JUST®
MEDICAL

AUSK®

Fixed-bearing Unicompartmental Knee System

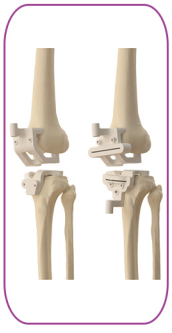
Surgical technique

JUST®
MEDICAL

KNEE STEPWISE SU

Dynamic fatigue tests after 10 million cycles in the international
Dynamic wear tests after 5 million cycles in the international En

PSI AUSK单髁



PSI SK全膝

— PSI —

AUSK
Mobile-bearing

AUSK
Fixed-bearing

FEMORAL COMPONENT

XI

XII CR

XII

AUSK
Mobile-bearing

AUSK
Fixed-bearing

TIBIAL BEARING

XI

XII CR/AS

XII

AUSK
Mobile-bearing

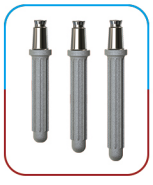
AUSK
Fixed-bearing

TIBIAL TRAY

XI

XI

STEM & AUGMENT



Neutral Stem

Offset Stem

Tibial

cartistem可特立®
SVF Extractor

AUSK
Mobile-bearing
unicompartmental knee

AUSK
Fixed-bearing
unicompartmental knee

SKI™ PS
Primary TKA System

SKII™ CR
Primary TKA System

SKII
Primary T

— REPAIR —

— KNEE PRESERVATION —

— PRIMARY —

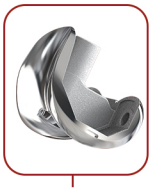
RGICAL SOLUTIONS

CNAS laboratory shows excellent results and no risk of fracture.
dolab® laboratory in Germany shows excellent wear resistance.


I PS


XII PLUS


XII PS


RSX


HR


I PS


XII PLUS


XII RPS


RSX

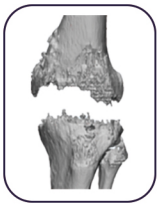

HR

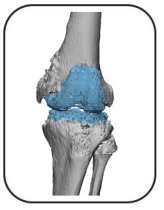

XII


XII RPS

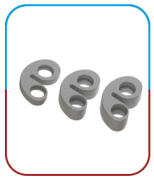

RSX


HR


Bone model restoration-1


Bone model restoration-2

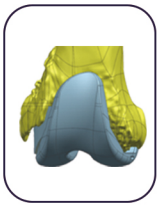

l Cone


Tibial Augment


Distal Femoral Augment


Posterior Femoral Augment


Knee Spacer


Customized prosthesis design

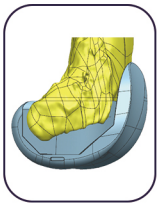

™ PS
KA System


SKII™ PLUS
Primary TKA System


SKII™ RPS
Primary TKA System


RSK™
Revision TKA System


HRSK
Hinge Rotating TKA System

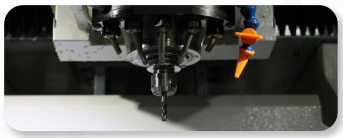

Customized product simulated implantation

COMPLEX PRIMARY ***REVISION*** ***CUSTOMIZED***

Imported Raw Material

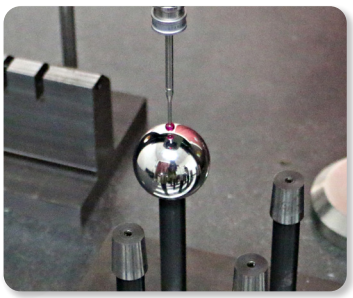
All raw material of HXLPE inserts were manufactured in Germany, meeting the technical requirements in ISO 5834 part 2 and ASTM F648.

