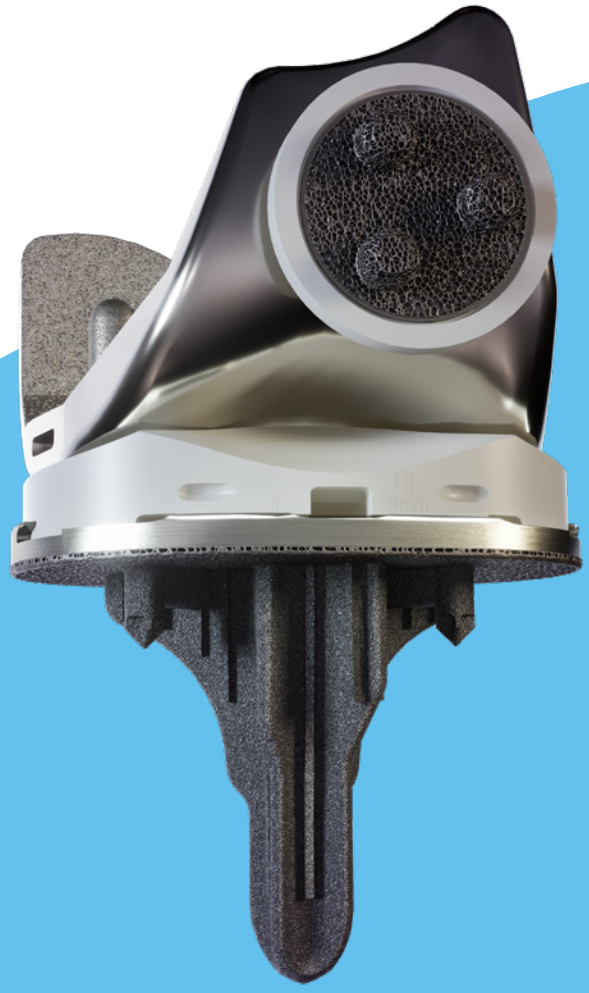
Smith+Nephew

LEGION◊
CONCELOC◊

Cementless Total Knee System

Surgical Technique



LEGION◊ CONCELOC◊ Cementless TKS

Contents

Nota Bene

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

Introduction

The LEGION◊ Total Knee System has been designed to offer the orthopaedic surgeon solutions to address intraoperative situations. Implant function is directly related to accurate surgical technique. Each surgeon must evaluate the appropriateness of the following technique based on his or her medical training, experience and patient evaluation.

To achieve successful cementless component arthroplasty, please note the technique tips throughout the surgical technique and those listed below.

- Precise, flat bone cuts are essential to maximize the porous material contact with the resected bone
- Ensure that peg holes are drilled or punched to their full depth and free of debris
- Pay careful attention when placing and removing trial implants or spacer blocks as well as when removing any osteophytes. Any unequal bony surfaces or defects can alter implant stability.
- Be sure to protect all resected bony surfaces until final components are implanted.

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 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.

Acknowledgments

Smith & Nephew Orthopaedics wishes to thank the global surgeon advisors for their dedication to the development and refinement of the LEGION CONCELOC® Cementless TKS implants and instrumentation.

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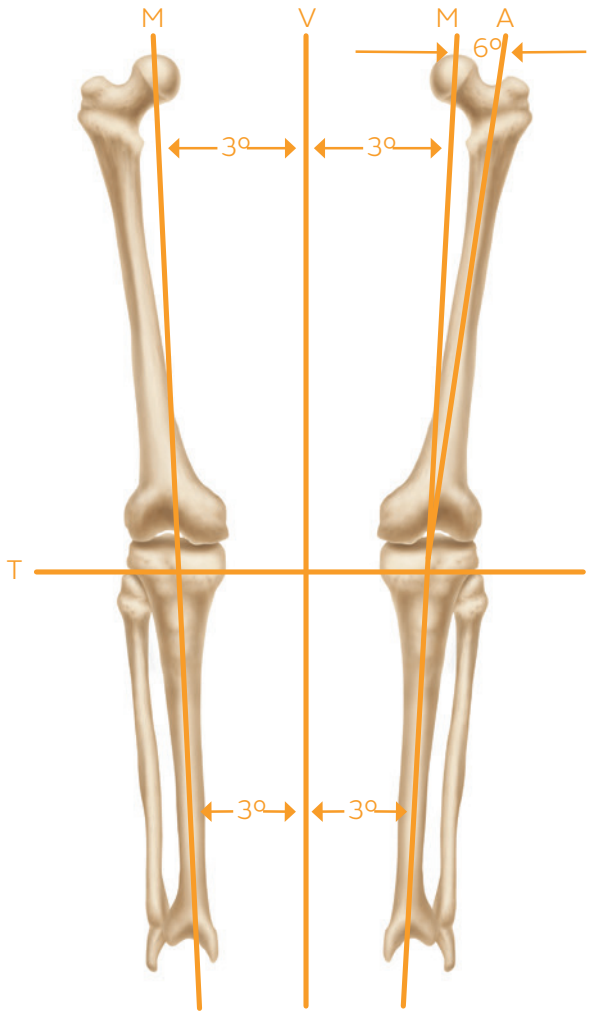


M = Mechanical Axis

A = Anatomical Axis

T = Transverse Axis

V = Vertical Axis

Preoperative planning

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

Note: Many surgeons prefer to simply select a standard angle for the distal femoral cut (i.e., 5°, 6° or 7°) based on the patient and surgical experience.

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

Figure 1

Distal femur

Instrument assembly

1. Attach the selected valgus angle bushing (5°, 6° or 7°) to the valgus alignment guide. Check the bushing position to make sure that 'left' is facing anteriorly when operating on a left knee and 'right' is facing anteriorly when operating on a right knee.
2. Attach a modular T-handle to the IM rod and insert through the alignment assembly (**Figure 1**).
3. Assemble the distal femoral cutting block onto the valgus alignment guide. Positioning the block at the 'primary' resection level will ensure the cut will equal the distal thickness of the femoral prosthesis. Lock by pressing the lever in a horizontal position toward the medial side.

Valgus Bushing
5° 71440014
6° 71440016
7° 71440018

Alignment Guide
71441144

T-handle
71110080

IM Rod
Long 71512040
Short 71512035

Distal Cutting Block
71441147

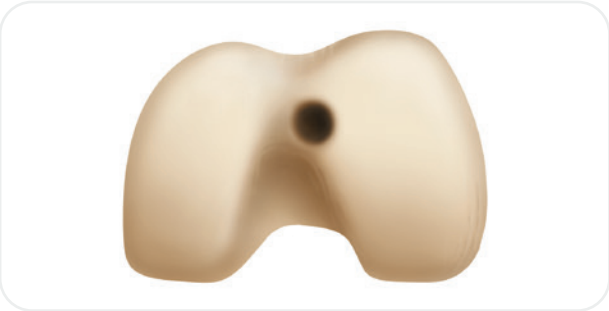


Figure 2

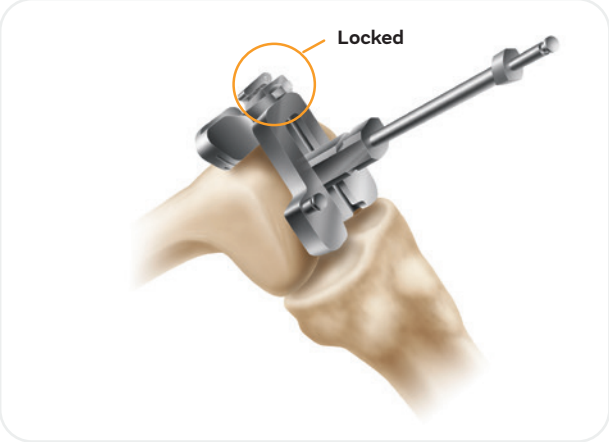


Figure 3

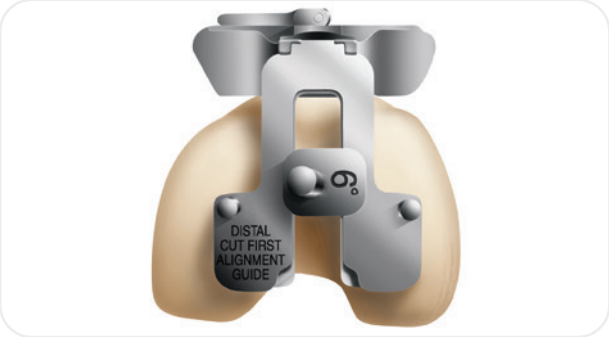


Figure 4

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. If desired, use the drill to open the tibial canal at this step (**Figure 2**).

