

Smith+Nephew

LEGION⁺ TKS

Total Knee System

SYNC

Performance Instruments

Surgical Technique



LEGION[®] TKS with SYNC Performance Instruments

Contents

Introduction.....	1
Distal Femur.....	3
Proximal Tibia.....	6
Extension Gap Assessment.....	9
Femoral Positioning and Sizing.....	10
Femoral A/P and Chamfer Resections.....	12
Resected Flexion Gap Assessment.....	13
Downsizing the Femoral Component.....	14
Patella Preparation: Resection Technique.....	15
Patella Preparation: Reaming Technique.....	16
LEGION CR and PS Trialing and Preparation.....	18
Femoral and Tibial Trialing.....	20
Tibial Keel Preparation.....	21
Final Implantation.....	22
Closure.....	25
Component Dimensions.....	26

Alternate Techniques

Fixed Femoral Alignment Technique.....	31
Kinematic Alignment Instrument Technique.....	34
Micro EM Tibial Alignment Technique.....	42
Spiked Extramedullary Tibia Technique.....	45
Intramedullary Tibia Technique.....	48

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.

Introduction

The LEGION® Total Knee System has been designed to offer the orthopaedic surgeon solutions to address intraoperative situations.

Patient outcomes can be directly related to accurate surgical technique and precision instrumentation.

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.

Constraint Options

LEGION TKS offers multiple levels of constraint based on surgeon preference and patient requirements.

LEGION CR Femoral Component

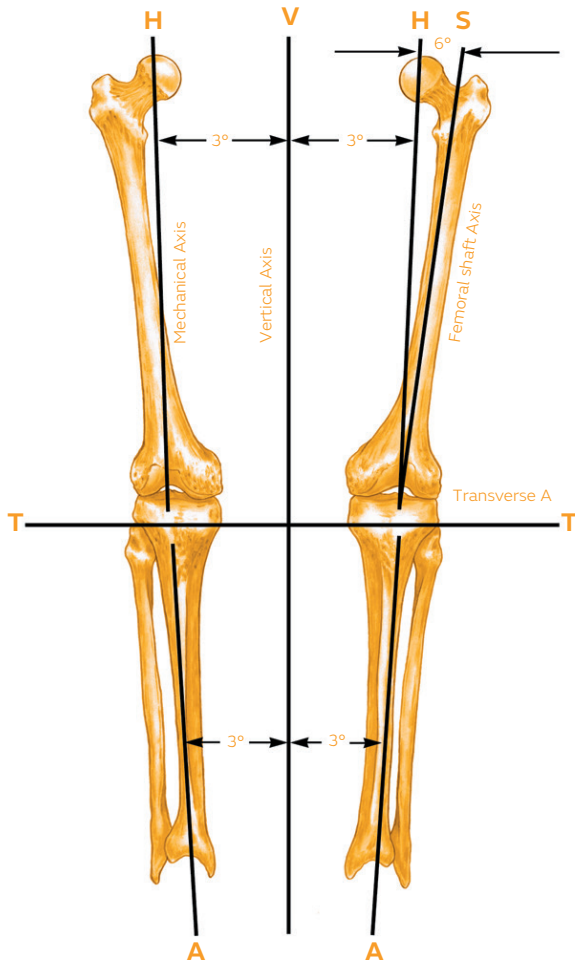
When the PCL is intact, the LEGION CR femoral component can be used with the CR, CRHF, Medial Stabilized or Deep Dished insert.

When the PCL is resected, the LEGION CR femoral component can be used with the Medial Stabilized or Deep Dished insert.

LEGION PS Femoral Component

When the PCL is resected, the LEGION PS femoral component can be used with the PS, PSHF or Constrained inserts. The Constrained insert can be used to provide additional varus/valgus stability for patient's requiring additional constraint to best balance the soft tissue.





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.

Pin Offerings

Cat. Item	Description	Quantity per package
74013480	Non-headed 65mm SPEED Pin	3
74013472	Headed 65mm SPEED Pin	3
74016466	MIS Headed 65mm Pin	3
74013471	Headed 45mm SPEED Pin	3
74016465	MIS Headed 45mm Pin	3
71512449	Short Bone Spike	6

Distal Femur

Instrument Assembly: Adjustable Femoral Alignment

1. Attach the Adjustable Valgus Bridge to the Adjustable Valgus Guide. Dial on the bridge should point towards the button on the Valgus Guide (**Figure 1**).

Note: The Adjustable Valgus Bridge was designed to move anterior and posterior within the Adjustable Valgus Guide to accommodate various patient morphology.

2. Attach the IM rod to the T-handle and insert through the alignment assembly (**Figure 3**). IM rod will lock into the alignment assembly in one of three places (**see Figure 2**).

Note: There are two locking positions on the IM Rod. If the alignment assembly can make a full rotation around the IM Rod, the second lock has not engaged. Remove the IM Rod and reengage.

3. Attach the Distal Femoral Cutting Block onto the Bridge. Positioning the Block and the dial on the adjustable bridge at the primary ("0") resection level will ensure the cut will equal the distal thickness of the femoral prosthesis (**Figure 4**).

Note: The Distal Femoral Cutting Block is designed to pivot medial and lateral to accommodate various patient morphology.

Tip: If surgeon preference is to pin the -2mm pin holes initially, it is recommended to add the Wide Distal Cut Block to the set.

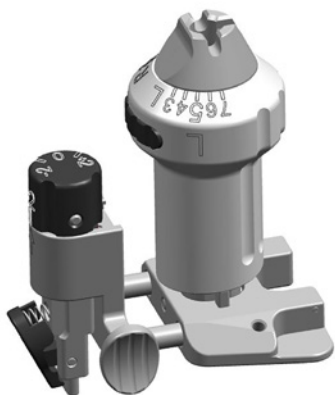


Figure 1

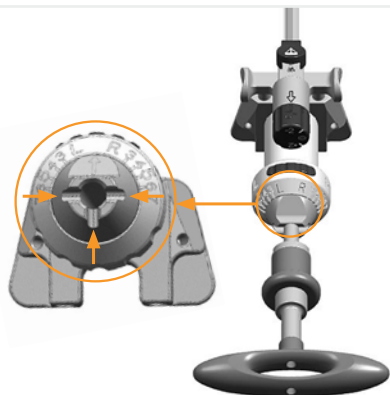


Figure 2

Figure 3



Figure 4



Adjustable Valgus Guide
74034197



Adjustable Valgus Bridge
74016203



T-Handle
71674576



IM Rod
Long 74016211
Short 74016212



Distal Cutting Block
74016205



Figure 5

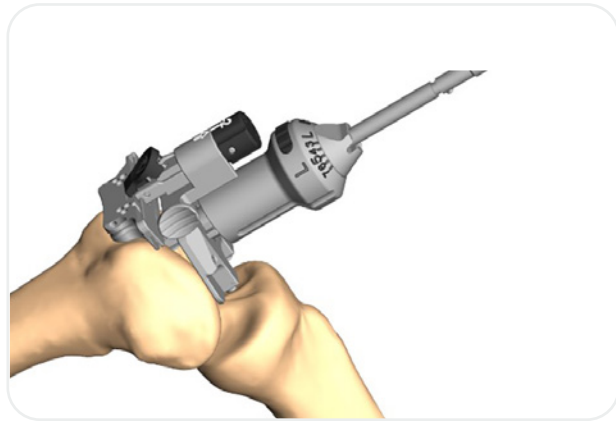


Figure 6

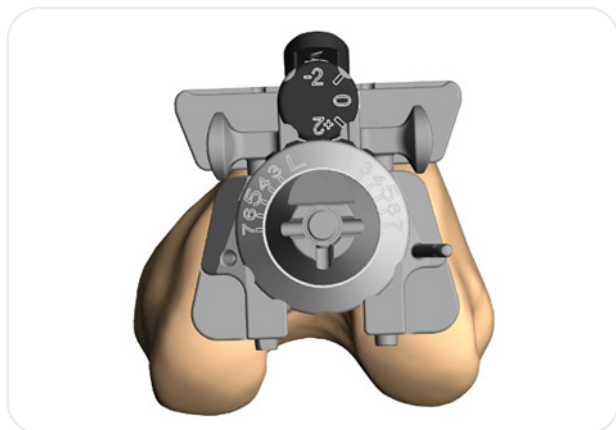


Figure 7

Distal Femur

Intramedullary alignment

1. Open the femoral canal with the 9.5mm Intramedullary Drill. The drill has a 12mm step to open the entry point further (**Figure 5**).

2. Slide the Intramedullary Rod of the alignment assembly into the femoral canal until the Valgus Guide contacts the distal femur (**Figure 6**).

Note: There may be times when only one side of the guide will touch bone.

Tip: To avoid a shallow distal resection, it is recommended to not push the Bridge all the way into the Valgus Guide until it has been seated on the distal surface.

Tip: Alternately, the Bridge can be assembled after seating the Valgus Guide onto the distal femur.

3. Push the button on the Valgus Guide and rotate ("L" for a left knee, "R" for a right knee) to set the valgus angle (3°, 4°, 5°, 6°, or 7°).

Tip: This angle may be set before inserting the IM rod into the canal.

4. Orient rotation of the assembly neutral to the posterior condyles (**Figure 7**) insert a headed or non-headed 65mm pin into one or both of the oblique pin holes.

Note: Distal Cutting Guide will pivot to conform to the anterior bone geometry.



Adjustable Valgus Guide
74034197



Adjustable Valgus Bridge
74016203



T-Handle
71674576



IM Rod
Long 74016211
Short 74016212



Distal Cutting Block
74016205



Intramedullary drill,
9.5mm
74012111



SPEED PIN
Non-Headed 65mm
74013480

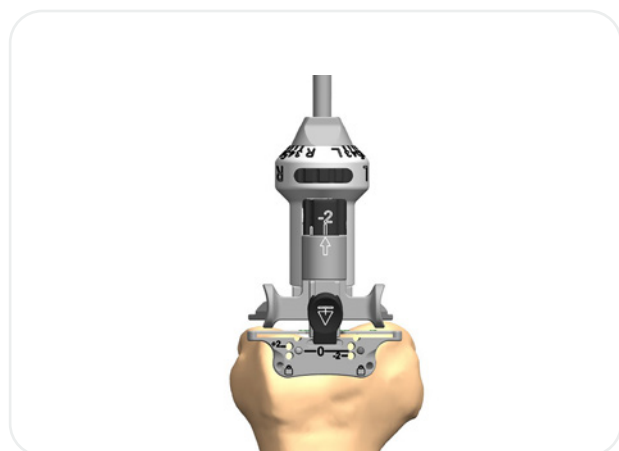


Figure 8



Figure 9

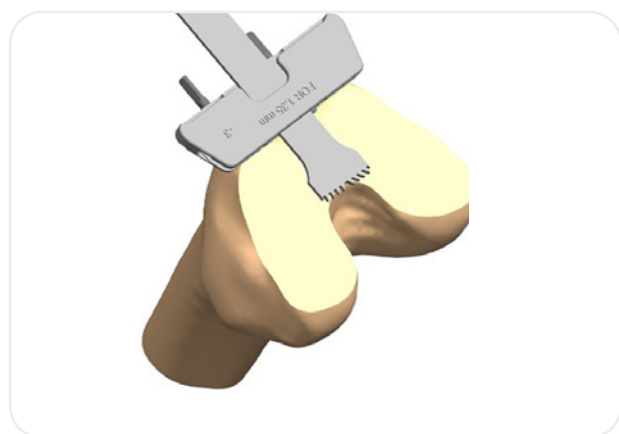


Figure 10

Distal Femur

Distal Resection

1. With the Adjustable Valgus Bridge dial set to 0mm, using non-headed 65mm pins, pin the Distal Femoral Cutting Block to the Anterior Femur using the holes marked '0'. Once adequate distal femoral resection is noted, headed or non-headed 65mm pin should be placed in one or both oblique pin holes for additional stability (**Figure 8**).

Tip: The resection level can be adjusted before pinning the Distal Block by using the dial on the Valgus Bridge. +2mm or -2mm can be dialed in prior to resection.

Note: Resection level can also be adjusted using the alternate pin holes on the Cutting Block, -2mm or +2mm of bone.

Tip: The chamfer on the -2mm pin holes of the Standard Distal Cutting Block may cause pins to become stuck in the Block. Place pin into pinhole before starting power.

Tip: The oblique pin holes on the Distal Cut Block may come in contact with the IM rod. If any resistance is present, stop and assess.

2. Push the button on the Valgus Bridge (**Figure 9**) to remove the alignment assembly from the incision site. Only the Distal Cutting Block should remain on the Femur.
3. Resect the distal femur (**Figure 10**) then remove the Distal Femoral Cutting Block.

Tip: If the distal femoral resection is not adequate, remove the oblique pin, and reposition the Block through the pin holes marked +2mm and re-insert the oblique pin.



