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Nota Bene

The technique description herein is made available to the healthcare professional to illustrate the author's suggested treatment for the uncomplicated procedure. In the final analysis, the preferred treatment is that which addresses the needs of the specific patient.

JOURNEY[◇] II BCS

Bi-Cruciate Stabilized Knee System

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Surgical technique – summary

1 Distal femoral resection

Verify the distal resection removes bone from the deepest portion of the trochlear groove creating a butterfly pattern (i.e., a continuous ridge of cortical bone running between medial and lateral condyles)

Note Must use PROFIX[®] sawblades (1.35mm thick) for all cutting blocks.



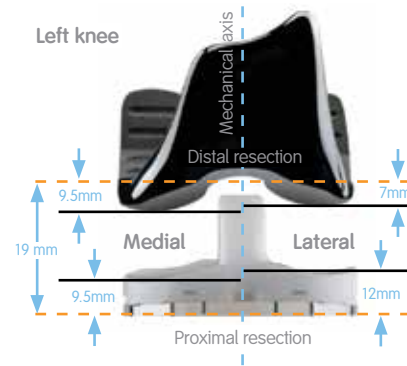
2 Proximal tibial resection

The tibial instrumentation is designed to remove 9.5mm from medial (unaffected) side or 12.0mm from lateral (unaffected) side.

Align EM Tower parallel to the tibial long axis (3° of posterior slope built into cutting block).

Excise all ACL/PCL attachments from both the femur and tibia.

Note The tibial resection stylus reads implant thickness, not resection depth.



3 Extension gap assessment

The 10mm Spacer Block should insert easily and the leg should drop passively into full extension to ensure 1mm of laxity.

If the 10mm Spacer Block doesn't fit and sufficient tibia has been resected consider removing 2mm more distal femur.

Note Tibial bone fragment on lateral side should be 10.5 - 11mm thick.



4 Flexion gap assessment

The 10mm Tibial Spacer Block should insert easily between the posterior condyles and the resected tibia in flexion. If the 10mm Tibial Spacer Block feels too loose or too tight, simply exchange the 10mm Shim to achieve balance (e.g. 11mm or 9mm respectively).

Remember the difference between the extension and flexion spacers (e.g. 10mm Ext - 11mm Flex = -1mm Flex Imbalance).



5 Femoral sizing

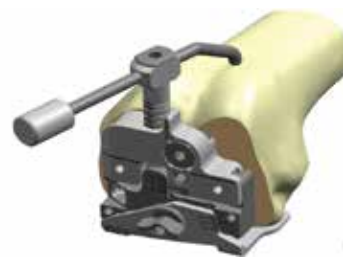
Placement: Mate sizing guide flush to the distal resection. Mate the medial paddle with the apex of the medial posterior condyle. Pin above the medial paddle.

Rotation: Set rotation relative to anatomic landmarks (Posterior Condyle, AP Axis and Epicondylar Axis)

Balance: Adjust AP position to account for any Extension/Flexion mismatch (e.g., -1mm)

Finalize: Drill through the holes to set the final AP position and rotation. Then estimate AP Femur size with the stylus (see image for placement).

Note 3mm between femoral A/P sizes.



6 Femoral A/P and chamfer resections

Select the AP cutting block size that minimizes anterior/posterior adjustment to avoid overstuffing the patella femoral joint or femoral notching.

Tip Lock the black knob with 3.5mm hex driver prior to pinning.

With the flexed posterior cut, use retractors and take precautions to protect the popliteus tendon.

Tip After completing all cuts re-face the anterior cut.



7 BCS Box preparation

Once the anterior flange of the femoral trial is fully seated, place one 30mm rimmed speed pin through the antero-lateral flange before removing the impactor. Slide the appropriately sized Box Prep Guide onto the femoral trial anterior to posterior. Ream anterior then posterior. Finish prep by chiseling anterior then posterior.

Tip If the femoral doesn't sit down fully, remove it, replace A/P cutting block and re-face all the cuts.



8 Baseplate alignment

Set position of the tibial baseplate based upon the anatomic landmarks of the tibia (best fit, coverage, and medial 1/3 of the tubercle). Pin the baseplate using two 30mm rimmed speed pins.

Tip Alternatively, if free floating is preferred, a single 30mm speed pin in the medial hole of the baseplate will allow rotational freedom while preventing the baseplate from sliding around.



9 Component trialing

The knee should drop passively into full extension.

Under varus/valgus stress, 1-2mm of laxity should be observed throughout the ROM (i.e., 0, 30, 60, 90 and 120°).

After trialing, mark the rotational laseretches with cautery and then punch for the appropriate keel size.



10 Final implantation and closure

Engage the articular insert with the leg in 110° of flexion, bring the leg to full extension and lock it in with the Articular Insert Assembly Tool.

Suction the keel prep hole and avoid contaminating implant cement interface surface with fat or other fluids prior to cement application and apply generous amounts of cement to the dry underside of the baseplate, keel and into the keel prep hole.

During closure, align the extensor mechanism anatomically or close with the knee in flexion.



Introduction

The goal of the JOURNEY® II Bi-Cruciate Stabilized (BCS) Total Knee System is to enable a higher level of function for total knee replacement patients—to not only relieve pain, but to help them regain their active lifestyles. Unmatched function, motion and durability is achieved through the unique features of the JOURNEY II BCS system—atomic alignment, kinematics and advanced bearings.

Patient outcomes can be directly related to accurate surgical technique and precision instrumentation. The JOURNEY II BCS instrumentation has been developed to assist surgeons in obtaining accurate and reproducible results and reducing OR time.

While it has been the designers' objective to develop accurate, easy-to-use instrumentation, each surgeon must evaluate the appropriateness of the following technique based on his or her medical training, experience and patient evaluation.

Indications

Indications for use include rheumatoid arthritis; post-traumatic arthritis, osteoarthritis or degenerative arthritis; failed osteotomies or unicompartmental replacement. This system is designed for use in patients in primary total knee replacement surgery, where the anterior and posterior cruciate ligaments are incompetent and the collateral ligaments remain intact.

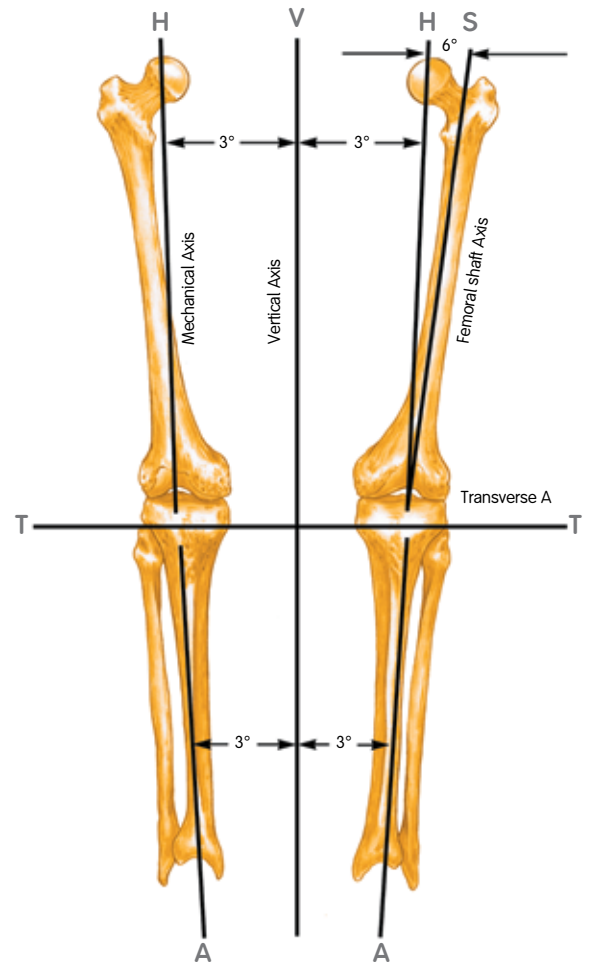
To replicate normal knee motion, the JOURNEY II BCS prosthesis provides more mobility in the lateral compartment than other total knee systems. For patients that present with significant varus or valgus deformities (> 15°), morbid obesity or deficient collateral ligaments consider whether additional implant constraint is more appropriate. If patients with the above mentioned conditions are scheduled for a JOURNEY II BCS then assess the flexion space under full ligament tension (eg, laminar spreaders) with the patella reduced and consider having a constrained implant option on hand.

