Smith+Nephew

JOURNEY◊ II UK

Unicompartmental Knee System

Surgical Technique

Medial Compartment

Smith+Nephew thanks the following surgeons for their participation as part of the JOURNEY II UK (Unicompartmental Knee System) design team.

John Barrington MD
Baylor Medical Center
Plano, TX

William Bugbee, MD
Scripps Clinic
Division of Orthopaedic Surgery
La Jolla, CA

Fred Cushner, MD
Hospital for Special Surgery
New York, NY

Kevin Fricka, MD
Anderson Orthopaedic Clinic
Alexandria, VA

Jeffrey Geller, MD
New York Presbyterian
Columbia University Medical Center
New York, NY

Tad Gerlinger, MD
Rush University Medical Center
Chicago, IL

Jess Lonner, MD
Rothman Institute
Thomas Jefferson University Hospital
Philadelphia, PA

John Masonis, MD
Carolinas Medical Center
Charlotte, NC

David Mayman, MD
Hospital for Special Surgery
New York, NY

Douglas Naudie, MD
London Health Sciences Center
London, Ontario, Canada

Carsten Tibesku, MD
Knie Praxis
Straubing, Germany

James Wood, MD
Harbor Hospital
Baltimore, MD

Additional contributions from:

Paolo Adravanti, MD
Casa di Cura Città di Parma
Parma, Italy

Hany Bedair, MD
Massachusetts General Hospital
Boston, MA

Federico D'Amario, MD
Humanitas San Pio X
Milan, Italy

Jerome Zechmann, MD
Olympia Orthopaedic Associates
Olympia, WA

Table of contents

Nota Bene

The following technique is for informational and educational purposes only. It is not intended to serve as medical advice. It is the responsibility of treating physicians to determine and utilize the appropriate products and techniques according to their own clinical judgment for each of their patients. For more information on the product, including its indications for use, contraindications, and product safety information, please refer to the product's label and the Instructions for Use packaged with the product.

Femoral component

Asymmetric

The implant is designed to mimic the femoral condyle's normal, anatomic shape with a gentle anterior bend toward the trochlear notch. The mesial shape of this bend has been designed to allow a forgiving user experience such that the component position may align more easily with the tibia component. This gentle bend also allows the left medial component to be used on the right lateral condyle, and the right medial component to be used on the left lateral condyle.

Anatomic

The implant is available in ten sizes in order to allow intra-operative optimization of implant fit. The shape of the sagittal articulating geometry (J-curve) is designed to be similar to clinically successful predicate designs and has been thoroughly analyzed through Life-Modeler anatomic analysis simulation.[1-2†] The peripheral anterior edge has been designed to allow flexibility in medial-lateral positioning while avoiding the opportunity for component overhang.

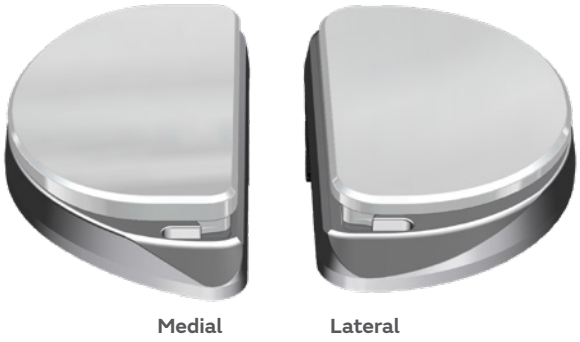
Bone interface

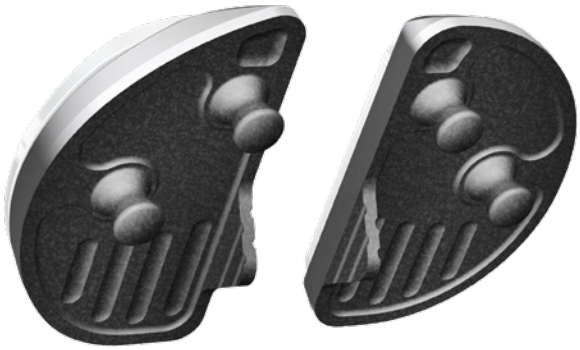
Three planar resections and two fixation lugs provide a uniform, cement interface. The pegs diverge from the posterior and distal planar resections. The posterior peg can be used as a guide to allow ease of alignment during implantation.

Versatility

Ten sizes of femoral implants are available in two millimeter A/P size increments to allow optimization of fit to patient anatomy. Femoral resection geometry and lug placement has been optimized to allow interchangeability. Implants have been divided in three groupings; core sizes 4-7, and outlier sizes 1-3 and 8-10. Within each grouping any size may be selected and implanted without modification to bone preparation.

The coronal articular geometry is designed to allow varus/valgus component positional flexibility while avoiding edge loading.





Tibial baseplate/Insert component

Asymmetric

JOURNEY II UK features tibia components designed individually for the medial and lateral compartments of the knee.

The medial component is designed to mimic medial compartment native bony anatomy. The lateral component is designed wider than the medial compartment to mimic the lateral native anatomy. The geometries have been blended to allow the surgeon rotational freedom.

Anatomic

Surgical flexibility was taken into account by tailoring the outer periphery for each compartment individually. This allows rotational freedom while helping to prevent overhang.

Bone interface

Bone interface: All bone facing surfaces have been prepared with grit blast for cement fixation.[3]

Versatility

Ten sizes of medial tibia baseplate implants, and eight sizes of lateral tibia baseplate implants are available in two millimeter A/P size increments to allow optimization of fit to patient anatomy. Modular tibia inserts are available from 8 to 14mm (composite) thickness, offered in one millimeter increments.

The medial tibial insert features slight Anterior Posterior conformity while the lateral tibial insert is completely flat. Articular implants are unconstrained to allow soft tissue structures to guide kinematic motion of the implant while also allowing surgical flexibility in component position.

Femur Insert Compatibility

Medial	Femoral implant size										
Insert Size	0	1	2	3	4	5	6	7	8	9	10
1-2	●	●	●	●	●	●	●	●	●	●	●
3-4	●	●	●	●	●	●	●	●	●	●	●
5-6	●	●	●	●	●	●	●	●	●	●	●
7-8	●	●	●	●	●	●	●	●	●	●	●
9-10	●	●	●	●	●	●	●	●	●	●	●

Full compatibility between all femur implants and all lateral inserts

Tibia Insert Compatibility

Medial	Tibia baseplate size									
Insert Size	1	2	3	4	5	6	7	8	9	10
1-2	●	●								
3-4			●	●						
5-6					●	●				
7-8							●	●		
9-10									●	●

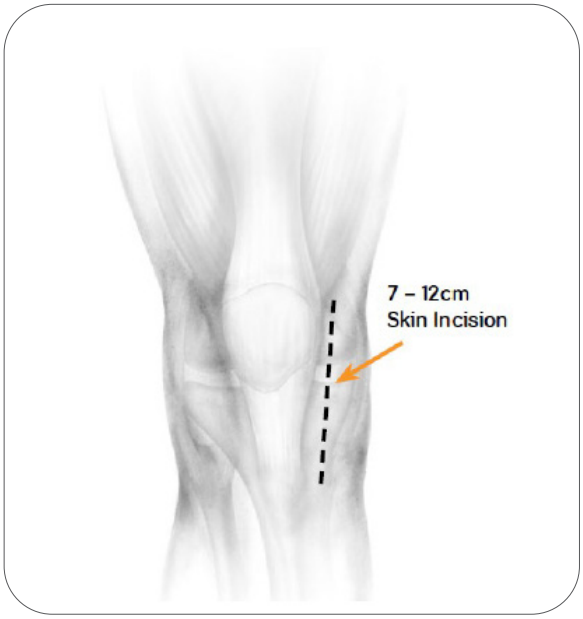


Figure 1

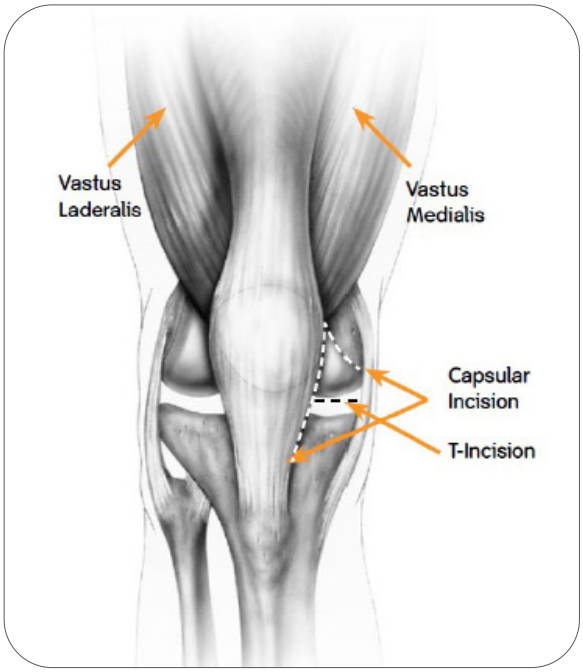


Figure 2

Surgical approach

In the medial procedure, the incision can be made with the leg in flexion or extension. Make a medial parapatellar incision extending from the superior pole of the patella to about 2 cm-4 cm below the joint line adjacent to the tibial tubercle (**Figure 1**).

Incise the joint capsule in line with the skin incision beginning just distal to the vastus medialis muscle and extending to a point distal to the tibial plateau (**Figure 2**).

Excise a minimum amount of the fat pad, as necessary to facilitate visualization, being careful not to cut the anterior horn of the lateral meniscus. Reflect the soft tissue subperiosteally from the tibia along the joint line back towards, but not into, the collateral ligament.

Excise the anterior third of the meniscus. The remainder of the meniscus will be removed after bone resection. A subperiosteal dissection should be carried out towards the midline, ending at the patellar tendon insertion. This will facilitate positioning of the tibial cutting guide.

Debride the joint and inspect it carefully. Remove intercondylar osteophytes to avoid impingement with the tibial spine or cruciate ligament. Also, remove peripheral osteophytes that interfere with the collateral ligaments and capsule. With medial compartment disease, osteophytes are commonly found on the lateral aspect of the medial tibial eminence and anterior to the origin of the anterior cruciate ligament (ACL). Final debridement will be performed before component implantation.

