

Buechel-Pappas™
KNEE
SYSTEM

Surgical Procedure by Frederick F. Buechel, M.D.



Total knee arthroplasty represents a major advance in the management of severe, crippling arthritis of any kind. Both cemented and non-cemented implants have been developed in the New Jersey Low-Contact-Stress Buechel-Pappas Knee System of components.

Textured implants use polymethylmethacrylate for primary fixation of the femoral, tibial and patellar components, while the porous coated components can be used without cement, relying on tissue ingrowth stabilization into the micro-porous coated (325 micron pore size) fixation surface of each component.

The current B-P Knee System™ offers meaningful refinement to the original LCS knee, developed by Drs. Buechel and Pappas more than a quarter of a century ago. During the last twenty years Drs. Buechel and Pappas have been refining the design based on experience with the LCS. Although, DePuy has adopted most of these refinements, the B-P knee contains additional refinements. The primary difference between the current DePuy “Complete” LCS and the B-P knee is the use of titanium alloy coated with a wear and scratch resistant, ceramic, UltraCoat titanium nitride for all the metal components of the B-P knee, DePuy also sells titanium alloy knees with UltraCoat, under license from Drs. Buechel and Pappas, as a premium knee. However, this coating is the standard at Endotec. A revision system is also available. For details, see the Endotec B-P REVISION KNEE SYSTEM brochure.

Also significant is the superior engagement of the B-P tibial bearing with the femoral component makes the use of a posterior stabilized (PS) device unnecessary. Thus, since PS devices are characterized by highly excessive post against cam stresses, lack of axial rotation, failure in providing full flexion and other problems such devices are also undesirable.

All UHMWPe tibial and patellar components are available for low demand patients. These devices are superior to other fixed bearing articulating surfaces now in use with regard to providing lower contact stresses.

A tibia-cut-first approach similar to the successful Total Condylar procedure was chosen to provide a logical, time-tested method of establishing a stable, reproducible flexion gap which can then be easily balanced by an equal and stable extension-gap. This provides total knee stability throughout the range of active and passive motion. Such stability maintains contact pressure on the bearings and prevents subluxations or dislocations. This surgical technique can be used for either cemented or cementless application of the implants, since the resection surfaces are designed for press-fit stability of all components.

Primary femoral bone cuts preserve a maximum of bone stock using the anterior femoral shaft, epicondyles and center of the femoral canal for surgical reference points. Slight external rotation of the femoral component allows for a perpendicular resection of the proximal tibia in the medial-lateral plane, while providing equal medial and lateral compartment tension in flexion, as well as providing a more stable tracking position for the patella.

Posterior inclination of the proximal tibial cut, parallel to the anatomical inclination angle during this procedure, provides compressive loading of tibial components and avoids the shearing effects associated with perpendicular lateral plane resections.

Resection of the patellar articulating surface at the level of the quadriceps and patella tendons, respectively, allows sufficient bone stock and blood supply to implant a three peg fixturing element, which stabilizes the patella replacement.

This system, coupled with the revision knee system, contains a wide variety of components allowing optimal treatment of a wide range of pathologies.

The use of congruent bearing elements in the Buechel-Pappas Tricompartmental System, combined with the precise use of instruments for insertion provides the surgeon with superior alignment and placement of all components with bearing elements designed for maximum wear resistance without mechanical restrictions to movement. These implants have been in clinical use in their present articulating geometry for more than 30 years.

Basic Implants Concepts

- 1 Duplication of tibiofemoral and patellofemoral motion patterns.
- 2 Maximl area contact of metal to polyethylene bearings to decrease contact Stesses and improve wear properties.
- 3 Anatomical axial rotation to eliminate torquing loads on the prosthesis.
- 4 Metallic anchoring components for better load transfer characteristics, improved cement bed protection and substrate use in biologic fixation surfaces. Components with both porous-coated Biocoal and texfured (for cemented use only) fixation surfaces are available. All UHMWPe patellar and tibial components are also available for low demand patients.

Component Description

1. Tricompartmental Femoral Component (Right And Left. Standard And Narrow)

The Femoral Component is designed to replace the complex geometry of the femoral articular surface while maintaining an anatomical valgus angle. The radii of curvature decrease from anterior to posterior in a coordinated fashion to provide full flexion while maintaining excellent bearing congruity with the tibial component. Its geometry also congruently accommodates varus-valgus and rotary motions as well as providing congruent contact for the patellar components or the natural patella. The B-P femoral component has a 20 greater fully congruent tibiofemoral range of motion than the current LCS device. Full patellofemoral contact is retained for an additional 20 as well. Further, improved articulating surface accuracy and fit improve the congruity of the articulation surface in the B-P component.

2. Patellar Component

The Patella Component consists of a patella bearing mounted on a metallic anchoring plate. The bearing congruently matches the spherical anterior flange segments and sulcus of the femoral component. This component provides axial rotation to allow for variations in anatomical rotation as well as surgical misalignment. The metallic anchoring plate is used to protect the prosthesis-cement and prosthesis-bone interfaces.

3. Uhmwpe Patellar Component

This component provides fully congruent contact on its lateral facet except near full extension where contact pressures are low. The medial facet, which sees much lower loading, is in line contact with the femoral component. Thus stresses is this device rival those of the bearing patellar component.

4. Tibial Bearing

The Tibial Bearing provides anatomical axial rotation. This component is used in the absence of viable cruciate ligaments to provide functional stability by use of proper tension control of the surrounding soft tissues of the knee. Anatomical axial rotation with excellent bearing congruity and superior dislocation resistance is provided. These bearings come in a variety of thicknesses to allow flexibility in bone resection of the tibia, to correct gross deformities, and can be extremely useful in revision arthroplasties.

5. Tibial Component

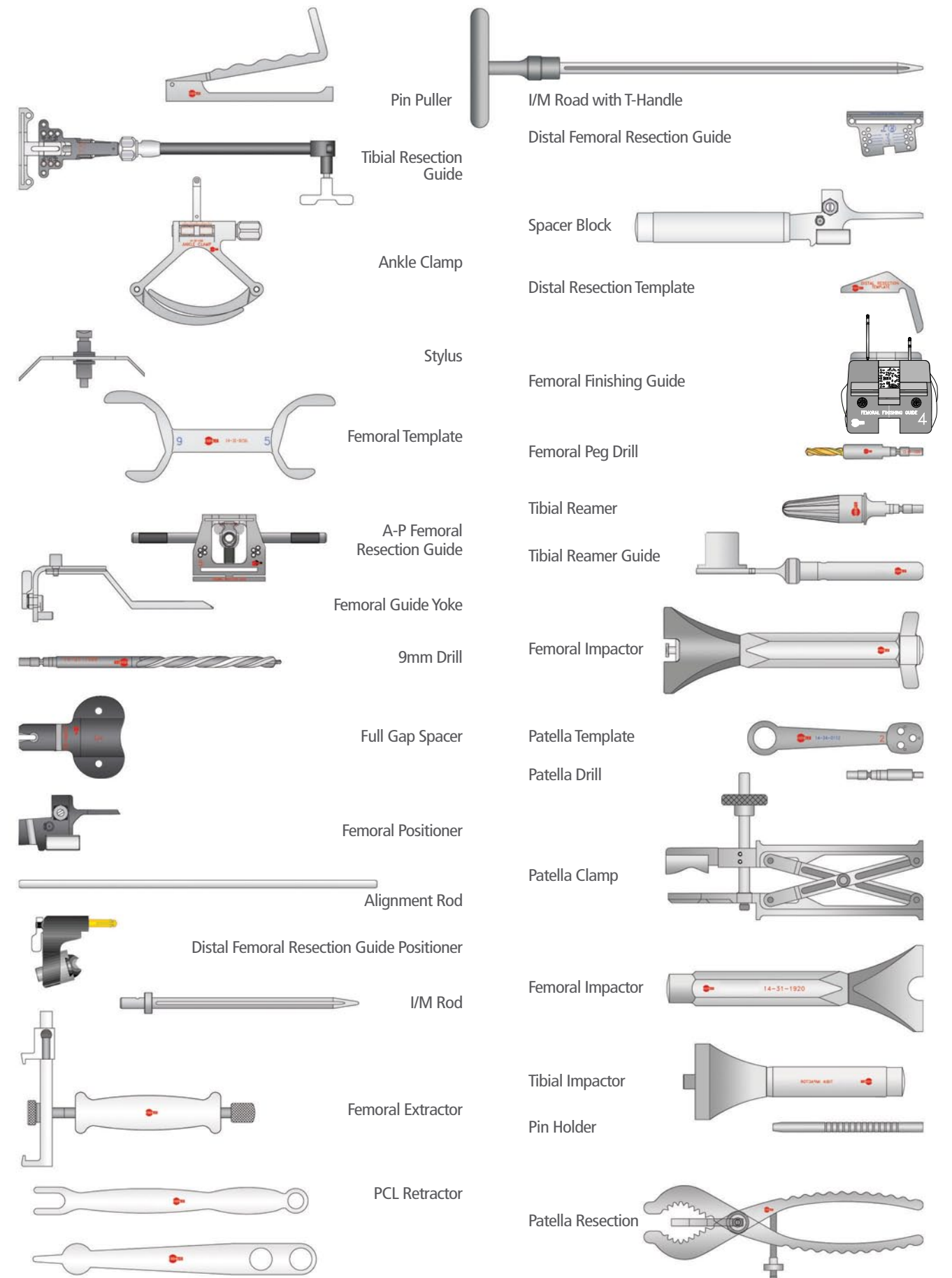
This plateau has an axial rotation stop and is intended for use with the Platform Bearing. In cases where there are insufficiencies of the soft tissue structures this stop provides resistance against spinout subluxation. This stop does not engage the bearing unless spinout is induced. If this occurs spin is limited so that normal compression of the joint results in self reduction of the bearing to a normal orientation.

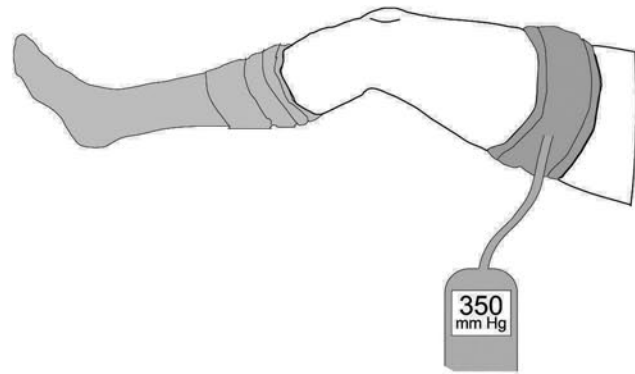
6. Uhmwpe Tibial Component

This all poly device is available for low demand patients. This device is superior to other fixed bearing tibial articulating sufaces now in use with regard to providing lower contact stresses.

