

Microplasty[®] Total Knee Instrumentation

Vanguard[®] Complete Knee System

Surgical Technique



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INDICATIONS

1. Painful and disabled knee joint resulting from osteoarthritis, rheumatoid arthritis, traumatic arthritis where one or more compartments are involved.
2. Correction of varus, valgus, or posttraumatic deformity.
3. Correction or revision of unsuccessful osteotomy, arthrodesis, or failure of previous joint replacement procedure.

The Regenerex[®] Femoral Augments are indicated for use with the Vanguard Total Knee System.

The Regenerex Tibial Augments are indicated for use with standard and offset Zimmer Biomet Tibial Trays.

Femoral components and tibial tray components with porous coatings are indicated for cemented and uncemented biological fixation application. Non-coated Interlok[®] devices and all-polyethylene patellar components are indicated for cemented application only. Regenerex components are intended only for uncemented biologic fixation application.

CONTRAINDICATIONS

Absolute contraindications include: infection, sepsis, and osteomyelitis.

Relative contraindications include: 1) an uncooperative patient or a patient with neurologic disorders who is incapable of following directions, 2) osteoporosis, 3) metabolic disorders which may impair bone formation, 4) osteomalacia, 5) distant foci of infections which may spread to the implant site, 6) rapid joint destruction, marked bone loss or bone resorption apparent on roentgenogram, 7) vascular insufficiency, muscular atrophy, neuromuscular disease, and/or 8) incomplete or deficient soft tissue surrounding the knee.

Zimmer Biomet Microplasty Tibial Trays are contraindicated for use with constrained bearings.

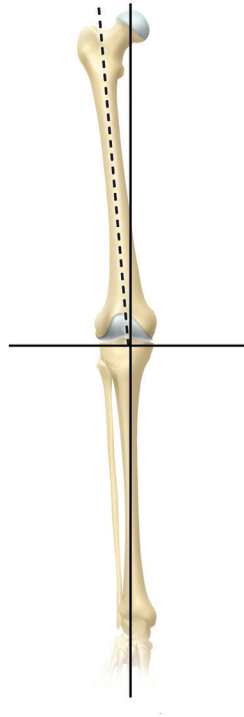


Figure 1

Introduction

Preoperative Planning

In order to assess bone stock, potential ligament instability and the anatomical axis, a 36 inches long standing A/P X-ray is recommended. Determine the angle between the anatomic and mechanical axis, assuring the distal femoral cut is perpendicular to the mechanical axis (Figure 1).

Estimate femoral component size preoperatively by using lateral view X-rays and radiographic templates. Confirmation of the appropriate size component intraoperatively is critical for normal kinematics.

Approaches

Microplasty Total Knee Instruments are designed for use with a minimally invasive technique.

Three basic procedures can be utilized for minimally invasive total knee arthroplasty:

- Option 1: Mini-medial parapatellar
(See page 6 for surgical technique)
- Option 2: Mid-vastus
(See page 7 for surgical technique)
- Option 3: Sub-vastus
(See page 9 for surgical technique)

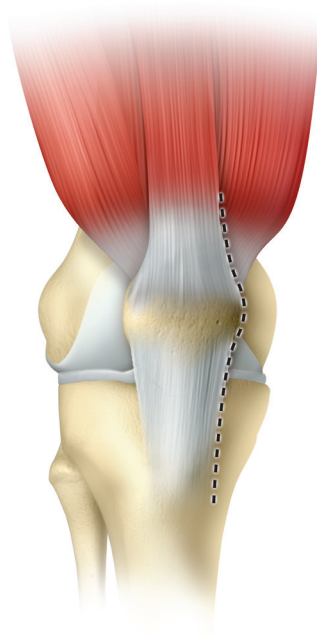


Figure 2

Mini-medial Parapatellar Approach, Option 1

Initial Skin Incision

Make the skin incision centered over the medial one-third of the patella extending from 1 cm above the superior pole of the patella to the tibial tubercle. The length of this incision will vary depending on the anatomy, but generally range between 4–6 inches. It is recommended to perform the skin incision in a flexed position which will help minimize the sensitivity with kneeling. It is extremely important to monitor the proximal and distal margins of the incision in order to make certain there is not increased tension from excessive retraction. Extension of the skin incision may be necessary during the procedure depending on the anatomy and the quality of the soft tissue.

Approach

Make a mini-medial parapatellar arthrotomy, beginning at the top medial corner of the patella and continuing down along the patellar tendon, ending at the patellar tendon insertion (Figure 2).

Once the incision has been made, ensure the release of any soft tissue adhesions.

Deep Exposure

With the knee in the extended position, perform the arthrotomy from 1–2 cm above the superior pole of the patella, extending to the level of the tibial tubercle. Perform fat pad excision to facilitate exposure and to improve patellar mobility. Perform a medial release at this time to release only what is necessary for the existing deformity. This will also allow for easy placement of the medial retractors for protection of the medial collateral ligament as well as exposure of the proximal tibia later in the procedure.

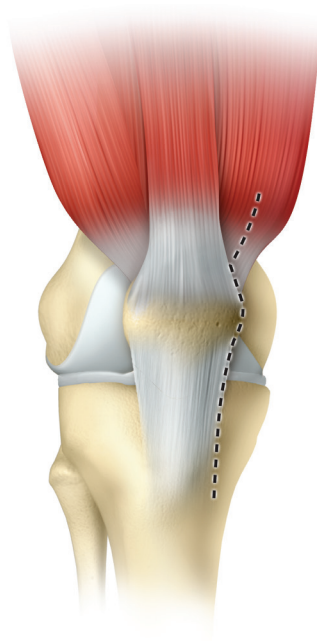


Figure 3

Mid-vastus Approach, Option 2

Initial Skin Incision

Make the skin incision centered over the medial one-third of the patella extending from 1 cm above the superior pole of the patella to the tibial tubercle (Figure 3). The length of this incision will vary depending on the anatomy, but generally range between 4–6 inches. It is recommended to perform the skin incision in a flexed position which will help minimize the sensitivity with kneeling.

It is extremely important to monitor the proximal and distal margins of the incision in order to make certain there is not increased tension from excessive retraction. Extension of the skin incision may be necessary during the procedure depending on the anatomy and the quality of the soft tissue.

Mid-vastus Approach, Option 2 (cont.)

Approach

Extend the capsular incision in a straight line proximally obliquely cutting across Vastus Medialis Oblique (VMO) muscle fibers. This is most easily performed with the knee flexed near 90 degrees. The VMO incision typically extends for a distance of 1–3 cm. This length is partially dependent on the VMO insertion site onto the patella. If the VMO has a proximal patellar insertion, the VMO incision may be only 1–2 cm. If the VMO inserts into the patella as far distally as mid-patella, the incision into the VMO may reach 3–4 cm. If it is later determined that a more extensile incision is required for proper exposure, the VMO incision can be continued straight proximally.