Precise Processing



Strict Inspection

JUST MEDICAL Inspection Center



◆ Product Features

Tibial Bearing-Excellent Wear Resistance

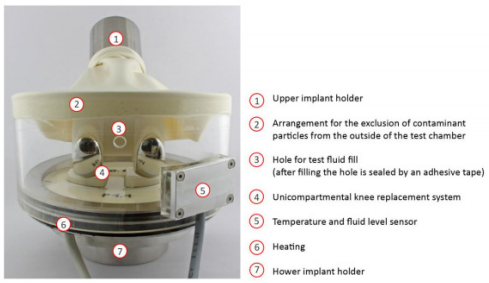
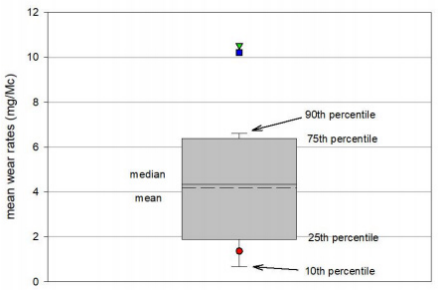


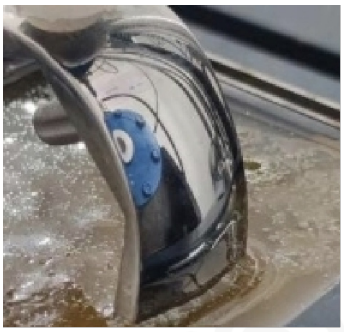
Fig. 7: A representative test chamber.

5 Million Dynamic Wear Tests



Below to the mean value determined at EndoLab® so far

Femoral Condyle
- Excellent Fatigue Resistance



JUST AUSK

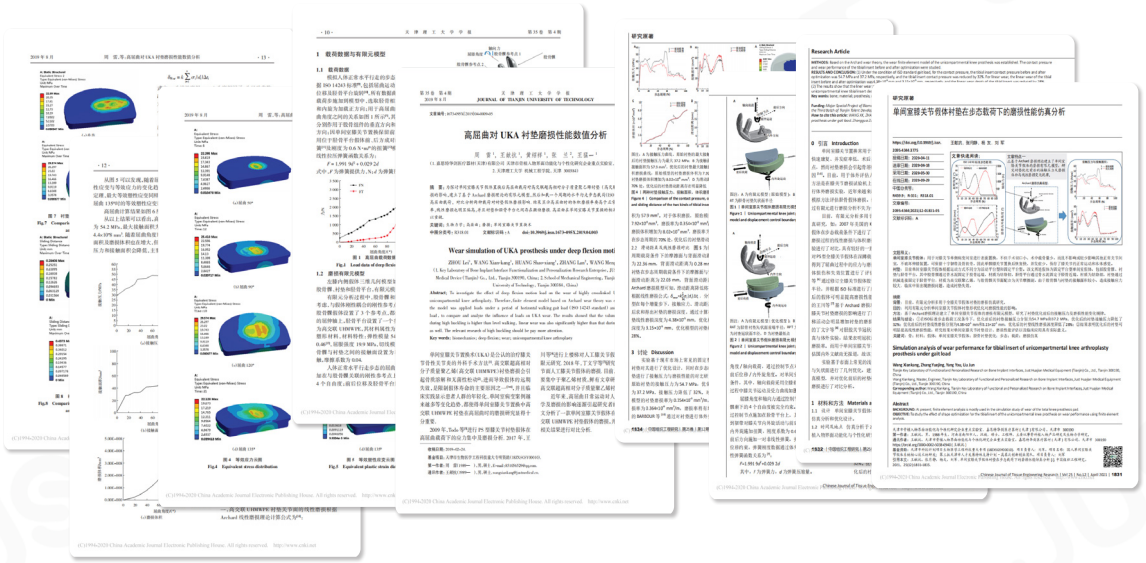
Dynamic fatigue tests after 10 milion cycles shows excellent results and no risk of fracture

Similar American Brands Breakage

◆ Fundamental Research

《Simulation analysis of wear performance for tibial insert of unicompartmental knee arthroplasty prosthesis under gait load》

《Wear simulation of UKA prosthesis under deep flexion motion》



Patent Certificate

Patent Name. Tibial cut guide used in fixed-unicompartmental knee arthroplasty
Patent No. ZL 2018 2 1180023.5
Patent Name. Fixed-unicompartmental knee prosthesis
Patent No. ZL 2018 2 1682 194.8
Patent Name. Tibial dimension measuring device
Patent No. ZL 2019 2 0578720.2
Patent Name. Fixed unicompartmental prostheses with different sagittal shapes
Patent No. ZL 2022 2 0093567.8

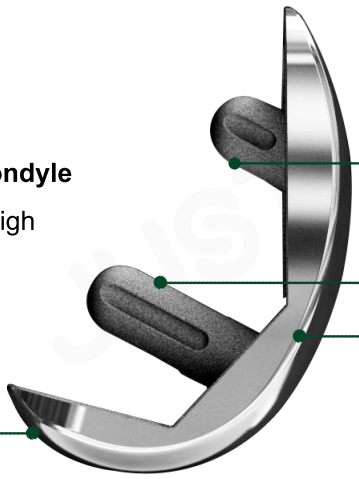
Product Features

Angled Femoral Pegs

Angled femoral pegs are designed to enhance femoral fixation by providing resistance to loosening forces during flexion up to 118°.