Adjustable Valgus Guide
74034197



Adjustable Valgus Bridge
74016203



T-Handle
71674576



IM Rod
Long 74016211
Short 74016212



Distal Cutting Block
74016205



SPEED PIN
Non-Headed
65mm
74013480

Proximal Tibia

Instrument Assembly: Macro Tibial Alignment

1. Attach the EM Posterior Slope Guide to the Ankle Clamp (**Figure 11**) by depressing the button on the Slope Guide and slide to the desired position.

Tip: The neck on the Slope Guide should orient toward the arms and dials of the Ankle Clamp.

Note: Each tooth is 1mm apart.

2. Attach the Macro EM Tibial Alignment Tube to the EM Posterior Slope Guide by depressing the inferior button on the Alignment Tube (**Figure 12**) and sliding to the desired position. Once the button is released, the height will be locked in position.

Tip: The inferior button on Alignment Tube should face away from the arms of Ankle Clamp.

Note: Each tooth is 1mm apart.

3. Attach the appropriate hand Cutting Block to the Alignment Tube by depressing the superior button on the Alignment Tube (**Figure 13**).



Figure 11



Figure 12



Figure 13



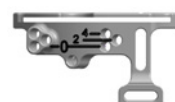
Ankle Clamp
74016241



EM Posterior
Slope Guide
74016231



EM Macro
Alignment Tube
74016232



Tibial Cutting Guide
3 Degree
Left 74016216
Right 74016217

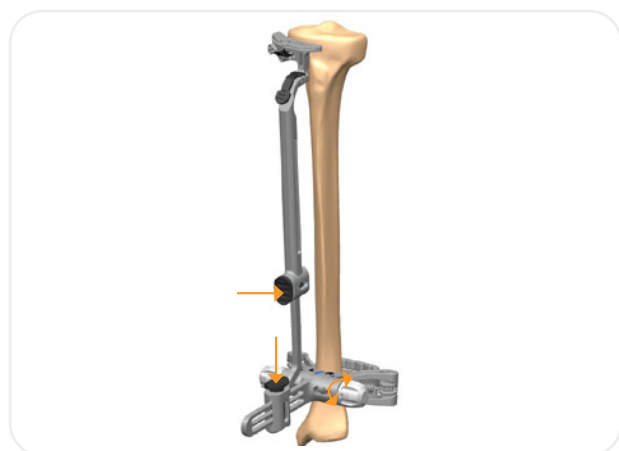


Figure 14

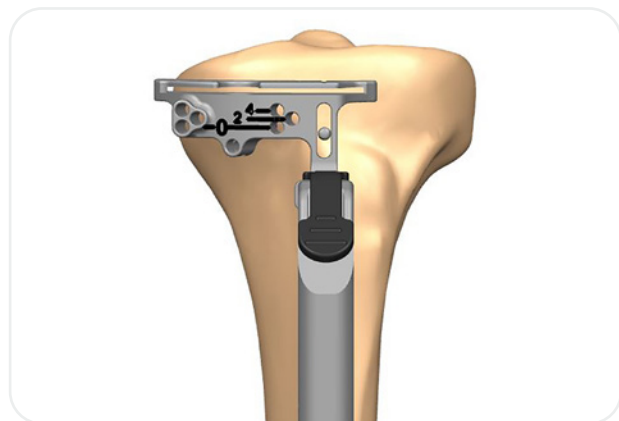


Figure 15



Figure 16

Proximal Tibia

Extramedullary Alignment

1. Open the arms of the ankle clamp and attach alignment jig to the tibia. Adjust height and distance from tibia by depressing the buttons on the Macro Alignment Tube and EM Posterior Slope guide, respectively (**Figure 14**).
2. Once approximate resection level is set, use a headed 45mm pin to pin through the provisional slot in the Tibia Cutting Block (**Figure 15**).
3. Insert Adjustable Footed Tibia Stylus into the saw slot of the Cutting Guide (**Figure 16**).
4. Adjust the stylus to desired resection level by rotating the dial.

Note: The dial on the stylus adjusts from 2mm – 13mm in 1mm increments.

Tip: A 9mm resection is recommended since 9mm of metal and plastic is the thinnest available component.

Tip: Depending on provisional position, it may be necessary to depress the inferior button of the Alignment Tube while setting resection depth via the stylus. Alternately, this resection level may be set prior to attaching the jig to the patient.

Recommended Posterior Slope

LEGION CR/CRHF	≥5°
LEGION MS/DD (with PCL)	≥5°
LEGION MS/DD (no PCL)	3°
LEGION PS/PSHF	3°

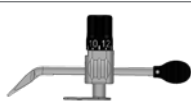
Note: 3° and 5° tibial cutting guides are available



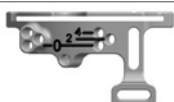
Ankle Clamp
74016241



EM Macro
Alignment Tube
74016232



Adjustable
Footed Stylus
71674576



Tibial Cutting Guide
3 Degree
Left 74016216
Right 74016217



SPEED PIN
Headed 45mm
74013471
MIS Headed 45mm
74016465



Figure 17

Proximal Tibia

Proximal Resection

1. With the Adjustable Tibia Stylus set to the desired resection level, using non-headed 65mm pins, pin the cutting guide in position through the holes marked '0.' For additional fixation, a headed or non-headed 65mm pin can be inserted through the oblique pin hole.

Note: To do an extramedullary alignment check, remove alignment tube and replace with the EM alignment guide handle. Place the extramedullary alignment rod through the EM alignment guide handle (**Figure 17**).

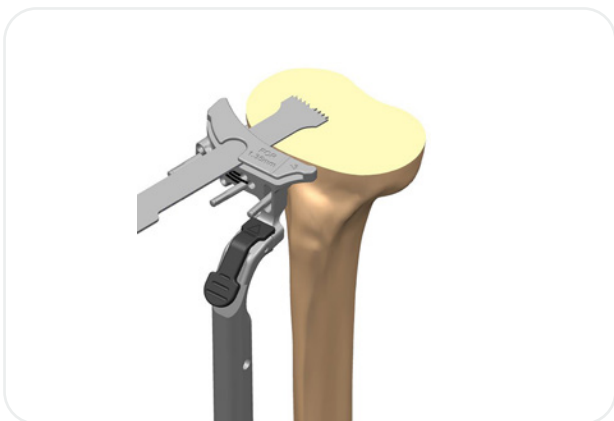


Figure 18

2. Remove the Tibia Stylus. Resect the proximal tibia (**Figure 18**) and remove the cutting guide.

Note: If an uncaptured saw cut is desired, the resection can be performed by cutting on top of the Block. An additional 3mm will be needed to account for this offset.

Tip: If additional resection is needed, the cutting guide can be shifted to the holes marked '2' or '4' for an additional +2mm or +4mm of resection, respectively.

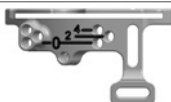
3. To remove assembly, depress the superior button on the Alignment tube to disengage from the Cutting Block.



EM Macro
Alignment Tube
74016232



Adjustable
Footed Stylus
71674576



Tibial Cutting Guide
3 Degree
Left 74016216
Right 74016217



SPEED PIN
Non-Headed 65mm
74013480



EM Alignment
Guide Handle
74016213



VNR Extramedullary
Alignment Rod
71440302

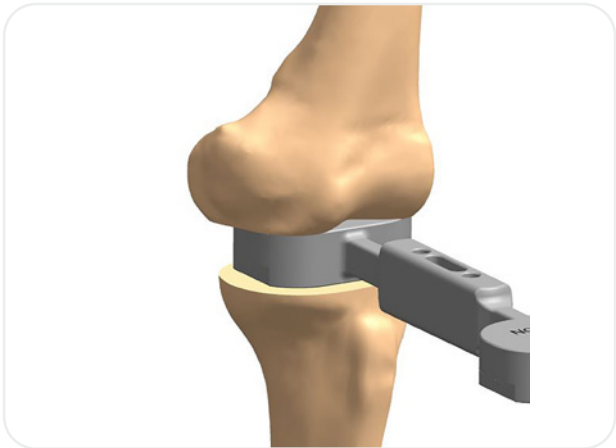


Figure 19

Extension gap assessment

Note: If performing a Posterior Stabilized surgery and the PCL has not already been removed, excise completely the entire PCL attachment from the femoral intercondylar 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.

Tip: 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.

Ensure that all posterior osteophytes are removed prior to assessing the extension gap. Posterior osteophytes at this stage may result in inaccurate balance once all resections are performed.

- 1. The 9mm end of the Extension Spacer Block should easily insert into the extension gap (**Figure 19**).
- 2. In addition to using the 10mm end, shims (11mm, 12mm, 13mm, etc) can be added to the 9mm end to adjust thickness and determine extension space.

Tip: The Extramedullary Alignment Rod can be inserted through the Extension Spacer Block to check limb alignment.



Extension Spacer Block
74016254



Spacer Plate Shim
11mm 74016257
12mm 74016258
13mm 74013721

15mm 74013722
18mm 74013723



VNR Extramedullary Alignment Rod
71440302

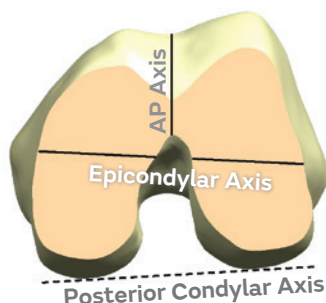


Figure 20

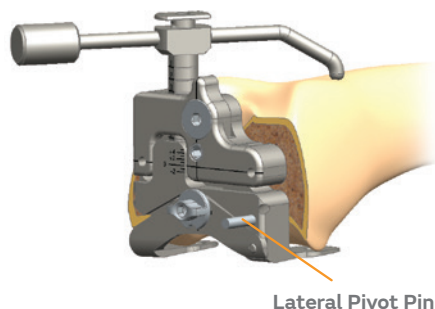


Figure 21

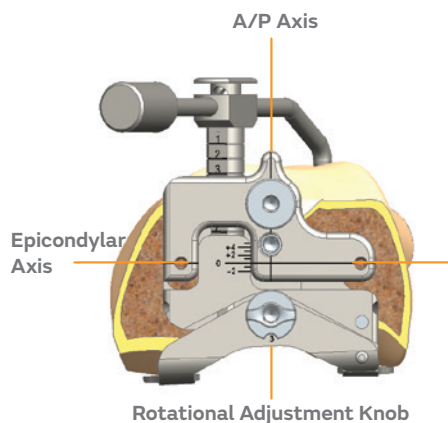


Figure 22

Femoral positioning and sizing

1. Flex the knee, approximately 90° so the posterior condyles are accessible.
2. Optional: Mark the A/P and epicondylar axes on the femur (**Figure 20**).
3. Place the appropriate sizing guide (left or right) flush against the resected distal femur. Ensure the posterior paddles are contacting the underside of both posterior condyles. Once correct position of sizing guide is established, place a pin through the hole just above the lateral paddle (**Figure 21**).
4. Ensure the medial paddle contacts the posterior medial condyle. Begin with the rotational knob set to 3°. If adjustment is needed, use a hex screwdriver to align laser marks (**Figure 22**) with epicondylar and/or A/P axis.
5. Ensure the Anterior/Posterior position is set to '0'.



Sizing Guide
Left 71440007
Right 71440008



Sizing Stylus
 71441140



Hex Screwdriver
 115035



SPEED PIN
Non-Headed 65mm
 74013480

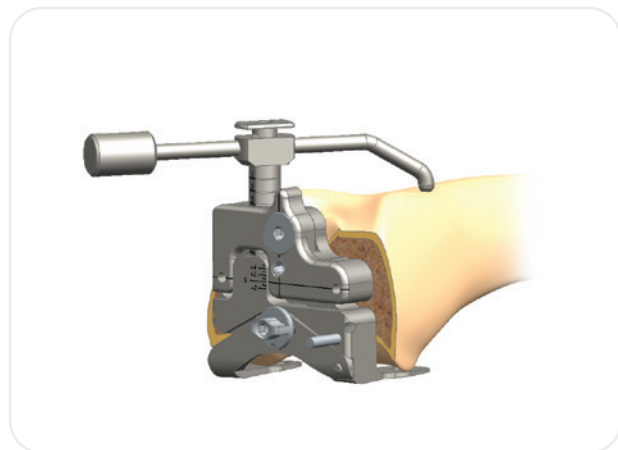


Figure 23

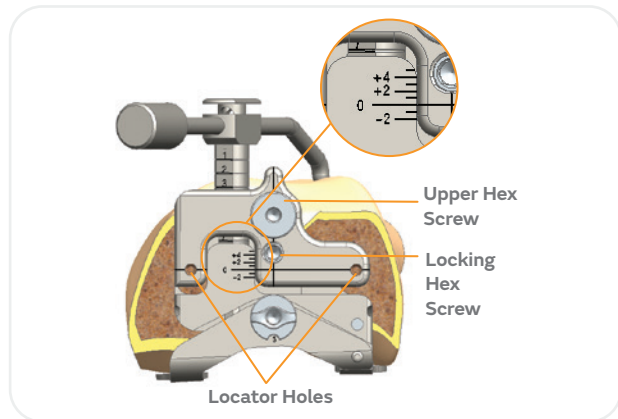


Figure 24

Femoral positioning and sizing

6. Attach the LEGION Sizing Stylus to the guide.

Position the sizing guide stylus so that it contacts the lateral ridge of the anterior femoral cortex (highest point on the anterior cortex of the femur) (**Figure 23**).

