

# LCS® Complete™ – P.F.C.® Sigma™ RP Mobile-bearing Total Knee System

## IMPORTANT

This Essential Product Information sheet does not include all of the information necessary for selection and use of a device. Please see full labeling for all necessary information.

## INDICATIONS

### CEMENTED USE:

The LCS Complete – P.F.C. Sigma RP Mobile-bearing Total Knee System is indicated for cemented use in cases of osteoarthritis and rheumatoid arthritis. The RPF insert and femoral component are indicated where a higher than normal degree of post-operative flexion is required. The rotating platform prosthesis and modular revision components are indicated for revision of failed knee prostheses.

### UNCEMENTED USE:

The porous coated Keeled and Non-keeled M.B.T.™ (Mobile-bearing Tibial) Tray configurations of the LCS Total Knee System are indicated for noncemented use in skeletally mature individuals undergoing primary surgery for reconstructing knees damaged as a result of noninflammatory degenerative joint disease (NIDJD) or either of its composite diagnoses of osteoarthritis and post-traumatic arthritis pathologies. The Rotating Platform device configuration is indicated for use in knees whose anterior and posterior cruciate ligaments are absent or are in such condition as to justify their sacrifice. The P.F.C. Sigma RP Curved bearings when used with the P.F.C. Sigma Cruciate Retaining Femoral Component can be used in posterior cruciate ligament retaining procedures.

## CONTRAINDICATIONS

The use of the LCS Complete – P.F.C. Sigma RP Mobile Bearing Total Knee System is contraindicated in:

- the presence of osteomyelitis, pyrogenic infection or other overt infection of the knee joint;
- patients with any active infection at sites such as the genitourinary tract, pulmonary system, skin or any other site. Should a patient have any infection prior to implantation, the foci of the infection must be treated prior to, during and after implantation.
- patients with loss of musculature or neuromuscular compromise leading to loss of function in the involved limb or in whom the requirements for its use would affect recommended rehabilitation procedures.
- patients with severe osteoporosis or other metabolic bone diseases of the knee.
- patients with any of the following conditions:
  - lesions of the supporting bone structures (e.g. aneurysmal or simple bone cysts, giant cell tumor or any malignant tumor),
  - systemic and metabolic disorders leading to progressive deterioration of solid bone support,
  - the presence of severe instability secondary to advanced loss of osteochondral structure or the absence of collateral ligament integrity, fixed deformities greater than 60° of flexion, 45° of genu varus or valgus,
  - known drug or alcohol addiction,
  - skeletally immature individuals and the presence of allergic reaction to implant metals or polyethylene are also contraindications for the noncemented, porous coated, M.B.T. and LCS Complete – P.F.C. Sigma RP Mobile Bearing device configurations, and for the cemented use of all device configurations of the LCS Complete – P.F.C. Sigma RP Mobile Bearing Total Knee System.

## CONTRAINDICATIONS FOR USE WITHOUT CEMENT

Noncemented use of the Porous Coated Keeled or Non-Keeled M.B.T. Tray device configurations is contraindicated in patients with sufficient loss in quantity or quality of bone stock (as determined on x-ray) such that successful noncemented fixation is unlikely. Additional contraindications may become apparent at the time of surgery. These include:

- vascular deficiency at the bone site;
- inadequate bone stock to assure both a firm press fit and close apposition of the cut bone surfaces to the prosthesis;
- the inability to make bone cuts so as to assure both correct component position and intimate apposition of bone and prosthetic surfaces;
- inadequate bone quality (e.g. severe osteoporosis) and lack of stability of the implanted components.

In the presence of any of the above conditions the components should be fixed with cement.

## WARNINGS AND PRECAUTIONS

Components labeled for "Cemented Use Only" are to be implanted only with bone cement. The following conditions tend to adversely affect knee replacement implants: excessive patient weight, high levels of patient activity, likelihood of falls, poor bone stock, metabolic disorders, disabilities of other joints. The P.F.C. stem extensions can only be used with M.B.T. revision trays and LCS Complete Revision Modular femoral components.

## ADVERSE EVENTS

The following are the most frequent adverse events after knee arthroplasty: change in position of the components, loosening, bending, cracking, fracture, deformation or wear of one or more of the components, infection, tissue reaction to implant materials or wear debris; pain, dislocation, subluxation, flexion contracture, decreased range of motion, lengthening or shortening of leg caused by improper positioning, looseness or wear of components; fractures of the femur or tibia.

For more information about DePuy products, visit our website at [www.depuyknees.com](http://www.depuyknees.com)



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 pfc **sigma**<sup>™</sup> **RP-F**

Surgical Technique

Introduction	iii
<hr/>	
Surgical Approach	1
<hr/>	
Appendix 1: Posterior Up Femoral Sizing Guide	44
<hr/>	
Appendix 2: Non-cemented M.B.T. Tray Application	46
<hr/>	
Appendix 3: Femoral Sizing (Anterior Down)	48
<hr/>	
Appendix 4: Alternative Cutting Block Option for Tissue Sparing Technique	49
<hr/>	
Catalog Numbers	52
<hr/>	

## Introduction

For certain groups of patients undergoing total knee replacement, high range of motion is necessary for daily activities, which may include prolonged kneeling, squatting or cross-legged sitting. Therefore a knee implant that addresses these parameters is required.

The basic concept of the P.F.C.® Sigma™ RP-F total knee prosthesis is to provide sufficient articular surface and proper patella tracking as well as rotational freedom to accommodate deep knee flexion up to 155 degrees.

## High Function Demands Rotation

### *High Function*

- Accommodates up to 155 degrees flexion.

### *High Conformity*

- The patented post and cam mechanism acts as a third weight-bearing condyle to help improve load transfer and minimize polyethylene stress.

### *Increased Rotational Freedom*

- Provides up to 20 degrees of fully supported internal/external rotation in deep flexion.



Appropriately prepare and drape the extremity. Apply a tourniquet and following the application of an Esmarch bandage, inflate it.

A straight incision is initiated proximal to the superior margin of the patella and an equivalent distance distal to its inferior margin (Figure 1). Thereby, reducing the degree of skin retraction and lowering the risk of subsequent adipose tissue necrosis.

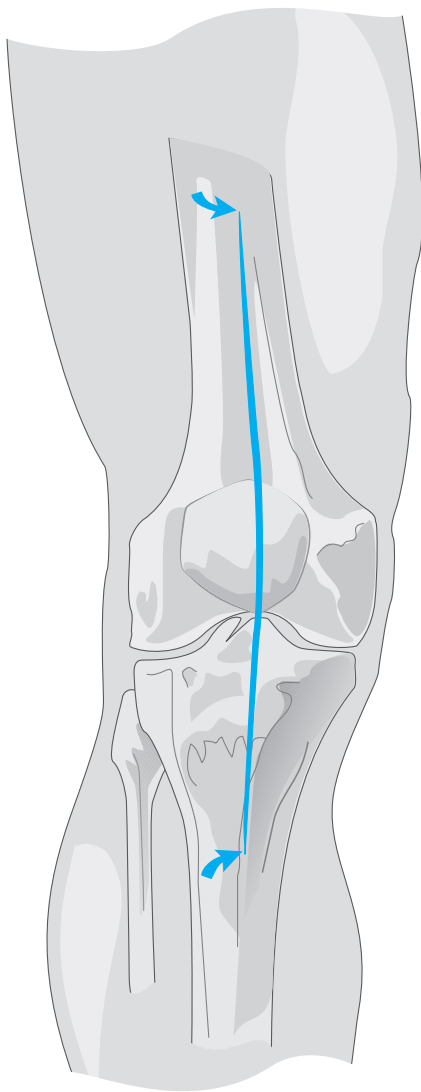


Figure 1

The incision is developed at the deep fascial level to the tendon of rectus femoris and the patellar tendon. Undermining of the bilateral skin flaps is avoided. The tendon of rectus femoris is incised and the incision carried 2-3 mm medial to the medial margin of the patella, the patellar tendon and, subperiosteally, 5 cm distal to the superior margin of the tibial tubercle (Figure 2).

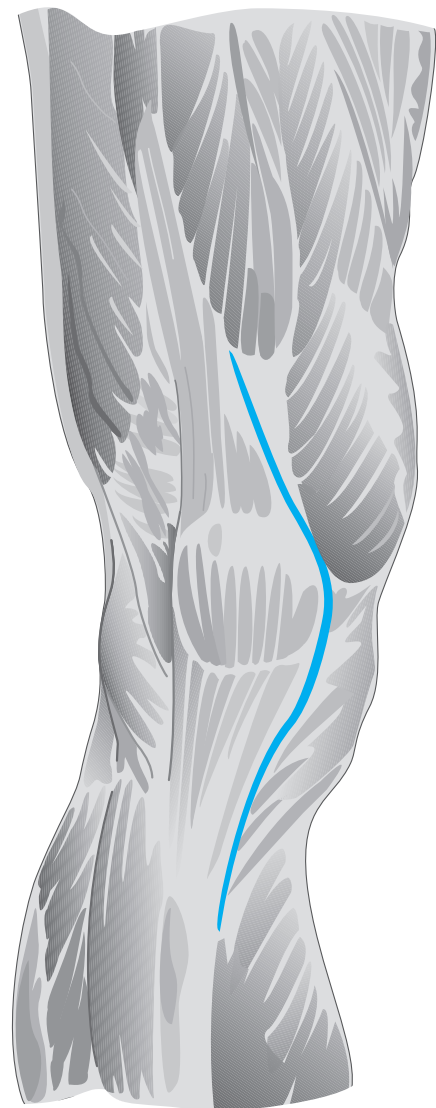


Figure 2

# Exposure

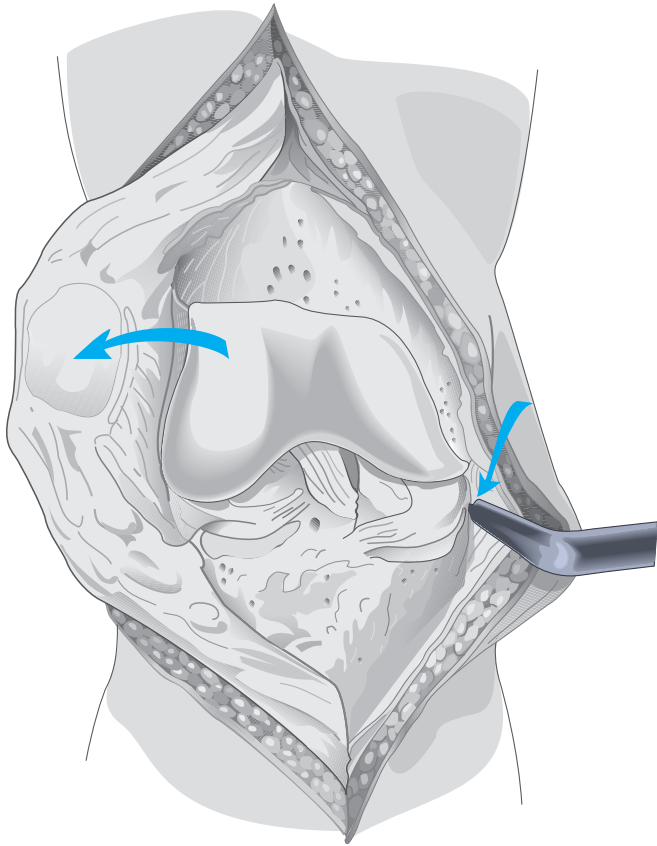


Figure 3

With the knee in 90 degrees of flexion, the tibia is externally rotated with posteromedial dissection, bringing its medial condyle clear of the femur. Medial meniscectomy is completed, and attention directed to the lateral side (Figure 4).

Exposure and preliminary balance must be based on the patient's preoperative deformity and soft-tissue stability. The following is for mild varus deformity.

The patella is everted laterally and the knee placed in full flexion (Figure 3). The cruciate ligaments and the menisci are excised. Where the knee is tight and in varus, preliminary soft-tissue release is performed. A curved osteotome is passed along the medial tibial border posterior to the midcoronal plane to release the meniscotibial ligament and promote anterior subluxation of the tibia.

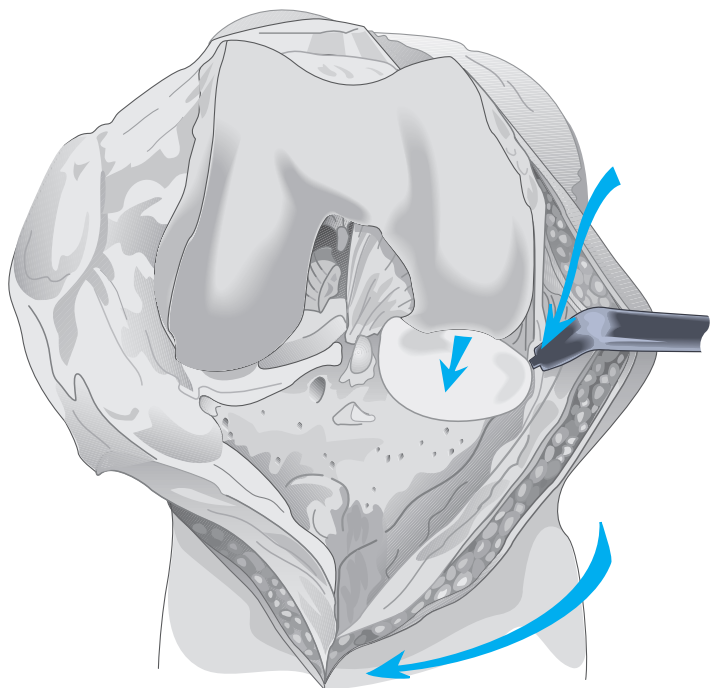


Figure 4

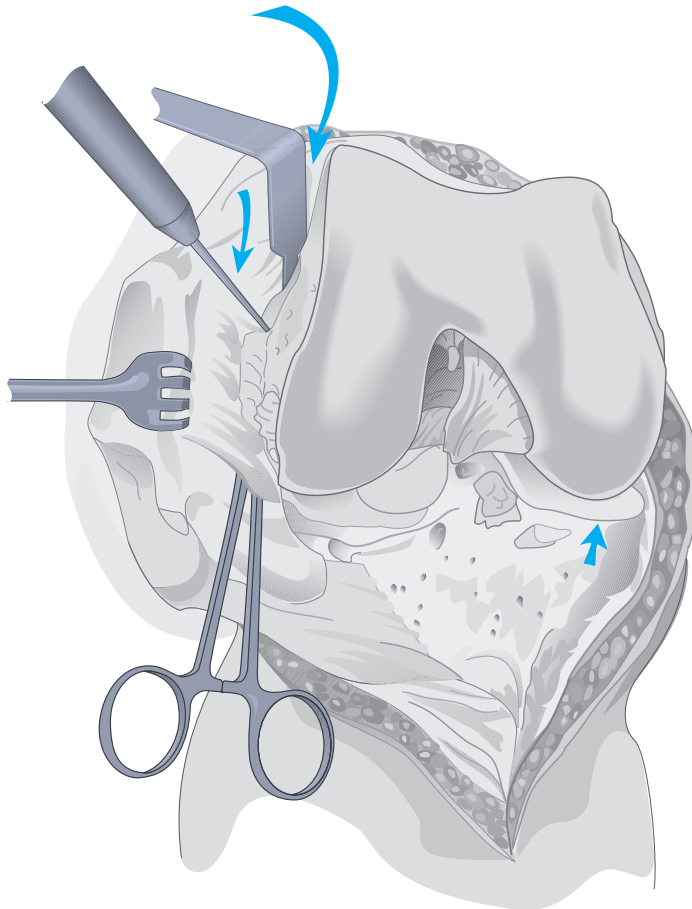


Figure 5

A 90 degree Hohmann retractor is positioned between the everted patella and the distolateral femur, exposing the lateral patellofemoral ligament, which is incised with electrocautery (Figure 5).

The retractor is repositioned at the interval of the iliotibial tract and the tibial attachment of the capsule. The capsule is dissected free from the infrapatellar fat pad and a lateral meniscectomy is performed. The lateral inferior genicular artery is coagulated. The insertion of the iliotibial tract is identified and the capsule dissected from the lateral tibial condyle. The retractor is repositioned against the lateral tibial condyle (Figure 6).

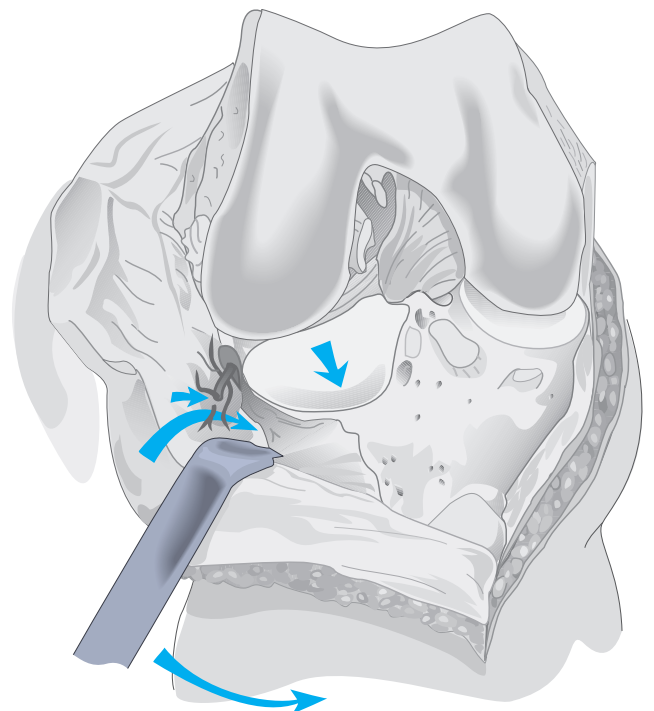


Figure 6

# Tibial Alignment

Place the knee in maximum flexion with the tibia distracted anteriorly and stabilized.

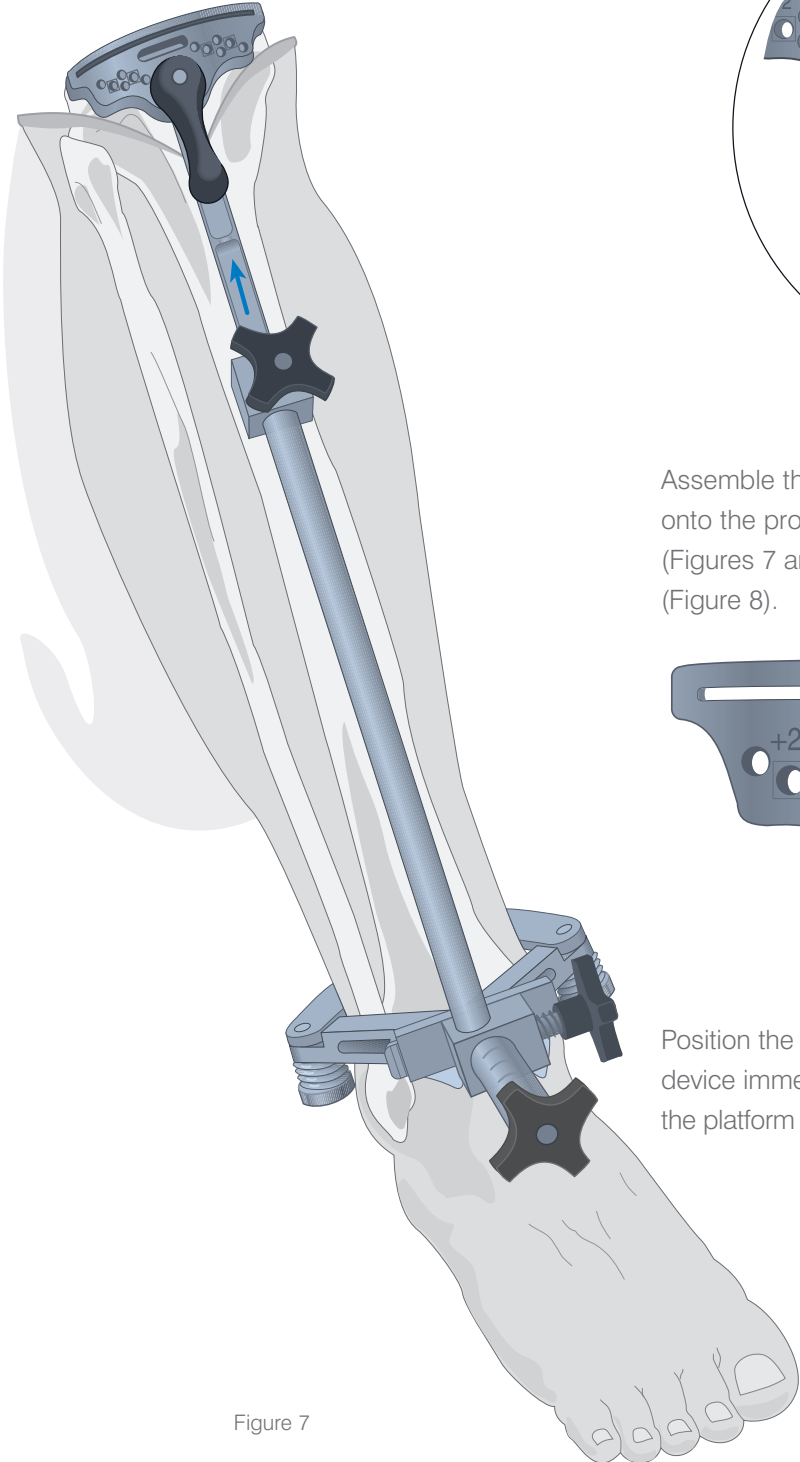


Figure 7

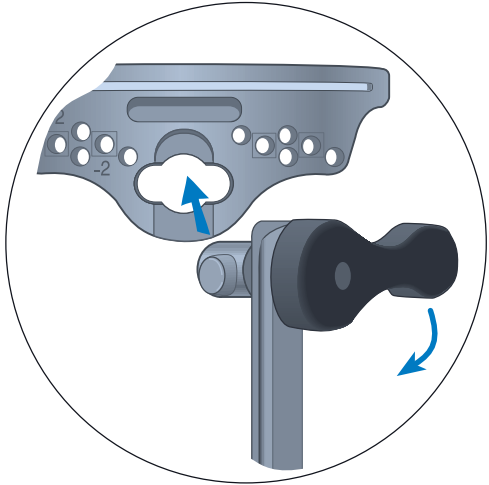


Figure 7A

Assemble the upper cutting platform and secure it onto the proximal uprod of the tibial alignment device (Figures 7 and 7A). Choose a 0 degree cutting block (Figure 8).

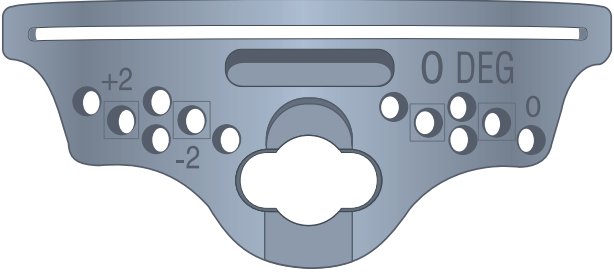


Figure 8

Position the malleolar clamp of the tibial alignment device immediately proximal to the malleoli. Raise the platform to the level of the tibial condyles (Figure 7).

Translate the lower assembly anteroposteriorly to align it parallel to the tibial axis (Figure 9).

The proximal tibial cut must be perpendicular to the tibial axis (0 degree posterior slope).

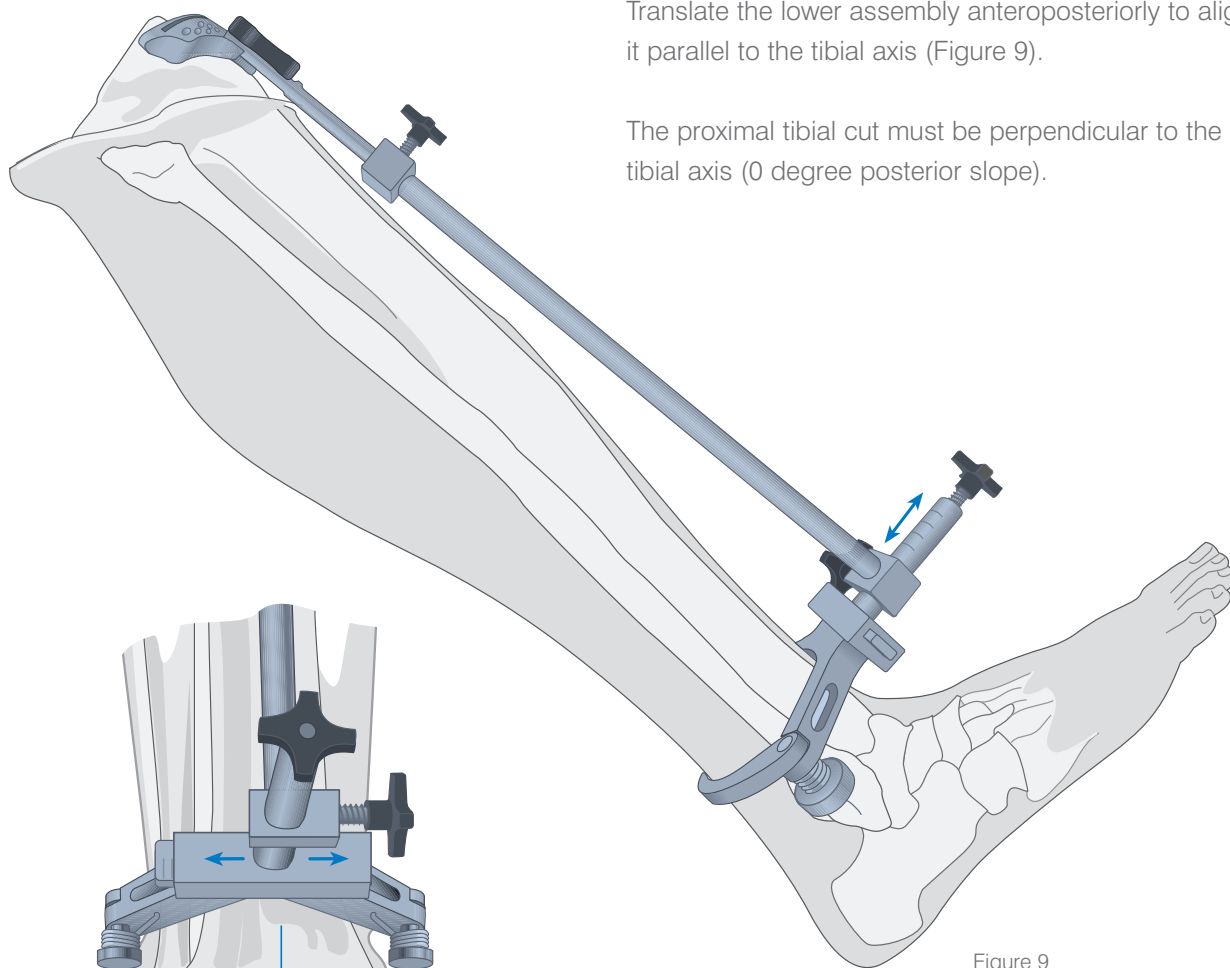


Figure 9

Mediolateral alignment is approximately parallel to the tibial axis, but as the lateral malleolus is more prominent, bisecting the transmalleolar axis will prejudice the cut into varus. The midline of the tibia is approximately 3 - 5 mm medial to the transaxial midline. Translate the lower assembly medially to the palpable anterior crest of the tibia, usually somewhere between the first and second vertical mark (Figure 10). There are scribe marks at 3 mm and 6 mm for reference. If the platform is medially displaced, make an adjustment at the lower assembly.

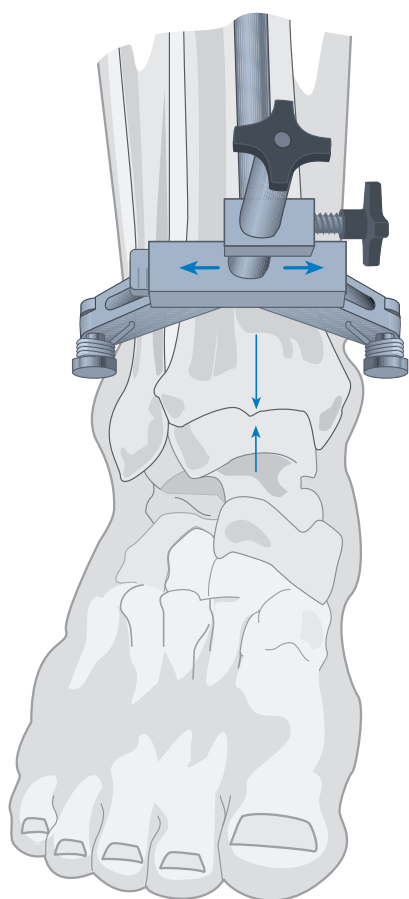


Figure 10

# Tibial Alignment

The distal portion of the long arm of the tibial alignment device should align with the center of the talus.

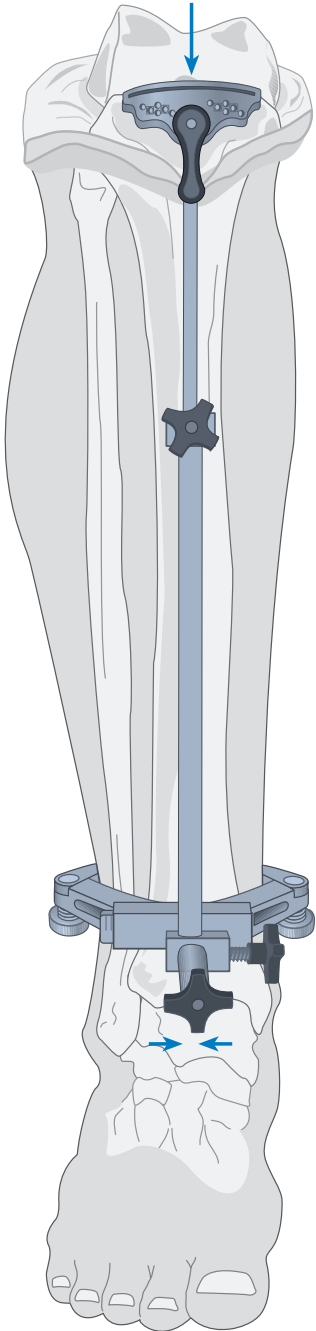


Figure 11

Lateral alignment is similarly confirmed (Figure 12).