Extended Posterior Condyle

Safely accommodates high flexion up to 155°.



Round-on-Flat Articulation

Unconstrained design allows soft tissues to dictate motion of the knee. Round-on-Flat articulation allows +/- 8° varus/valgus tilt without edge loading.

Anatomical Shape

Anatomical shape for optimal bone coverage

.

3 Points of Tibial Fixation

2 hour-glass pegs and the rotational fin guard against shear and rotational forces.

Rationale

In UKA, varus/valgus alignment is determined by the composite thickness of the prosthetic unicompartmental components. The amount of tibial bone resection is variable while the amount of distal femoral bone resection is constant.
In the Spacer Block technique, the tibia is resected first, and the femoral resection is based on the tibia cut. The AUSK has been designed for 5°of posterior tibial slope. The distal femoral resection is angled 5°relative to the bottom of the Distal Femoral Resection. This ensures that the distal femoral resection is made perpendicular to the long axis of the femur.
After resecting the tibia, introduce the Distal Femoral Resection with the attached 9mm Shims-Tibial side into the joint space using the Adaptor Handle; only the extension gap is checked. The Distal Femoral Resector and with the knee in extension, a linked cut is made(Fig. 1, Fig. 2).

Fig. 1

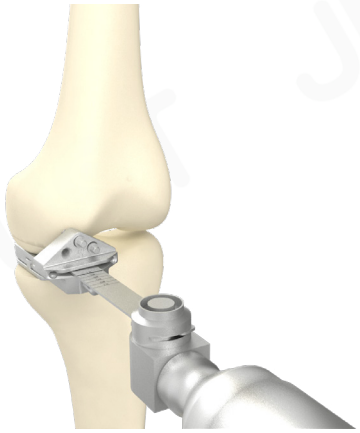


Fig. 2

Preoperative Plan

Take standing weight-bearing A/P and lateral radiographs of the affected knee, and a skyline radiograph of the patella. Then, take a long-standing A/P radiograph showing the center of the femoral head, the knee, and as much of the tibia as possible (preferably including the ankle). Alternatively, a single A/P radiograph of the entire femur allows correct calculations and can be made on a 35cm x 42cm (14 x 17-inch) film.

Technique tip: It is important to avoid overcorrection.

An additional radiograph, while stressing the limits of the collateral ligaments, may be helpful in assessing the appropriate correction.
When evaluating the patient and planning for the procedure, consider TKA if:
Degenerative changes are present in the contralateral compartment and/or the patellofemoral joint.
• The ACL is deficient.
• A significant flexion contracture exists.
• Slight under-correction is not attainable.
• A significant overcorrection is likely with a varus stress.
• There is an existing valgus or varus deformity ›15°.

Surgical Technique

I Patient Preparation

With the patient in the supine position, test the range of hip and knee flexion. If unable to achieve 120° of knee flexion, a larger incision may be necessary to create sufficient exposure.

Wrap the ankle area with an elastic wrap. Do not place bulky drapes on the distal tibia, ankle, or foot. A bulky drape in this area will make it difficult to locate the center of the ankle, and will displace the Tibial Resector, which may cause inaccurate cuts.

Be sure that the proximal femur is accessible for assessing the femoral head location. Use anatomic landmarks to identify the location of the femoral head. Alternatively, the surgeon may prefer to reference the anterior superior iliac spine.

Technique tip: Place a marker, such as an EKG electrode, over the center of the femoral head. Then confirm the location with an A/P radiograph.

II Exposure

The incision can be made with the leg in flexion or extension, according to preference.

In the medial procedure

the incision can be made with the leg in flexion or extension. Make a medial parapatellar incision extending from the superior pole of the patella to about 2 cm-4 cm below the joint line adjacent to the tibial tubercle (Figure 2.1).