7. Determine the size of the component from the graduations on the shaft of the stylus

For Fixed Posterior Referencing, choose the larger size if in between sizes.

For Adjustable Anterior Referencing, use the upper hex screw to shift the sizing guide. Shift anterior (up to '+4') for the next smaller size, or posterior (up to '-2') for the next larger size). Turn the locking hex screw to select this size and position (**Figure 24**).

Note: Anterior Shift (+) of the Sizing guide increases the posterior resection. Similarly, Posterior Shift (-) of the Sizing Guide takes more bone off the anterior cortex.

Design note: The AP difference between LEGION TKS femoral implant sizes varies but ranges between 3-4mm. See page 27 for AP Box Dimensions.

8. Drill the locator holes to set the position for the Cutting Block.
9. Remove the pins and the sizing guide.



Femoral A/P and Chamfer Resections

1. Position the fixed spikes on the A/P Cutting Block into the predrilled holes. Use a mallet to ensure the Cutting Block is flush with the resected distal femur.

Tip: It is not necessary that the Block be centered M/L on the distal femur.

2. Place one pin centrally through one of the middle holes just medial or lateral to the quick-connect attachment. For additional stability, a headed pin may be placed through one or both of the holes on the medial or lateral side of the Block (**Figure 25**).
3. Complete the anterior, posterior and chamfer cuts (**Figures 26-29**). The Block is designed to allow for angling of the sawblade during the cuts.

Tip: To maintain Block stability, the anterior chamfer cut should be completed last.

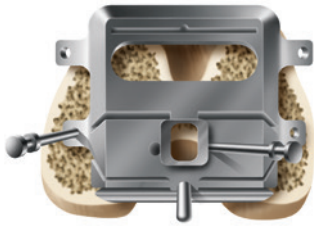


Figure 25

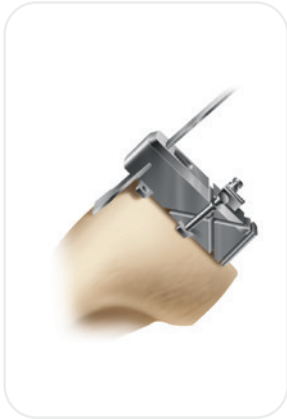


Figure 26



Figure 27



Figure 28



Figure 29



SPEED PIN
Headed 45mm
 74013471
MIS Headed 45mm
 74016465



A/P Cutting Block
Size 5 71441153

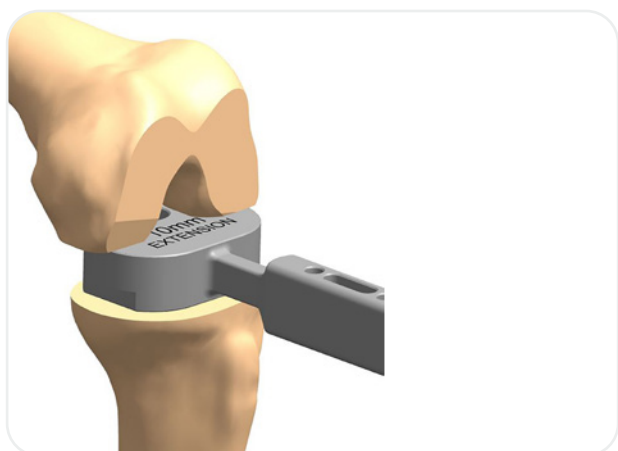


Figure 30

Resected Flexion Gap Assessment

1. The 9mm end of the Extension Spacer Block should easily insert into the flexion gap (**Figure 30**).
2. In addition to using the 10mm end, shims (11mm, 12mm, 13mm, etc) can be added to the 9mm end to adjust thickness and determine flexion space.



Extension Spacer Block

74016254



Spacer Plate Shim

11mm 74016257

12mm 74016258

13mm 74013721

15mm 74013722

18mm 74013723



Figure 31

Downsizing the Femoral Component

1. Attach the downsizing drill guide to the cut femur, placing the spikes on the back of the plate into the same location holes used for the A/P Cutting Block (**Figure 31**).
2. Drill new location holes through the downsizing drill guide (shifted 1, 2 or 3mm).
3. Place the smaller A/P Cutting Block into the new location holes. Redo the posterior, anterior and chamfer cuts.

Tip: It is useful to mark the original pin track holes with a marking pen to properly identify the new holes.



Downsizing Drill Guide
71440860



Figure 32

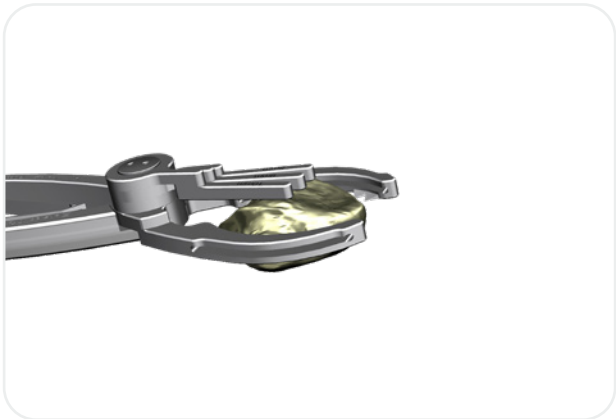


Figure 33

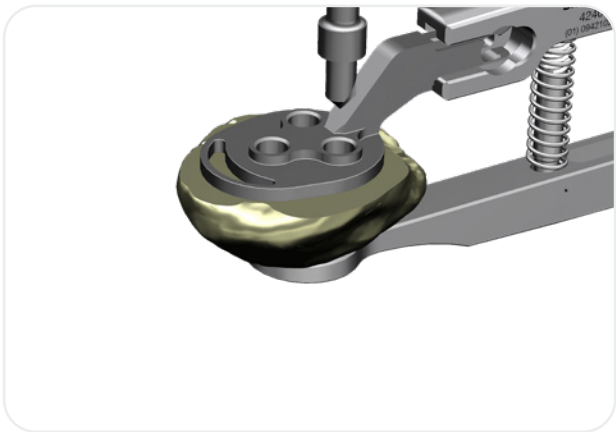


Figure 34

Patella Preparation: Resection Technique

1. Measure the overall thickness of the patella with the Caliper and assess how much bone to remove based on selected patella implant thickness (**Figure 32**).
- Note:** Round patella options come in 9mm and/or 7.5mm. See chart below for Oval patella options.
2. Determining the depth of cut (usually based on patella implant thickness) and dial in the stylus on the patella saw guide to have the corresponding resection level. Clamp the patella between the jaws of the guide (**Figure 33**).
- Note:** It is recommended to leave at least 12mm of residual patella to minimize the risk of fracture.
3. Resect the patella through slots of the dedicated saw guides (**Figure 33**).
4. Assess size (diameter) of the patella with the sizing guides.
5. Select the appropriate diameter Patella Drill Guide and slide it onto the Resection Patella Clamp. Attach the Assembly to the resected patella and tighten to 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 (**Figure 34**).
7. Remove the Patella Resection Clamp and Drill Guide from the patella.
8. Place the Round Patella Trial onto the resected patella. Use the Caliper to reassess the patella thickness.

Oval Patella sizing options

Diameter	Thickness
29mm	8.5mm
32mm	9.0mm
35mm	9.0mm
38mm	9.5mm
41mm	10.0mm



Classic Patella
Saw Guide
42404211



Sizing Guides
74015461



Resection Clamp
42404321



Peg Drill Guide
4240436X



Peg Drill
74014748



Figure 35

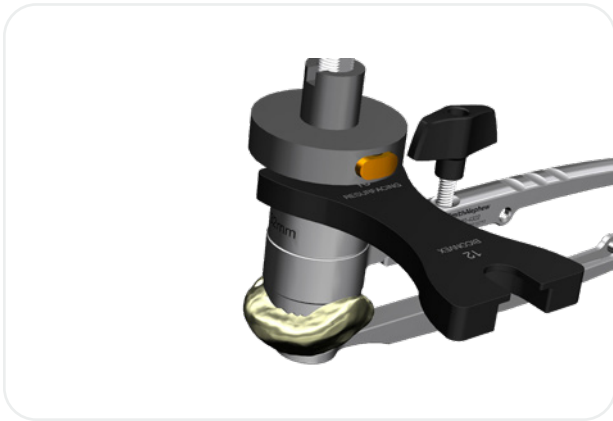


Figure 36

Patella Preparation: Reaming Technique

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.

Evert the patella, or at least partially evert the patella to 90°, measure its thickness and determine the appropriate diameter implant.

1. Measure the overall thickness of the patella with the caliper. Assess how much bone to remove based on selected patella implant thickness (**Figure 35**).

Note: It is recommended to leave at least 12mm of residual patella. Depth gages allows 10mm and 12mm depth of ream (**Figure 36**).

2. Attach the Reaming Patella Clamp with appropriate collet, based on patella diameter, to the patella and tighten the reamer guide on the patella.
3. Attach the Patella Reamer Shaft with depth stop to the drill and lower the reamer through the Patella Clamp until the reamer dome contacts the patella.
4. Place the Depth Gage on the top of the patella collet around the reamer shaft. Use Biconvex side of depth gage if using biconvex patella implant. Use Resurfacing side if using Round patella implant (**Figure 36**).
5. Lower the Patella Depth Stop until it contacts the Patella Depth Gage.
6. Remove the Depth Gage.
7. Ream the patella until the depth stop engages the patella clamp (**Figure 36**).



Calipers
114943



Reaming Clamp
42404322



Reaming Collet



Depth Gage
42407380



Reamers



Depth Stop
71440427

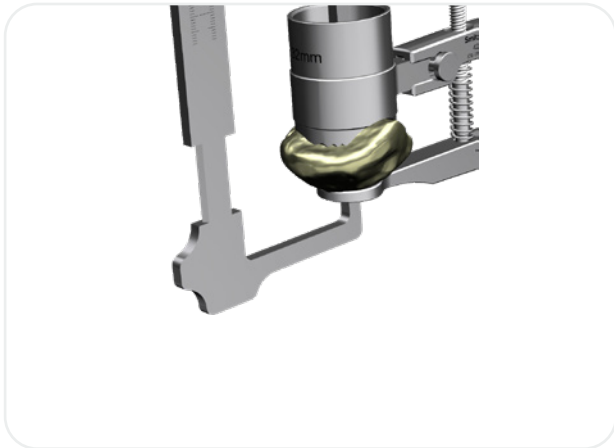


Figure 37



Figure 38

Patella Preparation: Reaming Technique

Biconvex patella (inset)

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.

Round patella (onset)

9. If the Round Patella design is selected, use the Caliper to reassess the patella thickness (**Figure 37**).
10. Remove the Patella Reamer Collet from the Patella Reamer Guide.
11. Select the appropriate diameter 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 (**Figure 38**).
12. Use the Patella Peg Drill to drill the three pegs through the Patella Drill Guide until the drill bottoms out in the guide (**Figure 38**).
13. Remove the Patella Reamer Guide and drill guide from the patella.
14. Place the Round Patella Trial onto the resected patella. Use the Patella Caliper to reassess the patella thickness.

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 Patella Depth Stop engages the Patella Reamer Collet.