   Tip: If desired, the distal femoral cutting block may be set to resect an additional +2, +5 or +7mm of bone.

2. Slide the intramedullary rod of the assembly into the femoral canal until the alignment guide contacts the distal femur (**Figure 3**).

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

3. Orient rotation of the assembly neutral to the posterior condyles (**Figure 4**) and impact one or both of the floating spikes into the distal femur.

Valgus Bushing
5° 71440014
6° 71440016
7° 71440018

Alignment Guide
71441144

T-handle
71110080

IM Rod
Long 71512040
Short 71512035

Distal Cutting Block
71441147

Intramedullary drill, 9.5 mm
74012111

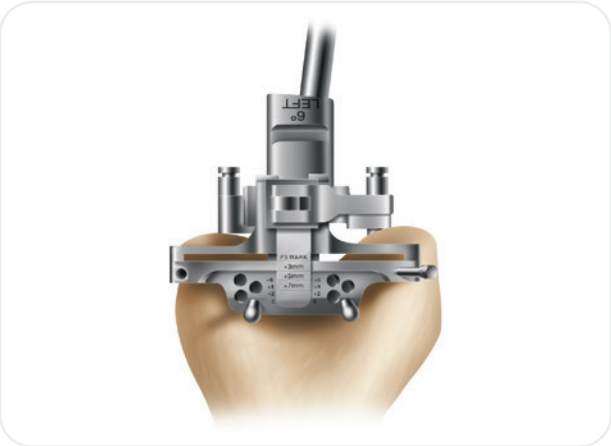


Figure 5

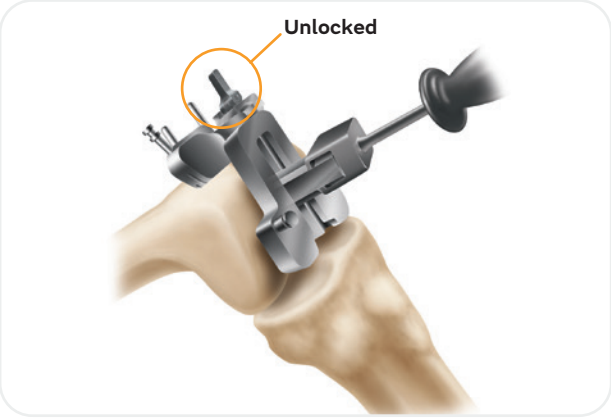


Figure 6

Figure 7

Distal femur

Distal resection

1. Using a non-headed pin, pin the distal femoral cutting block to the anterior femur using the holes marked '0'. Once adequate distal femoral resection is noted, an additional headed or non-headed pin should be placed obliquely to provide additional stability (**Figure 5**).

2. Unlock the lever on the valgus alignment guide, remove the intramedullary rod and the valgus alignment assembly using the universal extractor (**Figure 6**). Only the distal femoral cutting block should remain on the femur.

3. Resect the distal femur (**Figure 7**) 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 +2 or +4mm for the desired level of resection and re-insert the oblique pin.

Before proceeding, evaluate the bone quality of the resected femur. If bone quality is poor, a LEGION® cemented femoral component should be implanted.

Valgus Bushing
5° 71440014
6° 71440016
7° 71440018

Alignment Guide
71441144

Universal Extractor
71440366

IM Rod
Long 71512040
Short 71512035

Distal Cutting Block
71441147

SPEED PIN
74013480

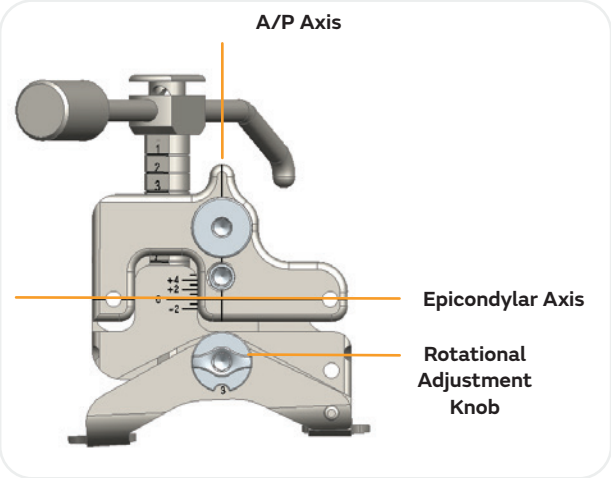


Figure 8

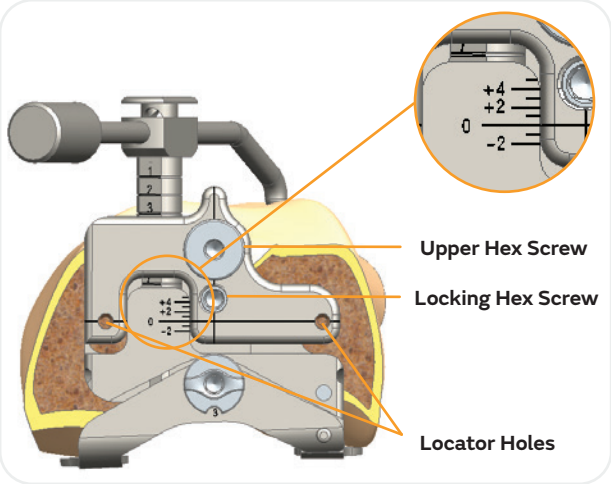


Figure 9

Figure 10

Femoral positioning and sizing

Sizing Guide capabilities

The sizing guide allows for external rotation to be set from 0-6° based on surgeon preference and patient anatomy. Rotational alignment may be checked by aligning the A/P axis with the pointer on the sizing guide or by ensuring that the laser marked lines on the face of the guide are parallel with the epicondylar axis. The rotational adjustment knob on the lower portion of the guide is turned to dial in rotation (**Figure 8**).

The guide can be used for fixed posterior referencing or can be adjusted anteriorly or posteriorly for fine tuning. When in-between sizes, the surgeon can choose to adjust sizing up to 4mm anteriorly, thereby taking up to an additional 4mm off the posterior condyles, or up to 2mm posteriorly, taking up to an additional 2mm off of the anterior cortex.

If the anterior surface of the guide is in-between two sizes when it is at the zero position, the upper hex screw can be rotated to shift the anterior face of the sizing guide up to the next smaller size or down to the next larger size on the stylus. As a result, the locator holes for the A/P cutting block are shifted either anteriorly or posteriorly to align with the next implant size (**Figure 9**).

Tip: The gap between the top of the sizing guide and the stylus graduation line indicates how much bone will be removed from either the anterior cortex or posterior condyles by choosing the next larger size (**Figure 10**).