ⓘ **Note:** The strongest fascia for closure is on the deep surface of the VMO. When the capsule is closed, this deep fascial layer must be included in the sutures. Typically only two or three sutures are required to close the mid-vastus VMO extension of the capsular incision.

Once the incision has been made, ensure the release of any soft tissue adhesions.

Deep Exposure

With the knee in the extended position, perform the arthrotomy from 1–2 cm above the superior pole of the patella, extending to the level of the tibial tubercle. Perform fat pad excision to facilitate exposure and to improve patellar mobility. Perform a medial release at this time to only release what is necessary for the existing deformity. This will also allow for easy placement of the medial retractors for protection of the medial collateral ligament as well as exposure of the proximal tibia later in the procedure.

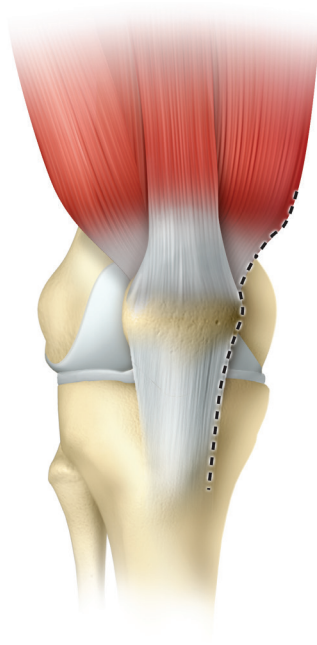


Figure 4

Sub-vastus Approach, Option 3

Initial Skin Incision

Make the skin incision centered over the medial one-third of the patella extending from 1 cm above the superior pole of the patella to the tibial tubercle. The length of this incision will vary depending on the anatomy, but generally range between 4–6 inches. It is recommended to perform the skin incision in a flexed position which will help minimize the sensitivity with kneeling. It is extremely important to monitor the proximal and distal margins of the incision in order to make certain there is not increased tension from excessive retraction. Extension of the skin incision may be necessary during the procedure depending on the anatomy and the quality of the soft tissue.

Approach

Make a horizontal arthrotomy along the inferior border of the VMO leaving a cuff of retinaculum for closure (Figure 4). Complete the arthrotomy in a standard manner along the medial patellar tendon.

Once the incision has been made, ensure the release of any soft tissue adhesions.

Sub-vastus Approach, Option 3 (cont.)

Deep Exposure

With the knee in the extended position, perform the arthrotomy from 1–2 cm above the superior pole of the patella, extending to the level of the tibial tubercle. Perform fat pad excision to facilitate exposure and to improve patellar mobility.

Perform a medial release at this time to only release what is necessary for the existing deformity. This will also allow for easy placement of the medial retractors for protection of the medial collateral ligament as well as exposure of the proximal tibia later in the procedure.



Figure 5

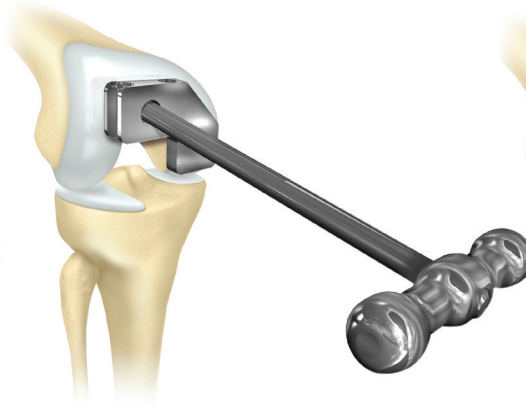


Figure 6

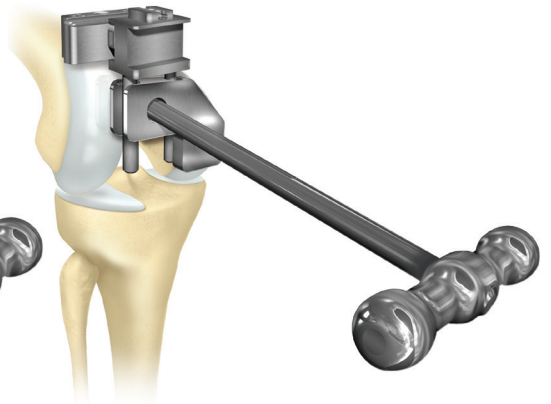


Figure 7

Distal Femoral Resection

Utilize the 0.375 inch intramedullary (IM) drill to penetrate the intracondylar notch and dense cancellous bone of the distal femur to a depth of approximately 1.5–2 inches (3.5–5 cm). Place the canal entry location 1 cm above the insertion of the posterior cruciate ligament and slightly medial in the intercondylar notch (Figure 5).

Choose the appropriate left or right valgus wing and slide it onto the IM rod. Introduce the IM rod to the femoral canal to depressurize the canal. Slide the valgus wing until it rests against the medial distal condyle (Figure 6). The “left” or “right” engraving on the block must face distally based on the operative leg.

Slide the Slidex[®] Distal Resection Block and cut block adaptor into the anterior holes of the valgus wing until the Slidex Distal Resection Block contacts the anterior cortex of the femur (Figure 7).

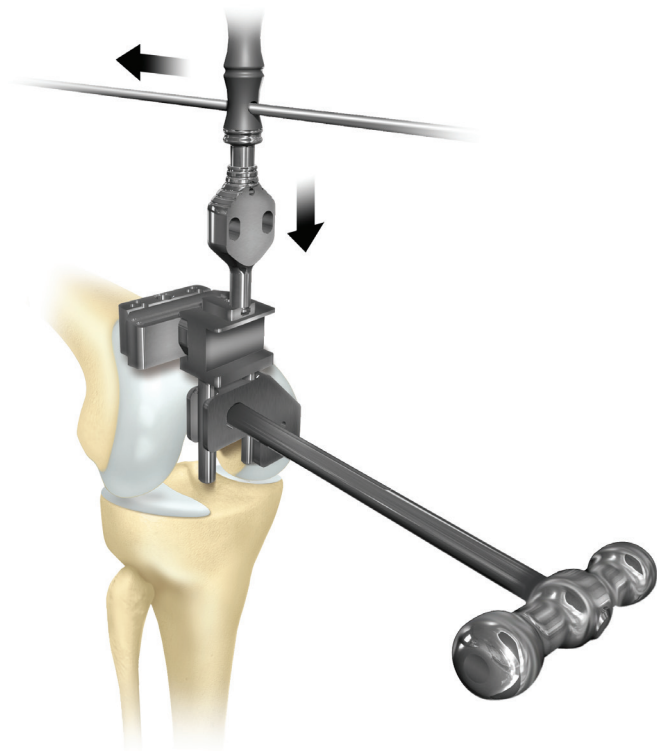


Figure 8



Figure 9

Distal Femoral Resection (cont.)

To confirm the valgus angle, the alignment handle can be inserted into the cut block adaptor and a ¼ inch alignment rod can be inserted and extended to the center of the femoral head (Figure 8).

Pin the Slidex Distal Resection Block into place using ⅛ inch quick release drill pins in the most proximal pin holes of the block (Figure 9).