**Note: Where indicated, make varus/valgus corrections by sliding the distal portion of the tibial alignment to the appropriate location.**

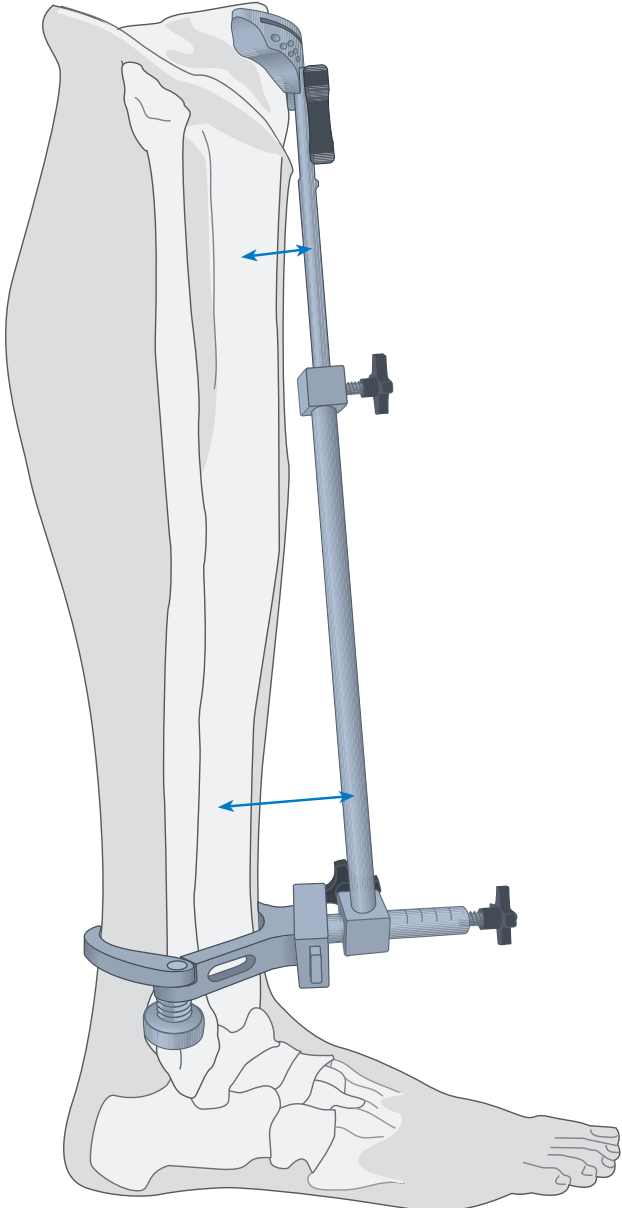


Figure 12

Align the upper cutting platform with the medial third of the tibial tubercle and the medial margin of the lateral intercondylar eminence with the extremities of the cutting surface against the cortex (Figure 13).

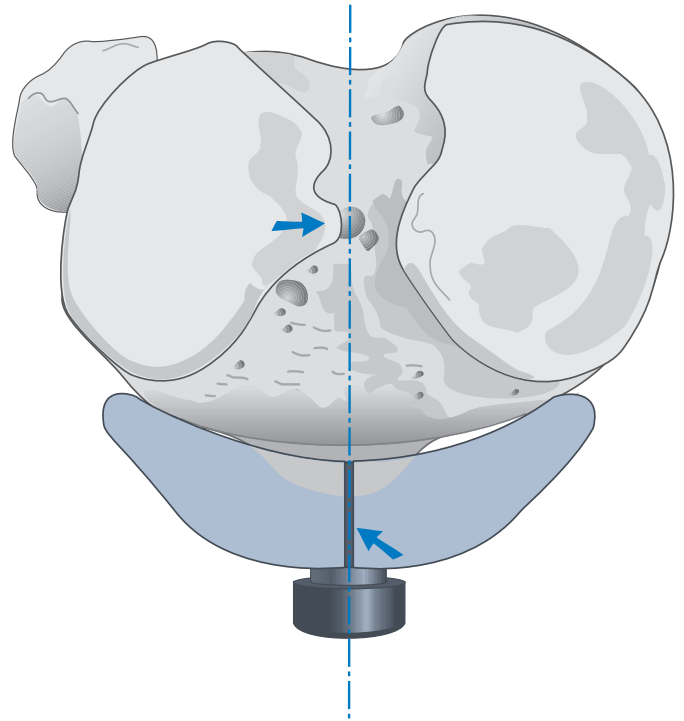


Figure 13

The exact level of resection will vary according to patient anatomy. As the mediolateral transverse plane of the tibial plateau is usually 3 degrees from the perpendicular and the projected cut is perpendicular to the anatomic axis, more bone is typically removed from the lateral condyle (Figure 14).

Composite thickness of the P.F.C. Sigma RP-F tibial insert is 10, 12.5, 15, and 17.5 mm.

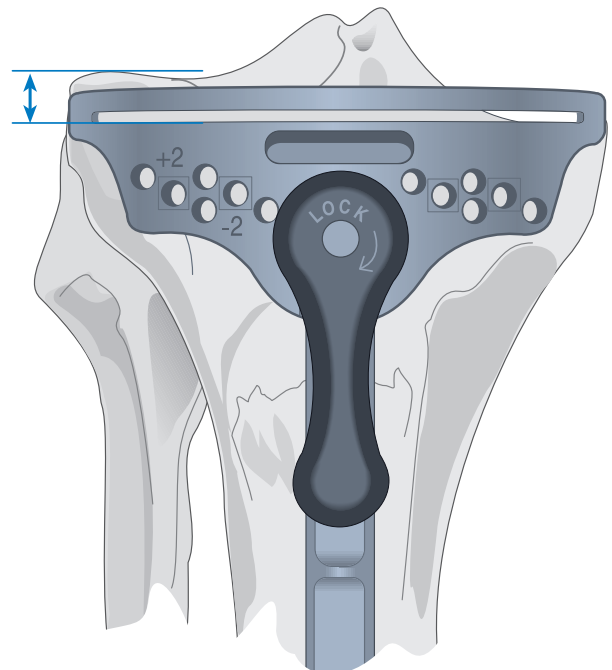


Figure 14

# Tibial Stylus

The stylus determines the exact level of resection.

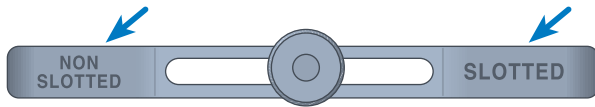


Figure 15

The outrigger of the stylus is marked non-slotted and slotted at either end (Figure 15). When the tibial resection is performed from the surface of the block, choose the non-slotted end of the outrigger; conversely when the resection is performed through the slots, choose the slotted end of the outrigger. There is a 4 mm difference between the top surface and the slot.

Insert the cylinder foot into the slot of the cutting block and adjust to the appropriate level (Figure 16). It is calibrated in 2 mm increments, indicating the amount of bone and residual cartilage to be resected (Figure 17).

A level of 10 mm is suggested when resection is based on the less involved condyle. Adjust the block so that the stylus rests on the center of the condyle. The cutting block is secured by the large anterior set screw.

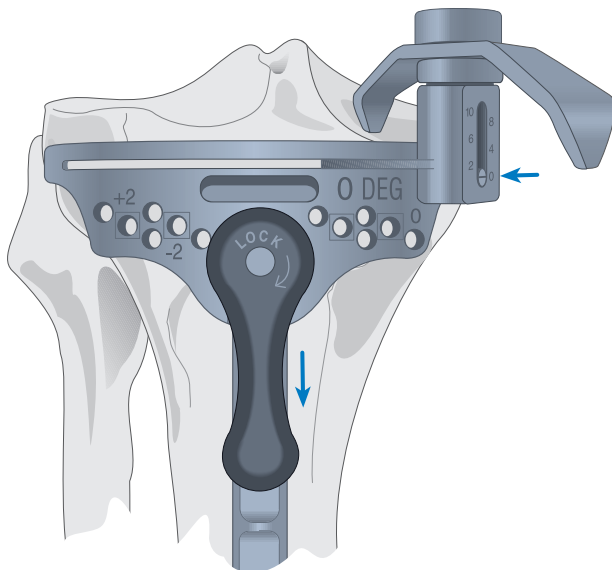


Figure 18

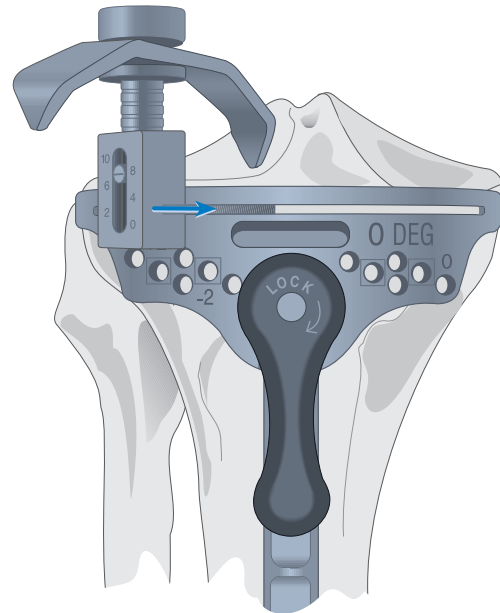


Figure 16

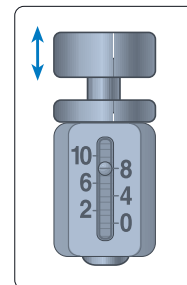


Figure 17

Select level 0 when resection is based on the more involved condyle and does not result in excessive contralateral resection (Figure 18). Secure the cutting block by the large anterior set screw.

**Note:** When this indicates greater than 10 mm of resection from the contralateral condyle, a more proximal level is indicated. Augment the deficiency with cement or bone graft as the situation dictates. In special cases, a M.B.T. revision tray with augmentation option may be indicated.

# Securing the Platform and Tibial Resection

Introduce Steinmann pins or 3.2 mm (1/8 in.) drill bits through the central holes into the tibia, stopping well short of the posterior cortex (Figure 19). The tibial alignment device can either be removed by unlocking the cutting block or left in place for additional stability.

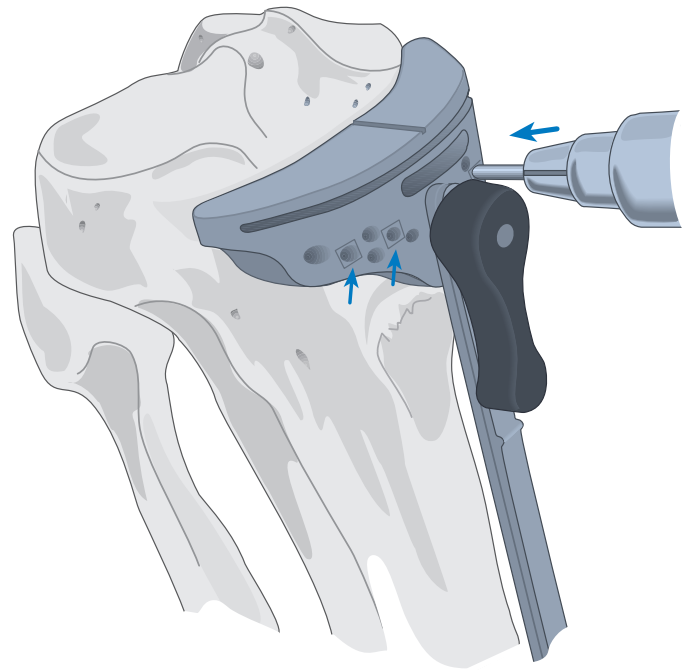


Figure 19

Resection is made either through the slot or on the top surface, depending upon the stylus reference used (Figure 20). A 1.19 mm saw blade is recommended when cutting through the slots.

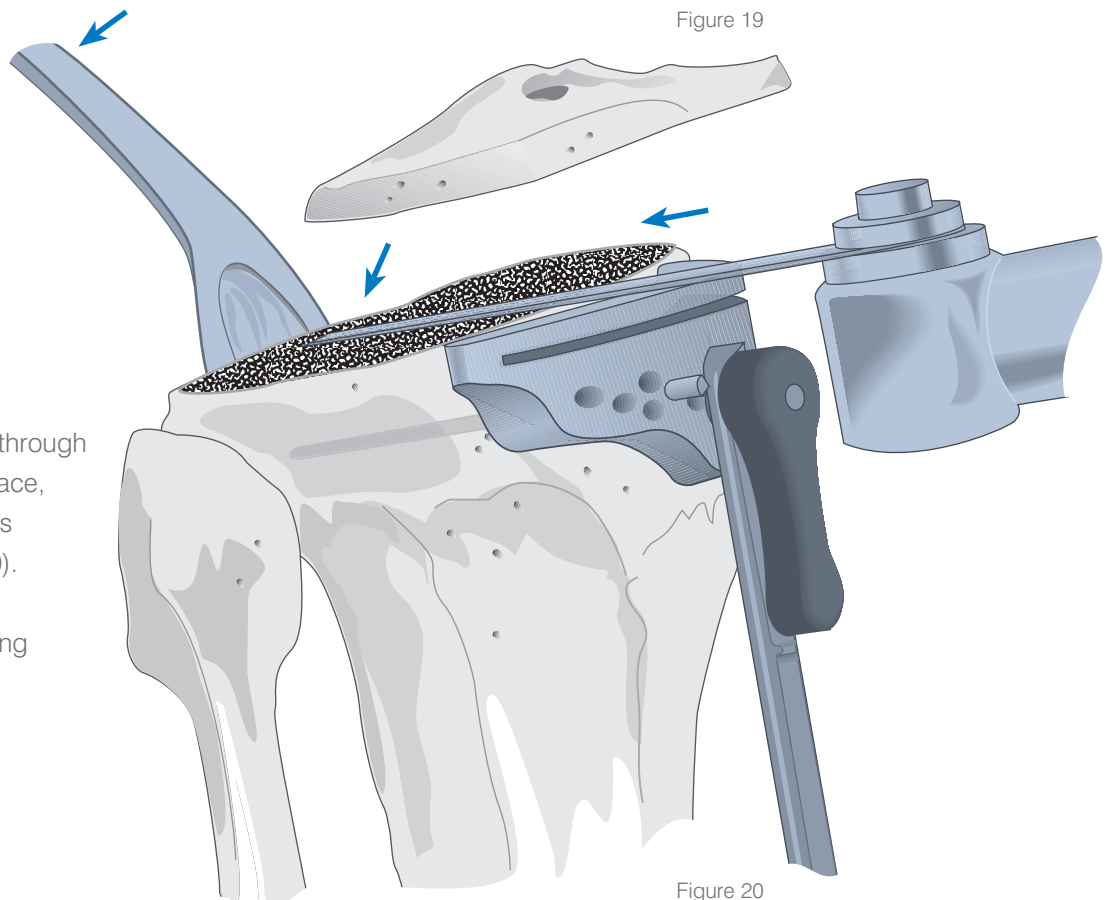
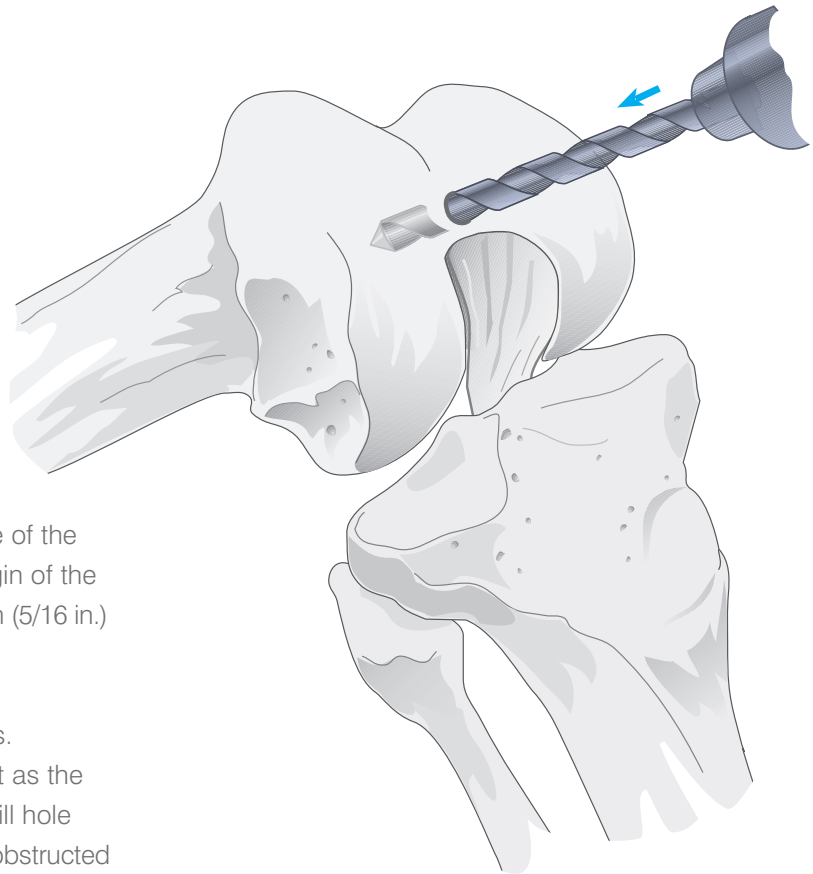


Figure 20

# Entering the Medullary Canal



The medullary canal is entered at the midline of the femoral trochlea 7-10 mm anterior to the origin of the PCL, to a depth of about 5-7 cm using a 8 mm (5/16 in.) drill (Figure 21).

Care is taken that the drill avoids the cortices. It is helpful to palpate the distal femoral shaft as the drill is advanced (Figures 22 and 23). The drill hole may be biased anteromedially to facilitate unobstructed passage of the long intramedullary rod to the diaphyseal isthmus, if indicated by pre-operative radiographs.

Figure 21

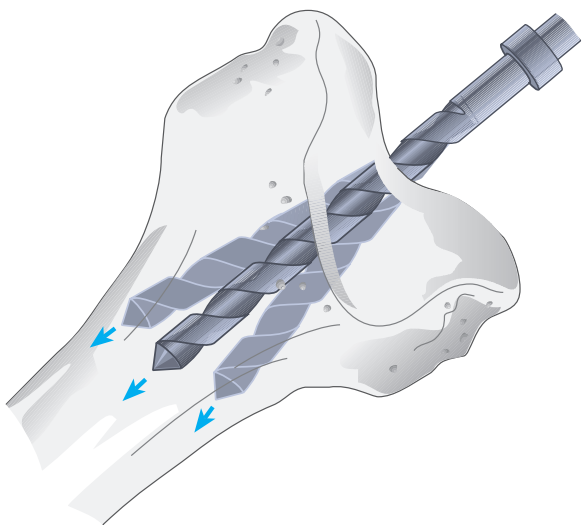


Figure 22

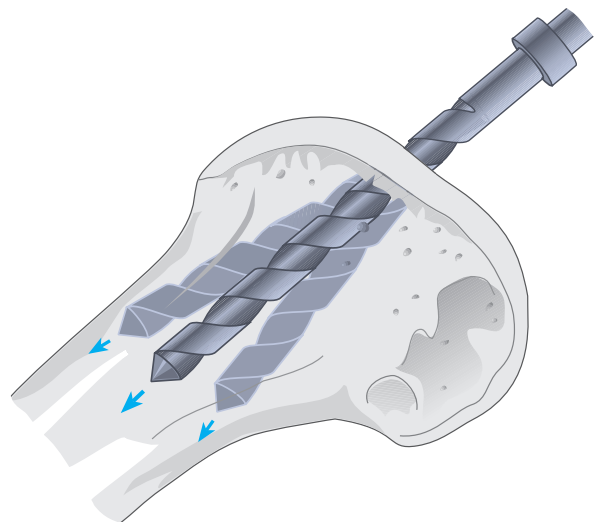


Figure 23

# The Intramedullary Rod

With the handle assembled onto the long intramedullary rod, the rod is introduced slowly into the canal to the level of the isthmus to confirm unobstructed passage (Figure 24). The rod is fluted to relieve intramedullary pressure and permit the release of bone marrow, avoiding embolization. It is subsequently withdrawn.

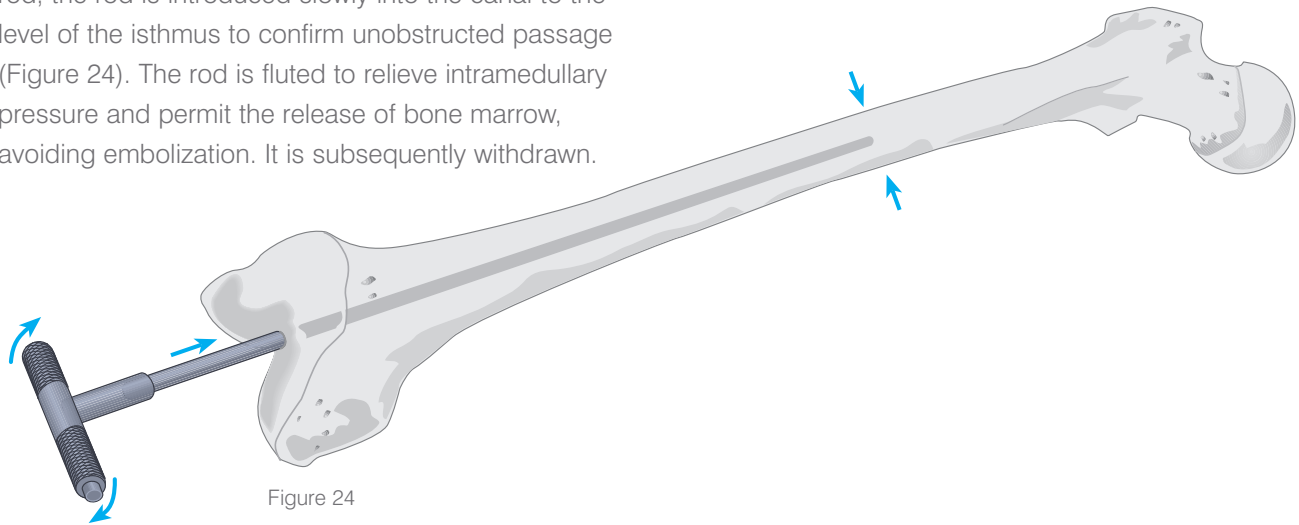


Figure 24

# The Femoral Locating Device

The desired valgus angle with the appropriate Right/Left designation, as indicated on the pre-operative films, is set and locked into place on the front of the locating device (Figure 25). The angle can be set from 0 degrees to 9 degrees in 1 degree increments.

With the rod repositioned in the medullary canal, the handle is removed and the locating device is placed over the rod (Figure 26).

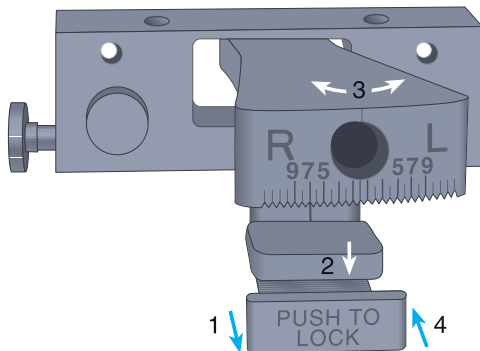


Figure 25

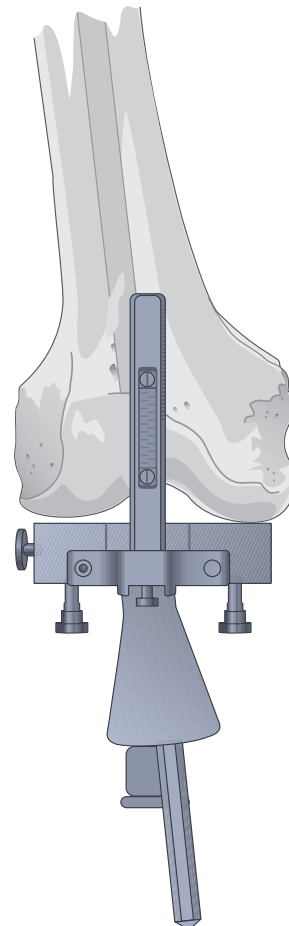


Figure 26

# Rotational Correction

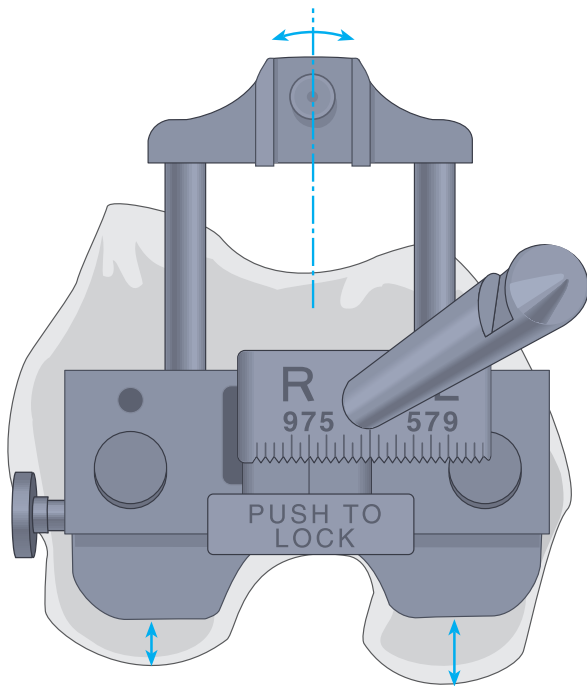


Figure 27

The femoral locating device is tapped into position at the more prominent condyle (usually the medial) (Figure 28).

**Note: It is essential that firm contact be established at the subchondral level of the condyle, clear of any residual peripheral osteophytes.**

Orientation is initially determined with reference to the posterior femoral condyles, subject to subsequent correction at the A/P resection. The graduated outrigger is centered at the femoral trochlea, placing it in slight external rotation and exposing a greater amount of medial condyle (Figure 27).

Alternatively, it may be externally rotated until perpendicular to the mechanical axis of the tibia in 90 degrees of flexion.

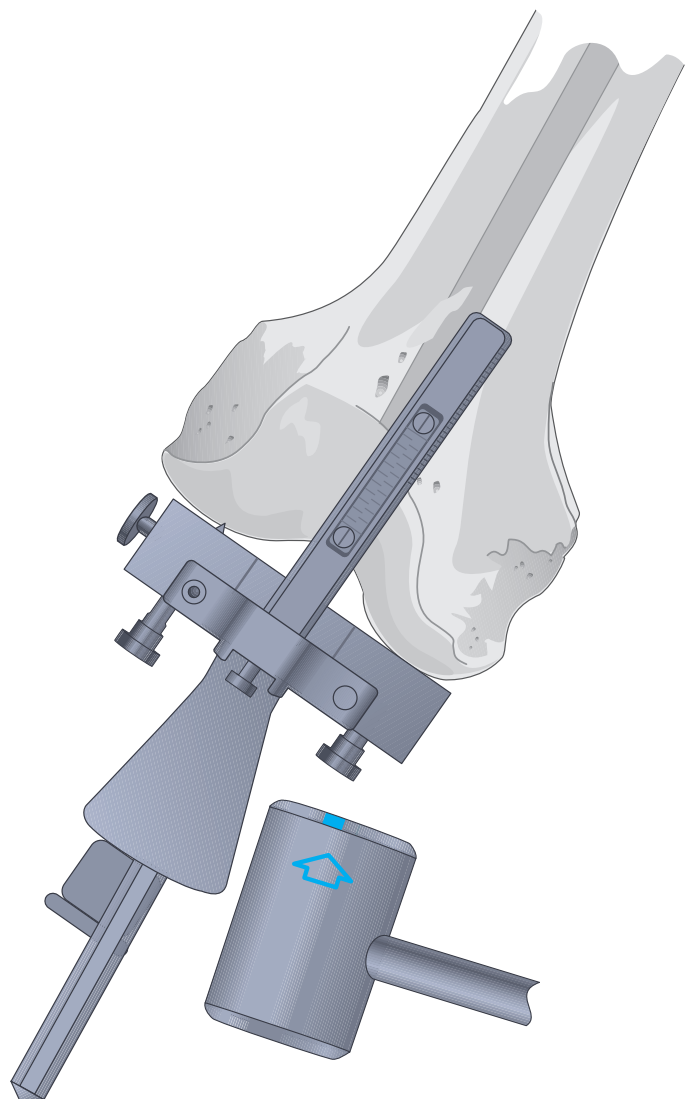


Figure 28

# The Distal Femoral Cutting Block

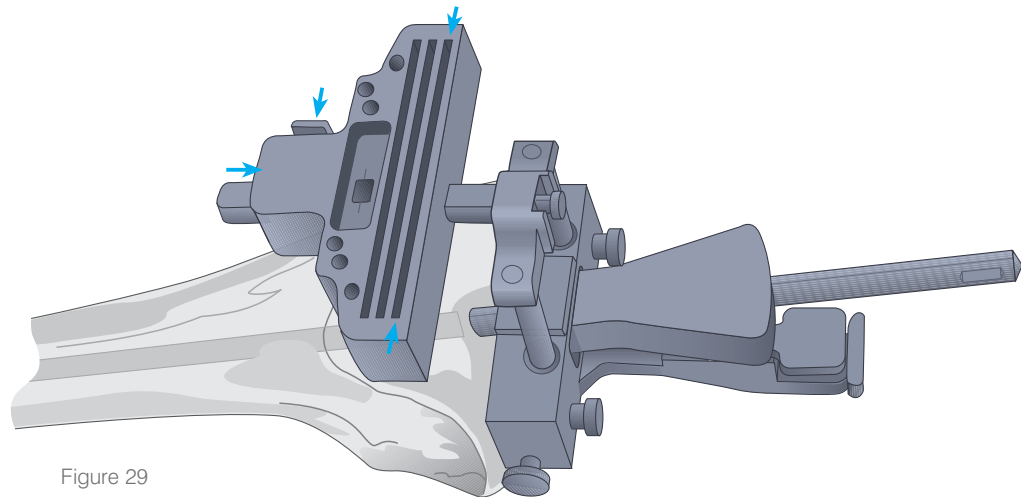


Figure 29

The cutting block is assembled onto the calibrated outrigger by depressing the button located on the right proximal end (Figure 29). The resection of the more prominent condyle, inclusive of residual cartilage, will correspond to the distal dimension of the femoral prosthesis. Where the femoral locating device rests on eburnated bone, resection is 2 mm less than the distal dimension of the femoral prosthesis to allow for absent cartilage and to avoid elevation of the joint line.