Sizing Guide
Left 71440007
Right 71440008

Sizing Stylus
71441140

Hex Screwdriver
115035

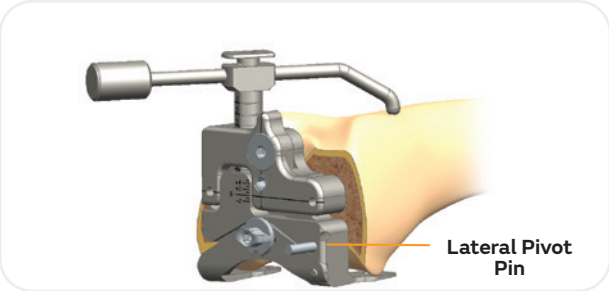


Figure 11

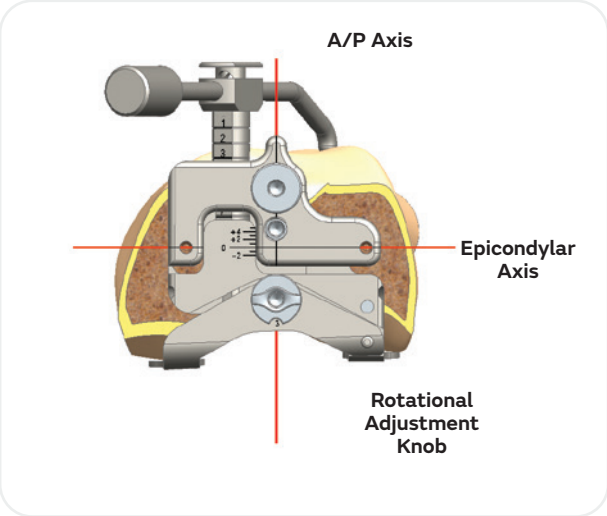


Figure 12

Femoral positioning and sizing

Rotation

1. Flex the knee, approximately 90º so the posterior condyles are accessible.
2. Choose appropriate sizing guide, '**Left**' for a left knee and '**Right**' for a right knee.
3. Position the femoral sizing guide flush against the distal femur, while ensuring the posterior paddles are contacting the underside of both posterior condyles. Once correct position of sizing guide is established, place a pin through lateral pivot pinhole located in the posterior/lateral corner on the face of the sizing guide (**Figure 11**).
4. Adjust the external rotation of the sizing guide to be aligned anatomically with the epicondylar and/or A/P axis. This can be achieved by turning the rotational adjustment knob (0-6º) using a hex screwdriver (**Figure 12**).
5. Once rotation is set, sizing can be established either by fixed posterior referencing or adjustable referencing.

Sizing Guide
Left 71440007
Right 71440008

Sizing Stylus
71441140

Hex Screwdriver
115035

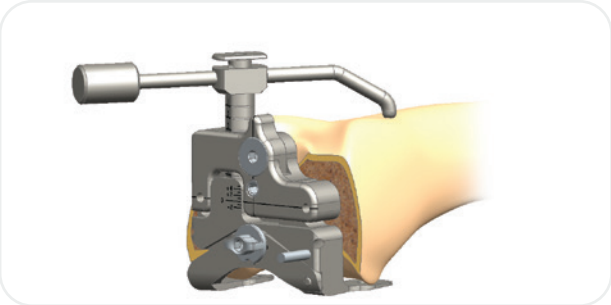


Figure 13

Femoral positioning and sizing

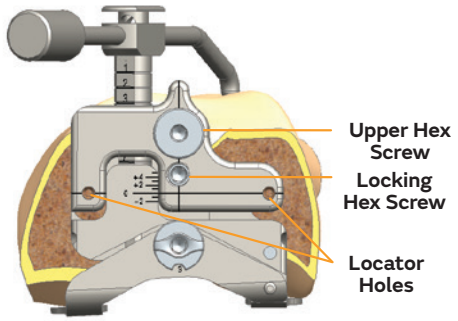
Fixed posterior referencing

1. Ensure that the anterior surface of the sizing guide is set in the '0' position.
2. Drill and insert two pins through the locator holes of the sizing guide to secure the guide.
3. 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 13**).
4. Determine the size of the component from the graduations on the shaft of the stylus.
5. If the femur is between sizes, chose the larger size.
6. Remove the pins and the sizing guide.

Sizing Guide
Left 71440007
Right 71440008

Sizing Stylus
71441140

Hex Screwdriver
115035



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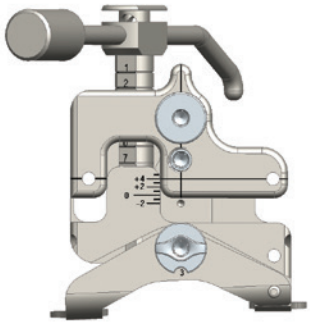
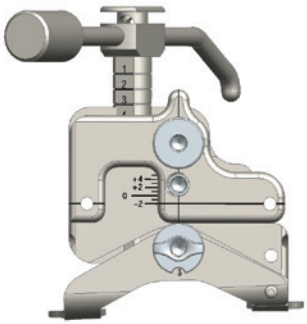


Anterior Reference Shift of 4mm

Figure 15a



Posterior Reference Shift of 2mm

Figure 15b

Femoral positioning and sizing

Adjustable anterior referencing

1. Ensure that the anterior surface of the sizing guide is set in the '0' position.
2. Drill and insert two pins through the oblique holes of the sizing guide to secure the guide.
3. 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 14**).
4. Determine the size of the component from the graduations on the shaft of the stylus.
5. If the indicated size is in-between sizes, you can turn the upper hex screw to shift the anterior surface up to an additional 4mm to the next smaller size or down an additional 2mm to the next larger size (**Figures 15a and b**). Once the appropriate size is selected, turn the locking hex screw to lock the anterior surface and locator holes into position (**Figure 14**).
6. Drill the locator holes to set the position for the cutting block.
7. Remove the pins and sizing guide.

Sizing Guide
Left 71440007
Right 71440008

Sizing Stylus
71441140

Hex Screwdriver
115035

Figure 16

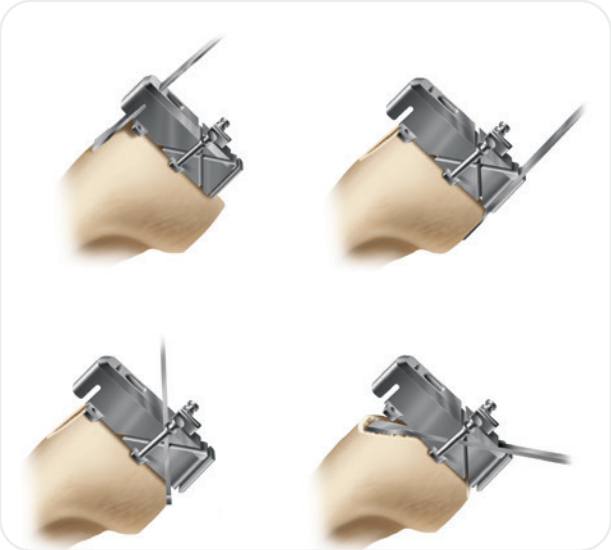


Figure 17

Femoral A/P resection

1. Position the fixed spikes on the A/P cutting block into the predrilled holes.

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

2. Ensure that the cutting block is flush with the resected distal femur. Several holes in the A/P block allow fixation of the block. 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 the holes on the medial or lateral side of the block (**Figure 16**).

3. Complete the anterior, posterior and chamfer cuts (**Figure 17**). 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.

Before proceeding, ensure flat femoral cuts have been achieved. It is critical to ensure adequate contact between the porous implant and the bone. If flat cuts can not be achieved a LEGION◊ cemented femoral component should be implanted.

A/P Cutting Block
Sz 5 71441153

Figure 18

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 18**).
2. Drill new location holes through the downsizing drill guide (shifted 2mm anterior).
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 in order to properly identify the new holes.

