

## Implant Partners™ Primary Knee: CS-PS

SURGICAL TECHNIQUE



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Implant Partners™ recognizes that proper surgical procedures and techniques are the responsibility of the medical professional. The following guidelines are furnished for information purposes only. Each surgeon must evaluate the appropriateness of the procedures based on his or her personal medical training, experience, and patient condition. Prior to use of the system, the surgeon should refer to the product Instructions For Use package insert for additional warnings, precautions, indications, contraindications and adverse effects. Instructions For Use package inserts are also available by contacting the manufacturer. Contact information can be found on the back of this surgical technique and the Instructions For Use package inserts are available on www.implantpartners.com/partner-resources.

 $\textit{Please contact Implant Partners} {}^{\text{\tiny{TM}}}\textit{Customer Service for product availability}.$ 

Product Information

chapter

The Implant Partners™ CS and PS Primary Knee System builds on the clinical history of the medial-conforming ball-in-socket design.

## Indications

The Implant Partners™ Medial Conforming Knee Systems with adaptive inserts are indicated for use in knee arthroplasty in skeletally mature patients with the following conditions:

- Noninflammatory degenerative joint disease including osteoarthritis, traumatic arthritis or avascular necrosis;
- 2) Inflammatory degenerative joint disease including rheumatoid arthritis;
- 3) Correction of functional deformity;
- 4) Revision procedures where other treatments or devices have failed; and treatment of fractures that are unmanageable using other techniques.

Implant Partners™ Knee Systems are for cemented use only.

## Contraindications

Patients should be warned of these contraindications. Contraindications include:

- 1) Overt infection;
- 2) Distant foci of infections (which may cause hematogeneous spread to the implant site);
- 3) Rapid disease progression as manifested by joint destruction or bone absorption apparent on roentgenogram;
- Skeletally immature patients;
- 5) Cases where there is inadequate neuromuscular status (eg. prior paralysis, fusion and/or inadequate abductor strength), poor bone stock, or poor skin coverage around the joint that would make the procedure unjustifiable.





» Knee should be in >90° flexion

#### Retractors and placement:

- "Z" Retractor superior lateral on femur to lift skin out of way of distal resection guide
- "Z" Retractor medial on femoral condyle or tibia to protect collateral ligament

## Preparation of the Distal Femur

## **Starter Hole Preparation**

Initiate an opening in the femoral canal with the 9.5mm (3/8") diameter drill (K0001022). The hole may be placed medial and anterior to the anteromedial corner of the intercondylar notch, in the center of the trochlear groove, or 1cm (.4") anterior to the PCL origin. | Figure 1



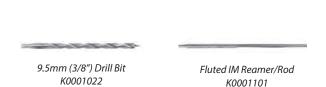
## **Alignment Rod Insertion**

Insert the fluted IM reamer/rod (K0001101) into the femoral canal, being sure to irrigate and aspirate several times to reduce the chance of a fat embolus. Turn the reamer during insertion with the T-handle (K0001016). | Figure 2



**EFFICIENCY SUGGESTION:** Some surgeons prefer the distal femoral alignment guide (E1101001), valgus bushing (E1100357) and resection guide (E10000XX) pre-loaded on the IM rod (K0001101) before it is introduced into the femur. After insertion, the T-handle (K0001016) is maintained on the rod for faster rod removal after the resection guide (E10000XX) is pinned. | Figure 3





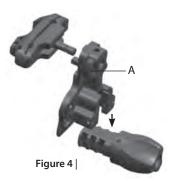




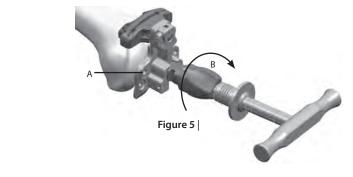
- » Knee should be in >90° flexion
- » "Z" Retractor Posterior lateral on femur
- » Bent Hohmann Anterolateral on femoral cortex

IMPORTANT NOTE: All femoral resection slots are designed for use with a .050'' (1.27mm) thick saw blade. Wide 1" (25.4mm) saw blades are recommended for the distal resection.

Distal resection guides are available in 10mm (E1000010) and 12mm (E1000012). Load the appropriate distal resection guide onto the distal femoral alignment guide (E1101001) and lock them together by pushing the locking button from left to right. | A in Figure 4 A lock icon will be visible. Insert the distal femoral alignment guide (E1101001) onto the valgus bushing (E1100357). | Figure 4 The valgus bushing (E1100357) has both a "Left" and "Right" side, and has three slots which allow 3°, 5°, or 7° of valgus. Ensure the "Left" side of the bushing is facing up for a left knee, and the "Right" side is facing up for a right knee.



Slide the valgus bushing (E1100357) down the IM rod (K0001101) toward the T-handle (K0001016) connection. Insert the fully assembled IM rod into the intramedullary canal until the distal femoral alignment guide (E1101001) rests against the unresected prominent distal condyle. | Figure 5 Although rotation is not critical at this step, the distal femoral alignment guide (E1101001) features two lines which may be aligned with the epicondyles. | A in Figure 5 Lock the valgus bushing (E1100357) to the IM rod (K0001101) by turning the knob until it is tight. | B in Figure 5





10mm Distal Resection Guide F1000010



12mm Distal Resection Guide E1000012



Distal Femoral Alignment Guide E1101001



Valgus Bushing E1100357

#### **Knee Positioning Tip**

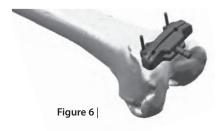


Knee should be placed in 90° of flexion to facilitate placement of the sizing caliper feet under the posterior condyles.

#### Retractors and placement:

- » Curved Single Prong Hohmann on lateral femur to retract patella to side of lateral femoral condyle
- » "Z" Retractor superior lateral under quadriceps

Pin the distal resection guide (E10000XX) to the anterior cortex with two headless pins through the "STD" holes. These are the most proximal holes on the guide. If the pins are left too proud, they may impinge on the saw and prevent full saw penetration. Push the locking button to detach the resection block and remove the IM rod (K0001101), distal femoral alignment guide (E1101001) and valgus bushing (E1100357). Use of a divergent pin is recommended to prevent the distal resection guide (E10000XX) from vibrating off the pins during resections. In the absence of a divergent pin, a kocher can be clipped to the pin to provide stability. | Figure 6



NOTE: At this point the proximal tibia may be resected. This allows easier placement of the femoral sizing caliper under the posterior condyles.

#### Precision Pointe



Make sure the caliper rests flat on the distal surface.