The scale for the numbers on the outrigger is even on the left and odd on the right (Figure 30). The number corresponding to the appropriate resection level is aligned with the inscribed line in the center of the window of the distal femoral cutting block.



Figure 30

**Note: For P.F.C. Sigma RP-F femoral components, the following distal femoral resection is recommended:**  
**Sizes 1 to 5: 9 mm distal resection,**  
**Size 6: 10 mm distal resection.**

The base block is slotted; however, if used without the slot and the resection is initiated from the top of the block, 4 mm is added to the resection level. For example, if 9 mm is the desired resection level, add 4 mm to this and set the block at 13 mm and cut from the surface of the block. Note the top of the block is engraved "4 mm offset" (Figure 29).

The outrigger and cutting block is lowered onto the anterior cortex by depressing the button on the left-hand side of the locating device. Either 3.2 mm (1/8 in.) drill bits or Steinmann pins are introduced through the holes designated zero and enclosed in □'s. They are advanced into the anterior cortex (Figure 31).

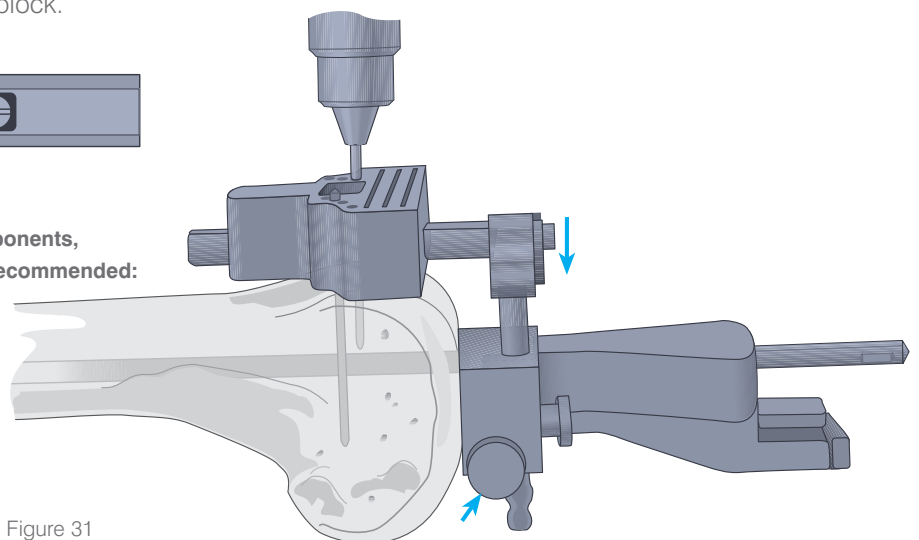


Figure 31

# The Distal Femoral Cut

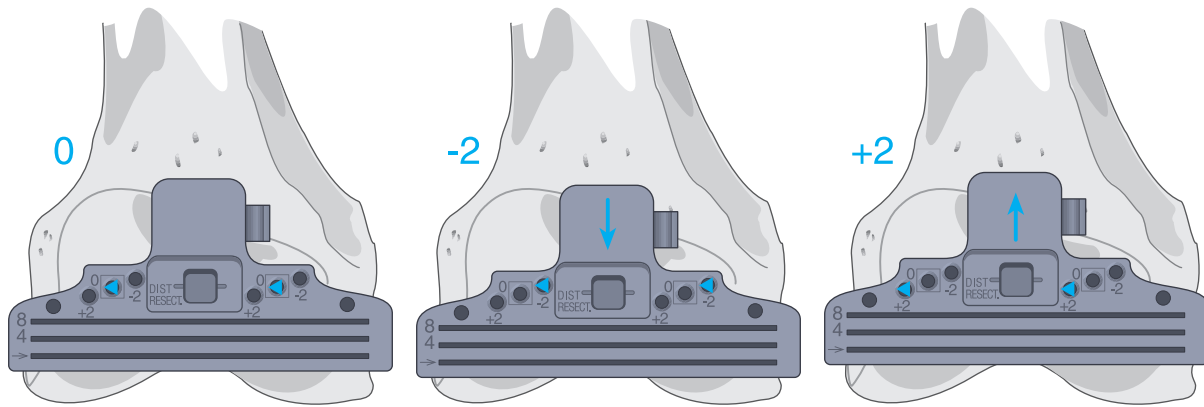


Figure 32

The locating device and intramedullary rod are disengaged from the cutting block by depressing the right button on the cutting block. The holes on the block are designated -2, 0 and +2, indicating in mms, the amount of bone resection each will yield supplemental to that indicated on the calibrated outrigger (Figure 32).

The oscillating saw blade is positioned through the slot, or, where applicable, the blade is positioned flush to the top cutting surface of the block (Figure 33). A 1.19 mm saw blade is recommended. The condyles are resected and the surface checked for accuracy.

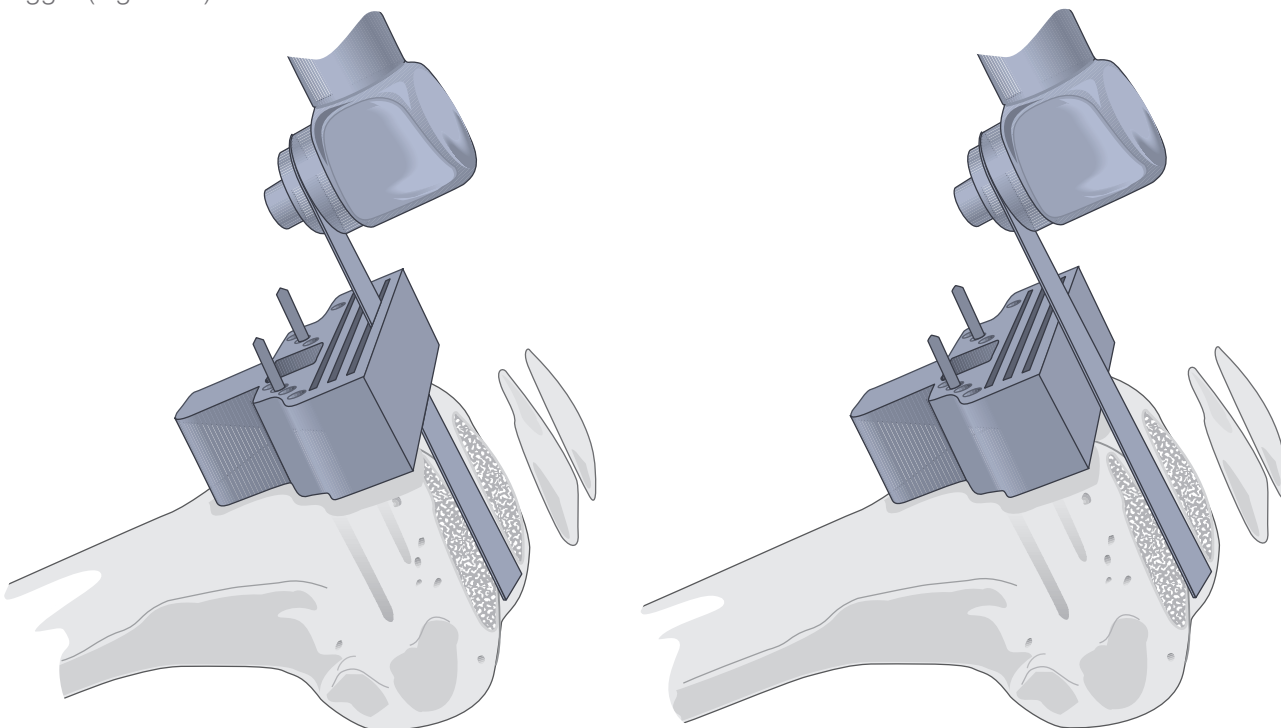


Figure 33

# Evaluating the Extension Gap

The knee is placed in full extension and lamina spreaders applied medially and laterally (Figure 34). Peripheral osteophytes have to be removed at this stage, since they may influence ligament balancing. The extension gap must be rectangular in configuration. Where it is trapezoidal, the bilateral soft tissue must be balanced. Bone cuts are not altered (Figure 35).

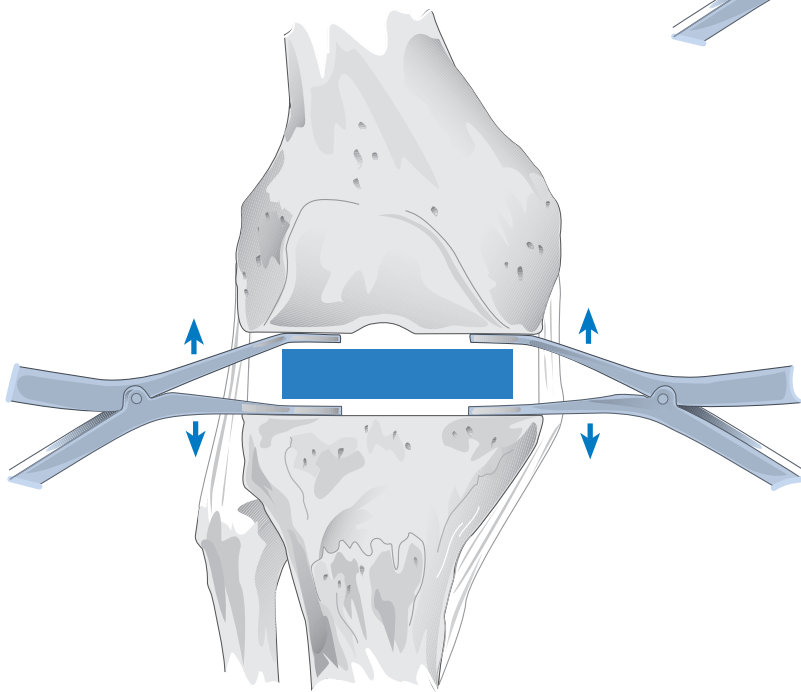


Figure 34

In extension, the spacer block is assembled from the base element and the insert shim of the appropriate thickness. The spacer indicates the appropriate thickness of the tibial insert, subject to re-evaluation at trial reduction (Figure 36).

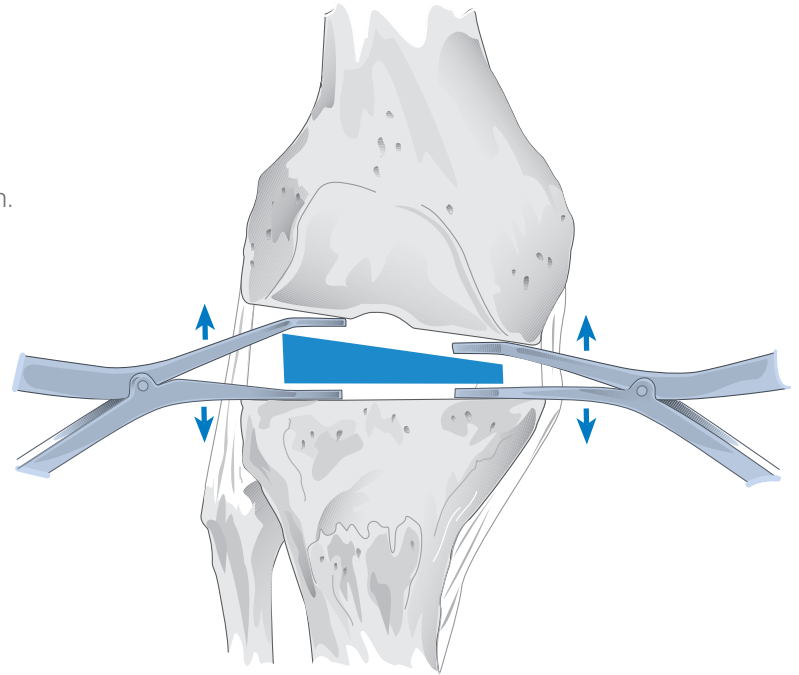


Figure 35

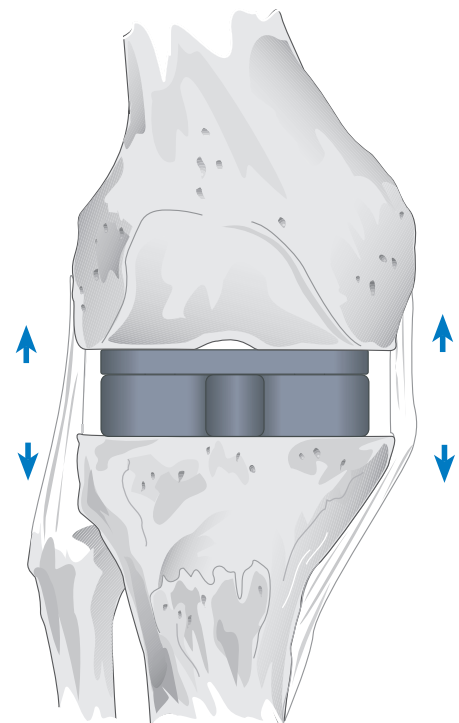


Figure 36

# Sizing the Femoral Component

Careful preoperative planning, including the application of templates to lateral radiographs, is critical to the sizing of the femoral component (Figure 37). Priority is given to re-establishment of the A/P dimension, as this will restore normal kinematics and quadriceps function. Under-sizing will cause looseness in flexion and possible notching of the anterior femoral cortex. Over-sizing will create tightness in flexion and increased tension in the quadriceps mechanism.

**P.F.C. Sigma RP-F X-ray templates**  
Cat. No. 9579-03-000

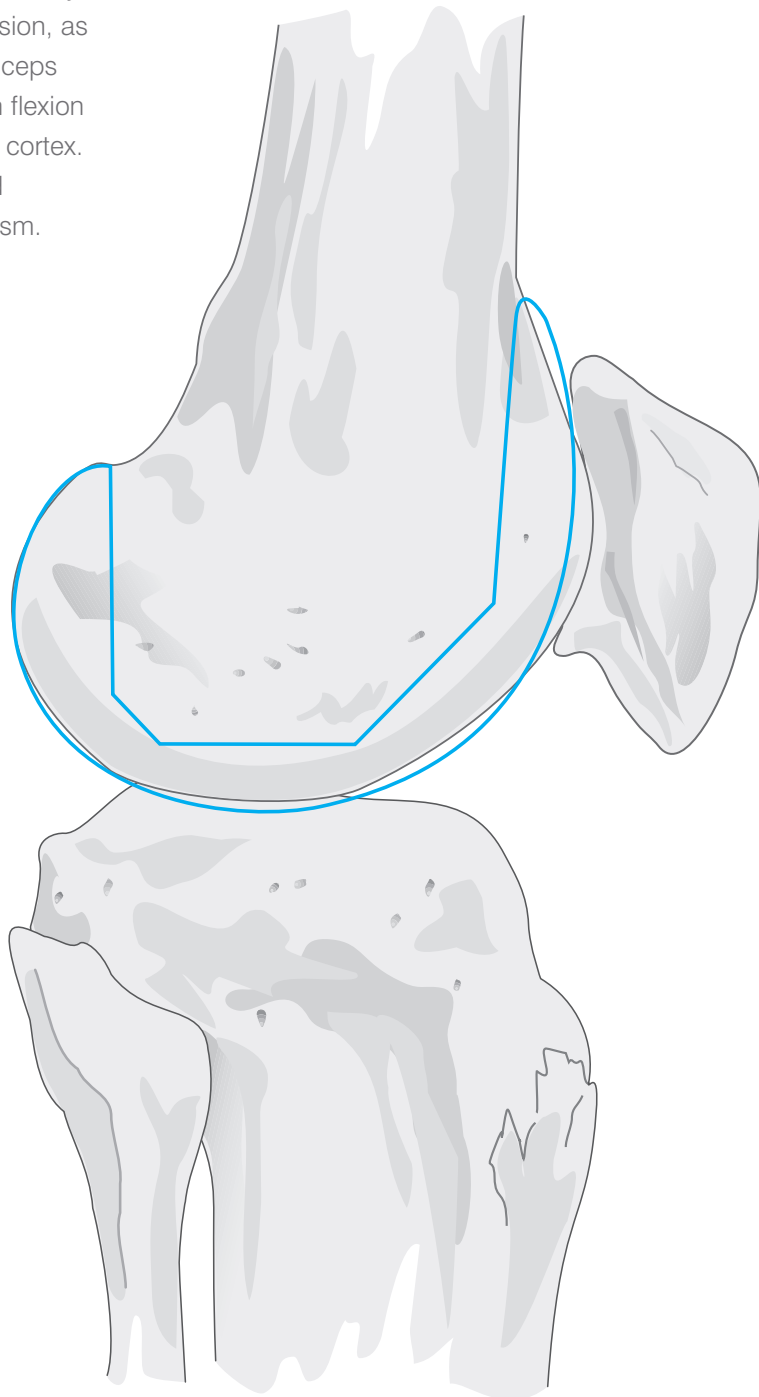


Figure 37

# Femoral Sizing: Anterior Down

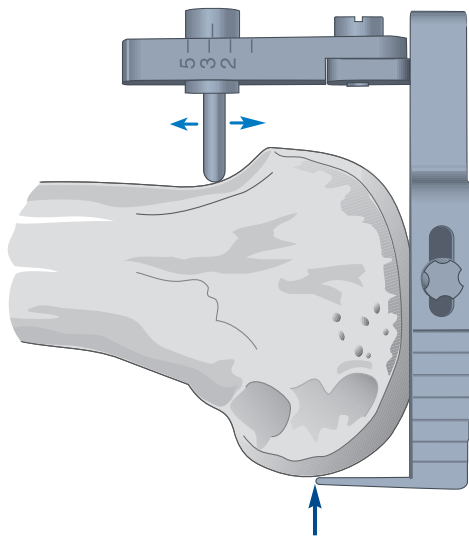


Figure 38

**Note: Care should be taken if there are deficient medial or lateral posterior condyles as this may affect femoral rotation.**

Seat the chosen sizing guide flush and centered on the prepared distal femoral surface. Allow the stylus to move freely within the guide, and move it proximal to the articular surface (Figure 38).

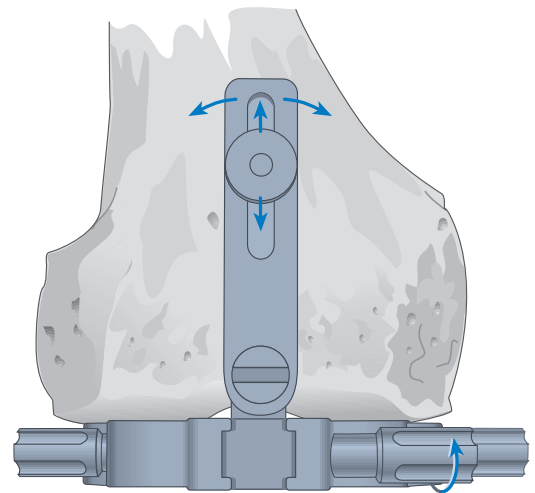
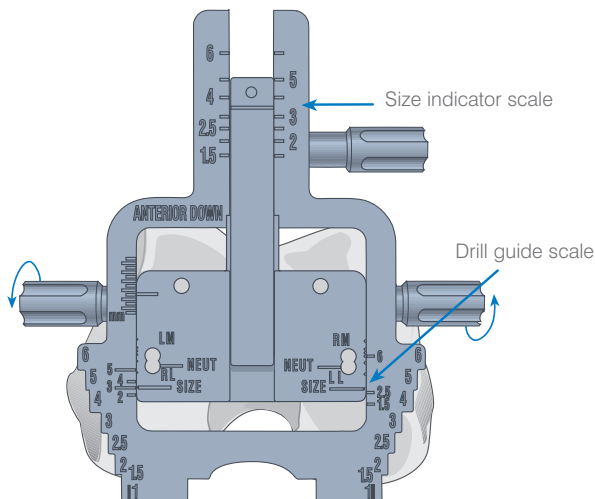


Figure 39

Pass the stylus over the anterior cortex immediately proximal to the articular surface. At the appropriate level where the stylus is not impeded, turn the stylus locking knob clockwise until it is tight, to fix its position (Figure 39).



**The Anterior Reference Femoral Sizing Guide**

Figure 40

Use the sizing guide to position the femoral cutting block so the anterior flange of the prosthesis is flush with the anterior cortex of the femur (Figure 40). When the sizing device indicates a whole size, 8 mm will be resected from the posterior condyles, corresponding to the posterior condyle thickness of the prosthesis.

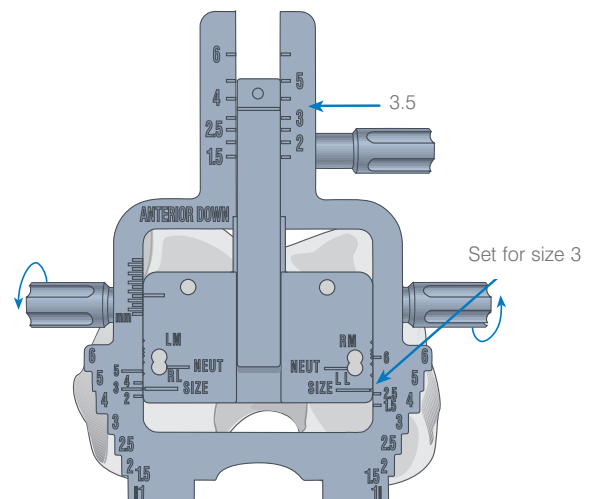


Figure 41

The serrated edges of the drill guide show the M/L dimension of the femoral component.

Decide whether to upsize or downsize based on where the femur measures between sizes.

If choosing to downsize when the upper scale reads 3.5, set the sizing guide to size 3 and use a size 3 A/P cutting block (Figure 41). Because the guide uses the anterior cortex as the reference, the anterior cut level remains constant and more bone will be resected from the posterior condyles (Figure 42).

The extra posterior resection increases the size of the flexion gap. If, at trial reduction, there is marked laxity in flexion, remove more distal femur and use a thicker tibial insert.

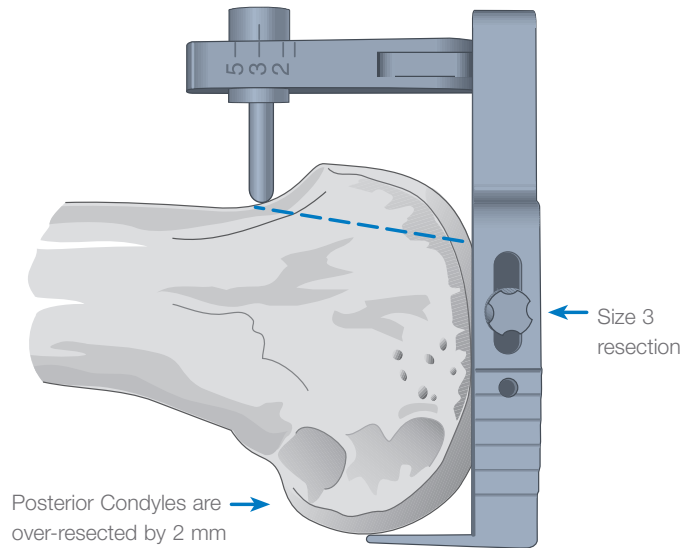


Figure 42

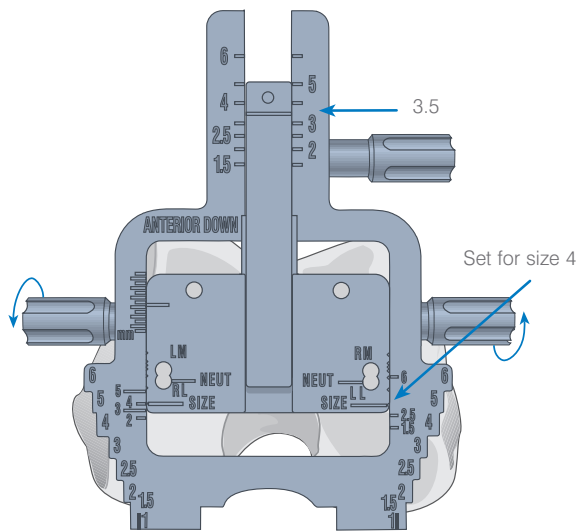


Figure 43

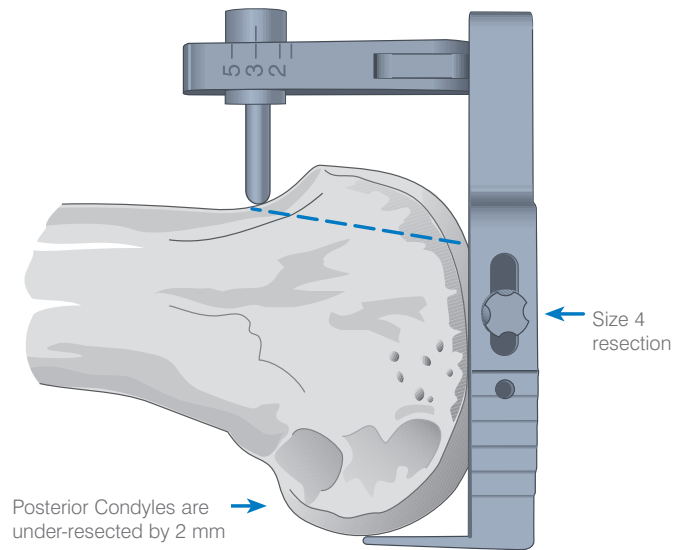


Figure 44

When electing to upsize the femur, set the sizing guide to size 4 and use a size 4 A/P cutting block (Figure 43). The anterior cut remains constant and less bone is removed from the posterior condyles (Figure 44).

The under-resection of the posterior condyles will decrease the size of the flexion gap.

**Note: Alternatively the posterior up method of femoral sizing may be used as shown in Appendix I.**

# Rotational Alignment/Anterior Down

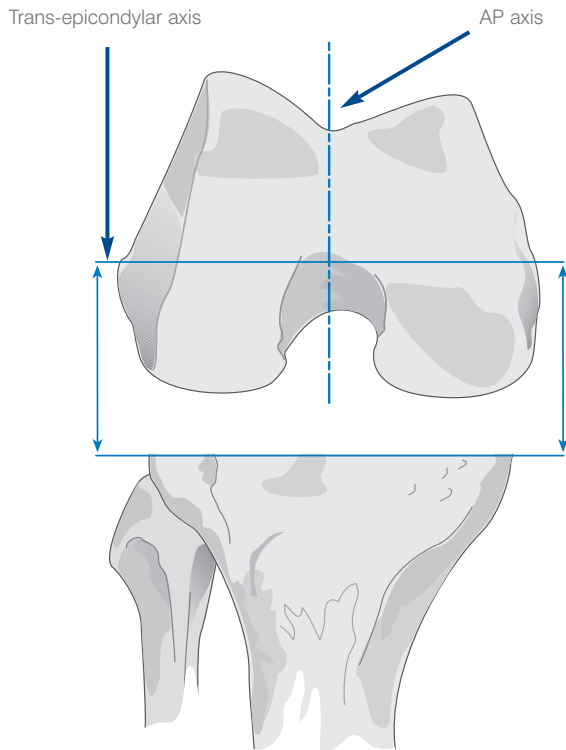


Figure 45

Control internal/external rotation of the A/P cuts by resting the skids of the sizing guide on the posterior condyles. The natural joint line lies medially oblique by approximately three degrees. The tibial resection at 90 degrees to the tibial mechanical axis effectively rotates to prosthetic joint line three degrees laterally (external rotation). The anterior and posterior cuts must be externally rotated in order to be parallel to the tibial cut and to provide a rectangular flexion gap. Follow the legend on the sizing guide, which places the medial pin in the upper hole and the lateral pin in the lower hole. Offsetting the holes produces a three degree external rotation of the cutting block (Figure 45).

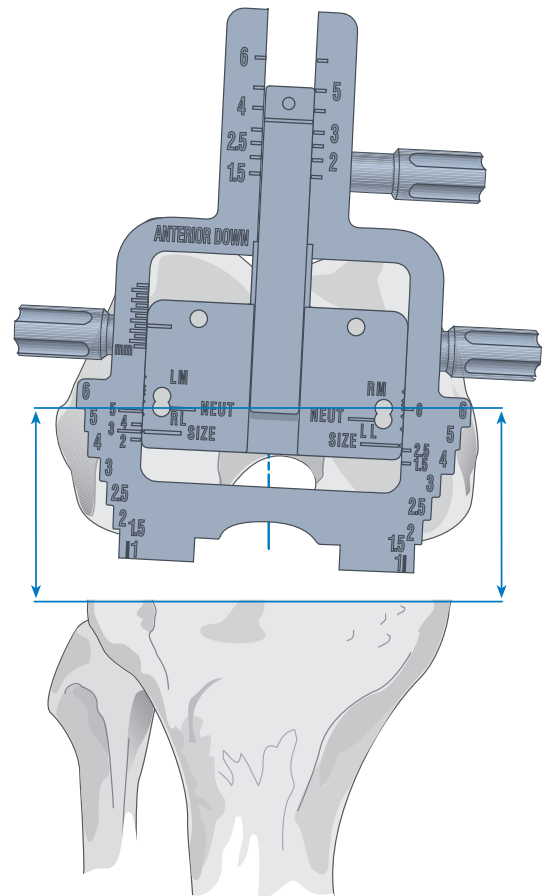


Figure 46

Care should be taken if there are deficient medial or lateral posterior condyles as they may affect femoral rotation. The femoral rotation, suggested by the femoral sizing guide should always be verified against natural landmarks like the trans-epicondylar line or the AP axis, since rotational alignment may differ from patient to patient (Figure 46).

# Alternative Method (Ranawat Block)

Select the appropriate intramedullary rod and assemble it to the appropriately sized femoral A/P cutting block with the appropriate Right/Left designation to the anterior (Figure 47). Retract the pins.