7. Revision Components

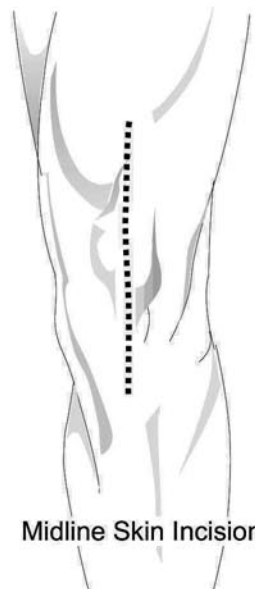
Modular, extended length, intramedullary stems are also available with Modular Femoral and Tibial Components to provide additional fixation in cases where bone stock is poor. Please refer to the Endtec brochures "Buechel-Pappas Revision Knee System" and the "Buechel-Pappas Revision Knee System Surgical Procedure" for details.





Preparation and Draping

Place the patient in a supine position on the operating table. Prep and drape the knee in a sterile fashion. Apply a sterile non-permeable stockinette to allow for palpation of the anterior tibial and malleolar contours. Elevate the leg for one minute to allow for venous run-off and then inflate a previously applied tourniquet.



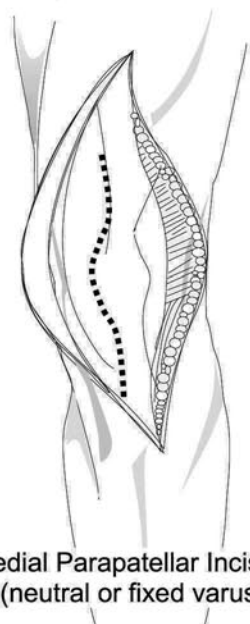
Midline Skin Incision

Skin Incisions

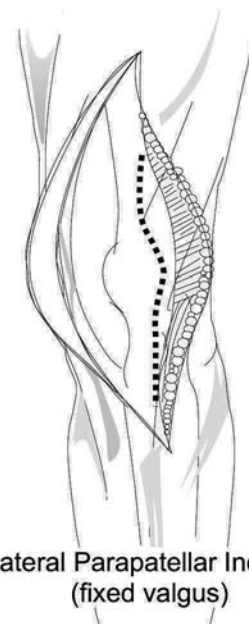
Use a midline skin incision unless previous incisions have been used in which case use the previous incision that allows visualization of the compartment involved.

Deep Incisions

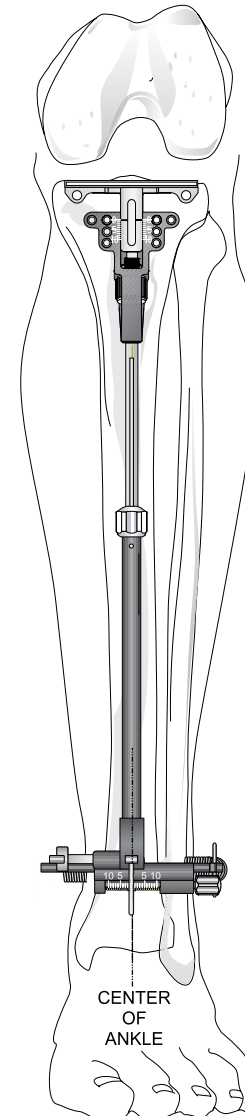
Use a deep median parapatellar incision for medial compartment arthritis to expose the joint. Perform a medial soft tissue release from the proximal medial tibia if the varus deformity is fixed. In lateral compartment disease and in fixed valgus deformities use a lateral parapatellar incision to gain entrance to the lateral compartment and perform a release of the ilio-tibial tract subperiosteally from the proximal lateral tibia. Should this fail to give complete release of the valgus deformity, proceed to a proximally-based, subperiosteal elevation of the lateral collateral ligament and the popliteus tendon from the distal lateral femur. These sequential approaches for fixed varus or valgus knees should allow the correction of knee alignment to resume that of the mechanical axis.



Medial Parapatellar Incision (neutral or fixed varus)



Lateral Parapatellar Incision (fixed valgus)

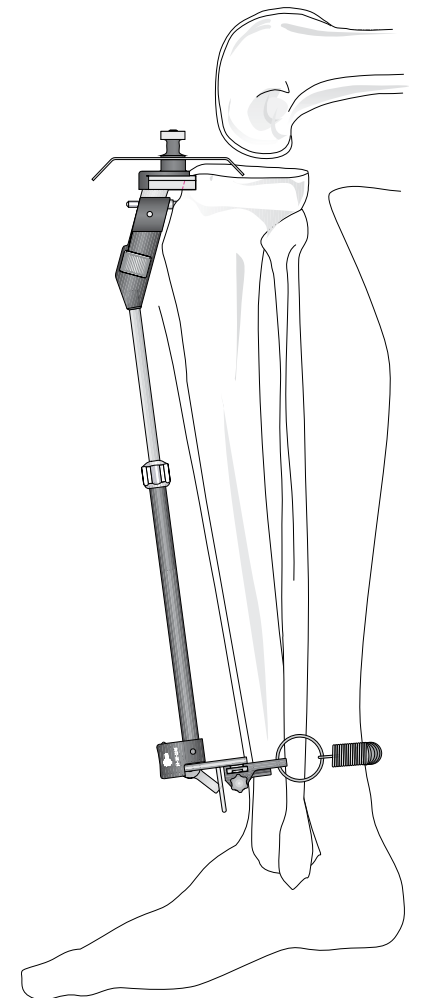


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Tibial Resection Guide Orientation

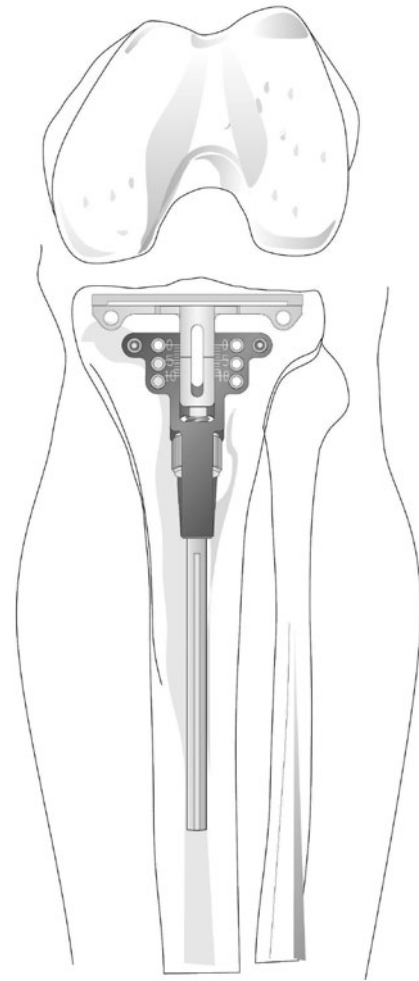
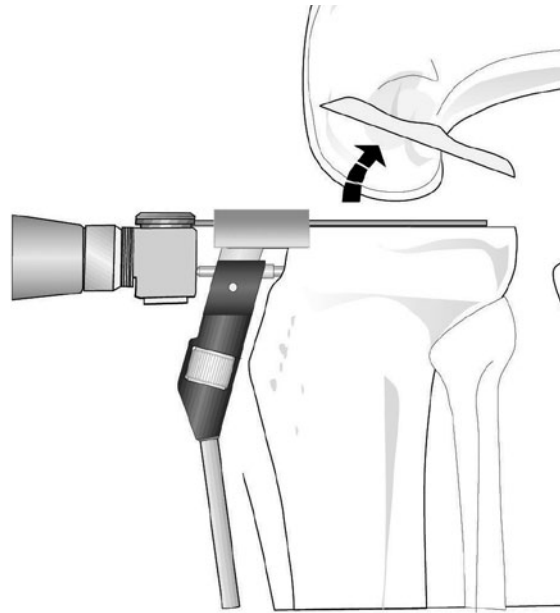
- Assemble the Tibial Resection Guide to the Ankle Clamp and initially position on the tibia.
- Proximally, set the adjustable cutting height to a midpoint setting of "5" on the calibrated scale, allowing maximum proximal and distal height adjustments once pinned in place.
- Proximally, place the cutting slot at the approximate intended level of resection, and at a centered medial-lateral orientation. Generally, this occurs slightly medial to the tibial tubercle.
- Distally, adjust the Ankle Clamp portion of the Guide to establish proper medial/lateral orientation. This occurs when positioned over the exterior hallucis longus tendon, which approximates the ankle joint center, and generally occurs 5 to 8mm medial to the transmalleolar axis. Note: The proximal tibial resection A-P slope may be modified by lifting or depressing the distal end of the Resection Guide to position at the desired anatomic posterior slope. Once an ideal position is obtained, tighten the collet and all related adjustments.
- Assemble the Tibial Stylus onto the Tibial Resection Guide to determine the final cutting height elevation. This stylus allows the choice of a 2mm or 8mm setting. This choice allows the cutting slot to be positioned 2mm or 8mm below the point of contact with the stylus tip on the proximal tibial plateau, either medially or laterally positioned.
- Pin the Guide in place by using two Fixation Pins.

Note: Pre-drilling of the bone with a 1/8" drill bit will typically allow easier insertion of the pins.



Tibial Resection Guide Orientation (continued)

- Once the guide is pinned into place, you may further adjust the cutting height, if desired, by using the Knurled Knob on the calibrated scale to change the resection level.
- Remove the stylus.
- Perform the tibial resection utilizing a 1.27mm (.050 inch) thick saw blade. Use standard care and caution to achieve adequate soft tissue retraction.
- Once the resection is complete, remove the Guide, leaving the Bone Pins in place. (Note: The Bone Pins allow for simple/rapid re-establishment of the Guide position should additional tibial resection be desired later in the procedure.)