## Femoral Sizing and Rotation

The caliper must be set for the appropriate knee. For example: If used on a right knee, the "Right" marking must be facing the observer and the "Left" marking should be against the bone. To set the caliper for the opposite knee, remove the posterior feet, rotate the caliper and reinsert the feet. | Figure 7

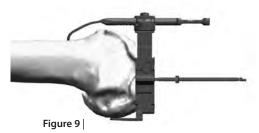


Figure 7

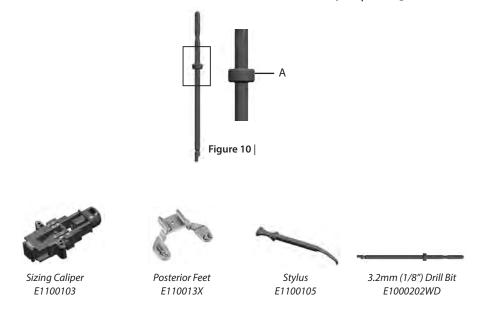
Place the sizing caliper (E1100103) flush against the resected distal femur. Adjust the sizer so the posterior feet (E110013X) rest against the posterior condyles. The stylus (E1100105) should be set to the expected femoral size (femoral size is presumed based on preoperative templating) and the stylus should be pushed until the number of clicks equals the suspected size from preoperative templating. The numbers corresponding to femoral sizes on the stylus are read from the back as it enters the sizing caliper. | A in Figure 8



Ensure the caliper (E1100103) rests flat on the distal surface. | Figure 9



The tip of the stylus (E1100105) should touch the most prominent aspect of the anterior cortex just proximal to the lateral anterior condyle. The femoral size is read through the windows in the anterior face of the sizing caliper (E1100103). Sizes are represented by shaded areas. The 4-in-1 resection block (E12041XX) preparation holes are drilled through the 3° holes with the 3.2mm (1/8") drill bit (E1000202WD) which features a shoulder at the correct depth. | A in Figure 10

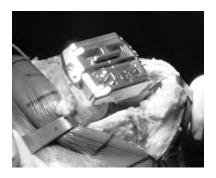


Chapter 2 Surgical Technique

The preparation of the holes will set 3° of external rotation relative to the posterior condylar axis. In a severe varus or valgus knee, the posterior condylar axis may not be a reliable reference for femoral rotation; instead, rotation may be set visually by referencing the A/P axis or epicondyles. If rotation must be set visually, the caliper (E1100103) features a central window with crosshairs. With the sizing caliper (E1100103) resting on the distal resection, the crosshair may be aligned with the A/P axis or the epicondyles. | Figure 11 Once aligned, the peg holes are drilled through the 0° holes.



Figure 11



- » Curved single-prong Hohmann Superiorlateral on femoral cortex
- » "Z" Retractor Posterior lateral on femur
- "Z" Retractor Posterior medial on femur to protect medial collateral ligament

## **Anterior and Posterior Resections**

CAUTION: Take care to protect the collateral ligaments during resections.

Select the 4-in-1 femoral resection block (E12041XX) corresponding to the size indicated by the femoral sizing caliper (E1100103). Make sure the 4-in-1 femoral resection block (E12041XX) is set to zero at the beginning of the case. Place the pegs on the back of the femoral resection block (E12041XX) into the holes drilled through the sizing caliper (E1100103). The femoral resection blocks (E12041XX) may be used to double-check the femoral size. The width of the resection block (E12041XX) on the step just posterior to the level of the pinholes represents the width of the femoral component. The distance from the top of the posterior slot to the central bottom portion of the guide represents the thickness of the posterior condyles of the implant. | A in Figure 12



Figure 12



Femoral Resection Block E12041XX

To ensure appropriate posterior condyle resection, utilize the posterior condylar gauge (E1200113). | Figure 13 The inside of the gauge equals the thickness of the implant posterior condyles (10mm for sizes 2-4; 11mm for sizes 5-8). The thickness of the outside of the gauge equals approximately 2mm more (12mm for sizes 2-4; 13mm for sizes 5-8). It is recommended to remove 2mm more bone than the implant thickness from the medial side during the posterior resection.



Figure 13

To ensure an appropriate anterior resection, utilize the dual reference "angel wing" gauge (K0014407). If it appears too much or too little of the posterior condyles are being removed, or that there will be anterior notching, the 4-in-1 femoral resection block (E12041XX) may be adjusted up to 2mm (.08") anterior or posterior with the 3.5mm hex head screwdriver (E5001005). Place the screwdriver (E5001005) into the adjustment dial and push the dial inward, then turn the dial in increments of 1mm. | Figure 14



Figure 14



Posterior Condylar Gauge E1200113



Angel Wing Gauge K0014407



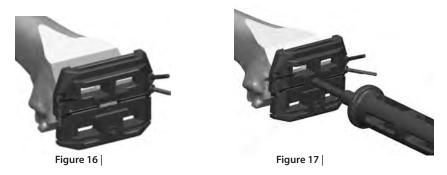
Screwdriver E5001005

Ensure the resection block (E12041XX) rests flat on the distal surface. | Figure 15



Figure 15

Stabilize the block (E12041XX) against the bone using four 3.2mm (1/8") diameter pins on the medial and lateral sides of the block (E12041XX). | Figure 16 | If two pins are preferred, place one pin low and the other high contralaterally. The recommended order of resection is: anterior, posterior, posterior chamfer, anterior chamfer. After resections have been made, the pins are withdrawn, and the block (E12041XX) is removed with the slap hammer (K0002008) and the extraction boss (E5002004WD). | Figure 17



Care should be taken to remove posterior condylar osteophytes to avoid impingement with the posterior portion of the tibial component. | Figure 18

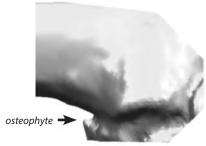


Figure 18





Chapter 2 Surgical Technique

## Trochlear Groove Resection for CS Femoral Components

Select the sulcus resection guide (E120100X) corresponding to the size indicated by the sizing caliper (E1100103). Place the sulcus resection guide (E120100X) on the femur. | Figure 19 The width of the distal aspect of the guide (E120100X) is the same M/L width as the femoral implant, and the lateral proximal edge represents the lateral edge of the implant and dictates the final implant location. | Figure 20 Place the guide (E120100X) along the lateral edge of the femur to prepare the trochlear groove location for the final implant. Pin the guide using two collared pins. | A in Figure 19 The trochlear groove should be resected by using a 12.7mm (1/2") sawblade on the angled surface and along the sides of the central portion of the guide (E120100X).

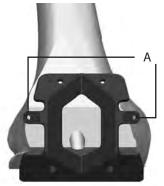






Figure 20

## Femoral Peg Hole Preparation for CS Femoral Components

The peg holes for the implant are prepared after the trochlear groove resection step. Drill through the 4.8mm (3/16") distal holes on the sulcus guide (E120100X) to prepare final peg holes using femoral peg drill (K0001018).

#### Refer to page 21 for instructions on re-cutting the distal femur.

IMPORTANT NOTE: If a femoral re-cut is necessary, the 4-in-1 femoral resection guide (E12041XX) cannot be remounted onto the femur due to the 3.2mm (1/8") pegs on the back of the guides (E12041XX).