Peg Drill
74014748



Peg Drill Guide
4240436X

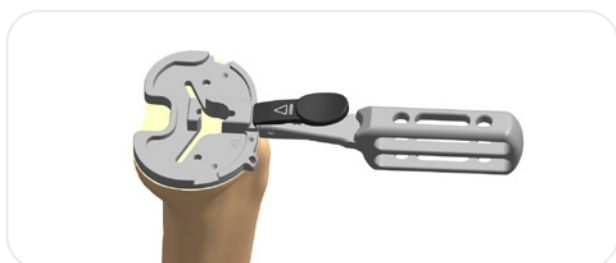


Figure 39

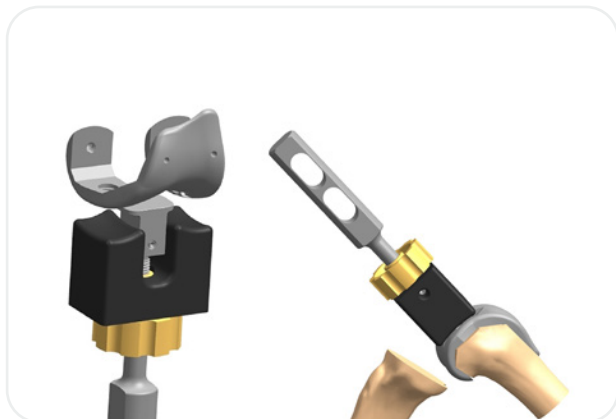


Figure 40

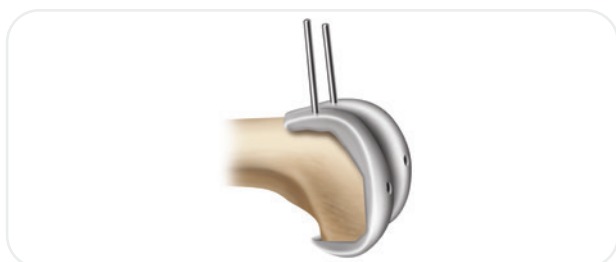


Figure 41

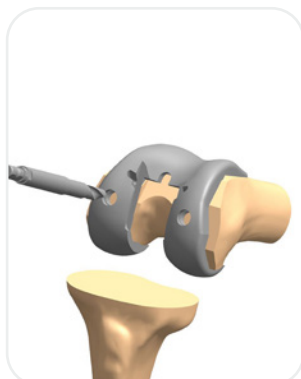


Figure 42

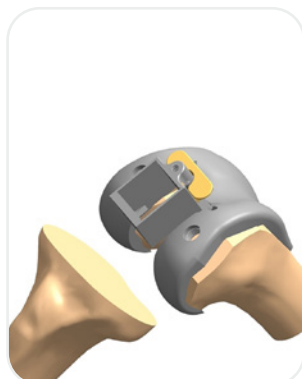


Figure 43

LEGION[®] CR and PS Trialing and Preparation

1. Select the baseplate trial based upon best fit and coverage on the resected tibia. Typically, this is one size below the femoral component size. Set position of the tibial baseplate based upon the anatomic landmarks of the tibia (best fit coverage and medial third of the tubercle). Alignment can be confirmed at this point by dropping an alignment rod through the EM Alignment Guide Handle. Pin the baseplate using one or two short spikes (**Figure 39**).

Tip: If desired, for additional fixation, a headed 45mm pin can be used in the anterior medial pin hole.

2. Flex the knee to 90° and insert the Femoral Trial using the Femoral Trial Impactor (**Figure 40**).
3. Pin the femoral trial through the anterior flange (**Figure 41**). Loosen the lock knob of the Femoral Trial Impactor and remove anteriorly, leaving the trial in place.
4. For Cruciate Retaining femorals, prepare the femoral lug holes through the femoral trial with the Femoral Lug Drill (**Figure 42**).
5. For Posterior-Stabilized femorals, insert the appropriate size Housing Resection Collet. Attach the Collet to the femoral trial by sliding the Housing Collet (anterior to posterior) into the slots on the distal face of the femoral trial (**Figure 43**).



Universal Tibia
Baseplate Trial
74033814



EM Alignment
Guide Handle
74016213



Femoral Trial
Impactor
71440009



Legion CR Ream-
Through Femoral Trial
Left size 5 71433345



Femoral Lug Drill
74016421



Housing Resection Collet
Size 1-2
71434423
Size 3-8
71434424



Figure 44

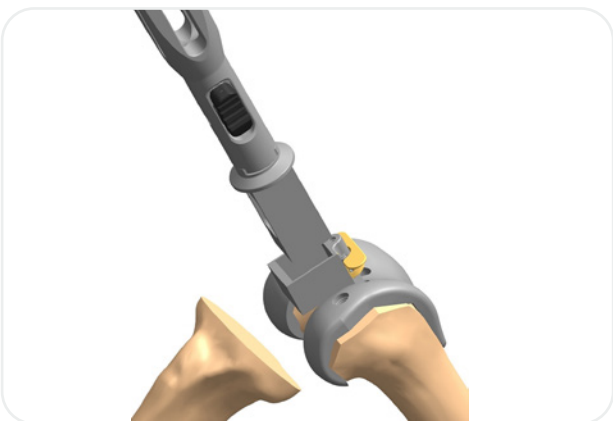


Figure 45

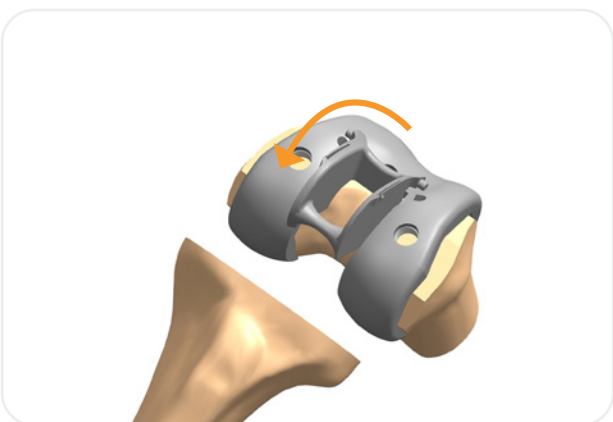


Figure 46

LEGION® CR and PS Trialing and Preparation

6. Insert the PS Box Reamer into the Resection Collet and ream until the reamer contacts the Collet (**Figure 44**). Ream in the posterior position first, then slide collet anterior and ream again.

Tip: If the power equipment has “Drill” and “Reamer” settings, ensure “Drill” setting is selected and allow the PS Box Reamer to reach maximum speed before engaging the bone.

7. Connect the Modular Box Chisel (**Figure 45**) to the Modular Impact Handle. Insert the Chisel into the Collet and impact until flush. Slide collet and chisel again. Use underside of strike plate to remove.
8. Remove Resection Collet.
9. Remove any remaining bone debris within the box preparation area.
10. Select the appropriately sized Femoral Trial Cam Module (matching the femoral trial size selected.)
11. Insert the arms of the femoral cam module into the anterior aspect of the femoral trial box and rotate posteriorly until seated (**Figure 46**).

PS Box Reamer
74016269

Modular Impact
Handle
74016242

Modular Box
Chise
74016248

Femoral Cam Trial
Size 5 71433365



Figure 47



Figure 48

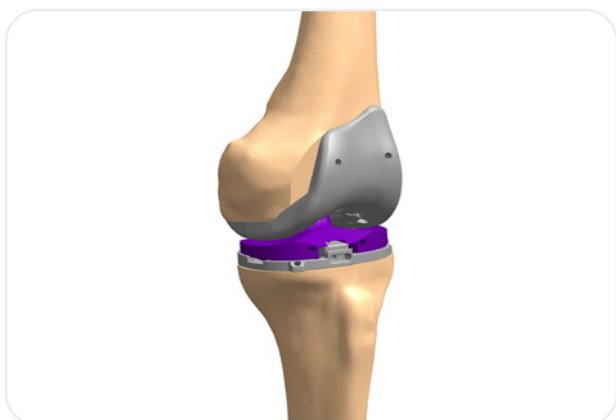


Figure 49

Femoral and Tibial Trialing

1. Place the appropriate size and desired thickness Articular Insert Trial onto the Tibia Baseplate Trial.

Tip: Connect the Articular Insert Trial Adapter to the EM Alignment Guide Handle to aid in trial insertion (**Figure 47**).

Note: To trial thicknesses 11mm and higher, assemble the appropriate thickness Universal Insert Spacer with the 9mm Articular Insert Trial.

2. Perform trial range of motion and assess laxity and balance, and optionally, Tibial Baseplate Trial position (**Figure 48**).

Optional: Extend the knee fully, attach the EM Handle to the baseplate trial. Pass an alignment rod through the handle to assess full-leg alignment.

3. Once the trial assessment is completed and the correct insert thickness has been determined, take the leg into full extension (**Figure 49**). Mark the location of the laser etch lines on the anterior cortex of the tibia to reference the baseplate rotation.

Tip: In most cases, rotational alignment of the tibial baseplate based upon 1) best fit and coverage, 2) the medial third of the tubercle, and 3) the cautery mark will all match.

Tip: The center-line marks on the femoral and tibial trial components should line up.



Insert Trial
71434623



Universal Tibia
Baseplate Trial
74033804



Insert Trial
Pitchfork
74034196



Universal Insert
Spacer
74016263



Universal Pin
Driver
71513331



Figure 50

Tibial Keel Preparation

4. Once the trial assessment is complete, and final implant positions are determined, remove the Insert Trial and Femoral Trial.
5. Use the Tibial Drill to prepare the canal.

Note: An alternative method to setting tibial rotation is to use the tibia trial bullet. This can be used once the central canal has been prepared but before the keel preparation. With the tibial trial not pinned to the tibial surface, insert the bullet through the baseplate trial into the prepared canal, insert desired articular insert trial and appropriate femoral trial. Assess baseplate rotation and mark correct position. Then pin the baseplate trial, remove bullet, and prepare keel.

6. Connect the appropriate size Modular Fin Punch to the Modular Impact Handle (**Figure 50**). Impact through the baseplate trial. Use the underside of the strike plate to remove.

Tip: If the tibial bone is sclerotic, begin the fin slot with a burr or thin sawblade before using the fin punch to prevent tibial fracture.

7. Remove the two short bone spikes and anterior pin, if used, 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.



Modular Impact Handle
74016242



JOURNEY II Removal Tool
74012826



Modular NP Fin Punch
74016245



11mm Tibial Drill
71440040



Tibia Bullet
71442196

Final Implantation

Femoral Component

1. Flex the knee to 90°, apply generous amounts of cement to the dry inside surfaces of the femoral component and onto the prepared surfaces of the bone.

Tip: 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.

2. Place the Femoral Component onto the Femoral Impactor (**Figure 51**) and then the assembly onto the femur (**Figure 52**). Use the Femoral Impactor to seat the implant.
3. Connect the Modular LEGION® Femoral Impactor to the Modular Impact Handle for final impactions (**Figure 53**).
4. Remove excess cement. Extend the knee to remove cement anteriorly without retracting the proximal soft tissue.



Figure 51



Figure 52



Figure 53

OXINIUM® CR
Impactor (Universal
Impactor)
71440890

PS Femoral Impactor
71440005

Modular Impact
Handle
74016242

Modular LEGION
Femoral Impactor
74016250



Figure 54

Final Implantation

Tibial Component

1. Maximally flex the knee.
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.
4. Connect the Modular Tibia Impactor to the Modular Handle. Use a mallet to fully seat the Tibial Baseplate Component onto the proximal tibia (**Figure 54**).

Optional Instrument: Use the Locking Tibia Impactor and a mallet to introduce the Tibial Baseplate Component onto the prepared proximal tibia. Release the locking tabs from the center island of the Baseplate Component. Finish with Modular Handle and Modular Tibia Impactor.

5. Remove excess cement.

Tip: Place the tibial insert trial onto the Tibia implant and extend the leg to pressurize the cement.



Modular Impact
Handle
74016242



Modular Universal
Tibial Impactor
74016249



JOURNEY II Locking
Tibia Impactor
74016268

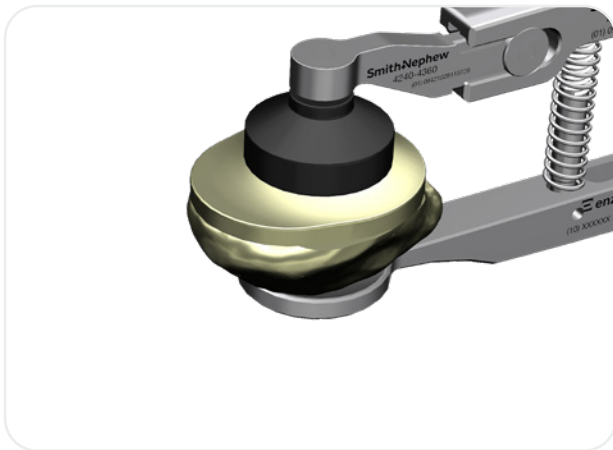


Figure 55

Final Implantation

Patellar Component

1. Assemble the Patella Cement Clamp to the Patellar Reamer Guide.
2. Apply bone cement to the patella component and onto the prepared surface of the patella.
3. Place the patellar implant onto the prepared patella.
4. Clamp the patellar implant into the bone and remove the extruded cement (**Figure 55**).

LEGION® 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.
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 (**Figure 56**).

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.