Prologue

Preoperative planning

Determine the angle between the anatomical and the mechanical axis. This measurement will be used intraoperatively to select the appropriate valgus angle so that correct limb alignment is restored. Beware of misleading angles in knees with a flexion contracture or rotated lower extremities.

Note It is recommended to use preoperative templating to determine femoral size because sizes 1-8 and 9-10 have different resection depths.



Incision

Leg position

Appropriate leg position is crucial when performing less invasive total knee arthroplasty. During the procedure, the knee is flexed to 70-110°. Hyperflexion is used only intermittently for specific portions of the case, such as insertion of the tibial component. To aid in holding the leg, a sandbag is placed across from the contralateral ankle when positioning the patient on the table.

Incision

With the leg fully extended, a longitudinal incision is made over the anterior aspect of the knee along the medial border of the patella. The incision extends approximately from the middle of the tibial tubercle to a point slightly proximal to the superior pole of the patella. If significant tension is noted at the skin edges, the incision should be extended to minimize risk of wound edge necrosis.

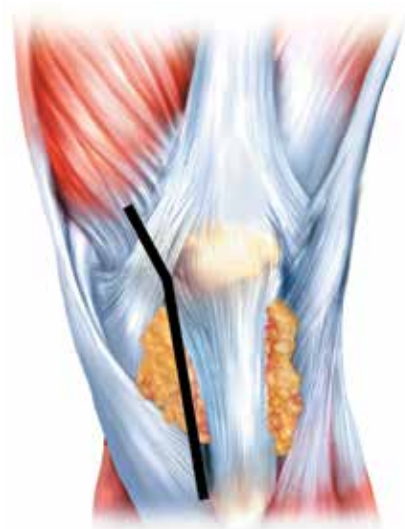
Arthrotomy

The procedure can be performed using a “mini-patellar” capsulotomy or a “mini-mid-vastus” capsulotomy. The mid-vastus may offer some advantages for quicker recovery of extensor function postoperatively. However, in cases where the extensor mechanism is stiff or the patient is heavily muscled, the parapatellar capsulotomy may allow easier mobilization of the patella. Either type of arthrotomy can be extended to conventional length if exposure is problematic.

For the mini-mid-vastus approach, begin 5mm medial to the tibial tubercle and extend dissection around the medial border of the patella. The arthrotomy is extended up to the proximal border of the patella.

The suprapatellar pouch is identified, separated from the underside of the tendon and preserved.

The distal extent of the vastus medialis (VMO) is identified and the orientation of the fibers is determined. An oblique cut is made to the VMO and the muscle fibers are then spread bluntly for approximately 2cm.



Exposure

With the leg extended, the patella is retracted laterally. The fat pad is excised both medially and laterally leaving a small amount of fat deep under the patellar tendon. The patellar tendon proximal to the tubercle is dissected from the tibia. The release of the anterior horn of the lateral meniscus at this point will facilitate retraction of the extensor mechanism and exposure to the lateral side. The anterior horn of the medial meniscus is divided and dissection is carried around the proximal medial tibia using electrocautery and an osteotome.

A thin bent Hohmann is placed into the lateral side to hold the patella in a subluxed position while a second Hohmann or a Z-retractor is placed along the medial border of the proximal tibia to protect the medial collateral ligament.

Note Excessive tension on the retractors is not necessary and can sometimes hamper the exposure.

The proximal soft tissue attachments extending around the proximal medial tibia are released in the standard fashion. Finally, excise the anterior cruciate ligament.

Note In patients with tight extensor mechanism (usually larger, muscular patients or those with abundant patellar osteophytes), the patella is cut at this time.

Intramedullary femoral alignment

- 1 Open the femoral canal with the 9.5mm Intramedullary Drill. The drill has a 12mm step to open the entry point further. If desired, use the drill to open the tibial canal at this step.
- 2 Use the Quick Connect T-Handle to insert the 8mm Intramedullary Rod into the femoral canal.
- 3 Slide the Distal Femoral Cutting Block assembly over the Intramedullary Rod until the Valgus Alignment Guide touches at least one of the distal femoral condyles.
- 4 Orient the rotation of the assembly neutral to either the A-P or Epicondylar Axis. If desired, pin through the Valgus Alignment Guide with a Headed Bone Spike.
- 5 Use Trocar Pins to secure the Distal Femoral Cutting Block to the anterior femur through the two holes marked "0". It is advised to pre-drill the holes to prevent liftoff of the assembly.
- 6 Again, verify that the Valgus Alignment Guide is touching at least one of the distal femoral condyles.



Intramedullary drill,
9.5 mm
Cat. No. 7401-2111



JOURNEY° valgus
collet, 6°
Cat. No. 7401-2226



JOURNEY valgus
alignment guide left
Cat. No. 7401-2211



JOURNEY valgus
guide bridge
Cat. No. 7401-2241



JOURNEY distal
cutting block, slotted
Cat. No. 7401-2231



SPEED PIN°
Cat. No. 7401-3480

Distal femoral resection

1 Remove the Intramedullary Rod using the Quick Connect T-Handle and depress the button on the Valgus Guide Bridge to remove the Valgus Alignment Guide, Collet and Bridge assembly. Only the Distal Femoral Cutting Block should remain on the femur. If necessary, use the Slap Hammer to remove any bone spikes.

2 The Femoral Shim Plate is used to assess the resection level, which should remove bone through the deepest portion of the trochlear groove. Once adequate distal resection is noted, an additional Trocar Pin can be placed obliquely to provide additional stability.

Note The JOURNEY[®] II BCS Distal Femoral Instrumentation was designed to prevent elevation of the joint line; however, due to variations in anatomy, the result can be separate medial and lateral bone fragments. In those cases, take additional distal resection to achieve a butterfly resection pattern as shown.



SPEED PIN[®]
Cat. No. 7401-3480

JOURNEY[®] femoral
shim plate
Cat. No. 7401-2909

Distal femoral resection *continued*

Sizing note

The JOURNEY® II BCS femoral component features a proportional distal resection for the Standard and Large sizes (see table).

Use preoperative templating to estimate the femur size to determine the appropriate distal resection.

If the approximate size is between a size 8 and size 9, it is recommended to make the distal resection for the larger of the two sizes and proceed as normal.

The Distal Cutting Block is designed to remove 9.5mm off of the unaffected medial distal femur.

	Size	Distal Resection
Standard	1–8	9.5mm
Large	9–10	11.5mm

- 3 Resect the distal femur and then remove the Distal Femoral Cutting Block.

Note Femoral sizes 1-8 and 9-10 each have a separate spacer block to accommodate their different distal resection levels (see previous page).

Note If it has not already been removed, excise completely the entire PCL attachment from the femoral intracondylar notch with either a cautery or scalpel. The femoral box prep will NOT completely detach all fibers of the PCL.