Sulcus Resection Guide E120100X



Chapter 2 Surgical Technique

## Posterior Stabilized Femoral Housing Resection

If preparing for a posterior stabilized femoral component, a housing resection block (E120510X) is utilized at this point for all size Implant Partners™ PS implants. Place the appropriate size femoral housing resection guide (E120510X) flush against the anterior and distal bone surfaces. | Figure 21 Pin the guide with two collared pins. | A in Figure 21 The width of the distal aspect of the guide (E120510X) is the same M/L width as the femoral implant, and the lateral proximal edge represents the lateral edge of the implant and dictates the final implant location. Resect the intercondylar notch using a narrow 12.7mm (1/2″) saw blade on the angled surface. It is recommended that the proximal notch surface be prepared before the sides of the notch.

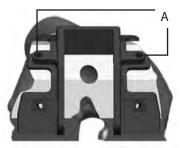


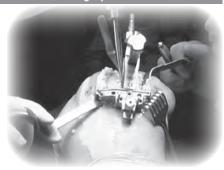
Figure 21

The proximal notch resection surface is angled at 14° to match the 14° posteriorly angled housing on the implant. The blade should pass straight anterior to posterior to prevent undercutting the condyle.



Housing Resection Block E120510X

#### **Knee Positioning Tip**



Knee should be placed in 90° of flexion.

#### Retractors and placement:

- » Curved Single Prong Hohmann on lateral tibia to cover patella and protect soft tissues
- » "Z" Retractor on medial tibia to expose tibia and protect the medial collateral ligament
- » Rake moves skin laterally to avoid the tibial resection guide
- » Cobb Elevator subluxes tibia forward

K0040116

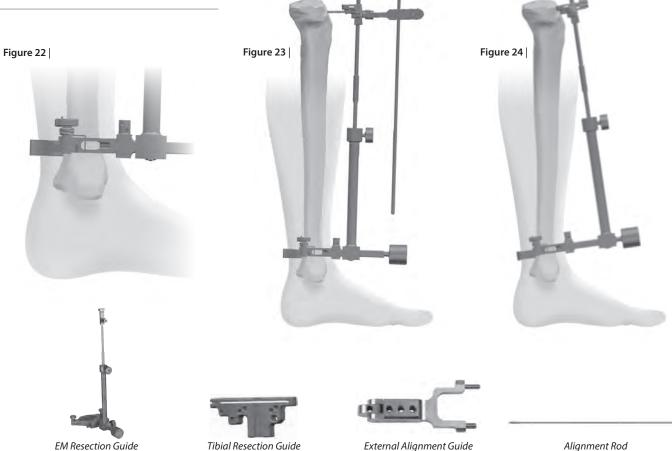
## **Tibial Preparation**

NOTE: The tibial resection guides are designed for use with a 1.27mm (.050") thick saw blade.

#### **Extramedullary Tibial Resection**

Position the ankle clamp of the Extramedullary (EM) Resection Guide (K0040116) against the lower leg just proximal to the malleoli. | Figure 22 Attach the appropriate Tibial Resection Guide (K004007L or K004007R) onto the guide and adjust it until the resection slot is positioned a few millimeters below the lowest articular surface. | Figure 23 When the vertical axis of the guide is parallel to the tibial axis, it is positioned for 3° posterior sloped resection. Attach the External Alignment Guide (K0040052) and slide the Alignment Rod (K0000901) through the appropriate TL or TR (Tibia Left or Tibia Right) hole. If the Alignment Rod is parallel to the tibia, 3° posterior slope is confirmed. | Figure 24

For an anatomically sloped resection, place the Dual Reference Gauge or a sawblade into the resection slot. Adjust the long axis of the EM Resection Guide by loosening the ankle screw and pulling the distal end of the guide away from the ankle. Adjust the EM Resection Guide until the cutting slot angle matches the anatomic slope of the tibia. | Figure 24



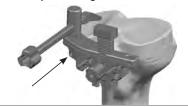
K0040052

K004007X

K0000901

#### **Precision Pointer**

Use of a divergent pin is recommended to prevent the resection block from vibrating off the pins during resections.



Drop the 2mm/10mm Tibial Stylus (K0040042) into one of the holes on the resection guide and turn the resection guide adjustment knob until the proper resection is reached. | Figure 25 Generally, the 2mm/10mm Tibial Stylus is set to resect 2mm from the most deficient side and/or 10mm from the most prominent. | Figure 26 Pin the Tibial Resection Guide to the proximal tibia through the +0mm holes. The External Alignment Guide and Alignment Rod can be used to check alignment to the ankle. If the Tibial Resection Guide is detached, it can be moved distally 2mm if headless pins are used. Divergent pin holes are available for additional stability and are highly recommended.

NOTE: The top surface of the resection guide can be used to resect the tibia and is 4mm proximal to the distal surface of the captured slot.

Figure 25

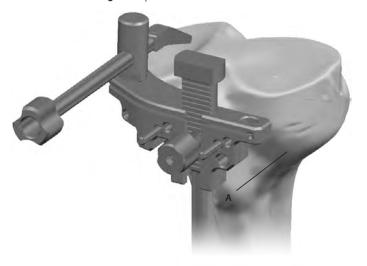


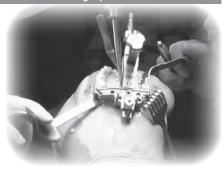
Figure 26





Tibial Stylus K0040042

#### **Knee Positioning Tip**



Knee should be placed in 90° of flexion.

#### **Retractors and placement:**

- » Curved Single Prong Hohmann on lateral tibia to cover patella and protect soft tissues
- » "Z" Retractor on medial tibia to expose tibia and protect the medial collateral ligament
- » Rake moves skin laterally to avoid the tibial resection guide
- » Cobb Elevator subluxes tibia forward

### **Precision Pointe**



Use of a divergent pin is recommended to prevent the resection block from vibrating off the pins during resections.

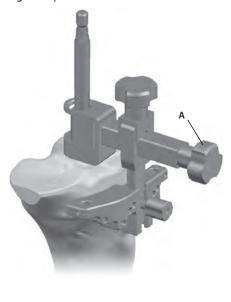
#### **Intramedullary Tibial Resection**

The 9.5mm (3/8") Drill is used to penetrate the proximal tibia, just posterior to the insertion of the ACL to the tibia. Insert the IM Reamer/Rod into the tibial canal; constantly turning the T-Handle. | Figure 27 | Irrigate and aspirate several times to reduce the chance of a fat embolus. Slide the Tibial Resection Guide onto the Intramedullary (IM) Tibial Alignment Guide (K0027445). This construct will connect to the IM Reamer/Rod which is sitting in the tibial canal. Turn the locking screw to lock the Tibial Alignment Guide to the IM Reamer/Rod. | A in Figure 28

Figure 27



Figure 28





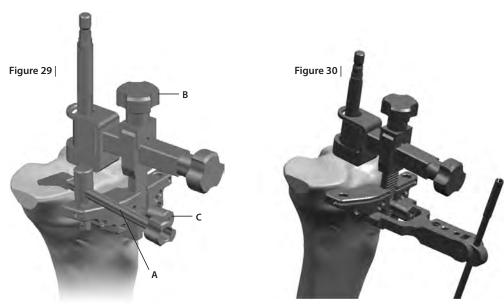
IM Tibial Alignment Guide K0027445

#### **Efficiency Suggestion**

Some surgeons prefer the tibial crosshead and IM alignment guide to be pre-loaded on the rod before it is introduced into the tibial canal. After insertion, the T-handle is maintained on the rod for easier rod removal. After the resection guide is pinned, the only knob that needs to be loosened (to remove the rod and alignment guide) is the resection guide knob (C in Figure 21).