Downsizing Drill Guide
71440860

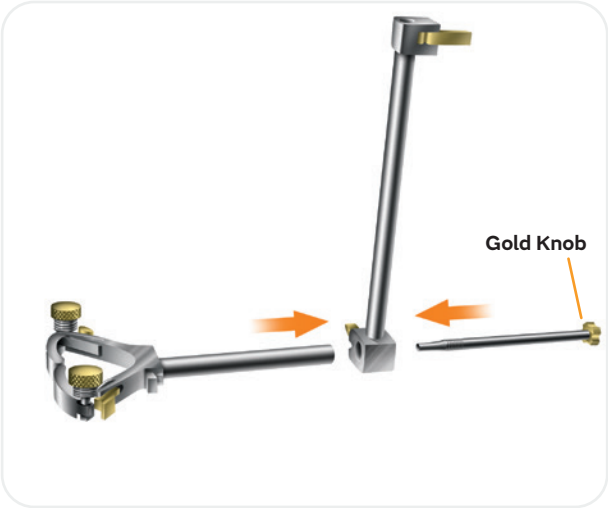


Figure 19

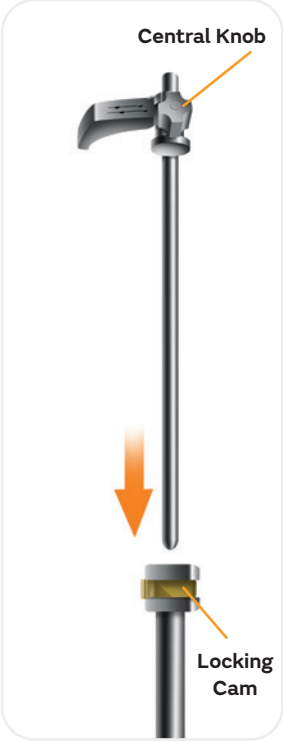


Figure 20

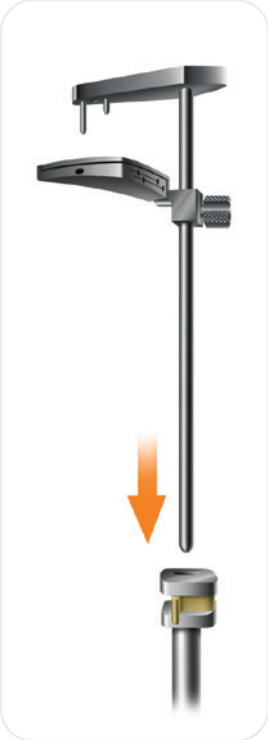


Figure 21

Proximal tibia

Instrument assembly: Extramedullary tibia alignment guide

Insert the ankle clamp into the distal end of the alignment tube and thread the locking pin into the ankle clamp (**Figure 19**).

After the ankle clamp is moved into the proper position, lock into place with the gold knob.

Choose the correct left or right tibial cutting block. Select the spiked or non-spiked fixation rod.

Note: When using the extramedullary tibial alignment, the surgeon may use a non-spiked or spiked fixation rod.

Option 1: Non-spiked fixation rod

Place the appropriate left or right tibial cutting block on top of the disc on the non-spiked fixation rod (**Figure 20**). Tighten the central knob to lock the block into position.

Introduce the rod into the extramedullary assembly and adjust and lock the cam in the assembly.

Option 2: Spiked fixation rod

Place the spiked fixation rod through the hole in the tibial cutting guide; adjust the block and tighten the central knob to lock the block into position.

Introduce the spiked fixation rod into the proximal end of the alignment assembly and adjust and lock the cam on the assembly (**Figure 21**).

Ankle Clamp
71440444

Alignment Tube
71440448

Tibial Cutting Block
Left 71441136
Right 71441137

Non-spiked Fixation Rod
71440446

Spiked Fixation Rod
71440198

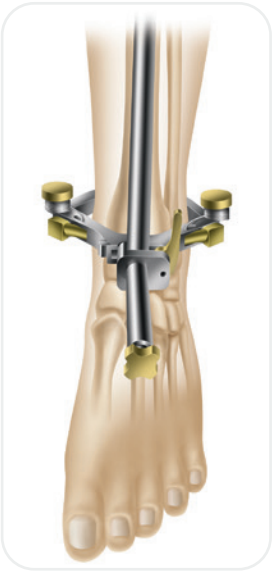


Figure 22

Figure 23

Figure 24

Figure 25

Proximal tibia

Extramedullary alignment
Option 1: Non-spiked fixation

1. Place the arms of the extramedullary alignment clamp around the ankle, and adjust the distal M/L slide directly over the middle of the tibiotalar joint, which is also approximated by the second ray of the foot proximal to the malleoli (**Figure 22**).

   The cutting block on the proximal end of the assembly should be proximal to the tibial tubercle (**Figure 23**).

2. Assess rotation of the alignment guide and slope of the cutting plane. The goal is to align the extramedullary alignment assembly rotationally so that it aligns over the medial third of the tibial tubercle and over the second toe (**Figure 24**).

3. Rotational alignment is critical due to the 3° posterior sloped cut. The slope can be adjusted according to the patient's anatomy (**Figure 25**).

Recommended posterior slope

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

Ankle Clamp
71440444

Alignment Tube
71440448

Tibial Cutting Block
Left 71441136
Right 71441137

Non-spiked Fixation Rod
71440446

Figure 26

Figure 27

Proximal tibia

Extramedullary alignment Option 2: Spiked fixation

1. Place the arms of the extramedullary alignment clamp around the ankle, and adjust the distal M/L slide directly over the middle of the tibiotalar joint, which is also approximated by the second ray of the foot proximal to the malleoli (**Figure 22**).

   The cutting block on the proximal end of the assembly should be proximal to the tibial tubercle (**Figure 23**).

2. Impact the longer spike of the spiked fixation rod into the proximal tibia (**Figure 26**).

3. Assess rotation of the alignment guide and slope of the cutting plane. The goal is to align the extramedullary alignment assembly rotationally so that it aligns over the medial third of the tibial tubercle and over the second toe (**Figure 24**).

4. Rotational alignment is critical due to the 3° posterior sloped cut. The slope can be adjusted according to the patient's anatomy (**Figure 25**). Impact the second spike to secure the assembly (**Figure 27**).

Recommended posterior slope

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

Ankle Clamp
71440444

Alignment Tube
71440448

Tibial Cutting Block
Left 71441136
Right 71441137

Spiked Fixation Rod
71440198

Figure 28

Proximal tibia

Tibial resection

1. Attach the tibial stylus to the tibial cutting block by inserting the stylus foot into the cutting slot.
2. Lower the cutting block until the stylus touches the low point on the least affected side of the tibia (**Figure 28**). The stylus can be adjusted for a 1-13mm tibial resection by twisting the knob on top of the stylus. If the affected side of the tibia is to be used as a reference, the stylus may be adjusted for a 1-9mm resection level.
3. Pin the tibial cutting block to the tibia by inserting pins first through the central holes; then the oblique hole.

Tip: Pinning through the central holes marked 0mm with smooth pins will allow the block to be moved +2mm should additional resection be required.

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

Tip: To do an extramedullary alignment check, place the extramedullary alignment rod through the tibial cutting block.

Tibial Stylus
71441143

Extramedullary Alignment Rod
114861

Tibial Cutting Block
Left 71441136
Right 71441137

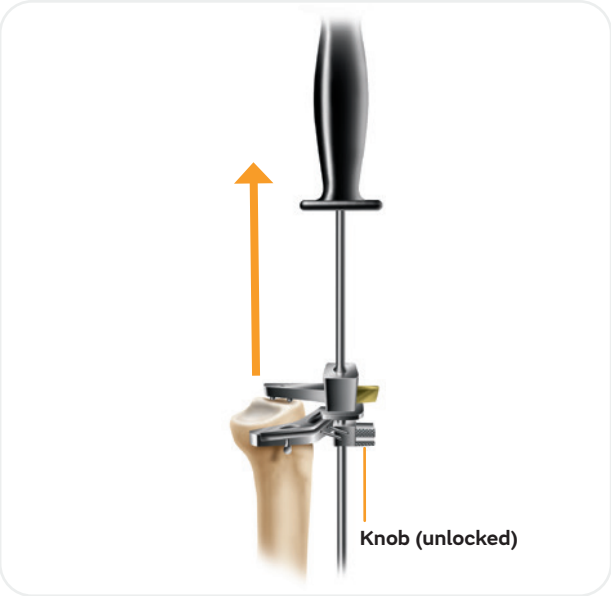


Figure 29

Figure 30

Proximal tibia

Tibial resection (continued)

4. To remove the assembly:
   a. For the assembly with spiked rod, release the cam at the top of the alignment tube and use the slap hammer to remove the spiked fixation rod (**Figure 29**) after loosening the thumbscrew.

   b. The assembly with the non-spiked rod may be left in place or removed by loosening the thumbscrew and lowering the non-spiked rod to disengage from the tibial cutting block.