Recommended Sawblades*

Cat. No.	Description
71512901	Stryker 2000 3/4" fanned
71512903	Amsco Hall 3/4" fanned
71512904	3M 3/4" fanned
71512905	Stryker 2000 1/2" straight
71512907	Amsco Hall 1/2" straight
71512908	3M 1/2" straight
71512910	VersiPower Plus 3/4" fanned
71512911	PowerPro 3/4" fanned

Or any 0.053" or 1.35mm thickness sawblade

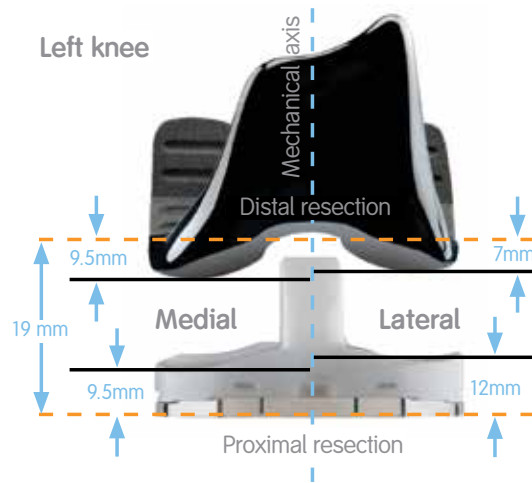
Extramedullary tibial alignment and resection

Tibial depth note

The 9mm insert resection level of the Extramedullary tibial stylus is marked for medial referencing on one side and lateral referencing on the other.

The tibial resection stylus reads **Implant thickness**, not resection depth.

A 9mm size insert replaces 9.5mm off the medial side and 12.0mm off the lateral side, as measured from the unaffected side. Resections shown are for standard femoral sizes 1-8 only. The combined thickness of a size 1-8 femoral, insert and baseplate is 19mm.



- 1 Place the Extramedullary Tibial Ankle Clamp around the patient's ankle and align the Extramedullary Tibial Alignment Guide parallel to the Tibial Axis in the coronal and sagittal planes.

Note The tibial cutting block slot has 3° of posterior slope built into it. Having more than 3° of posterior slope is **not** recommended for the JOURNEY® II BCS knee prosthesis.



EM tibial alignment guide
Cat. No. 7401-8311



EM tibial stylus
Cat. No. 7401-8321



Ankle clamp
Cat. No. 7401-8331



EM distal fixation up rod
Cat. No. 7401-8341



Tibial cutting block, MIS left
Cat. No. 7401-8411

Extramedullary tibial alignment and resection *continued*

Option 1 – Extramedullary tibial distal fixation up rod (available in left and right)

- 2 Rotate the Distal Fixation Up Rod to the medial one-third of the tibial tubercle. Secure the up rod to the most distal aspect of the incision using a Trocar Pin.
- 3 Adjust the resection level on the Extramedullary Tibial Stylus to the desired level. Insert the Extramedullary Tibial Stylus into the Tibial Cutting Block.

Note The medial reference point is the sulcus of the concavity and the lateral reference point is the high point of the convexity. Always reference the tibial resection depth from the tibial compartment least affected by the arthritic process.



Option 2 – Extramedullary proximal fixation up rod

- 2 Impact the posterior spike to secure the Proximal Fixation Up Rod to the tibial plateau. Rotate the extramedullary alignment guide assembly to the medial one-third of the tibial tubercle and impact the anterior spike of the up rod.
- 3 Adjust the resection level on the Extramedullary Tibial Stylus to the insert thickness. Insert the Extramedullary Tibial Stylus into the Tibial Cutting Block.

Note The medial reference point is the sulcus of the concavity and the lateral reference point is the high point of the convexity. Always reference the tibial resection depth from the tibial compartment least affected by the arthritic process.

Note The tibial resection stylus reads **Implant thickness**, not resection depth



Proximal Fixation
Up Rod
Cat. No. 7401-8531

4 Adjust the resection level of the Tibial Cutting Block and use the set screw to lock the position. Pin the block into place in at least two of the 0mm resection holes. If desired, pin through the oblique hole if there are no pins in the medial set of spike holes.

5 If desired, remove the EM Alignment Assembly.

Note If using the Proximal Fixation Up Rod, fully unthread the proximal lock knob and turn the lock out cam 90° (cam should be horizontal). Use the Slap Hammer to remove the up rod from the proximal tibia.

6 Complete the tibial resection.



Intramedullary tibial alignment and resection

- 1 Open the tibial canal with the 9.5mm Intramedullary Drill. The drill has a 12mm step to open the entry point further.
- 2 Use the Quick Connect T-Handle to insert the 8mm Intramedullary Rod into the tibial canal.
- 3 Slide the Tibial Cutting Block over the Intramedullary Tibial Stylus down rod from the distal end.



- 4 Depress the posterior lock knob and slide the Stylus over the Intramedullary Rod. Rotate the Tibial Stylus until the down rod is aligned with the medial 1/3 of the tibial tubercle.
- 5 Move the medial and lateral styli to the medial and lateral reference points, respectively, of the tibial plateau.



Note The medial reference point is the sulcus of the concavity and the lateral reference point is the high point of the convexity. Always reference the tibial resection depth from the tibial compartment least affected by the arthritic process.

- 6 Use the block set screw to adjust the resection level so that the top of the Tibial Block is aligned with the desired graduations on the down rod.

Note The tibial resection stylus reads **Implant thickness**, not resection depth. See tibial depth note.



Intramedullary tibial stylus
Cat. No. 7401-8211

- 7 Unscrew and depress the anterior lock knob to slide the Tibial Cutting Block closer to the tibia.

Note If desired, tighten the lock knob(s) for additional stability on the Intramedullary Rod and the AP rod.

- 8 Drill through the 0mm spike holes and use Trocar Pins to secure the Block to the tibia. If desired, pin through the oblique hole if there are no pins in the medial set of spike holes.

Note Ensure that pins directed toward the Intramedullary Rod are not fully seated until the IM Rod is removed.

- 9 If desired, remove Intramedullary Tibial Stylus.

- 10 Complete the tibial resection.

Note A tibial EM Alignment Tower (CI # 7401-8421) is available that fits into the tibial cutting block slot and has a handle for a drop rod to check the cutting block alignment prior to making the tibial resection.

Additional tibial resection – recut

- 1 Place the Tibial Block over the Trocar Pins through the +2mm or +4mm holes.
- 2 If it is desirable to change the varus/valgus angle of the resection, place a Trocar Pin through the central hole on the distal surface of the block.
- 3 Remove all other pins and rotate the block to the desired Varus/Valgus alignment. Place at least two Trocar Pins into previously unused holes and recut the tibia.

Extension gap assessment

Note If it has not already been removed, excise completely the entire PCL attachment from the femoral intracondylar notch with either a cautery or scalpel to prevent it from affecting the assessment. The femoral box prep will NOT completely detach all fibers of the PCL.

Note Assess the extension gap prior to making the posterior cut as removing the posterior condyles can relax the posterior tissue and create a false sense of increased extension laxity.

1 Assemble the Quick Connect Handle to the appropriate size Flexion/Extension Block (available in Standard and Large). Attach the 10mm Flexion/Extension Spacer onto the Flexion/Extension Block.

2 The Flexion/Extension Block with 10mm spacer should easily insert into the extension gap.

Note Use the 10mm Spacer as a gauge to ensure a minimum of 1mm of extension laxity.

Note The Flexion/Extension Block with 10mm Spacer has a 20mm gap, which accommodates a standard size implant and 9mm insert (19mm) plus 1mm of laxity.

3 Adjust thickness of spacer (9mm, 11mm, 12mm, etc) as needed to determine the extension space.

Note If the extension gap is too tight for a 9mm spacer, and the distal resection is through the deepest portion of the trochlear groove, resect additional tibia.

Note The Extramedullary Alignment Rod can be inserted through the Quick Connect Handle to check limb alignment.