**Note: This also sets the valgus angle, depending on the degree selected.**

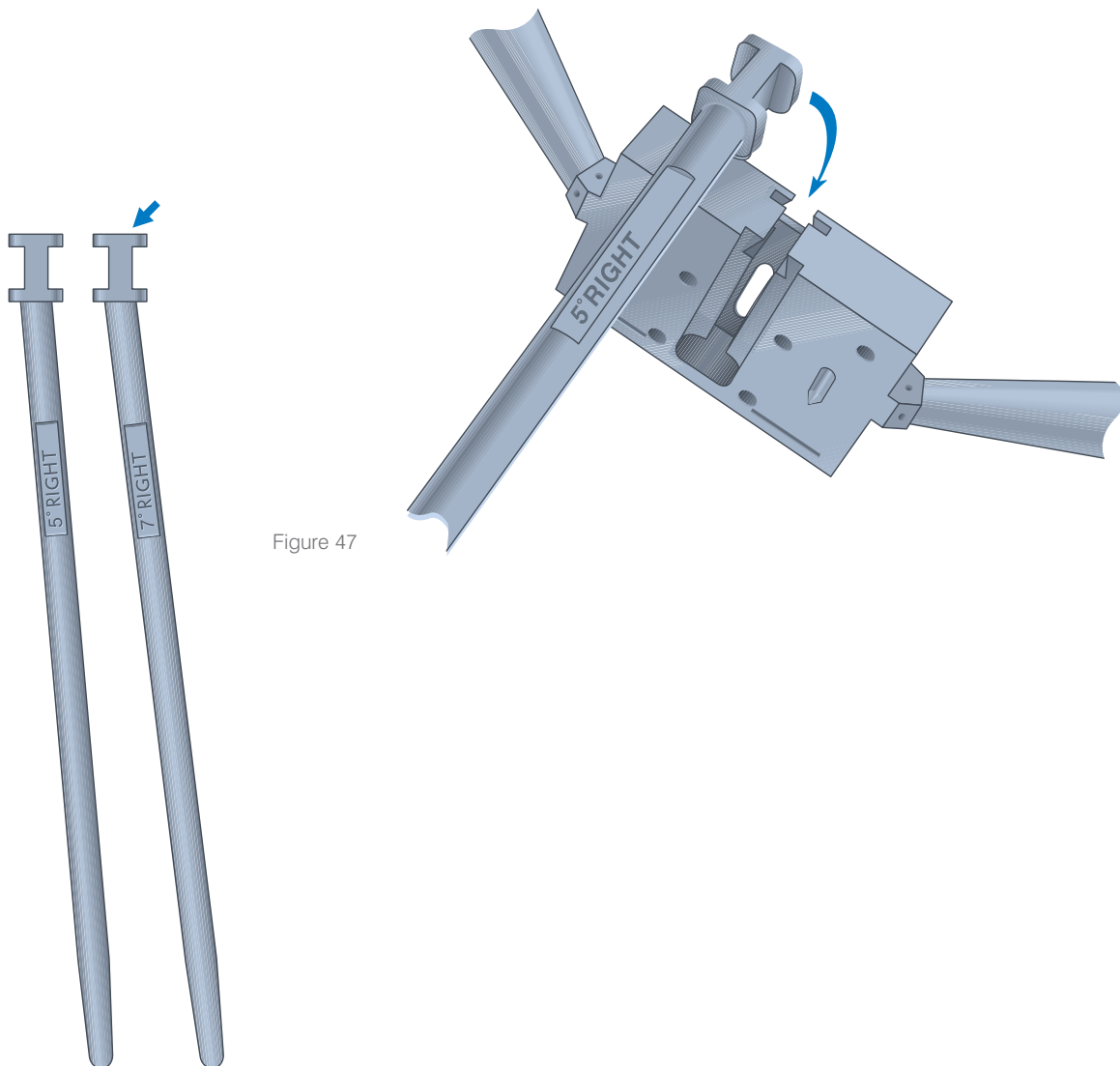


Figure 47

# Positioning the Cutting Block (Ranawat Block)

Insert the chosen IM rod into the canal so the A/P block is allowed to slide up or down to facilitate sizing. The cutting block is seated flush to the cut distal surface.

Fully seat the foot of the stylus assembly in its receptacle on the anterior surface of the block so that it reads 0 (Figure 48).

Adjust the cutting block posteriorly until the stylus (which has the arm marked non-slotted positioned toward the bone) is in contact with the anterior femoral cortex (Figure 49).

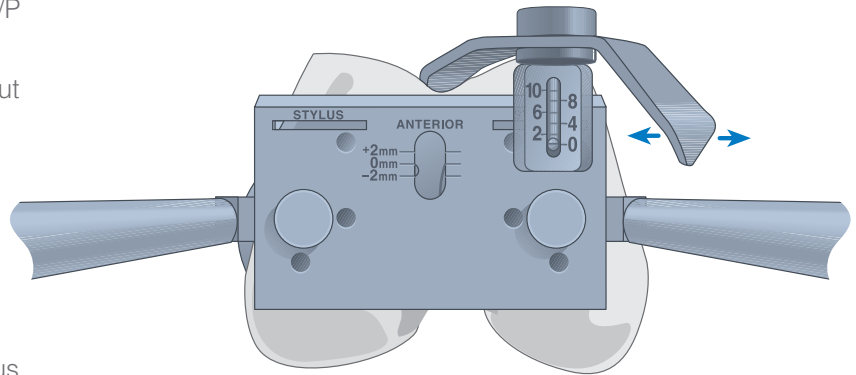


Figure 48

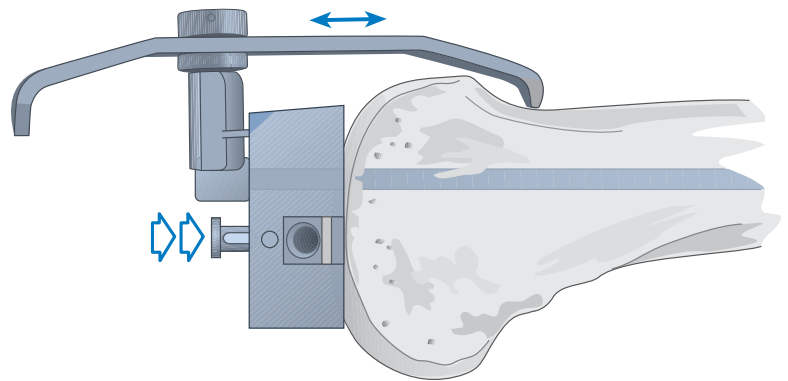


Figure 49

# Rotational Adjustment (Ranawat Block)

Determine rotation with the knee in 90 degrees of flexion and position the block so that its posterior surface is parallel to the resected tibial plateau, creating the desired rectangular flexion gap. Tap the retractable pins into the distal femur when the collateral ligaments are equally tensioned (Figure 50).

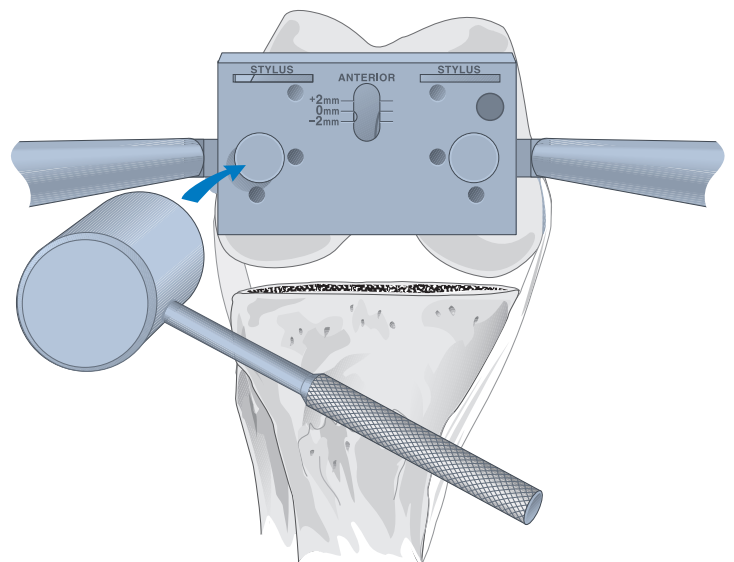


Figure 50

# Evaluating the Flexion Gap (Ranawat Block)

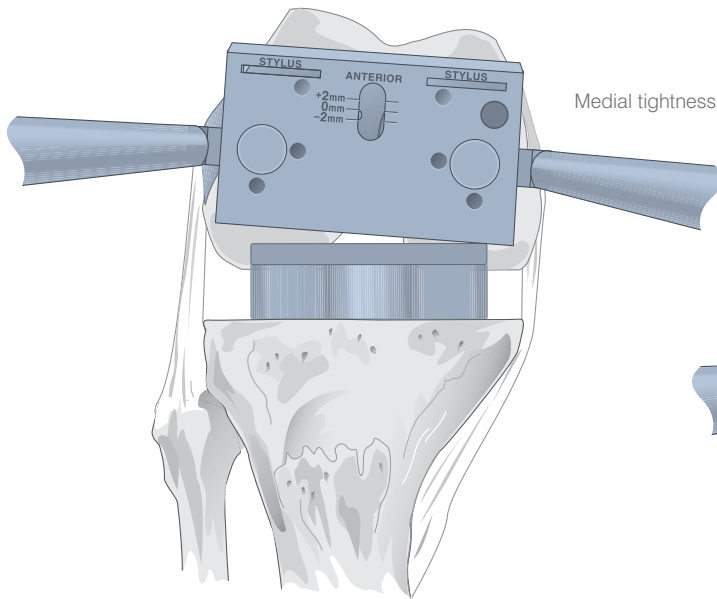


Figure 51

Position a properly sized spacer block containing the base block and the adequate insert thickness shim between the resected proximal tibial surface and the posterior surface of the block (Figure 51).

**Note: Flexion adaptor shim is not required in this composition.**

The objective is a rectangular flexion gap with the collateral ligaments equally tensioned (Figure 52).

**Note: Further ligamentous release is not recommended at this stage.**

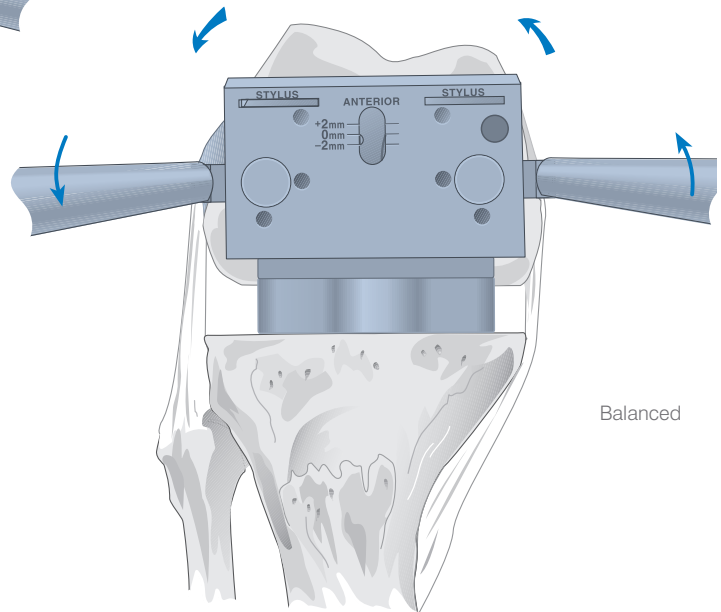


Figure 52

The following guidelines are available to determine the rotation of the A/P cutting block:

1. Place the A/P cutting block parallel to the trans-epicondylar axis.
2. Place the anterior margin of the block perpendicular to the anteroposterior axis.
3. Position the block parallel to the resected proximal tibia (with the knee at 90 degrees flexion and collateral ligaments equally tensioned).

# Anterior Femoral Cut

The anterior cut is made with the blade of the oscillating saw held flush against the cutting block surface (Figure 53). A 1.19 mm saw blade is recommended. Pop-up slots may be used. The cut is checked for accuracy.

**Option:**

The Specialist® 2 4-in-1 Cutting Block can also be used to perform the anterior cut and the femoral chamfer cuts (Figure 53A).

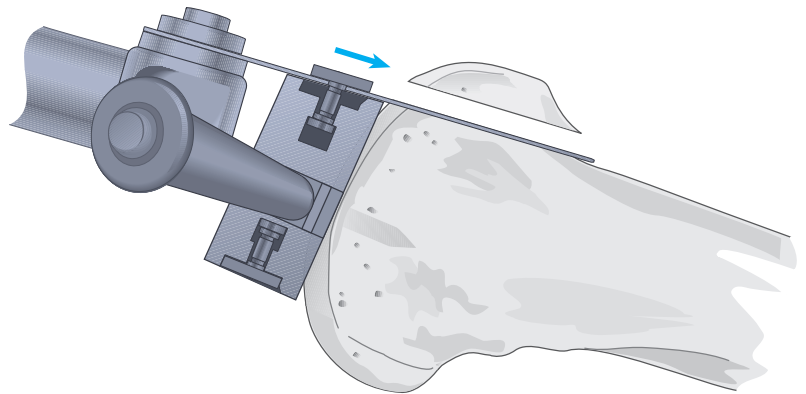


Figure 53

# Femoral Chamfer Cuts

Chamfer cuts are made through the slotted 4-in-1 block and the block is then removed (Figure 54).

**Option:**

The P.F.C. Sigma RP-F MITKR cutting blocks can also be used to perform the femoral chamfer cuts, posterior resection and box cut (Figure 54A). Please refer to Appendix 4 (p. 49) for further information.

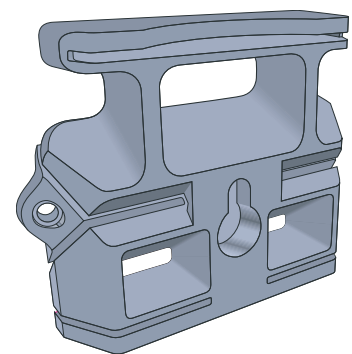


Figure 53A

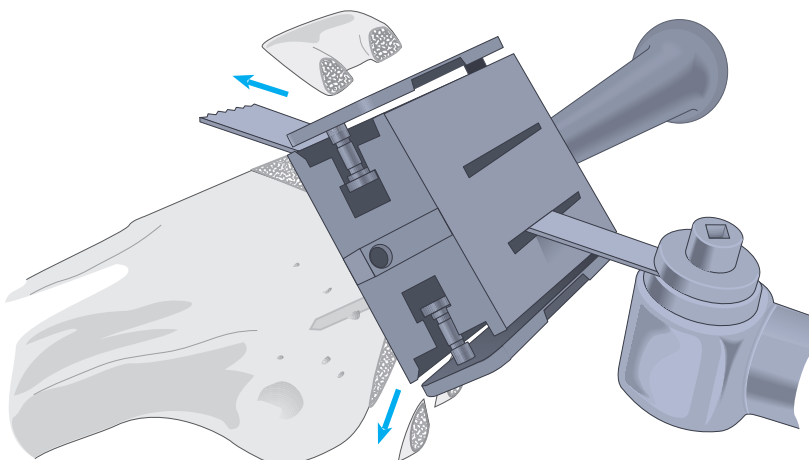


Figure 54

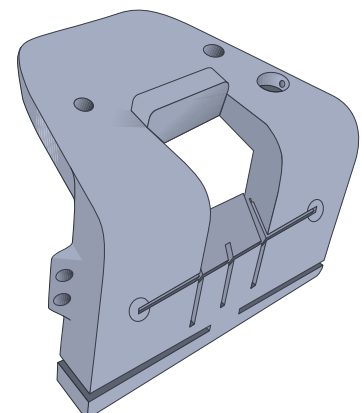


Figure 54A

# RP-F Femoral Cutting Guide

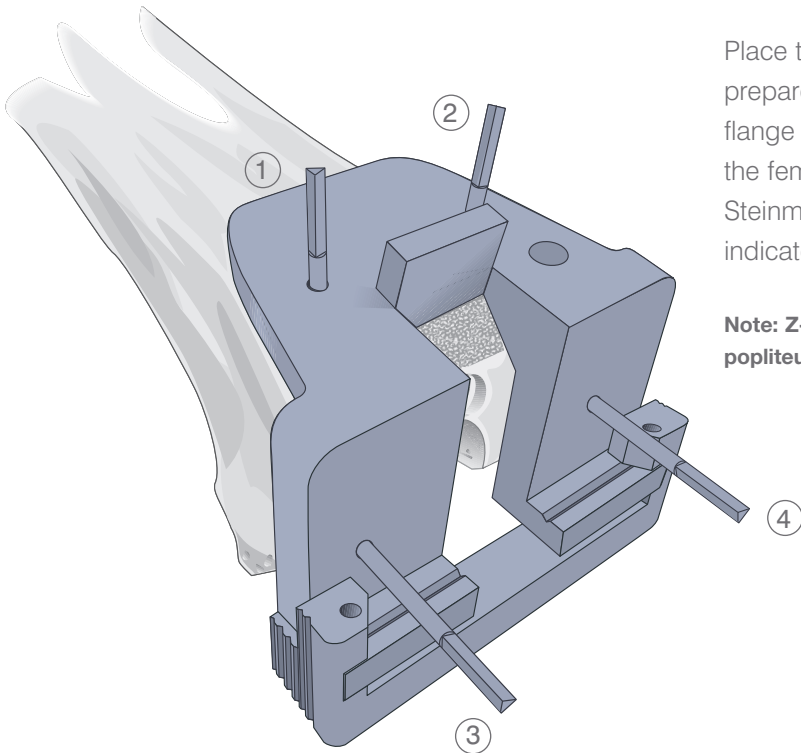


Figure 55

Place the RP-F femoral cutting guide onto the prepared femur and position it such that the lateral flange of the cutting guide meets the lateral margin of the femur. Check the cutting line for the posterior cut. Steinmann pins are introduced (following the order indicated), to pin the block in place (Figure 55).

**Note:** Z-shaped retractors may be used to protect the popliteus when making the posterior cut.

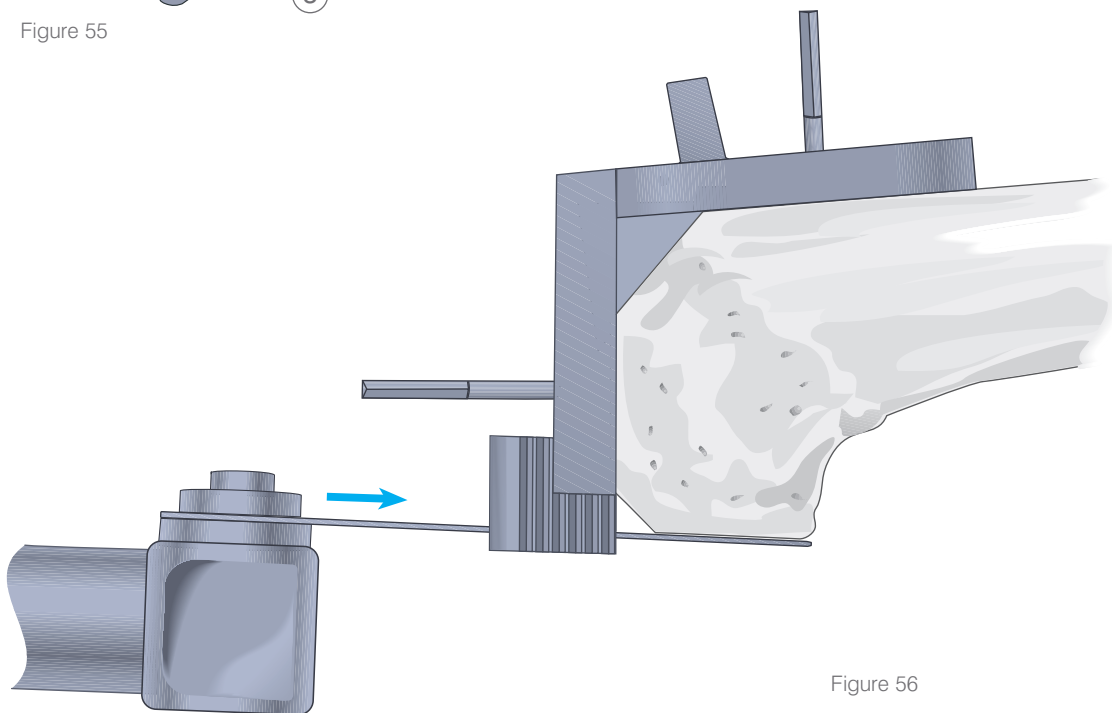


Figure 56

Perform the posterior cut with the oscillating saw through the slots provided (Figure 56).

**Note:** The saw capture can be removed to complete the cut.

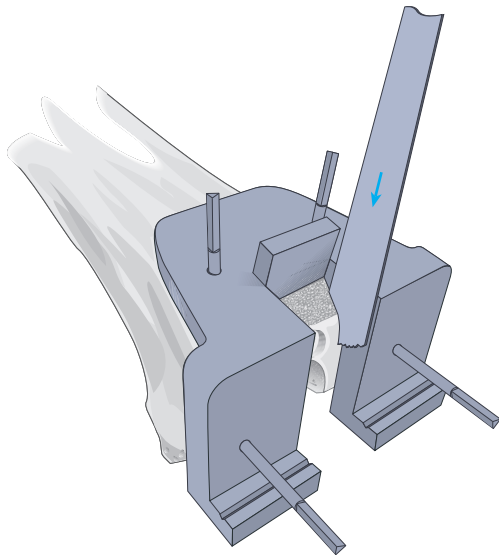


Figure 57

A small blade (13 mm x 75 mm x 1.19 mm) is recommended to cut the sides of the notch (Figure 57).

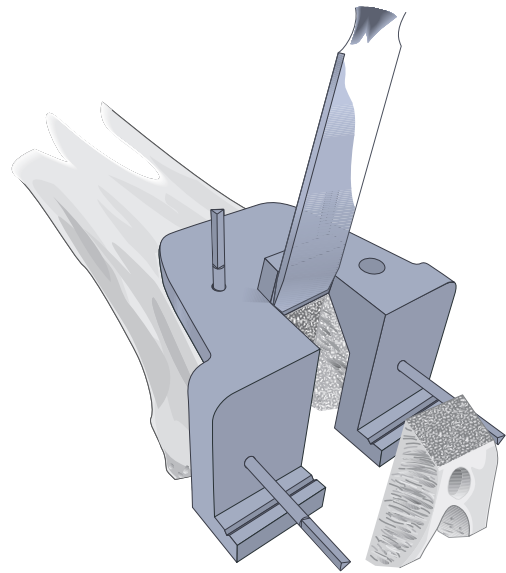
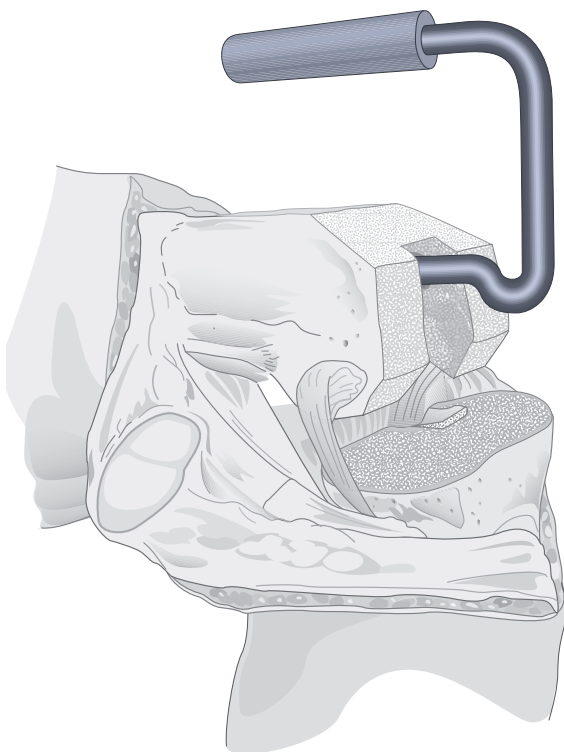


Figure 58

Cut the top of the box with an osteotome (Figure 58).

## Clearing Posterior Condyles



Posterior condyles have to be cleared from overhanging bone or osteophytes. A U-shaped or S-shaped retractor can be used to distract the joint and facilitate access to the posterior condyles (Figure 59).

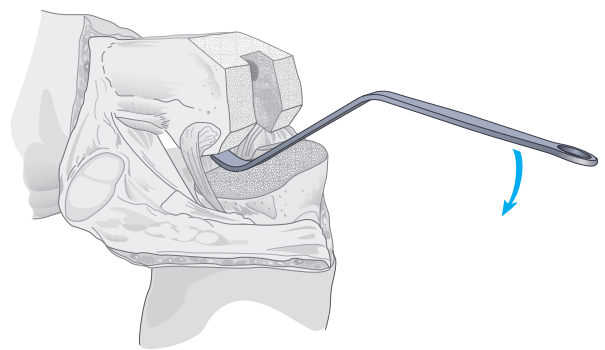
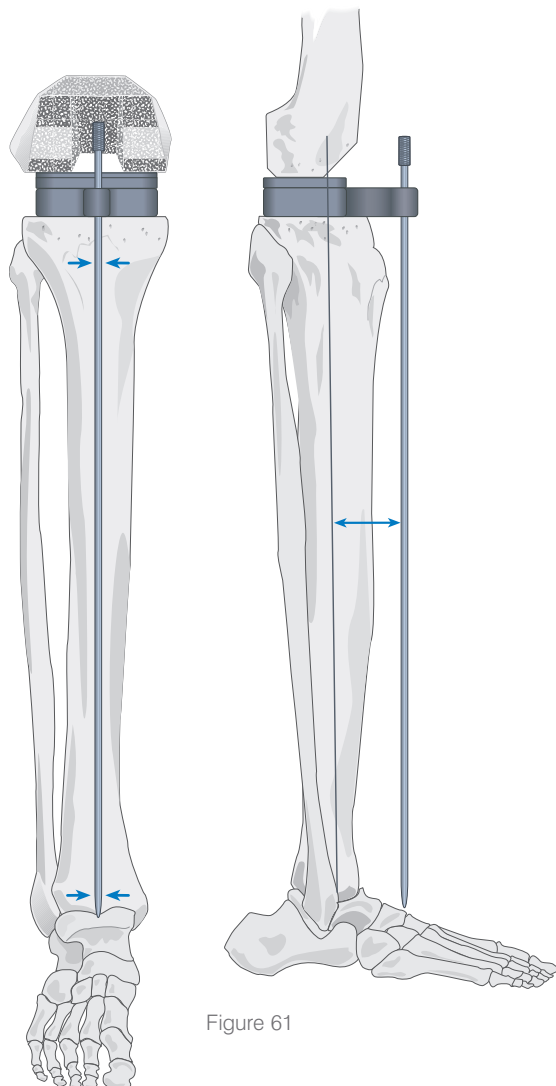
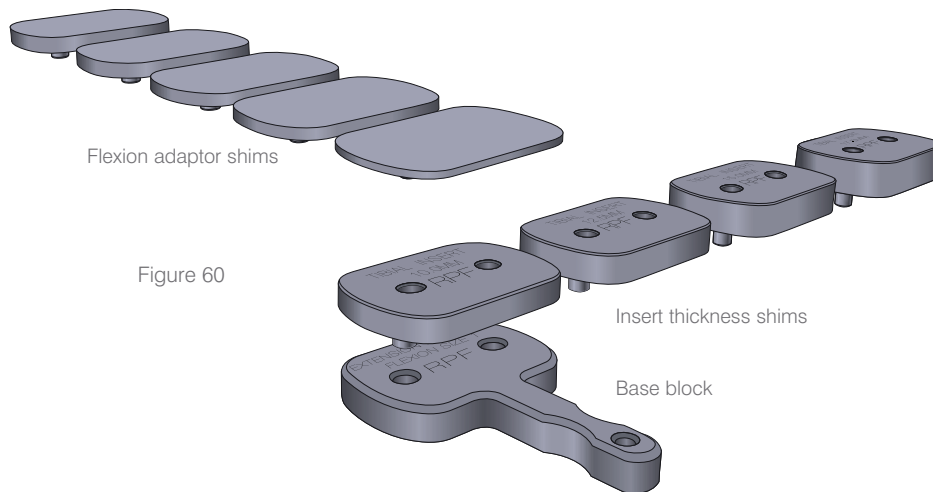


Figure 59

# Evaluating the Flexion/Extension Gap Balance



Use the base block and the insert thickness shim to evaluate the joint gap in extension. In flexion, use the base block, the insert thickness shim as well as the flexion adaptor shim. Use spacer blocks to measure the gap in extension as well as in 90 degrees of flexion (Figure 60).

Where further distal femoral resection is required to establish equivalent flexion and extension gaps, return the Steinmann pins to their original position in the anterior femoral cortex and the distal femoral cortex. Reposition the distal femoral cutting block using the holes designated +2 and +4 as indicated.

The long alignment rod should align with the center of the talus and lie parallel to the lateral tibial axis (Figure 61).

Femoral and proximal tibial cuts are now completed. Ligament balance has been achieved.

# Patella Resurfacing

It is important that the sagittal dimension and accurate tracking are maintained and that adequate bone stock is preserved. Problems will arise from inadequate or oblique resection resulting in greater thickness to the complex, asymmetric positioning of the implant, subsequent patellar tilt and increased implant wear. It is important that sufficient soft tissue is freed at the prepatellar bursa to position the calipers at the anterior cortex (Figure 62).

The greatest sagittal dimension is at the median ridge. The normal range is 20-30 mm. This dimension is established and an amount corresponding to the size of the selected implant subtracted. The remainder equals the target dimension following resection. Where the patella is small, a minimal residual bone thickness of 12 mm should be maintained.

Example: (for a 38 mm size dome or oval/dome patella) from a patella 25 mm thick, 9 mm of articular surface is resected, yielding 16 mm of residual bone to accommodate the 9 mm thick implant (Figure 63).

The template is selected that most adequately covers the articular surface without overhang (Figure 64). The handle is positioned on the medial side of the everted patella. Where bone is deficient on the lateral side, the next smaller size is selected, but positioned slightly to the medial side to enhance patellar tracking.

The amount of appropriate bone resection, as indicated on the template, is noted.