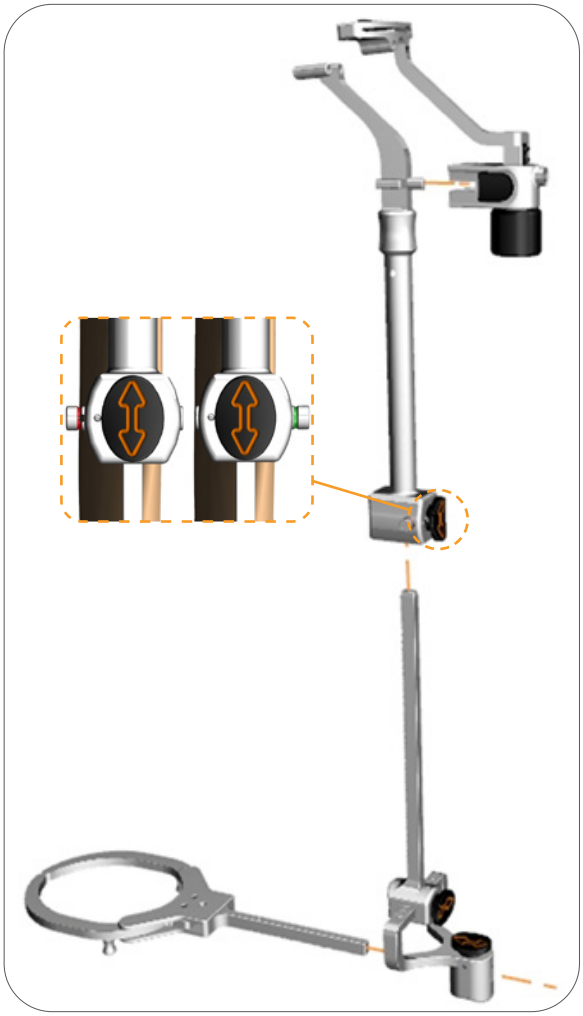


Figure 3

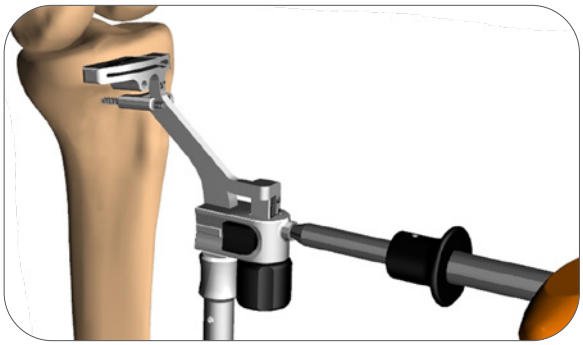


Figure 4

Tibia preparation

Setting up the cutting guide

The JOURNEY II UK Knee System is designed for an anatomic tibia slope. To ease set up and positioning, the cutting head features a built in 5° posterior slope.

The tibia cutting guide assembly consists of a Tibia Resection Guide (cutting head), a Tibia Alignment Guide (proximal/distal adjustment), a Tibia Alignment Adjustment Guide (varus/valgus and slope adjustments), and an Ankle Clamp (distal fixation).

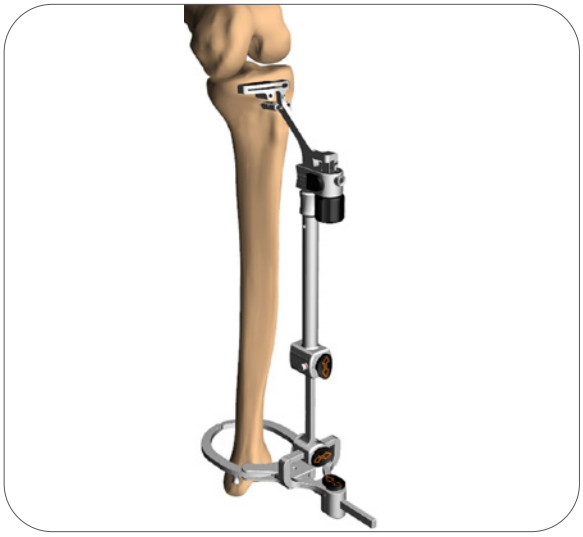
Assembly is performed as shown on the right (**Figure 3**).

- Assemble Tibia Alignment Guide to the Tibia Alignment Adjustment Guide.
- The ankle clamp is positioned as shown by inserting the male rod through the opening in the Tibia Alignment Adjustment Guide while depressing the Slope Adjustment Button.

Tip: It is helpful to select the free position of the proximal-distal macro adjustment by pressing the toggle switch to the left and ensuring the green (free) indication is shown. When switched to red, the uprod is locked and can only be moved by pressing the black push button.

- The Tibia Resection Guide is then positioned on the Tibia Alignment Adjustment Guide by snapping the receiving feature on the Resection Guide over the alignment stud on the Alignment Guide.

Tip: Ensuring both that the lock screw is set to the unlocked position and that the cutting head is in the neutral position will allow maximum surgical flexibility in the following steps. This is done by first turning the lock screw counter clockwise until the cutting head may translate freely by turning the micro adjustment feature (black knob). The knob may then be turned to set the initial position of the cutting head. We recommend the initial placement be set '0' as indicated by the scale on the anterior portion of the cutting guide (**Figure 4**).



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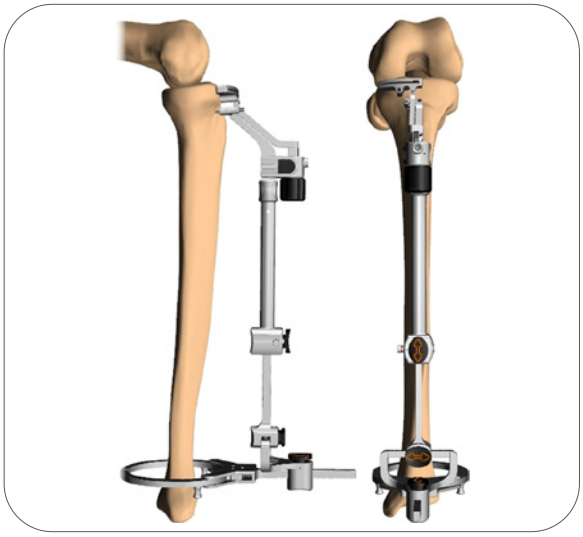

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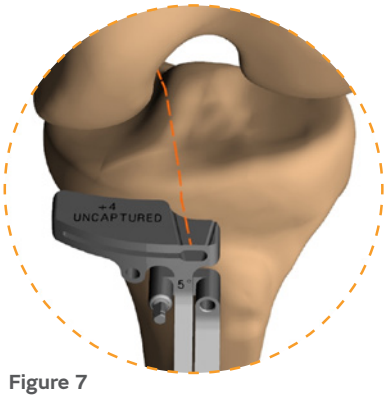

Figure 7

The tibia cutting guide assembly may now be positioned to ensure an accurate tibia resection (**Figure 5**).

Initial set up of the cutting guide includes a provisional varus/valgus, a provisional slope, and provisional proximal/distal placement. The final settings of these alignment parameters have been separated to allow ease in surgical flow.

The distal portion of the guide should be secured to the ankle by placing the spring arms of the ankle clamp just proximal to the malleoli.

Tip: The arms of the ankle clamp are mechanically operated such that both may be opened with one hand, allowing the now free hand to help control orientation of the proximal portion of the guide.

With the ankle clamp in place on the patient a provisional alignment should be completed including depth, slope and varus/valgus (medial lateral placement) of the guide and the guide adjusted likewise (**Figure 6**).

Tip: It may be helpful to select the free position of the proximal-distal macro adjustment by pressing the toggle switch to the left and ensuring the green (free) indication is shown.

Tip: The location of the sagittal resection should be considered when setting up the medial-lateral placement of the guide to ensure availability to place an undercut pin through the block. There are targeting marks on the top of the block to illustrate available placement area (**Figure 7**).

Once this provisional alignment is established, a headed rimmed pin may now be placed in one of two holes provided to secure the extramedullary guide assembly to the anterior proximal tibia.

After the guide has been fixed in one of the two provisional holes, the guide can still be translated to fine tune depth, slope and varus/valgus alignment.

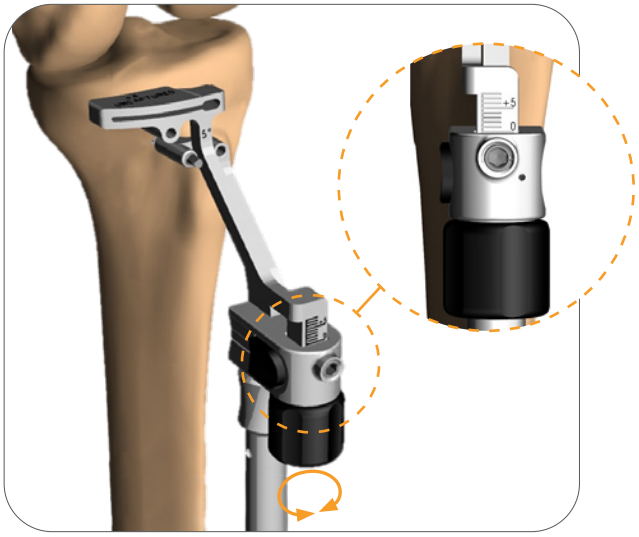

Figure 8

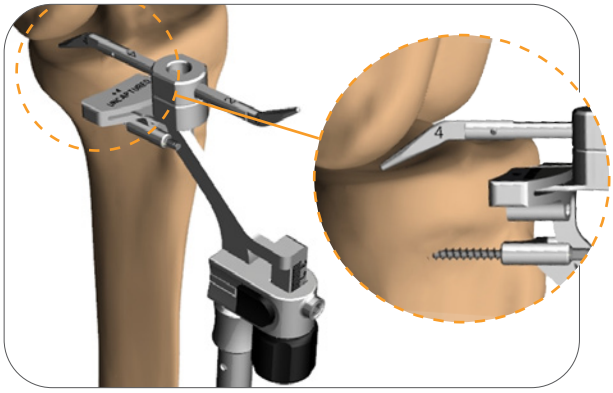

Figure 9

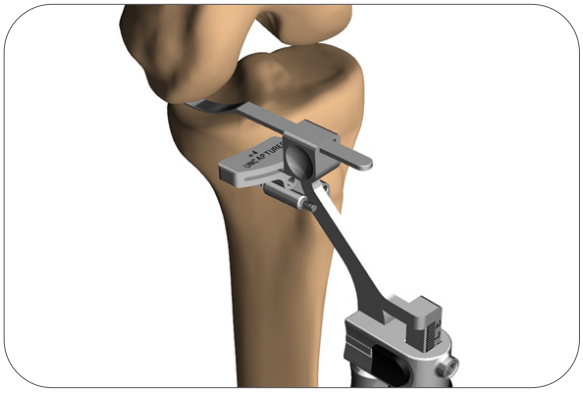

Figure 10

Setting the depth of the cutting guide

After the tibia guide is provisionally fixed, and varus/valgus and slope alignments have been established, a final resection depth may be selected by use of the micro-adjustment feature on the cutting guide (**Figure 8**).

Once this depth has been selected, cutting head movement may now be restricted by using the lock feature on the cutting guide. This is done by turning the lock screw clockwise to tighten the guide.

Tip: The provisional pin may be sufficient to provide a rigid construct for resection. If additional fixation is needed, a pin hole has been provided in the cutting head to further secure the guide.

Preoperative evaluation of deformity may aid in determining resection depth (See sections below on using reference instruments to aid in establishing final resection depth.)

Using the tibia styli

Two double ended styli are offered to aid setting the resection depth. These styli reference 2, 3, 4 or 5 millimeters between the tip and slotted resection surface (**Figure 9**).

Tip: If desired the proximal surface of the block may be used as a non-slotted cutting surface by adjusting the depth distally 4mm from depth referenced from slot.

Stylus selection is dependent on wear and deformity. Increased wear should result in a smaller depth selection and less wear should result in a larger depth of resection

Using the tibia spoons

Optional: Reference spoons are offered in 1, 2 and 3 millimeter thicknesses. These spoons may be placed between the worn proximal tibia and femur and used in conjunction with the connector shown in (**Figure 10**) to provide an initial tibia resection depth reference. These spoons are configured to prepare for an 8mm implant construct when referencing the resection slot.