Remove the valgus wing by removing the IM rod and pulling the valgus wing and cut block adaptor distally away from the distal resection block, leaving the Slidex Distal Resection Block in place.

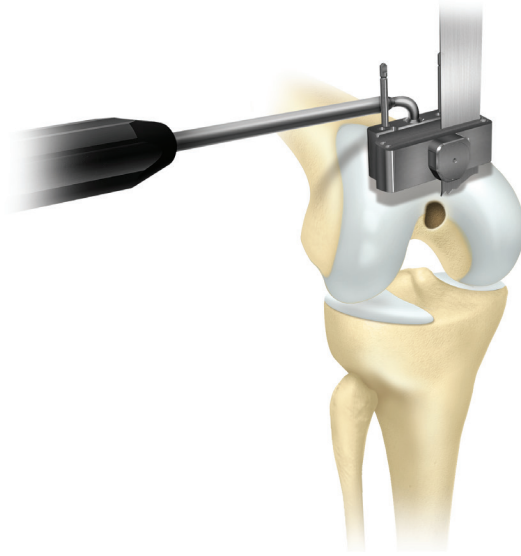


Figure 10

Distal Femoral Resection (cont.)

Two resection slots of 0 or +3 mm are available for the distal resection. The 0 mm slot will resect 9 mm from the most prominent part of the medial distal condyle. If additional distal resection is required, the +3 mm slot will resect 12 mm. If additional distal resection is required beyond the +3 mm slot, shift the resection guide proximal by utilizing the +2 or +4 mm $\frac{1}{8}$ inch pin holes.

Use a 0.054 inch saw blade to complete the distal resection through the selected slot. Check the resected distal femur using a flat instrument. Recut or file as necessary to ensure proper resection. For additional stability, the femoral block handle can be utilized (Figure 10).

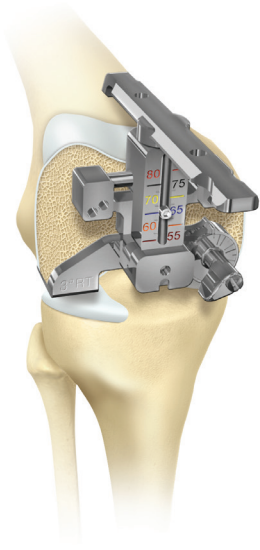


Figure 11

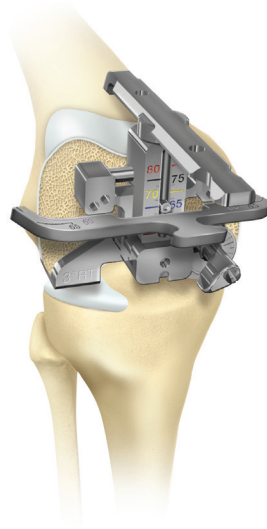


Figure 12

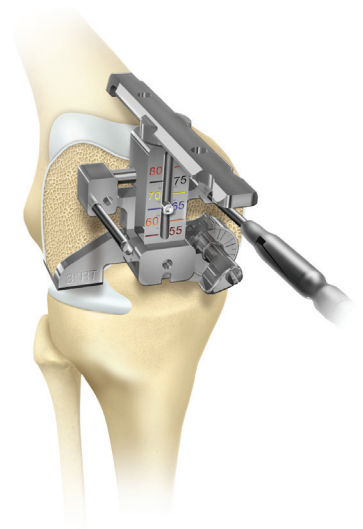


Figure 13

Femoral Sizing

With the epicondylar and/or A/P femoral axis marked, place the adjustable A/P sizer flat against the resected distal surface with the feet in contact with the posterior condyles of the femur.

Adjustable Rotation Feet, Option 1

Adjustable dial feet can be used with the A/P sizer. The adjustable rotation feet are right/left specific and may be externally rotated from 0–10 degrees. Adjust the dial to the desired rotation using a setting of 3 degrees as an initial setting (Figure 11).

The femoral component size can now be read from the central scale. If the size indicated is between component sizes, the +2 holes may be utilized in combination with downsizing to the next smaller component size. This is accomplished by shifting the femoral component position 2 mm anteriorly (+2 holes) increasing the posterior condylar resection by 2 mm and increasing the flexion gap.

To further evaluate the proper size of femoral component in the M/L dimension, insert the appropriately sized M/L width checker into the A/P sizer (Figure 12).

After confirming the femoral component size, use 1/8 inch drill pins to create the hole locations for the 4-in-1 cutting block by utilizing the most posterior drill holes (Figure 13).

ⓘ **Note:** The final M/L position of the component is not determined during this step, but is addressed later in the technique.

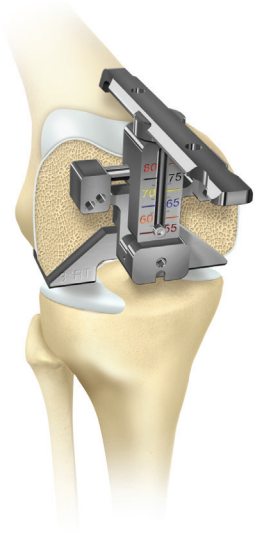


Figure 14

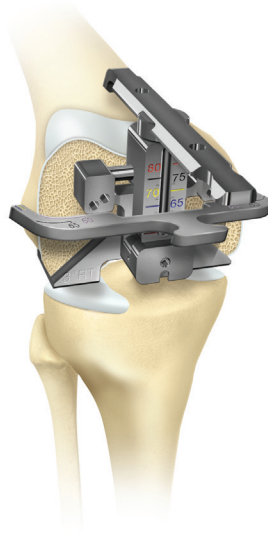


Figure 15

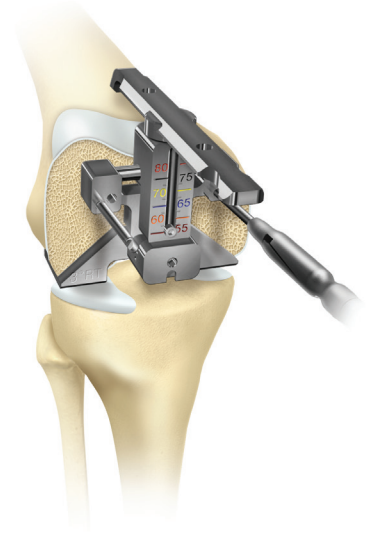


Figure 16

Femoral Sizing (cont.)

Fixed Rotation Feet, Option 2

Place the A/P sizer flat against the resected distal femoral surface with the posterior feet in contact with the posterior condyles of the femur (Figure 14).

The 0, 3, and 5 degree rotational feet are right/left specific and should correspond to the operative side.

If the size indicated is in between component sizes, the +2 holes may be utilized in combination with downsizing to the next smaller component size. This is accomplished by shifting the femoral component position 2 mm anterior (+2 holes) increasing the posterior condyle resection by 2 mm and increasing the flexion gap.