5. Cut the tibia by first directing the blade in the posterior direction and then laterally (**Figure 30**)

   Note: Ensure the tibia resection has created a flat/smooth surface as this is important for cementless fixation

Tibial Cutting Block
Left 71441136
Right 71441137

Universal Extractor (Slap Hammer)
71440366

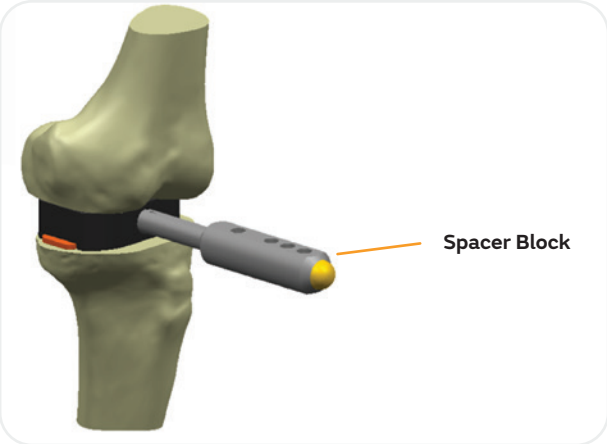


Figure 31

Gap balancing assessment

Be sure to remove all osteophytes, especially posteriorly, before checking alignment and balance

1. Assemble the Quick Connect Handle to the Flexion/Extension block. Attach desired thickness of Flexion/Extension Spacer onto the Flexion/Extension block.
2. Insert the Flexion/Extension block into the extension gap. Evaluate alignment, balance, and extension space (**Figure 31**)
3. Adjust the thickness of the spacer as needed to determine the extension space.
4. Remove the block and reassemble desired thickness of spacer for flexion gap evaluation.
5. With the knee flexed to 90°, place the Flexion/Extension Block into the joint space.
6. Apply a varus/valgus force and assess the medial and lateral compartment laxity levels of the flexion space. Then adjust the thickness of the spacer as needed to determine the flexion space.
7. When the flexion space is determined, compare the thickness selected relative to the extension space previously determined.

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

Flexion/Extension Spacers
9mm 74018608

Quick Connect Handle
71440044

Flexion/Extension Block Standard Size 1-8
74018603

Figure 32

Figure 33

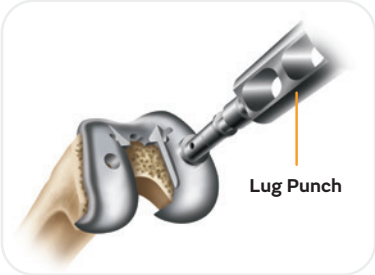


Figure 34

Figure 35

Figure 36

Femoral component trialing

1. Flex the knee to 90° and insert the femoral trial using the femoral trial impactor (**Figure 32**).
2. Use the appropriate baseplate and insert trial (begin with a 9mm trial) to determine stability and alignment.
3. Perform a trial range of motion. The alignment marks on the front of the femoral and tibial trials should line up (**Figure 33**). Medial/lateral placement of the femoral trial can be adjusted to optimize patellar tracking. Complete trial assessment and determine the correct insert thickness.
4. Prepare the femoral lug holes through the femoral trial with the femoral lug punch (**Figure 34**) or the femoral lug drill (**Figure 35**).
5. Attach the end of the universal extractor to the femoral trial and remove the femoral trial (**Figure 36**).

LEGION® Fem Lug Drill
74016421

Femoral Trial Impactor
71440009

Femoral Lug Punch
71440183

Universal Extractor
71440366

LEGION Ream thru Trial Sz 5
71433355 Right
71433345 Left

LEGION CRHF Insert Trial w/ JRNY Lock Sz 3-4
71434605 9mm
71434606 10mm

Figure 37

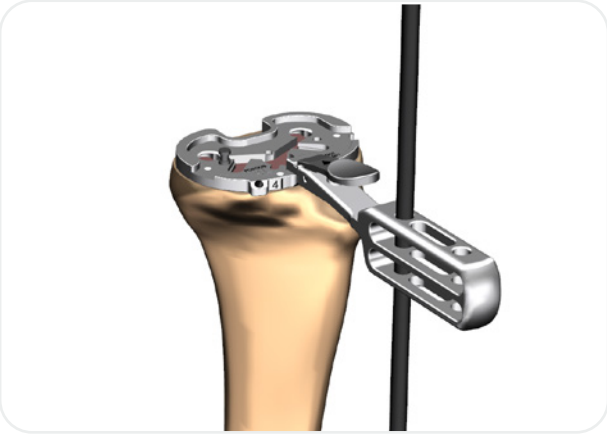


Figure 38

CONCELOC◊ Tibia preparation

Porous tibia sizing and rotation

Before proceeding, evaluate the bone quality of the resected tibia. If bone quality is poor the porous tibia baseplate should be cemented to the proximal tibia.

1. Attach a quick-connect handle to the porous tibia baseplate trial that provides optimal tibial coverage. As needed, additional sizes should be templated using the porous trials. Check the flatness of the cut surface with the trials. A rocking motion indicates the cut is not flat. A flat cut is necessary to ensure proper contact between the porous implant and prepared tibia surface.

2. Once the appropriate size and tibial rotation is determined, pin the medial side of the selected porous trial with a short headed pin (**Figure 37**).

3. Place a trial insert into the porous tibial trial tray and perform a trial range of motion to allow the baseplate to center on the femoral trial. (As a secondary check, the surgeon may pass the alignment rod through the quick-connect handle to assess alignment) (**Figure 38**). Pin the lateral side of the trial.

   Tip: After putting the knee through a trial range of motion, the surgeon should note the proper rotation of the trial tibial component on the proximal tibia and mark the tibia for future reference.

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

Porous Tibia Baseplate Trial Sz 4
71434639 Left
71434648 Right

VNR EM Alignment Rod
71440302

Quick Connect Handle
74016213

Universal pin driver
71513331

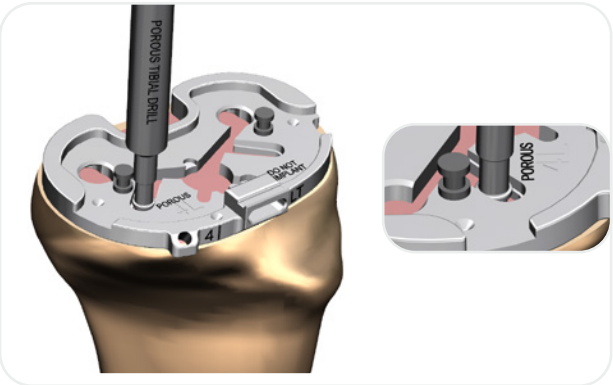


Figure 39

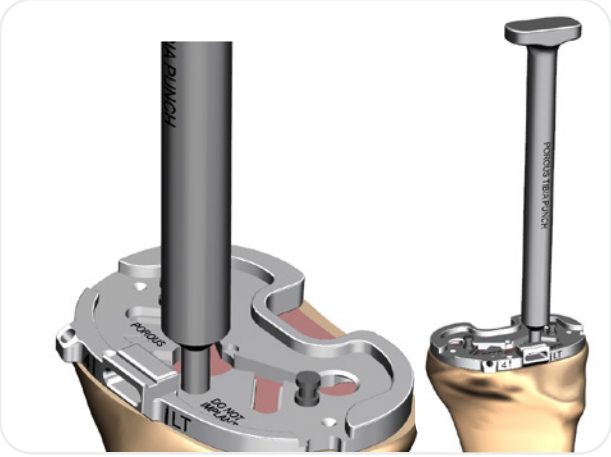


Figure 40

CONCELOC◊ Tibia preparation

Porous tibia drill and punch

Before proceeding, ensure a flat tibia cut has been achieved. It is critical to ensure adequate contact between the porous implant and the bone. If a flat cut can not be achieved the porous tibia baseplate should be cemented to the proximal tibia.

Tibia drill and punch may also be completed after full component trialing to ensure proper tibia rotation.

1. Use the porous tibia drill to prepare for the two anterior pegs and bridges of the porous tibia keel. Start with the drill anteriorly on either the medial or lateral peg (**Figure 39**) and move the drill posterior removing bone to accommodate the bridges. There is a positive stop shoulder that has been designed into the trial. Ensure drill is contacting shoulder to ensure proper depth in order to seat the implant. Repeat procedure for the adjacent side bridge.
2. Impact the porous tibia punch into the anterolateral keel peg hole until a positive stop is achieved (**Figure 40**).

Note: the porous tibia drill can be used in lieu of the punch to prepare peg hole if desired.