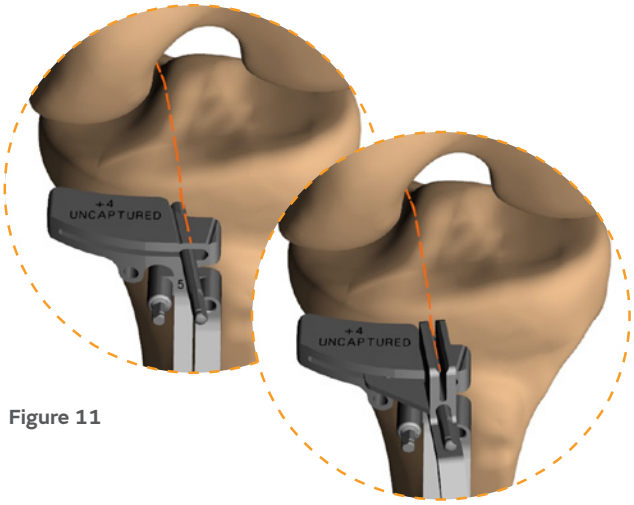

Figure 11

Using the modular vertical capture

Optional: The tibia cutting guide features the ability to place both a pin at the intersection of the sagittal and transverse resection and the option to add a slotted guide to aid creating the sagittal resection (**Figure 11**).

Tip: The undercut pin is made available to protect undercutting of the plateau and spine, and the sagittal guide is made available to help both targeting the pin and ensuring a perpendicular sagittal and transverse resection. Stress concentrations caused by undercutting the tibial plateau and spine may increase risk of post-operative bony fracture.

Tip: There are targeting marks on the top of the block to illustrate available placement area for undercut protection pin.

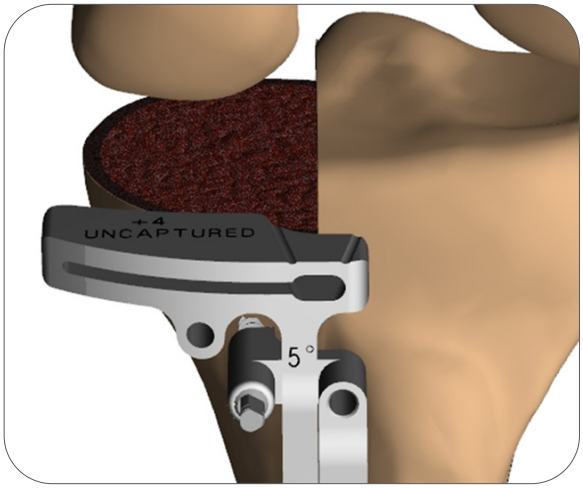

Figure 12

Tibia resection

The proximal tibia native anatomical bony structures of the operative compartment should be resected such that a planar surface is created with adequate space, and in orientation of proper surgical alignment for implantation of a tibia implant on this prepared surface.

Tip: Take a conservative yet adequate resection. If minimal resection for 8mm construct is not achieved, overcorrection and disease progression to uninvolved compartment could result.

Use a reciprocating blade to make the sagittal resection. Be cautious not to raise your hand and resect distally through the posterior cortex.

Use a narrow oscillating blade to make the transverse resection. This resection can be made through the saw capture or on top of the cutting block for more visibility.

Tip: If making a non-captured resection note that it is a +4mm resection (**Figure 12**).

Once both the sagittal and transverse resections are complete, the Tibia Resection Guide may be disengaged and removed to assess joint balance while leaving the remainder of the tibia cutting guide assembly in place. Remove the Tibia Resection Guide by depressing the black button on the medial aspect of the guide. This allows access to the joint space to check joint tension while maintaining a reference to the Tibia Resection Alignment (**Figure 13**).

Tip: Disengaging only the Tibia Resection Guide may aid in alignment should modification to the resection, such as additional depth, be needed.

Tip: Ensuring the Tibia Resection Guide locking feature is locked prior to removal will aid in alignment should additional resection depth be needed.

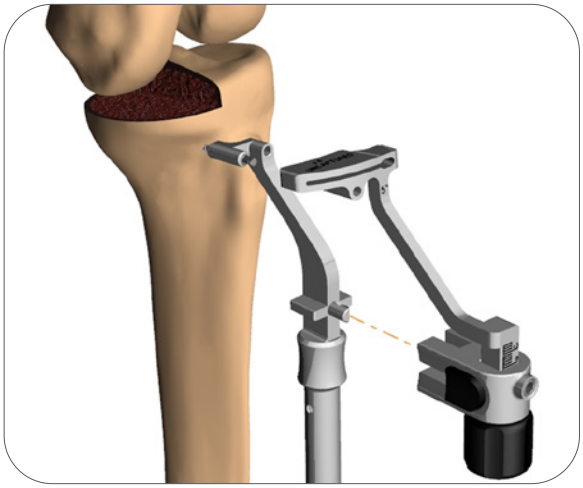

Figure 13

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Tip: Disengaging only the Tibia Resection Guide may aid in alignment should modification to the resection, such as additional depth, be needed.

Tip: Ensuring the Tibia Resection Guide locking feature is locked prior to removal will aid in alignment should additional resection depth be needed.

Joint balance

The JOURNEY® II UK is designed with a 2mm anterior shift of the femoral component to account for imbalance between intact posterior bone/cartilage and worn distal bone/cartilage.

This system has a 2mm shift built into the instrumentation and all spacers are labeled to the shown thickness (e.g. an 8 spacer is 8mm thick).

This system will tolerate an approximate 2mm imbalance between flexion and extension before resection of the femur without the necessity for additional manipulation. The minimum space needed after tibia resection is 8mm in extension and 6mm in flexion.

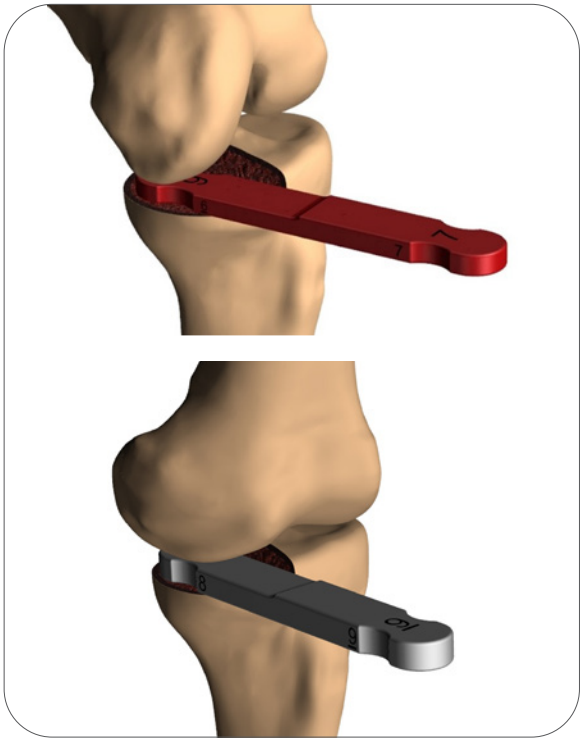


Figure 14a

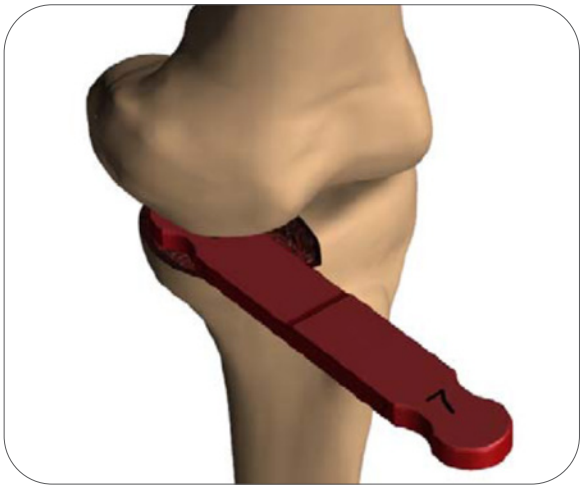


Figure 14b

Assessing joint balance

Adequate gap space for implantation of system tibia implant(s) between resected proximal anatomy and native distal and posterior femoral anatomy should be assessed. Complete this step prior to making the distal femoral resection.

Gap spacers are provided in a range of 6 to 14mm thicknesses to aid in assessment of appropriateness of the tibia resection and any potential ligament imbalance caused by deformity.

Joint laxity is assessed by selecting the appropriate spacer thickness that allows resistance but two finger free movement between the resected tibia and native femoral anatomy. This may be confirmed by tightness of the next available millimeter thickness gap spacer.

Prior to completing femoral resections, a minimum of 6mm of joint space is needed in flexion and 8mm of joint space is needed in extension for successful implantation. If joint laxity is less than 8mm in extension, and 6mm in flexion, additional resection will be necessary (**Figure 14a**).

Tip: For best results, the JOURNEY◊ II UK system has been designed for 1-2mm of post-operative laxity in extension and 2-3mm of post-operative laxity in flexion. Instruments will guide you to a balanced flexion/extension space if followed.

Tip: Distal resection may be adjusted +/- 2mm in 1mm increments to aid correction of imbalance.

Tip: 6 and 7mm gap sticks have been colored red to indicate additional resection may be necessary in extension (**Figure 14b**).

The native tibia surface may be assessed and/or prepared alternatively by computer-assisted navigation and/or patient-specific instrumentation.

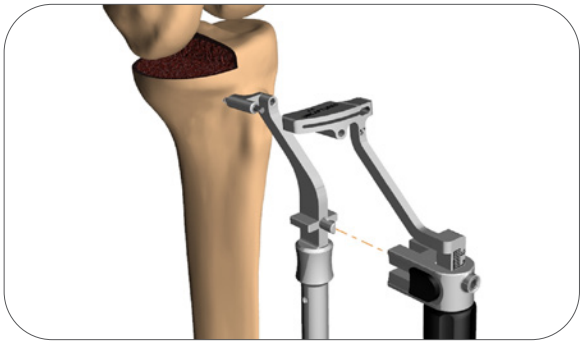


Figure 15

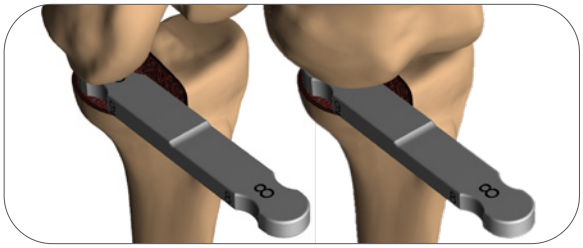


Figure 16

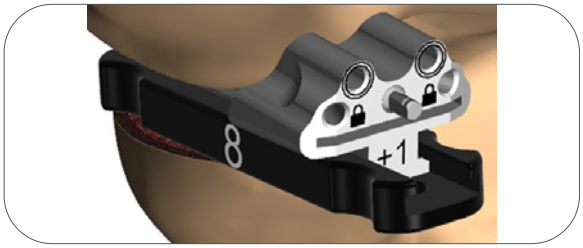


Figure 17

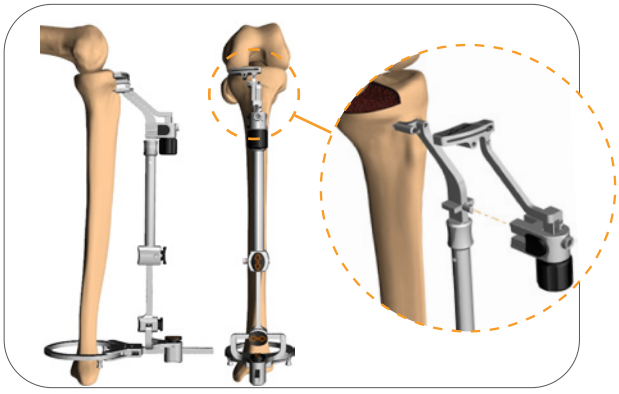


Figure 18

Figure 19

Correcting joint imbalance

Optimal balance is achieved when a minimum 6mm in flexion and 8mm of extension laxity is achieved prior to resection of the femur.

