeters needed to produce the same extension gap balance and tension. It is the measurement from the distal resected surface of the Femur to Proximal resected surface of the Tibia minus the **Tibial Tray** and the **Femoral Component**. The plates on the **Dynamic Gap Balancing Gage** show the imbalance of the ligaments.

When the extension gap is unbalanced an angular alignment indicator will displace to the side of imbalance up to 5 degrees. Additional resection, either bony or soft tissue releases, can be performed to achieve extension gap balance. Adjust the ligaments to make the indicator read 0. Alternatively, the surgeon may choose to lock the dynamic gap gage to not allow for any angular displacement. The knee is then brought into flexion to confirm equal flexion and extension gap balance.

A 'two-sided spacer style' **Gap Gage** (Figure 30) can also be used alternatively to assess ligament balance and extension gap. The numerical reading on each side of this gap gage represents the polymer Tibial Insert thickness needed to produce the same extension gap balance and tension.



Figure 29

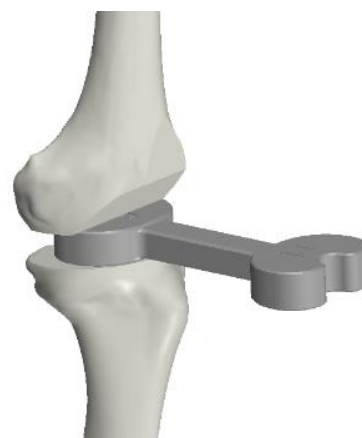


Figure 30

### TIBIAL SIZING

The different sizes of the universal **Tibial Tray Templates**, and **Tibial Insert Trials** are designed to be used to perform trial reduction and assess overall fit.

The medial to lateral length as well as the anterior to posterior length of the **Tibial Tray** should match as closely as possible to the medial to lateral length and the anterior to posterior length of the remaining tibial bone. Under sizing the **Tibial Tray** can result in catastrophic settling and oversizing can result in rim avulsion fractures of the tibia.

The **Tibial Tray Templates** are universal for left or right knees. They can be connected to the **Tibial Template Handle** by pressing the button on the **Tibial Template Handle** and sliding the parallel post on the **Tibial Template Handle** into the parallel holes in the **Tibial Tray Template**.

Once rotation and position of the **Tibial Tray Template** is determined, the **Tibial Tray Template** is pinned with two anterior oblique **3.2 Headed Pins** or alternatively with **3.2 Headed Pins** in the superior pin slots on the **Tibial Tray Template** (Figure 31).

The **Keel Punch Guide** is snapped into place on the **Tibial Tray Template** (Figure 32).

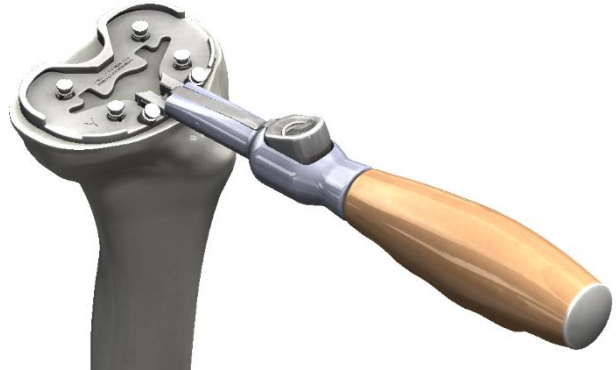


Figure 31

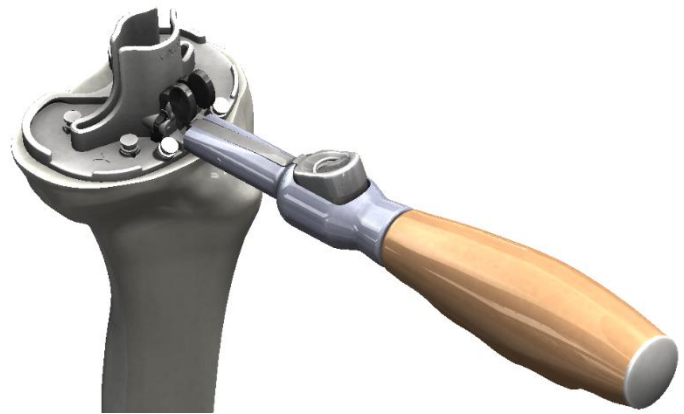


Figure 32

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The **Tibial Template Handle** can be removed. Using the **Central Drill (16mm or 17mm)**, drill through the **Keel Punch Guide** and the **Tibial Tray Template** until it bottoms out (Figure 33A) on the **Keel Punch Guide**. This hole is made in the tibial bone to establish the center of the **Tibial Tray** keel.

The **Central Drill** is offered in two diameters 16mm and 17mm. Use the 16mm Central Drill if implanting a Porous **Tibial Tray** and 17mm if cementing the **Tibial Tray**.

There are three **Keel Punches** for various sizes.

**SMALL** – Sizes 1-3

**MEDIUM** – Sizes 4-6

**LARGE** – Sizes 7-8

Use a mallet to impact the appropriate size **Keel Punch** down to prepare the bone for the keel fins on the **Tibial Tray** until the **Keel Punch** bottoms out at the top of the **Keel Punch Guide** (Figure 33B).