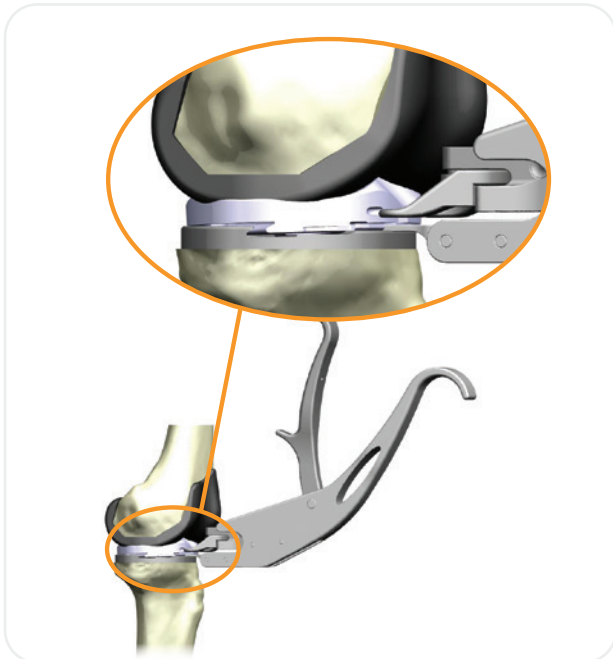


Figure 56



Cement Clamp
42404360



Resection Clamp
42404321



Articular Insert
Assembly Tool
74018911

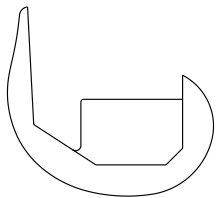
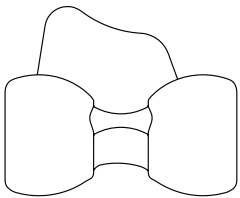
Closure

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.

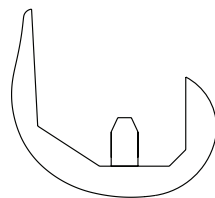
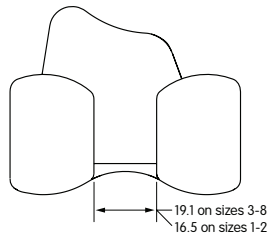
Tip: Closing the knee in flexion may benefit early rehab.

Femoral component dimensions (mm)

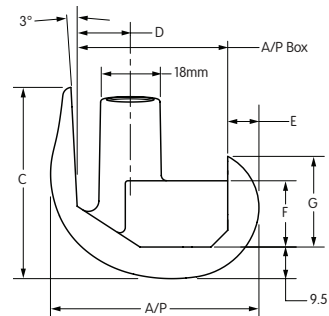
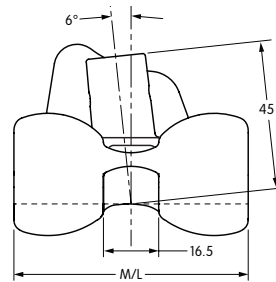
LEGION[®] CR
Femoral Component



LEGION PS
Femoral Component



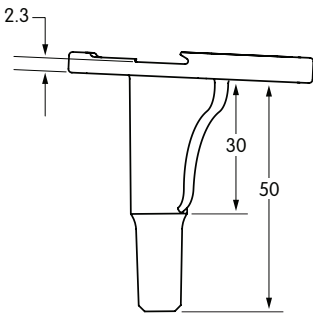
LEGION RK
Femoral Component



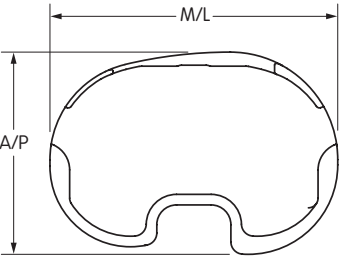
Size	M/L	A/P	C	D	E	F	G	A/P Box
2	58	50	50	12.3	9.5	17.1	24.4	34.3
3N	58	54	50	13.6	9.5	18	25.3	38.1
3	62	55	52	13.6	9.5	18.0	25.3	38.1
4N	62	58	52	14.8	9.5	19.6	26.2	41.7
4	66	59	55	14.8	9.5	19.6	26.2	41.7
5N	66	61	54	15.9	9.5	19.8	27	45
5	70	62	57	15.9	9.5	19.8	27.0	45.0
6N	70	65	56	17	9.5	20.6	28.6	48.3
6	74	66	59	17.0	9.5	20.6	28.6	48.3
7	77	70	61	18.6	11.5	20.2	31.1	50.3
8	80	75	62	19.8	11.5	20.6	32.7	54.9

Tibial Baseplate dimensions (mm)

Cemented Baseplate - Male tapered

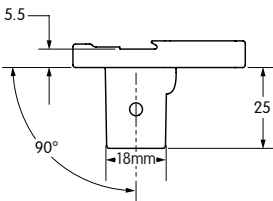


Note: 3° of baseplate slope plus approximately 4° of insert slope yields an effective 7° posterior slope with the final implant



Size	A/P	M/L
1	42	60
2	45	64
3	48	68
4	50	71
5	52	74
6	54	77
7	56	81
8	59	85

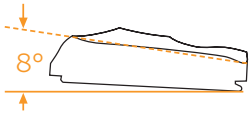
Cemented Baseplate - Female tapered



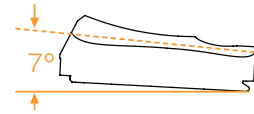
Note: 0° of baseplate slope plus approximately 4° of insert slope yields an effective 7° posterior slope with the final implant

Average slope for tibial inserts

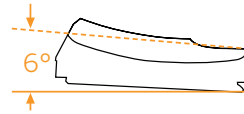
CRHF



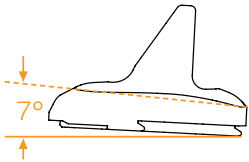
CR



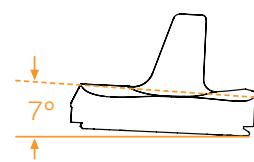
DD



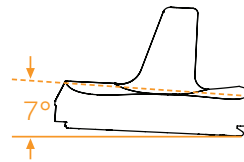
PSHF



PS



Constrained



Note: The composite posterior slope is defined by the bone resection plus the insert slope. The primary baseplate bone resection is made at 3° posterior slope relative to its taper, whereas the revision (RK) baseplate bone resection is made with no posterior slope relative to its taper.

Tibial insert thickness offering

Design	Thickness (mm)							
CRHF/Medial Stabilized	9	10	11	12	13	15	18	
CR	9		11		13	15	18	
Deep Dished*	9	10	11	12	13	15	18	21
PSHF	9	10	11	12	13	15	18	21 25
PS	9		11		13	15	18	21 25
Constrained	9		11		13	15	18	21 25 30
CR All-Poly	9		11		13	15		
PS All-Poly	9		11		13	15		

*XLPE available in certain thicknesses

Tibial insert compatibility

LEGION® CRHF, Medial Stabilized, PSHF Compatibility

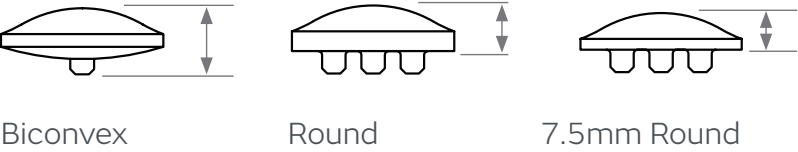
	Femoral Size						
Insert Size	2	3	4	5	6	7	8
1-2	●	●	●				
3-4	●	●	●	●	●		
5-6			●	●	●	●	●
7-8					●	●	●

Note: The Cruciate Retaining Inserts (CR) are completely interchangeable with all sizes of femoral components.

LEGION Deep Dished, PS, Constrained Compatibility

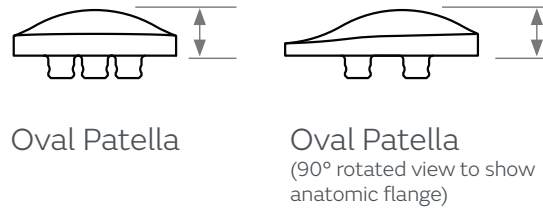
	Femoral Size						
Insert Size	2	3	4	5	6	7	8
1-2	●	●					
3-4	●	●	●	●			
5-6			●	●	●	●	
7-8					●	●	●

Patellar dimensions (mm)



	Thickness (mm)	Diameter			
Biconvex	13	23	26	29	32
Round	9*	26	29	32	35
Round 7.5mm	7.5**	26	29	32	35

* 13mm including peg height.
** 12mm including peg height.



Oval Patella sizing options

Diameter	Thickness (mm)
29	8.5
32	9.0
35	9.0
38	9.5
41	10

Fixed Femoral Alignment Technique

Instrument Assembly: Fixed Femoral Guide

1. Attach the appropriate Fixed Valgus Bushing (4-7 Degrees) to the Fixed Valgus Guide Base.

Tip: Position the bushing such that the appropriate hand (“LT” or “RT”) orients toward “ANTERIOR” on the Valgus Guide.

2. Attach the desired Valgus Bridge to the Valgus Guide Base (**Figure 57**).

Note: The Valgus Bridge was designed to move anterior and posterior within the Valgus Guide to accommodate various patient morphology

3. Attach the IM rod to the T-handle and insert through the alignment assembly (**Figure 58**). IM rod will lock into the alignment assembly in one of four places (**see Figure 59**).

Note: There are two locking positions on the IM Rod. If the alignment assembly can make a full rotation around the IM Rod, the second lock has not engaged. Remove the IM Rod and reengage.

4. Attach the Distal Femoral Cutting block onto the Bridge. Positioning the block and the dial on the adjustable bridge at the primary (“0”) resection level will ensure the cut will equal the distal thickness of the femoral prosthesis (**Figure 60**).

Note: The Distal Femoral Cutting block is designed to pivot medial and lateral to accommodate various patient morphology.

Tip: If surgeon preference is to pin the -2mm pin holes initially, it is recommended to add the Wide Distal Cut Block to the set.

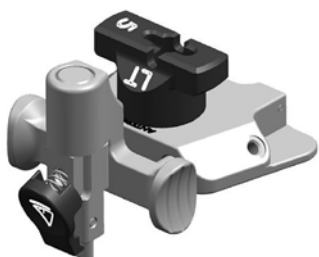


Figure 57



Figure 58



Figure 59

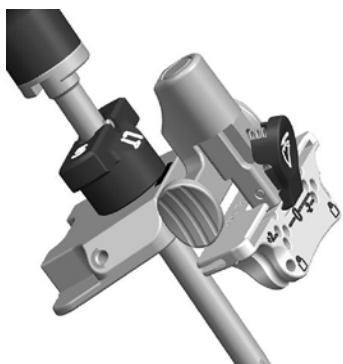


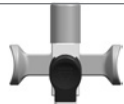
Figure 60



Fixed Valgus Bushing
4 Degrees 74016206
5 Degrees 74016207
6 Degrees 74016208
7 Degrees 74016209



Fixed Valgus Guide Base
 74016200



Fixed Valgus Bridge
 74016202



T-Handle
 71674576



IM Rod
Long 74016211
Short 74016212



Distal Cutting Block
 74016205



Figure 61

Fixed Femoral Alignment Technique

Intramedullary Alignment

1. Open the femoral canal with the 9.5mm Intramedullary Drill. The drill has a 12mm step to open the entry point further (**Figure 61**).



Figure 62

2. Slide the Intramedullary Rod of the alignment assembly into the femoral canal until the Valgus Guide contacts the distal femur (**Figure 62**).

Note: There may be times when only one side of the guide will touch bone.

Note: To avoid a shallow resection, it is recommended to not push the Bridge all the way into the Valgus Guide until it has been seated on the distal surface.

Tip: Alternately, the Bridge can be assembled after seating the Valgus Guide onto the distal femur.



Figure 63

3. Orient rotation of the assembly neutral to the posterior condyles (**Figure 63**) insert a headed or non-headed 65mm pin into one or both of the oblique pin holes.

Note: Distal Cutting Guide will pivot to conform to the anterior bone geometry.