If corrective action is necessary to restore balance, the following are the most common methods for correcting this imbalance, with correction typically occurring within a 2mm window for the following conditions:

Both flexion and extension are tight

- Resect additional proximal tibia (**Figure 15**)

Both flexion and extension are loose

- Increase thickness of gap spacer(s) used to assess balance (**Figure 16**)

Tight in extension, flexion OK -or-

Loose in Flexion, extension OK

- Resect additional distal femur using +1 or +2 distal cutting blocks (**Figure 17**)

Tip: Use caution to avoid raising the joint line

Tight in flexion, extension OK

- Use rasp to remove additional posterior femur
- Recut tibia with additional slope (**Figure 21**)

Tip: When making the posterior femoral resection, a +2mm resection is made to shift the component anterior and decompress the flexion space. This will account for intact posterior cartilage on the femur.

Loose in extension, flexion OK

- Resect less distal femur using -1 or -2 distal cutting blocks (**Figure 19**).

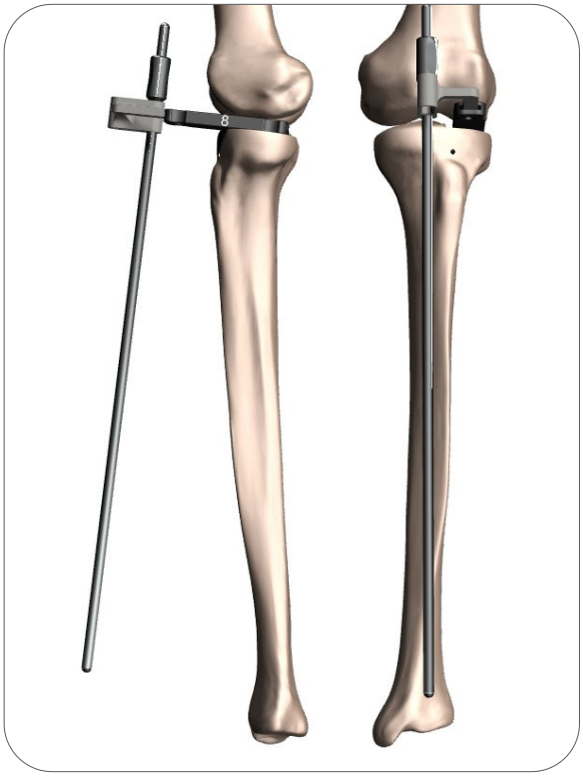


Figure 20

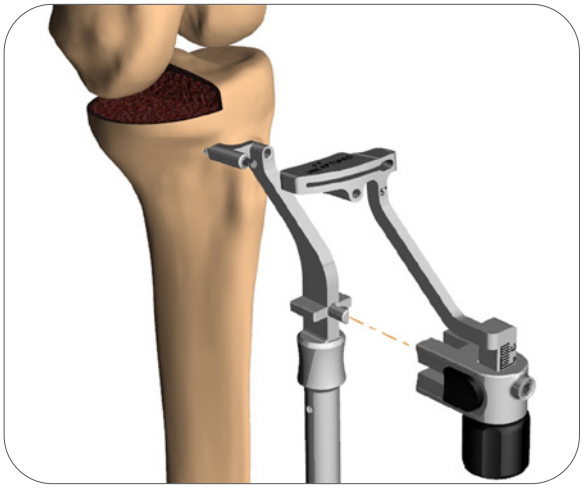


Figure 21

Assessing tibia resection alignment

Alignment of resected bone to long axes of the tibia can be confirmed by using the Drop Rod Adapter with an appropriate thickness Spacer Rail (matching thickness from previous step - as pictured). Confirm that rod is parallel to long axis of the tibia in coronal plane, by having rod intersect medial 3rd of tibia tubercle. Assess that slope is appropriate in sagittal plane (**Figure 20**).

The steps within this section may be omitted if using computer assisted navigation in lieu of using provisional trials at later step in procedure (after preparation of femoral bone is completed).

Modifying tibia resection

If modification of the tibia resection is required, re-attach the Tibia Resection Guide to the tibia alignment guide (**Figure 21**).

If additional resection depth is necessary, unlock the Tibia Resection Guide to adjust resection depth. New depth can be referenced by the scale on the cutting guide, and/or confirmed with the tibia styli.

Once desired recut depth is identified, lock the Tibia Resection Guide and complete both transverse and sagittal resections.

After resections are complete, repeat Joint balance and alignment confirmation steps.

Tip: Resection guide may be adjusted with sub millimeter accuracy to aid in joint balance precision.

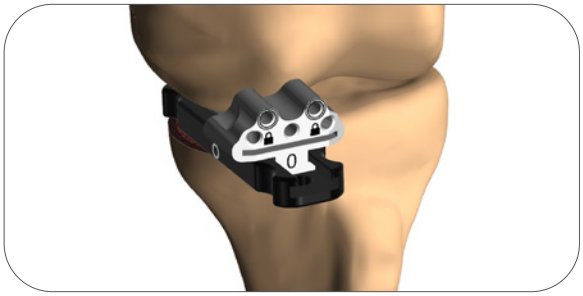


Figure 22

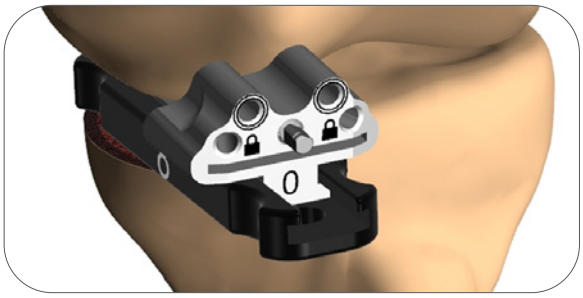


Figure 23

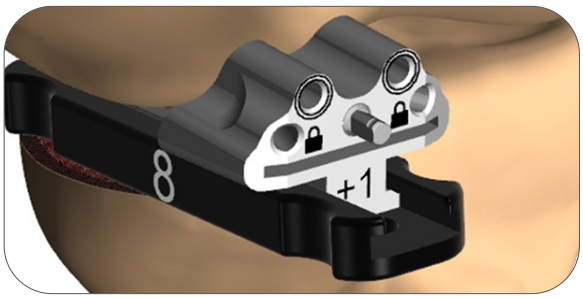


Figure 24a

Figure 24b

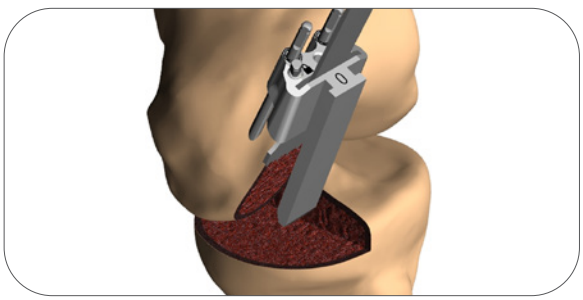


Figure 25

Femoral preparation

Distal femur resection

The distal femoral native anatomical bony structures of the operative compartment should be resected such that a planar surface is created with adequate space and in orientation of proper surgical alignment for implantation of distal portion of femoral implant. Distal implant thickness is 6.5mm and typical distal resection is accomplished with the block marked “0” (or 6.5mm) (**Figure 22**).

The standard method for resecting the distal femur is to place the distal cutting block between the resected proximal tibia and native distal femur along with a short spacer rail indicating current joint laxity (minimum 8mm with “0” Cutting block). One rimmed pin is then placed in the central pin hole and the distal resection is made in extension with the spacer rail in place, taking care to avoid excessive posterior saw excursion that may damage soft tissues along the posterior aspect of the knee (**Figure 23**).

Complete distal femoral resection using 1.27mm or 1.35mm thick narrow saw blade. Remove the distal femur cutting block. Then check the extension joint space using the resected gap sticks. (See page 17).

Tip: +/- 1mm or +/- 2mm distal blocks may be selected to aid correction of imbalance in conjunction with the identified short spacer rail (**Figure 24a and 24b**).

Tip: The distal resection may also be completed in flexion (**Figure 25**). Making the distal resection in flexion will allow for visualization of the saw to avoid posterior neurovascular structures. If resecting in flexion, a minimum of two pins will be needed to ensure alignment is maintained. Pinning the top two parallel pins will provide the greatest stability, however one pin on the top row, and one pin on the opposite side of the bottom row may also be used. To resect in flexion, remove the short spacer rail. The removal hook may be used to aid removal of spacer.

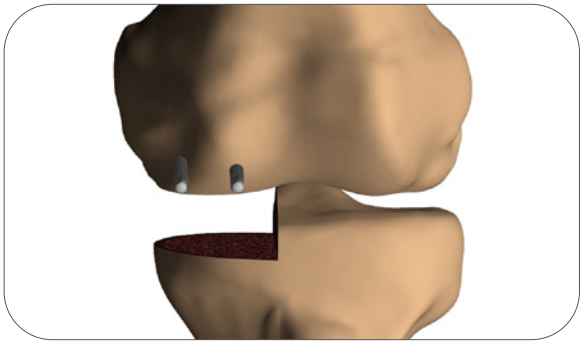


Figure 26

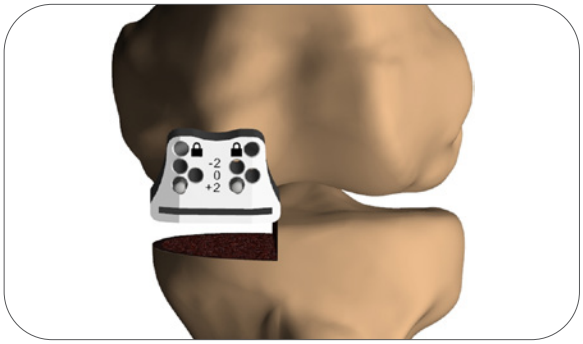


Figure 27

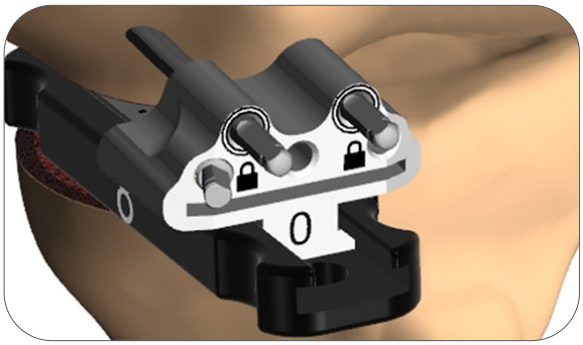


Figure 28a

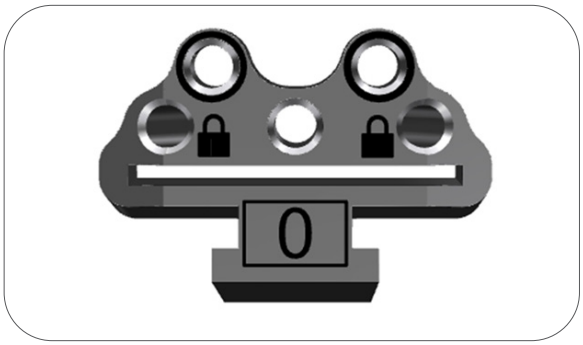


Figure 28b

Tip: Provision has been made to allow for up to two millimeters of additional resection to be completed if needed after initial resection has been completed and assessed (**Figure 34**). In order to accommodate this the top two holes (indicated by rings) must be pinned with non-rimmed pins to allow proper alignment of the re-cutting blocks (**Figure 26**).