To further evaluate the proper size of femoral component in the M/L dimension, insert the appropriately sized M/L width checker into the A/P (Figure 15). After confirming the femoral component size, use 1/8 inch drill pins to create the hole locations for the 4-in-1 cutting block (Figure 16).

ⓘ **Note:** The final M/L position of the component is not determined during this step but is addressed later in the technique.

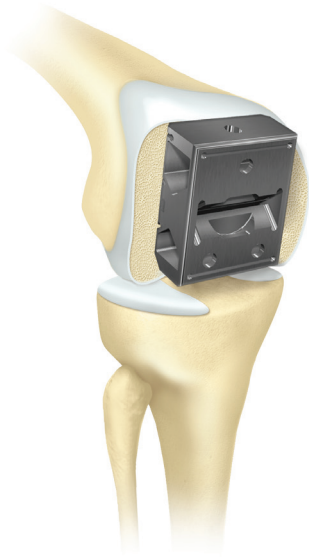


Figure 17

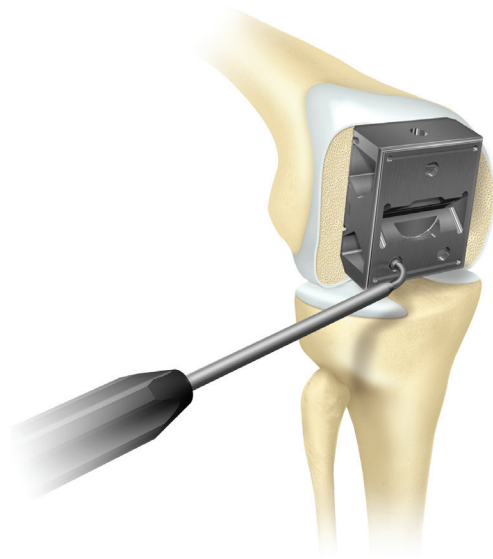


Figure 18

Femoral 4-in-1 Resections

Choose the slotted femoral Slidex A/P 4-in-1 Cut Block that matches the selected size on the A/P sizer and place it into the $\frac{1}{8}$ inch holes drilled into the distal femur (Figure 17). A 0.054 inch feeler blade can be used to determine the amount of anterior cortex resection.

The femoral block handle can be placed onto this cut block if additional support is desired (Figure 18). The handle can be used to assist in sliding the cut block medially and laterally.

Note: Take extra caution to avoid angling the Slidex A/P 4-in-1 Cut Block when using handle.

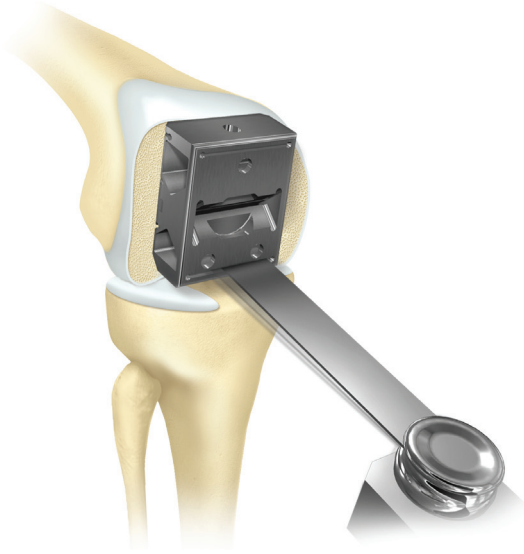


Figure 19

Femoral 4-in-1 Resections (cont.)

Always utilize retractors to aid in stability and to protect soft tissues. Perform the anterior resection followed by the posterior resection. Then perform the posterior chamfer resection followed by the anterior chamfer resection (Figure 19).

ⓘ **Note:** If implanting a CR femoral component, femoral trialing can be completed after femoral 4-in-1 resections are made.



Figure 20

PS Box Preparation

Universal Bone Conserving Guide

Place the Microplasty Universal PS Box Guide on the prepared distal femur. Take care to offset the universal box resection guide 1–2 mm laterally to aid in patellar tracking (Figure 20).

Secure the box resection guide using $\frac{1}{8}$ inch bone nails through any of the holes located on the guide.

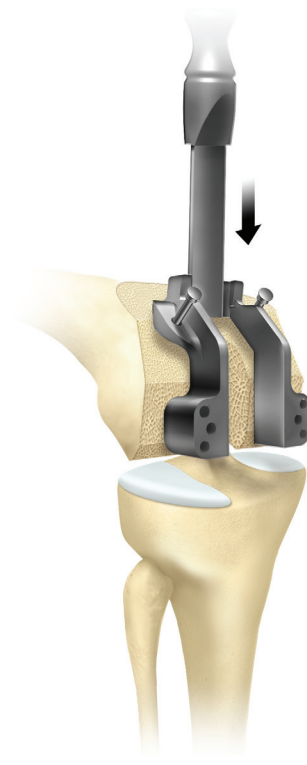


Figure 21

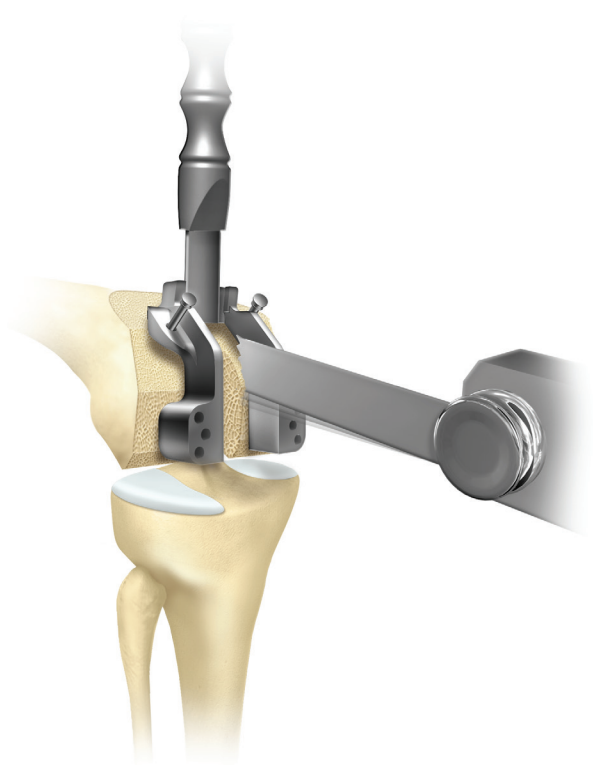


Figure 22

PS Box Preparation (cont.)

Universal Bone Conserving Guide (cont.)

Position the PS box chisel, with the beveled edge facing distally into the resection slot. Impact the PS box chisel to a depth approximately one half the thickness of the femur (Figure 21).

ⓘ **Note:** The Microplasty Universal Box Guide is a bone conserving cut and is only compatible with a Vanguard PS Open Box Femoral Component.

Using a 0.054 inch saw blade, resect along the interior of the box guide with an oscillating saw or reciprocating saw to the depth of the box chisel (Figure 22).