When using the porous component, remove the **Keel Punch Guide Assembly** and then prepare the tibial bone for the **Tibial Tray** Pegs. One at a time, extract the **Headed Pins** with the **Pin Puller** (Figure 34), or a similar pin extractor.

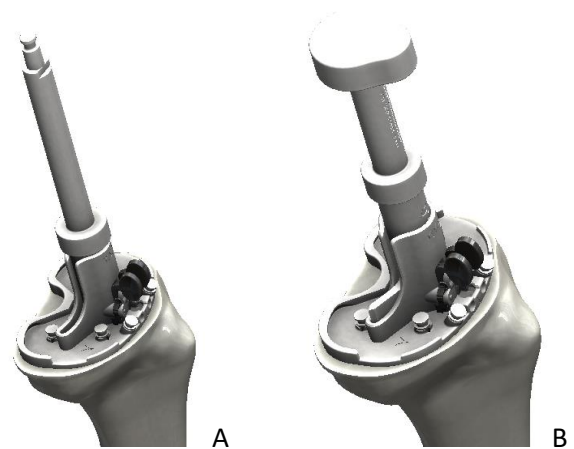


Figure 33



Figure 34

Then use the **Tibial Tray Peg Punch** to prepare the **Tibial Tray** peg shape in the bone, through the superior pin holes in the **Tibial Tray Template** (Figure 35).

There are only two posterior pegs for sizes 1-3. There are 4 pegs for sizes 4-8.

If surgeon opts to use the **Tibial Insert Trials**, the **Keel Punch Guide Assembly** needs to be removed, if it has not already been removed.

The appropriate **Tibial Insert Trial** is inserted on the **Tibial Tray Template** to assess fit, joint laxity, and range of motion. The **Tibial Insert Trial 6mm Shim** can be used to add 6mm more to **Tibial Insert Trial** height (Figure 36).

See suggestions in the **Knee Balancing Algorithm** section if further balancing is needed.

Once the appropriate **Tibial Insert** thickness and the amount of tibial resection is found to be appropriate, the **Headed Pins** should be removed from the **Tibial Insert Trial** and all remaining tibial instrumentation removed in preparation for the placement of the **Tibial Tray Implant**.

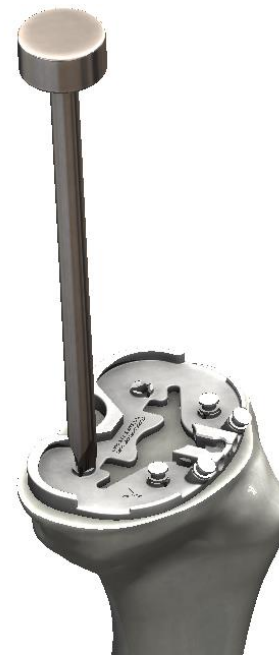


Figure 35



Figure 36

### TIBIAL TRAY IMPLANTATION

Connect the **Tibial Tray Impactor** to the **Impactor Handle**. Then, deliver the Uncemented **Tibial Tray** onto the prepared tibia bone and impact until the baseplate of the Uncemented **Tibial Tray** is seated with minimal gaps between the Porous **Tibial Tray** and the cut proximal tibia.

If a cemented **Tibial Tray** is used, place bone cement between the cemented **Tibial Tray** and the cut proximal tibia prior to implant delivery. Once the **Tibial Tray** is seated, clear all excess bone cement surrounding the periphery of the **Tibial Tray** (Figure 37).

### TIBIAL TRAY REMOVAL

To extract the **Tibial Tray**, first loosen the **Tibial Tray** with an osteotome, and then extract using a Mallet and an osteotome.

### TIBIAL INSERT IMPLANTATION

Engage the **Tibial Insert** with the **Tibial Tray** by placing it slightly angled while adjusting it posteriorly and distally until it snaps into the **Tibial Tray**. This can be done with the assistance of the **Tibial Insert Impactor** (Figure 38).

The **Tibial Insert** is fully seated when the polymer tab on its distal side is locked under the anterior catch on the **Tibial Tray**.

### TIBIAL INSERT REMOVAL

To extract the **Tibial Insert**, place a 1/8 inch, or similarly sized, osteotome in the front tab on the **Tibial Insert** and twist the osteotome until the polymer **Tibial Insert** is loosened and disengages from the **Tibial Tray**. The **Tibial Insert** cannot be reused.



Figure 37



Figure 38

### TIBIAL STEMS

The optional **Tibial Stems** are meant to fit in either **Cementless Tibial Trays** or **Cemented Tibial Trays** (Figure 39a).

The **Tibial Stem** and the **Tibial Tray** are locked together by a tapered connection secured with a set screw. Tibial Stem assembly should be performed on a solid, fully supported table by turning the **Tibial Tray** upside down on a soft cloth and attaching the intended **Tibial Stem**. Apply a second soft cloth over the **Tibial Stem** and impact the two components together with in-line impaction from a mallet. Two to three forceful blows with a mallet should be used to lock the tapered connection between the **Tibial Stem** and the **Tibial Tray** together.