Patella size	Resection
32 mm	8.0 mm
35 mm	8.5 mm
38 mm	9.0 mm
41 mm	11.5 mm

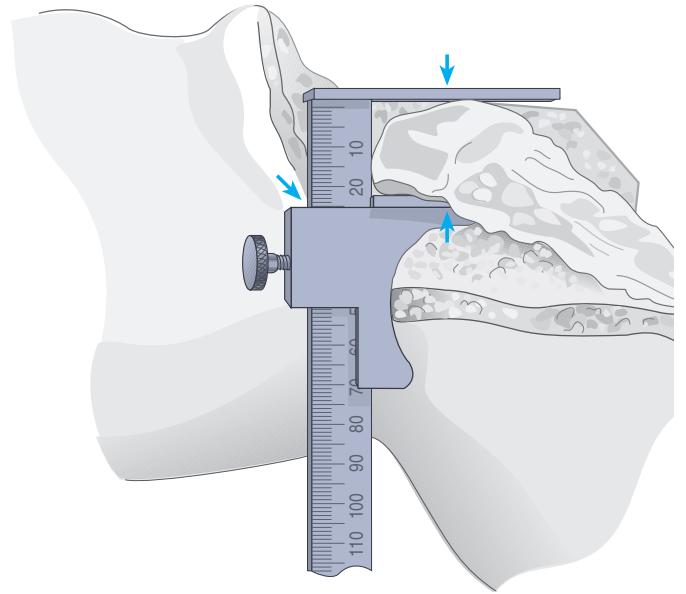


Figure 62

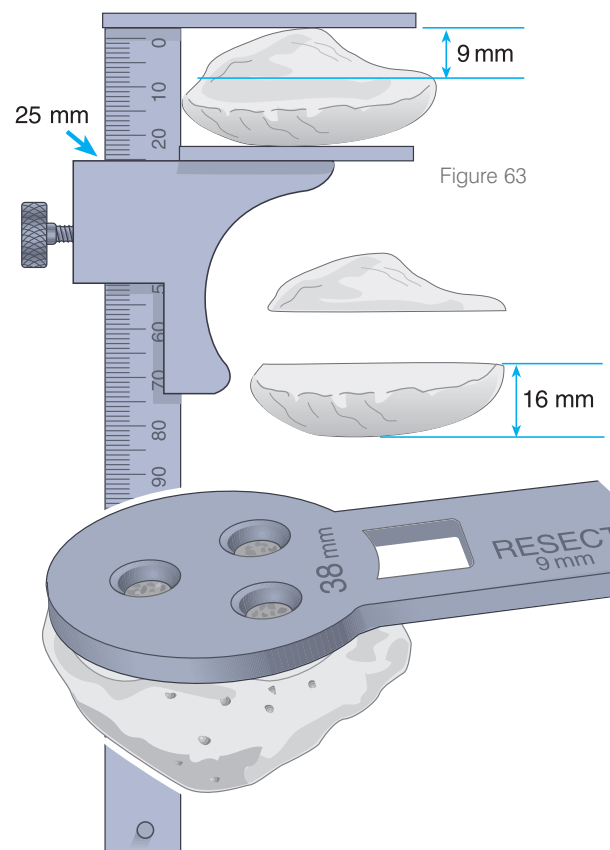


Figure 63

Figure 64

# The Patellar Cutting Guide

Synovial tissue is cleared to the level of the insertion of the quadriceps mechanism and the patellar ligament. The prongs of the knurled fork are adjusted to the predetermined thickness of residual patella as indicated on the graduated column (Figure 65).

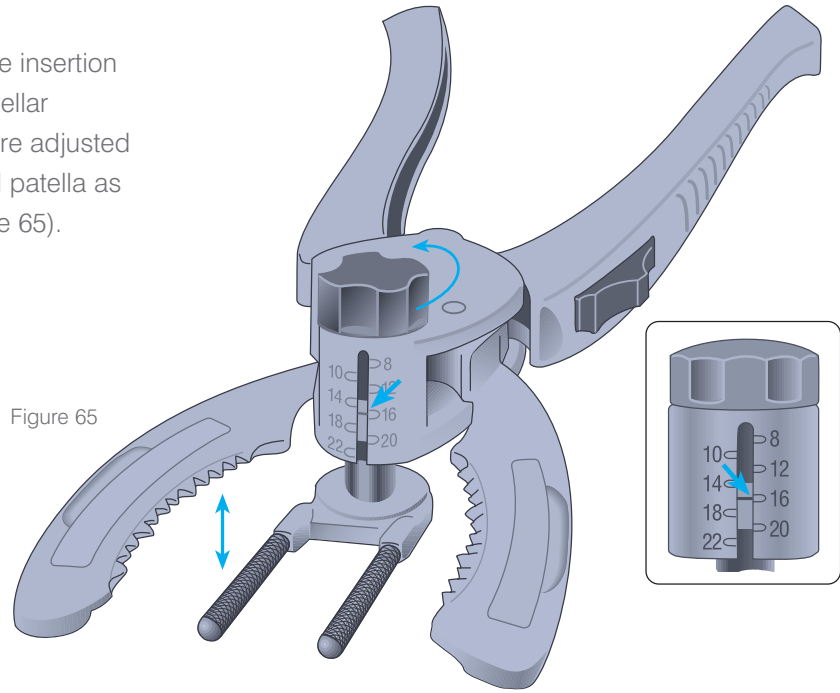


Figure 65

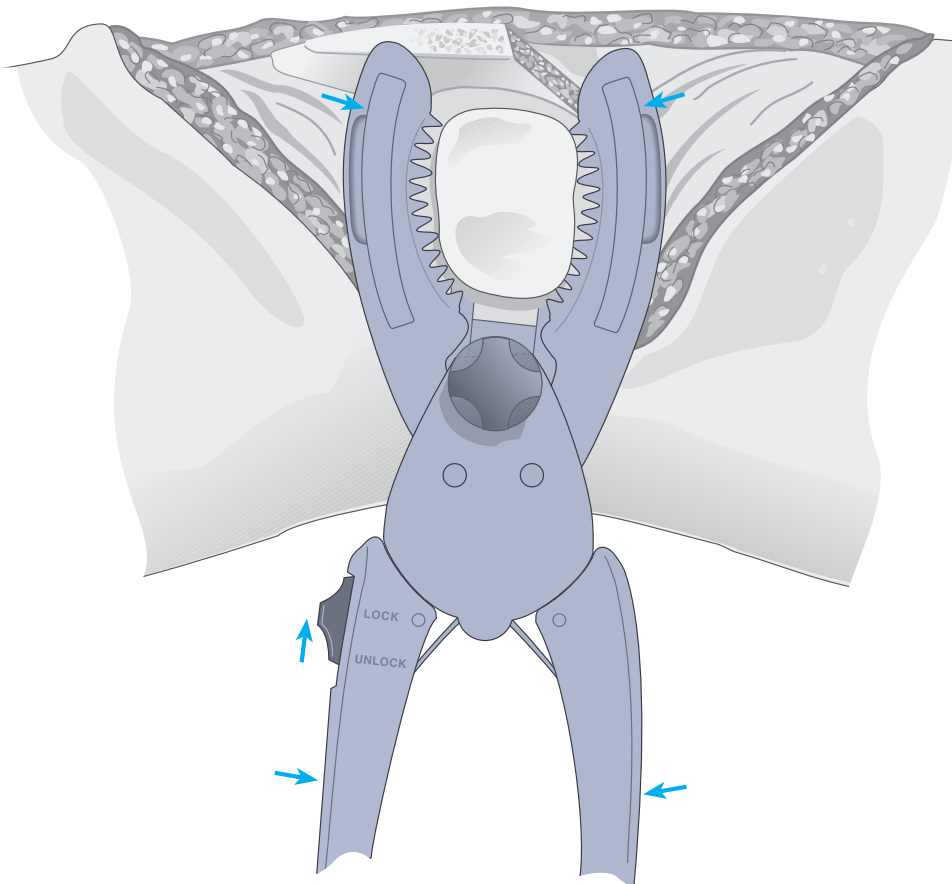


Figure 66

The leg is placed in extension, the cutting guide positioned with the prongs of the fork deep to the pre-patellar bursa and against the anterior patellar cortex with the serrated jaws at the superior and inferior margins of the articular surface. The switch is placed to the LOCK position and the jaws closed to firmly engage the patella (Figure 66).

# Patella Resection and Drilling

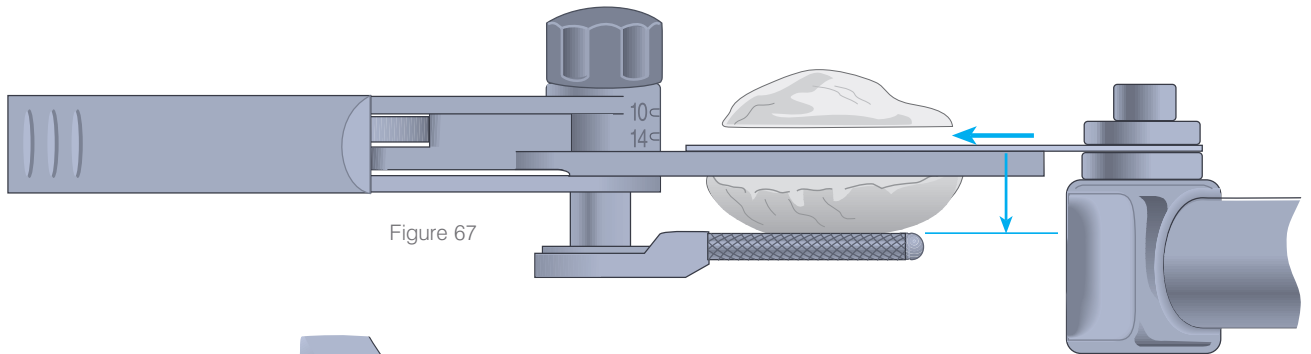


Figure 67

Resection is performed with an oscillating saw, maintaining the blade flush to the cutting surface (Figure 67). The guide is subsequently removed and the residual dimension checked with calipers, laterally, medially, proximally and distally. All measurements should be equivalent. Asymmetry is addressed with a saw or a bone rasp.

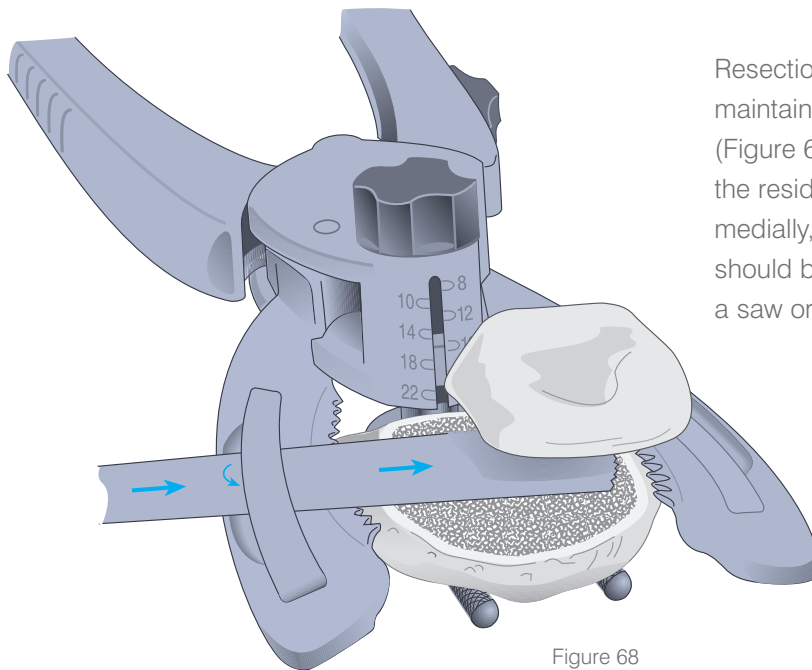


Figure 68

Alternatively, the saw blade is inserted into the well of the cutting surface of either of the jaws. The insert is lifted and the blade thereby confined within the slot created, ensuring that the cut will remain flush to the cutting surface (Figure 68). A 1.19 mm saw blade is recommended.

The previously selected template is positioned onto the cut surface with the handle positioned on the medial side of the everted patella, such that two drill holes lie at the medial side, one at the lateral. The template is firmly engaged to the resected surface and holes fashioned with the appropriate drill bit (Figure 69).

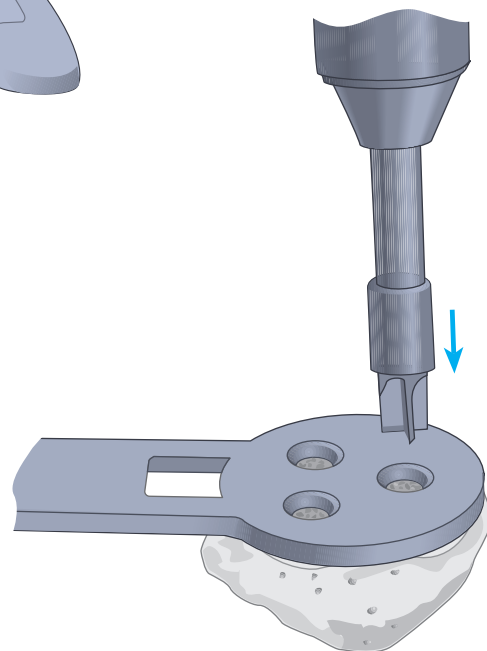


Figure 69

# Plateau Preparation and Initial Trial Reduction

## Build-a-Trial Tibial Preparation

With the knee in full flexion and the tibia subluxed anteriorly, assemble the alignment handle onto the M.B.T. tray trial (Figure 70).

Connect the tibial tray alignment handle to the M.B.T. tray trial by retracting the lever, inserting the two pins into the anterior portion of the tray trial and releasing the lever. Place the tray trial onto the resected tibial surface (Figure 71).

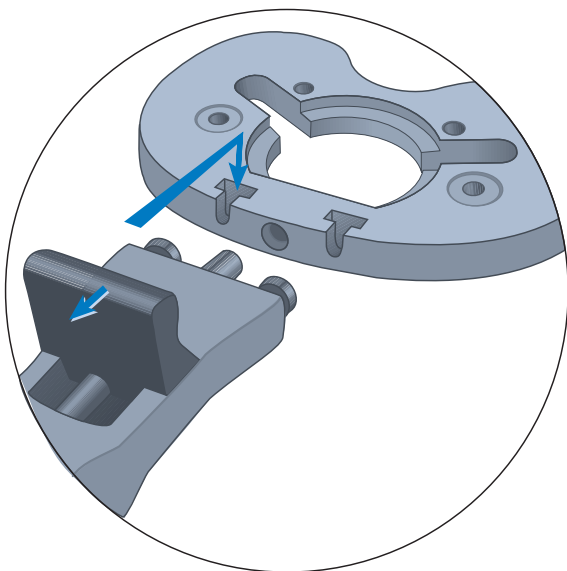


Figure 70

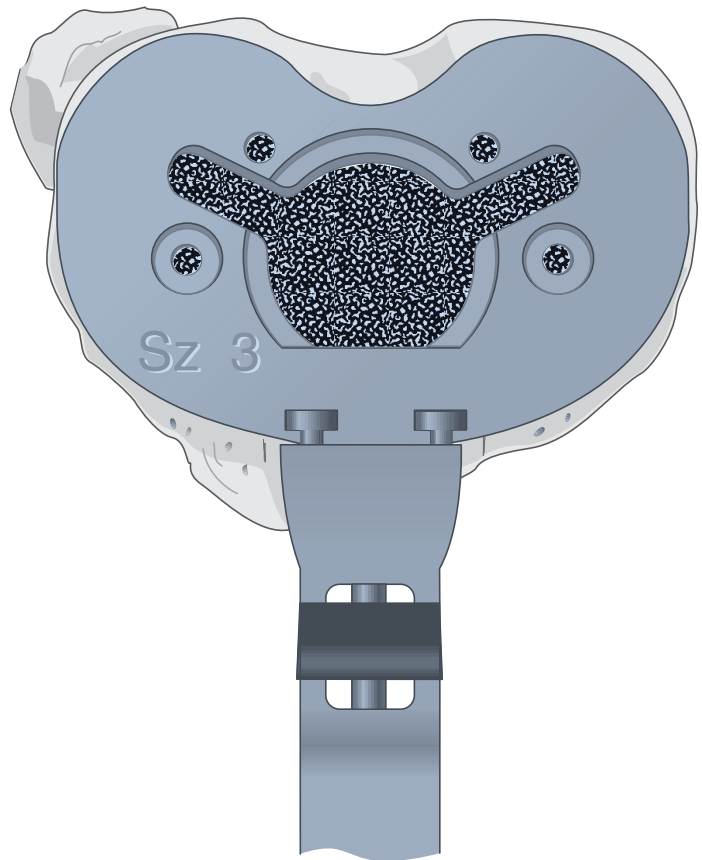


Figure 71

There are two options available to assess the knee during trial reduction. One or both may be used.

**1. Trial reduction with trial bearing in non-rotation mode.**

This option is useful when the tibial tray component size is smaller than the femoral size (bearing size MUST match the femoral size).

Position the appropriate sized femoral trial onto the femur.

Position the lock-off evaluation bullet into the cut-out of the M.B.T. tray trial (Figure 72).

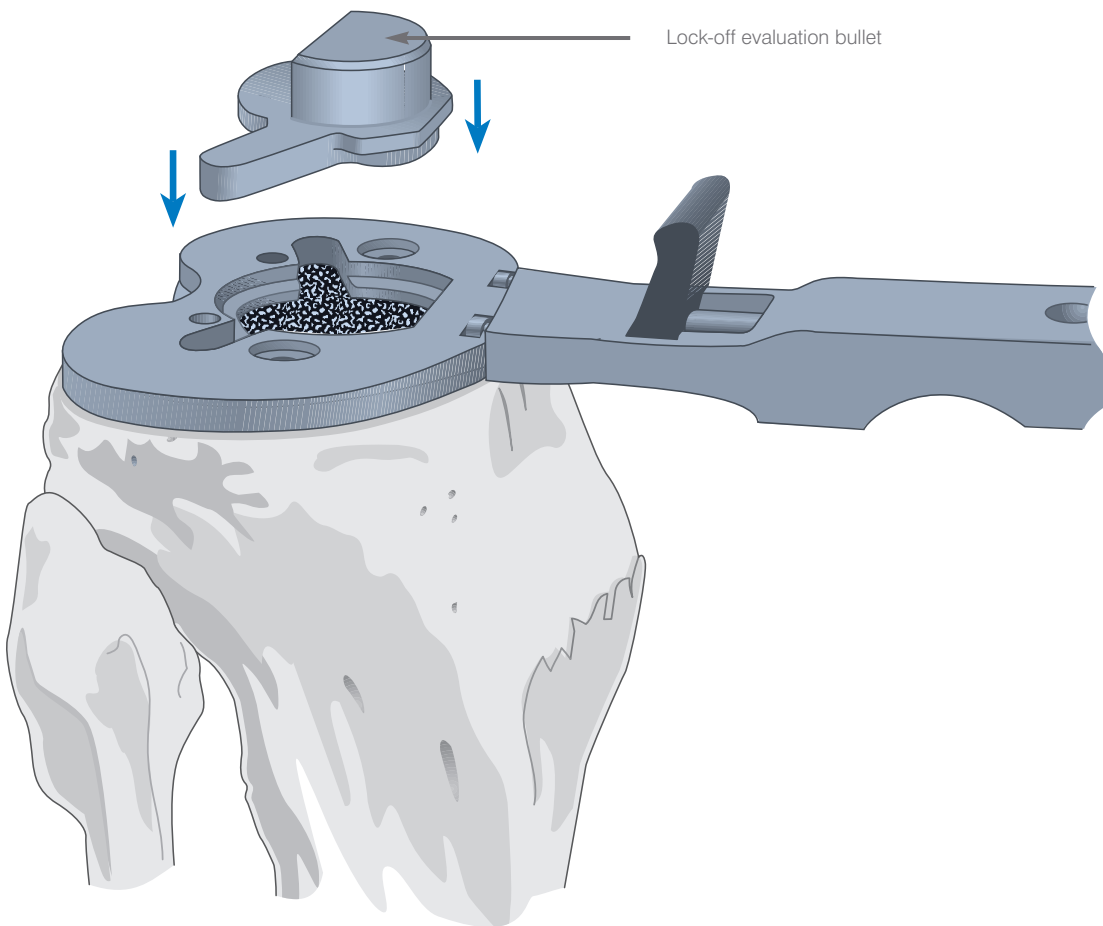


Figure 72

Place the appropriately sized P.F.C. Sigma RP-F femoral trial onto the femur.

Select the P.F.C. Sigma RP-F tibial insert trial that matches the chosen femoral size and insert onto the M.B.T. tray trial (Figure 73).

With the trial prosthesis in place, extend the knee carefully, noting the anteroposterior stability, medial/lateral stability and overall alignment in the A/P and M/L plane.

If there is any indication of instability, substitute a tibial insert trial with the next greater thickness and repeat the reduction. Select the insert which gives the greatest stability in flexion and extension while still allowing full extension.

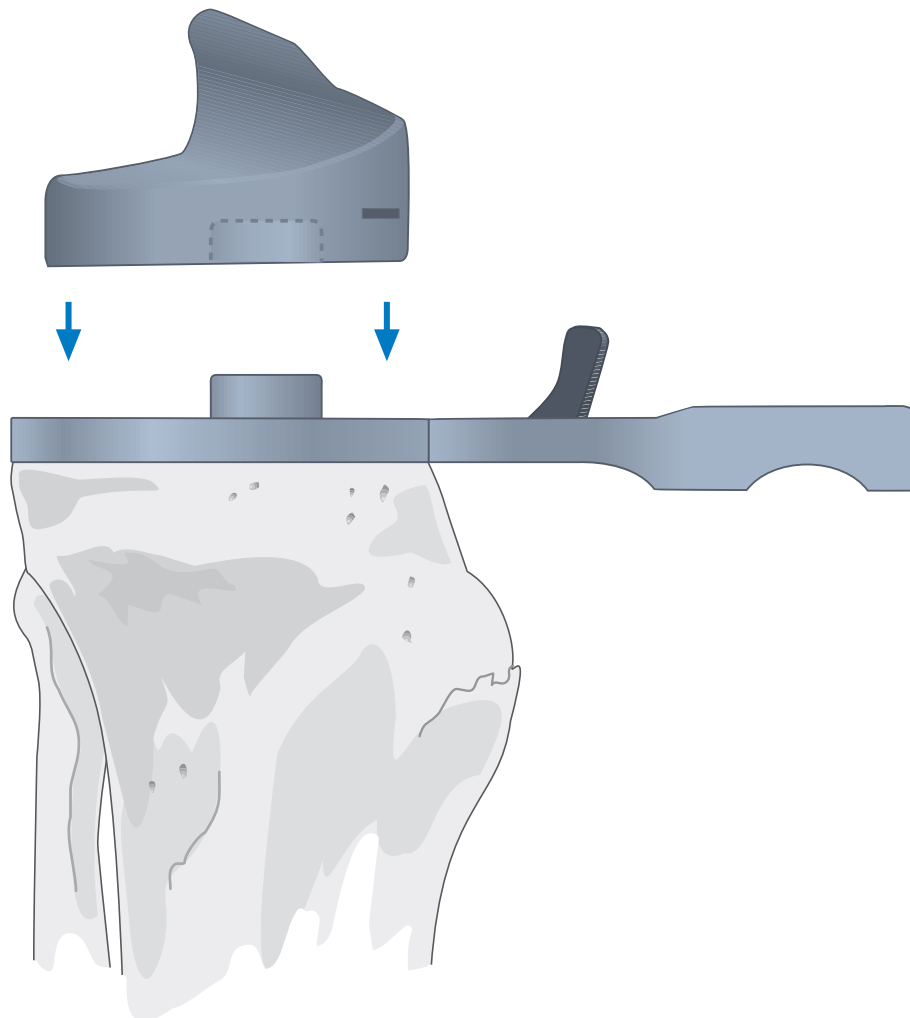


Figure 73

# Trial Reduction (non-rotation mode)

Rotational alignment of the tibial tray is adjusted with the knee in full extension, using the alignment handle to rotate the tray and trial insert into congruency with the femoral trial. The rotation of the tibial tray is usually centered on the junction between the medial and central one-third of the tibial tubercle.

The appropriate position is marked with electrocautery on the anterior tibial cortex (Figure 74).

Overall alignment can be confirmed using the two part alignment rod, attaching it to the tibial alignment handle.

Fully flex the knee, and remove the trial components. Replace the M.B.T. tray trial back on the proximal tibia, and align the handle with electrocautery marks. Assessment can then be made of the overall tibial coverage.

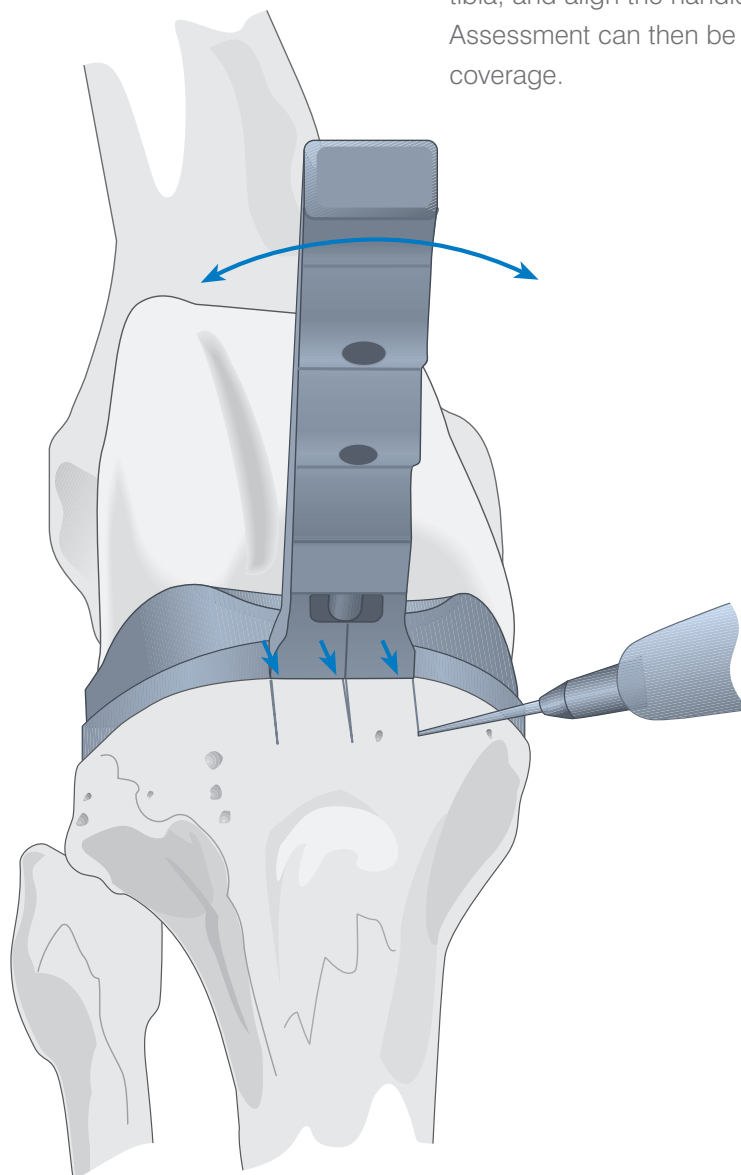


Figure 74

## 2. Trial reduction with trial bearing free to rotate.

This trial reduction can be done instead or in addition to the one previously described.

Position the appropriately sized P.F.C. Sigma RP-F femoral trial onto the femur and place the appropriately sized M.B.T. trial tray onto the resected tibial surface.

Pinned evaluation bullet

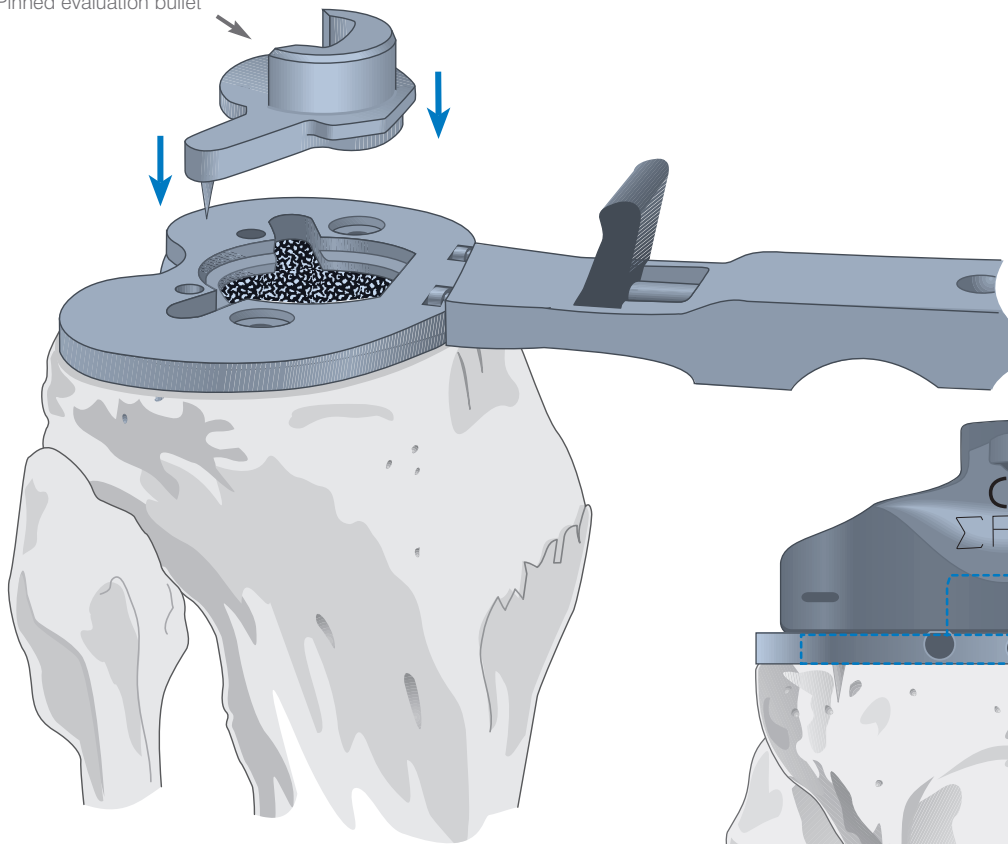


Figure 75

Position the pinned evaluation bullet into the cut-out of the M.B.T. tray trial and tap down lightly to secure the tray to the proximal tibia (Figure 75). Select the P.F.C. Sigma RP-F tibial insert trial that matches the chosen femoral size onto the M.B.T. tray trial (Figure 76).