Femoral Sizing

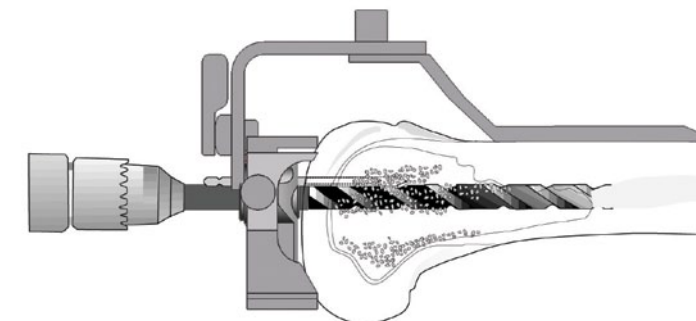
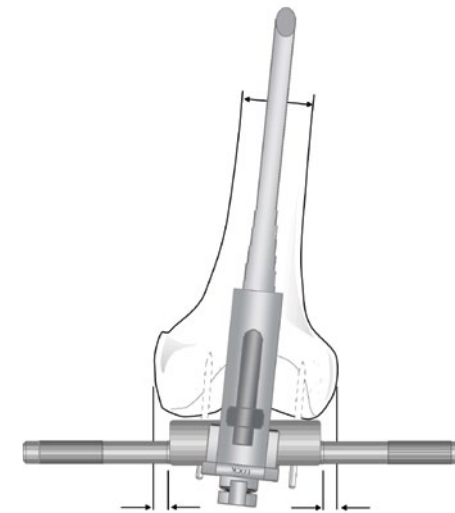
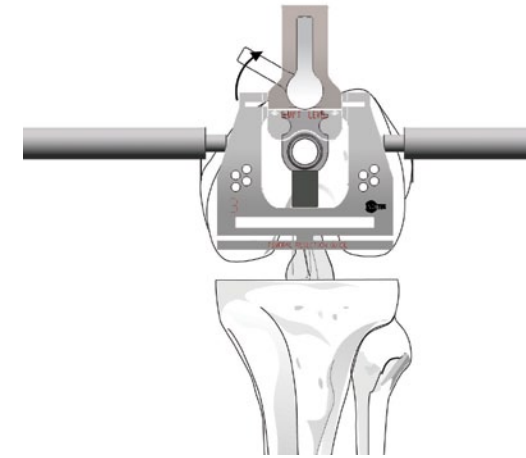
To accurately size for the intended femoral component, remove all femoral osteophytes so that the normal femoral shape can be visualized. Using the Femoral Template on the lateral aspect of the knee, select the size that best approximates the bony (not the articular cartilage) profile of the lateral femoral condyle.

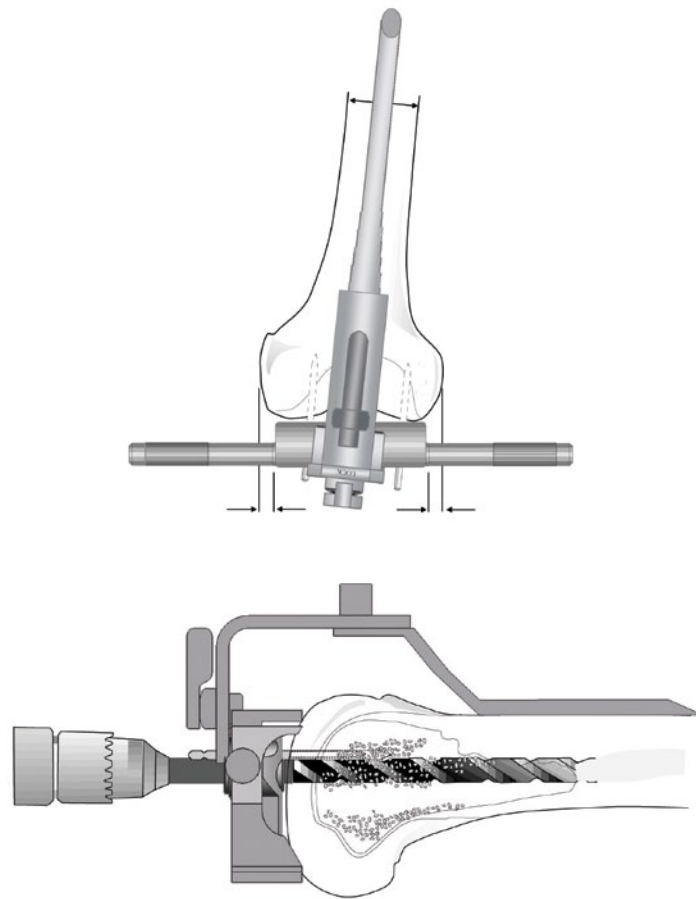
Note: The femoral a-p size determination is important as it will determine the amount of posterior femoral bone resection, and therefore, combined with the tibial resection, determine the initial flexion gap space created. In 90 degrees of flexion, a size chosen too large will result in an inferior displacement of the joint line and create an inadequate flexion gap. Conversely, a size chosen that is too small will result in a superior displacement of the joint line and excessive femoral resection. This aspect of the technique allows the surgeon to access the intended resultant flexion gap that will be created prior to making the osteotomies.

A-P Femoral Resection

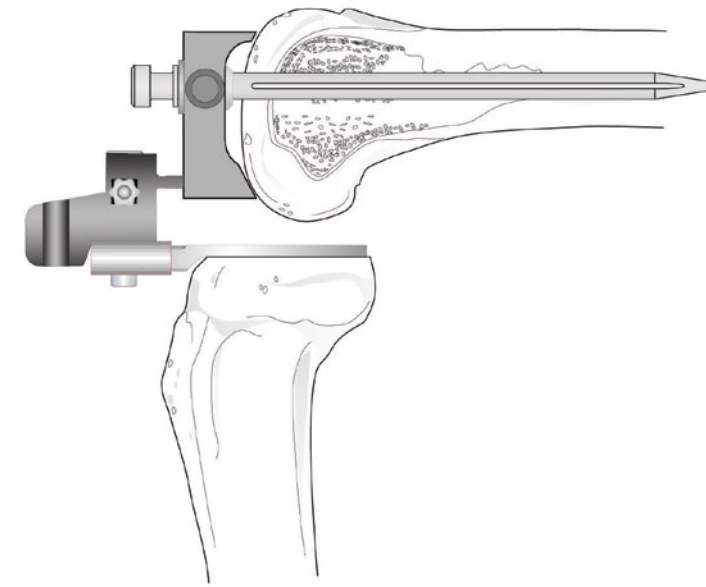
Assemble and lock in place the Femoral Guide Yoke onto the chosen size of A-P Femoral Resection Guide. The Anterior Femoral Guide Yoke is used to establish the A-P Femoral Resection Guide at an appropriate A-P level to position the subsequent osteotomy at an appropriate level on the anterior femoral cortex.

Center the A-P Femoral Resection Guide between the femoral epicondyles. Note: The width of the A-P Femoral Resection Guide is the same width as the Standard series Femoral Components. Note that the Guide width does not overhang the femoral articular surface excessively in the M-L plane. If so noted, a Narrow series femoral size may be selected. Prior to center drilling the canal hole, if desired, the Guide may be stabilized by using two or more Fixation Pins.





While maintaining a stable and desired positioning of the A-P Femoral Resection Guide, drill into the shaft of the femur using a 9mm drill. The m-l location of this hole is typically located 3 to 5mm medial to the sulcus of the intercondylar notch. Note: Be aware of the penetration depth of the drill. If a total hip is present on the operative leg, avoid contact with the distal cement mantle.

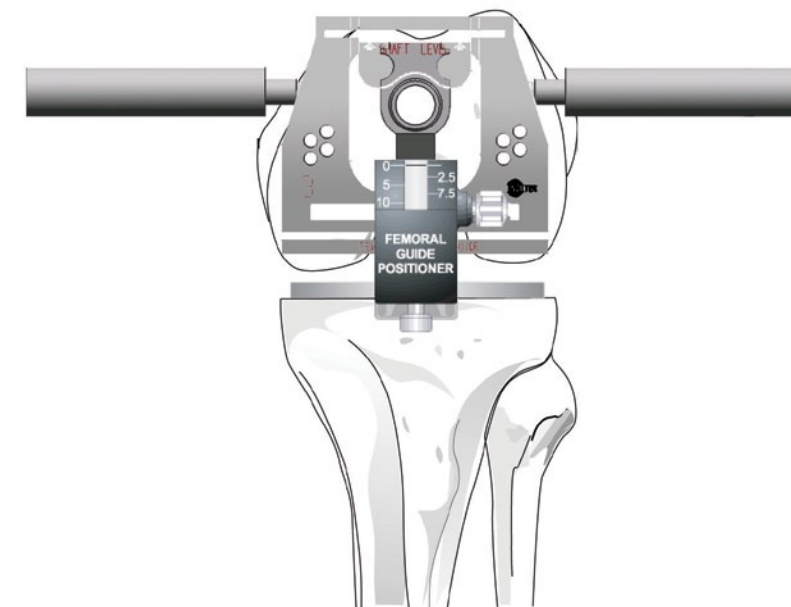


Insert the IM Rod into the corresponding size A-P Femoral Resection Guide and insert the IM Rod into the drilled hole in the femoral canal.

The adjustable Femoral Guide Positioner is now used to assess the intended flexion gap and determine the rotation of A-P Femoral Resection Guide. With the Femoral Guide Positioner set at the '0' calibration, assemble the Guide Positioner onto the A-P Femoral Resection Guide by placing the tongue of the Femoral Guide Positioner into the tongue slot of the Resection Guide. Note that the function of the Femoral Guide Positioner is to determine and evaluate the flexion gap amount, ligamentous tension and balance, and to rotate the femoral posterior resections parallel to the tibial resection in the frontal plane.

If the resultant flexion gap is deemed too tight (with the Femoral Guide Positioner set at the '0' level), the tibial resection is deemed to be too high. If this occurs, re-install the Tibial Resection Guide and minimally resect additional tibial plateau, to establish the appropriate flexion gap spacing.

If the resultant flexion gap is deemed too loose, move the adjustable carriage of the Femoral Guide Positioner to an increased thickness setting (2.5, 5.0, etc), by loosening the thumb screw sufficiently to allow the carriage to drop to a thicker position setting. Select the thickness that best approximates a normal flexion gap tension of the ligaments.



Note: The final thickness setting noted on the carriage of the Guide Positioner indicates the thickness of the bearing that will be used to fill the flexion gap created. This setting is then noted and used when establishing the extension gap, thereby establishing an equal and balanced extension gap.



If desired, check the tibial resection angle using the long Alignment Rod inserted into the Femoral Guide Positioner. Correct the tibial resection if necessary before proceeding.