Use the **2.5mm Hex Driver** to transfer the 2 **Taper Set Screws** to the anterior and posterior holes in the **Tibial Tray** keel. Use the Hex Driver to tighten the Taper Set Screw into the grooves of the **Tibial Stem** to secure the connection between the Tibial Stem and Tibial Tray (Figure 39b).

The **Tibial Stem** can be placed into the bone after first reaming the tibial bone with the appropriately sized straight reamer. For uncemented Tibial Stems, match the reamer to the stem diameter. For cemented use, use a reamer 1mm larger than the Tibial Stem.



Figure 39a



Figure 39b



## Patellar Preparation

### PATELLAR RESECTION AND TRIALS

The **Patella Clamp** is a common parallel pivoting mechanism style instrument often used for patella implant preparation. The **Patella Clamp** has universal style connections on both arms allowing the **Patella Resection Guides**, **Patella Drill Guide**, and **Patella Cement Clamps** to snap in place (Figure 40).

Use the **Patella Resection Guides** with the **Patella Stylus** to determine the measured resection, 9mm or 10 mm from the patella apex of the cartilage side of the patella (Figure 41).

Exchange the **Patella Resection Guide** for the **Patella Drill Guide** (with three drill holes) to the appropriate position and drill three holes for the **Patella** implant (Figure 42).



Figure 40



Figure 41



Figure 42



**Patella Sizers** can be attached to the **Patella Drill Guide** (31mm diameter) to size a 33, 36, or 39mm patella (Figure 43).

Insert the **Patella Trial** components to trial all components to determine patella tracking (Figure 44).

Prepare the resected bone surfaces for bone cement application. Apply the bone cement between the resected patella and the **Patella** implant. Clamp the **Patella** implant with **Patella Clamps (Anterior and Posterior)** and hold it in place while the bone cement hardens (Figure 45).



Figure 43



Figure 44



Figure 45

### Knee Balancing Algorithm

The ligament balance of the knee should be verified in flexion and extension. If balance has not been achieved, the following suggested steps outlined in the table below may be of assistance.

Extension	Flexion	Method
Acceptable	Acceptable	Proceed to next step.
Tight	Acceptable	Release posterior capsule and/or re-cut the distal femur using +2mm on the <b>Distal Femoral Cut Block</b> and recut with the femoral cuts with same size <b>Femoral Chamfer Cut Block</b> .
Loose	Acceptable	Increase the slope of the tibial cut using the <b>Tibial Resection Guide</b> and upsize the thickness of the polymer <b>Tibial Insert</b> .
Acceptable	Too Tight	<ol style="list-style-type: none"> <li>1. Increase the slope cut of the tibia using the <b>Tibial Resection Guide</b>.</li> <li>2. Recess the PCL.</li> <li>3. Downsize the <b>Femoral Component</b> (provided no notching occurs) using one size smaller <b>Femoral Chamfer Cut Block</b>.</li> </ol>
Acceptable	Too Loose	Recut the distal femur and increase the thickness of the polymer <b>Tibial Insert</b> .
Too Tight	Too Tight	Downsize the polymer <b>Tibial Insert</b> if possible, OR recut the tibia using the <b>Tibial Resection Guide</b> .
Too Loose	Too Tight	Recut the tibia to add more posterior slope then upsize the <b>Tibial Insert</b> OR down size <b>Femoral Component</b> and upsize the <b>Tibial Insert</b> .
Too Loose	Too Loose	Upsize the thickness of the polymer <b>Tibial Insert</b> .

### Implant Product List

#### FEMORAL COMPONENTS

Catalog Number	Catalog Description
1014-F-0101	CR Femoral Component, Non-Porous CoCr, CEMENTED, Size 1, Left
1014-F-0102	CR Femoral Component, Non-Porous CoCr, CEMENTED, Size 1, Right
1014-F-0201	CR Femoral Component, Non-Porous CoCr, CEMENTED, Size 2, Left
1014-F-0202	CR Femoral Component, Non-Porous CoCr, CEMENTED, Size 2, Right
1014-F-0301	CR Femoral Component, Non-Porous CoCr, CEMENTED, Size 3, Left
1014-F-0302	CR Femoral Component, Non-Porous CoCr, CEMENTED, Size 3, Right
1014-F-0401	CR Femoral Component, Non-Porous CoCr, CEMENTED, Size 4, Left
1014-F-0402	CR Femoral Component, Non-Porous CoCr, CEMENTED, Size 4, Right
1014-F-0501	CR Femoral Component, Non-Porous CoCr, CEMENTED, Size 5, Left
1014-F-0502	CR Femoral Component, Non-Porous CoCr, CEMENTED, Size 5, Right
1014-F-0601	CR Femoral Component, Non-Porous CoCr, CEMENTED, Size 6, Left
1014-F-0602	CR Femoral Component, Non-Porous CoCr, CEMENTED, Size 6, Right
1014-F-0701	CR Femoral Component, Non-Porous CoCr, CEMENTED, Size 7, Left
1014-F-0702	CR Femoral Component, Non-Porous CoCr, CEMENTED, Size 7, Right
1014-F-0801	CR Femoral Component, Non-Porous CoCr, CEMENTED, Size 8, Left
1014-F-0802	CR Femoral Component, Non-Porous CoCr, CEMENTED, Size 8, Right
1014-F-4101	CR Femoral Component, Porous CoCr, Size 1, Left
1014-F-4102	CR Femoral Component, Porous CoCr, Size 1, Right
1014-F-4201	CR Femoral Component, Porous CoCr, Size 2, Left
1014-F-4202	CR Femoral Component, Porous CoCr, Size 2, Right
1014-F-4301	CR Femoral Component, Porous CoCr, Size 3, Left
1014-F-4302	CR Femoral Component, Porous CoCr, Size 3, Right
1014-F-4401	CR Femoral Component, Porous CoCr, Size 4, Left
1014-F-4402	CR Femoral Component, Porous CoCr, Size 4, Right
1014-F-4501	CR Femoral Component, Porous CoCr, Size 5, Left
1014-F-4502	CR Femoral Component, Porous CoCr, Size 5, Right
1014-F-4601	CR Femoral Component, Porous CoCr, Size 6, Left
1014-F-4602	CR Femoral Component, Porous CoCr, Size 6, Right
1014-F-4701	CR Femoral Component, Porous CoCr, Size 7, Left
1014-F-4702	CR Femoral Component, Porous CoCr, Size 7, Right
1014-F-4801	CR Femoral Component, Porous CoCr, Size 8, Left
1014-F-4802	CR Femoral Component, Porous CoCr, Size 8, Right