This is completed by leaving the two non-rimmed pins in place after the initial distal resection has been completed. If after assessing the post-resected joint balance additional distal resection is needed, either the 1mm or 2mm distal re-cutting block may be used by aligning the re-cutting block over the two rimmed pins through the holes indicated with the desired amount of additional resection (**Figure 27**).

Tip: The furthest outer pins (indicated by padlock symbol) have been angled to provide additional fixation if needed. The holes on this row are convergent such that no more than one pin may be used on this row to prevent creating stress concentrations (**Figure 28a and 28b**).

Tip: It is recommended that no more than 3 (three) pins be used to fix distal cutting block to avoid creating postoperative stress concentrations created by voids.

This would represent two pins in the top row of holes and one in the bottom. It is possible to fix the block using only one pin (as described in **Figures 24**). It is recommended the distal cutting block should be secured with the fewest number of pins needed to adequately fix the block for the preferred resection technique.

Figure 29/

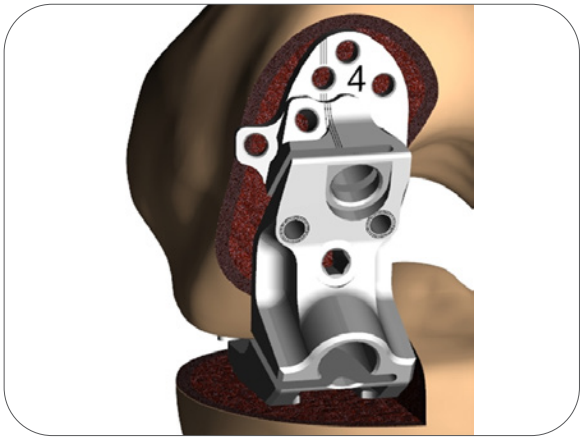


Figure 30

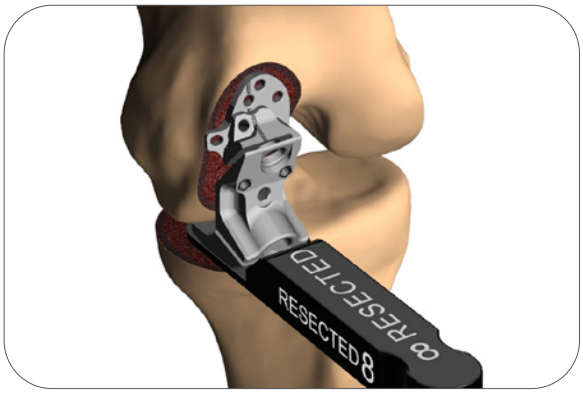


Figure 31

Resected gap assessment

The combination of resected proximal tibia and resected distal femur may now be assessed to ensure adequate bone removal for tibia and distal femoral implants.

Joint laxity is assessed by selecting the appropriate resected spacer thickness that allows resistance but two finger free movement between the resected tibia and native femoral anatomy. This may be confirmed by tightness of the next available millimeter thickness gap spacer.

The thickness of resected gap stick indicates the composite thickness of the tibia implant construct and distal femoral implant thicknesses (**Figure 29**).

Completing femur resections

Preparation of remaining planar femoral resections is completed at this step to prepare native bone to receive provisional femoral trials. Initial sizing and component rotation are also completed at this step.

Femoral implants are available in ten sizes, separated by 2mm A/P increments, and two hands (LM/RL, and RM/LL). Likewise A/P cutting blocks are provided for each size and hand whereby the outer profile of the A/P block represents the shape of the corresponding femoral implant (**Figure 30**).

The standard method for selecting and aligning the A/P cutting block is to mate the appropriate resected gap spacer with an approximate size femoral cutting block, then to place the construct between the resected proximal tibia and native posterior femur, and placing the distal surface of the cutting block flush with the distal femoral resection. The cutting block should then be moved into an approximate M/L position and a preliminary size should be assessed (**Figure 31**).

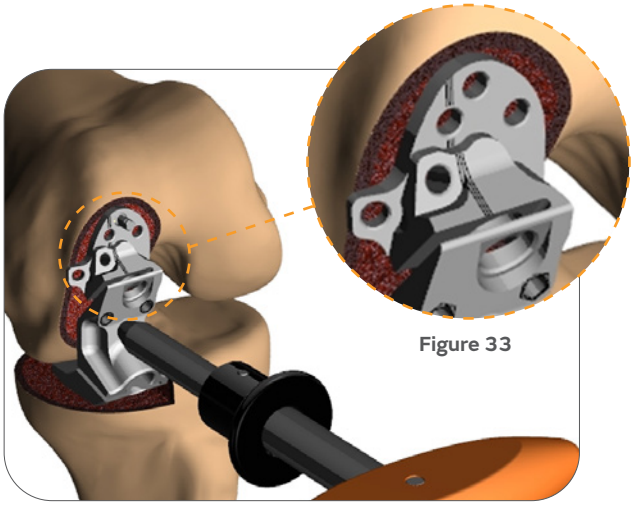


Figure 33

Figure 32

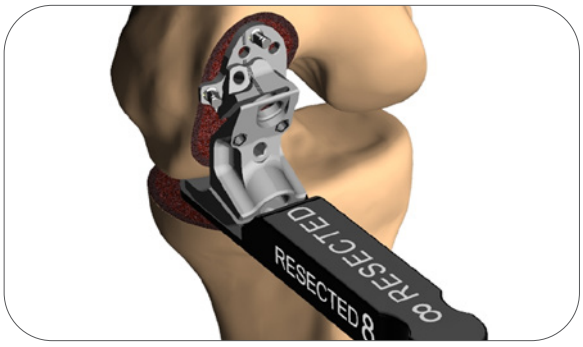


Figure 34

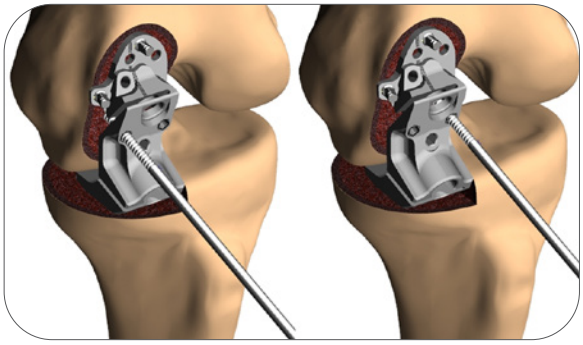


Figure 35

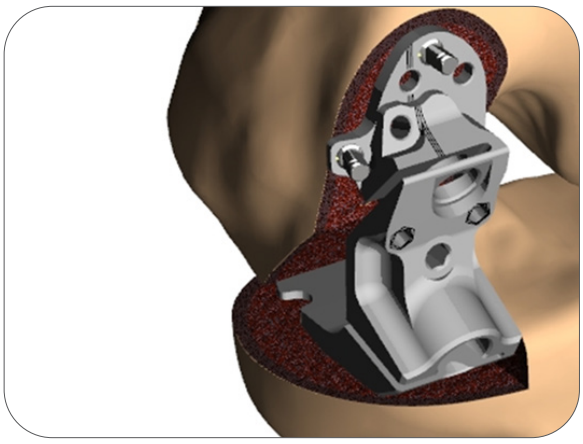


Figure 36

Optional: Rotation and placement may alternately be set, or fine tuned by using the A/P block holder (T-Handle) (**Figure 32**). This may be used in lieu of the gap spacer to set component position/rotation, or to fine tune after anterior pin has been affixed and gap spacer removed.

Component size is suggested to be selected such that 2-3mm of exposed resected bone is visible anterior of the tip of the component as shown in (**Figure 33**).

Once appropriate component size and rotation have been determined the cutting block should then be pinned in place using a rimmed pin through one of the two holes in the anterior of the block, and a rimmed or non-rimmed pin in one of the oblique fixation holes. Once properly fixed the gap spacer may be removed (**Figure 34**).

Optional: The alignment holes for the Drill Thru Femoral trials may be drilled using either a 3.2mm (1/8”) drill bit or by partially threading a speed pin into the resected bone. Care should be taken to avoid overdrilling the depth of these holes, appropriate depth of preparation needed to align trial spikes is approximately 5-10mm (**Figure 35**).

Complete the posterior and chamfer resections. It is suggested to complete the posterior resection first as this will be the component reference for positional alignment, then to resect the bone to prepare for the chamfer (**Figure 36**).

Please see information on the following page for additional tips completing sizing and femoral resections and optional drilling step.

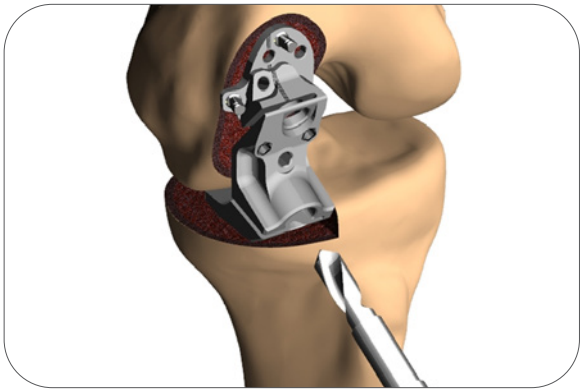


Figure 37

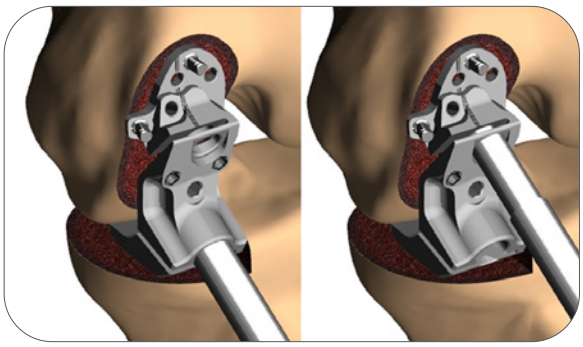


Figure 38

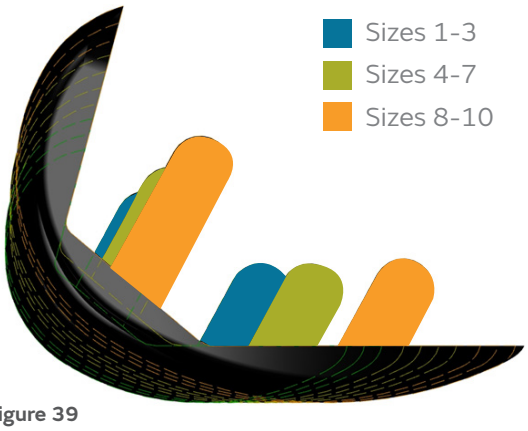


Figure 39

Optional: Standard method for preparing bone to receive femoral lugs is performed with drill thru trials. This preparation may also be optionally completed by traditional method using A/P cutting blocks if satisfied with final component position. To do so use the posterior femoral drill for posterior hole then standard drill for anterior hole (**Figures 37,38**). If drilling at this step, drilling prior to completing resections is recommended. These drilled holes will be the primary alignment method for placing the final implant.

Tip: If using the drill thru trials, do not complete drilling step at this time.

Tip: The dedicated posterior drill is not offered in the standard set. The preferred method to drilling the lugs is through drill thru trials. If needed, the optional Posterior Femoral Peg Drill (74036108) should be ordered.