Assess the position of the tray to achieve maximal tibial coverage (align the handle with the electro-cautery marks if procedure described in 1 has been followed). The rotation of the tibial tray is usually centered on the junction between the medial and central one-third of the tibial tubercle.

**Note: Excessive mal-rotation of the tibial tray relative to the femoral component can result in excessive bearing overhang and impingement with soft tissues.**

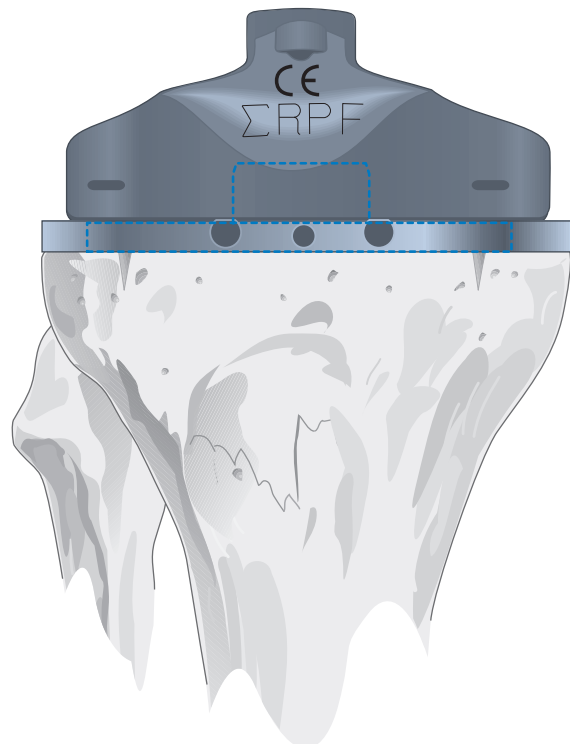


Figure 76

## Trial Reduction (free-rotation mode)

Carefully remove the alignment handle and with the trial prosthesis in place, extend the knee carefully, noting the anteroposterior stability, medial/lateral stability and overall alignment in the A/P and M/L planes (Figure 77). Assessment of the bearing rotation and patellofemoral tracking can also be achieved. Overall alignment can be confirmed using the two part alignment rod, attaching it to the tibial alignment handle.

If there is any indication of instability, substitute a tibial insert trial with the next greater thickness and repeat reduction. Select the insert which gives the greatest stability in flexion and extension while still allowing full extension. Confirm tray rotation and position, and mark with electrocautery if this has not already been done.

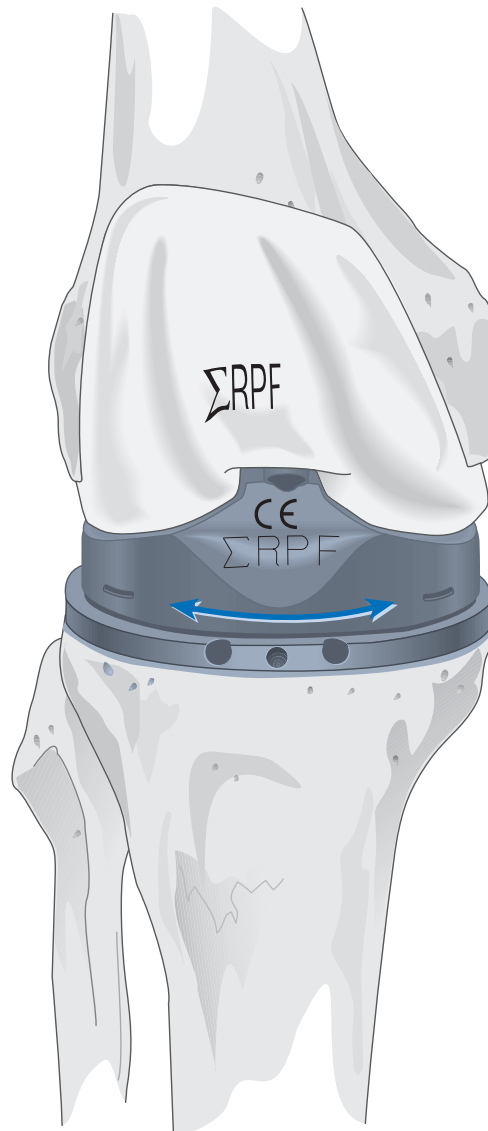


Figure 77

# Tibial Finishing

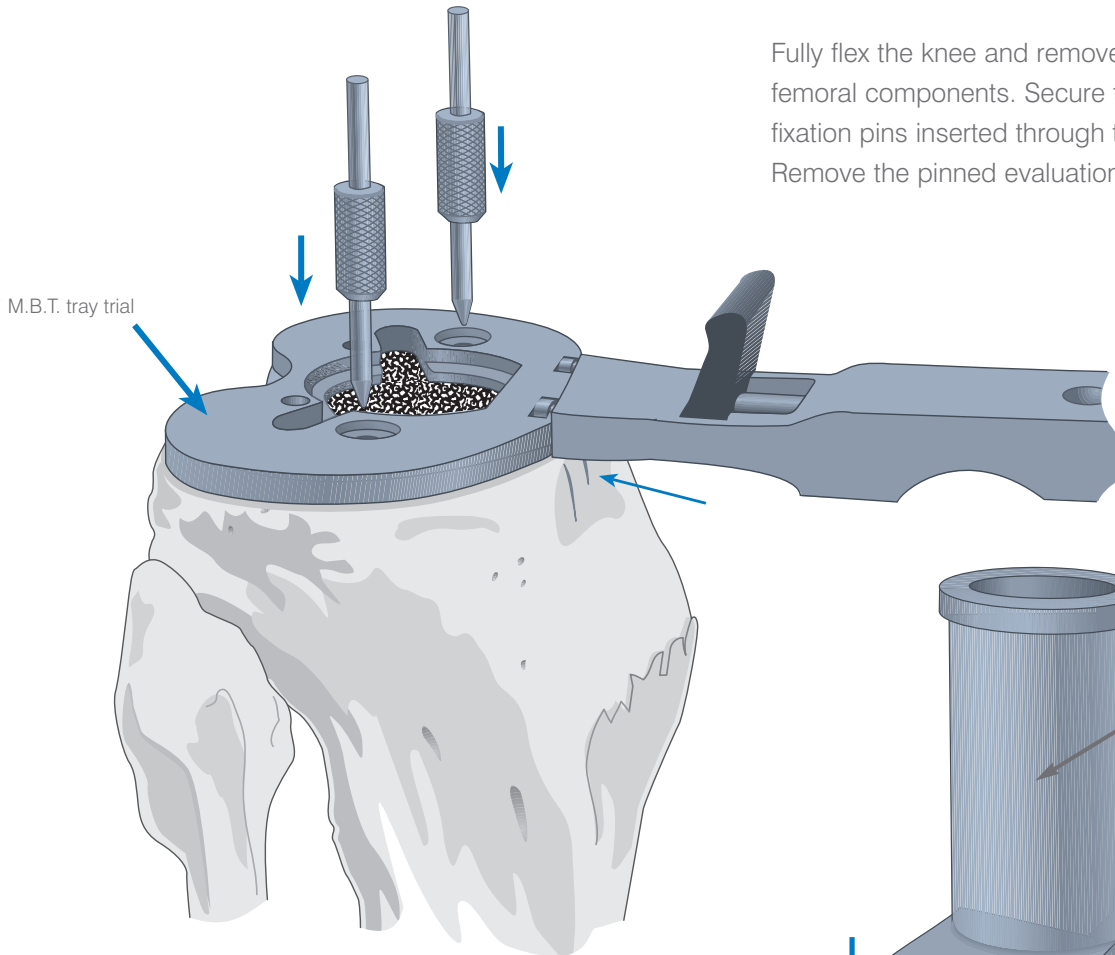


Figure 78

Fully flex the knee and remove the trial bearing and femoral components. Secure the tray trial with two fixation pins inserted through the recessed holes. Remove the pinned evaluation bullet (Figure 78).

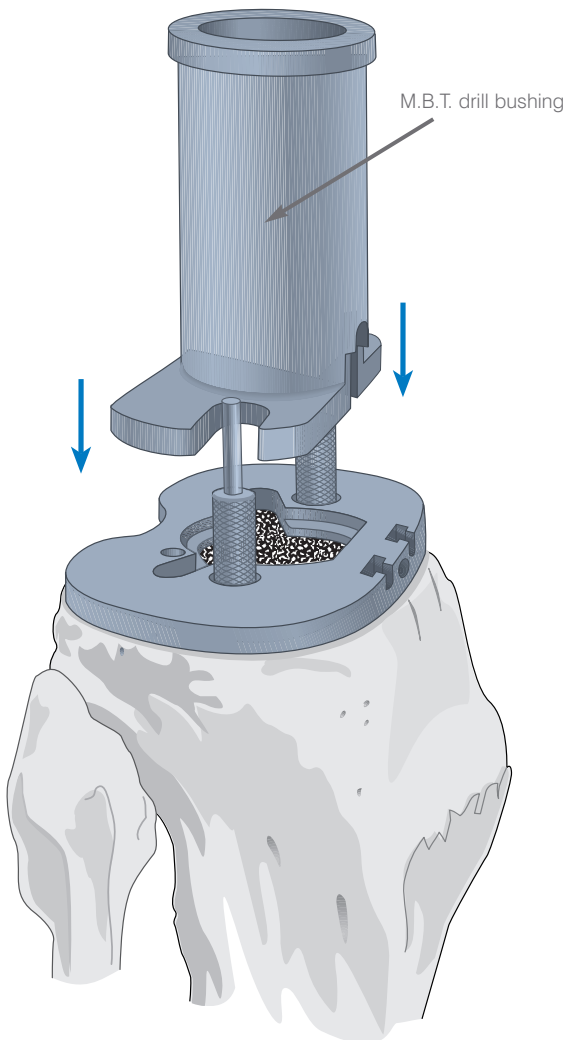


Figure 79

Seat the M.B.T. drill bushing into the tibial tray trial by lightly tapping the top of the drill bushing (Figure 79).

In cases where the proximal tibial bone is sclerotic, use a Steinmann pin to drill two small holes posteriorly to facilitate the placement of the spikes on the drill bushing onto the tray trial.

If a non-cemented M.B.T. tray is to be used, please follow Appendix II.

## Cemented M.B.T. tray preparation

Assemble the drill stop onto the M.B.T. drill and position at the selected tray size. Advance the M.B.T. drill through the M.B.T. drill bushing and into the cancellous bone, until it hits the drill stop (Figure 80).

The M.B.T. drill creates a cavity that is line-to-line with the punch bushing and final implant (Figure 81). Cement will interdigitate as the tray is implanted. Should a larger cement mantle be required, please see the table below.

### Creating Central Stem Mantle

Tray Size	Drill Stop Seating	Cement Mantle
1-1.5	2-3	0.5 mm per side 4 mm distal
2-3	4-7	0.5 mm per side 4 mm distal
4-7	drill 'bottoms out' on tray trial	0.5 mm per side 4 mm distal

**Note: If over-reaming is desired, remove the tray trial to avoid impingement of the reamer on the tray trial. To compact cancellous bone, advance the drill in reverse.**

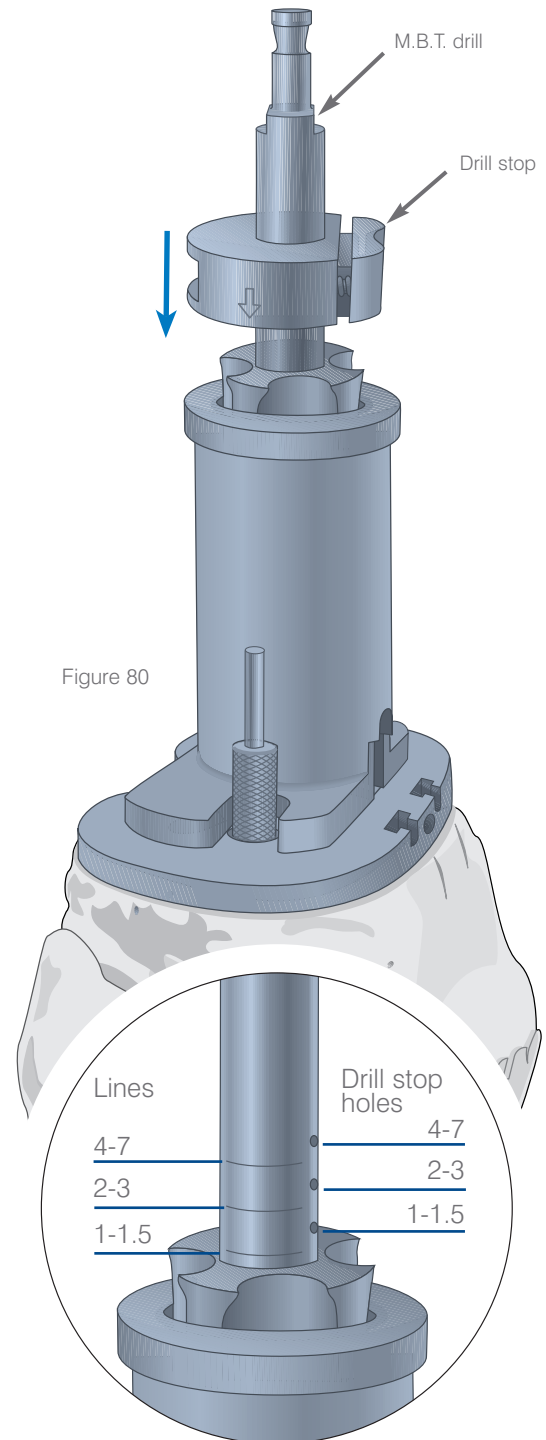


Figure 80

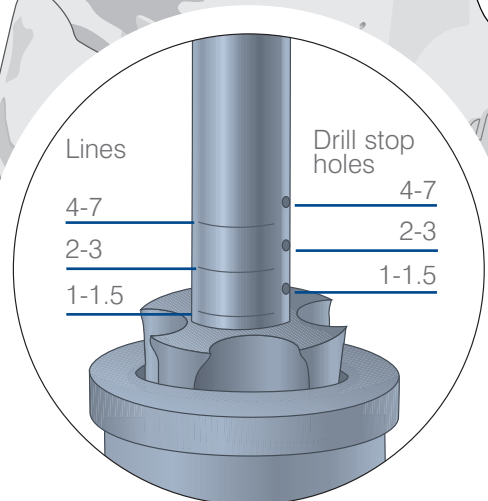


Figure 81

Insert the M.B.T. keel punch bushing into the M.B.T. tray trial, utilizing the M.B.T. punch bushing impactor/extractor (Figure 82). When complete, the superior surface of the punch bushing should be flush with the superior surface of the tibial tray trial.

Remove the punch bushing impactor/extractor.

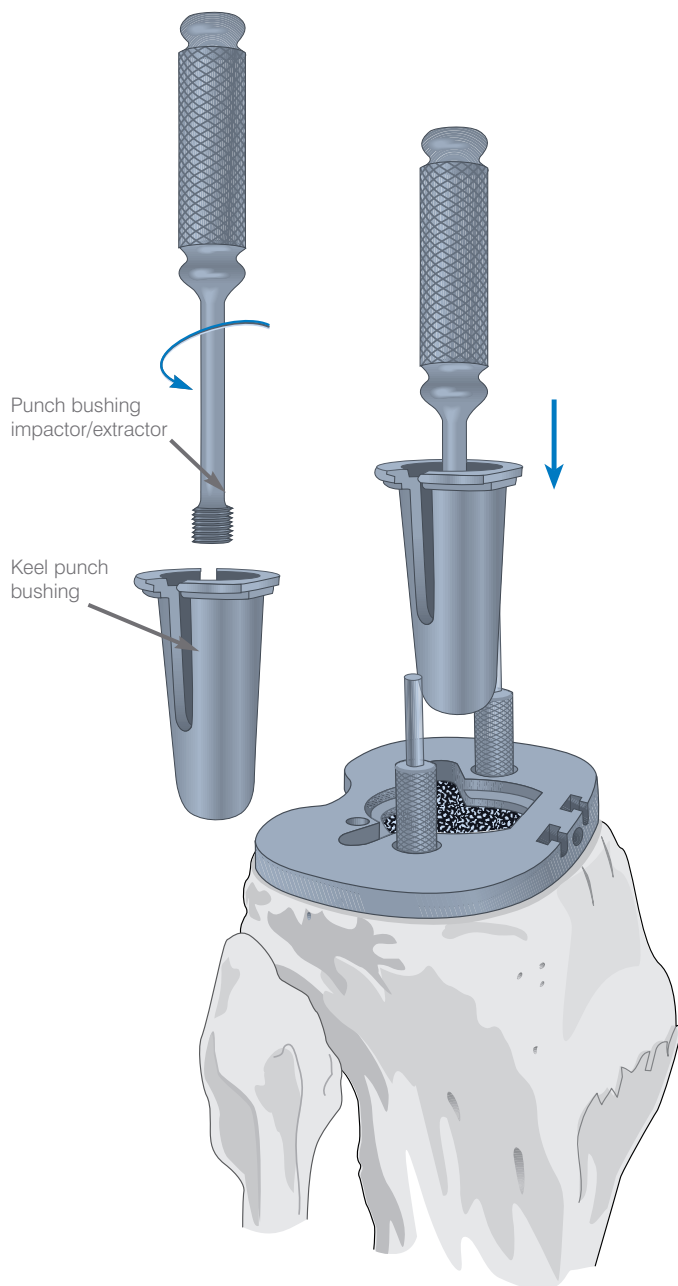


Figure 82

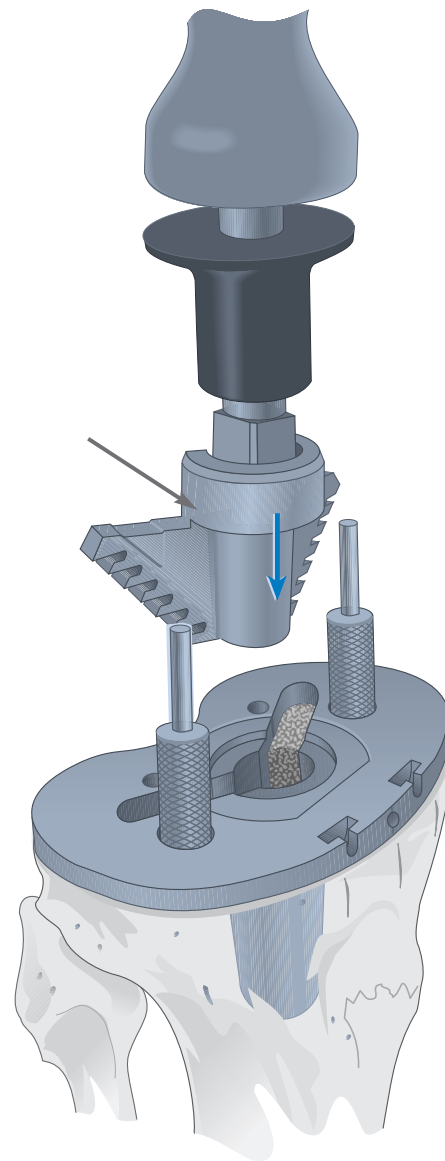


Figure 83

Assemble the universal handle to the appropriately sized M.B.T. keel punch and insert it into the M.B.T. punch bushing, being careful to avoid malrotation. Impact this composite into the cancellous bone until the shoulder of the punch is in even contact with the M.B.T. punch bushing (Figure 83). Disconnect the universal handle, leaving the M.B.T. punch in place.

**Note: If the bone on the medial or lateral plateau is sclerotic, it is helpful to initially prepare the keel slot with an oscillating saw or high speed burr.**

The illustrated keel punch and punch bushings provide a line-to-line fit. If a cement mantle is desired, select the appropriate sized cement keel punch and cemented keel punch bushing. These will provide a 1 mm cement mantle per side of the keel.

# Additional Trial Reduction

This trial reduction can be performed once the central stem has been prepared.

Select the P.F.C. Sigma RP-F tibial insert trial that matches the chosen P.F.C. Sigma RP-F femoral trial size and insert it onto the M.B.T. tray trial (Figure 84).

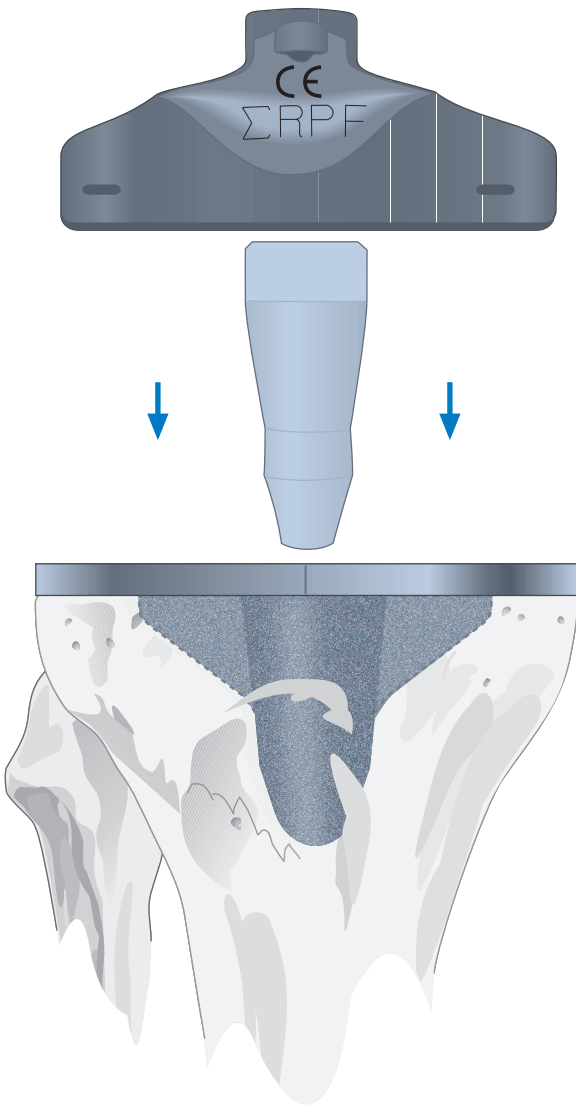


Figure 84

With the trial prostheses in place, fully extend the knee carefully, noting the anteroposterior stability and overall alignment in the A/P and M/L planes (Figure 85).

If there is any indication of instability, substitute a tibial insert trial with the next greater thickness and repeat reduction. Select the insert that gives the greatest stability in flexion and extension while still allowing full extension.

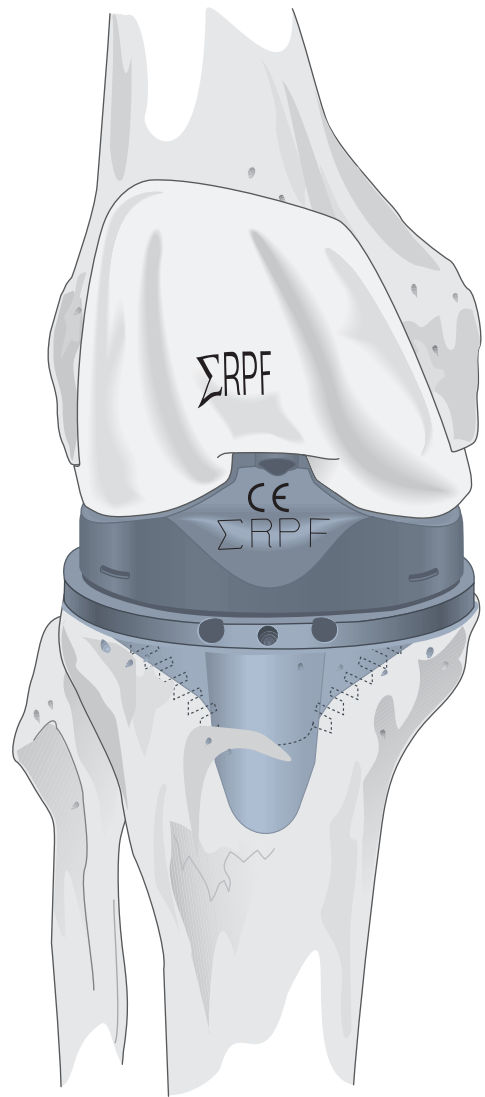


Figure 85

# Implanting the Components

## Cemented M.B.T. Tray

Thoroughly cleanse the entire site with pulsatile lavage. Prepare bone cement and apply it by syringe or with digital pressure in its low viscous state to assure maximal penetration into the trabecular bone (Figure 86).

Assemble the universal handle onto the M.B.T. tray impactor and carefully insert the tibial tray, avoiding malrotation. When fully inserted, deliver several mallet blows to the top of the universal handle. A swab may be inserted between the impactor and the component in order to protect the bearing surface (Figure 87).

The previous electrocautery marks will aid alignment of the tray.

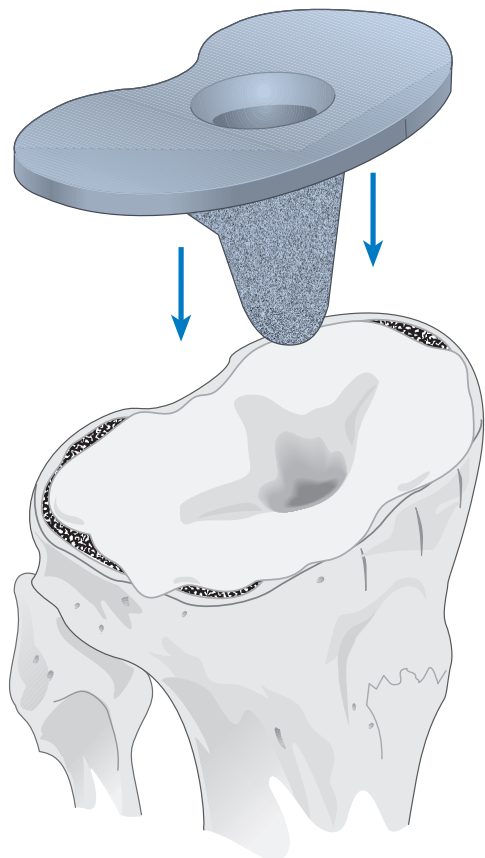


Figure 86

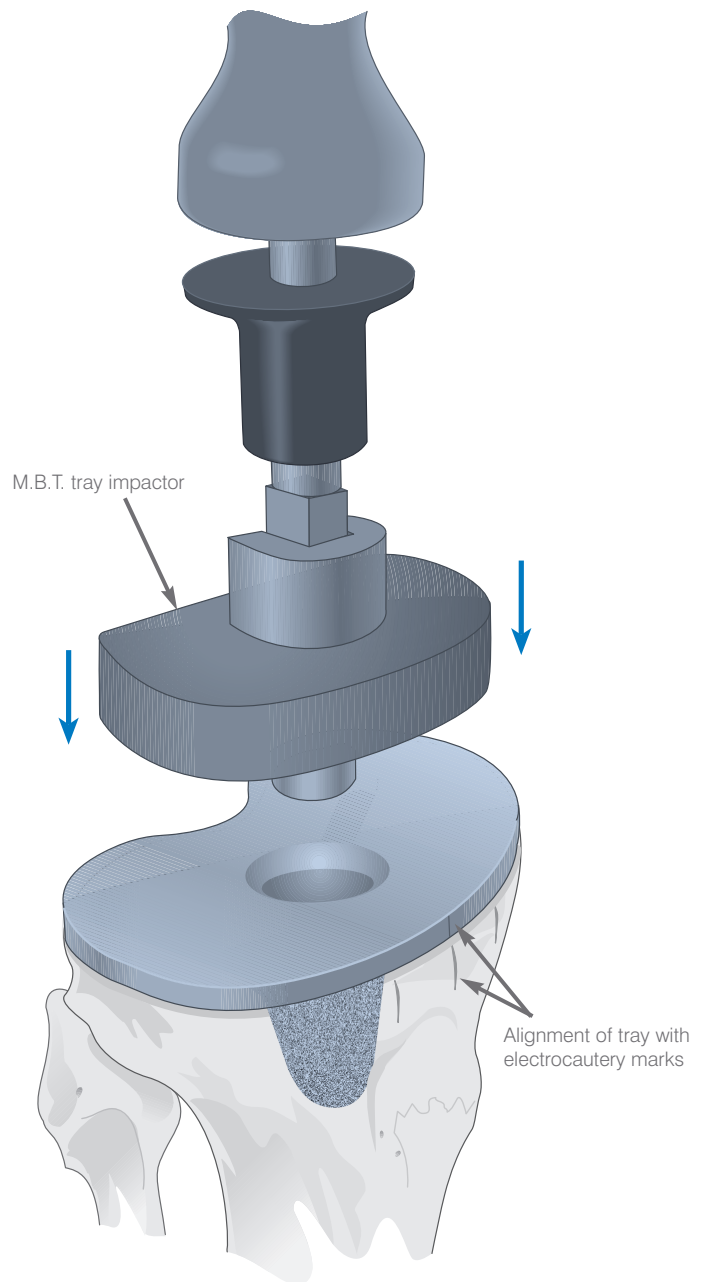
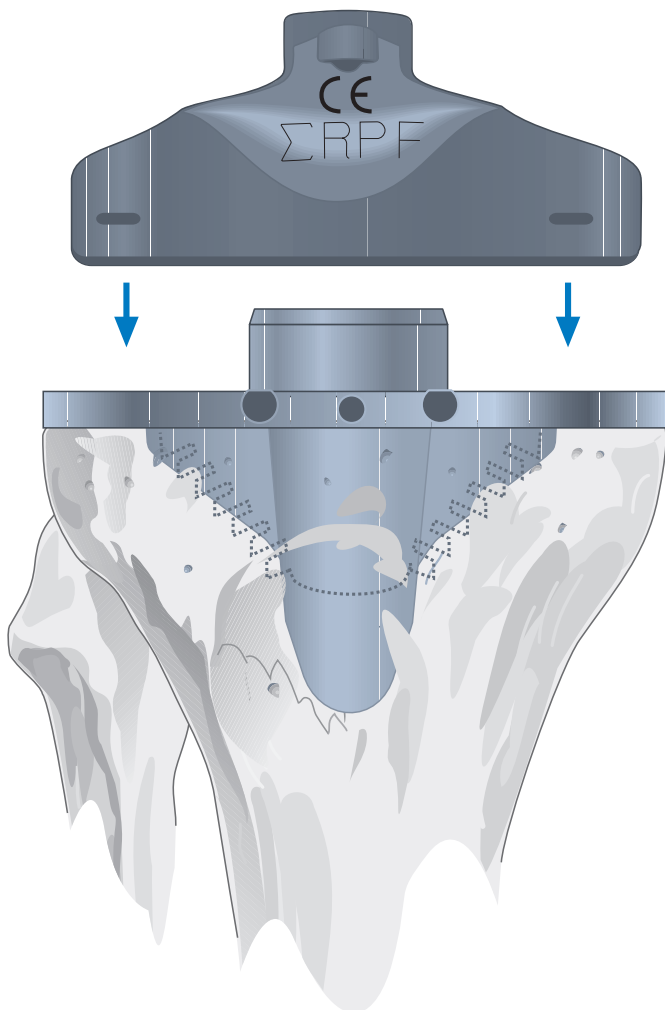


Figure 87

As the cement polymerises, position a P.F.C. Sigma RP-F trial femoral component on the prepared femur and the M.B.T. trial post into the central stem of the M.B.T. tray component and insert a P.F.C. Sigma RP-F tibial insert trial (Figure 88). Take care to avoid scratching the proximal surface of the tibial tray. Place the knee in full extension and maintain even pressure across the bone/tibial implant interface.