### TIBIAL COMPONENTS

Catalog Number	Catalog Description
1014-B-9000	TAPER SET SCREW
1014-B-0100	Tibial Tray Component, Non-Porous Titanium, CEMENTED, Size 1
1014-B-0200	Tibial Tray Component, Non-Porous Titanium, CEMENTED, Size 2
1014-B-0300	Tibial Tray Component, Non-Porous Titanium, CEMENTED, Size 3
1014-B-0400	Tibial Tray Component, Non-Porous Titanium, CEMENTED, Size 4
1014-B-0500	Tibial Tray Component, Non-Porous Titanium, CEMENTED, Size 5
1014-B-0600	Tibial Tray Component, Non-Porous Titanium, CEMENTED, Size 6
1014-B-0700	Tibial Tray Component, Non-Porous Titanium, CEMENTED, Size 7
1014-B-0800	Tibial Tray Component, Non-Porous Titanium, CEMENTED, Size 8
1014-B-1100	Tibial Tray Component, Porous Titanium, Size 1
1014-B-1200	Tibial Tray Component, Porous Titanium, Size 2
1014-B-1300	Tibial Tray Component, Porous Titanium, Size 3
1014-B-1400	Tibial Tray Component, Porous Titanium, Size 4
1014-B-1500	Tibial Tray Component, Porous Titanium, Size 5
1014-B-1600	Tibial Tray Component, Porous Titanium, Size 6
1014-B-1700	Tibial Tray Component, Porous Titanium, Size 7
1014-B-1800	Tibial Tray Component, Porous Titanium, Size 8

### TIBIAL STEMS

Catalog Number	Catalog Description
1014-S-1000	STEM $\phi$ 10X25MM
1014-S-1005	STEM $\phi$ 10X75MM
1014-S-1015	STEM $\phi$ 10X115MM
1014-S-1050	STEM $\phi$ 10X150MM
1014-S-1055	STEM $\phi$ 10X50MM
1014-S-1200	STEM $\phi$ 12X25MM
1014-S-1205	STEM $\phi$ 12X75MM
1014-S-1215	STEM $\phi$ 12X115MM
1014-S-1250	STEM $\phi$ 12X150MM
1014-S-1255	STEM $\phi$ 12X50MM
1014-S-1400	STEM $\phi$ 14X25MM
1014-S-1405	STEM $\phi$ 14X75MM
1014-S-1415	STEM $\phi$ 14X115MM
1014-S-1450	STEM $\phi$ 14X150MM
1014-S-1455	STEM $\phi$ 14X50MM

1014-S-1605	STEM $\phi$ 16X75MM
1014-S-1615	STEM $\phi$ 16x115mm
1014-S-1650	STEM $\phi$ 16x150mm
1014-S-1805	STEM $\phi$ 18X75MM
1014-S-1815	STEM $\phi$ 18X115MM
1014-S-1850	STEM $\phi$ 18x150mm
1014-S-2005	STEM $\phi$ 20x75mm
1014-S-2015	STEM $\phi$ 20x115mm
1014-S-2050	STEM $\phi$ 20x150mm
1014-S-2205	STEM $\phi$ 22x75mm
1014-S-2215	STEM $\phi$ 22x115mm
1014-S-2250	STEM $\phi$ 22x150mm