Note: The posterior hole may be alternatively drilled with standard drill. When drilling posterior hole through A/P block with standard drill, posterior lug will be drilled to second drill stop, anterior lug will be drilled to first stop. Care should be taken when drilling posterior lug with standard drill as drill may contact bone prior engagement in sleeve. A misaligned drill may bind, or move block during drilling.

Tip: Check for and remove posterior condylar osteophytes if necessary after completing resections (The keel punch may be used alternately as an osteotome to aid removal.).

Femoral resection and lug positions are combined in three groupings such that final component sizing may be deferred to later steps. Sizes 1-3, 4-7, and 8-10 all share resection and lug geometry. To aid in identifying proper size, and availability to change size within groups, the next size down is indicated by an etch on the anterior of the block if another smaller size is available within its grouping (**Figure 39**).

Tip: Cutting blocks feature a reference line noting the center of component articulation. This can be used as a reference in M/L and rotational block placement.

Figure 40

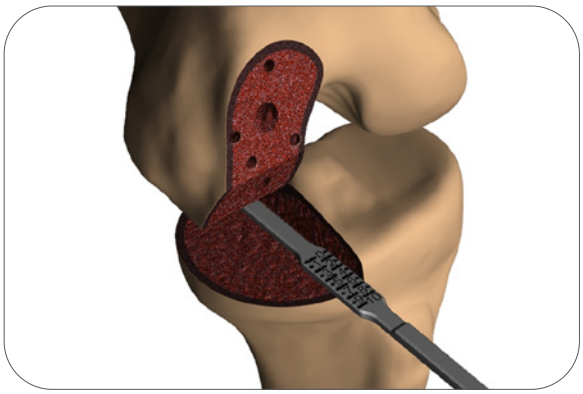


Figure 41

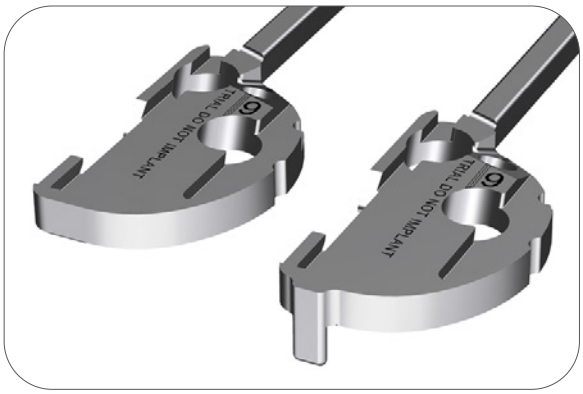


Figure 42

Trialing and preparation

Tibia sizing and preparation

At this step the resected tibia bone is assessed for tibia baseplate component size and position. Preparation is then made to resected bone to receive size and hand specific fixation features of the final tibia implant.

Tibia implants are available in ten medial sizes, and eight lateral sizes separated by 2 mm A/P increments, and two hands for each compartment (LM, RM, RL, and LL). Lateral sizes range from 0-7, and medial sizes from 1-10 where each numerical size shares the same A/P length (e.g. Size 1 medial and lateral are both 40mm A/P) (**Figure 40**).

The medial baseplates have been optimized with a shape friendly to the medial tibia, lateral components are wider than medial baseplates to provide optimal fit for the lateral compartment. However, either baseplate may be used in the contralateral compartment at the physician's discretion. When doing so, typical hand convention for unicompartmental knees (LM/RL, and RM/LL) should be followed (e.g. a Left Medial baseplate could secondarily be indicated in the Right Lateral compartment, and a Right Lateral baseplate could be secondarily indicated for the Left Medial compartment).

A tibia sizing hook is provided and may be used for an unobstructed A/P assessment of tibia baseplate component sizing. The hook should be placed on the resected tibia surface along the mesial wall created by the sagittal resection. The hook will reference the posterior cortex of the tibia, once engaged pull forward to read maximum tibia size with no overhang via reference marks on the sizing guide (**Figure 41**).

A secondary check of implant size may be performed by using the double ended interactive sizing trials (medial), or double ended symmetric sizing guides (lateral).

Note: The medial interactive sizing trials are available in a variant with a hook to provide a reference of the posterior cortex, and without a posterior hook (**Figure 42**). These devices are also hand specific (there is a separate device for left or right medial). The lateral symmetric sizer is not hand specific (device may be flipped over for left or right hand. Henceforth, instructions will be given with assumption the sizers with hook are used, the following instructions will be the same with exception of reference to the posterior cortex.

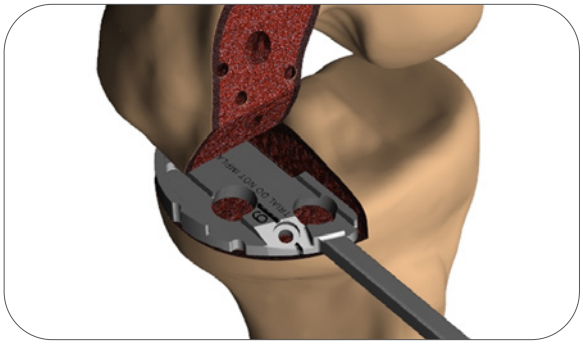


Figure 43

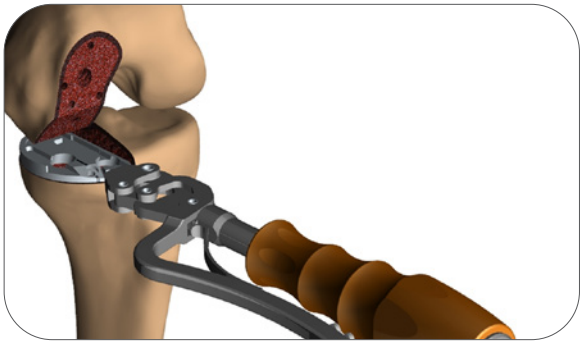


Figure 44

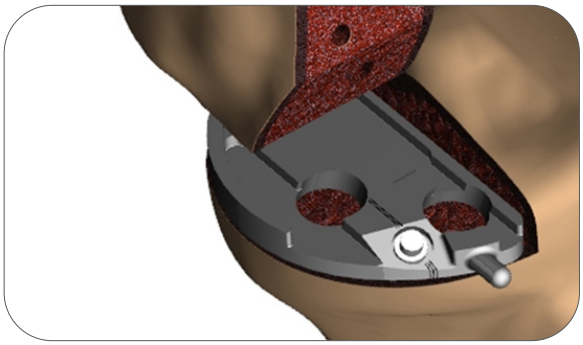


Figure 45

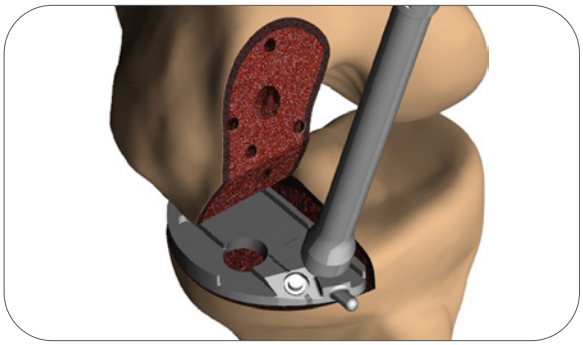


Figure 46

Place the double ended sizing guide/trial flat on the resected tibia surface. The hook will reference the posterior cortex of the tibia and pull forward. Place sizing trial against vertical resection while avoiding anteromedial component overhang. The appropriate size will be the largest available size with no overhang (**Figure 43**).

Tip: Interactive sizing trials feature notches along periphery to indicate next smaller size and a notch on the handle to indicate next larger size.

Once provisional sizing is complete, a tibia baseplate trial of like size and hand may be positioned and provisional keel impacted in place using the tibia trial impactor.

Tip: On medial trials, the pin inserter/extractor may be used to aid placement of the tibia baseplate trial (**Figure 44**). (On lateral trials this feature has been omitted to avoid soft tissues associated with the patella.).

Tip: Some users find it advantageous to affix the keel with the trial in a slightly anterior position (2-3 mm) then use the tibia trial impactor to drive the trial posterior into optimal position. The furrow created may allow increased cement fixation around the keel. The trial has been designed with a taper on the provisional keel to aid this movement.

Once properly positioned, the trial may be affixed in place by using a rimmed pin through the provisional pin hole in the anterior-medial aspect of the trial. A 17mm bone spike has been provided with the system for convenience which may be inserted and extracted using the pin inserter/extractor as shown in (**Figure 45**).

Preparation of the resected proximal surface may now be made to receive the tibia lugs by drilling two holes through the tibia trial using the tibia drill. This drilling is done at a 20º posterior angle and is made such a way as to provide sufficient room for bone cement to be placed to increase fixation between tibia baseplate and bone (**Figure 46**).

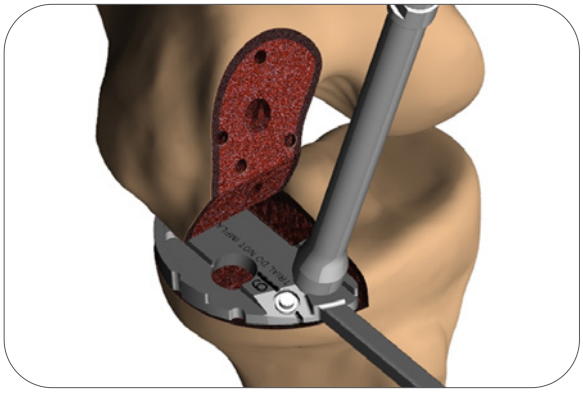


Figure 47

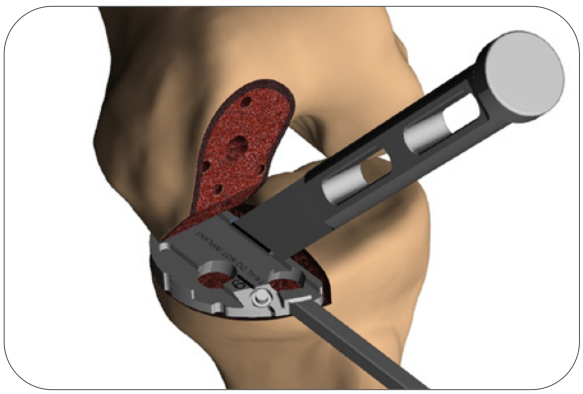


Figure 48

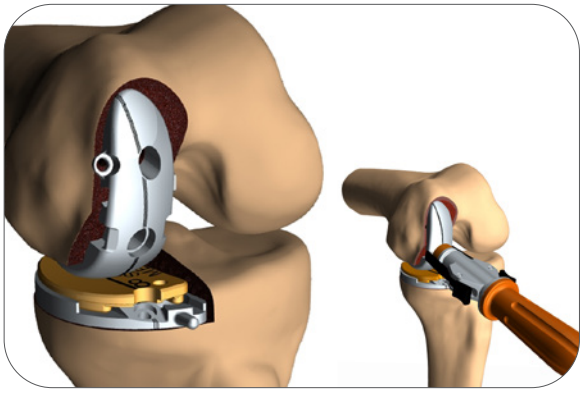


Figure 49

Optional: The medial interactive sizing trials have been designed with features to allow preparation of both keel and lugs as an alternative to using the tibia baseplate trials. These guides may be affixed to the bone in a similar manner as the baseplate trials. The lug holes may then be drilled as described above (**Figure 47**).