Care should be taken not to hyperextend the knee as this could apply unequal pressure to the anterior portion of the tray thereby causing posterior lift-off. When the cement has set, place the knee in flexion and remove the trial femoral component as well as the tibial insert trial and M.B.T. trial post. If using an osteotome to remove the insert trial from the tray, cover the osteotome with laps to avoid scratching the proximal surface of the tray. Carefully remove all extruded cement with special attention to the posterior compartment and entire periphery.



**Note: Non-cemented M.B.T. tray application, see Appendix II.**

Figure 88

## The Femoral Component

The entry hole at the medullary canal is plugged with cancellous bone. All surfaces are thoroughly cleansed with pulsatile lavage. Cement is applied to the bone at the anterior, anterior chamfer and distal surfaces and to the inner surface of the component at the posterior condylar recesses. Care is taken to avoid the articular surface of the implant.

The implant is assembled onto the femoral inserter.

Care is taken that it is correctly oriented.

The leading edges are advanced equally, parallel to the distal surface and protecting the carefully configured surfaces (Figure 89).

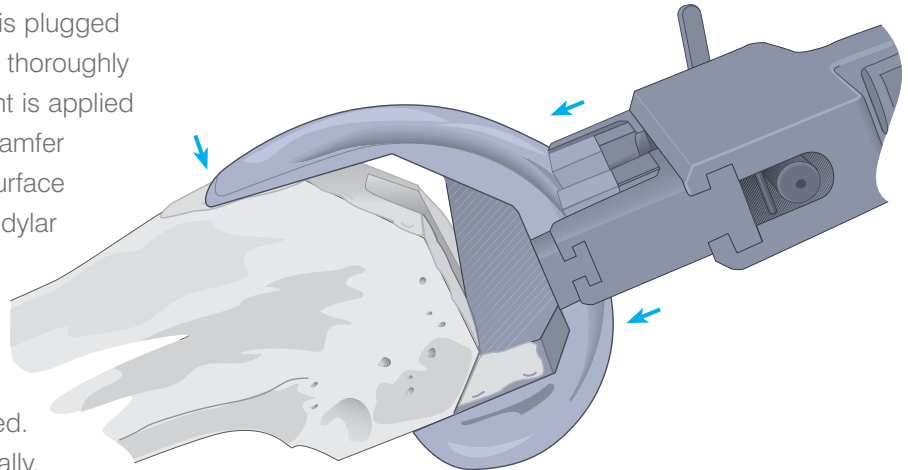
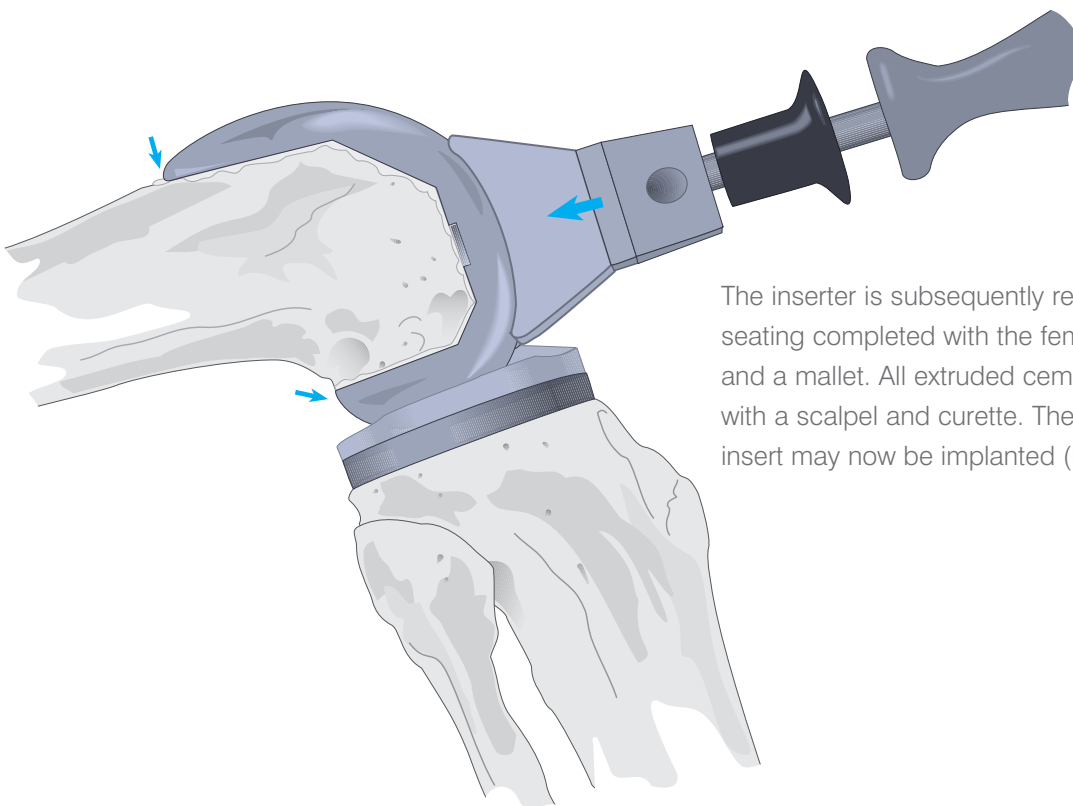


Figure 89



The inserter is subsequently released and seating completed with the femoral impactor and a mallet. All extruded cement is cleared with a scalpel and curette. The final tibial insert may now be implanted (Figure 90).

Figure 90

### The Patellar Component

The patellar implant may be cemented at the surgeon's convenience with either of the other components. The cut surface is thoroughly cleansed with pulsatile lavage. Cement is applied to the surface and the component inserted.

The patellar clamp is designed to fully seat and stabilize the implant as the cement polymerises. It is positioned with the silicon O-ring centered over the articular surface of the implant and the metal backing plate against the anterior cortex, avoiding skin entrapment. When snug, the handles are closed and held by the ratchet until polymerization is complete (Figure 91). Excessive compression is avoided as it can fracture osteopenic bone. All extruded cement is removed with a scapel to avoid pulling cement out from under the patella. To release the clamp, place the locking knob in the unlocked position and squeeze the handles together to release the clamp.

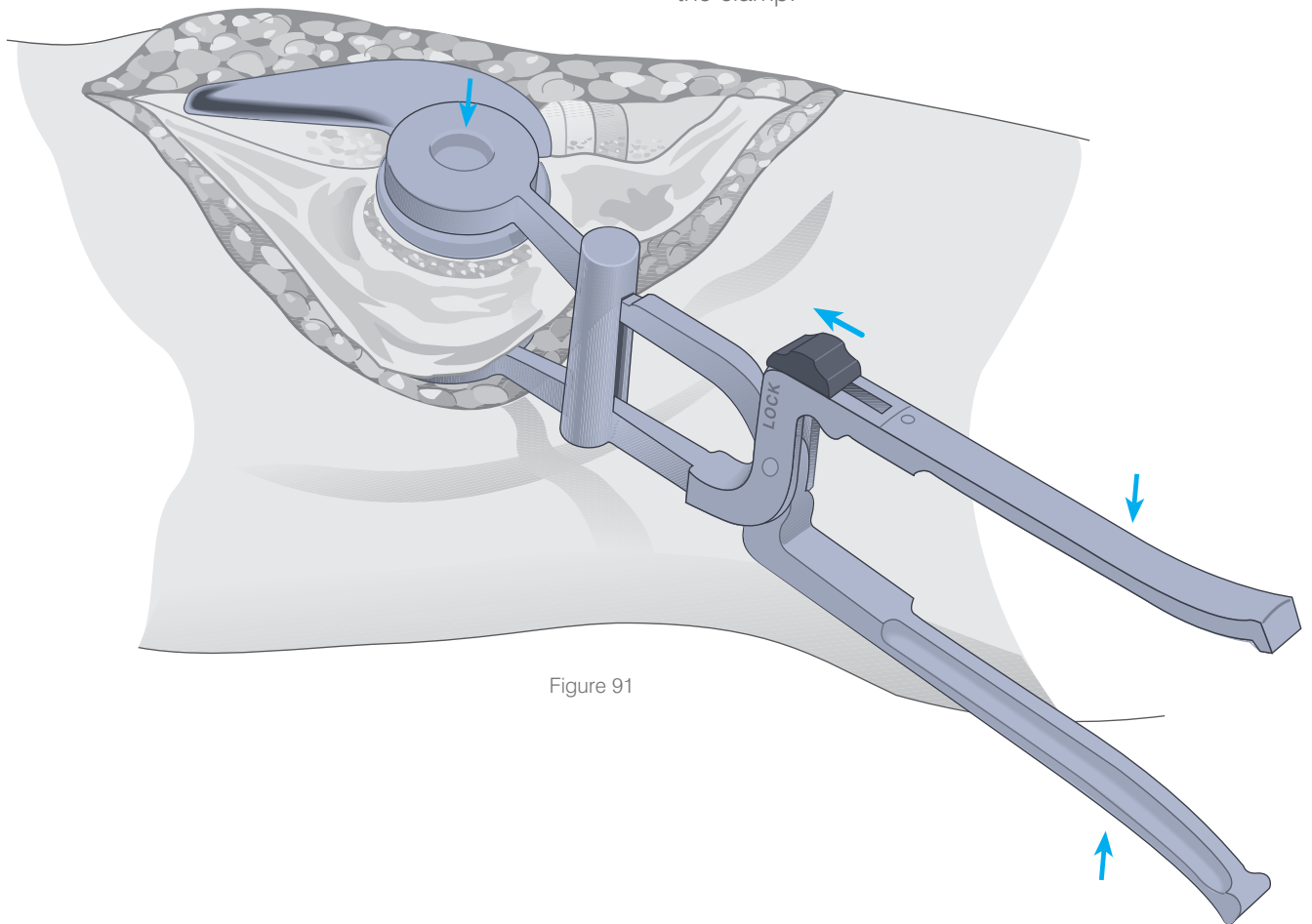


Figure 91

# Appendix 1

## Posterior Up Femoral Sizing Guide

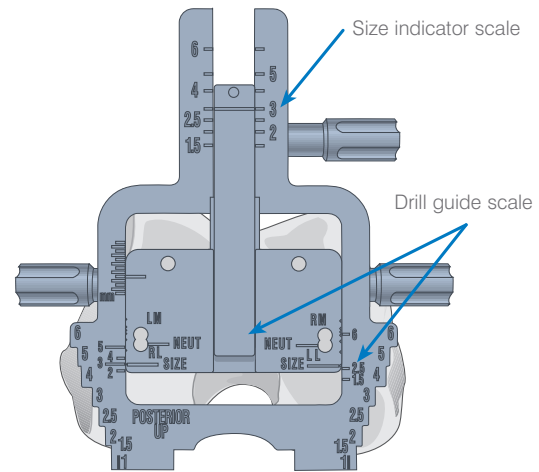
The posterior up sizing guide measures the femur in the same way as the anterior down guide. The sizing guide will position the femoral A/P chamfer cutting block so 8 mm will be resected from the posterior condyles, corresponding to the posterior condyle thickness of the prosthesis (Figure 92).

Three options are available when the femur measures between sizes.

### Option 1

If choosing to downsize when the size indicator scale reads 3.5, set the sizing guide to size 3 and use a size 3 cutting block (Figure 93).

This will give an 8 mm posterior resection but will cause a larger anterior resection. Increased anterior resection may notch the anterior cortex of the femur. Femoral shaft notching should be avoided, since there is an associated risk for fracture (Figure 94).



The Posterior Reference Femoral Sizing Guide

Figure 92

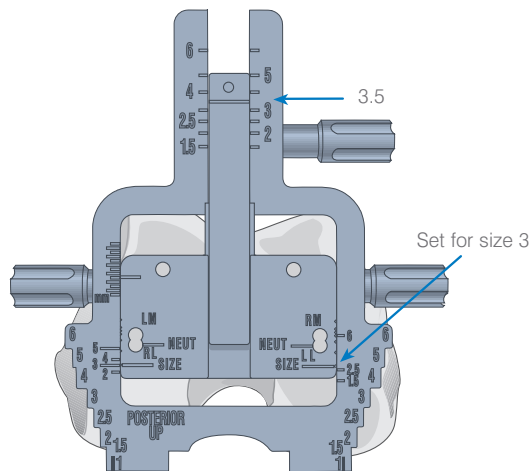


Figure 93

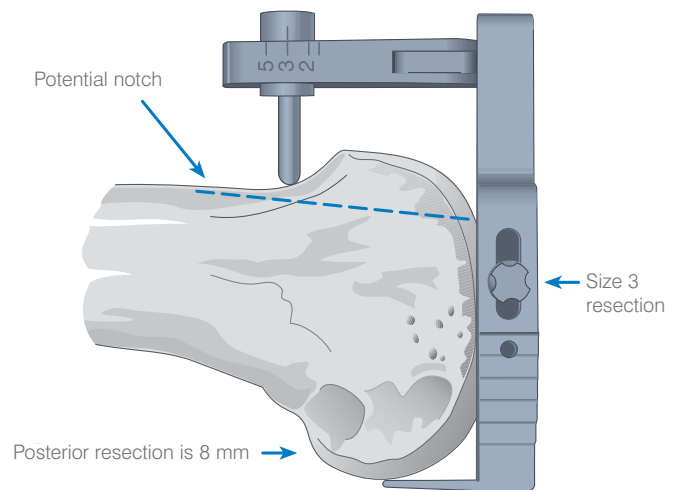


Figure 94

Use the millimeter scale on the side of the drill guide to 'ease' the anterior cut by moving the drill guide anteriorly. This increases the posterior cut and thereby the flexion gap size. Keep a balance between the anterior cut and the flexion space.

## Option 2

When electing to upsize the femur set the sizing guide to size 4 and use a size 4 cutting block. This again will resect 8 mm from the posterior condyles but less anteriorly (Figure 95).

The under-resection of the anterior surface can have a significant effect on the patella. It may cause tightness of the joint and high forces to be transmitted to the patella since the anterior articular surface would be positioned too anterior. Using the millimeter scale allows the anterior resection to be increased. This will cause under-resection posteriorly and a potentially tight flexion gap.

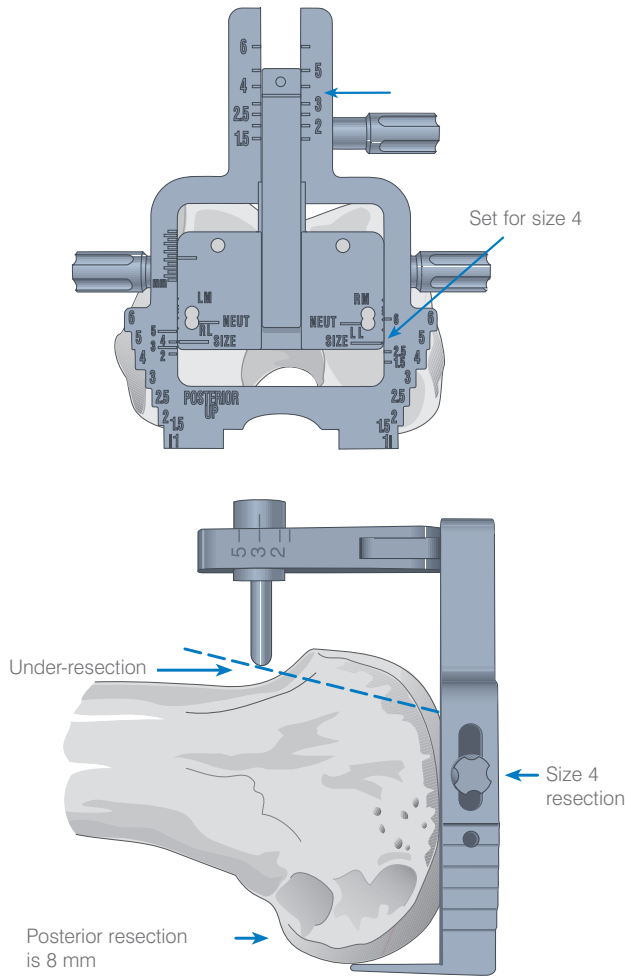


Figure 95

## Option 3

Divide the extra bone resection involved in downsizing between the anterior and posterior cuts by setting the sizing guide to 4 and using the size 3 cutting block. This increases the posterior resection by 1.4 mm and the anterior by 2.5 mm (Figure 96).

The two sizing guides assure a consistent posterior cut or a consistent anterior cut and the ability to accommodate femurs which fall between whole sizes.

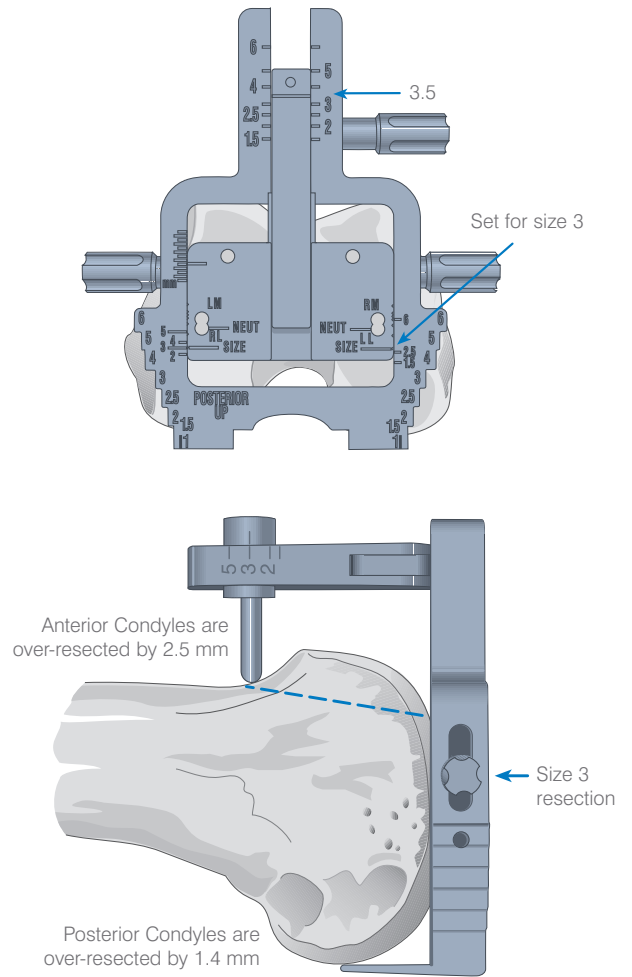


Figure 96

# Appendix 2

## Non-cemented M.B.T. Tray Application

Advance the M.B.T. stem punch into the drill bushing and impact into the cancellous bone until the appropriate tray size marking is reached (Figure 97).

Insert the M.B.T. keel punch bushing into the M.B.T. tibial tray trial, utilizing the M.B.T. punch bushing impactor/extractor. When complete, the superior surface of the punch bushing should be flush with the superior surface of the tibial tray trial (Figure 98).

Remove the punch bushing impactor/extractor.

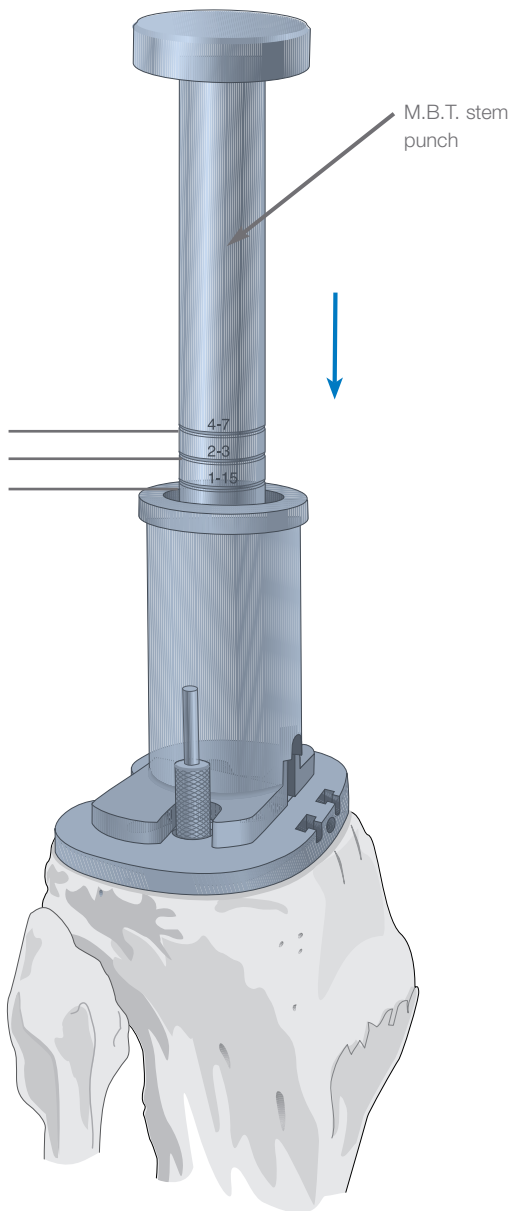


Figure 97

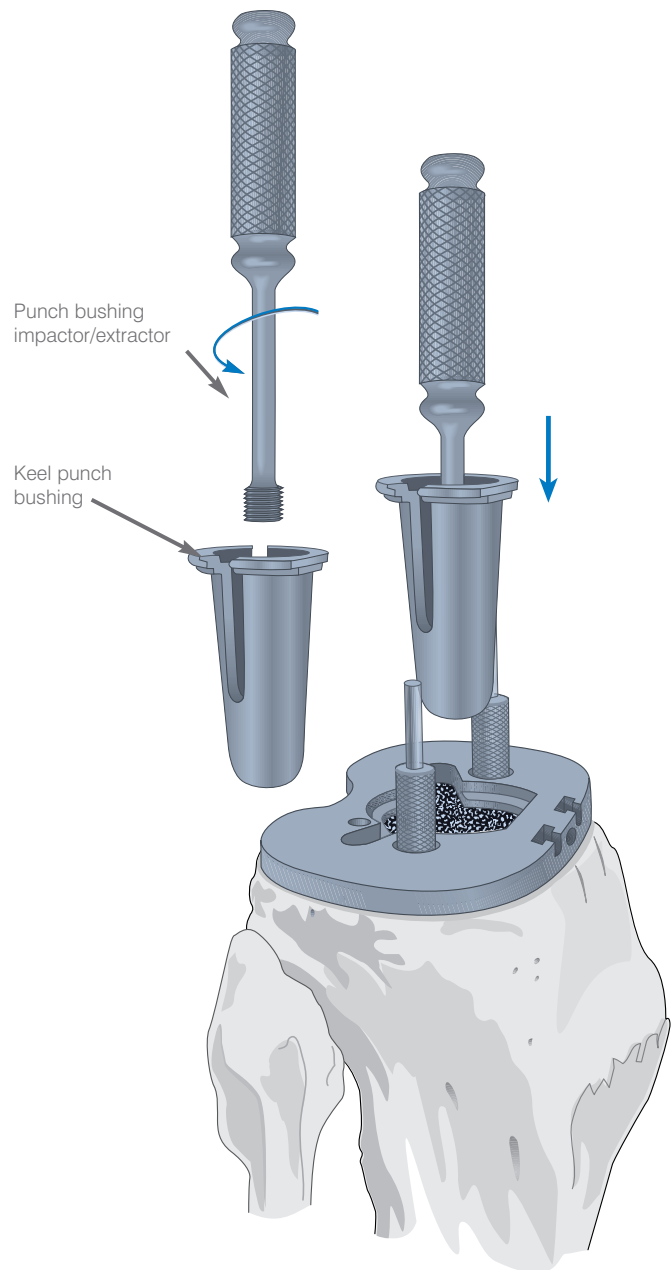
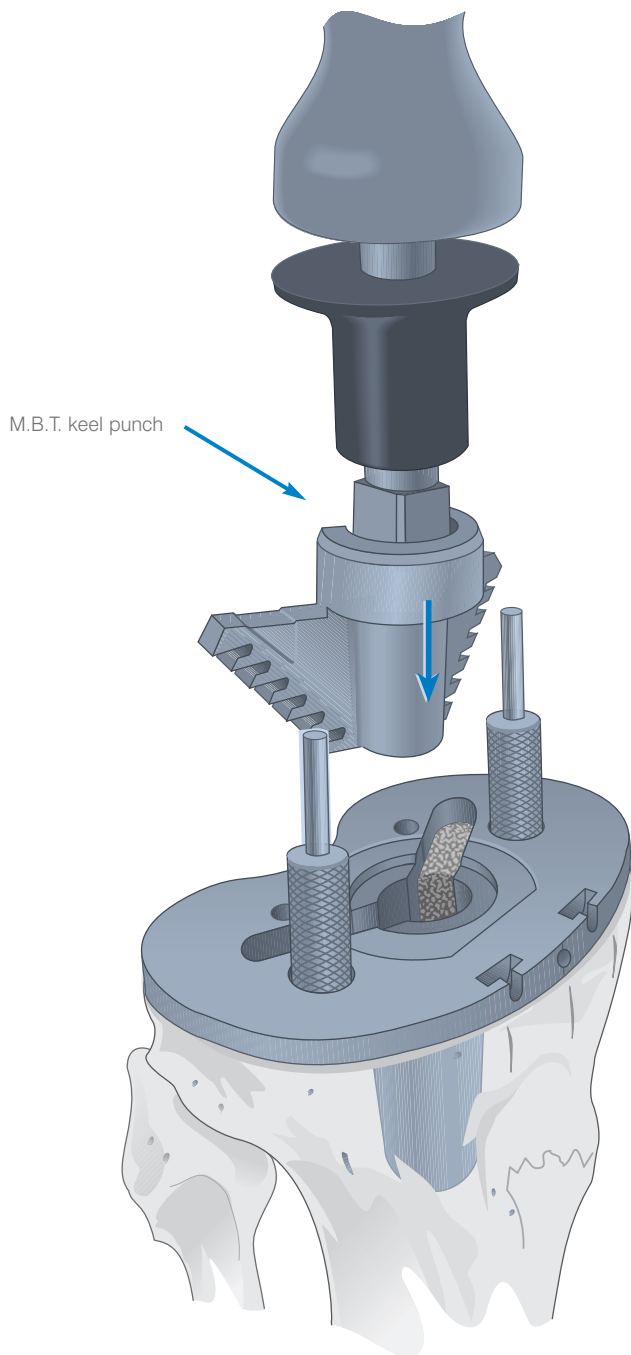


Figure 98



If the keeled version of the non-cemented M.B.T. tray is used, assemble the universal handle to the appropriately sized M.B.T. keel punch and insert it into the M.B.T. punch bushing, being careful to avoid malrotation. Impact this composite into the cancellous bone until the shoulder of the punch is in even contact with the M.B.T. punch bushing. Disconnect the universal handle, leaving the M.B.T. punch in place (Figure 99).

**Note: If the bone on the medial or lateral plateau is sclerotic, it is helpful to initially prepare the keel slot with an oscillating saw or high speed burr.**

The porous tray will create a 'true' interference fit of 1.6 mm around the entire central stem when fully impacted.

Figure 99

# Appendix 3

## Femoral Sizing (Anterior Down)

Place the anterior sizing guide on the resected distal surface of the femur with the posterior condyles resting on the posterior plate of the guide (Figure 100).

Place the stylus on the anterior sizing guide on the anterior femur with the tip positioned at the intended exit point on the anterior cortex - avoiding any potential notching of the femur.

Tighten the locking screw and read the size from on top of the sizing indicator. When properly set, the size indicated on the stylus should match the size on the guide. Set the drill guide scale to match the size on the sizing indicator and tighten the adjustment screw (Figure 101).

Drill pins through the upper medial and lower lateral hole to set 3 degrees of external femoral rotation (Figure 101). Remove the medial pin and the sizing guide leaving the lateral pin in place.