Fixed Valgus Bushing
4 Degrees 74016206
5 Degrees 74016207
6 Degrees 74016208
7 Degrees 74016209



Fixed Valgus Guide Base
 74016200



Fixed Valgus Bridge
 74016202



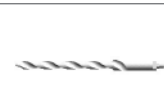
T-Handle
 71674576



IM Rod
Long 74016211
Short 74016212



Distal Cutting Block
 74016205



Intramedullary drill, 9.5mm
 74012111

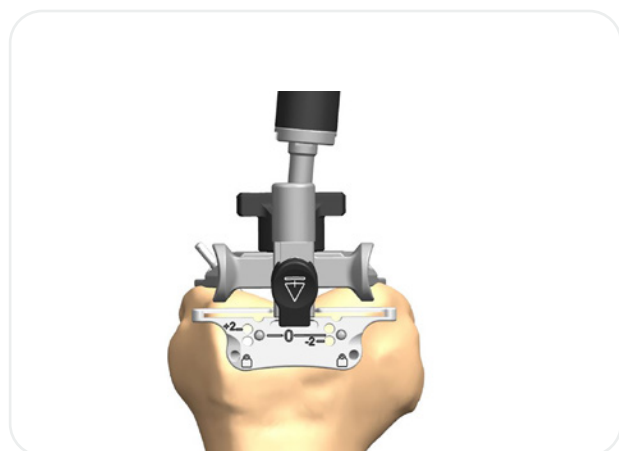


Figure 64

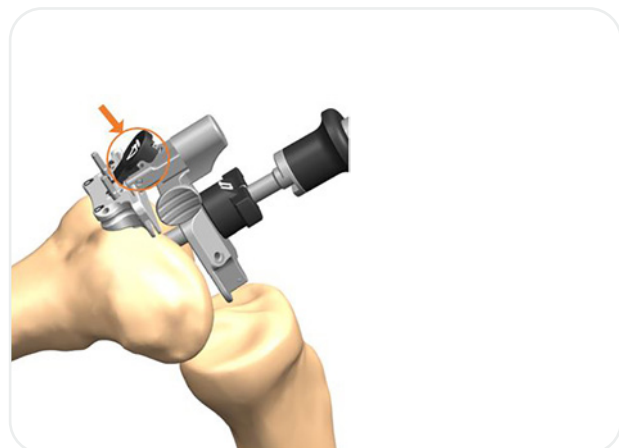


Figure 65

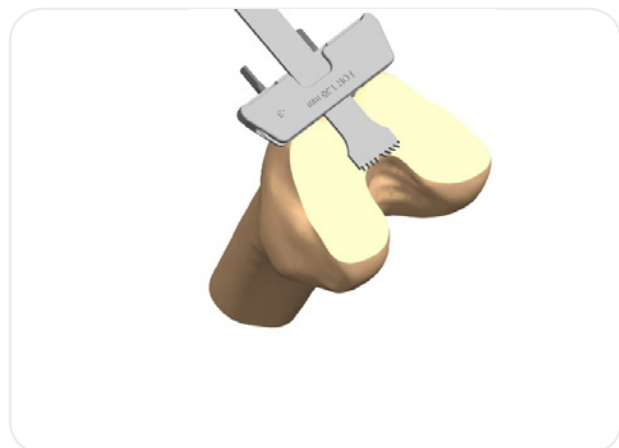


Figure 66

Fixed Femoral Alignment Technique

Distal Resection

1. Using non-headed 65mm pins, pin the distal femoral cutting block to the anterior femur using the holes marked '0'. Once adequate distal femoral resection is noted, a headed or non-headed 65mm pin should be placed in one or both oblique pin holes for additional stability (**Figure 64**).

Note: Resection level can be adjusted using the alternate pin holes on the cutting block, -2mm or +2mm of bone.

Tip: The chamfer on the -2mm pin holes of the Standard Distal Cutting Block may cause pins to become stuck in the block. Place pin into pinhole before starting power.

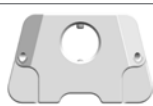
Tip: The oblique pin holes on the Distal Cut Block may come in contact with the IM rod. If any resistance is present, stop and assess.

2. Push the button on the Valgus Bridge (**Figure 65**) to remove the alignment assembly from the incision site. Only the distal cutting block should remain on the femur.
3. Resect the distal femur (**Figure 66**) then remove the distal femoral cutting block.

Tip: If the distal femoral resection is not adequate, remove the oblique pin, and reposition the block through the pin holes marked +2mm and re-insert the oblique pin.



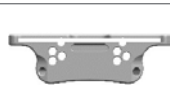
Fixed Valgus Bushing
4 Degrees 74016206
5 Degrees 74016207
6 Degrees 74016208
7 Degrees 74016209



Fixed Valgus Guide Base
 74016200



Fixed Valgus Bridge
 74016202



Distal Cutting Block
 74016205



SPEED PIN
Non-Headed 65mm
 74013480

Kinematic Alignment Instrument Technique

Introduction to Kinematic Alignment

Kinematic Alignment aims to restore the patient's pre-arthritis anatomy by:

1. Restoring the native femoral and tibial articular surfaces
2. Restore the native knee and limb alignments
3. Restore the native soft-tissue laxities of the knee.

The femoral and tibial instruments described in this section will allow for restoration of the patient's knee anatomy by aligning the resections in a way to remove the implant thickness on each condyle accounting for cartilage wear if present.

In this Kinematic Alignment technique, it is assumed that that healthy cartilage is approximately 2mm. Therefore, the target resection depth for a worn condyle would be (Implant Thickness – 2mm).

Kinematic Alignment Instrument Technique

Distal Femoral Alignment Guide Assembly

1. Insert the Fixed Valgus Bridge into the LEGION® Kinematic Alignment Valgus Guide (**Figure 67**).

Note: The Valgus Bridge was designed to move anterior and posterior within the Valgus Guide to accommodate various patient morphology.

2. Attach the Distal Femoral Cutting block onto the Fixed Valgus Bridge (**Figure 68**).

Note: The Distal Femoral Cutting block is designed to pivot medial and lateral to accommodate various patient morphology.

3. Attach the Short IM rod to the T-handle and insert through the alignment assembly (**Figure 69**). IM rod will lock into the alignment assembly in one of four places

Note: There are two locking positions on the IM Rod. If the alignment assembly can make a full rotation around the IM Rod, the second lock has not engaged. Remove the IM Rod and reengage.

4. Assess the distal femoral condyles for cartilage wear (medial, lateral or both), and place a 2mm shim on the worn side/s of the Kinematic Alignment Valgus Guide to accommodate for the cartilage wear (**Figure 70**).

Note: If a distal condyle is partially worn, use a ring curette to remove the remaining cartilage.

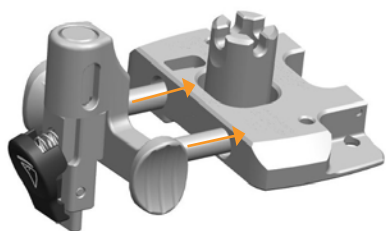


Figure 67

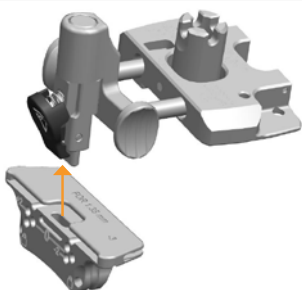


Figure 68



Figure 69

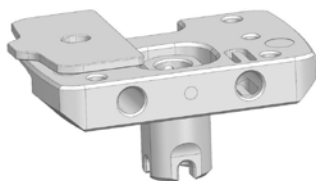


Figure 70



Fixed Valgus Bridge
74016202



LEGION KA Distal Valgus Guide
42407560



Short IM Rod
74016212



Distal Cutting Block
74016205



2mm Distal Cartilage Shim
42407562

Kinematic Alignment Instrument Technique

Placing Femoral Alignment Guide

1. Open the femoral canal with the 9.5mm Intramedullary Drill. The drill has a 12mm step to open the entry point further (**Figure 71**).
2. Slide the Intramedullary Rod of the Kinematic Alignment assembly and pivot the Distal Valgus Guide until both sides contact the distal femur (**Figure 72**). Contacting both sides of the femur ensures that the resection will match the implant thickness accounting for cartilage wear

Note: To avoid a shallow resection, it is recommended to not push the Bridge all the way into the Valgus Guide until it has been seated on the distal surface.

3. Orient rotation of the assembly neutral to the posterior condyles and insert a non-headed 65mm pin into one of the distal holes to maintain rotation (**Figure 73**).

Note: Distal Cutting Guide will pivot to conform to the anterior bone geometry.

4. Using non-headed 65mm pins, pin the distal femoral cutting block to the anterior femur using the holes marked '0'. Once adequate distal femoral resection is noted, a headed or non-headed 65mm pin should be placed in one or both oblique pin holes for additional stability (**Figure 74**).

Tip: The oblique pin holes on the Distal Cut Block may come in contact with the IM rod. If any resistance is present, stop and assess.



Figure 71

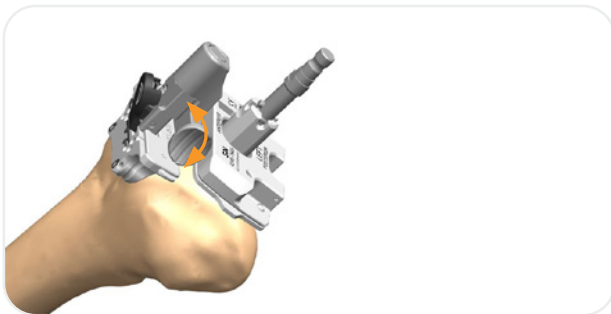


Figure 72



Figure 73

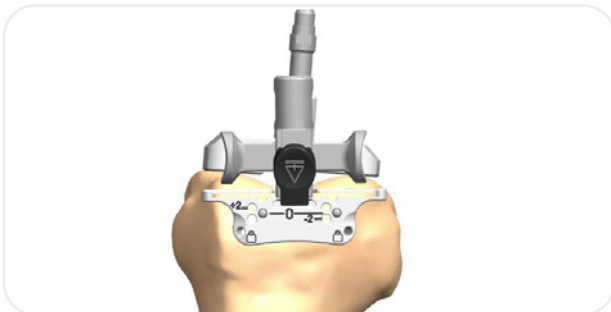


Figure 74



Intramedullary
drill, 9.5mm
74012111



Fixed Valgus
Bridge
74016202



LEGION KA Distal
Valgus Guide
42407560



Short IM Rod
74016212



Distal Cutting Block
74016205



2mm Distal
Cartilage Shim
42407562



Speed Pin
74013480

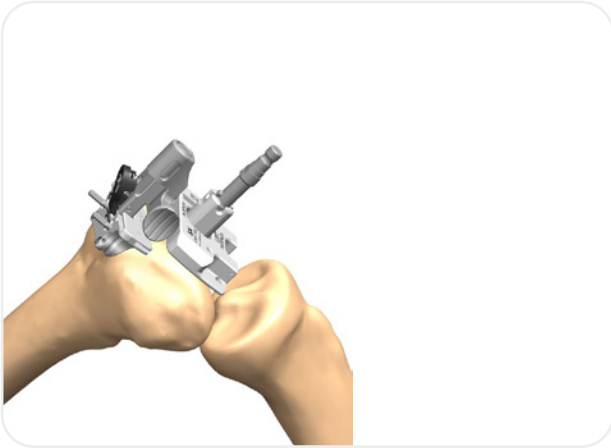


Figure 75

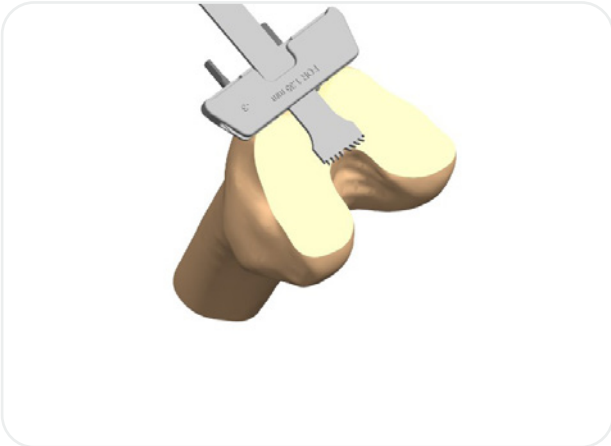


Figure 76

Kinematic Alignment Instrument Technique

5. Push the button on the Valgus Bridge to remove the alignment assembly from the incision site (**Figure 75**). Only the distal cutting block should remain on the femur.

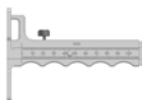
Distal Resection

1. Resect the distal femur (**Figure 76**) then remove the distal femoral cutting block.
2. Measure the distal cuts with the caliper to ensure that implant thickness was taken on both sides while accounting for 2mm of wear on the worn side/s

Note: The distal thickness of the LEGION® femoral component is 9.5mm.



Distal Cutting Block
74016205



Kinematic Alignment Caliper
42407354

Kinematic Alignment Instrument Technique

Proximal Tibia Assembly: Macro Extramedullary tibial alignment guide

1. Attach the EM Posterior Slope Guide to the Ankle Clamp by depressing the button on the Slope Guide and slide to the desired position (**Figure 77**).

Tip: The neck on the Slope Guide should orient toward the arms and dials of the Ankle Clamp.

Note: Each tooth is 1mm apart.

2. Attach the Macro EM Tibial Alignment Tube to the EM Posterior Slope Guide by depressing the inferior button on the Alignment Tube and sliding to the desired position (**Figure 78**). Once the button is released, the height will be locked in position.

Tip: The inferior button on Alignment Tube should face away from the arms of Ankle Clamp.

Note: Each tooth is 1mm apart.

3. Attach the appropriate hand tibial cutting block to the Alignment Tube by depressing the superior button on the Alignment Tube (**Figure 79**).