Porous Tibia Baseplate Trial Sz 4
71434639 Left
71434648 Right

Porous Tibia Punch
71434719

Porous Tibia Drill
71434721

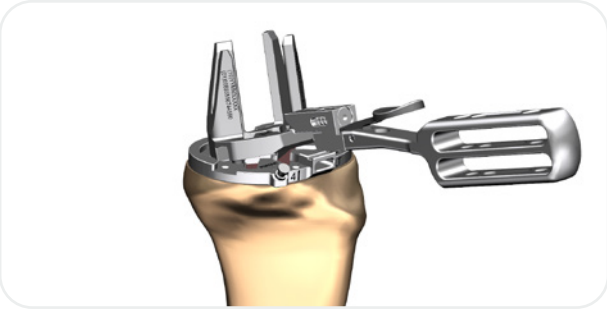


Figure 41

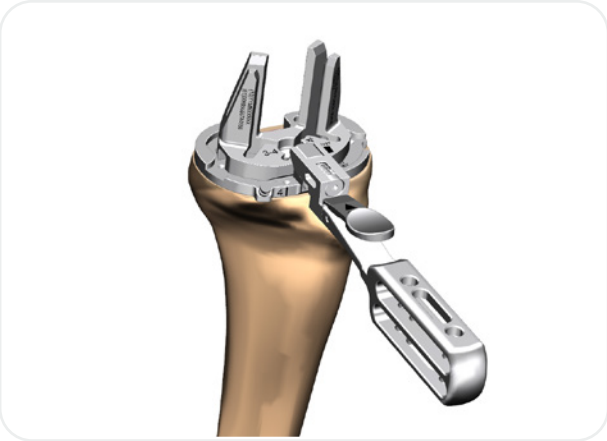


Figure 42

CONCELOC◊ Tibia preparation

Porous tibia drill and punch (continued)

3. Attach a quick connect handle to the porous tibia fin punch guide that corresponds with the size of the porous tibia baseplate trial. Engage the two posterior feet of the guide into the posterior aspect of the trial (**Figure 41**).

   Note: A short headed pin can be used in the anterior hole of the baseplate trial if additional fixation is needed.

4. Lower the guide onto the trial until it makes contact and locks into place (**Figure 42**). In some cases a slight pull-back on the quick connect handle may be needed to fully lock and seat the guide into place.

Porous Tibia Baseplate Trial Sz 4
71434639 Left
71434648 Right

Quick Connect Handle
74016213

Porous Tibia Fin Punch Guide Sz 3-4
71434712

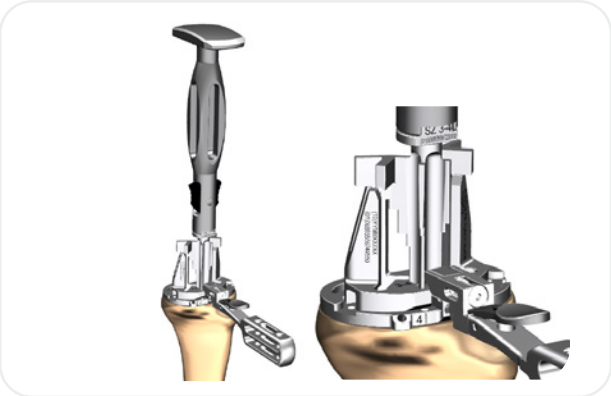


Figure 43

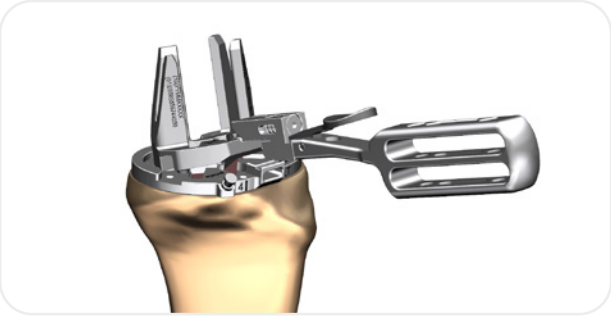


Figure 44

Figure 45

CONCELOC◊ Tibia preparation

Porous tibia drill and punch (continued)

5. Connect the modular impact handle to the porous tibia fin punch that corresponds with the size of the baseplate trial and fin punch guide.

6. Align the fin punch to guide and slightly impact to ensure it is aligned properly within the guide (**Figure 43**). Continue to impact the fin punch through the guide until a positive stop is achieved.

   Tip: Place tip of punch in the hole anteriorly to the guide and roll posterior into position. Punch should fall easily into guide slots.

   Note: Take care during fin punch impaction in order to maintain integrity of the tibia canal, especially in sclerotic bone. Impact very slowly if needed to ensure proper bone displacement. Ensure that the tibia trial and guide stay pinned and stable during impaction so as not to modify the path of the punch.

7. Remove fin punch by gently tapping upwards on the handle strike plate. Ensure the fin punch is removed straight up and out as to not disrupt the prepared bone within the tibia.

8. Remove the fin punch guide by pulling back on the quick connect handle and lifting out of the trial baseplate (**Figure 44**).

9. Remove the short bone spikes with the removal tool and remove the baseplate trial.

10. Ensure proximal tibia surface has been fully prepared to accept porous tibia implant (**Figure 45**).

Porous Tibia Fin Punch Sz 3-4
71434655

Modular Impact Handle
74016242

Removal Tool
74012825

Porous Tibia Baseplate Trial Sz 4
71434639 Left
71434648 Right

Quick Connect Handle
74016213

Porous Tibia Fin Punch Guide Sz 3-4
71434712

Figure 46

Figure 47

Figure 48

Figure 49

CONCELOC◊ Patella preparation

Patella resection

1. Trim tissue surrounding the patella using electrocautery (bovie) (**Figure 46**).
2. Use a rongeur to remove osteophytes and reduce the patella to its true size (**Figure 47**). It is recommended to leave the superior rim of bone intact. The bovie should also be used to release soft tissue attachments to the estimated level of resection.
3. Measure the overall thickness of the patella with the Patellar Caliper (**Figure 48**).
4. After determining the depth of the cut, dial in the stylus on the patella resection guide to have the corresponding resection level. Clamp the patella between the jaws of the guide (**Figure 49**).
5. Resect the patella through the slots of the patella resection guide (**Figure 49**).

   Before proceeding, evaluate the bone quality of the resected patella. If bone quality is poor the porous patella should be cemented.

   Note: Take care when determining the depth of the cut in an effort to minimize the risk of fracture. It is recommended to leave at least 12mm of residual patella. See Tables 1 and 2 for porous patella implant thicknesses.

Table 1

CONCELOC Oval Patella	
Diameter	Thickness
29mm	9mm
32mm	9.5mm
35mm	9.5mm
38mm	10.5mm
41mm	10.5mm

Table 2

CONCELOC Round Patella	
Diameter	Thickness
26-35mm	9mm
38mm	10mm
41mm	10mm

Patella Resection Guide
71935819

Patella Caliper
71434672

Figure 50

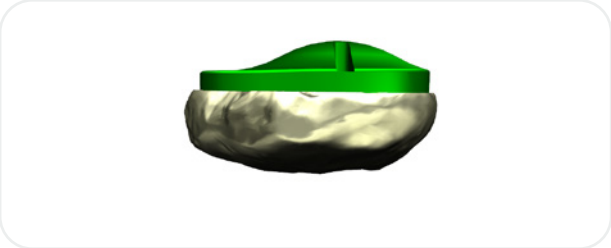


Figure 51

CONCELOC◊ Patella preparation

Patella peg preparation

1. Choose the appropriate size porous oval/round patella drill guide and attach it to the patella clamp. Make sure the guide sits flush on the resected patella and there are no spaces visible. Use the porous patella peg drill 5.7mm to drill the three fixation holes (**Figure 50**).

   Note: If necessary the porous patella peg drill 6mm may be used which will create slightly less press fit.

2. Place the CONCELOC round or oval patella trial onto the prepared patella. Make sure there are no spaces between the prepared bone and trial to ensure press-fit (**Figure 51**).