### CR ASSYMETRIC TIBIAL INSERTS

Catalog Number	Catalog Description
1014-P-0109-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 9mm, Left
1014-P-0109-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 9mm, Right
1014-P-0111-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 11mm, Left
1014-P-0111-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 11mm, Right
1014-P-0113-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 13mm, Left
1014-P-0113-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 13mm, Right
1014-P-0115-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 15mm, Left
1014-P-0115-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 15mm, Right
1014-P-0117-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 17mm, Left
1014-P-0117-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 17mm, Right
1014-P-0119-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 19mm, Left
1014-P-0119-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 19mm, Right
1014-P-0209-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 9mm, Left
1014-P-0209-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 9mm, Right
1014-P-0211-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 11mm, Left
1014-P-0211-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 11mm, Right
1014-P-0213-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 13mm, Left
1014-P-0213-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 13mm, Right
1014-P-0215-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 15mm, Left
1014-P-0215-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 15mm, Right
1014-P-0217-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 17mm, Left
1014-P-0217-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 17mm, Right
1014-P-0219-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 19mm, Left
1014-P-0219-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 19mm, Right

Catalog Number	Catalog Description
1014-P-0309-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 9mm, Left
1014-P-0309-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 9mm, Right
1014-P-0311-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 11mm, Left
1014-P-0311-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 11mm, Right
1014-P-0313-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 13mm, Left
1014-P-0313-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 13mm, Right
1014-P-0315-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 15mm, Left
1014-P-0315-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 15mm, Right
1014-P-0317-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 17mm, Left
1014-P-0317-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 17mm, Right
1014-P-0319-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 19mm, Left
1014-P-0319-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 19mm, Right
1014-P-0409-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 9mm, Left
1014-P-0409-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 9mm, Right
1014-P-0411-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 11mm, Left
1014-P-0411-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 11mm, Right
1014-P-0413-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 13mm, Left
1014-P-0413-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 13mm, Right
1014-P-0415-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 15mm, Left
1014-P-0415-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 15mm, Right
1014-P-0417-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 17mm, Left
1014-P-0417-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 17mm, Right
1014-P-0419-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 19mm, Left
1014-P-0419-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 19mm, Right
1014-P-0509-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 9mm, Left
1014-P-0509-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 9mm, Right
1014-P-0511-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 11mm, Left
1014-P-0511-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 11mm, Right
1014-P-0513-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 13mm, Left
1014-P-0513-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 13mm, Right
1014-P-0515-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 15mm, Left
1014-P-0515-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 15mm, Right
1014-P-0517-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 17mm, Left
1014-P-0517-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 17mm, Right
1014-P-0519-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 19mm, Left
1014-P-0519-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 19mm, Right
1014-P-0609-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 9mm, Left
1014-P-0609-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 9mm, Right
1014-P-0611-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 11mm, Left





# Blue Total Knee System

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Catalog Number	Catalog Description
1014-P-0611-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 11mm, Right
1014-P-0613-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 13mm, Left
1014-P-0613-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 13mm, Right
1014-P-0615-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 15mm, Left
1014-P-0615-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 15mm, Right
1014-P-0617-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 17mm, Left
1014-P-0617-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 17mm, Right
1014-P-0619-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 19mm, Left
1014-P-0619-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 19mm, Right
1014-P-0709-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 9mm, Left
1014-P-0709-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 9mm, Right
1014-P-0711-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 11mm, Left
1014-P-0711-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 11mm, Right
1014-P-0713-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 13mm, Left
1014-P-0713-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 13mm, Right
1014-P-0715-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 15mm, Left
1014-P-0715-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 15mm, Right
1014-P-0717-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 17mm, Left
1014-P-0717-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 17mm, Right
1014-P-0719-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 19mm, Left
1014-P-0719-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 19mm, Right
1014-P-0809-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 9mm, Left
1014-P-0809-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 9mm, Right
1014-P-0811-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 11mm, Left
1014-P-0811-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 11mm, Right
1014-P-0813-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 13mm, Left
1014-P-0813-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 13mm, Right
1014-P-0815-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 15mm, Left
1014-P-0815-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 15mm, Right
1014-P-0817-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 17mm, Left
1014-P-0817-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 17mm, Right
1014-P-0819-01	CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 19mm, Left
1014-P-0819-02	CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 19mm, Right



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### HIGHLY CONGRUENT CR (HC-CR) TIBIAL INSERTS

Catalog Number	Catalog Description
1014-P-1109	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 9mm
1014-P-1111	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 11mm
1014-P-1113	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 13mm
1014-P-1115	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 15mm
1014-P-1117	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 17mm
1014-P-1119	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 1, Thickness 19mm
1014-P-1209	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 9mm
1014-P-1211	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 11mm
1014-P-1213	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 13mm
1014-P-1215	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 15mm
1014-P-1217	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 17mm
1014-P-1219	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 2, Thickness 19mm
1014-P-1309	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 9mm
1014-P-1311	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 11mm
1014-P-1313	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 13mm
1014-P-1315	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 15mm
1014-P-1317	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 17mm
1014-P-1319	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 3, Thickness 19mm
1014-P-1409	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 9mm
1014-P-1411	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 11mm
1014-P-1413	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 13mm
1014-P-1415	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 15mm
1014-P-1417	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 17mm
1014-P-1419	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 4, Thickness 19mm
1014-P-1509	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 9mm
1014-P-1511	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 11mm
1014-P-1513	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 13mm
1014-P-1515	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 15mm
1014-P-1517	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 17mm
1014-P-1519	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 5, Thickness 19mm
1014-P-1609	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 9mm
1014-P-1611	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 11mm
1014-P-1613	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 13mm
1014-P-1615	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 15mm
1014-P-1617	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 17mm
1014-P-1619	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 6, Thickness 19mm
1014-P-1709	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 9mm