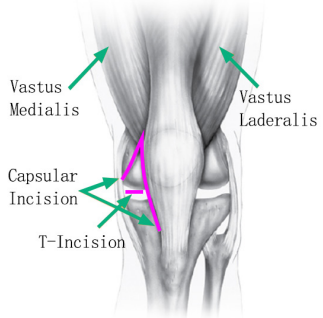
Incise the joint capsule in line with the skin incision beginning just distal to the vastus medialis muscle and extending to a point distal to the tibial plateau (Figure 2.2). Excise the fat pad, as necessary to facilitate visualization, being careful not to cut the anterior horn of the lateral meniscus.

Reflect the soft tissue subperiosteally from the tibia along the joint line back towards, but not into, the collateral ligament. Excise the anterior third of the meniscus. The remainder of the meniscus will be removed after bone resection.

A subperiosteal dissection should be carried out towards the midline, ending at the patellar tendon insertion. This will facilitate positioning of the tibial cutting guide.

Debride the joint and inspect it carefully. Remove intercondylar osteophytes to avoid impingement with the tibial spine or cruciate ligament. Also, remove peripheral osteophytes that interfere with the collateral ligaments and capsule. With medial compartment disease, osteophytes are commonly found on the lateral aspect of the medial tibial eminence and anterior to the origin of the ACL. Final debridement will be performed before component implantation. Careful osteophyte removal may be important in achieving full extension.

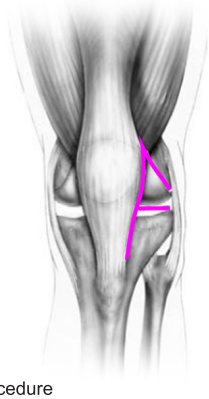
Fig. 2.1



In the medial procedure

Fig. 2.2

Fig. 2.3



In the lateral procedure

Fig. 2.4

In the lateral procedure

For a lateral parapatellar skin incision, begin the incision just lateral to the superior pole of the patella and extend it below the joint line and slightly lateral to the tibial tubercle (Fig. 2.3). Then dissect the subcutaneous tissue.

Identify the lateral margin of the patellar tendon inferiorly and mark it. Being careful to avoid the patellar tendon, make a lateral parapatellar arthrotomy beginning at the superolateral border of the patella just distal to the vastus lateralis muscle and extending to a point distal to the tibial plateau (Fig. 2.4). If necessary, split the distal of the vastus lateralis muscle, and release the patellar tendon slightly off the tibial tubercle to help mobilize the patella.

Excise the fat pad as necessary to facilitate visualization, being careful not to cut the anterior horn of the medial meniscus. Reflect the soft tissue subperiosteally from the tibia along the joint line back toward the collateral ligament, leaving the ligament intact. Be careful to avoid the popliteus tendon.

Excise the anterior third of the lateral meniscus to expose the anterior edge of the tibial plateau. The remainder of the meniscus will be removed after bone resection. Slightly release the iliotibial band off Gerdy's tubercle at the lateral margin of the tibia.

Continue the subperiosteal dissection toward the midline, ending at the patellar tendon insertion. This will facilitate positioning of the tibial cutting guide.

Debride the joint and inspect it carefully. Remove intercondylar osteophytes to avoid impingement with the tibial spine or cruciate ligament. Also, remove from both the femur and tibia any peripheral osteophytes that interfere with the collateral ligament and lateral capsule. Final debridement will be performed before component implantation. Careful osteophyte removal is important in achieving full extension.

Note: It may be necessary to extend the incision intraoperatively to achieve appropriate exposure and visualization.

III Proximal Tibial Resection

The JUST Medical AUSK Fixed Unicompartmental Knee System is designed for an anatomic tibial position with a 5°posterior slope.

The tibial assembly consists of a Tibial Shim(or a Slotted Tibial Shim), a Tibial Cut Guide, a Distal Telescoping Rod, an Ankle Clamp and a Silicone Ankle Strap. Positioning of the Tibial Resector is crucial.

Note: All landmarks should be marked before attaching instruments.

In the sagittal plane, align the assembly so it is parallel to the anterior tibial shaft by pressing the A/P slide adjustment at the distal end of the Distal Telescoping Rod. Releasing the button for the adjustment. If there is a bulky bandage around the ankle, adjust the assembly to accommodate the bandage. This will help with cutting the tibia on the proper slope.