Cuts should be made moving from the anterior to posterior portion. Continue impacting the chisel until the intercondylar bone is removed.



Figure 23

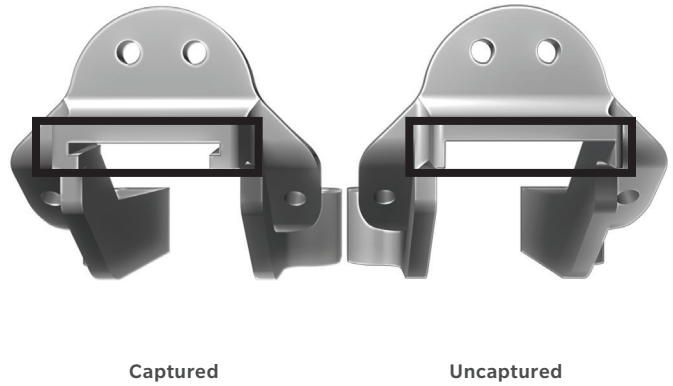


Figure 24

PS Box Preparation (cont.)

Universal Bone Conserving Guide (cont.)

Remove universal PS box guide. Place the PS open box gauge into the resected intercondylar bone to determine if appropriate depth and width of bone has been removed (Figure 23).

ⓘ **Note:** The universal PS box guide only prepares the femur for a Vanguard PS Open Box Femoral Component. The universal PS box guide is available in captured or uncaptured configurations (Figure 24). An uncaptured universal PS box guide is available for use with a sagittal saw.



Figure 25



Figure 26

Tibial Resection

Extramedullary Slidex Tibial Resection Guide

With the knee flexed, place the spring loaded arms of the ankle clamp around the distal tibia just above the malleoli (Figure 25).

Adjust the height of the tibial resection block by turning the red locking knob on the extramedullary (EM) tibial guide (Figure 26).



Figure 27

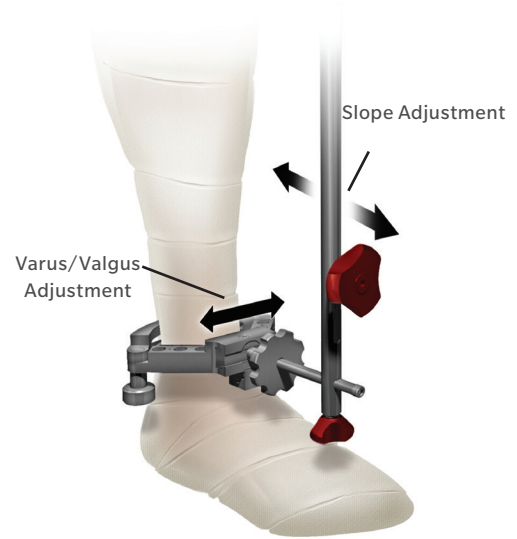


Figure 28

Tibial Resection (cont.)

Extramedullary Slidex Tibial Resection Guide (cont.)

With the tibial resection guide in an upward position, place the Slidex Tibial Resection Block against the proximal tibia (Figure 27).

From the sagittal view, turn the red knob on the bottom of the EM guide and adjust the EM guide along the perpendicular shaft of the guide bottom until the tubular body is parallel (for 0 degree posterior slope) with the shaft of the tibia (Figure 28).

Once correct alignment of the EM guide is achieved from the sagittal view, rotate the resector until the shaft of the resector is just medial to the tibial tubercle in the coronal view. Adjust the varus/valgus slope of the resection head by changing the M/L position of the resector ankle clamp assembly (Figure 28).

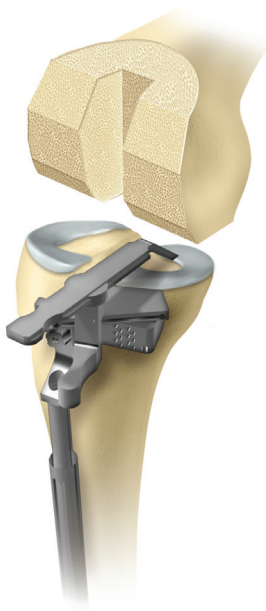


Figure 29

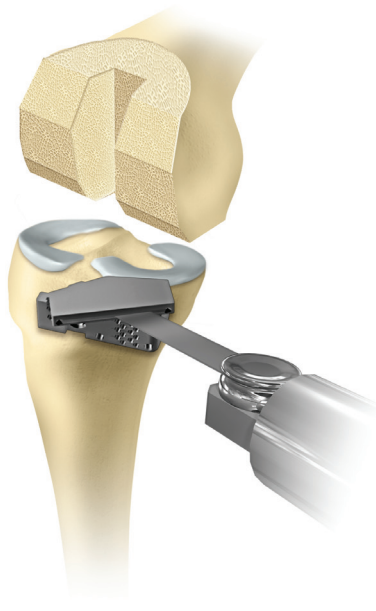


Figure 30

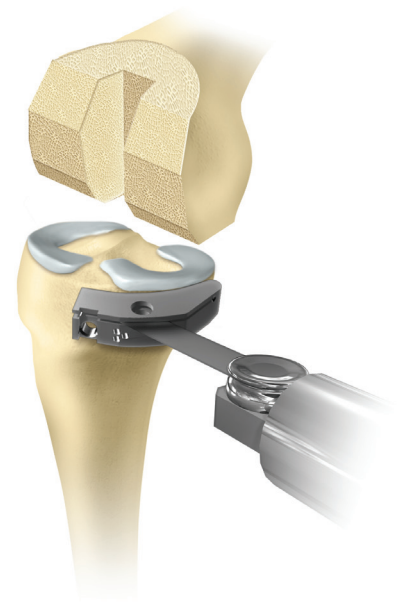


Figure 31

Tibial Resection (cont.)

Extramedullary Slidex Tibial Resection Guide (cont.)

Insert the Slidex Tibial Stylus into the desired holes for appropriate tibial resection. When referencing the deepest portion of the unaffected condyle, set the stylus to read 8–10 mm. Set the stylus to read 2–4 mm when referencing the most affected condyle (Figure 29).

Once the correct position is established, $\frac{1}{8}$ inch drill pins are used to secure the cutting block to the tibia through the most distal holes.

Insert the 0 mm Slidex Capture into the Slidex Tibial Resection Block by positioning the dovetail lock on the bottom of the plate with the lateral portion of the top of the block body. Insert the dovetail into the groove and slide the plate medially, which will lock the plate to the resection body preventing unintended slope or tilt. The tibial plateau is resected using 0.054 inch saw blade (Figure 30). If additional tibial plateau needs to be resected, the +1 mm Slidex Capture can be inserted into the Slidex Tibial Resection Block. The resection guide without the modular capture attached represents a +2 mm surface resection.

⊖ **Note:** In addition to using the Slidex Tibial Cutting Block, left and right fixed tibial cutting guides can be utilized as well (Figure 31).