Drop the 2mm/10mm Tibial Stylus into one of the holes on the IM Tibial Resection Guide to set the desired level of tibial resection. | A in Figure 29 Generally, the 2mm/10mm Tibial Stylus is set to resect 2mm from the most deficient side and/or 10mm from the most prominent. Pin the Tibial Resection Guide to the proximal tibia through the +0mm holes. Before inserting a divergent pin, loosen the A/P adjustment knob and move the Tibial Resection Guide as close as possible to the tibia. | B in Figure 29 To detach, loosen the resection guide knob | C in Figure 29 and extract the IM Reamer/Rod and IM Tibial Alignment Guide together. When the IM Tibial Alignment Guide is detached, the Tibial Resection Guide may be moved 2mm distally if headless pins are used. Varus/Valgus angulation can be checked to the ankle using the External Alignment Guide. | Figure 30



#### **Knee Positioning Tip**



Knee should be placed in 90° of flexion.

#### Retractors and placement:

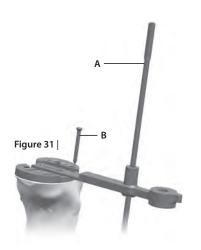
- » Curved Single Prong Hohmann on lateral tibia to cover patella and protect soft tissues
- "Z" Retractor on medial tibia to expose tibia and protect the medial collateral ligament
- » Cobb Elevator subluxes tibia forward

#### **Efficiency Suggestion**

Some surgeons do not utilize the knurled handle and simply hold the keel punch guide in position.

TABLE 1 | Keel Sizing

Tibia Base	Reamer Depth	Keel Punch
3, 4	Line 1	3, 4 (small)
5, 6	Line 2	5, 6 (medium)
6+, 7, 7+	Line 3	6+, 7, 7+ (large)



## **Tibial Sizing and Keel Preparation**

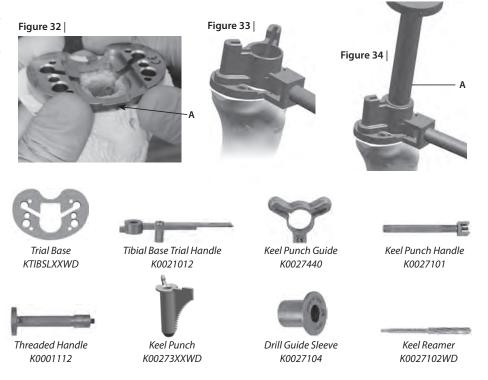
NOTE: The Implant Partners  $^{\text{TM}}$  CS or PS Primary Knee allows for 1-up, 1-down tibiofemoral sizing interchangeability.

(Refer to Sizing Charts on pg. 25)

Assemble the appropriate Universal Trial Base (KTIBSLXXWD) to the Trial Tibial Base Handle (K0021012) and place it against the proximal tibial surface. | Figure 31 The External Alignment Rod may be inserted through the Trial Tibial Base Handle to check alignment to the ankle. | A in Figure 31 Align the Universal Trial Base (generally to the medial one-third of the tibial tubercle) and pin it to the proximal tibia using short-headed anchoring pins. | B in Figure 31 If the Universal Trial Base is too small, a "plus size" will provide additional tibial coverage. In the event that the Trial Tibial Base Handle is not used, you can use the laser mark as a reference to the tubercle with respect to rotation. | A in Figure 32

Attach the Keel Punch Guide (K0027440) to the Keel Punch Handle (K0027101) and secure it to the Universal Trial Base by turning the knurled handle. | Figure 33 Using the Threaded Handle (K0001112) and appropriate Keel Punch (K00273XXWD), plunge through the Keel Punch Guide until the punch is fully seated and the collar is level with the edge of the guide. | A in Figure 34 Remove the Keel Punch and Keel Punch Guide; leaving the Universal Trial Base in place for a trial reduction.

In the event of hard tibial bone, before punching the keel, prepare the entry hole for the tibial stem using the appropriate Drill Guide Sleeve (K0027104) and Keel Reamer (K0027102WD). | Figure 34 Ream to the first line on the Keel Reamer for a size 3 or 4 base; second line for a 5 or 6 base; third line for a 6+, 7, or 7+ base (Table 1).



Chapter 2 Surgical Technique

## Tibia Sizing

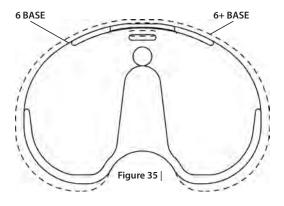
NOTE: The IP Primary Knee Systems have two options for each size tibia base. A standard and a "+" option. The locking mechanism for both the standard and plus base are located in the same place both anteriorly and posteriorly. The "+" base has a greater area compared to the standard base, thus providing more coverage on the tibia if needed.



### **Knee Positioning Tip**

Knee should be placed in full extension.

No retractors are necessary.



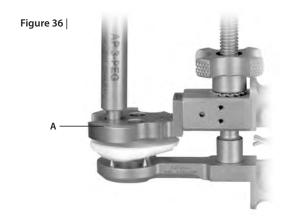
## Patella Preparation

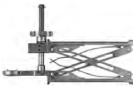
With the leg extended, the patella is tilted to almost a 90° angle. Resect the patella 8 or 10mm, depending on the templated size. Attach the Tri-Peg Patellar Drill Guide (K0031002) to the Parallel Patellar Clamp (K0031000). | A in Figure 36 The Tri-Peg Patellar Drill Guide has grooves on its surface indicating the patellar diameter options. The Tri-Peg Endmill (K0031013) is used to prepare the peg holes.

NOTE: Instead of utilizing a clamp for patellar resection, some surgeons prefer a non-instrumented technique.

 ${\bf NOTE:}\ The\ patellar\ peg\ holes\ may\ be\ prepared\ after\ the\ tibial\ and\ femoral\ resections.$ 

NOTE: The tri-peg patellae have the same peg patterns between sizes and can be easily changed during trial reduction.





Parallel Patellar Clamp K0031000



Tri-Peg Patellar Drill Guide K0031002



Tri-Peg Endmill K0031013

## **Trial Reduction**

Select the appropriate size femoral trial, either CS or PS. | Figure 37

Insert the trial tibial insert (EATXXXXXWD or EPTXXXXXWD) of the appropriate size and thickness onto the trial base (KTIBSLXX) and complete the trial reduction.

After the trial reduction is complete, remove the femoral trial (E130XXXX), with the slap hammer (K0002008) by sliding the extraction boss (E5002004WD) into the slot between the femoral condyles. | Figure 38 During removal, keep one hand on the trial (E130XXXX) to control its extraction.