Pressing the M/L slide adjustment at the anterior side of the distal end of the Distal Telescoping Rod. Releasing the button for the adjustment so it lies just lateral to the midpoint of the tibial tubercle and is in line with the center of the intercondylar eminence.

Technique tip: Optional Technique: If the patient has a slight flexion contracture, cutting less posterior slope may help as it would result in less bone resection posteriorly than anteriorly, thereby opening the extension gap more relative to the flexion gap. This can be accomplished by moving the assembly closer to the leg distally. Then check the depth and angle of resection with the Resection Guide.

Technique tip: Because of the greater rollback in the lateral compartment, the posterior slope can generally be less than that of the medial compartment to achieve an appropriate flexion gap. If preferred, the initial cut can be made with a 3° slope. The proximal tibia can then be recut if necessary.

Resection Level

In this technique, there are two instrumentation options for making the proximal tibial resection: Option 1 and Option 2.

Option 1

A Tibial Cut Guide equipped with 0mm Slotted Tibial Shim is selected.

Insert the foot of the Tibial Resection Stylus into the cutting slot of the Slotted Tibial Shim (Figure 3.1). Using the 4 mm tip of the stylus, Open the proximal button of the Distal Telescoping Rod and then adjust the height of the Tibial Cut Guide to contact the tibial stylus tip to the lowest point of the worn anteromedial tibial plateau (Figure 3.2). A thinner cut may be desired if there is severe wear of the tibia. In this case, the 2 mm tip of the stylus can be used. Measure the resection level using the Feeler Blade, then check the slope and rotation.

Secure the Tibial Cut Guide to the proximal tibia by predrilling and inserting the Headless Pin or inserting the Headed Nail through the two holes. Use electrocautery or the reciprocating saw to score the tibial surface where the sagittal cut will be made. Check this point both in extension and flexion. If desired, the depth of cut can be verified by inserting the Tibial Resection Stylus again (Fig. 3.3).

Fig. 3.1

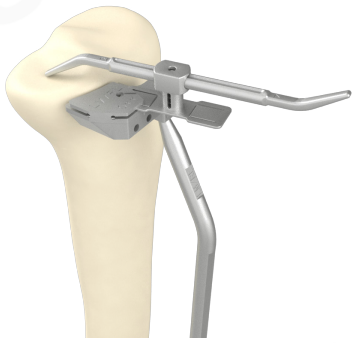


Fig. 3.2

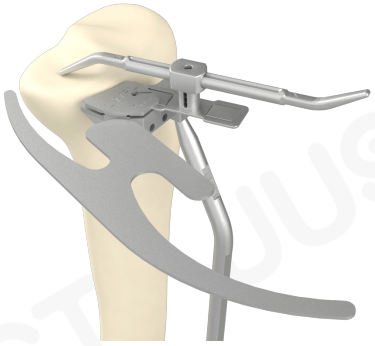


Fig. 3.3

Option 2

A Tibial Cut Guide equipped with 0mm Tibial Shim is selected.

With the knee in flexion, insert the Gap Spacer Base Block (based on preoperative estimate sizing), starting with a 1 mm Block. With all retractions removed, assess the ligament tension. Usually, the 1 mm thick Block achieves the proper ligament tension, but if it does not, replace it with a thicker sizing Block until the proper tension is achieved. (Figure 3.5).

Manipulate the upper end of the guide so that its face lies against the exposed bone. A recess accommodates the skin and the patellar tendon laterally (Figure 3.6). Engage the cam by pulling the lever downwards to lock the three components together. Once the G-clamp is locked holding

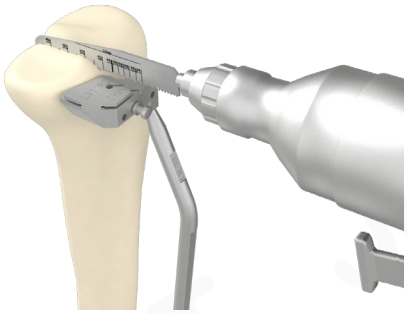


Fig. 3.4

the Gap Spacer Base Block and Tibial Cut Guide in place, pin the guide(Figure 3.7).
Once the Tibial Cut Guide is pinned in place, unlock the G-clamp and remove it along with the Gap Spacer Base Block.

Note:This option is only for medial procedure. This option used the intact posterior condyle as the reference point and proved to be more accurate in positioning.