Note: The Alignment Rod is also useful for 'rocking' the Femoral Guide Positioner assembly to create a varus/valgus stress, to evaluate the flexion gap tension in each compartment prior to posterior femoral resection.

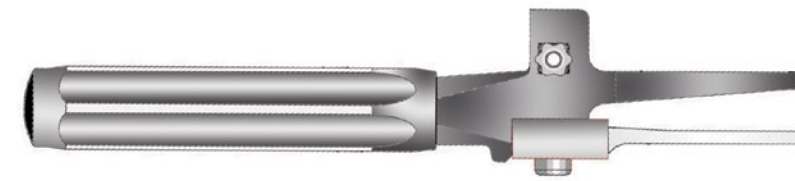
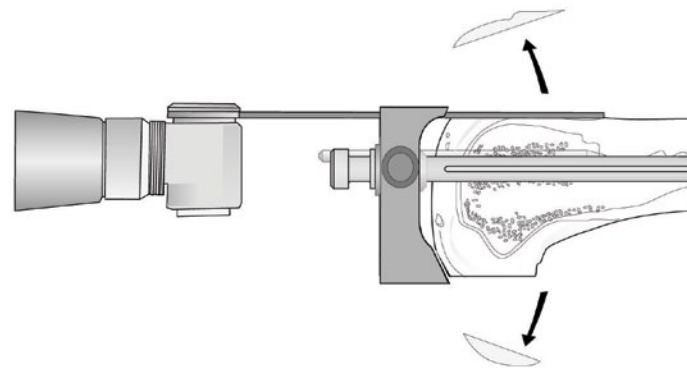
Once the flexion gap is determined to be correct, pin the rotational orientation of the AP Femoral Resection Guide using two Fixation Pins. Remove the Femoral Guide Positioner and Alignment Rod prior to performing the resections.

First perform the anterior femoral resection. Check that this resection is both flat and complete, and at the appropriate level of the anterior aspect of the femoral shaft. If the anterior resection is deemed too high or too low, first remove the I/M Rod, and then re-position the A-P Femoral Resection Guide by selecting a new set of holes so that the new resection will occur at the desired level.

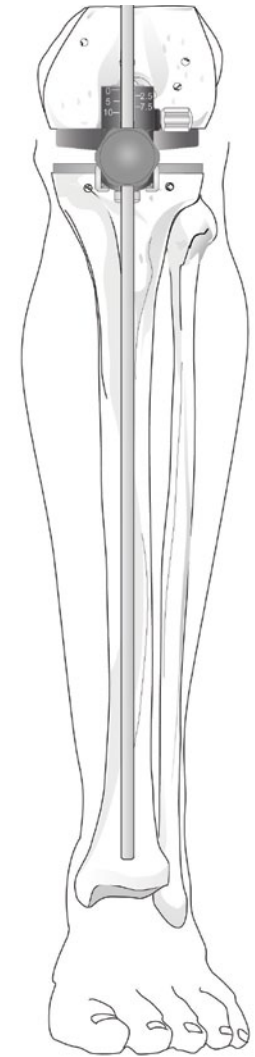
Note : Take care that the anterior femoral resection is properly flat and complete, as this resection surface is subsequently used as the reference surface for the distal femoral valgus resection.

After making a proper anterior resection, resect the posterior femoral condyles. Note: More condyle will typically be resected from the medial side.

Remove all instrumentation (with the exception of the tibial pins).



As an option to further confirm the osteotomy angles, assemble the black handled Spacer Block with the appropriate size Full Gap Spacer plate. Set the thickness position of the assembly to the same value previously used in assessing the flexion gap prior to performing the resections. Insert the assembled instrument and assess that the flexion gap tension and associated varus/valgus stability is as desired. Based on observation of the gap, the surgeon may elect to perform soft tissue releases at this time to fine tune the gap/compartment tension.



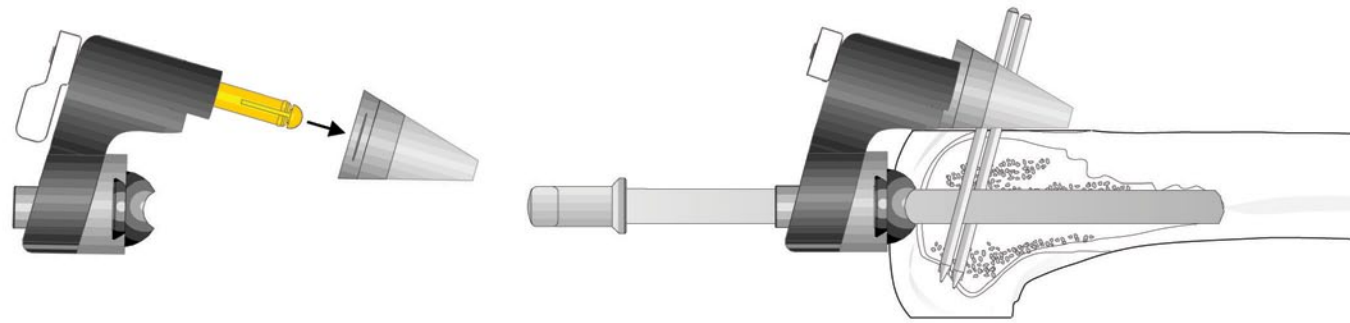
Selecting the Recommended Valgus Angle:

Whenever possible, the valgus angle of the contralateral knee should be used to estimate the desired valgus angle. When this is not possible, the angle chosen is understood to be a function of the patient's height as follows:

Patient Height:

Less than 5'11"	Approximately 5 degrees
5'11" to 6'1"	Approximately 4 degrees
Greater than 6'1"	Approximately 3 degrees

Note: In some instances, a short patient with obesity present, may require a smaller valgus angle to keep their thighs from rubbing.



Assemble the chosen valgus angle Distal Femoral Resection Guide (with the correct Left or Right indication facing upward) onto the Distal Femoral Resection Guide Positioner. To assemble the Guides, position the thumb lock on the Positioner vertically. Once securely assembled, lock the two instruments together by turning the thumb lock to a horizontal position. The IM Rod with T-Handle are now inserted through the Positioner and into the femoral canal drill hole. Advance the IM Rod carefully into the femoral canal.

Note: Prior to pinning the Distal Femoral Resection Guide, visually check that the Guide Positioner is fully superiorly advanced; contacting the femoral intercondylar notch. Additionally, on the anterior femoral surface, check that the Distal Femoral Resection Guide is in flat and stable surface contact.

Note: It is not required to fully insert the entire length of the IM Rod, so long as the femoral isthmus is engaged, giving assurance that the direction of the IM Rod is appropriate.

Pin the Distal Femoral Resection Guide (using the '0' holes) onto the anterior femoral resection surface. Once pinned, again check for flat contact.

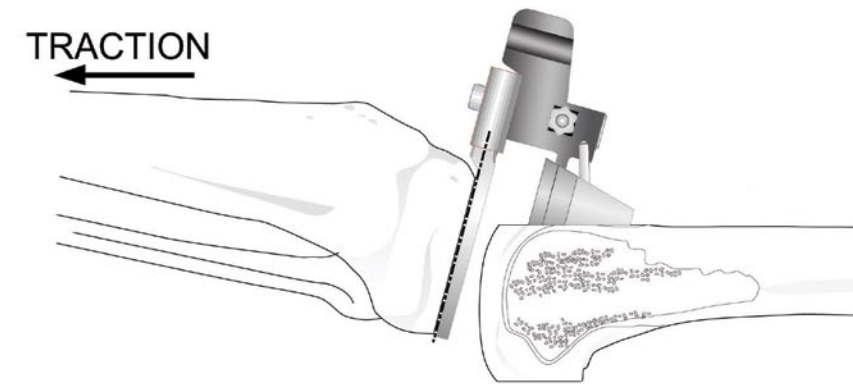
Disassemble the Guide Positioner from the Resection Guide by turning the thumb lock to the vertical position. Remove the IM Rod, then the Guide Positioner leaving the Resection Guide in place.

Evaluation Extension Gap:

The adjustable Femoral Positioner assembled with a Full Gap Spacer are used along with the Resection Guide to assess the appropriate distal femoral bone resection that will produce an Extension Gap which is equal to the earlier determined Flexion Gap.

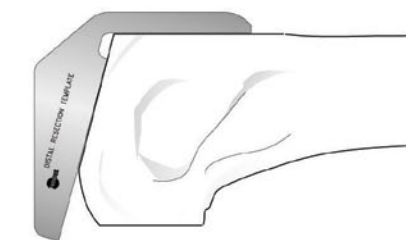
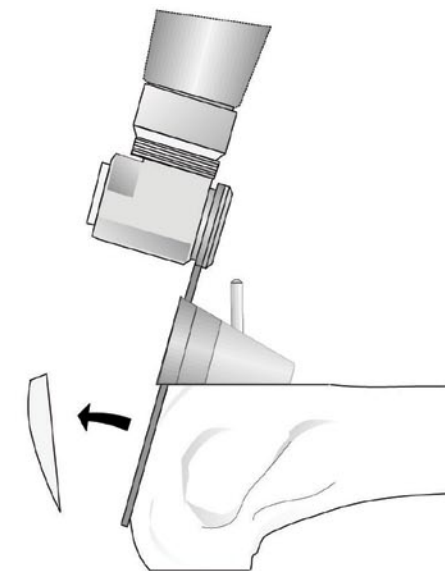
Initially, fully extend and align the leg, and by applying traction at the ankle, simulate normal extension ligamentous tension.

Assemble the Femoral Positioner to the Full Gap Spacer plate.



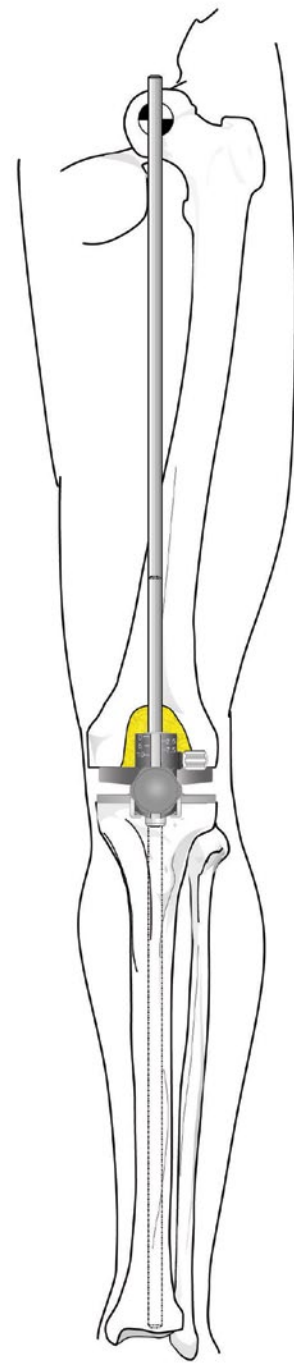
With the Femoral Positioner set at the same gap setting used to measure the Flexion Gap, link the Femoral Positioner to the Resection Guide by inserting the tongue of the Positioner into the corresponding slot on the Resection Guide.