Porous Oval Patella Trial 32mm
71434683

Porous Round Patella Trial 32mm
71434832

Patella Clamp
75005701

Porous Oval/ Round Patella Drill Guide 32mm
71434732

Porous Patella Peg Drill
71434671 5.7mm
71434723 6.0mm

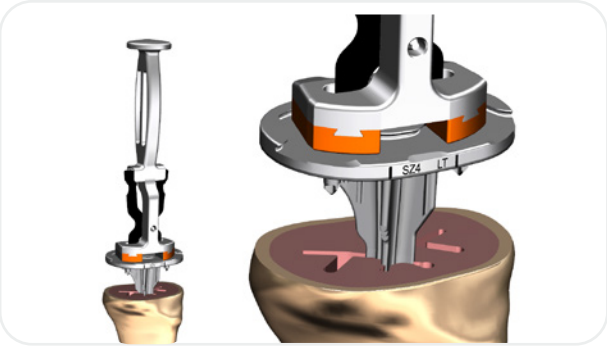


Figure 52

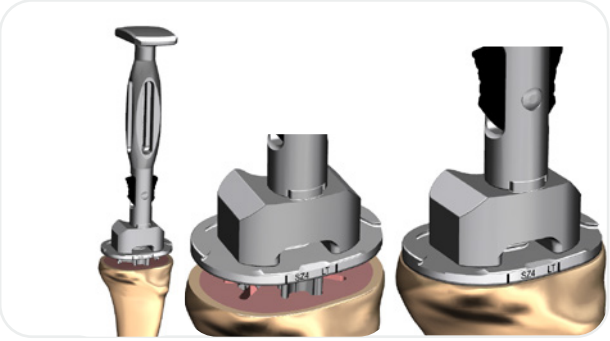


Figure 53

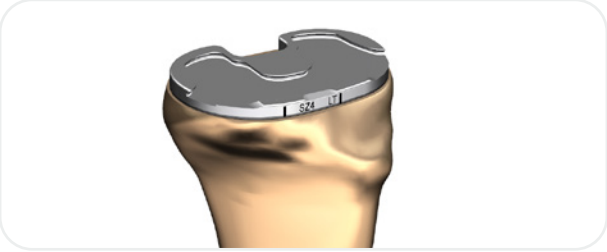


Figure 54

Component implantation

CONCELOC◊ Tibia implantation

Ensure that the tibial bone surface is flat and free of bone debris and fragments. This will help to achieve an optimal press-fit.

1. Connect the locking tibia impactor to the tibia implant.

   Note: Pegs on the porous tibia implant are sharp. Be cautious when handling.

2. Align the porous tibia implant with the prepared tibia. Take care to ensure implant keel is appropriately aligned within the prepared slots (**Figure 52**).

3. Slowly impact the porous tibia implant roughly ¾ of the way down to the proximal tibia surface. While impacting, ensure that the inferior surface of the implant and proximal tibia are parallel (**Figure 52**). Also be sure to continually perform visual checks to ensure proper alignment is maintained throughout impaction.

4. Attach the modular handle to the modular universal tibia impactor. Continue impaction until the tibia implant is fully seated (**Figure 53**).

5. After impaction, ensure that the tibia implant is completely contacting the surface of the resected tibia and no gaps are present between the implant and bone (**Figure 54**). Fixation, support and stability may be compromised if gaps are present between the implant and bone.

Modular Impact Handle
74016242

Locking Tibia Impactor
74016268

Modular Universal Tibial Impactor
74016249

Figure 55

Figure 56

Component implantation

Porous Femoral implantation

Ensure that flat, clean cuts are made to all of the femoral resection cuts and they are free from bone debris. This will help to achieve an optimal press-fit.

1. Attach the outer-grip locking femoral impactor to the appropriate size and side porous femoral implant. Place the femoral implant on the femur and impact it until fully seated (**Figure 55**) The finishing femoral impactor may also be used to seat the implant if needed (**Figure 56**).

   Note: While impacting be sure to maintain an extended femoral component position as frictional resistance from the porous coating can create unanticipated implant flexion.

Modular Impact Handle
74016242

Modular Legion Femoral Impactor
74016250

Outer Grip Locking Femoral Impactor
74018902

Figure 57

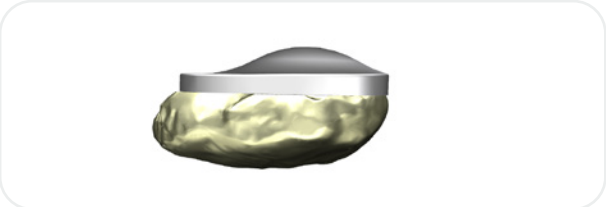


Figure 58

Component implantation

CONCELOC◊ Patella implantation

Ensure that the prepared patella surface is flat and free of bone debris and fragments. This will help to achieve an optimal press-fit.

1. Align the pegs of the porous patella implant to the fixation peg holes previously prepared. When using an oval patella implant, ensure that the lateral facet of the oval patella implant is over the lateral facet of the native patella. Lightly press the patellar pegs into the native patella.
2. Attach the patella cement clamp to the patella clamp. Center cement clamp over the patella implant and apply pressure to the clamp until patella implant is fully seated onto the resected surface of the native patella (**Figure 57**). Maintain consistent pressure across the entire implant and continually perform visual checks to ensure the inferior surface of the implant and bony surface are parallel.
3. After press-fit is achieved, ensure that the patella implant is completely contacting the surface and no gaps are present between the implant and bone (**Figure 58**). Fixation, support and stability may be compromised if gaps are present between the implant and bone.

Patella Cement Clamp
71434663

Patella Clamp
75005701

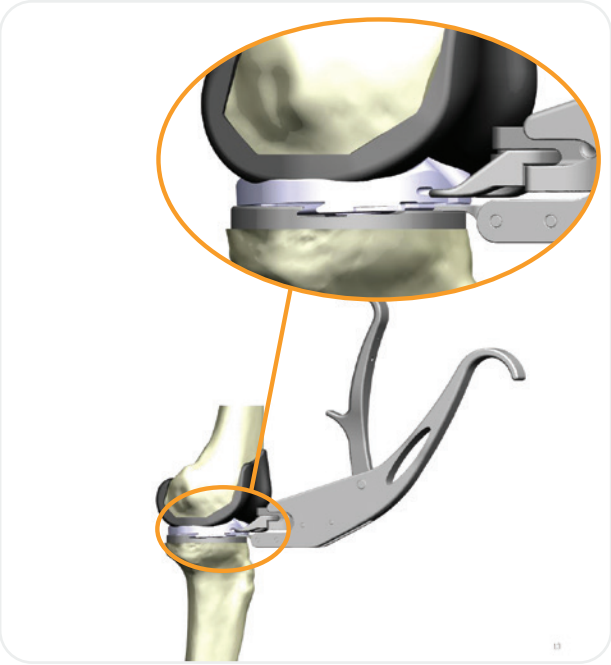


Figure 59

Component implantation

Tibia insert implantation

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

   Note: The articular insert can be difficult to insert because of the high medial posterior lip. The best technique is to flex the knee to 110º, push in the insert as far as possible and bring the leg out into full extension. Externally rotating the tibial in flexion can also help with getting in the insert.
3. Insert the tip of the Articular Insert Assembly Tool into the center notch of the anterior lock detail (handle up) and engage the two tabs of the Tool into the two recesses on the anterior periphery of the insert (**Figure 59**).