Figure 32



Figure 33

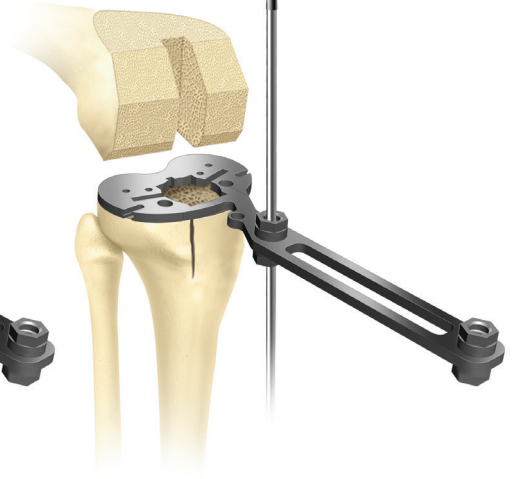


Figure 34

Tibial Sizing

Place the knee in maximum flexion and sublux the tibia anteriorly using a PCL retractor and placing a Z-retractor medially and laterally. Using the tibial template, select the tibial tray size that provides the appropriate coverage in both the A/P and the M/L planes (Figure 32).

Base the rotation on the position of the template relative to the tibial tubercle and the malleolar axis. Make an extramedullary alignment check by placing the $\frac{1}{4}$ inch alignment rod through the tibial baseplate handle (Figure 33). Slight external rotation is preferable to optimize patellofemoral tracking.

When correct rotation has been determined, mark the position by extending the anterior marks of the template onto the anterior tibia with electrocautery (Figure 34).

Note: Take extra caution to avoid internal rotation of the tibial tray due to the presence of lateral soft tissue.

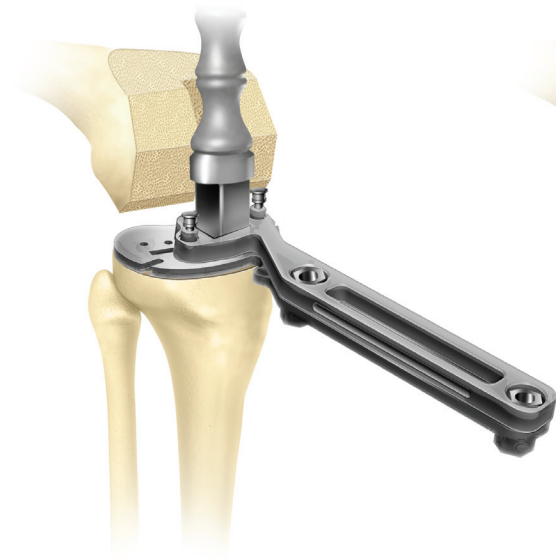


Figure 35

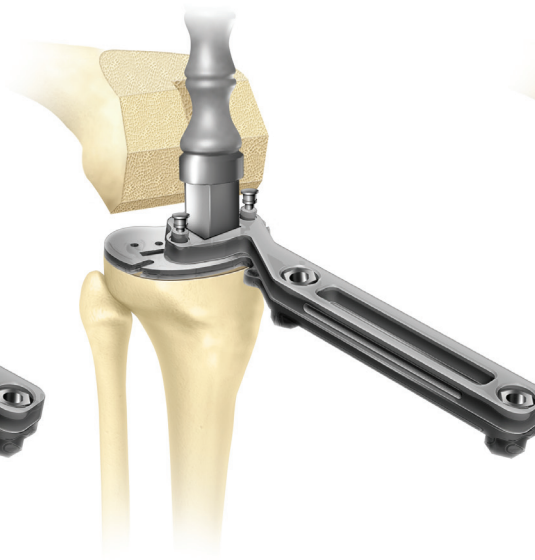


Figure 36



Figure 37

Tibial Stem Preparation

I-beam Stem Punch

Assemble the I-beam punch guide mask onto the tibial template and pin in place using 1/8 inch medium bone nails. Use the three-sided box chisel prior to the I-beam punch (Figure 35).

Impact the three-sided chisel with the A/P etching facing anterior and remove. Rotate the chisel 180 degrees and impact a second time to complete the cut for the I-beam punch.

Carefully impact the I-beam stem punch through the punch guide until it reaches the stop to achieve the appropriate depth (Figure 36).

While the stem is being prepared, the trial can be built. Once stem preparation is complete, remove the tibial template and I-beam punch mask and insert assembled tibial trial into the tibia (Figure 37).

Note: If the cruciate stem is selected, follow the technique above, substituting the I-beam mask, three-sided box chisel, I-beam punch, and stem with the cruciate mask, cruciate punch and trial cruciate stem.

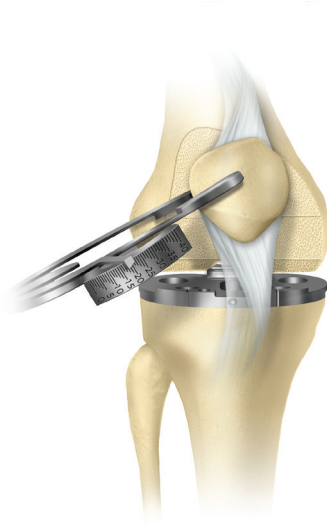


Figure 38



Figure 39

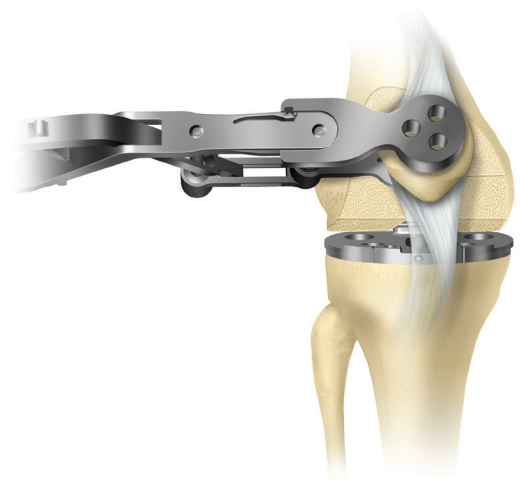


Figure 40

Patellar Resection

Tilt the patella to 90 degrees and remove the osteophytes and peripatellar tissues down to the level of the tendinous insertions of the quadriceps and patellar tendons. Determine the level of the cut through caliper measurement of the total patellar thickness (Figure 38).

Surface Clamp

A magnetic depth stylus may be utilized to determine the appropriate resection level (Figure 39). Perform the initial patellar resection utilizing the patella clamp surface cut guide. Clamp the guide to perform a flat cut across the patella.

Vanguard Patella Offerings

		Diameter (mm)					
		25	28	31	34	37	40
1-peg	Std	8.0	8.0	8.0	8.5	10.0	10.0
	Thin	6.2	6.2	6.2	7.8	8.6	N/A
3-peg	Std	8.0	8.0	8.0	8.5	10.0	10.0
	Thin	6.2	6.2	6.2	7.8	8.6	N/A

Care should be taken to restore original patella thickness to prevent overstuffing of the patellofemoral joint. If a 1-peg patellar component is utilized, use the 1-peg patellar drill guide to locate the placement of the central peg. Drill the central hole using the $\frac{5}{16}$ inch Series A™ patellar drill. Select a trial patellar component to optimize coverage without increasing patellar thickness beyond pre-resection height.