Assure that the Full Gap Spacer is in flat contact with the resected tibial plateau. Check the extension ligament tension which occurs. If tension is deemed inadequate, move the Distal Femoral Resection Guide to a new set of holes to establish proper tension.



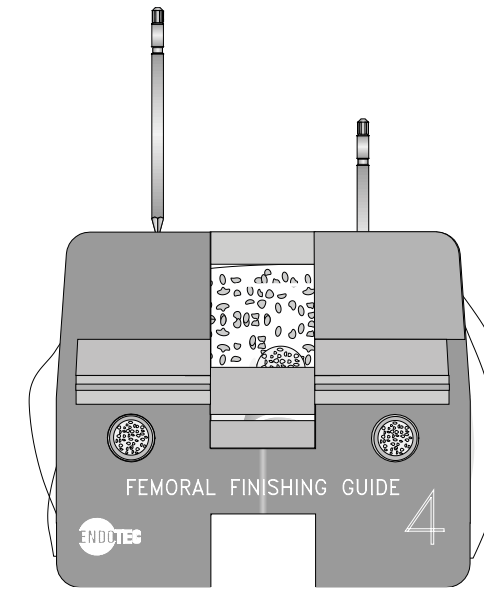
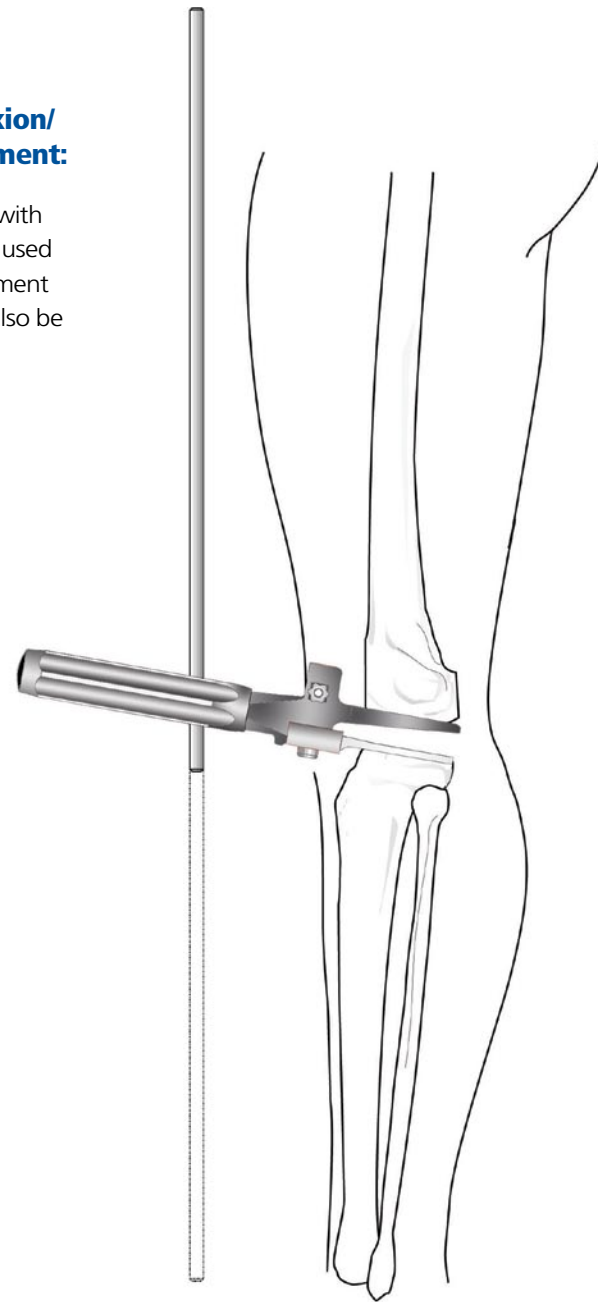
Once the extension gap spacing is determined, perform the distal femoral resection through the cutting slot in the Distal Femoral Resection Guide using a 1.27mm thickness saw blade (.050 inches). Remove the Distal Femoral Resection Guide.

Note: Assess that the bone resection is complete and flat. Errors in this cut surface will generate errors in the subsequent femoral resections. The correct angular relationship of the two cuts may be assessed using the Distal Resection Template blade gauge.



Confirmation of Matching Flexion/ Extension Gaps and Leg Alignment:

Again, as an option, the spacer block with the full length Alignment Rod may be used to assess the resultant extension alignment of the leg. Varus/Valgus stability may also be assessed at this time.

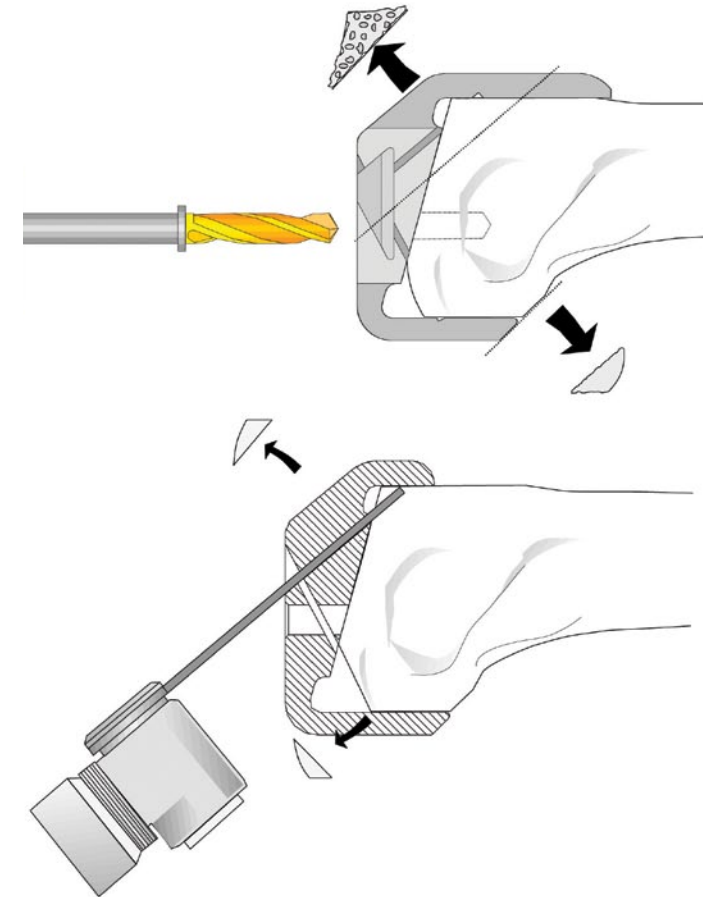


Finishing the Femoral Cuts:

Center the Finishing Guide onto the femur between the femoral epicondyles.

Note: This Finishing Guide is used for either Standard or Narrow Femoral Implants as the spacing of the implant posts are identical for either type of implant.

With the Femoral Peg Drill, drill two 6mm holes through the Finishing Guide holes.



Perform the anterior sulcus resection by using a 20mm osteotome.

Perform the posterior recessing resections with an osteotome or power saw. The posterior recessing resections are recommended to maximize ROM and avoid impingement between the bearing and the femur during deep flexion.

Note: In performing the posterior resections, take care not to notch the posterior femoral shaft.

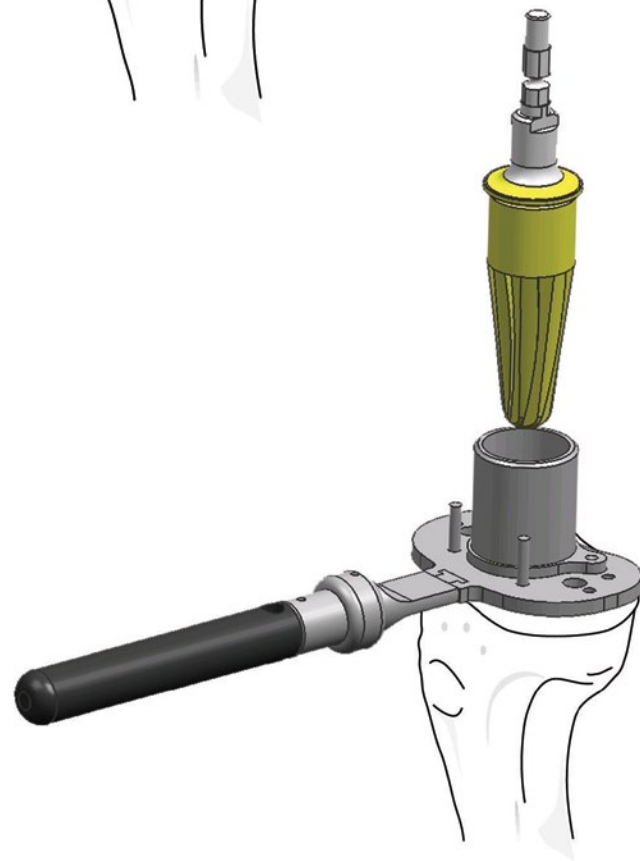
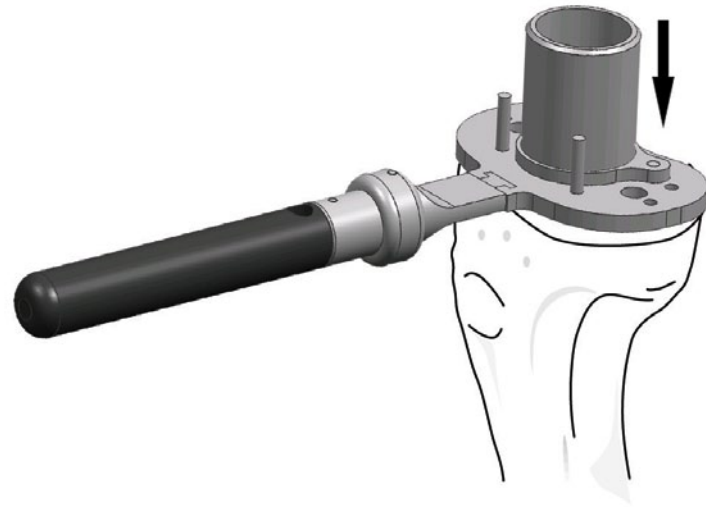
Select and place the Tibial Reamer Guide Template onto the tibia for best bony coverage.