Figure 37

Figure 38



Trial CS Tibial Insert EATXXXXXWD



Trial PS Tibial Insert EPTXXXXXWD



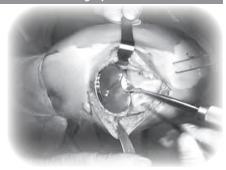
E1101007

## Re-cutting the Distal Femur

Assemble the T-handle (K0001016), IM rod (K0001101), valgus bushing (E1100357), and 10mm distal resection guide (E1000010). Place the 2mm distal recut spacer (E1101007) against the interior face of the distal femoral alignment guide (E1101001). | Figure 39 When utilized, the distal spacer (E1101007) will reduce the distal resection made by 8mm. (For example, it will allow a 2mm distal resection when cutting through the 10mm distal resection slot.) Slide the IM Reamer Rod (K0001101) into the intramedullary canal until the distal spacer (E1101007) contacts the distal femur. | Figure 40 Pin the resection guide (E1000110) in place and remove the IM reamer rod (K0001101), valgus bushing (E1100357) and distal femoral alignment guide (E1101001).



#### **Knee Positioning Tip**



Knee should be placed in 90° of flexion.

#### **Retractors and placement:**

- » Curved Single Prong Hohmann on lateral tibia to cover patella and protect soft tissues
- » "Z" Retractor on medial tibia to expose tibia and protect the medial collateral ligament
- » Cobb Elevator subluxes tibia forward

## Final Implant and Insert Implantation

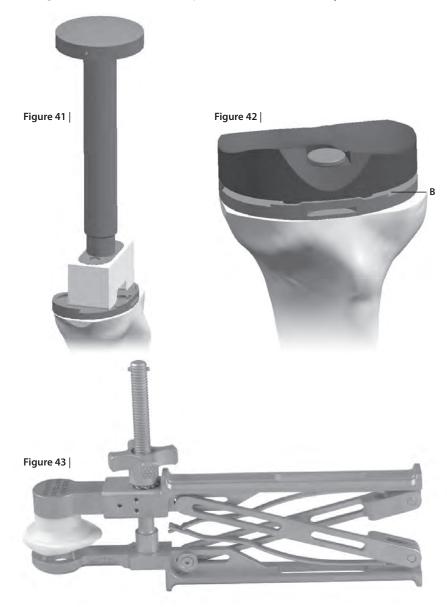
The recommended order for implantation is left to the discretion of the orthopaedic surgeon.

## **Implant Insertion**

The Tibial Base Implant (KTCCNPXXWD) is inserted with the Tibial Base Impactor (K0027225). | Figure 41 After the Tibial Base Implant has been inserted, the appropriate Trial Tibial Insert may be used to recheck ligament and soft tissue balancing. | Figure 42

NOTE: The trial insert only engages the central locking detail, and a gap will be present along the anterior periphery of the insert (B in Figure 32).

The Patellar Implant (KPONTPXXWD) may be held in place, while the cement cures, using the Parallel Patellar Clamp and Seater (K0031001). | Figure 43





Tibial Base Impactor K0027225



Chapter 2 Surgical Technique

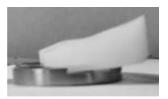


Figure 44

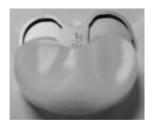


Figure 45 |



Figure 46



Figure 47



Figure 48 |

## **Tibial Insert Seating**

Ensure the posterior and peripheral captures of the tibial base implant are completely clear of soft tissue and bone. If these captures are not clear, the tibial insert will not be able to seat.

Once the cement has cured, the Implant Partners<sup>™</sup> adaptive inserts may be locked into place. To properly insert the tibial insert, the following technique must be followed:

- 1. Place the back of the insert against the anterior tibial base surface at a slight angle to avoid the anterior capture. | Figure 44
- 2. Ensure the posterior edge of the insert is parallel to the posterior edge of the tibial base. Direct the center of the insert at the central dovetail capture of the tibial base. Gingerly slide the insert posteriorly with hand pressure; making sure it follows a straight path and that both sides contact the posterior locking mechanism evenly. | Figure 45
- 3. Push the insert posteriorly until it almost fully engages the central and posterior captures. If the insert is misaligned, it may be re-inserted, but the locking mechanism must be carefully inspected to ensure it is undamaged before re-insertion is attempted. (If there is any reason to suspect the insert is damaged or deformed, a new insert should be utilized.) The insert can usually be pushed back until it is almost fully seated. Approximately 3mm of anterior insert lip should be visible extending anteriorly over the tibial base anterior capture. | Figure 46

NOTE: Failure to position the insert by hand as described may lead to increased incidence of misalignment or failed seating.

- 4. After initial seating, the 45° insert impactor (K0027211) may be utilized by placing the impactor tip in the anterior slot of the tibial insert at approximately a 45° angle to the tibia base. | Figure 47
- 5. While maintaining this 45° angle, apply several strong mallet blows directing the insert posteriorly. After the anterior edge of the insert has been pushed past the anterior capture of the tibial base, it will automatically drop behind the anterior capture and the insert face will be flush against the surface of the tibial base. | Figure 48

NOTE: It is not necessary to raise the impactor handle to 90° to impact the anterior part of the insert down further. Impacting at this angle may damage the anterior locking mechanism of the insert if it is not fully engaged behind the anterior base capture; rendering the insert unsuitable for implantation. If this occurs, a new insert should be utilized.