Preparation for the keel using the interactive sizing guide may be accomplished by use of the keel punch as shown in (**Figure 48**).

The interactive sizing guide will also accept a tibia insert trial to complete range of motion trialing.

Note: Keel punch is for use with interactive sizing trial and is not required for tibia trial.

Range of motion trialing

Joint tension and component alignment are assessed and finalized at this step.

Select the appropriate size drill thru femoral trial identified during the femoral sizing step. Attach the femoral trial to the femoral holder and introduce to the resected femur. The drill thru trial has been designed with moveable spikes to aid provisional fixation of the trial.

Tip: The holes previously drilled in the resected bone to align the drill thru trial may be used to aid in placement of the drill thru trial.

An appropriate thickness insert trial may then be inserted between the provisional tibia and femoral trials and range of motion joint tension may be assessed (**Figure 49**).

Tip: Insert trials are color coded by size and are indicated also on the final implant packaging for convenience (Table 1).

JOURNEY II UNI Trial Inserts

Lateral	Color	Medial
0-1	Black	1-2
2-3	Yellow	3-4
4-5	Orange	5-6
6-7	Green	7-8
	Blue	9-10

Table 1

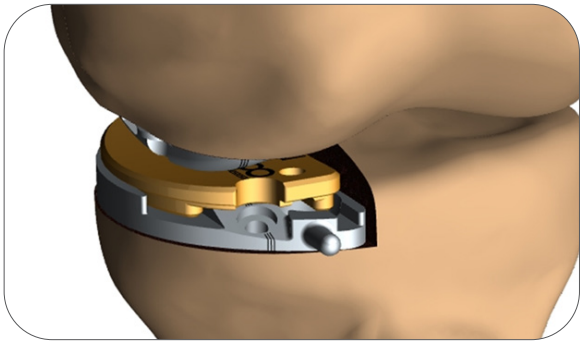


Figure 50

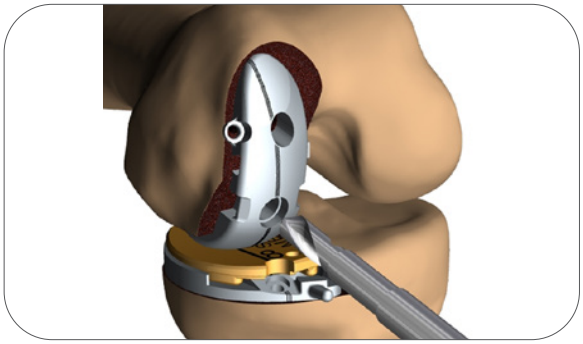


Figure 51

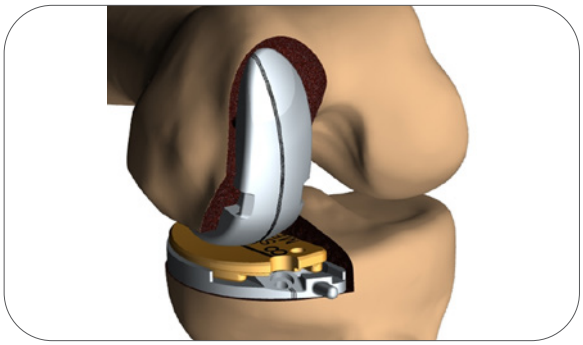


Figure 52

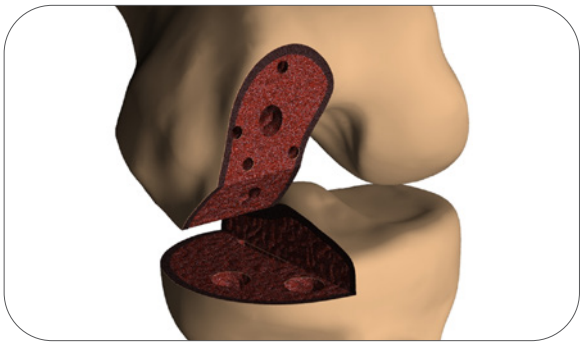


Figure 53

Two tension spacers have been provided to assess the joint laxity at this step:

- A flat gap spacer reading 2mm on one end, and 3mm on the opposite.
- A curved spacer with graduated thickness markings along the top side and a radius on the opposite side matching the medial articular curvature.

Tip: For best results the JOURNEY◊ II UK knee system has been designed for 1-2mm of post-operative laxity in extension and 2-3mm of post-operative laxity in flexion (**Figure 50**).

Caution: Do not use the spacer in an upward motion which may cause it to break. Example: Using the spacer to pry up on the femoral component from the tibia.

Conventionally this may be assessed as a 2mm spacer in extension, and a 2 or 3mm spacer in flexion as measured by the tension gauge.

Markings have been provided on all trial components indicating the center of articulation. These may be used to aid final M/L placement of the drill thru femoral trial.

Once the final position of the drill thru trial has been established the femoral drill can then be used to prepare for the implant lugs by drilling to the first drill stop through the two holes provided in the femoral trial (**Figure 51**).

Tip: Ensure that the posterior flange of the trial is flush against the resected posterior femoral condyle when placing this trial femoral component before drilling the holes for the pegs on the femur.

Optional: Trials with lugs may also be used if lug holes were prepared during chamfer resection, such that adequate preparation may be confirmed at this step (**Figure 52**).

Once range of motion trialing is complete, the tibia insert trial can be removed using the removal hook. After removing any additional fixation pins the femoral trial may be removed and the tibia trial may be removed with the pin inserter/extractor (medial trials only – lateral trials may be lifted by using a narrow tapered osteotome).

After removing trials bone surfaces should be thoroughly cleaned in preparation for final implantation. Use of irrigation to remove loose particles and debris is recommended to create an ideal cement surface. Ensure that the resected bone is thoroughly clean and dry (**Figure 53**).

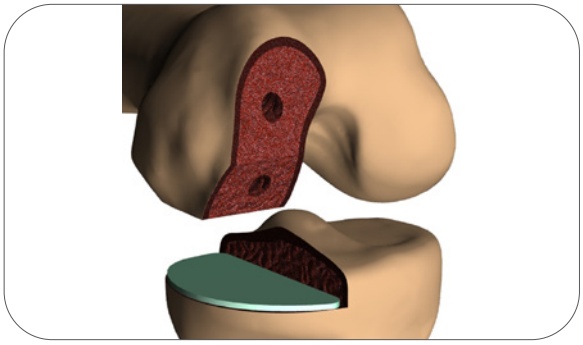


Figure 54

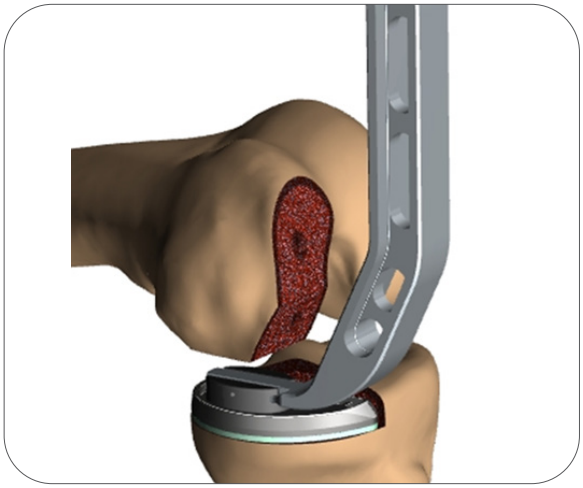


Figure 55

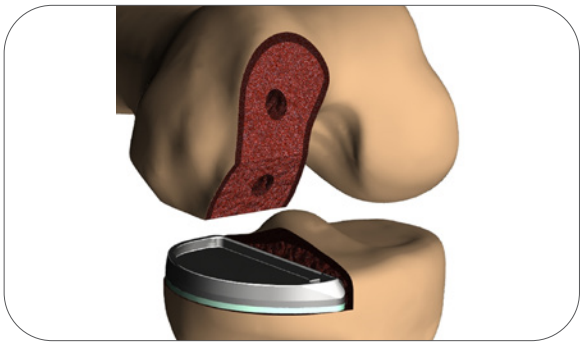


Figure 56

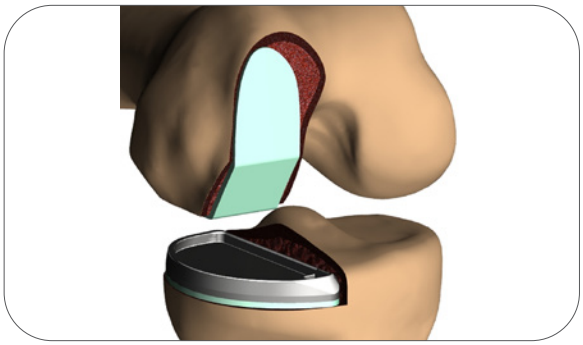


Figure 57

Implantation

Cemented component implantation

Cement should be applied to both the bone and tibia implant to achieve optimal fixation. An osteotome can be used to assist in compressing the cement into the plateau (**Figure 54**).

Place the tibia baseplate component onto the prepared tibia bone. Impact tibia component into place using the tibia impactor. Start with the posterior aspect of the tibia tray working anterior. This method will allow cement to extrude anteriorly and avoid being trapped in the posterior capsule. Remove excess cement from the periphery of the tibia component (**Figure 55**).

Note: Please note that the inside rim of the tibia tray must be free of cement and debris to ensure an adequate lock may be made between insert and tibia tray (**Figure 59**).

Tip: A narrow drill (typically 2mm dia.) may be used to drill several holes into prepared planar surfaces prior to cementation to increase cement to bone interdigitation.

Cement should be applied to both the bone and femoral implant to achieve optimal fixation (**Figure 57**). Apply cement to the backside of the femoral component. Seat the femoral implant by aligning the femoral lugs to the pre-drilled peg holes in the femur.

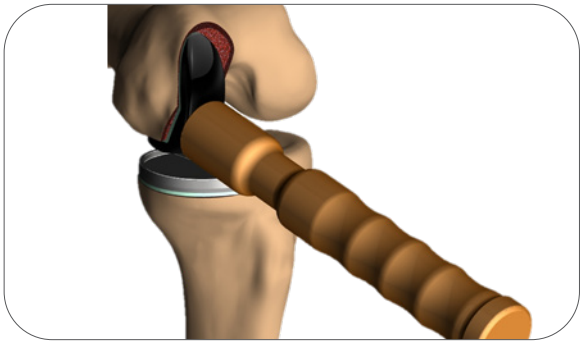


Figure 58

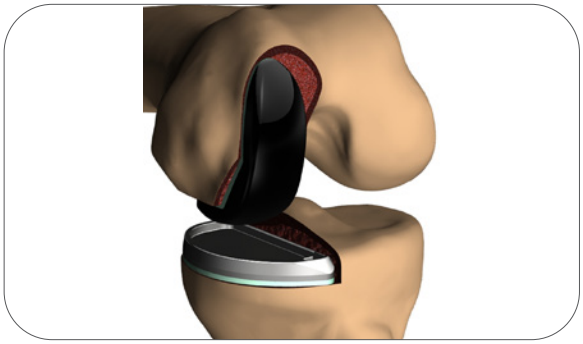


Figure 59

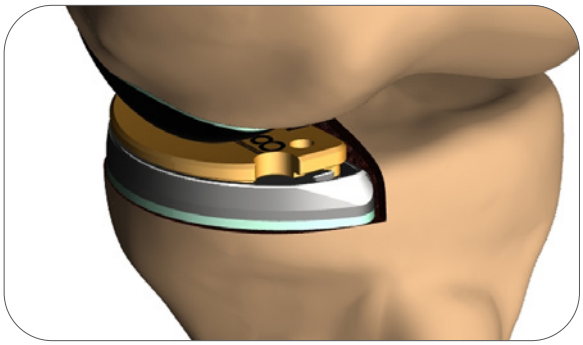


Figure 60

Place the femoral component onto the prepared bone using the femoral holder. Use the femoral free impactor as necessary and remove excess cement from the periphery of the component (**Figure 58**).