Figure 77



Figure 78

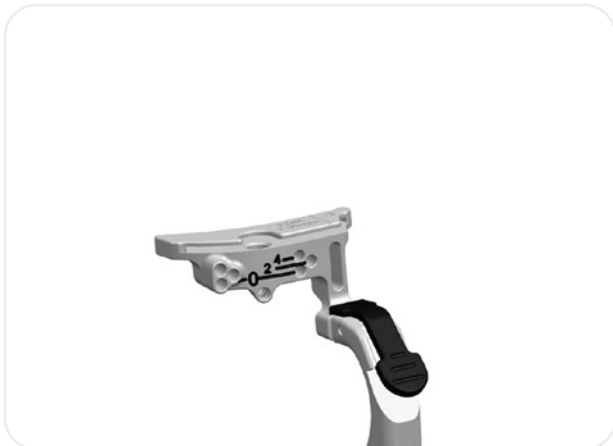


Figure 79



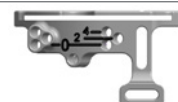
Ankle Clamp
74016241



EM Posterior
Slope Guide
74016231



EM Macro
Alignment Tube
74016232



Tibial Cutting Guide
3 Degree
Left 74016216
Right 74016217

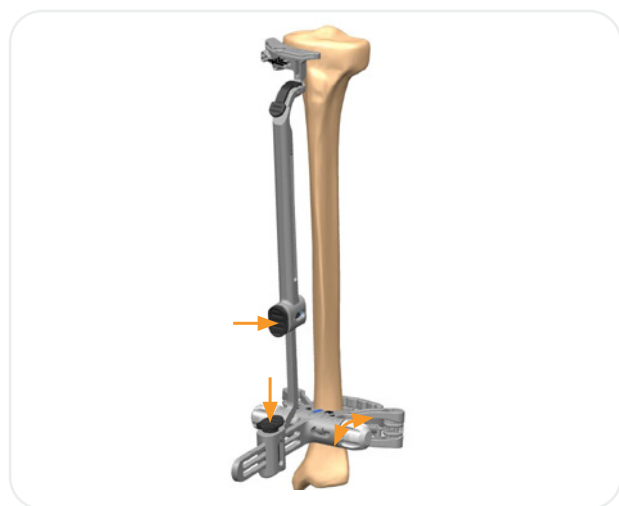


Figure 80



Figure 81



Figure 82

Kinematic Alignment Instrument Technique

Placing Extramedullary Tibial Alignment Guide

1. Open the arms of the ankle clamp and attach alignment jig to the tibia. Adjust height and slope by depressing the buttons on the Macro Alignment Tube and EM Posterior Slope guide, respectively (**Figure 80**).

Note: Varus/valgus adjustments can be made by rotating the dial on the ankle clamp.

2. Once approximate resection level is set, use a headed 45mm pin to pin through the provisional slot in the Tibia Cutting Block (**Figure 81**).

3. Insert Adjustable Footed Tibia Stylus into the saw slot of the Cutting Guide (**Figure 82**).

4. Adjust the stylus to desired resection level by rotating the dial and reference the lateral tibial plateau with its respective implant thickness accounting for (and subtracting) cartilage wear if present.

Note: The combined thickness of the LEGION® insert and baseplate is 9mm.

5. With the Adjustable Tibia Stylus set to the desired resection level on the lateral side, pin the cutting block on the lateral side by using a non-headed 65mm pin through the hole marked '0.' (**Figure 83**).



Adjustable
Footed Stylus
74016229



SPEED PIN
Non-Headed 65mm
74013480

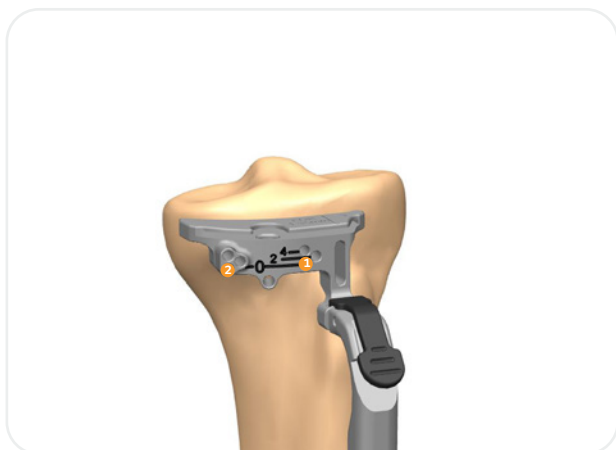


Figure 83

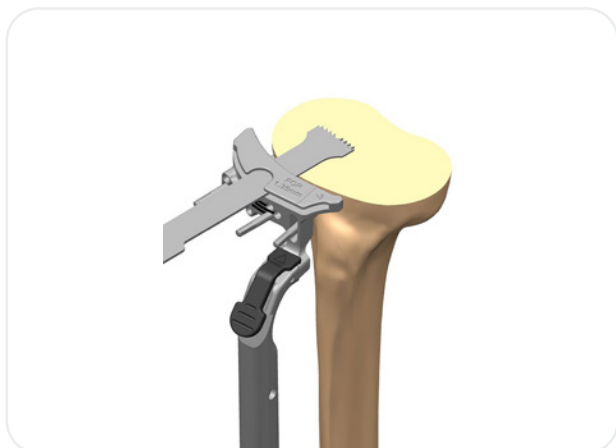


Figure 84



Figure 85

Kinematic Alignment Instrument Technique

6. Repeat the same resection depth measurement on the medial side by adjusting the stylus to account for implant thickness and cartilage wear if present. Place a non-headed 65mm pin through the hole marked '0'. For additional fixation, a headed or non-headed 65mm pin can be inserted through the oblique pin hole.

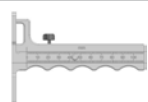
Proximal Tibia Resection

1. Remove the Tibia Stylus. Resect the proximal tibia and remove the cutting guide (**Figure 84**).
2. Measure the proximal tibia cuts with the caliper to ensure that implant thickness was taken on both sides while accounting for 2mm of wear on the worn sides.

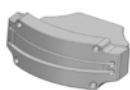
Note: The combined thickness of the LEGION[®] insert and baseplate is 9mm.

Tip: If additional resection depth is needed, the cutting guide can be shifted to the holes marked '2' or '4' for an additional +2mm or +4mm of resection, respectively.

3. To remove assembly, depress the superior button on the Alignment tube to disengage from the cutting block.
4. If additional varus or valgus resection is needed, place the flat surface of Varus/Valgus Recut Block on the cut tibial surface to add an additional 2° in either direction (**Figure 85**).



Kinematic
Alignment Caliper
42407354



2° Varus/Valgus
Recut Block
42407624

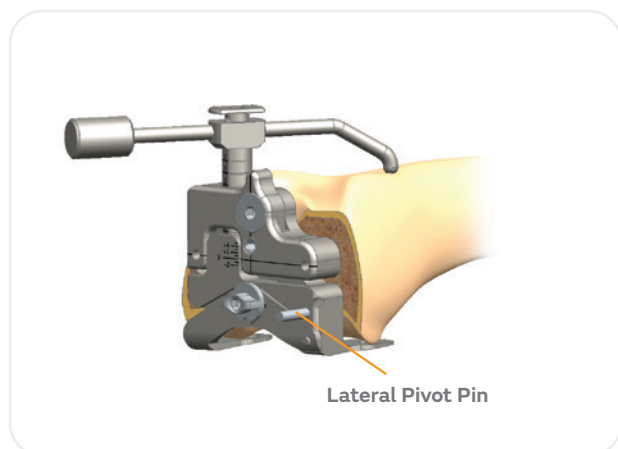


Figure 86

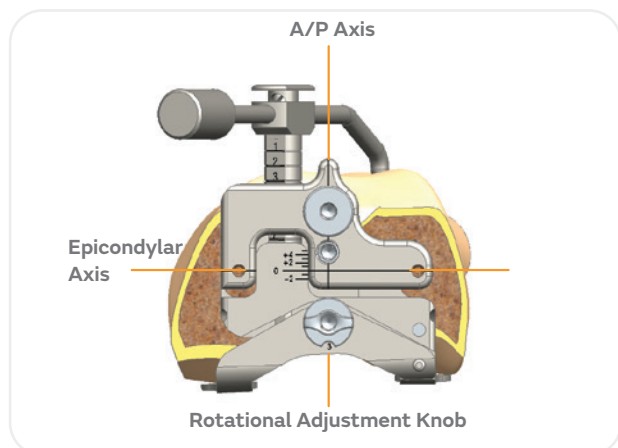


Figure 87

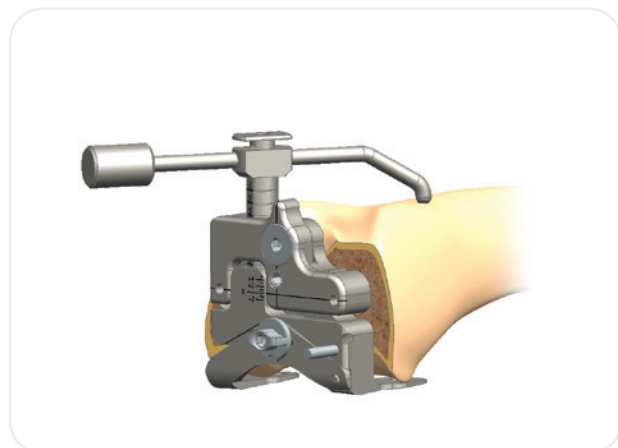


Figure 88

Kinematic Alignment Instrument Technique

Femoral Rotation and Sizing

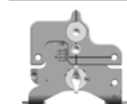
1. Place the appropriate (left or right) LEGION® Sizing Guide on the resected distal femur with the rotation set to 0° to resect implant thickness from the posterior condyles. Place a 45mm headed pin through the hole just above the lateral paddle to secure the sizing guide for the remainder of its use (**Figure 86**).

Note: Rotation is set to 0° for the LEGION Femur due to align the posterior condyles of the implant with the posterior condyles of the femur.

2. Ensure that both medial and lateral paddles are contacting the posterior condyles with the guide set to 3°.
3. Once both the A/P 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 (**Figure 87**).
4. Insert the LEGION Sizing Stylus to the guide and estimate the A/P femoral size. Position the stylus tip just lateral of the anterior trochlear sulcus (**Figure 88**).

Design note: The LEGION Sizing Guide is designed to reference the posterior condyles.

Continue to Femoral Cuts on page 12 of this surgical technique



Sizing Guide
Left 71440007
Right 71440008



Sizing Stylus
71441140

Micro EM Tibial Alignment Technique

Micro Alignment Assembly

1. Attach the EM Posterior Slope Guide to the Ankle Clamp (**Figure 89**) by depressing the button on the Slope Guide and slide to the appropriate position

Tip: The neck of the Slope Guide should orient toward the arms and dials of the Ankle Clamp.

Note: Each tooth is 1mm apart.

2. Attach the Micro EM Tibial Alignment Tube to the EM Posterior Slope Guide by depressing the inferior button on the Alignment Tube (**Figure 90**) and sliding to the desired position. Once the button is released, the height will be locked in position.

Tip: The inferior button on Alignment Tube should face away from the arms of Ankle Clamp.

Note: Each tooth is 1mm apart.

3. Attach the EM Tibial Alignment Guide Micro Head Dial to the Alignment Tube by depressing the button on the Micro Head Dial sliding it onto the Alignment Tube (**Figure 91**).
4. Attach the appropriate hand Cutting Guide Head to the Micro Adjustment Tibial Alignment Dial by engaging the threads and rotating the black dial (**Figure 91**).

Tip: Adjust the Tibial Cutting Guide Head so that the “0” mark is aligned with the Micro Adjustment Tibial Alignment Dial.