Figure 49

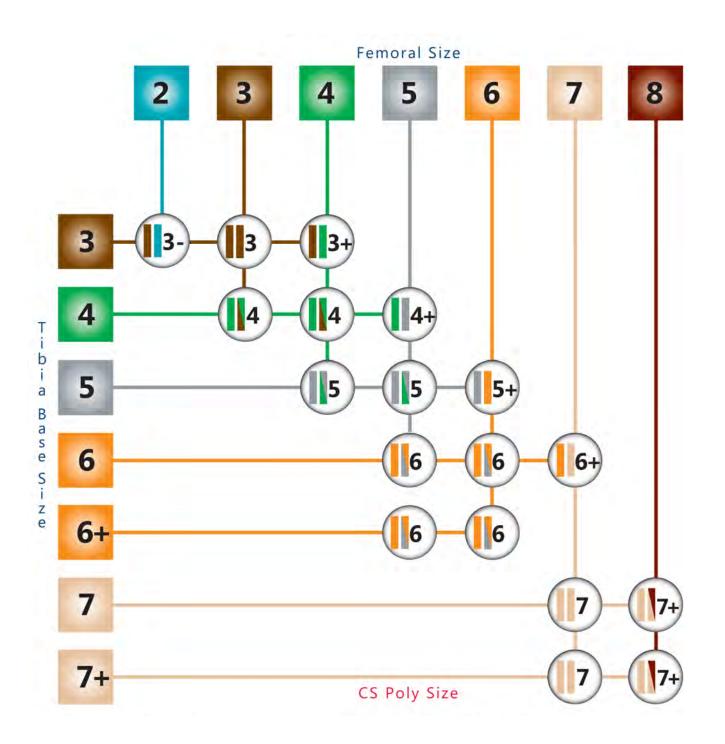


## Femoral Implantation

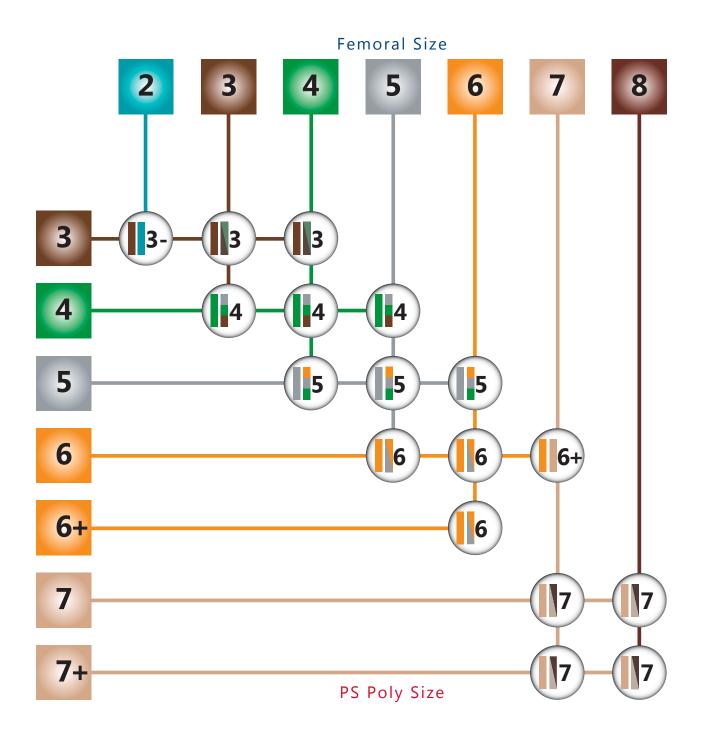
Final impaction of the femur needs to be performed with the finishing impactor (K0015100). | Figure 49

Please use the sizing chart for the appropriate configuration of the insert implant (Adaptive CS (EAIXXXXXWD) or Adaptive PS (EPIXXXXXWD) and tibial base implant (KTCCNPXXWD).

## Sizing Chart - IP CS Femur



## Sizing Chart - IP PS Femur



## **Explant Information**

### FEMUR, TIBIA, AND PATELLA COMPONENTS

To remove the components, small osteotomes, power saws, or other surgical instruments may be used to disrupt the bone-cement interface. Care must be exhibited to save remaining bone stock as well as to prevent fracture. Once the components have been removed, rongeurs or small osteotomes as well as other surgical instruments may be used to remove the remaining cement.

#### **INSERT REPLACEMENT**

A narrow osteotome may be inserted into the anterior region of the insert to facilitate removal. A hemostat may be used to remove the insert once it is no longer locked to the tibial base. Care must be taken not to scratch or mar any component that is not intended to be removed.

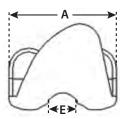
## Postoperative Management

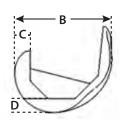
Postoperative care is the responsibility of the medical professional.

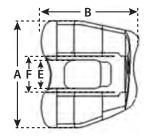
## Implant Dimensions

Sizes 3-7 (Implant Partners™ offering)

Ρ	PS Femoral Components (mm)						
	Size	Α	В	C	D	Е	F
	3	63.5	57.0	9.6	8.6	17.5	22.0
	4	66.0	60.0	9.6	8.6	17.5	22.0
	5	69.5	64.1	10.8	8.6	17.5	22.0
	6	73.0	68.0	10.8	8.6	17.5	22.0
	7	76.5	72.5	10.8	8.6	20.5	25.0

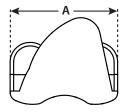


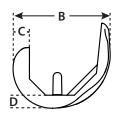


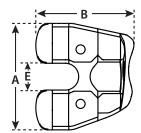


## CS Femoral Components (mm)

Size	Α	В	C	D	Е
3	63.5	57.0	9.6	8.6	17.5
4	66.0	60.0	9.6	8.6	17.5
5	69.5	64.1	10.8	8.6	17.5
6	73.0	68.0	10.8	8.6	17.5
7	76.5	72.5	10.8	8.6	20.5

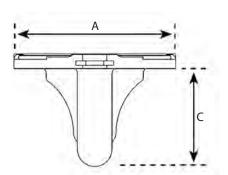


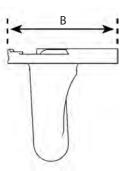




## Primary Tibial Base Components (mm)

Size	Α	В	C
3	60.0	40.5	35.2
4	65.0	43.9	35.2
5	70.0	47.3	42.5
6	75.0	50.7	42.5
6+	80.0	54.1	50.0
7	80.0	54.1	50.0
7+	85.0	57.5	50.0





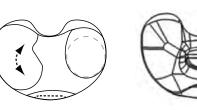
#### CS/PS Insert (mm)\*

Thickness	ses: 10, 12, 1	(PS Only)	(PS Only)	
Size	A (CS)	A (PS)	В	C
3	10.2	8.0	19.3	15.5
3+	10.2	not available	not available	not available
4	10.2	8.7	19.8	15.5
4+	10.3	not available	not available	not available
5	10.5	8.1	20.3	15.5
5+	10.6	not available	not available	not available
6	10.6	9.1	21.3	15.5
6+	10.6	8.6	22.4	18.5
7	10.6	9.1	22.4	18.5

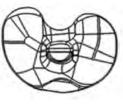
\*CS/PS Insert share the same AP and ML dimensions as the Primary Tibial Base.

## Onlay All-Poly Tri-Peg Patella (mm)

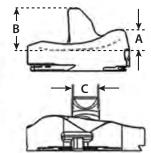
	_	
Α	В	С
29.0	8.1	5.1
32.0	8.1	5.1
35.0	8.1	5.1
38.0	10.1	5.1

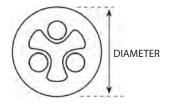


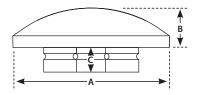
Medial Conforming/CS Insert



PS Insert





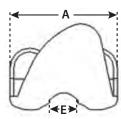


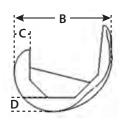
## Implant Dimensions

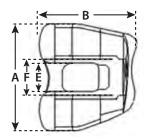
Special size offerings through MicroPort Orthopedics\*

**EVOLUTION®** 

MP PS Femoral Components (mm)						(PS Only)
Size	Α	В	C	D	Ε	F
1	58.5	51.4	9.6	8.6	15.7	20.3
2	61.0	54.2	9.6	8.6	15.7	20.3
- 8	80.0	76.3	10.8	8.6	20.5	25.0