Care should be taken to avoid excess cement on the posterior aspect of the femur and femoral component. Excess cement that extrudes posteriorly can be difficult to remove (**Figure 59**).

Tip: The insert trial may be used to aid in cement compression as cement sets (**Figure 60**).

Note: Care should be taken not to disturb cemented implants until the cement has exited its working period and is sufficiently cured.

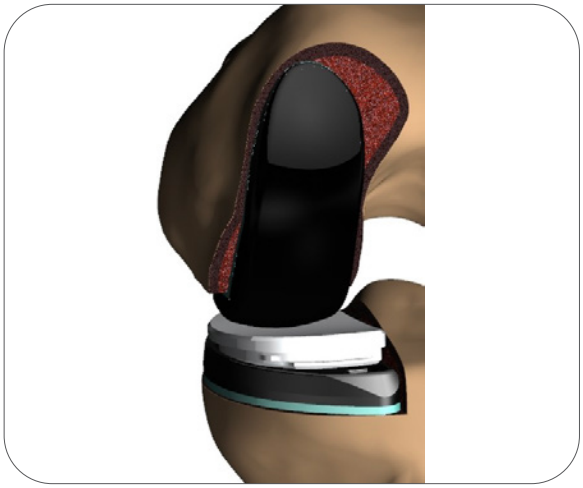


Figure 61

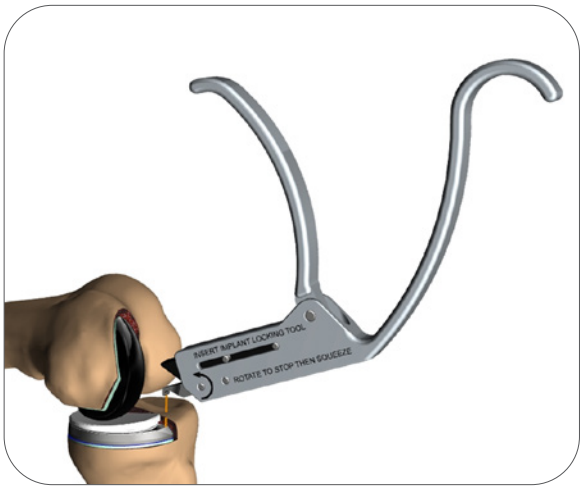


Figure 62a

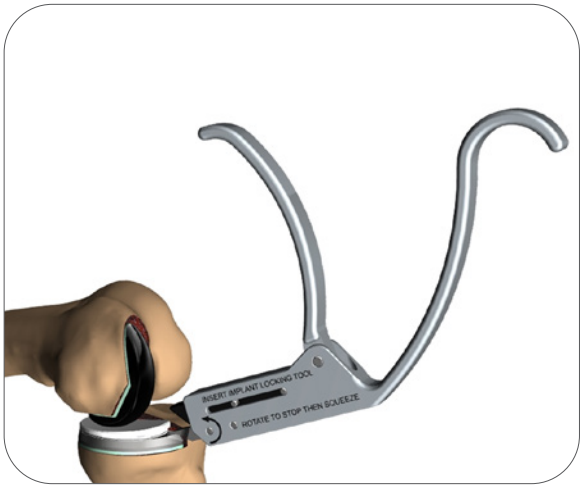


Figure 62b

Implant insert locking

The insert implant may now be inserted and locked into place by ensuring first the pocket is free of debris. Visual inspection of the posterior locking area of the tibia baseplate should be completed to ensure the insert implant will not be prevented from fully engaging in the locking area.

The insert implant should then be placed into position by engaging the posterior locking tab with the receiving area in the baseplate, and positioning the mesial wall of the insert implant in contact with and parallel to the mesial wall of the tibia baseplate (**Figure 61**). Care should be taken to ensure soft tissue is sufficiently clear of the area beneath the insert implant, as this has shown to be a common failure mechanism preventing adequate locking of the insert implant into the baseplate implant.

The insert implant locking tool should then be used to secure the insert implant into the baseplate implant. This tool has been designed to prevent disturbing the baseplate cement mantle during implantation by allowing the user to apply a downward counterforce on the handle.

Proper operation involves engaging the hook of the tool into the receiving slot of the baseplate implant (**Figure 62a and 62b**).

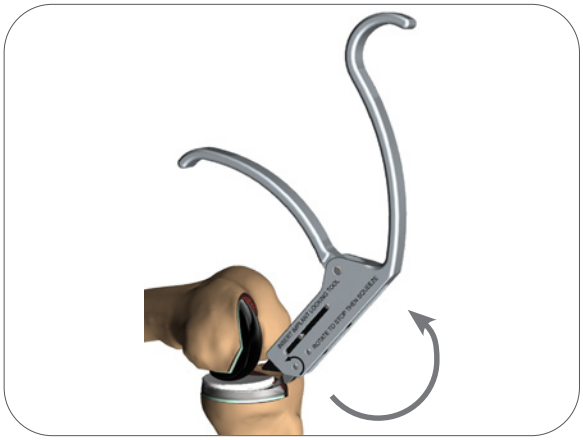


Figure 63

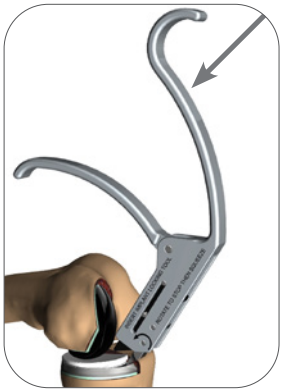


Figure 64a

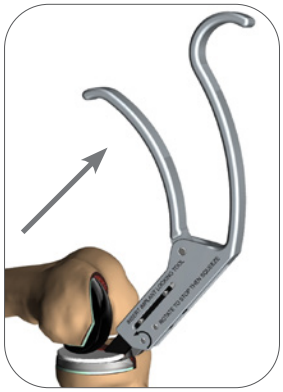


Figure 64b

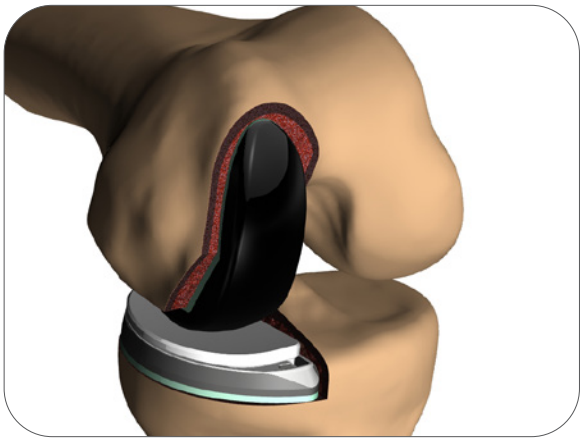


Figure 65

The tool should then be rotated to engage the hook until touching the stop on the posterior wall of the baseplate mating feature (**Figure 63**).

This should be done gently, and care should be exercised to ensure the tool does not lever the anterior of the baseplate proximally.

Once engaged, an anterior downward force should be applied to the handle, and the trigger squeezed to engage the locking mechanism of the insert liner (**Figure 64a and 64b**).

Proper insertion should be verified by ensuring a consistent gap of no more than 0.5 mm is present between the metal baseplate and insert implant along the entire periphery (**Figure 65**).

Wound closure

Irrigate the knee for the final time and close. Follow your usual post-operative wound care protocol.

Ordering information

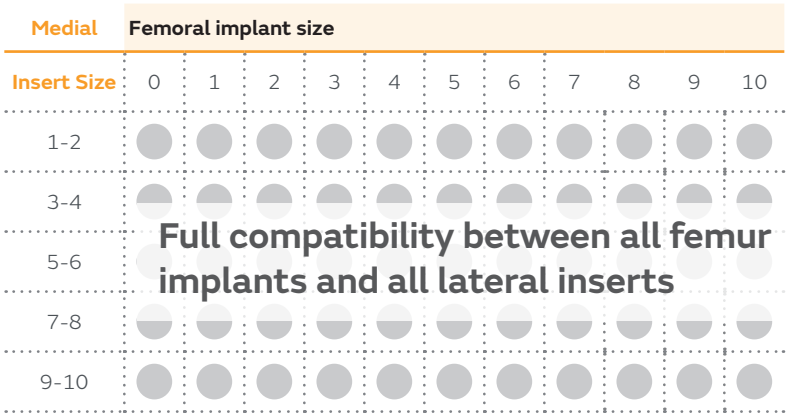
JOURNEY◊ II UK features modular configuration of trays, allowing for surgeon customization. The instrument tray layouts can be found in a separate guide for reference and ordering purposes.

Refer to JOURNEY II UK Interactive Tray Layout Guide for further information.

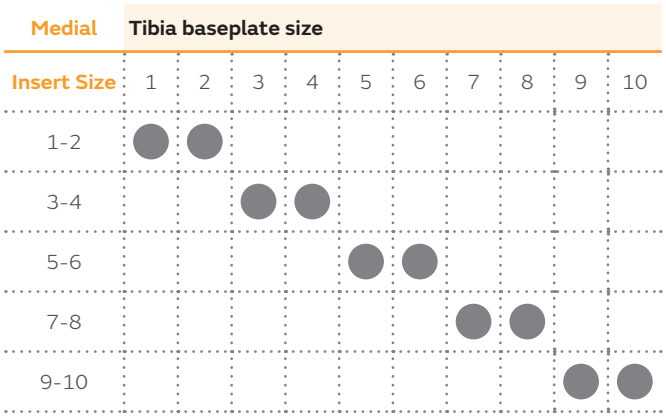
System compatibility

Femoral	Insert	Tibial Baseplate
JOURNEY◊ II UK OXINIUM◊ Femoral Component	JOURNEY II UK Medial Insert (XLPE) JOURNEY II UK Lateral Insert (XLPE)	JOURNEY II UK Medial Tibial Baseplate JOURNEY II UK Lateral Tibial Baseplate

Femur Insert Compatibility



Tibia Insert Compatibility



Compatibility Table

JOURNEY◊ II UK	Compatible Component	Size
JOURNEY II UK OXINIUM◊ Femoral	JOURNEY II UK Medial Insert (XLPE)	1-10, 8-14mm
	JOURNEY II UK Lateral Insert (XLPE)	0-7, 8-14mm
JOURNEY II UK Medial Insert (XLPE)	JOURNEY II UK Femoral (OXINIUM)	1-10, LM/RL RM/LL
	JOURNEY II UK Medial Tibial Baseplate	1-10 LT/RT
JOURNEY II UK Lateral Insert (XLPE)	JOURNEY II UK Femoral (OXINIUM)	1-10, LM/RL RM/LL
	JOURNEY II UK Lateral Tibial Baseplate	0-7 LT/RT
JOURNEY II UK Medial Tibial Baseplate	JOURNEY II UK Medial Insert	1-10, 8-14mm
JOURNEY II UK Lateral Tibial Baseplate	JOURNEY II UK Lateral Insert	0-7, 8-14mm

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Smith & Nephew, Inc.
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