Pin the Guide in place using two Fixation Pins.

Attach the appropriate Reamer Tower to the Tibial Reamer Guide Template.

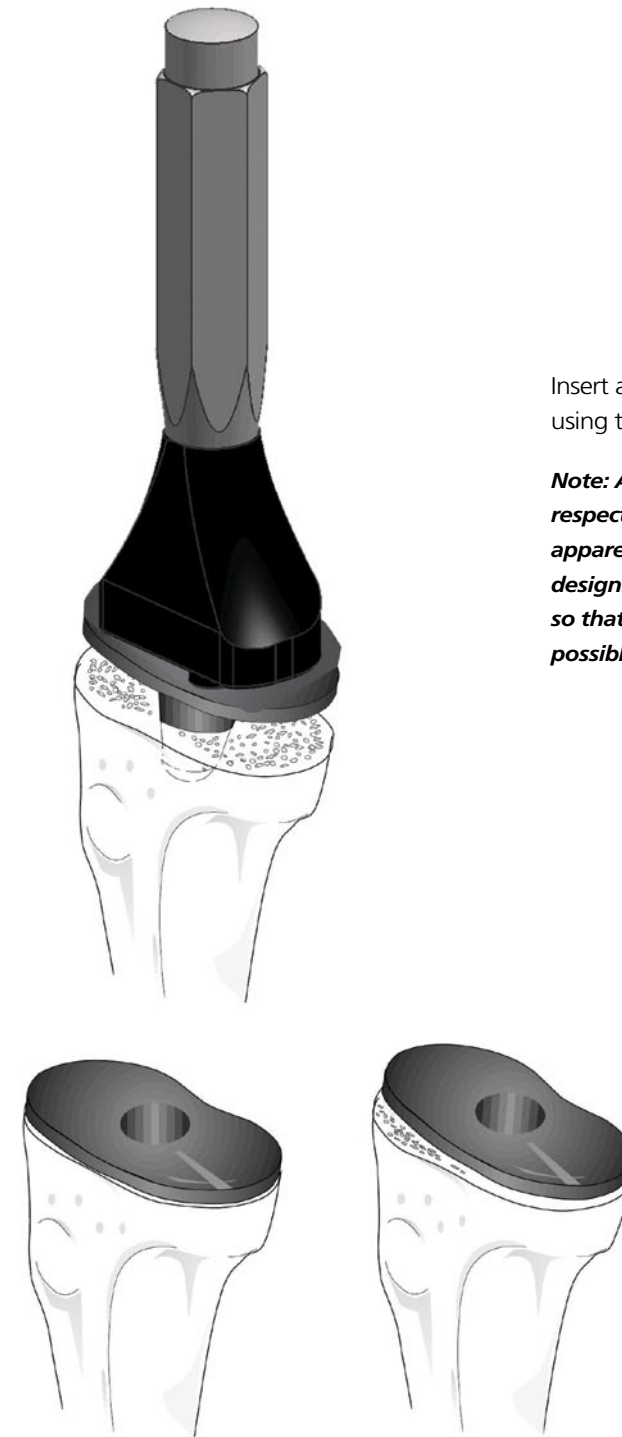
Ream the tibial stem hole using the conical Tibial Reamer, advancing the powered Reamer slowly to assure proper, smooth advancement of the Tibial Reamer. In severely sclerotic bone a curved gouge may be used to start the hole prior to reaming.

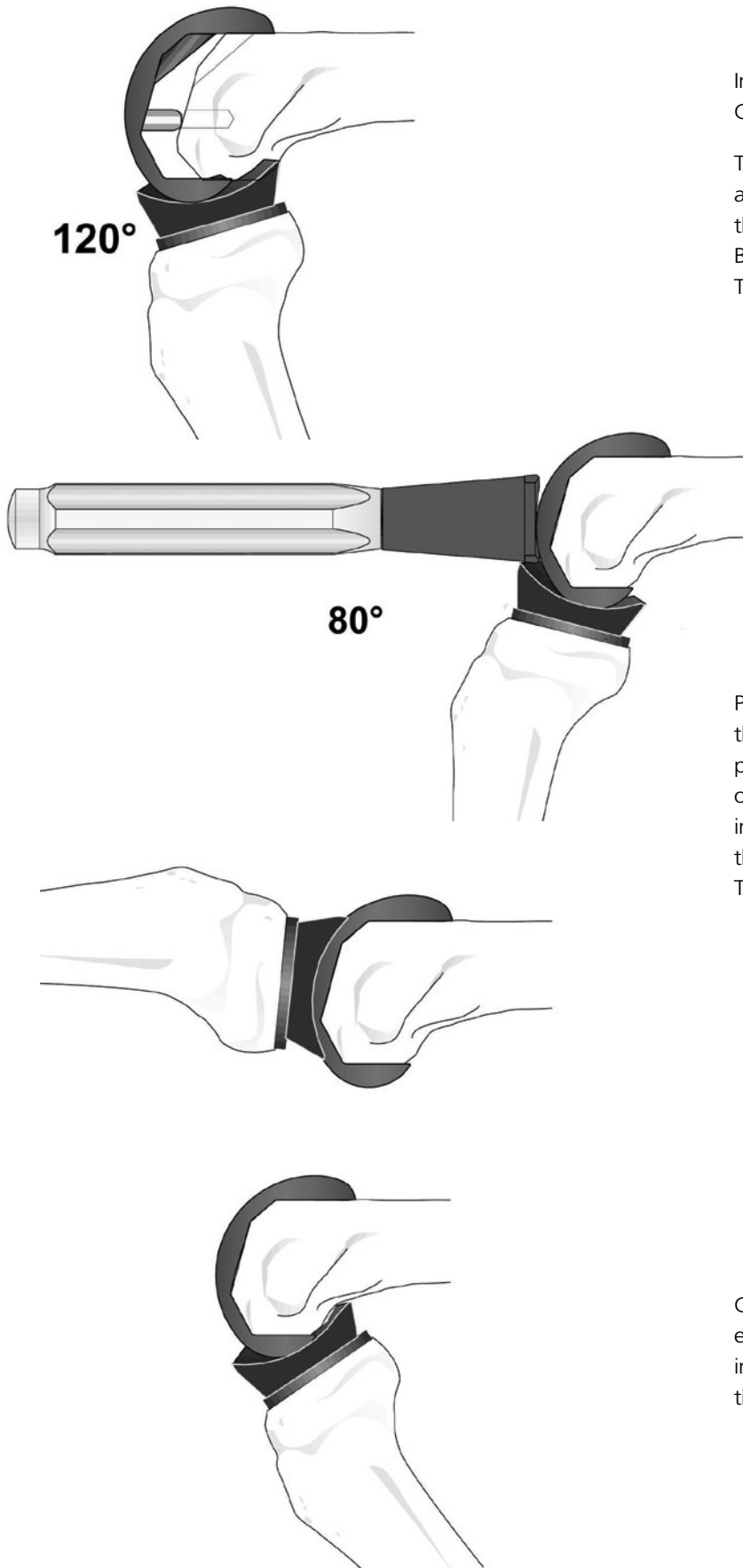
Ream the tibial stem hole by using the Conical Reamer, advancing the reamer carefully to assure smooth advancement into the tibial canal. As an option, many surgeons elect to advance this Conical Reamer with the rotation set at a counter-clockwise setting to achieve impaction of the soft bone in this region.



Insert and impact the appropriate size Trial Tibial Component using the Tibial Impactor.

Note: Axial alignment of the Trial Tibial Component with respect to the direction of normal gait is unnecessary. This apparent misalignment is accommodated by the bearing design. Adjust the rotational position of Trial Tibial Component so that the component provides the maximum bony coverage possible.



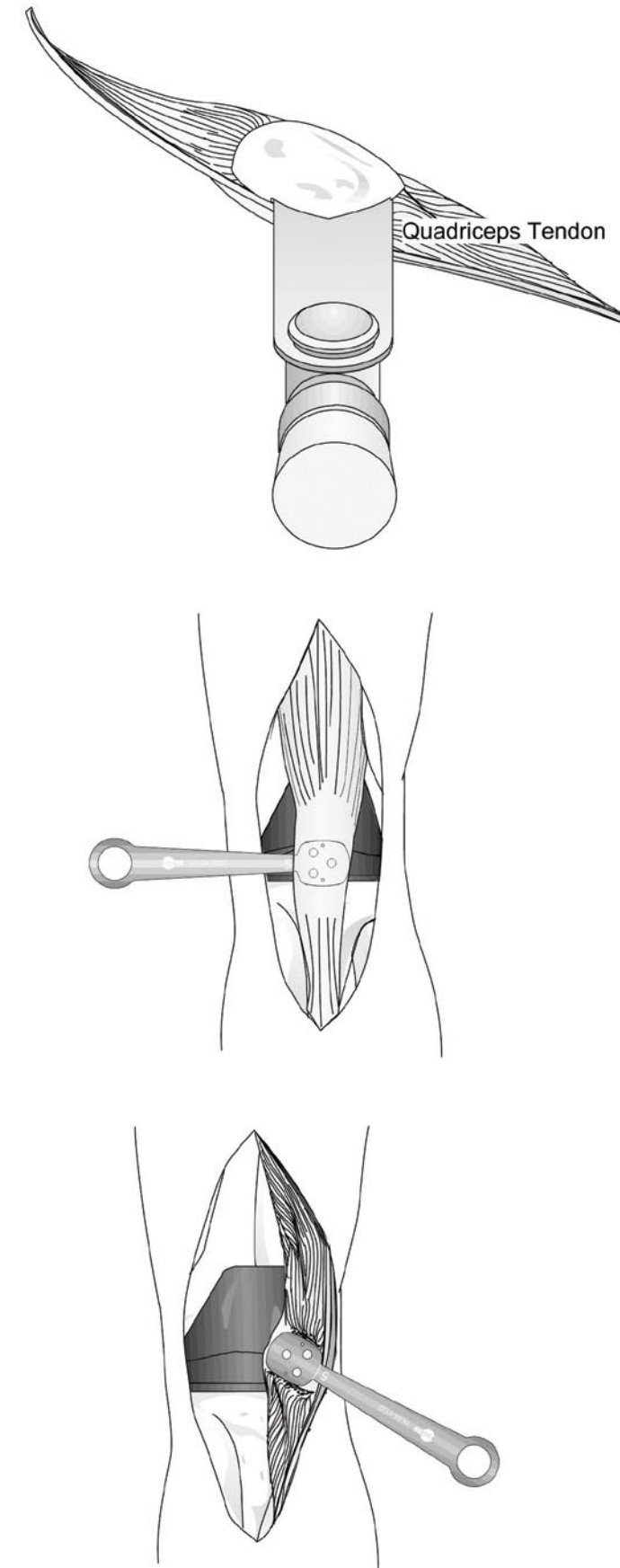


Insert the Trial Tibial Bearing onto the Trial Tibial Component.