Figure 89



Figure 90

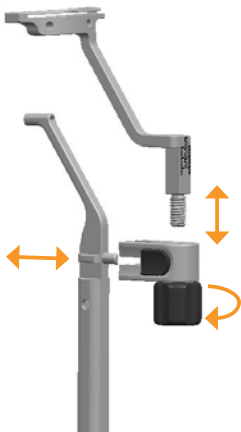


Figure 91



Ankle Clamp
74016241



EM Posterior Slope Guide
74016231



EM Tibial
Alignment
Tub Micro
74016233



Tibial Cutting Guide
Head 3 Degree
Left 74016237
Right 74016238



EM Tib Align Guide
Micro Head
74016236

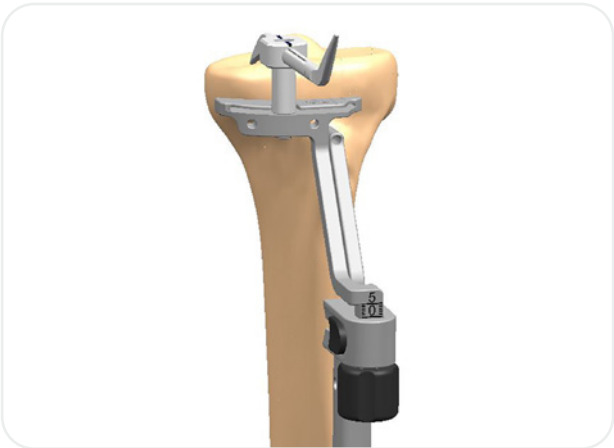


Figure 92

Micro EM Tibial Alignment Technique

Extramedullary Alignment

- 1. Open the arms of ankle clamp and attach alignment jig to tibia. Adjust height and distance from the tibia (slope) by depressing the buttons on the Micro Alignment Tube and EM Posterior Slope Guide, respectively.
- 2. Once approximate resection level is set, use a headed 45mm to pin through the provisional pin hole in the EM Micro Tibial Alignment Tube Micro.
- 3. Insert the 2 and 10mm Pegged Tibial Stylus into the hole of the Cutting Guide (**Figure 92**).
- 4. Reference the desired condyle with the desired stylus level. Stylus arms rotate to reference desired location.
- 5. Adjust the cutting guide to the desired amount of resection by rotating the dial.

Note: The Dial allows for 13mm of total proximal-distal adjustment.






				
EM Tibial Alignment Tub Micro 74016233	Tibial Cutting Guide Head 3 Degree Left 74016237 Right 74016238	EM Tib Align Guide Micro Head 74016236	Tibial Stylus 2 and 10mm Pegged 74016229	SPEED PIN Headed 45mm 74013471 MIS Headed 45mm 74016465



Figure 93

Micro EM Tibial Alignment Technique

Proximal Resection

1. With the 2 and 10mm Pegged Tibia Stylus set to the desired resection level, using non-headed pins, pin the cutting guide through the holes.
2. Remove the Tibia Stylus. Resect the proximal tibia (**Figure 93**) and remove the cutting guide.

Tip: If an uncaptured saw cut is desired, the resection can be performed by cutting on top of the block. An additional 3mm will be needed to account for this offset.

Tip: If additional resection is needed, the cutting guide can be adjusted by rotating the black dial.



EM Tibial
Alignment
Tub Micro
74016233



Tibial Cutting Guide
Head 3 Degree
Left 74016237
Right 74016238



EM Tib Align Guide
Micro Head
74016236



SPEED PIN
Non-Headed 65mm
74013480



Figure 94



Figure 95



Figure 96



Figure 97

Spiked Extramedullary Tibia Technique

Spiked EM Tibial Alignment Guide Assembly

1. Attach the Spiked EM Posterior Slope Guide to the Ankle Clamp by depressing the button on the Slope Guide and slide to the desired position (**Figure 94**).

Tip: The neck on the Slope Guide should orient toward the arms and dials of the Ankle Clamp.

Note: Each tooth is 1mm apart.

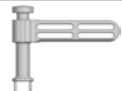
2. Slide the Spiked EM Alignment Jig into the Spiked EM/IM Down Rod (**Figure 95**).
3. Slide the appropriate hand tibial cutting block up the Spiked EM/IM Down rod until it reaches the section of hash marks and lock into place by rotating the knob on the cutting block (**Figure 96**).
4. Complete the whole assembly by placing onto the EM Posterior Slope Guide (**Figure 97**).



Spiked EM
Slope Guide
42407455



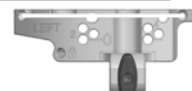
Ankle Clamp
74016241



Spiked EM
Alignment Jig
42407453



Spiked EM/IM Down Rod
42407454



Spiked EM/IM Tibia 3°
Cutting Block
Left 42407611
Right 42407612
Symmetric 42407616

Spiked Extramedullary Tibia Technique

Placing Spiked EM Tibial Alignment Guide

1. Open the arms of the ankle clamp and attach alignment jig to the tibia. Adjust height and impact first spike to set initial position (**Figure 98**).

Note: The Spiked EM Alignment Jig can slide to optimize positioning on the proximal tibia

2. Assess rotation of the alignment guide and slope of the cutting plane. The slope can be adjusted with the button on the Spiked EM Posterior Slope Guide (**Figure 98**). Impact the second spike fully to secure the assembly

Note: Depending on the chosen slope, 4° of slope is built into the articular insert and 3° of slope is built into the tibial cutting block. A neutral or slightly sloped alignment should be chosen.

Recommended Posterior Slope

LEGION® CR/CRHF	≥5°
LEGION MS/DD (with PCL)	≥5°
LEGION MS/DD (no PCL)	3°
LEGION PS/PSHF	3°

Note 3° and 5° tibial cutting guides are available

3. Insert Adjustable Footed Tibia Stylus into the saw slot of the Cutting Guide (**Figure 99**).
4. Adjust the stylus to desired resection level by rotating the dial on the stylus and adjusting the height of the cutting block by using rotating the knob.

Note: The dial on the stylus adjusts from 2mm – 13mm in 1mm increments.

Note: The 9mm tibial implant is 9.5mm thick on the medial side and 12mm thick on the lateral side.

Note: All knobs on this assembly can be locked with the hex driver.



Figure 98

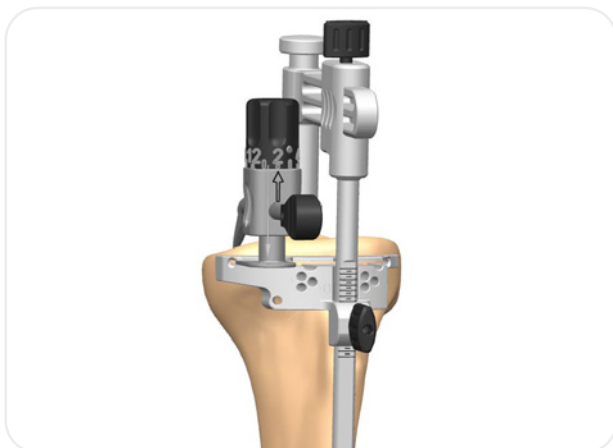


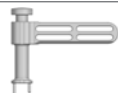
Figure 99



Spiked EM
Slope Guide
42407455



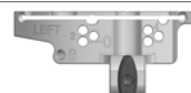
Ankle Clamp
74016241



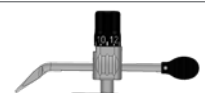
Spiked EM
Alignment Jig
42407453



Spiked EM/IM Down Rod
42407454



Spiked EM/IM Tibia 3°
Cutting Block
Left 42407611
Right 42407612
Symmetric 42407616



Tibial Stylus
Adjustable Footed
74016229

Spiked Extramedullary Tibia Technique

Proximal Tibia Resection

1. With the Adjustable Tibia Stylus set to the desired resection level, using non-headed 65mm pins, pin the cutting guide in position through the holes marked '0.' For additional fixation, a headed or non-headed 65mm pin can be inserted through the oblique pin hole (**Figure 100**).
2. Remove the Tibia Stylus and assembly leaving the cutting block in place. Resect the proximal tibia (**Figure 101**).

Note: If an uncaptured saw cut is desired, the resection can be performed by cutting on top of the block. An additional 3mm will be needed to account for this offset.

Tip: If additional resection is needed, the cutting guide can be shifted to the holes marked '2' or '4' for an additional +2mm or +4mm of resection, respectively.

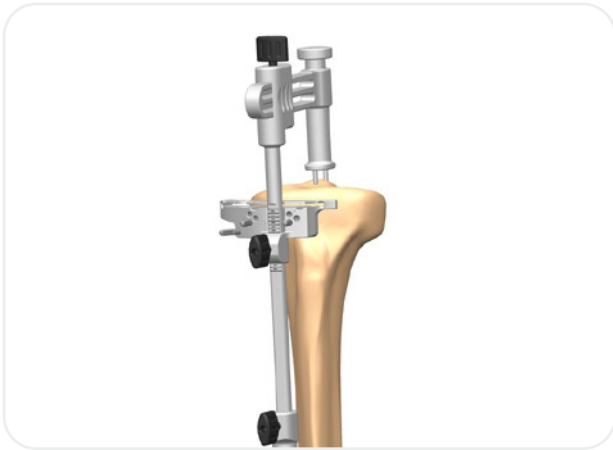


Figure 100



Figure 101

Intramedullary Tibia Technique

Intramedullary Tibial Alignment Guide Assembly

1. Slide the IM Alignment Jig into the Spiked EM/IM Down Rod (**Figure 102**).
2. Slide the appropriate hand tibial cutting block up the Spiked EM/IM Down rod until it reaches the section of hash marks and lock into place by rotating the knob on the cutting block (**Figure 103**).
3. Attach T-Handle onto the Long IM Rod and run the IM Rod through the IM Alignment Jig (**Figure 104**).



Figure 102



Figure 103



Figure 104



**Intramedullary
Alignment Jig**
42407457



**Spiked EM/IM
Down Rod**
42407454



**Spiked EM/IM Tibia 3°
Cutting Block**
Left 42407611
Right 42407612
Symmetric 42407616



T-Handle
71674576



IM Rod
74016211



Figure 105

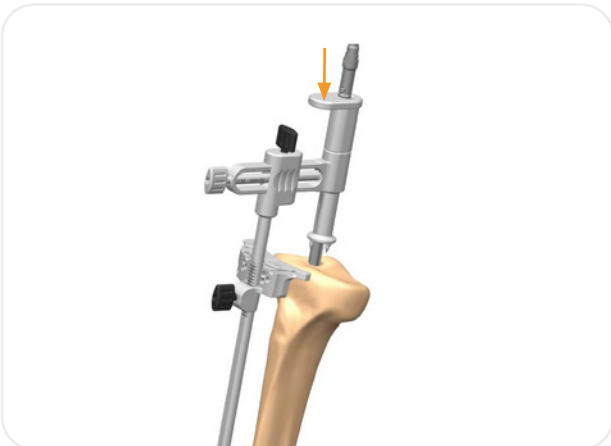


Figure 106



Figure 107

Intramedullary Tibia Technique

Placing Intramedullary Tibial Alignment Guide

1. Open the tibial canal with the 9.5mm Intramedullary Drill. The drill has a 12mm step to open the entry point further (**Figure 105**). A preliminary resection of the tibial spine may facilitate seating of the tibial drill guide onto the proximal tibia.
2. Slowly insert the Intramedullary Rod of the IM assembly into the tibial Canal (**Figure 106**).
3. Assess rotation of the intramedullary tibial alignment guide.
4. Impact the top of the IM Alignment Jig to secure assembly to the proximal tibia (**Figure 106**).
5. Insert Adjustable Footed Tibia Stylus into the saw slot of the Cutting Guide (**Figure 107**).
6. Adjust the stylus to desired resection level by rotating the dial on the stylus and adjusting the height of the cutting block by using rotating the knob.

Note: The dial on the stylus adjusts from 2mm – 13mm in 1mm increments.

Note: The 9mm tibial implant is 9.5mm thick on the medial side and 12mm thick on the lateral side.

Note: All knobs on this assembly can be locked with the hex driver.



Intramedullary
drill, 9.5mm
74012111



Tibial Stylus
Adjustable Footed
74016229



Figure 108

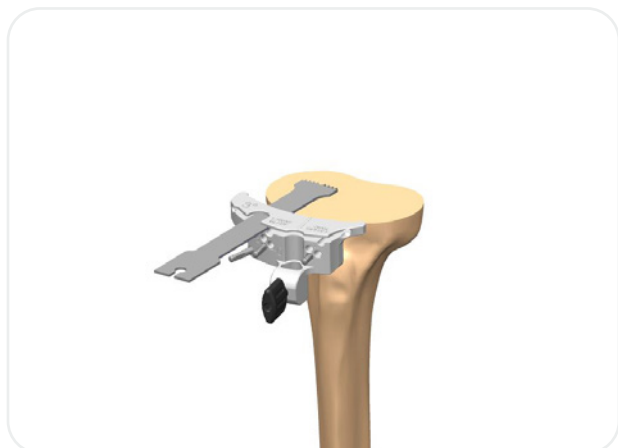


Figure 109

Intramedullary Tibia Technique

Tibial Resection

1. With the Adjustable Tibia Stylus set to the desired resection level, using non-headed 65mm pins, pin the cutting guide in position through the holes marked '0.' For additional fixation, a headed or non-headed 65mm pin can be inserted through the oblique pin hole (**Figure 108**).
2. Remove the Tibia Stylus and assembly leaving the cutting block in place. Resect the proximal tibia (**Figure 109**).

Note: If an uncaptured saw cut is desired, the resection can be performed by cutting on top of the block. An additional 3mm will be needed to account for this offset.

Tip: If additional resection is needed, the cutting guide can be shifted to the holes marked '2' or '4' for an additional +2mm or +4mm of resection, respectively.

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