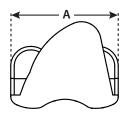


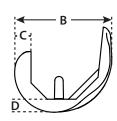


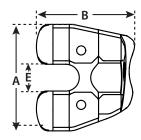


EVOLUTION®
CS/CR Femoral Components (mm)

Size	Α	В	C	D	Е
1	58.5	51.4	9.6	8.6	15.7
2	61.0	54.2	9.6	8.6	15.7
8	80.0	76.3	10.8	8.6	20.5

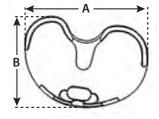


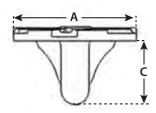


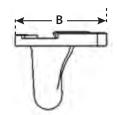


EVOLUTION® MP Tibial Base Components (mm)

Size	Α	В	C
1	54.0	40.0	31.1
2	58.0	43.0	31.1
2+	62.0	46.0	34.3
8	82.0	61.0	40.7
8+	86.0	64.0	40.7



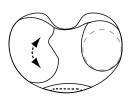




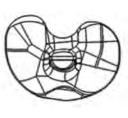
## EVOLUTION® CS/PS Insert (mm)\*

Thicknesses: 10, 12, 14, 17mm			(PS Only)	(PS Only)
Size	A (CS)	A (PS)	В	C
1	10.2	8.4	19.1	13.7
1+	10.3	not available	not available	not available
2	10.3	8.6	19.3	13.7
2+	10.3	8.7	19.5	15.5
8	11.1	10.3	23.7	18.5

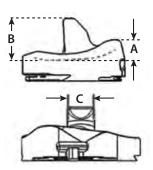
<sup>\*</sup>CS/PS Insert share the same AP and ML dimensions as the MP Tibial Base.











<sup>\*</sup>These special sizes are available through our partnership with MicroPort and are not a part of the core offering from Impact Partners.

# Ordering Information

## IMPLANT PARTNERS™ CS PRIMARY TIBIAL INSERTS, LEFT

Part Number	Description
EAI3110LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 3 LEFT 10MM
EAI3112LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 3 LEFT 12MM
EAI3114LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 3 LEFT 14MM
EAI3117LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 3 LEFT 17MM
EAI4110LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 3+ LEFT 10MM
EAI4112LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 3+ LEFT 12MM
EAI4114LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 3+ LEFT 14MM
EAI4117LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 3+ LEFT 17MM
EAI4210LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 4 LEFT 10MM
EAI4212LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 4 LEFT 12MM
EAI4214LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 4 LEFT 14MM
EAI4217LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 4 LEFT 17MM
EAI5210LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 4+ LEFT 10MM
EAI5212LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 4+ LEFT 12MM
EAI5214LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 4+ LEFT 14MM
EAI5217LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 4+ LEFT 17MM
EAI5310LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 5 LEFT 10MM
EAI5312LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 5 LEFT 12MM
EAI5314LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 5 LEFT 14MM
EAI5317LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 5 LEFT 17MM
EAI6310LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 5+ LEFT 10MM
EAI6312LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 5+ LEFT 12MM
EAI6314LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 5+ LEFT 14MM
EAI6317LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 5+ LEFT 17MM
EAI6410LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 6 LEFT 10MM
EAI6412LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 6 LEFT 12MM
EAI6414LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 6 LEFT 14MM
EAI6417LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 6 LEFT 17MM
EAI7410LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 6+ LEFT 10MM
EAI7412LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 6+ LEFT 12MM
EAI7414LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 6+ LEFT 14MM
EAI7417LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 6+ LEFT 17MM
EAI7510LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 7 LEFT 10MM
EAI7512LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 7 LEFT 12MM
EAI7514LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 7 LEFT 14MM
EAI7517LWD	CS PRIMARY KNEE TIBIAL INSERT SZ 7 LEFT 17MM

## IMPLANT PARTNERS™ CS PRIMARY TIBIAL INSERTS, RIGHT

INIPLAINT PARTINERS	CS PRIMART HDIAL INSERTS, RIGHT
Part Number	Description
EAI3110RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 3 RIGHT 10MM
EAI3112RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 3 RIGHT 12MM
EAI3114RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 3 RIGHT 14MM
EAI3117RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 3 RIGHT 17MM
EAI4110RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 3+ RIGHT 10MM
EAI4112RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 3+ RIGHT 12MM
EAI4114RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 3+ RIGHT 14MM
EAI4117RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 3+ RIGHT 17MM
EAI4210RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 4 RIGHT 10MM
EAI4212RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 4 RIGHT 12MM
EAI4214RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 4 RIGHT 14MM
EAI4217RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 4 RIGHT 17MM
EAI5210RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 4+ RIGHT 10MM
EAI5212RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 4+ RIGHT 12MM
EAI5214RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 4+ RIGHT 14MM
EAI5217RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 4+ RIGHT 17MM
EAI5310RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 5 RIGHT 10MM
EAI5312RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 5 RIGHT 12MM
EAI5314RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 5 RIGHT 14MM
EAI5317RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 5 RIGHT 17MM
EAI6310RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 5+ RIGHT 10MM
EAI6312RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 5+ RIGHT 12MM
EAI6314RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 5+ RIGHT 14MM
EAI6317RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 5+ RIGHT 17MM
EAI6410RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 6 RIGHT 10MM
EAI6412RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 6 RIGHT 12MM
EAI6414RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 6 RIGHT 14MM
EAI6417RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 6 RIGHT 17MM
EAI7410RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 6+ RIGHT 10MM
EAI7412RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 6+ RIGHT 12MM
EAI7414RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 6+ RIGHT 14MM
EAI7417RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 6+ RIGHT 17MM
EAI7510RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 7 RIGHT 10MM
EAI7512RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 7 RIGHT 12MM
EAI7514RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 7 RIGHT 14MM
EAI7517RWD	CS PRIMARY KNEE TIBIAL INSERT SZ 7 RIGHT 17MM

## IMPLANT PARTNERS™ CS PRIMARY KNEE FEMURS

Part Number	Description
EFSRN3PLWD	CS PRIMARY KNEE FEMUR NON-POR LEFT SZ 3
EFSRN4PLWD	CS PRIMARY KNEE FEMUR NON-POR LEFT SZ 4
EFSRN5PLWD	CS PRIMARY KNEE FEMUR NON-POR LEFT SZ 5
EFSRN6PLWD	CS PRIMARY KNEE FEMUR NON-POR LEFT SZ 6
EFSRN7PLWD	CS PRIMARY KNEE FEMUR NON-POR LEFT SZ 7
EFSRN3PRWD	CS PRIMARY KNEE FEMUR NON-POR RIGHT SZ 3
EFSRN4PRWD	CS PRIMARY KNEE FEMUR NON-POR RIGHT SZ 4
EFSRN5PRWD	CS PRIMARY KNEE FEMUR NON-POR RIGHT SZ 5
EFSRN6PRWD	CS PRIMARY KNEE FEMUR NON-POR RIGHT SZ 6
EFSRN7PRWD	CS PRIMARY KNEE FEMUR NON-POR RIGHT SZ 7