10mm flexion/
extension spacer
Cat. No. 7401-8610



Extramedullary
alignment rod
Cat. No. 7401-8631



Flexion/extension
block standard
Size 3-8
Cat No. 7401-8603



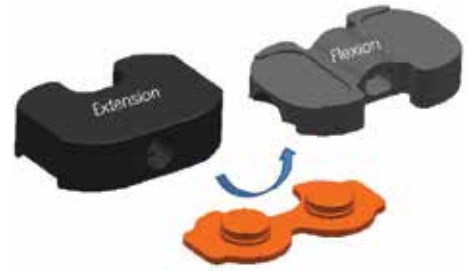
Flexion/extension
block large
Size 9-10
Cat No. 7401-8609

Flexion gap assessment

Note If it has not already been removed, excise the entire PCL attachment from the femoral intercondylar notch with either a cautery or scalpel as the PCL has been shown to alter the flexion assessment.

- 1 Assemble the Quick Connect Handle to the appropriate size Tibial Spacer Block (available in Narrow and Wide). Attach the 10mm Flexion/Extension Spacer onto the Tibial Spacer Block as was done in the extension assessment.
- 2 With the knee flexed to 90°, place the Tibial Spacer Block into the joint space allowing the flat plate to reference off of the cut tibial surface and the stepped, articular side to reference the native posterior femoral condyles.
- 3 Apply a varus/valgus force and assess the medial and lateral compartment laxity levels of the flexion space. Then adjust thickness of spacer (9mm, 11mm, 12mm, etc.) as needed to determine the flexion space.
- 4 When the flexion space is determined, compare the thickness selected relative to the extension space on the previous page.

Note Remember any difference between the Extension and Flexion Space Assessments as this will affect how the femoral implant is positioned in the steps ahead (e.g., 10mm Ext - 11mm Flex = -1mm Flex Imbalance).



Tibial spacer block,
narrow
Cat. No. 7401-2645



Tibial spacer block,
wide
Cat. No. 7401-2646

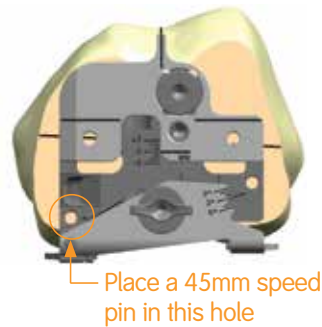
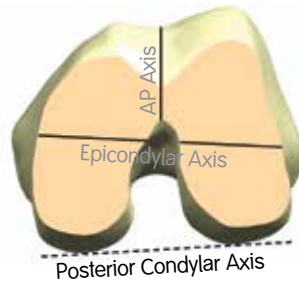


10mm flexion/
extension spacer
Cat. No. 7401-8610

Femoral positioning and sizing

1 **Optional** Mark the AP and epicondylar axis on the femur.

2 Place the (left or right) JOURNEY[®] II DCF Sizing Guide on the resected distal femur. With the medial paddle mated to the posterior medial condyle and the sizing guide flush to the distal resection, place a 45mm headed speed pin through the hole just above the medial paddle. This will secure the sizing guide for the remainder of its use.

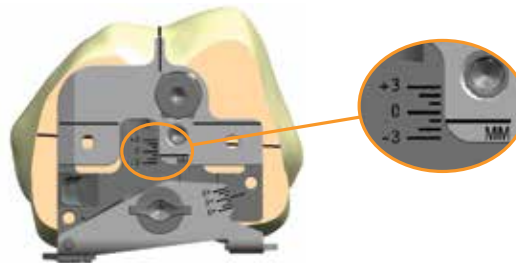


3 If there exists a known flexion/extension imbalance, unlock, translate and relock the drill guide appropriately.

Note For example, a 10mm extension space - an 11mm flexion space = -1mm imbalance. Therefore, the drill guide should be translated to the -1mm position.

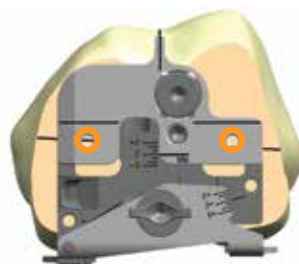
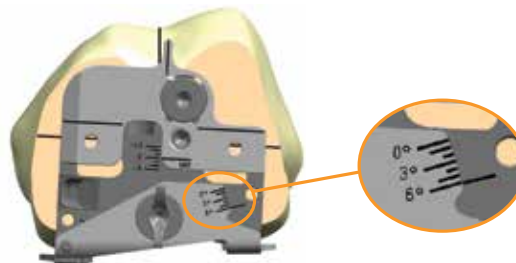
Note Do not translate the drill guide for anterior referencing. Anterior referencing, if desirable, is accomplished with the AP Cutting Block.

4 Ensure that the lateral paddle is mated to the posterior lateral condyle. Begin with the paddle set to 3°. Rotate away from 3° if it is desirable to match the AP or epicondylar axis or if it is desirable to balance the medial and lateral flexion gaps.



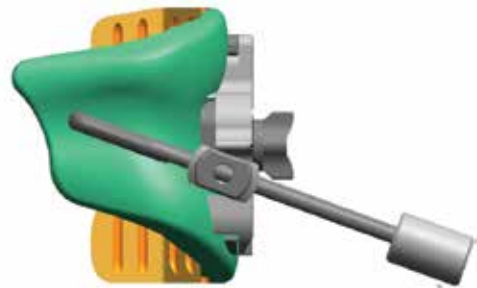
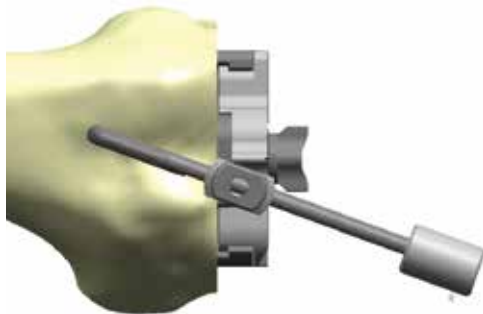
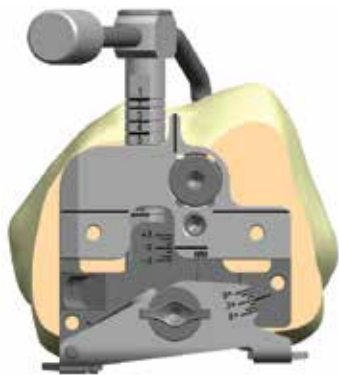
Note Each degree of rotation away from 3° is approximately 1mm deviation away from the lateral condyle (e.g. at 6°, 3mm of implant material is added to the lateral flexion gap).

5 Once both the AP and rotational measures are desirable relative to the anatomic landmarks, drill about a 1 inch (25mm) deep hole through each of the two holes in the drill guide.



6 Finally, assemble the JOURNEY[®] Sizing Stylus to the guide and estimate the AP femoral size. Position the stylus tip just lateral of the anterior trochlear sulcus. If desired, use the indicated size Femoral Trial to compare the ML width before selecting which size AP Cutting Block to use.

Design note The JOURNEY II DCF Sizing Guide is designed to reference the posterior condyles. At 3° the guide will make AP resections at 3° externally rotated from the posterior condylar axis. The guide also allows for rotation between 0° and 6° relative to the posterior condylar axis.



Femoral AP and chamfer resections instrument

- 1 Position the spikes on the DCF AP Femoral Block into the predrilled holes. Use the Mallet to impact the AP Block assembly until the block is flush with the resected distal femur. Remove the AP Block Impactor.



Note The posterior resection will match the implant thickness when the highlighted indicator in the AP Block knob is aligned with "Post. Ref".

- 2 Use the Angel Wing to check the location of the anterior cutting slot. Make any necessary anterior/posterior adjustments to avoid overstuffing the patella femoral joint, overstuffing the flexion space or femoral notching.