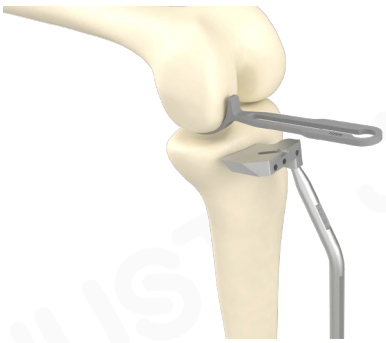


Fig. 3.5

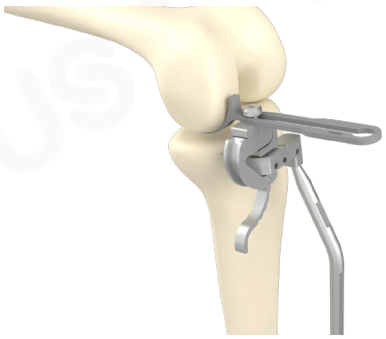


Fig. 3.6

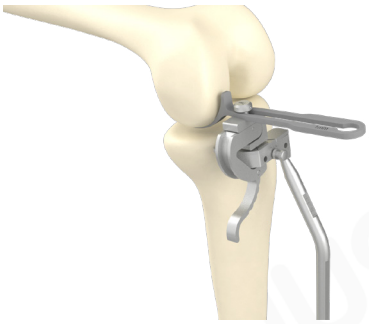


Fig. 3.7

The Sagittal Cut

Insert a retractor medially to protect the medial capsular structures, and flex the knee.
Push the blade into the intercondylar notch close to the lateral margin of the medial femoral condyle, from which the osteophytes were removed previously. The saw cut should be just medial to the apex of the medial tibial spine. It will pass through the edge of the ACL insertion. Point the blade toward the anterior superior iliac spine or flexion plane. The saw must reach the back of the tibial plateau and a little beyond. This is achieved by lining up the appropriate mark on the saw with the anterior cortex. Advance the saw vertically down until it rests on the surface of the saw guide (Figure 3.8). The saw must remain parallel to the guide.

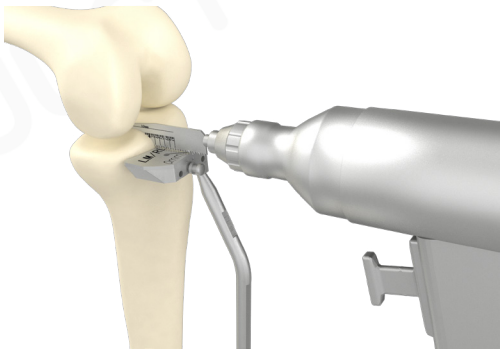


Fig. 3.8

Technique Tip:
Do not lift the saw handle as this will dip the saw blade and increase the risk of tibial plateau fracture.
Avoid damaging the posterior popliteal area by using a blunt tip reciprocating blade.

Fig. 3.9

The Transverse Cut

Before making the horizontal cut, insert the Retractor. Ensure this retractor is between the saw and the MCL. Use the 12 mm (or 10mm) wide Sawblade with appropriate markings to excise the plateau (Figure 3.8). Ensure the Sawblade is guided along the MCL Retractor to completely cut the medial cortex. To cut the posterior

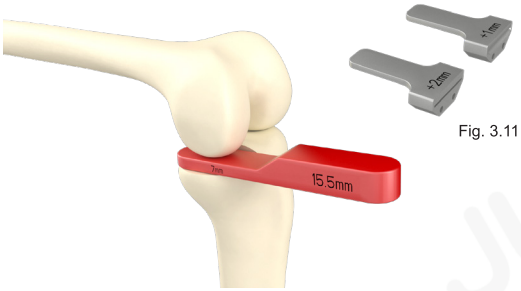


Fig. 3.10

Fig. 3.11

cortex, deepen the cut until the appropriate mark on the Sawblade is aligned with the anterior cortex. When the plateau is loose, lever it up with a broad osteotome and remove. Soft tissue attachments posteromedially may need to be cut with a knife.

Note: When making the horizontal cut the Slotted Tibial Shim may be used. This can be done by replacing the Tibial Shim with the corresponding the Slotted Tibial Shim. The Slotted Tibial Shim helps maintain the 5 degree posterior slope during the resection.