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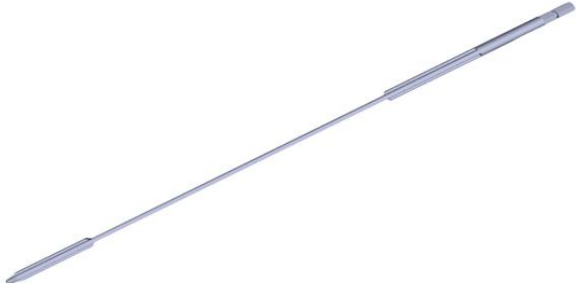
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Catalog Number	Catalog Description
1014-P-1711	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 11mm
1014-P-1713	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 13mm
1014-P-1715	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 15mm
1014-P-1717	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 17mm
1014-P-1719	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 7, Thickness 19mm
1014-P-1809	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 9mm
1014-P-1811	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 11mm
1014-P-1813	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 13mm
1014-P-1815	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 15mm
1014-P-1817	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 17mm
1014-P-1819	Highly Congruent CR Tibial Insert, UHMWPE + Vitamin E, Size 8, Thickness 19mm

### PATELLA COMPONENTS





Catalog Number	Catalog Description
1014-P-2708	Patella, UHMWPE with Vitamin E, 27mm x 8mm
1014-P-2908	Patella, UHMWPE with Vitamin E, 29mm x 8mm
1014-P-3109	Patella, UHMWPE with Vitamin E, 30mm x 9mm
1014-P-3309	Patella, UHMWPE with Vitamin E, 33mm x 9mm
1014-P-3610	Patella, UHMWPE with Vitamin E, 36mm x 10mm
1014-P-3911	Patella, UHMWPE with Vitamin E, 39mm x 11mm

### Surgical Instrumentation

Catalog Number	Catalog Description	Representative Illustration
1014-1-0001	FEMORAL IM ROD	

Catalog Number	Catalog Description	Representative Illustration
1014-1-0002	FEMORAL IM ROD HANDLE	
1014-1-0003	FEMORAL ANGULAR ALIGNMENT GUIDE	
1014-1-0004	DISTAL FEMORAL ALIGNMENT GUIDE	
1014-1-0005	DISTAL FEMORAL CUT BLOCK	
1014-1-1001	FEMORAL CHAMFER CUT BLOCK SZ1	
1014-1-1002	FEMORAL CHAMFER CUT BLOCK SZ2	
1014-1-1003	FEMORAL CHAMFER CUT BLOCK SZ3	
1014-1-1004	FEMORAL CHAMFER CUT BLOCK SZ4	
1014-1-1005	FEMORAL CHAMFER CUT BLOCK SZ5	

Catalog Number	Catalog Description	Representative Illustration
1014-1-1006	FEMORAL CHAMFER CUT BLOCK SZ6	
1014-1-1007	FEMORAL CHAMFER CUT BLOCK SZ7	
1014-1-1008	FEMORAL CHAMFER CUT BLOCK SZ8	
1014-1-2001	FEMORAL TRIAL UNIVERSAL SZ 1	
1014-1-2002	FEMORAL TRIAL UNIVERSAL SZ 2	
1014-1-2003	FEMORAL TRIAL UNIVERSAL SZ 3	
1014-1-2004	FEMORAL TRIAL UNIVERSAL SZ 4	
1014-1-2005	FEMORAL TRIAL UNIVERSAL SZ 5	
1014-1-2006	FEMORAL TRIAL UNIVERSAL SZ 6	
1014-1-2007	FEMORAL TRIAL UNIVERSAL SZ 7	
1014-1-2008	FEMORAL TRIAL UNIVERSAL SZ 8	
1014-1-2101	FEMORAL TRIAL INSERT CR SIZE 1	
1014-1-2102	FEMORAL TRIAL INSERT CR SIZE 2	
1014-1-2103	FEMORAL TRIAL INSERT CR SIZE 3	
1014-1-2104	FEMORAL TRIAL INSERT CR SIZE 4	
1014-1-2105	FEMORAL TRIAL INSERT CR SIZE 5	
1014-1-2106	FEMORAL TRIAL INSERT CR SIZE 6	
1014-1-2107	FEMORAL TRIAL INSERT CR SIZE 7	
1014-1-2108	FEMORAL TRIAL INSERT CR SIZE 8	
1014-1-0048	FEMORAL DRILL	
1014-1-0051	FEMORAL IMPACTOR	




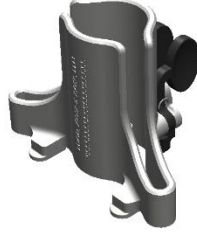
Catalog Number	Catalog Description	Representative Illustration
1014-1-0052	FEMORAL DRIVER	
1014-1-0053	3.2MM FLUTED PIN	
1014-1-0055	PIN PULLER	
1014-1-0056	ANGEL WING	

Catalog Number	Catalog Description	Representative Illustration
1014-1-0057	FEMORAL SIZER	
1014-1-0058	FEMORAL TRIAL INSERTER	
1014-1-0059	FEMORAL CR AUX PEG DRILL	
1014-1-0061	CURVED OSTEOTOME	