Note If 2mm upshift is not enough to avoid notching, select the next largest AP cutting block size and adjust until notching is avoided.

Design note The difference between JOURNEY[®] femoral implant sizes is 3mm on average.



JOURNEY DCF AP femoral cutting block Size 5
Cat. No. 7401-2415



JOURNEY DCF AP femoral block impactor
Cat. No. 7401-2421



Mallet
Cat. No. 7401-2901



JOURNEY resection check
Cat. No. 7401-2431



JOURNEY 3.5 mm hex driver
Cat. No. 7401-2441

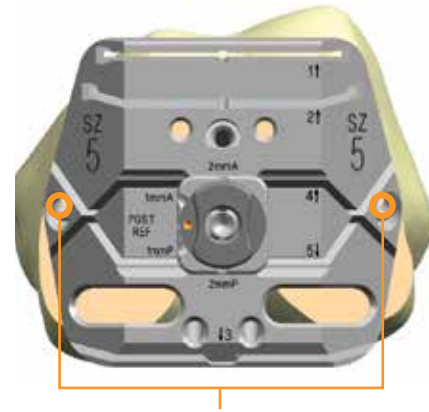
3 Use two 45mm rimmed speed pins through the medial and lateral fixation holes on the cutting block.

Note Any bone spikes placed in either the medial or lateral anterior spike holes should be removed before making the anterior chamfer resection.

4 Complete the cuts in the order indicated on the block:

- 1 Anterior
- 2 Anterior Chord
- 3 Posterior
- 4 Posterior Chamfer
- 5 Anterior Chamfer

Note While performing the posterior and posterior chamfer resections use careful placement of retractors to protect the Popliteus Tendon attachments to the femur. Releasing the Popliteus Tendon can destabilize the knee laterally in flexion.



Use two 45mm Speed Pins



Resected flexion gap assessment

1 Assemble the Quick Connect Handle to the appropriate size Flexion/Extension Block (available in Standard and Large). Attach the 10mm Flexion/Extension Spacer into the Flexion/Extension Block.

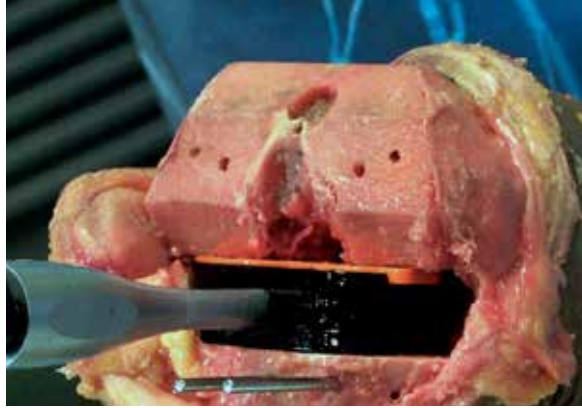
2 The Flexion/Extension Block with 10mm Spacer should easily insert into the flexion gap.

Note Use the 10mm Spacer as a gauge to ensure a minimum of 1mm of flexion laxity.

Note The Flexion/Extension Block with 10mm Spacer has a 20mm gap, which accommodates a standard size implant and 9mm insert (19mm) plus 1mm of laxity.

3 If the 10mm Spacer Block goes in tight in flexion and loose in extension, consider downsizing the femur.

If the 10mm spacer block goes in tight in flexion and extension, consider taking 2mm more tibia.



Downsizing femoral component

- 1 Place the smaller DCF AP Block into the pre-drilled holes. Turn the center knob of the AP Block until either the highlighted indicator is aligned with the “2mmP” mark or the anterior resection cutting slot is aligned with the anterior resection. This can be verified using the Femoral Shim Plate.
- 2 Secure the AP Block to the distal femur and remake the cuts as indicated on the block: anterior, anterior chord, posterior, posterior chamfer and anterior chamfer.

Additional distal resection

- 1 If the pre-drilled holes in the anterior cortex can be located, place two Trocar Pins into the anterior femur. Place the Distal Cutting Block over the Trocar Pins through the spike holes at the desired resection level.
- 2 If the pre-drilled holes can not be found, place the Femoral Shim Plate through the Distal Block resection slot and position the Plate onto the distal resection. Pin the Distal Block through the “0” holes. Remove the Shim Plate and then shift the block to the desired resection level, pin obliquely and remake the distal resection.
- 3 Place the AP Cutting Block into the pre-drilled holes on the distal resection. Turn the center knob of the AP Block until the anterior resection cutting slot is aligned with the anterior resection. This can be verified using the Femoral Shim Plate.

Note Due to the flexed posterior resections taking more distal resection will create a small gap posteriorly (i.e. 0.5mm gap for 2mm additional distal resection). Some surgeons will look to move the AP Cutting Block 1mm anteriorly to move the gap to the anterior cortex.

- 4 Secure the AP Cutting Block to the distal femur and remake the cuts as indicated on the block: anterior, anterior chord, posterior, posterior chamfer and anterior chamfer.

Patellar preparation

The recommended time to prepare the patella is after all tibial and femoral cuts are made, but prior to trial placement. In some cases, the patella is cut just after the arthrotomy to facilitate exposure.

Rotate the patella to 90°, measure its thickness and determine the appropriate diameter implant.

- 1 Attach the Patella Reamer Guide to the patella and tighten the reamer guide on the patella.
- 2 Use the Patella Calipers to measure the patella thickness through the collet and guide.
- 3 Attach the Patella Reamer Shaft assembly to the drill and lower the reamer through the Patellar Reamer Guide until the reamer dome contacts the patella.
- 4 Swing the Patellar Depth Gauge around so that the “claw” contact surrounds the Patellar Reamer Shaft.
- 5 Lower the Patellar Depth Stop until it contacts the Patellar Depth Gauge.
- 6 Remove the Depth Gauge.



Patella reamer collet
Cat. No. 7144-0512



Patellar reamer
guide
Cat. No. 7401-9201



Calipers
Cat. No. 114943



Biconvex patellar
depth gauge
Cat. No. 7144-0328



Resurfacing patellar
depth gauge
Cat. No. 7144-0330

7 Ream the patella until the Patellar Depth Stop engages the Patella Reamer Collet. Remove the reamer assembly from the Patella Reamer Collet and remove any loose material from the patella.

Biconvex (inset) patella

8 If the Biconvex design is selected, use a towel clip to insert the appropriate diameter Biconvex Patella Trial into the recess in the patella. Use the Patella Caliper to reassess the patella thickness. If the desired thickness is achieved, remove the Patella Reamer Guide Assembly from the patella.

Note To decrease the patella thickness further, depress the button on the depth stop to raise it on the Patella Reamer Shaft. Each tooth adjustment will ream an additional 1mm. Engage the Patella Reamer back into the Patella Reamer Collet and ream the patella until the Patellar Depth Stop engages the Patella Reamer Collet.



Biconvex patellar reamer
Cat. No. 7144-0636



Resurfacing patellar reamer
Cat. No. 7144-0348



Patellar depth stop
Cat. No. 7401-9302



Patellar reamer shaft
Cat. No. 7401-9305



Biconvex patella trial
Cat. No. 7403-4626



Calipers
Cat. No. 114943

Resurfacing (onset) patella

8 If the Resurfacing design is selected, use the Patella Caliper to reassess the patella thickness. If the desired thickness is achieved, remove the Patella Reamer Guide Assembly from the patella.

Note To decrease the patella thickness further, depress the button on the Patellar Depth Stop to raise it on the Patella Reamer Shaft. Each tooth adjustment will ream an additional 1mm. Engage the Patella Reamer back into the Patella Reamer Collet and ream the patella until the depth stop engages the Patella Reamer Collet.