Verifying the Tibial Cut

The excised plateau should show the classical lesion of anteromedial osteoarthritis, erosion of cartilage and bone in its mid and anterior parts and preserved cartilage posteriorly. Osteophytes around the edge of the plateau remain attached after its removal. If this pattern is not observed, re-assess the status of the ACL. The excised plateau can be examined to check if the desired posterior slope has been achieved.

Flexion Gap Evaluation

Remove all retractors. Flex the knee to 90 degrees and check the flexion gap using the 7mm Flexion/ Extension Gap Spacer (Figure 3.10). If the flexion gap is tight, use caution before consideration of additional tibial resection. Evaluate the slope to ensure lack of slope is not contributing to a tight flexion gap.

Extension Gap Evaluation

Place the knee in extension and assess the extension gap with the 9mm Flexion/Extension Gap Spacer. The extension gap can be filled 1 or 2 mm distally with use of a Femoral Shim. If extension laxity exists relative to flexion, use a Flexion/Extension Gap Spacer in extension to get an idea of which Femoral Defect Shim should be used. At this stage the tibial implant thickness, extension gap, stability of the collateral ligaments, limb alignment and ability to achieve full extension can be verified.

Prior to completing femoral resections, a minimum of 7 mm of joint space is needed in flexion and 9 mm of joint space is needed in extension for successful implantation. If joint laxity is less than 9 mm in extension and 7 mm in flexion, additional resection will be necessary by using the 1mm (or 2mm) Tibial Resector Base. If both the flexion and extension gaps are loose, a thicker tibial component should be used.

If the extension gap is tight in extension and the flexion gap is ok, or the flexion gap is loose in and the extension gap is ok, additional resection will be necessary by using the 1mm (or 2mm) Tibial Resector Base.

Note: Use caution to avoid raising the joint line.

IV Distal Femoral Condyle Resection

The AUSK Unicompartmental Knee System has been designed for 5°of posterior tibial slope. The handle of the Distal Femoral Resection Guide is angled 5° relative to the bottom of the Distal Femoral Resection Guide. This ensures that the distal femoral resection is made perpendicular to the mechanical axis of the femur.

Use shims in the following scenarios where appropriate with the Distal Femoral Resection Guide.

Femoral Shims (1 mm or 2 mm): If excessive extension laxity exists relative to flexion. Use of these Femoral Shims will effectively under-resect the distal femur (removing less bone than is replaced by component thickness), tightening the extension gap in cases where distal femoral loss has occurred.

Tibial Shims (9 mm, 10 mm, 11 mm, 12 mm, 13 mm, 14 mm): Add the appropriate Tibial Shim to the

tibial side of the Distal Femoral Resection Guide. For example, if joint laxity were 9 mm in extension and 7 mm in flexion, the 9mm Tibial Shim can be added to the tibial side of the Distal Femoral Resection Guide (Figure 4.1). For ease of insertion, attach the Adaptor Handle to the anterior attachment of the Distal Femoral Resection Guide. Fully extend the knee, and insert the appropriate Distal Femoral Resection Guide into the joint space until the anterior stop contacts the anterior tibia (Fig. 4.2).

Technique tip: The Distal Femoral Resection Guide must be fully inserted and sit flat on the resected tibial surface to ensure that the proper amount of femoral bone will be resected.

Fig. 4.1

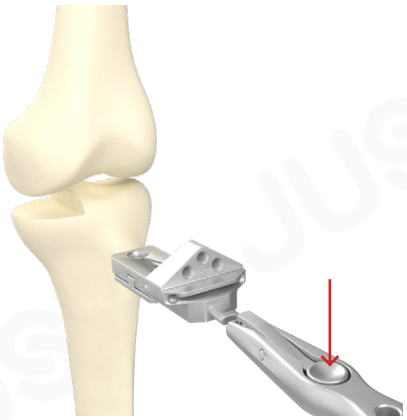


Fig. 4.2

Insert a 33mm hex head screws into the lateral angled hole in the Distal Femoral Resection Guide (Fig. 4.3), confirming the good position of the cutting block to the distal femur and proximal tibia.
With the leg in full extension, assemble the Spacer Block Alignment Tower and extramedullary Align Rod into the slot of the Distal Femoral Resection Guide to check local alignment, both varus/valgus and flexion/extension. To achieve proper femoral component position in the sagittal plane, flex the tibia until the Alignment Rod is parallel to the intramedullary axis of the femur (Fig. 4.4). Insert a 33mm hex head screws into the medial angled hole in the Distal Femoral Resection Guide. (Fig. 4.5)