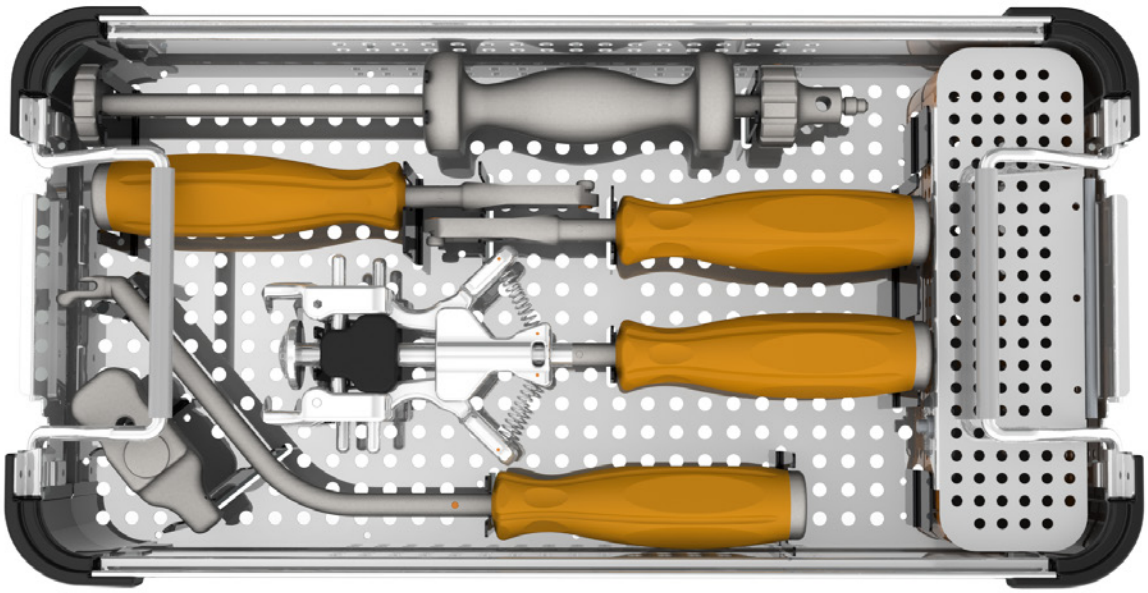
   Note: Make sure the tool is level with the plane of the baseplate.
4. Squeeze the tool handle until the insert is fully seated within the Tibial Component. The insert should not move under any pressure in flexion or extension.

Articular insert assembly tool
74018911

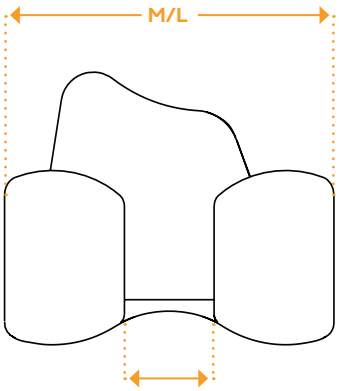
Component removal

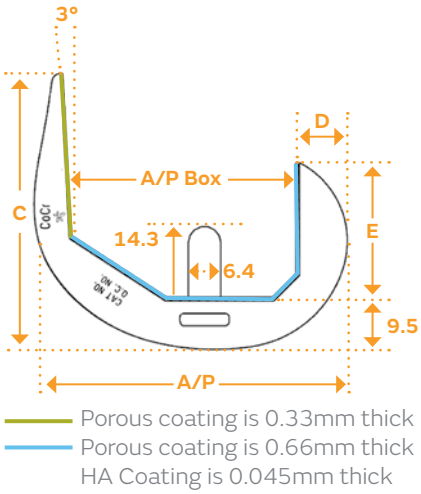
Please refer to RENOVATION Universal Knee Implant Extraction Instrument System Surgical Technique 04044 (2025)

RENOVATION Knee Extraction Set 75210243



Femoral component dimensions (mm)





Size	M/L	A/P	C	D	E	A/P Box
2	58	50	50	9.5	24.4	33
3	62	55	52	9.5	25.3	37
4	66	59	55	9.5	26.2	41
5	70	62	57	9.5	27	44
6	73	66	59	9.5	28.6	47
7	77	70	61	11.5	31.1	49
8	80	75	62	11.5	32.7	54

All dimensions in millimeters (mm)

Tibial insert compatibility

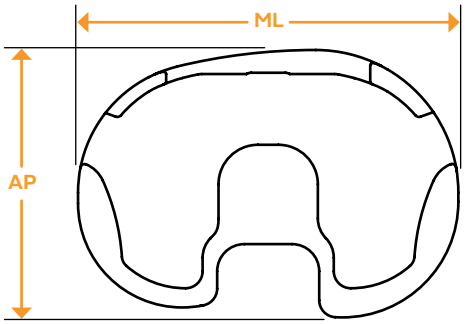
LEGION◊ CRHF, Medial Stabilized Compatibility

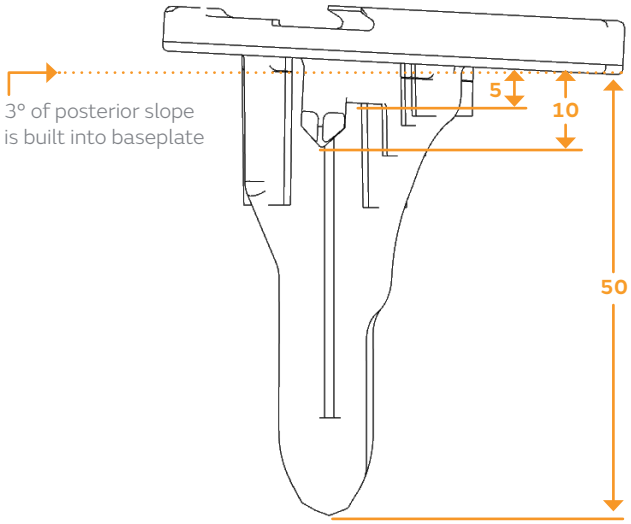
	Femoral size							
Insert Size	1	2	3	4	5	6	7	8
1-2	●	●	●	●				
3-4		●	●	●	●	●		
5-6				●	●	●	●	●
7-8						●	●	●

LEGION Deep Dished Compatibility

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

CONCELOC◊ Tibial Baseplate dimensions (mm)





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

All dimensions in millimeters (mm)

Dimensions above are the same for all size tibias and are in millimeters (mm).

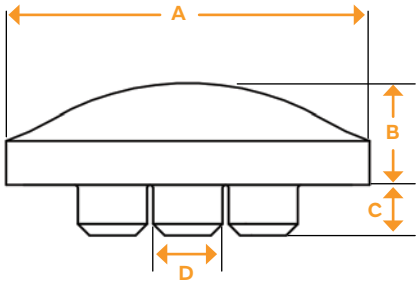
Trials account for thickness.

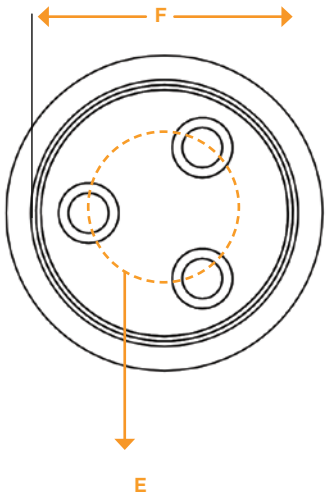
CONCELOC Patella dimensions (mm)

Round

Size	A (Diameter)	B (Thickness)	C (Peg height)	D (Peg diameter)	E (Peg circle diameter)	F (CONCELOC pad diameter)
26mm Std	26	9	4.4	6	15.3	22
29mm Std	29	9	4.4	6	15.3	25
32mm Std	32	9	4.4	6	15.3	26
35mm Std	35	9	4.4	6	17.9	29
38mm Std	38	10	4.4	6	17.9	32
41mm Std	41	10	4.4	6	17.9	35

All dimensions in millimeters (mm)

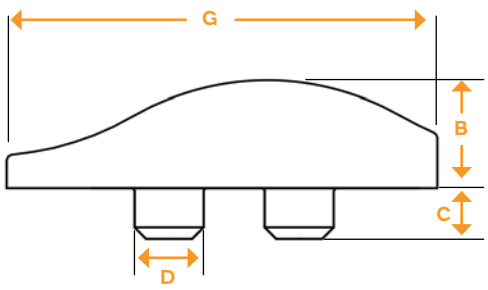




Oval

Size	A (Diameter)	B (Thickness)	C (Peg height)	D (Peg diameter)	E (Peg circle diameter)	F (CONCELOC pad diameter)	G (Major diameter)
29mm Std	29	9	4.4	6	15.3	25	35
32mm Std	32	9.5	4.4	6	15.3	26	38
35mm Std	35	9.5	4.4	6	17.9	29	41
38mm Std	38	10.5	4.4	6	17.9	32	44
41mm Std	41	10.5	4.4	6	17.9	35	47

All dimensions in millimeters (mm)



Notes

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