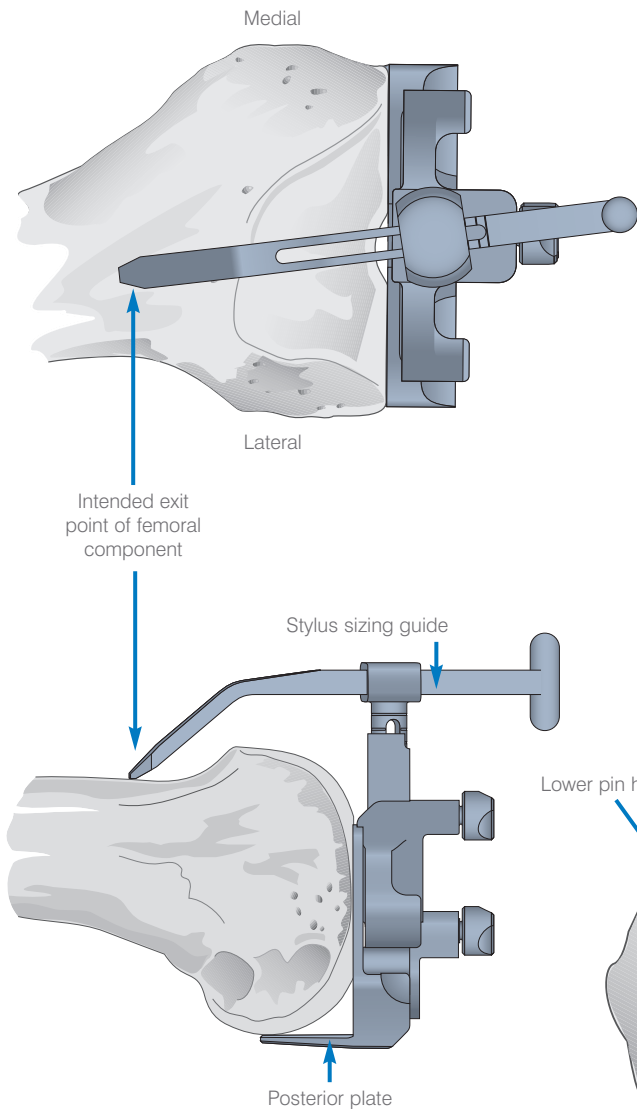


Figure 100

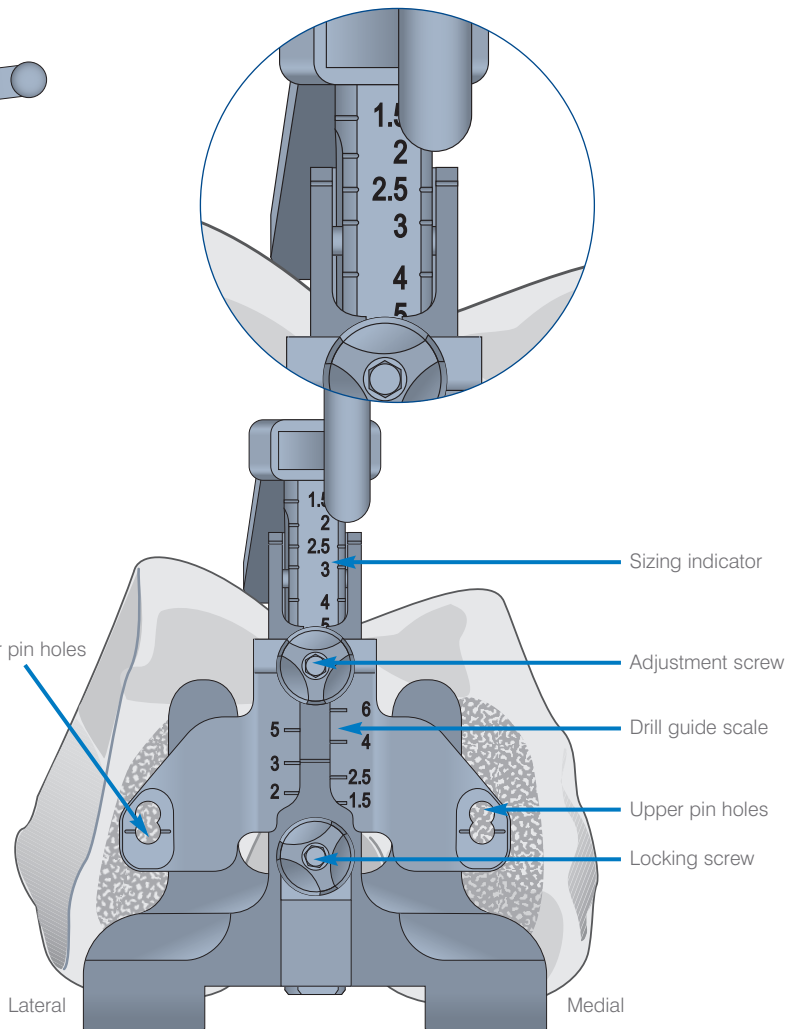


Figure 101

# Appendix 4

## Alternative Cutting Block Option for Tissue Sparing Technique

### Anterior femoral resection

The appropriate side (left or right) anterior resection cutting guide is selected and positioned flush to the resected distal femur. The cutting guide should be set to the mid position (size 3), using the scale as a reference (Figure 102).

The initial pin is introduced to fix the cutting guide on the resected femur. When complete the fixation button is pressed to secure the lower half of the jig.

The resection height is navigated using the adjustment screw (Figure 103) and the cutting guide is fixed in place with a final pin (Figure 104).

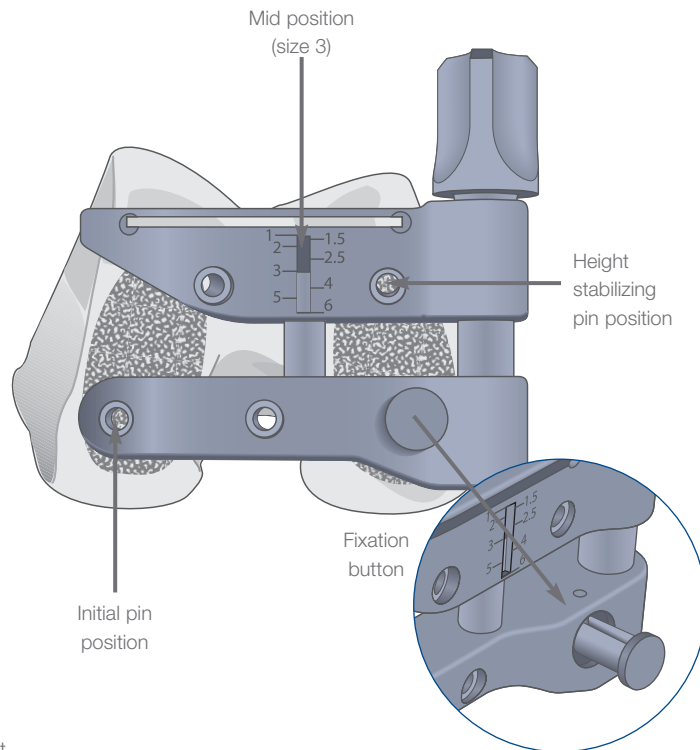


Figure 102

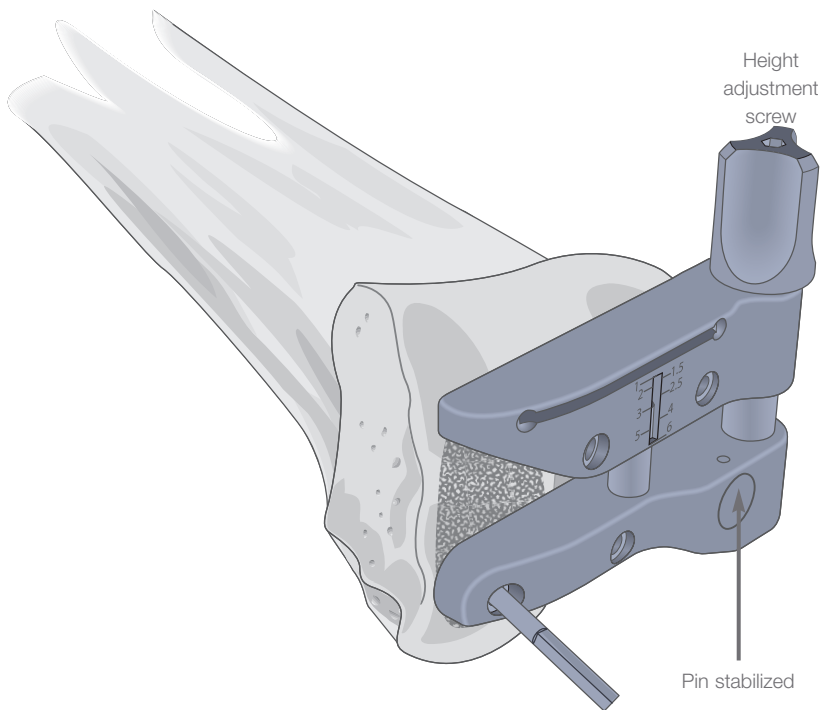


Figure 103

The anterior resection is completed using an oscillating saw with a 1.47 mm blade (Figure 104).

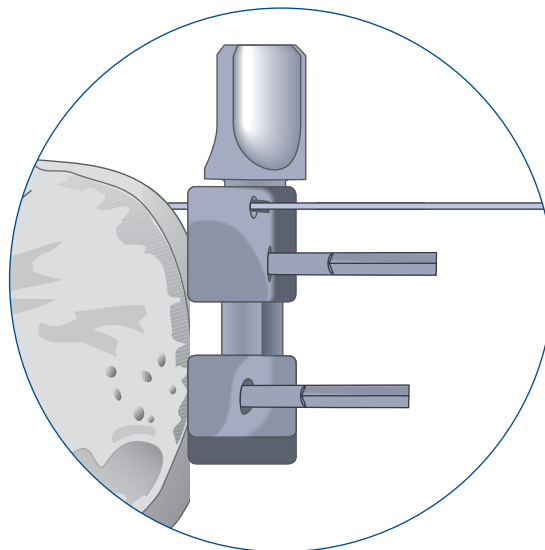


Figure 104

# Appendix 4 continued

## Final femoral preparation

For surgeons, practicing “tissue sparing techniques” in total knee replacement, the use of the P.F.C. Sigma RP-F MITKR cutting blocks might be an option (Figure 105).

**Note: Visibility of anatomic landmarks may be compromised in a minimally invasive technique. DePuy recommends the use of the computer navigated Ci™ System to support the positioning of the P.F.C. Sigma RP-F MITKR cutting block.**

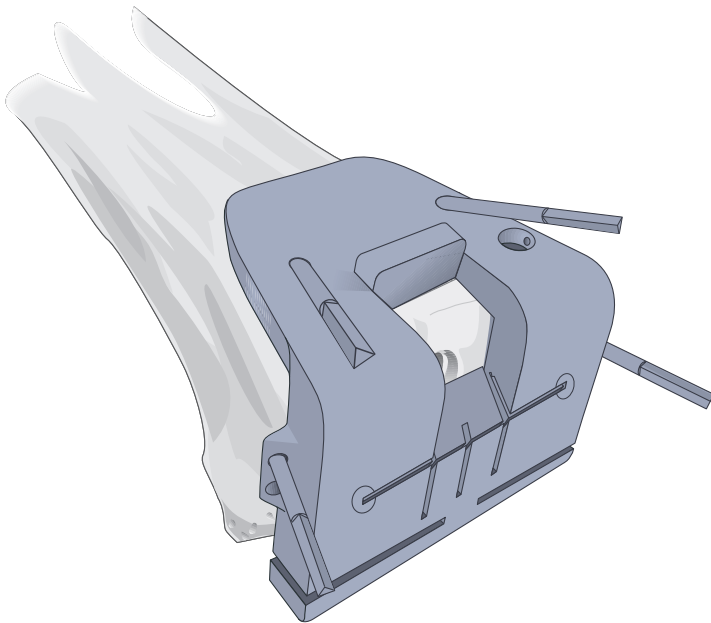


Figure 105

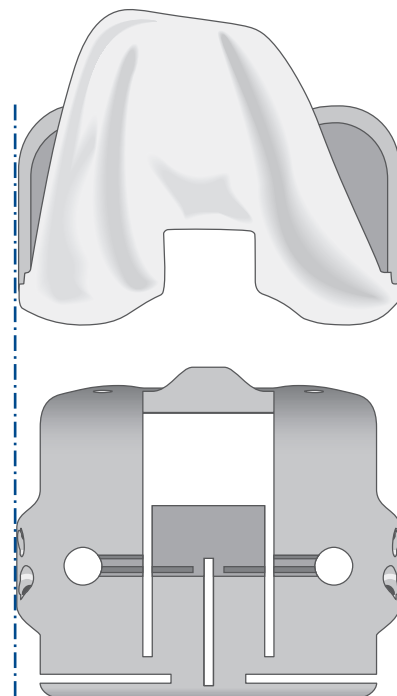


Figure 106

Position the P.F.C. Sigma RP-F MITKR cutting block on the resected anterior and distal surface of the femur. Check the medial-lateral positioning of the block. Introduce the pins to secure the block in place. A sawblade may be used to check the posterior cutting line. (Figure 106).

**Note: The medial-lateral width of the P.F.C. Sigma RP-F MITKR cutting guide represents the medial-lateral width of the P.F.C. Sigma RP-F femoral component. The anterior lateral flange of the P.F.C. Sigma RP-F MITKR cutting guide does not represent the lateral anterior flange of the P.F.C. Sigma RP-F femoral component.**

To perform the posterior cut with an oscillating saw, a new 8 mm x 70 mm x 1.47 mm blade is recommended (see page 53 for catalog numbers). Take care not to damage collateral or posterior structures of the knee (Figure 107).

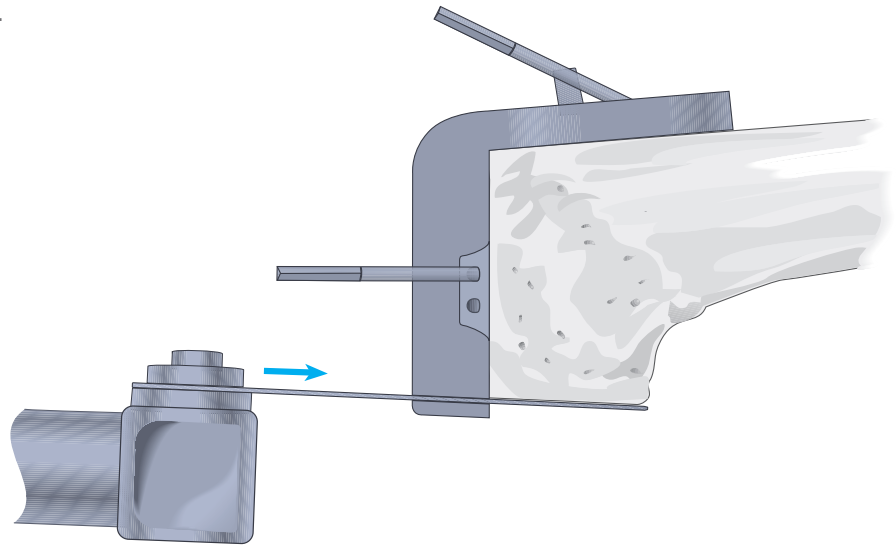
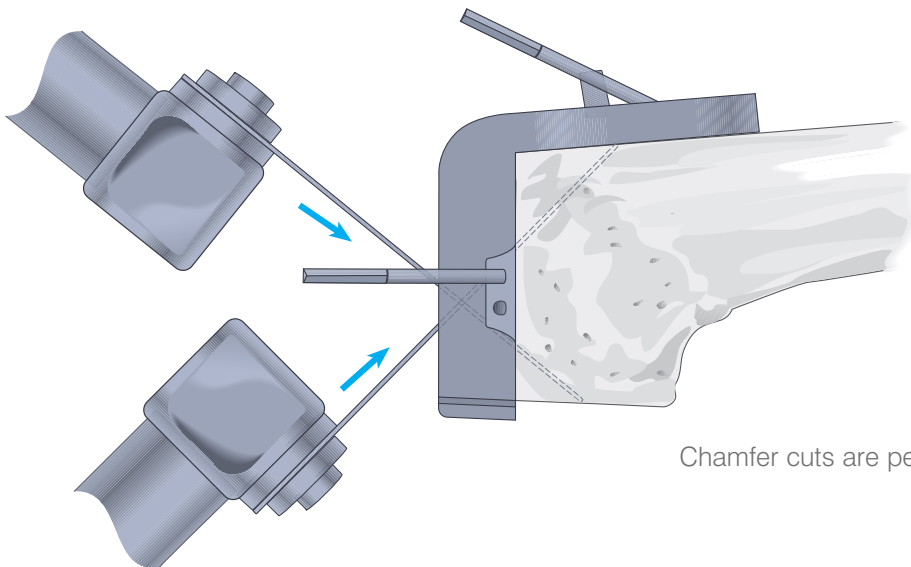
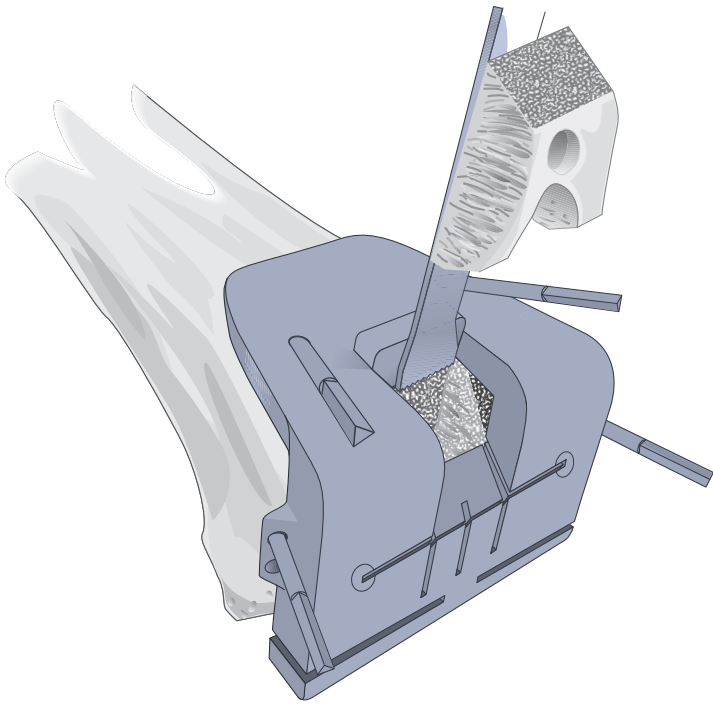


Figure 107



Chamfer cuts are performed subsequently.



The use of a small blade (8 mm x 70 mm x 1.47 mm) is recommended to cut the sides of the notch. Use an osteotome to cut the top of the box. When removing the bone from the notch, care should be taken to avoid damaging the posterior structures of the knee (Figure 108).

Figure 108

# Catalog Numbers

## P.F.C. Sigma RP-F Cutting Guides including removable saw capture

95-9003	P.F.C. Sigma RP-F Post Cut / Femoral Ntch Gd Size 1.5
95-9004	P.F.C. Sigma RP-F Post Cut / Femoral Ntch Gd Size 2
95-9005	P.F.C. Sigma RP-F Post Cut / Femoral Ntch Gd Size 2.5
95-9006	P.F.C. Sigma RP-F Post Cut / Femoral Ntch Gd Size 3
95-9007	P.F.C. Sigma RP-F Post Cut / Femoral Ntch Gd Size 4
95-9008	P.F.C. Sigma RP-F Post Cut / Femoral Ntch Gd Size 5
95-9009	P.F.C. Sigma RP-F Post Cut / Femoral Ntch Gd Size 6

## P.F.C. Sigma RP-F Spacer Blocks

95-9026	P.F.C. Sigma RP-F Spacer Blocks (10-17.5 mm)
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## P.F.C. Sigma RP-F Sterilization Containers

95-9035	P.F.C. Sigma RP-F Sterilization Container Trials
95-9036	P.F.C. Sigma RP-F Sterilization Container Instruments

## Optional Instruments

86-9055	Femoral Distractor U-Shape
95-9001	P.F.C. Sigma RP-F Femoral Distractor S-Shape

## Outsize Instruments (Size 1)

95-9010	P.F.C. Sigma RP-F Femoral Sizing Guide Post Up
95-9011	P.F.C. Sigma RP-F Femoral Sizing Guide Ant Down
95-9012	Four in One A/P Chmf Blk. Pop-Up Size 1
95-9019	P.F.C. Sigma RP-F Chmf Cutting Guide Size 1
95-9032	P.F.C. Sigma Ranawat Block Size 1
95-9002	P.F.C. Sigma RP-F Post Cut / Femoral Ntch Gd Size 1

## P.F.C. Sigma MITKR Anterior Jig Assembly

9505-01-550	MITKR Anterior Jig Assembly
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## P.F.C. Sigma RP-F MITKR Cutting Guides

9505-01-550	3-in-1 Size 1
9505-01-551	3-in-1 Size 1.5
9505-01-552	3-in-1 Size 2
9505-01-553	3-in-1 Size 2.5
9505-01-554	3-in-1 Size 3
9505-01-555	3-in-1 Size 4
9505-01-556	3-in-1 Size 5
9505-01-557	3-in-1 Size 6

## Stablecut® Oscillating Saw Blades

(for use with MITKR Cutting Blocks)

9505-01-591	Old Stryker®
9505-01-592	New Stryker
9505-01-593	Old Hall
9505-01-594	PowerPro®
9505-01-595	Synthes®
9505-01-596	3M

# Catalog Numbers

## P.F.C. Sigma RP-F Tibial Insert Trials

95-4110	P.F.C. Sigma RP-F Tibial Insert Trial 10 mm Size 1
95-4111	P.F.C. Sigma RP-F Tibial Insert Trial 12.5 mm Size 1
95-4112	P.F.C. Sigma RP-F Tibial Insert Trial 15 mm Size 1
95-4113	P.F.C. Sigma RP-F Tibial Insert Trial 17.5 mm Size 1
95-4114	P.F.C. Sigma RP-F Tibial Insert Trial 10 mm Size 1.5
95-4115	P.F.C. Sigma RP-F Tibial Insert Trial 12.5 mm Size 1.5
95-4116	P.F.C. Sigma RP-F Tibial Insert Trial 15 mm Size 1.5
95-4117	P.F.C. Sigma RP-F Tibial Insert Trial 17.5 mm Size 1.5
95-4120	P.F.C. Sigma RP-F Tibial Insert Trial 10 mm Size 2
95-4121	P.F.C. Sigma RP-F Tibial Insert Trial 12.5 mm Size 2
95-4122	P.F.C. Sigma RP-F Tibial Insert Trial 15 mm Size 2
95-4123	P.F.C. Sigma RP-F Tibial Insert Trial 17.5 mm Size 2
95-4125	P.F.C. Sigma RP-F Tibial Insert Trial 10 mm Size 2.5
95-4126	P.F.C. Sigma RP-F Tibial Insert Trial 12.5 mm Size 2.5
95-4127	P.F.C. Sigma RP-F Tibial Insert Trial 15 mm Size 2.5
95-4128	P.F.C. Sigma RP-F Tibial Insert Trial 17.5 mm Size 2.5
95-4130	P.F.C. Sigma RP-F Tibial Insert Trial 10 mm Size 3
95-4131	P.F.C. Sigma RP-F Tibial Insert Trial 12.5 mm Size 3
95-4132	P.F.C. Sigma RP-F Tibial Insert Trial 15 mm Size 3
95-4133	P.F.C. Sigma RP-F Tibial Insert Trial 17.5 mm Size 3
95-4140	P.F.C. Sigma RP-F Tibial Insert Trial 10 mm Size 4
95-4141	P.F.C. Sigma RP-F Tibial Insert Trial 12.5 mm Size 4
95-4142	P.F.C. Sigma RP-F Tibial Insert Trial 15 mm Size 4
95-4143	P.F.C. Sigma RP-F Tibial Insert Trial 17.5 mm Size 4
95-4150	P.F.C. Sigma RP-F Tibial Insert Trial 10 mm Size 5
95-4151	P.F.C. Sigma RP-F Tibial Insert Trial 12.5 mm Size 5
95-4152	P.F.C. Sigma RP-F Tibial Insert Trial 15 mm Size 5
95-4153	P.F.C. Sigma RP-F Tibial Insert Trial 17.5 mm Size 5

95-4160	P.F.C. Sigma RP-F Tibial Insert Trial 10 mm Size 6
95-4161	P.F.C. Sigma RP-F Tibial Insert Trial 12.5 mm Size 6
95-4162	P.F.C. Sigma RP-F Tibial Insert Trial 15 mm Size 6
95-4163	P.F.C. Sigma RP-F Tibial Insert Trial 17.5 mm Size 6

## P.F.C. Sigma RP-F Femoral Trials

95-4210	P.F.C. Sigma RP-F Femoral Trial Size 1 Left
95-4220	P.F.C. Sigma RP-F Femoral Trial Size 1 Right
95-4211	P.F.C. Sigma RP-F Femoral Trial Size 1.5 Left
95-4221	P.F.C. Sigma RP-F Femoral Trial Size 1.5 Right
95-4212	P.F.C. Sigma RP-F Femoral Trial Size 2 Left
95-4222	P.F.C. Sigma RP-F Femoral Trial Size 2 Right
95-4213	P.F.C. Sigma RP-F Femoral Trial Size 2.5 Left
95-4223	P.F.C. Sigma RP-F Femoral Trial Size 2.5 Right
95-4214	P.F.C. Sigma RP-F Femoral Trial Size 3 Left
95-4224	P.F.C. Sigma RP-F Femoral Trial Size 3 Right
95-4215	P.F.C. Sigma RP-F Femoral Trial Size 4 Left
95-4225	P.F.C. Sigma RP-F Femoral Trial Size 4 Right
95-4216	P.F.C. Sigma RP-F Femoral Trial Size 5 Left
95-4226	P.F.C. Sigma RP-F Femoral Trial Size 5 Right
95-4217	P.F.C. Sigma RP-F Femoral Trial Size 6 Left
95-4227	P.F.C. Sigma RP-F Femoral Trial Size 6 Right

# Catalog Numbers

## P.F.C. Sigma RP-F Femoral Implants

95-0010	P.F.C. Sigma RP-F Cemented Femoral Size 1 Left
95-0020	P.F.C. Sigma RP-F Cemented Femoral Size 1 Right
95-0011	P.F.C. Sigma RP-F Cemented Femoral Size 1.5 Left
95-0021	P.F.C. Sigma RP-F Cemented Femoral Size 1.5 Right
95-0012	P.F.C. Sigma RP-F Cemented Femoral Size 2 Left
95-0022	P.F.C. Sigma RP-F Cemented Femoral Size 2 Right
95-0013	P.F.C. Sigma RP-F Cemented Femoral Size 2.5 Left
95-0023	P.F.C. Sigma RP-F Cemented Femoral Size 2.5 Right
95-0014	P.F.C. Sigma RP-F Cemented Femoral Size 3 Left
95-0024	P.F.C. Sigma RP-F Cemented Femoral Size 3 Right
95-0015	P.F.C. Sigma RP-F Cemented Femoral Size 4 Left
95-0025	P.F.C. Sigma RP-F Cemented Femoral Size 4 Right
95-0016	P.F.C. Sigma RP-F Cemented Femoral Size 5 Left
95-0026	P.F.C. Sigma RP-F Cemented Femoral Size 5 Right
95-0017	P.F.C. Sigma RP-F Cemented Femoral Size 6 Left
95-0027	P.F.C. Sigma RP-F Cemented Femoral Size 6 Right

## P.F.C. Sigma RP-F Tibial Insert Implants

95-1010	P.F.C. Sigma RP-F Tibial Insert 10 mm Size 1
95-1011	P.F.C. Sigma RP-F Tibial Insert 12.5 mm Size 1
95-1012	P.F.C. Sigma RP-F Tibial Insert 15 mm Size 1
95-1013	P.F.C. Sigma RP-F Tibial Insert 17.5 mm Size 1
95-1015	P.F.C. Sigma RP-F Tibial Insert 10 mm Size 1.5
95-1016	P.F.C. Sigma RP-F Tibial Insert 12.5 mm Size 1.5
95-1017	P.F.C. Sigma RP-F Tibial Insert 15 mm Size 1.5
95-1018	P.F.C. Sigma RP-F Tibial Insert 17.5 mm Size 1.5
95-1020	P.F.C. Sigma RP-F Tibial Insert 10 mm Size 2
95-1021	P.F.C. Sigma RP-F Tibial Insert 12.5 mm Size 2
95-1022	P.F.C. Sigma RP-F Tibial Insert 15 mm Size 2
95-1023	P.F.C. Sigma RP-F Tibial Insert 17.5 mm Size 2
95-1025	P.F.C. Sigma RP-F Tibial Insert 10 mm Size 2.5
95-1026	P.F.C. Sigma RP-F Tibial Insert 12.5 mm Size 2.5
95-1027	P.F.C. Sigma RP-F Tibial Insert 15 mm Size 2.5
95-1028	P.F.C. Sigma RP-F Tibial Insert 17.5 mm Size 2.5
95-1030	P.F.C. Sigma RP-F Tibial Insert 10 mm Size 3
95-1031	P.F.C. Sigma RP-F Tibial Insert 12.5 mm Size 3
95-1032	P.F.C. Sigma RP-F Tibial Insert 15 mm Size 3
95-1033	P.F.C. Sigma RP-F Tibial Insert 17.5 mm Size 3
95-1040	P.F.C. Sigma RP-F Tibial Insert 10 mm Size 4
95-1041	P.F.C. Sigma RP-F Tibial Insert 12.5 mm Size 4
95-1042	P.F.C. Sigma RP-F Tibial Insert 15 mm Size 4
95-1043	P.F.C. Sigma RP-F Tibial Insert 17.5 mm Size 4
95-1050	P.F.C. Sigma RP-F Tibial Insert 10 mm Size 5
95-1051	P.F.C. Sigma RP-F Tibial Insert 12.5 mm Size 5
95-1052	P.F.C. Sigma RP-F Tibial Insert 15 mm Size 5
95-1053	P.F.C. Sigma RP-F Tibial Insert 17.5 mm Size 5
95-1060	P.F.C. Sigma RP-F Tibial Insert 10 mm Size 6
95-1061	P.F.C. Sigma RP-F Tibial Insert 12.5 mm Size 6
95-1062	P.F.C. Sigma RP-F Tibial Insert 15 mm Size 6
95-1063	P.F.C. Sigma RP-F Tibial Insert 17.5 mm Size 6