9 Remove the Patella Reamer Collet from the Patella Reamer Guide.

10 Select the appropriate diameter Resurfacing Patella Drill Guide and slide it onto the Patella Reamer Guide. Attach the Patella Reamer Guide Assembly to the reamed patella and tighten the reamer guide on the patella.

11 Use the Patella Peg Drill to drill the three pegs through the Patella Drill Guide until the drill bottoms out in the guide.

12 Remove the Patella Reamer Guide and drill guide from the patella.

13 Place the Resurfacing Patellar Trial onto the resected patella. Use the Patella Caliper to reassess the patella thickness.



JOURNEY®
Resurfacing patella
drill guide
Cat. No. 7401-0426



Patella peg drill
Cat. No. 7401-0401

Resection guide technique

- 1 Measure the overall thickness of the patella with the Patellar Caliper.
- 2 Subtract from this number the thickness of the JOURNEY® Resurfacing Patellar Component, which is 9mm.
- 3 The Patella Resection Guide should be set at the amount of bone that should remain after cutting the patella – i.e., the difference between the original patellar thickness and the thickness of the resurfacing patella. The guide is set at this level by turning the knurled knob.



For example

A Measure the overall thickness of the patella with the Patellar Caliper. For this example, the patella measures 25mm.

B Subtract the thickness of the Resurfacing Patellar Component. In this example, 9mm (25mm - 9mm = 16mm). The guide should be set at 16mm for this example

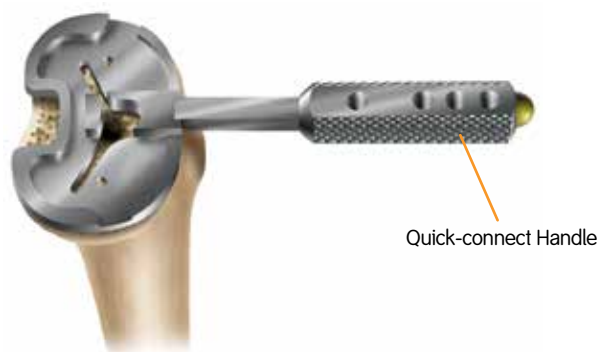
- 4 Cut the patella through the dedicated saw guides.
- 5 Select the appropriate diameter Resurfacing Patella Drill Guide and slide it onto the Patella Reamer Guide. Attach the Patella Reamer Guide Assembly to the resected patella and tighten the reamer guide on the patella.
- 6 Use the Patella Peg Drill to drill for the three peg holes through the Patella Drill Guide until the drill bottoms out in the guide.
- 7 Remove the Patella Reamer Guide and Drill Guide from the patella.
- 8 Place the Resurfacing Patellar Trial onto the resected patella. Use the Patella Caliper to reassess the patella thickness.



Patella resection
guide
Cat. No. 7144-0391

BCS box preparation

- 1 Select the baseplate trial based upon best fit and coverage on the resected tibia. Set position of the tibial baseplate based upon the anatomic landmarks of the tibia (best fit and coverage and medial 1/3 of the tubercle). Pin the baseplate using two 30mm rimmed speed pins.



- 2 Place the Femoral Trial onto the femur by positioning the proximal edge of the posterior condyles at the proximal end of the posterior resection.

- 3 Impact on the angled surface of the Femoral Trial Impactor to rotate the Femoral Trial from posterior to anterior until the distal surface is completely flush with the distal resection.



- 4 Place the Short Bone Spikes in the anterior flange to secure the Femoral Trial to the femur. Loosen the lock knob of the Femoral Trial Impactor and remove anteriorly, leaving the trial in place.

- 5 Insert the appropriate size JOURNEY® II BCS Collet into the T-slot of the Femoral Trial from the anterior side until the pegs on the Collet engage in the Femoral Trial.



Note If the pegs on the Collet do not automatically engage, apply hand pressure down to manually engage pegs.



Femoral trial impactor
Cat. No. 7401-2513



JOURNEY TKA femoral trial
Cat. No. 7403-1225



BCS box prep guide size 1-2
Cat. No. 7401-2574



BCS box prep guide size 3-5
Cat. No. 7401-2575



BCS box prep guide size 6-8
Cat. No. 7401-2576



BCS box prep guide size 9-10
Cat. No. 7401-2577

- 6 Insert the Reamer into the BCS Collet and ream first anteriorly and then posteriorly. If the power equipment has “Drill” and “Reamer” settings, ensure that the “Drill” setting is selected and allow the Reamer to reach maximum speed before engaging the bone.



- 7 Insert the Chisel into the anterior chisel guide. Impact the Chisel through the guide until flush with the Collet. Repeat punching using posterior guide.

- 8 Remove the BCS Collet by lifting up on the outside casing to disengage the pegs and sliding anteriorly.

- 9 Remove any remaining bone debris within the box preparation area.



- 10 Position the anterior tabs of the JOURNEY® II BCS Box Trial into the Femoral Trial's anterior recess and rotate the Box Trial posteriorly until the Femoral Trial detents have secured the Box Trial.



GII chisel
Cat. No. 7144-0144



GII reamer
Cat. No. 7144-0142



Patellar reamer shaft
Cat. No. 7401-9305

Femoral and tibial trialing

- 1 Place the appropriate size and desired thickness Articular Insert Trial onto the Tibial Trial.

Note Placing the insert trial into the trial baseplate can be difficult because of the high medial posterior lip of the insert. The best technique is to flex the knee to 120°, push in the insert as far as possible and bring the leg out into full extension.

Note To trial thicknesses 13mm and higher, assemble the appropriate thickness Articular Insert Spacer Trial with the 9mm Articular Insert Trial.

- 2 Perform trial range of motion and assess laxity and balance. The knee should drop passively into full extension. Under varus/valgus stress, there should be approximately 1-2mm of gapping both medially and laterally throughout the range-of-motion. There should be **no** increase in resistance as the knee flexes from 0° to 90°. If the knee is too tight, try a thinner insert or resect more tibia.

Tip Under full varus or valgus stress, the gapping should be at least the width of a cautery tip (~2mm).

- 3 Once the trial assessment is completed and the correct insert thickness has been determined then take the leg into full extension. Use a cautery to mark the location of the laser etch lines on the anterior cortex of the tibia to reference the baseplate rotation.

Note In most cases, rotational alignment of the tibial baseplate based upon best fit and coverage, medial 1/3 of the tubercle and the cautery mark will all match.



BCS box trial
Cat. No. 7403-2145



Tibial trial
Cat. No. 7403-2224



Articular insert trial
Cat. No. 7403-5241



Universal pin driver
Cat. No. 7151-3331

4 Once the trial assessment is complete and final implant sites determined remove the insert trial and femoral trial.

5 Fin punch through the baseplate with the appropriate size punch, remove the two short bone spikes with the JOURNEY® II TKA Removal Tool and remove the baseplate trial.

Note If a constrained insert has been selected, the patient should have good femoral bone quality and a tibial stem is recommended.



Stem/fin punch
Cat. No. 7401-8813



Femoral trial and
cam extractor
Cat. No. 7401-2825

Final implantation and closure

Tibial component

- 1 Maximally flex the knee and place a thin bent Hohmann laterally and medially and an Aufranc Retractor posteriorly to sublux the tibia forward.
- 2 Suction the keel prep hole and avoid contaminating the implant cement interface surface with fat or other fluids prior to cement application.
- 3 Apply generous amounts of cement to the dry underside of the baseplate, keel and into the keel prep hole.
- 3 Use the Tibial Implant Impactor and Mallet to fully seat the Tibial Baseplate Component onto the proximal tibia.
- 4 Remove excess cement.