## IMPLANT PARTNERS™ PRIMARY KNEE TIBIAL BASES

Part Number	Description
KTCCNP10WD	PRIMARY KNEE TIBIA BASE Sz 3 Co/Cr Nonporous
KTCCNP20WD	PRIMARY KNEE TIBIA BASE Sz 4 Co/Cr Nonporous
KTCCNP30WD	PRIMARY KNEE TIBIA BASE Sz 5 Co/Cr Nonporous
KTCCNP40WD	PRIMARY KNEE TIBIA BASE Sz 6 Co/Cr Nonporous
KTCCNP41WD	PRIMARY KNEE TIBIA BASE Sz 6+ Co/Cr Nonporous
KTCCNP50WD	PRIMARY KNEE TIBIA BASE Sz 7 Co/Cr Nonporous
KTCCNP51WD	PRIMARY KNEE TIBIA BASE Sz 7+ Co/Cr Nonporous

## IMPLANT PARTNERS™ PS PRIMARY FEMURS

Part Number	Description
EFPSN3PLWD	FEM PS NON-POR LEFT SZ 3
EFPSN4PLWD	FEM PS NON-POR LEFT SZ 4
EFPSN5PLWD	FEM PS NON-POR LEFT SZ 5
EFPSN6PLWD	FEM PS NON-POR LEFT SZ 6
EFPSN7PLWD	FEM PS NON-POR LEFT SZ 7
EFPSN3PRWD	FEM PS NON-POR RIGHT SZ 3
EFPSN4PRWD	FEM PS NON-POR RIGHT SZ 4
EFPSN5PRWD	FEM PS NON-POR RIGHT SZ 5
EFPSN6PRWD	FEM PS NON-POR RIGHT SZ 6
EFPSN7PRWD	FEM PS NON-POR RIGHT SZ 7

## IMPLANT PARTNERS™ PATELLA

Part Number	Description
KPONTP29WD	PRIMARY KNEE PATELLA TRI-PEG, 29mm
KPONTP32WD	PRIMARY KNEE PATELLA TRI-PEG, 32mm
KPONTP35WD	PRIMARY KNEE PATELLA TRI-PEG, 35mm
KPONTP38WD	PRIMARY KNEE PATELLA TRI-PEG, 38mm

## IMPLANT PARTNERS™ INSERTS LEFT

Part Number	Description
EPI3110LWD	ADAPTIVE PS INSERT SZ 3 LEFT 10MM
EPI3112LWD	ADAPTIVE PS INSERT SZ 3 LEFT 12mm
EPI3114LWD	ADAPTIVE PS INSERT SZ 3 LEFT 14mm
EPI3117LWD	ADAPTIVE PS INSERT SZ 3 LEFT 17mm
EPI4210LWD	ADAPTIVE PS INSERT SZ 4 LEFT 10mm
EPI4212LWD	ADAPTIVE PS INSERT SZ 4 LEFT 12mm
EPI4214LWD	ADAPTIVE PS INSERT SZ 4 LEFT 14mm
EPI4217LWD	ADAPTIVE PS INSERT SZ 4 LEFT 17mm
EPI5310LWD	ADAPTIVE PS INSERT SZ 5 LEFT 10MM
EPI5312LWD	ADAPTIVE PS INSERT SZ 5 LEFT 12MM
EPI5314LWD	ADAPTIVE PS INSERT SZ 5 LEFT 14MM
EPI5317LWD	ADAPTIVE PS INSERT SZ 5 LEFT 17MM
EPI6410LWD	ADAPTIVE PS INSERT SZ 6 LEFT 10MM
EPI6412LWD	ADAPTIVE PS INSERT SZ 6 LEFT 12MM
EPI6414LWD	ADAPTIVE PS INSERT SZ 6 LEFT 14MM
EPI6417LWD	ADAPTIVE PS INSERT SZ 6 LEFT 17MM
EPI7410LWD	ADAPTIVE PS INSERT SZ 6+ LEFT 10MM
EPI7412LWD	ADAPTIVE PS INSERT SZ 6+ LEFT 12MM
EPI7414LWD	ADAPTIVE PS INSERT SZ 6+ LEFT 14MM
EPI7417LWD	ADAPTIVE PS INSERT SZ 6+ LEFT 17MM
EPI7510LWD	ADAPTIVE PS INSERT SZ 7 LEFT 10MM
EPI7512LWD	ADAPTIVE PS INSERT SZ 7 LEFT 12MM
EPI7514LWD	ADAPTIVE PS INSERT SZ 7 LEFT 14MM
EPI7517LWD	ADAPTIVE PS INSERT SZ 7 LEFT 17MM

## IMPLANT PARTNERS™ INSERTS RIGHT

Part Number	Description
EPI3110RWD	ADAPTIVE PS INSERT SZ 3 RIGHT 10mm
EPI3112RWD	ADAPTIVE PS INSERT SZ 3 RIGHT 12mm
EPI3114RWD	ADAPTIVE PS INSERT SZ 3 RIGHT 14mm
EPI3117RWD	ADAPTIVE PS INSERT SZ 3 RIGHT 17mm
EPI4210RWD	ADAPTIVE PS INSERT SZ 4 RIGHT 10mm
EPI4212RWD	ADAPTIVE PS INSERT SZ 4 RIGHT 12mm
EPI4214RWD	ADAPTIVE PS INSERT SZ 4 RIGHT 14mm
EPI4217RWD	ADAPTIVE PS INSERT SZ 4 RIGHT 17mm
EPI5310RWD	ADAPTIVE PS INSERT SZ5 RIGHT 10MM
EPI5312RWD	ADAPTIVE PS INSERT SZ 5 RIGHT 12MM
EPI5314RWD	ADAPTIVE PS INSERT SZ 5 RIGHT 14MM
EPI5317RWD	ADAPTIVE PS INSERT SZ 5 RIGHT 17MM
EPI6410RWD	ADAPTIVE PS INSERT SZ 6 RIGHT 10MM
EPI6412RWD	ADAPTIVE PS INSERT SZ 6 RIGHT 12MM
EPI6414RWD	ADAPTIVE PS INSERT SZ 6 RIGHT 14MM
EPI6417RWD	ADAPTIVE PS INSERT SZ 6 RIGHT 17MM
EPI7410RWD	ADAPTIVE PS INSERT SZ 6+ RIGHT 10MM
EPI7412RWD	ADAPTIVE PS INSERT SZ 6+ RIGHT 12MM
EPI7414RWD	ADAPTIVE PS INSERT SZ 6+ RIGHT 14MM
EPI7417RWD	ADAPTIVE PS INSERT SZ 6+ RIGHT 17MM
EPI7510RWD	ADAPTIVE PS INSERT SZ 7 RIGHT 10MM
EPI7512RWD	ADAPTIVE PS INSERT SZ 7 RIGHT 12MM
EPI7514RWD	ADAPTIVE PS INSERT SZ 7 RIGHT 14MM
EPI7517RWD	ADAPTIVE PS INSERT SZ 7 RIGHT 17MM



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