Catalog Number	Catalog Description	Representative Illustration
1014-2-0030	EM GUIDE ASSEMBLY	 <p>A 3D rendering of the EM Guide Assembly, a surgical instrument with a long handle and a curved, adjustable guide head.</p>
1014-2-0002	TIBIAL RESECTION GUIDE ASSEMBLY	 <p>A 3D rendering of the Tibial Resection Guide Assembly, a curved metal guide with multiple adjustment points and a central vertical scale.</p>
1014-2-0004	TIBIAL STYLUS 4 & 9MM	 <p>A 3D rendering of the Tibial Stylus 4 &amp; 9mm, a long, thin surgical instrument with a curved tip and a handle.</p>


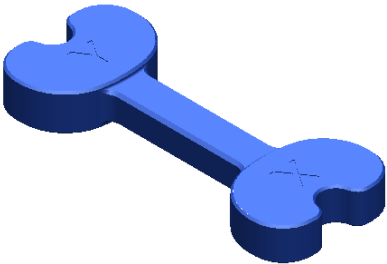
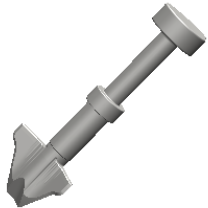




Catalog Number	Catalog Description	Representative Illustration
1014-2-0008	TIBIAL STYLUS 2 & 11mm	
1014-2-0005	TIBIAL TEMPLATE HANDLE	
1014-2-0006	3.2MM HEADED PIN	
1014-2-0007	TIBIAL TRAY CENTRAL DRILL 16MM	
1014-2-0009	TIBIAL TRAY CENTRAL DRILL 17MM	
1014-2-0010	AUXILLARY PEG PUNCH SHORT	

Catalog Number	Catalog Description	Representative Illustration
1014-2-0014	AUXILLARY PEG PUNCH LONG	
1014-2-0011	EM GDE-RESCTN GDE CONCTR 3 DGE	
1014-2-0012	EM GDE-RESCTN GDE CONCTR 0 DGE	
1014-2-0013	TIBIAL KEEL PUNCH GDE SZ 1,2,3	
1014-2-1456	TIBIAL KEEL PUNCH GDE SZ 4,5,6	
1014-2-1078	TIBIAL KEEL PUNCH GDE SZ 7,8	

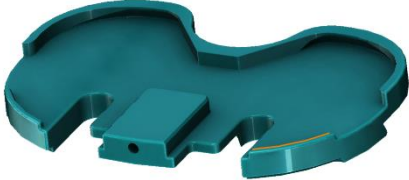
Catalog Number	Catalog Description	Representative Illustration
1014-2-0029	DYNAMIC GAP BALANCING GAGE	 <p>A surgical instrument with a grey metal head and a blue ergonomic handle. The head features a circular dial with multiple measurement points and a locking mechanism.</p>
1014-2-0017	TIBIAL INSERT IMPACTOR	 <p>A long, black, cylindrical surgical instrument with a textured grip and a hexagonal end.</p>
1014-2-0031	TIBIAL TRAY IMPACTOR	 <p>A black, rectangular surgical instrument with a textured surface and a hexagonal end.</p>
1014-2-0032	MCL RETRACTOR LEFT	 <p>A thin, curved metal surgical instrument with a hook-like end and the word "LEFT" engraved on it.</p>









Catalog Number	Catalog Description	Representative Illustration
1014-2-0033	MCL RETRACTOR RIGHT	
1014-2-0034	IMPACTOR HANDLE	
1014-2-0022	3.5MM HEX DRIVER	
1014-2-0035	2.5MM HEX DRIVER	
1014-2-0023	TIBIAL TRAY EXTRACTOR	
1014-2-0024	SLAP HAMMER	

Catalog Number	Catalog Description	Representative Illustration
1014-2-0025	Z-RETRACTOR	
1014-2-0911	GAP GAGE 9MM AND 11MM	
1014-2-1315	GAP GAGE 13MM AND 15MM	
1014-2-1719	GAP GAGE 17MM AND 19MM	
1014-2-2123	TIBIAL KEEL PUNCH SZ 1,2,3	
1014-2-2456	TIBIAL KEEL PUNCH SZ 4,5,6	
1014-2-2078	TIBIAL KEEL PUNCH SZ 7,8	
1014-2-3001	TIBIAL TRAY TEMPLATE SZ 1	
1014-2-3002	TIBIAL TRAY TEMPLATE SZ 2	
1014-2-3003	TIBIAL TRAY TEMPLATE SZ 3	
1014-2-3004	TIBIAL TRAY TEMPLATE SZ 4	
1014-2-3005	TIBIAL TRAY TEMPLATE SZ 5	
1014-2-3006	TIBIAL TRAY TEMPLATE SZ 6	
1014-2-3007	TIBIAL TRAY TEMPLATE SZ 7	
1014-2-3008	TIBIAL TRAY TEMPLATE SZ 8	
1014-2-4001	TIBIAL TRAY TRIAL SIZE-1	
1014-2-4002	TIBIAL TRAY TRIAL SIZE-2	
1014-2-4003	TIBIAL TRAY TRIAL SIZE-3	
1014-2-4004	TIBIAL TRAY TRIAL SIZE-4	
1014-2-4005	TIBIAL TRAY TRIAL SIZE-5	
1014-2-4006	TIBIAL TRAY TRIAL SIZE-6	
1014-2-4007	TIBIAL TRAY TRIAL SIZE-7	
1014-2-4008	TIBIAL TRAY TRIAL SIZE-8	
1014-4-0061	TIBIAL INSERT TRIAL 6MM SHIM- SZ 1	