If a 3-peg patellar component is to be implanted, place the appropriately sized 3-peg drill guide onto the resected patella and use the $\frac{1}{4}$ inch patellar drill to prepare for the component pegs (Figure 40).

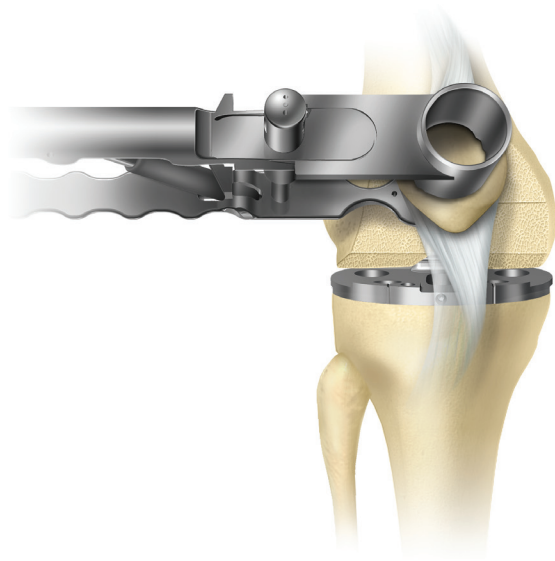


Figure 41

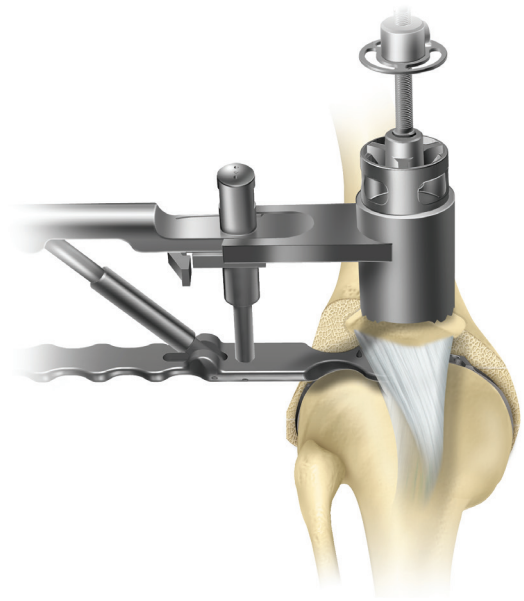


Figure 42

Patella Milling

Inset 1-Peg Patella using the Vanguard Patella Mill

Tilt the patella to 90 degrees and remove the osteophytes and peripatellar tissues down to the level of the tendinous insertions of the quadriceps and patellar tendon. Determine the patella thickness by using calipers.

Size the patella using the mill bushings (Figure 41). Attach the size-specific bushing to the mill handle after the appropriate size patella has been determined. Based on patella size and thickness, determine if a standard or thin patella should be used. Firmly clamp the patella with the mill handle paying careful attention not to tilt the patella.

Attach the appropriate size-specific patella reamer to the reamer shaft (Figure 42). Attach the proximal shaft to a power drill. Insert the reamer basket into the mill bushing and allow the reamer's central bit to rest on the apex of the patella bone.

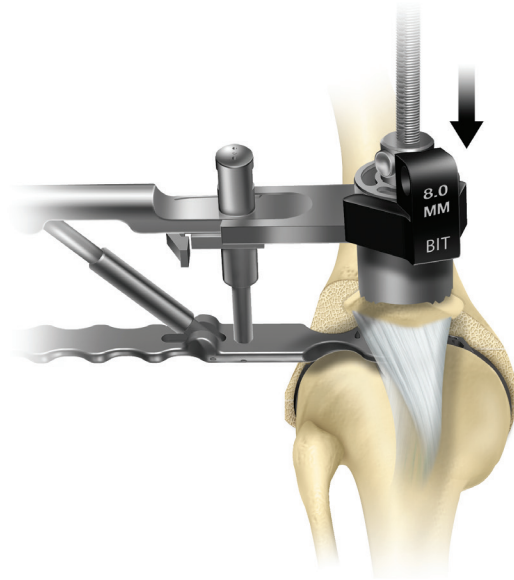


Figure 43

Patella Milling (cont.)

Inset 1-Peg Patella using the Vanguard Patella Mill (cont.)

Attach the appropriate thickness magnetic spacer (marked “Bit”) to the adjustable depth stop. Set the adjustable stop by depressing the button on its side and slide the stop down until the bottom of the spacer touches the mill bushing (Figure 43).

ⓘ **Note:** The magnetic spacer bit includes the depth of the peg. Do not sink the drill bit prior to setting the adjustable stop.

Remove the magnetic spacer and ream until the adjustable stop touches the mill bushing. Remove the reamer assembly and then disengage the mill handle by pulling the thumb trigger towards the handle.

ⓘ **Note:** If a 3-peg patellar component is to be implanted, the appropriate sized surface reamer will be used to prepare the inset surface. The magnetic spacer marked with a red dot should be used to correctly establish the resection depth. The 3-peg drill guide is tapped into the prepared patella inset and the ¼ inch patellar drill is used to make the holes for the component pegs.

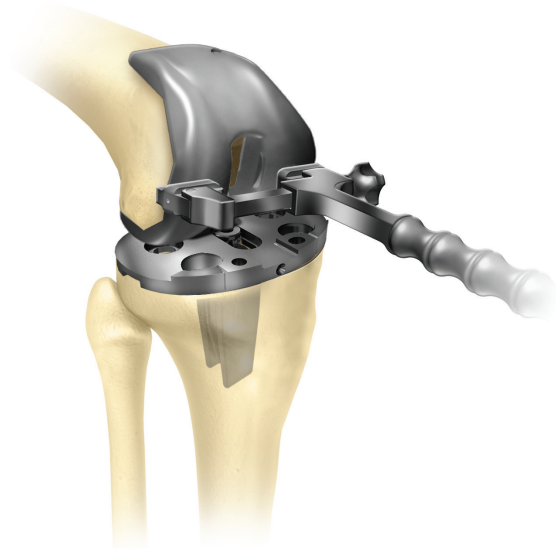


Figure 44

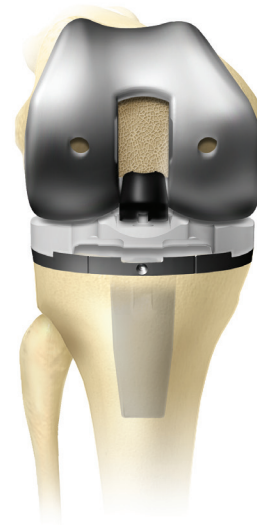


Figure 45

Trial Reduction

With all bony surfaces prepared and soft tissue debrided, complete a trial reduction with the trial components. Place and impact the trial femoral component on the femur with the femoral inserter (Figure 44).