Femoral component

Instrument assembly

- A Assemble the Femoral Implant Impactor Bumper (available in Left and Right) onto the Femoral Implant Impactor.
- B Unthread the lock knob completely.
- C Press the thumb lever on the posterior side on the Femoral Implant Impactor and push the dual arm mechanism upwards.
- D Position the taller arm inside the posterior cam of the femoral component and rotate the shorter arm onto the anterior cam. Release the thumb lever.
- E Thread the lock knob until hand tight.



Femoral implant impactor bumper, left
Cat. No. 7401-2821



Femoral implant impactor
Cat. No. 7401-2812



Tibial implant impactor
Cat. No. 7401-8901

1 Flex the knee to 90° keeping the thin bent Hohmann laterally and removing the Aufranc Retractor.

2 Mix and prepare bone cement for femoral component and distal femur.

Note Care should be taken to avoid excess cement on the posterior aspect of the femur and femoral component. Excess cement that extrudes posteriorly is difficult to remove.

3 Place the appropriate size Tibial Baseplate Cover onto the Tibial Component to protect it during Femoral Component implantation.

4 Place the Femoral Component onto the femur by positioning the proximal edge of the posterior condyles at the proximal end of the posterior resection.

Note Care should be taken when reverse impacting if implant removal is necessary.

5 Impact on the angled surface of the Femoral Implant Impactor to rotate the Femoral Component from posterior to anterior until the distal surface is completely flush with the distal resection.

6 Unthread the lock knob completely. Rotate the Femoral Implant Impactor posteriorly to disengage it from the Femoral Component.

7 Remove excess cement giving particular care to remove cement along the proximal portion of the femoral cam.

8 Extend the knee to remove cement anteriorly without retracting the proximal soft tissue.

Radiographic note The JOURNEY® II Bi-Cruciate Knee System features an anatomical joint line in the AP view. The distal condyles of the Femoral Component will present a 3° varus angle relative to the Tibial Component when correctly aligned.



Tibial baseplate
cover
Cat. No. 7401-8823

Articular insert

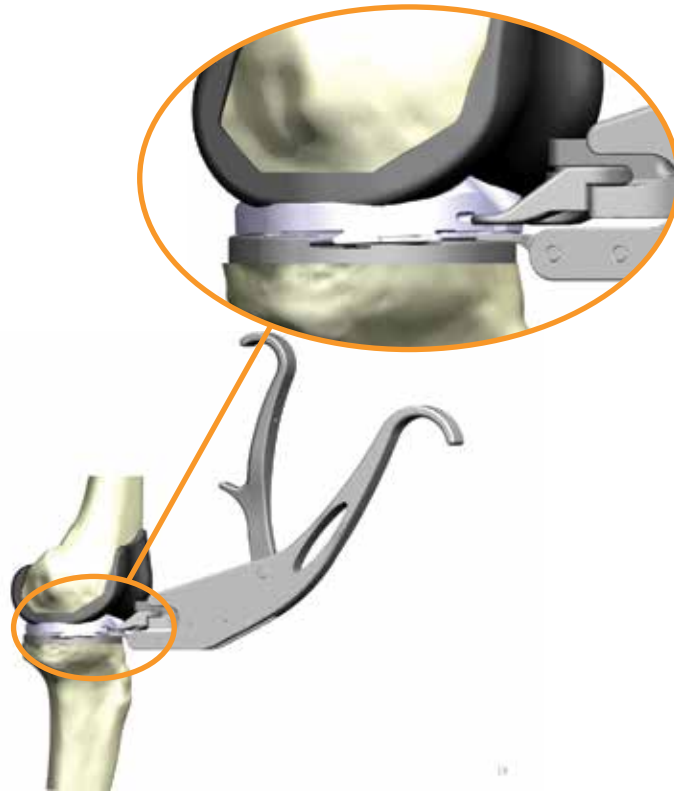
- 1 Clear any debris from the locking mechanism.
- 2 Manually slide the insert into the tibial baseplate engaging the locking mechanism until the insert periphery is within 1-2mm of the Tibial Component periphery.

Note The articular insert can be difficult to insert because of the high medial posterior lip. The best technique is to flex the knee to 110°, push in the insert as far as possible and bring the leg out into full extension. Externally rotating the tibia in flexion can also help with getting in the insert.

- 3 Insert the tip of the Articular Insert Assembly Tool into the center notch of the anterior lock detail (handle up) and engage the two tabs of the Tool into the two recesses on the anterior periphery of the insert.

Note Make sure the tool is level with the plane of the baseplate.

- 4 Squeeze the tool handle until the insert is fully seated within the Tibial Component. The insert should not move under any pressure in flexion or extension.



Patellar component

- 1 Assemble the Patellar Cement Clamp to the Patellar Reamer Guide.
- 2 Apply bone cement to the reamed patella.
- 3 Place the patellar implant onto the prepared patella.
- 4 Clamp the patellar implant into the bone and remove the extruded cement.



Articular insert
assembly tool
Cat. No. 7401-8911



Patellar cement
clamp
Cat. No. 7401-9801

Closure

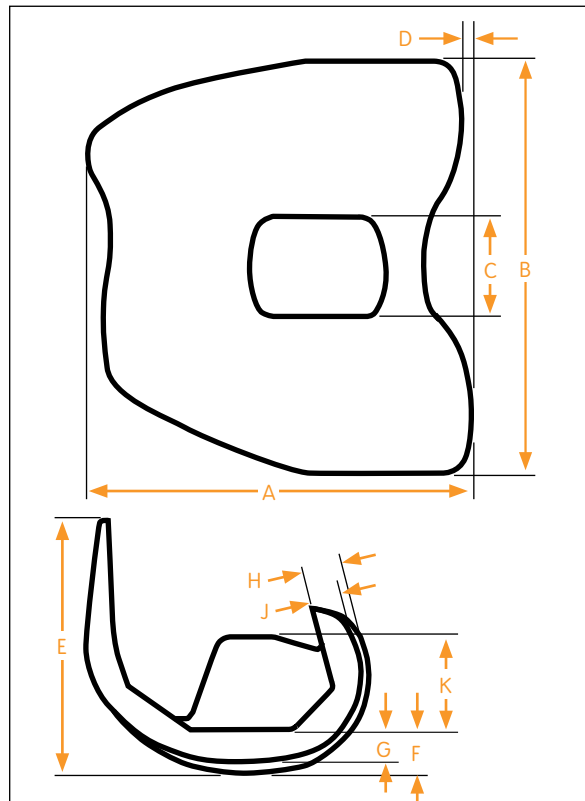
1 Close the arthrotomy by placing three O-Vicryl sutures at the superior border of the patella just distal to the VMO. A stitch is placed to close the VMO fascia. The remainder of the arthrotomy is closed in the standard fashion.

2 Perform routine subcutaneous and skin closure.

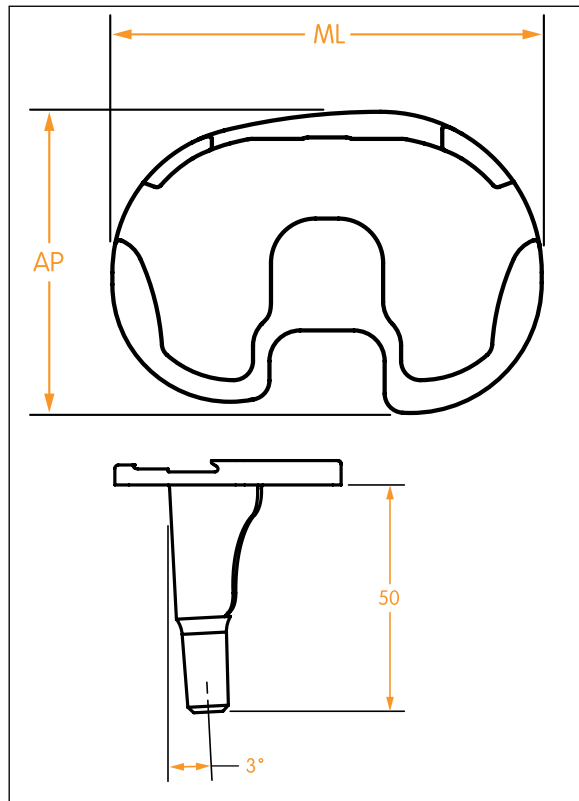
Tip Some surgeons are finding that closing the knee in flexion improves early rehab in patients.