To insert the Femoral Trial, position the knee at approximately 120 degrees of flexion. This allows the posterior condyles of the Femoral Trial to clear the Bearing. Attach the Femoral Impactor to the Femoral Trial, and initially align the Femoral Trial onto the femur.

Prior to complete seating of the Femoral Trial, extend the leg to approximately 80 degrees so that the posterior condyles of the Femoral Trial will not impinge on the posterior lip of the Trial Tibial Bearing. Fully impact the Femoral Trial with the knee flexed at less than 90 degrees of flexion to avoid rocking the Trial Tibial Base.

Check the range of motion of the knee, while evaluating free bearing motion and an absence of impingement. If these are not present, correct at this time.

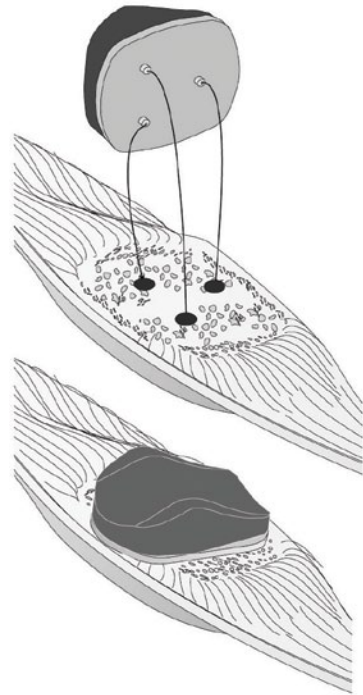


Resect the patellar surface at, and parallel to, the level of the quadriceps tendon using an oscillating saw. Ensure that the resected surface is flat and the retained patellar thickness is uniform. This thickness should generally be 12~14mm.

Note: Take care not to resect below the level of the tendon, as this will excessively weaken the patellar bone bed.

With the patella in a non-everted articular position, press the corresponding size Patella Template onto the patella. Position perpendicular to the leg alignment axis. The Patella Template, then pressed into the patellar bed, marks the location for drilling the corresponding peg hole locations.

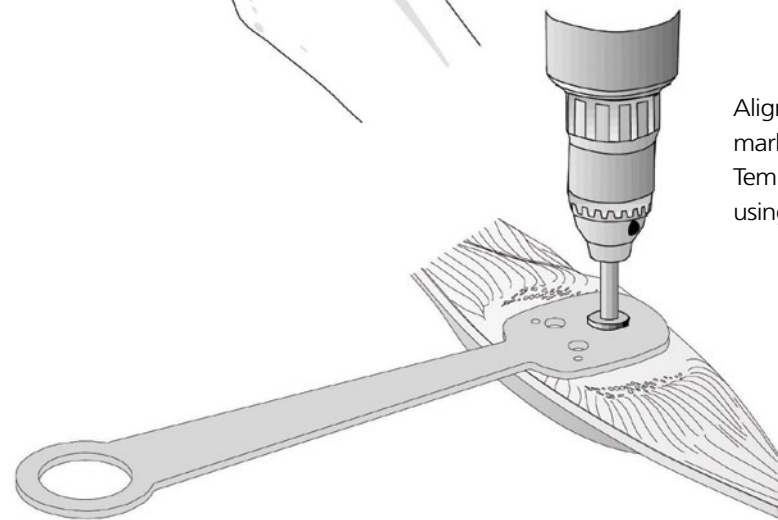
With the Patella Template positioned, evert the patella. The handle of the Patella Template will usually align at a 30 degree downward angle from the perpendicular tibial surface.



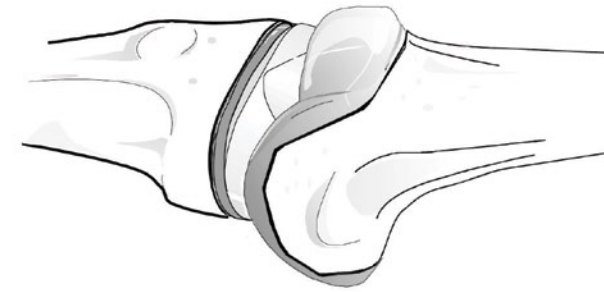
Press the Patella Trial onto the resected surface, positioning the Trial pins at the marked center of the peg holes.



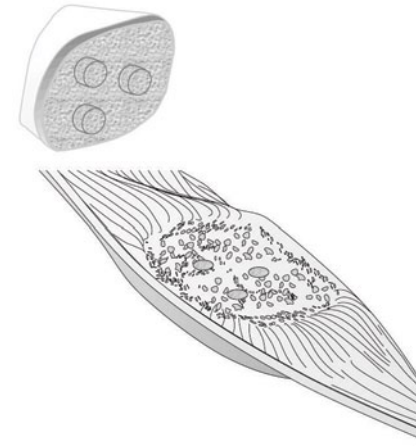
Reduce the patellar and evaluate patellar tracking. If necessary, adjust the position of the trial, or perform a lateral release to obtain central tracking. Once trialing is completed remove the trial.



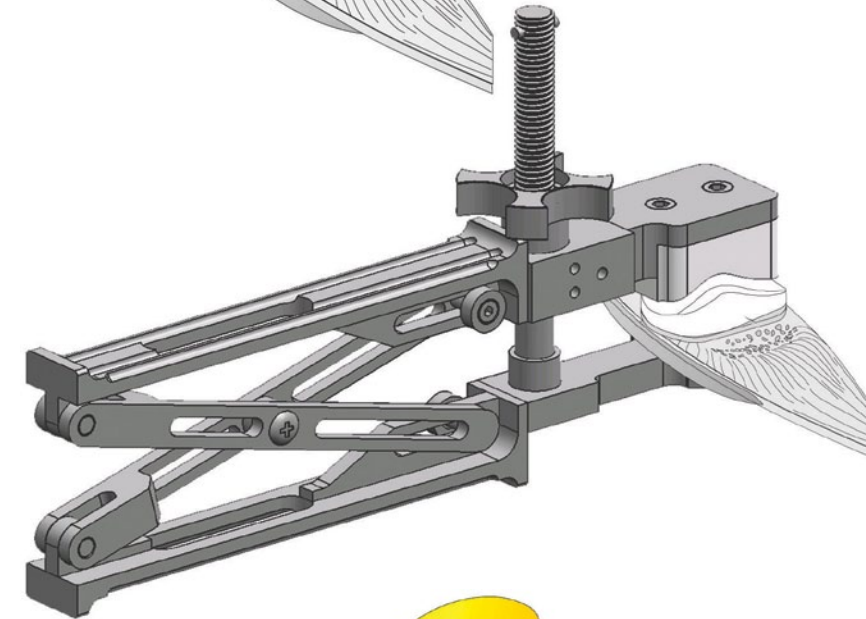
Align the appropriate Patellar Template with the hole markings on the resected patellar surface. Ensure the Template is flush, and drill the three fixation holes using the Patellar Drill.



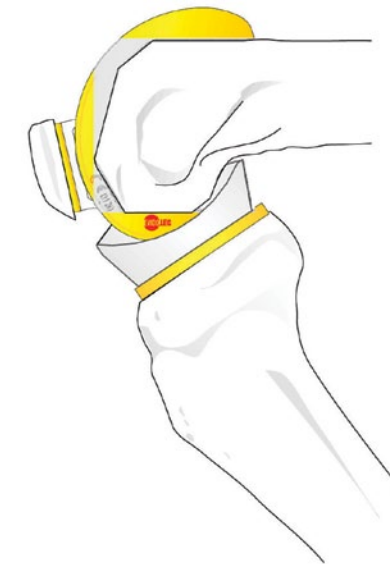
Remove all Trials. Implant the appropriate size Tibial Component, Tibial Bearing and Femoral Component, using cement, in the same order and manner as the trials were placed, utilizing the same seating/impacting instrumentation.

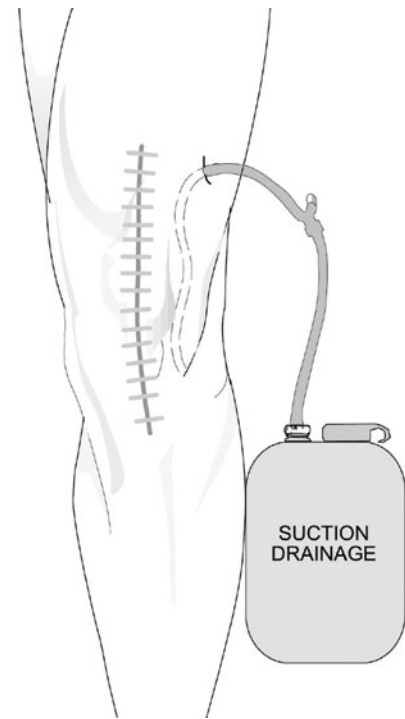


Utilize the Patellar Clamp to press/cement the final implant into place.



Reduce the patella and evaluate the implants. Ensure that an unrestricted range of motion, free bearing movement, and proper patellar tracking are present.





Closure: Release the tourniquet and copiously irrigate the wound with antibiotic saline solution. Check motion with the tourniquet down. Close the deep retinacular tissue using #1 absorbable suture, the subcutaneous tissue with a 2-0 absorbable suture and the skin using staples or a vertical mattress suture. A suction drain may or may not be used. Apply a Robert Jones compression dressing to the extremity followed by a long leg knee immobilizer.

Note: If pressure is needed to gain full extension, apply a long leg cast to hold full extension for 48 hours.