Select trial bearing inserts to determine the appropriate thickness of the tibial component.

Select a 1-peg or 3-peg trial patellar component that corresponds to the diameter and thickness and place it onto the patella. When the trial components are in place, check range of motion and stability of the knee.

ⓘ **Note:** If trialing a PS knee, insert the appropriate PS trial post to the insert bearing (Figure 45). If additional constraint is needed, utilize the PS plus trial post.

ⓘ **Note:** If distal femoral pegs are selected to be added to the femoral component, drill pegs through the designated holes provided in the femoral trial (Figure 45).



Figure 46

Tibial Implant Insertion

Assemble the modular tibial component by choosing the appropriate stem (most primary cases will require a 40 mm stem). The locking screw for the stem is included in the stem's packaging. Place the stem taper on the bottom of the appropriate modular tibial baseplate. Be sure that the alignment keys match between stem and plate. Impact the tip of the stem once with a mallet to seat the stem taper.

ⓘ **Note:** The stem taper will hold the stem and plate together. The screw is tightened into the threads of the stem for added stem fixation. Plugs can be left in the screw holes of the baseplate if screw fixation is not used. Utilize the tibial impactor to firmly seat the component (Figure 46). Remove excess cement in a routine manner.

Optional screw fixation: Using the drill guide and $\frac{1}{8}$ inch drill, prepare a hole for screw acceptance.

ⓘ **Note:** The low-profile screws may be angled at 15 degrees in any direction to engage the best available cancellous and/or cortical bone. Frequent reference to the X-rays will guide the drilling and screw insertion sequence.

With the baseplate firmly fixed, the provisional bearing may be reinserted, and a trial reduction performed to confirm joint tension and stability.

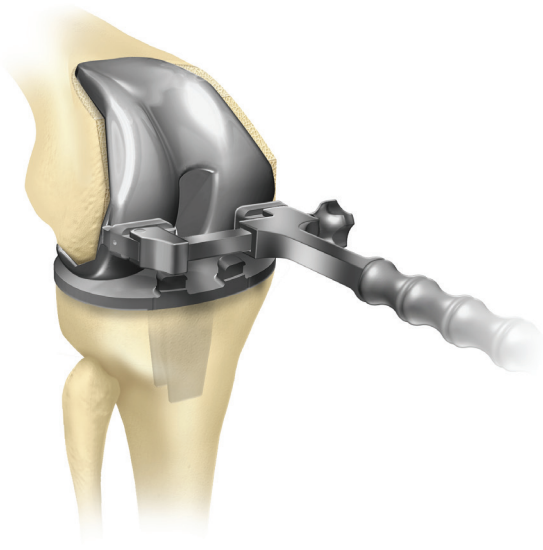


Figure 47

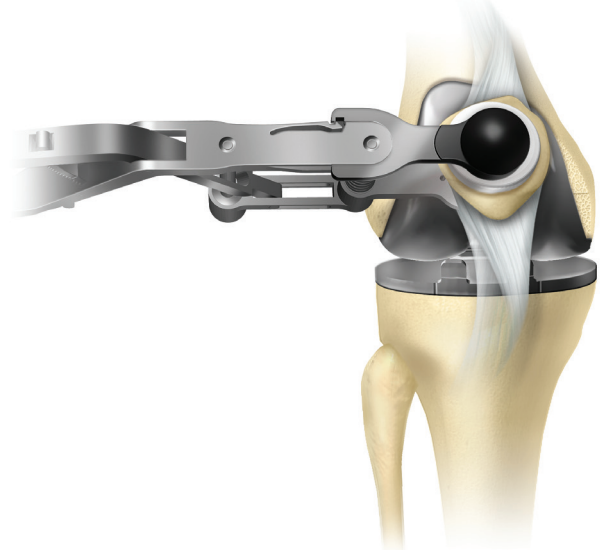


Figure 48

Femoral Implant Insertion

Note: If distal femoral pegs were selected to be added to the femoral component, use the peg wrench (Part No. 32-486122) to assemble the pegs to the femoral component. The peg wrench may also be used to remove pegs from the femoral component.

Place the appropriate femoral component on the end of the femur and insert it manually as far as possible (until about 1 cm of space remains between the component and the distal femur). Fully seat the component using the control femoral impactor (Figure 47).

Remove the extruded cement in a routine manner. Running through a range of motion will help to pressurize the cement.

Patellar Implant Insertion

Place the appropriate patellar component into the patella and push it into position with finger pressure so the peg(s) engage(s) the prepared hole(s).

Position the patellar clamp onto the component and tighten the handle until the clamp head contacts the component. Clamp tightly to compress the implant (Figure 48). Remove extruded cement in a routine manner. The clamp should be left in position until the cement cures.



Figure 49

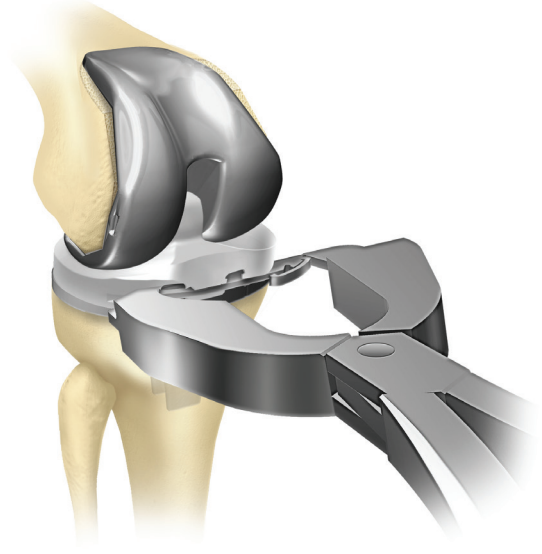


Figure 50

Locking Bar Insertion

Place the appropriate polyethylene bearing insert on the tibial baseplate and push posteriorly as far as possible using finger pressure. The polyethylene bearing must be flat on the baseplate in all directions. The locking bar, packaged with the tibial baseplate, is inserted into the medial side of the anterior tibial baseplate/polyethylene interface as far as possible using finger pressure (Figure 49). The locking bar must be tight upon insertion and should be too tight to insert completely with finger pressure only.

Place the large curved end of the locking bar insertion forceps in the notch on the locking bar. Place the small square end in the notch of the anterior post of the tibial baseplate. Ensure the smaller square end catches on the post of the tibial tray and does not block the path of the locking bar. Squeezing the forceps will gradually push the locking bar until it clicks into place (Figure 50). A visual and audible confirmation should be made to ensure complete locking bar insertion.

Zimmer Biomet does not practice medicine. This technique was developed in conjunction with a health care professional. This document is intended for surgeons and is not intended for laypersons. Each surgeon should exercise his or her own independent judgment in the diagnosis and treatment of an individual.

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BMET1059.2-GBL-REV0816