Specifications

Femoral component dimensions (mm)



Tibial baseplate dimensions (mm)

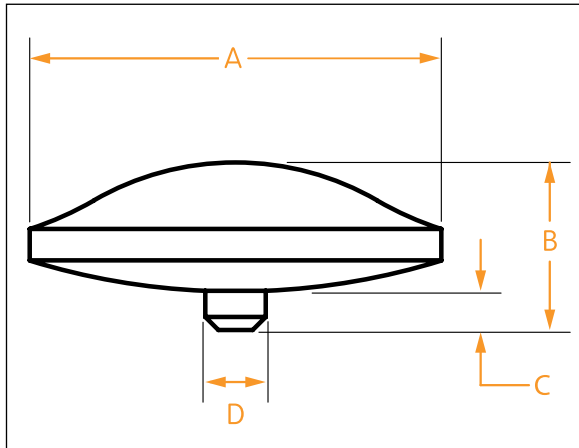


Size	Anterior-Posterior	Medial Lateral	PS Box Width	Posterior Condylar Offset	Flange Height	Distal Medial Thickness	Distal Lateral Thickness	Posterior Medial Thickness	Posterior Lateral Thickness	Box Height
1	51.7	59.0	16.5	1.7	49.5	9.5	7	9	7.4	16.0
2	53.7	60.0	16.5	1.7	50.7	9.5	7	9	7.4	17.0
3	56.7	61.5	16.5	1.7	52.5	9.5	7	9	7.4	17.0
4	59.7	64.5	16.5	1.7	54.3	9.5	7	9	7.4	20.5
5	62.7	67.5	16.5	1.7	56.0	9.5	7	9	7.4	20.5
6	65.7	70.5	16.5	1.8	57.7	9.5	7	9	7.4	22.0
7	68.8	73.5	16.5	1.8	59.5	9.5	7	9	7.4	22.0
8	71.8	76.0	16.5	1.8	61.2	9.5	7	9	7.4	22.0
9	75.8	80.0	16.5	1.8	63.5	11.5	9	11	9.4	22.8
10	79.8	82.0	16.5	1.8	65.7	11.5	9	11	9.4	22.8

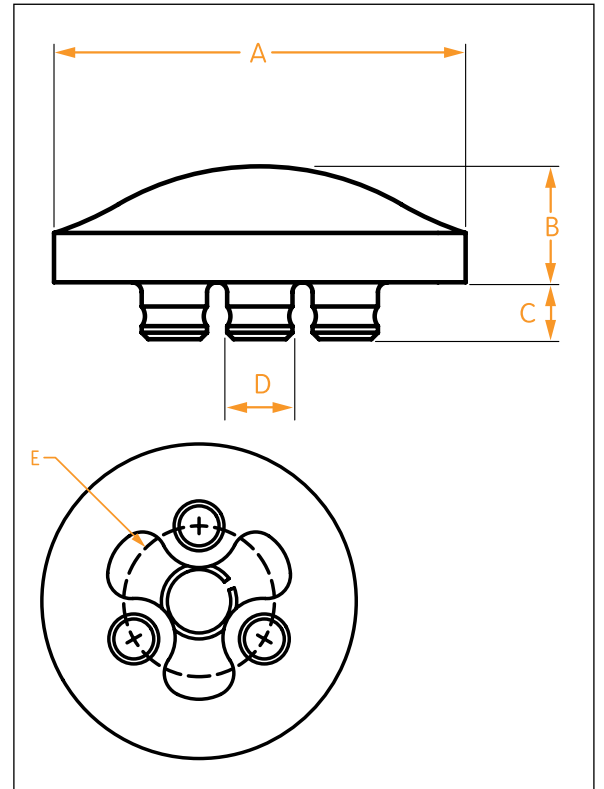
Size	Anterior-Posterior	Medial Lateral
1	42	60
2	45	64
3	48	68
4	50	71
5	52	74
6	54	77
7	56	81
8	59	85

Note Stem sloped 3° posteriorly. Stem length is 50mm on all nonporous sizes.

Patellar dimensions biconvex (mm)



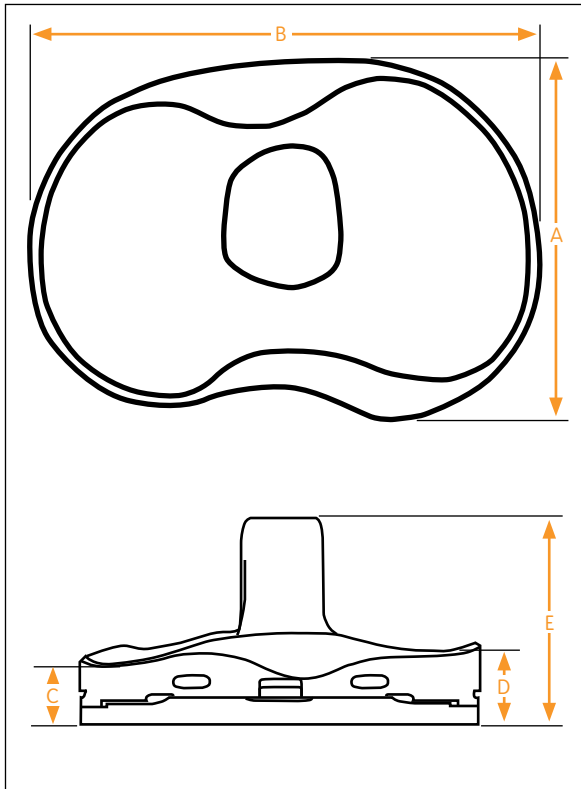
Patellar dimensions resurfacing (mm)



Size	Diameter A	Thickness B	Peg Height C	Peg Diameter D
23mm Std	23	13	4.1	4.7
26mm Std	26	13	4.1	4.7
29mm Std	29	13	3.1	4.7
32mm Std	32	13	3.1	4.7

Size	Diameter A	Thickness B	Peg Height C	Peg Diameter D	Peg Circle Diameter E
26mm Std	26	9	4.4	5.1	15.3
29mm Std	29	9	4.4	5.1	15.3
32mm Std	32	9	4.4	5.1	15.3
35mm Std	35	9	4.4	5.1	17.9
38mm Std	38	9	4.4	5.1	17.9
41mm Std	41	9	4.4	5.1	17.9

Articular insert dimensions (mm)



9mm Insert	Anterior Posterior	Medial Lateral	Medial* Thickness	Lateral* Thickness	Post Height
Size 1-2	42	60	9.6	11.9	34.1
Size 3-4	48	68	9.6	11.6	35.1
Size 5-6	52	74	9.6	11.9	38.6
Size 7-8	56	81	9.6	11.9	40.1

Minimum polyethylene thickness for a 9mm metal-backed component is 6.7mm on the medial side.

* Baseplate thickness included.

Insert offering / compatibility

Insert Size	Femoral Size									
	1	2	3	4	5	6	7	8	9	10
1-2	●	●	●	●						
3-4		●	●	●	●	●				
5-6				●	●	●	●	●	●	
7-8						●	●	●	●	●

Gender

JOURNEY TKA Gender Brochure 40930503

Results

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