Postoperative Care

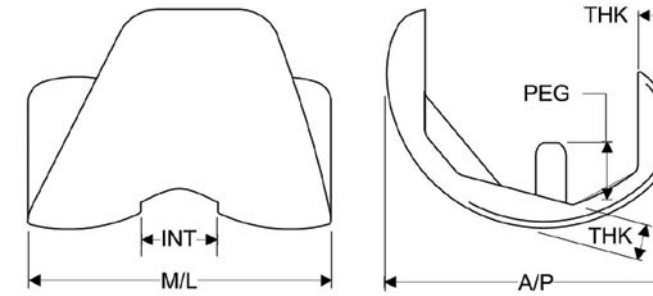
The patient may be out of bed on the first post-operative day and should begin isometric quad setting exercises of at least ten per hour. Remove suction drains, if used, after 48 hours. The patient may transfer with weight-bearing to tolerance on the first post operative day and may begin gravity-assist and active-assistive range of motion.

Should wound healing be a problem, defer flexion until the wound quality appears satisfactory. An anticoagulation program should be considered, beginning on the first postoperative day.

Perform physical therapy, consisting of progressive ambulation with weight bearing to tolerance daily for the first two weeks, and then three times weekly over the next four weeks.

Knee effusion (swelling) may persist consistent with the rehabilitation status of the quadriceps mechanism. Post operative swelling with a well-functioning quadriceps generally subsides within 6-12 weeks following knee replacement. Isometric quad setting exercises should be continued until knee effusion has subsided. Once the effusion has subsided, progressive resistive quadriceps exercises should begin to improve strength and endurance necessary for normal gait.

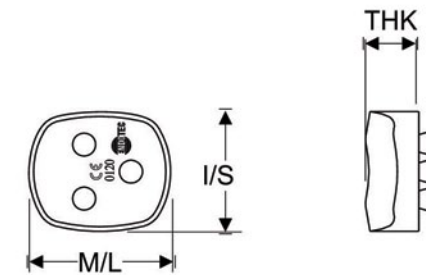
Femoral Component



Size	A/P(mm)	M/L(mm)		INT(mm)	PEG(mm)	THK(mm)
		STD	NARROW			
1	53.0	55.8	51.8	15.2	9.5	6.5
2	57.0	60.0	55.8	16.4	10.2	7.0
3	61.4	64.6	60.0	17.6	11.0	7.5
4	66.1	69.6	64.6	19.0	11.8	8.1
5	71.2	74.9	69.6	20.4	12.7	8.7
6	76.6	80.6	74.9	22.0	13.7	9.4

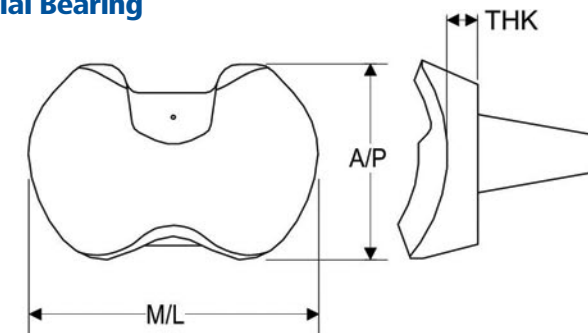
Available in left and right handed as well as standard and narrow width versions

Patellar Component



Size	I/S(mm)	M/L(mm)	THK(mm)
1	24.0	28.6	10.1
2	25.9	30.8	10.8
3	27.8	33.2	11.6
4	30.0	35.7	12.4
5	32.3	38.4	13.3
6	34.7	41.4	14.2

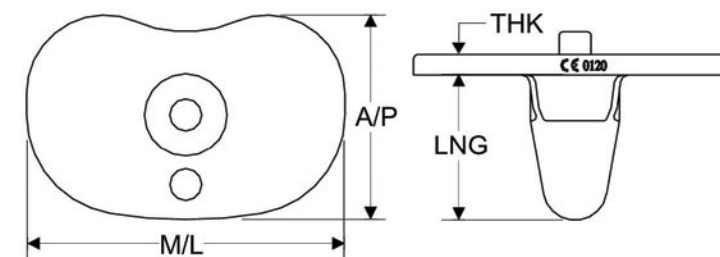
Tibial Bearing



This is the minimum thickness available. Also available with five additional thickness, increasing by 2.5mm increments.

Size	A/P(mm)	M/L(mm)	THK(mm)
1	33.9	55.1	6.0
2	36.5	59.3	6.3
3	39.3	63.9	6.9
4	42.4	68.7	7.4
5	45.6	74.0	8.1
6	49.1	79.6	8.8

Tibial Component

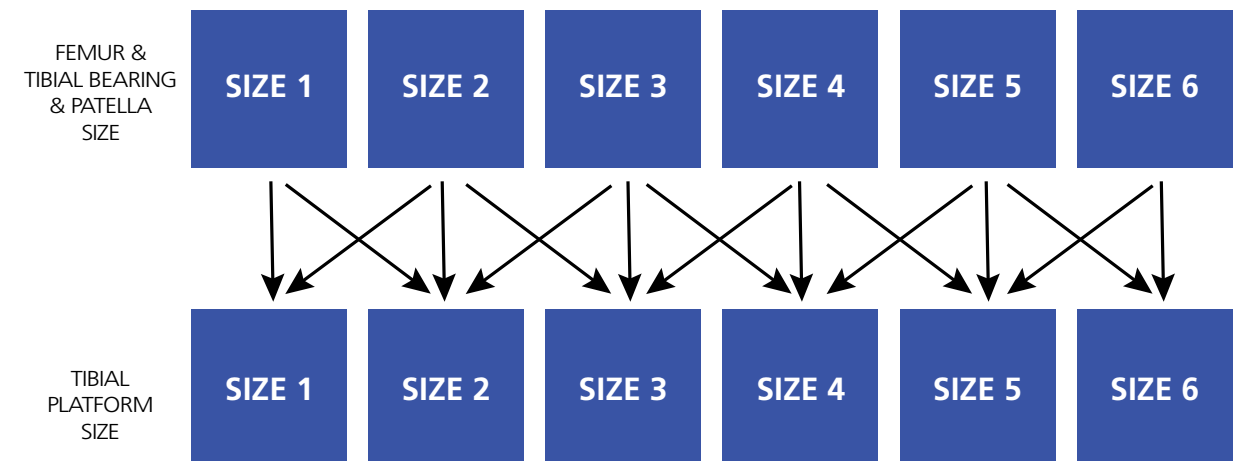


Size	A/P(mm)	M/L(mm)	THK(mm)	LNG(mm)
1	38.1	59.2	3.6	29.7
2	41.0	63.7	3.8	29.7
3	44.2	68.6	4.1	32.0
4	47.6	73.8	4.3	34.5
5	51.2	79.5	4.6	37.1
6	55.1	85.6	4.8	40.1

Description	Cat. Code	Size	Description	Cat. Code	Size
B-P FEMORAL COMPONENT	04-31-1001	1(RT)	B-P TIBIAL PLATFORM COMPONENT	04-32-0001	1 Type 1
	04-31-1002	2(RT)		04-32-0002	2 Type 1
	04-31-1003	3(RT)		04-32-0003	3 Type 1
	04-31-1004	4(RT)		04-32-0004	4 Type 1
	04-31-1005	5(RT)		04-32-0005	5 Type 1
B-P FEMORAL COMPONENT	04-31-2001	1(LFT)	B-P TIBIAL PLATFORM COMPONENT	04-32-0011	1 Type 2
	04-31-2002	2(LFT)		04-32-0012	2 Type 2
	04-31-2003	3(LFT)		04-32-0013	3 Type 2
	04-31-2004	4(LFT)		04-32-0014	4 Type 2
	04-31-2005	5(LFT)		04-32-0015	5 Type 2
FEMORAL COMPONENT (TiN Coated)	04-31-1301	1(RT)	B-P TIBIAL PLATFORM COMPONENT	04-32-0021	1 Type 3
	04-31-1302	2(RT)		04-32-0022	2 Type 3
	04-31-1303	3(RT)		04-32-0023	3 Type 3
	04-31-1304	4(RT)		04-32-0024	4 Type 3
	04-31-1305	5(RT)		04-32-0025	5 Type 3
				04-32-0026	6 Type 3
FEMORAL COMPONENT (TiN Coated)	04-31-2301	1(LFT)	B-P TIBIAL PLATFORM COMPONENT	04-32-0061	1 Type 0
	04-31-2302	2(LFT)		04-32-0062	2 Type 0
	04-31-2303	3(LFT)		04-32-0063	3 Type 0
	04-31-2304	4(LFT)		04-32-0064	4 Type 0
	04-31-2305	5(LFT)		04-32-0065	5 Type 0
B-P MODULAR FEMORAL COMPONENT	04-31-1101	1(RT)			
	04-31-1102	2(RT)			
	04-31-1103	3(RT)			
	04-31-1104	4(RT)			
	04-31-1105	5(RT)			
B-P MODULAR FEMORAL COMPONENT	04-31-2101	1(LFT)			
	04-31-2102	2(LFT)			
	04-31-2103	3(LFT)			
	04-31-2104	4(LFT)			
	04-31-2105	5(LFT)			

Description	Cat. Code	Size	Description	Cat. Code	Size
B-P BEARING	04-33-0001	1x0mm	B-P PATELLA COMPONENT	04-34-0001	1
	04-33-0002	2x0mm		04-34-0002	2
	04-33-0003	3x0mm		04-34-0003	3
	04-33-0004	4x0mm		04-34-0004	4
	04-33-0005	5x0mm		04-34-0005	5
B-P BEARING	04-33-0011	1x2.5mm	B-P ALL POLY PATELLA COMPONENT	04-34-0201	1
	04-33-0012	2x2.5mm		04-34-0202	2
	04-33-0013	3x2.5mm		04-34-0203	3
	04-33-0014	4x2.5mm		04-34-0204	4
	04-33-0015	5x2.5mm		04-34-0205	5
B-P BEARING	04-33-0021	1x5mm			
	04-33-0022	2x5mm			
	04-33-0023	3x5mm			
	04-33-0024	4x5mm			
	04-33-0025	5x5mm			
B-P BEARING	04-33-0031	1x7.5mm			
	04-33-0032	2x7.5mm			
	04-33-0033	3x7.5mm			
	04-33-0034	4x7.5mm			
	04-33-0035	5x7.5mm			

B-P Knee Interchangeability Chart



Note the femoral size, the bearing size, and the patella implant should be the same size. The tibial platform interchangeable options are shown above.