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Catalog Number	Catalog Description	Representative Illustration
1014-4-0062	TIBIAL INSERT TRIAL 6MM SHIM- SZ 2	
1014-4-0063	TIBIAL INSERT TRIAL 6MM SHIM- SZ 3	
1014-4-0064	TIBIAL INSERT TRIAL 6MM SHIM- SZ 4	
1014-4-0065	TIBIAL INSERT TRIAL 6MM SHIM- SZ 5	
1014-4-0066	TIBIAL INSERT TRIAL 6MM SHIM- SZ 6	
1014-4-0067	TIBIAL INSERT TRIAL 6MM SHIM- SZ 7	
1014-4-0068	TIBIAL INSERT TRIAL 6MM SHIM- SZ 8	
1014-4-1009	TIBIAL INSERT TRIAL CR UNIV-SZ 1, 9MM	
1014-4-1011	TIBIAL INSERT TRIAL CR UNIV-SZ 1, 11MM	
1014-4-1013	TIBIAL INSERT TRIAL CR UNIV-SZ 1, 13MM	
1014-4-2009	TIBIAL INSERT TRIAL CR UNIV-SZ 2, 9MM	
1014-4-2011	TIBIAL INSERT TRIAL CR UNIV-SZ 2, 11MM	
1014-4-2013	TIBIAL INSERT TRIAL CR UNIV-SZ 2, 13MM	
1014-4-3009	TIBIAL INSERT TRIAL CR UNIV-SZ 3, 9MM	
1014-4-3011	TIBIAL INSERT TRIAL CR UNIV-SZ 3, 11MM	
1014-4-3013	TIBIAL INSERT TRIAL CR UNIV-SZ 3, 13MM	
1014-4-4009	TIBIAL INSERT TRIAL CR UNIV-SZ 4, 9MM	
1014-4-4011	TIBIAL INSERT TRIAL CR UNIV-SZ 4, 11MM	
1014-4-4013	TIBIAL INSERT TRIAL CR UNIV-SZ 4, 13MM	
1014-4-5009	TIBIAL INSERT TRIAL CR UNIV-SZ 5, 9MM	
1014-4-5011	TIBIAL INSERT TRIAL CR UNIV-SZ 5, 11MM	
1014-4-5013	TIBIAL INSERT TRIAL CR UNIV-SZ 5, 13MM	
1014-4-6009	TIBIAL INSERT TRIAL CR UNIV-SZ 6, 9MM	
1014-4-6011	TIBIAL INSERT TRIAL CR UNIV-SZ 6, 11MM	
1014-4-6013	TIBIAL INSERT TRIAL CR UNIV-SZ 6, 13MM	
1014-4-7009	TIBIAL INSERT TRIAL CR UNIV-SZ 7, 9MM	
1014-4-7011	TIBIAL INSERT TRIAL CR UNIV-SZ 7, 11MM	
1014-4-7013	TIBIAL INSERT TRIAL CR UNIV-SZ 7, 13MM	
1014-4-8009	TIBIAL INSERT TRIAL CR UNIV-SZ 8, 9MM	
1014-4-8011	TIBIAL INSERT TRIAL CR UNIV-SZ 8, 11MM	
1014-4-8013	TIBIAL INSERT TRIAL CR UNIV-SZ 8, 13MM	
1014-3-2708	PATELLA TRIAL 27MM X 8MM	
1014-3-2908	PATELLA TRIAL 29MM X 8MM	

Catalog Number	Catalog Description	Representative Illustration
1014-3-3109	PATELLA TRIAL 31MM X 9MM	
1014-3-3309	PATELLA TRIAL 33MM X 9MM	
1014-3-3610	PATELLA TRIAL 36MM X 10MM	
1014-3-3911	PATELLA TRIAL 39MM X 11MM	
1014-3-0033	PATELLA SIZER 33MM	
1014-3-0036	PATELLA SIZER 36MM	
1014-3-0039	PATELLA SIZER 39MM	
1014-3-0009	PATELLA STYLUS 9MM	
1014-3-0010	PATELLA STYLUS 10MM	
1014-3-0019	PATELLA CLAMP	
1014-3-0012	PATELLA RESECTION GUIDE-LEFT	
1014-3-0013	PATELLA RESECTION GUIDE-RIGHT	
1014-3-0014	PATELLA DRILL	
1014-3-0015	PATELLA DRILL GUIDE	



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Catalog Number	Catalog Description	Representative Illustration
1014-3-0016	PATELLA CEMENT CLAMP-ANT SIDE	
1014-3-0017	PATELLA CEMENT CLAMP-POST SIDE	