Fig. 4.4

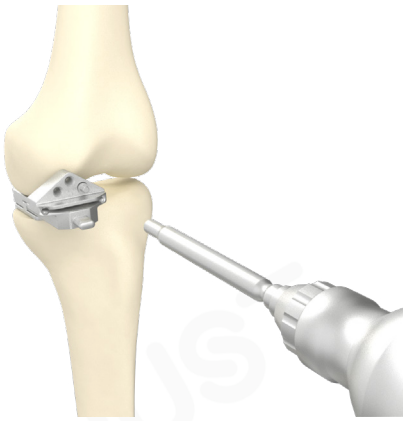


Fig. 4.3

Fig. 4.5

Insert the Retractor, and ensure this retractor is between the saw and the MCL. Resect the distal femoral bone using a saw blade. Do not extend the Sawblade posteriorly past the distal femur to avoid damaging the posterior popliteal area.

Technique tip 1: Without any Femoral Shims in place, the Distal Femoral Resection Guide will resect 6.5mm, the same thickness as the distal portion of the implant. Lack of distal femoral cartilage loss is rare medially but common laterally.

Technique tip 2: Before flexing the knee, remove the Distal Femoral Resection Guide.

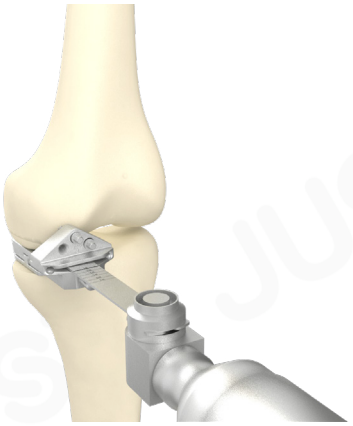


Fig. 4.6

Fig. 5.1

V Confirming the Flexion and Extension Gaps

To assess the flexion and extension gaps, Flexion/Extension Gap Spacers are available that correspond to the 9mm, 10mm, 11mm, 12mm, 12mm and 14mm tibial articular surface thicknesses. The thick end of each spacer duplicates the combined thickness of the corresponding tibial and femoral components in extension. The thin end of each spacer simulates the thickness of the tibial component iniflexion.

Check the extension gap by inserting the thick end of the 8mm Flexion/Extension Gap Spacer into the joint (Fig. 5.1). It may be helpful to flex the knee slightly (5°- 10°) when checking the extension gap to avoid a false sense of tightness.

Remove the Flexion/Extension Gap Spacer and flex the knee. Check the flexion gap by inserting the thin end of the selected Flexion/Extension Gap Spacer into the joint (Fig. 5.2).

If, in both flexion and extension, the joint space is too tight to insert the 9mm Flexion/Extension Gap Spacer, then more bone must be removed. Once the recut has been completed, use the Flexion/Extension Gap Spacers to check the gaps.

If, in both flexion and extension, the joint space is too loose, insert progressively thicker Flexion/ Extension Gap Spacers and repeat the gap checking.

If tight in extension and acceptable in flexion, two options may be pursued:

1. Recut the proximal tibia with less tibial slope;
2. Recut 1mm-2mm of distal femoral condyle.

After any adjustment of the flexion and/or extension gap is made, use the Flexion/Extension Gap Spacers to recheck the gaps. Verifying the gaps at this stage of the procedure will reduce the likelihood of a gap imbalance during the trial reduction.

Fig. 5.2

VI Size the Femur

There are six sizes of femoral implants and corresponding sizes of Femoral Sizer/Finishing Guides. The outside contour of the Femoral Sizer/Finishing Guides matches the contour of the corresponding implant.

Femoral Posterior Shim (7 mm, 8 mm, 9 mm or 10 mm): Add the appropriate Femoral Posterior Shim to the tibial side of the Femoral Sizer/Finishing Guide to stabilize the Guide on the posterior condyle (Figure 27).

Femoral Posterior Shim(1# ~ 3#、4# ~ 6#): Use the Femoral Posterior Shim on Femoral Sizer/Finishing Guide if the posterior condyle is worn.

For example, if joint laxity were 9 mm in extension, and 7 mm in flexion, the 7mm Femoral Posterior Shim can be add to the tibial side of the Femoral Sizer/Finishing Guides (Figure 6.1).

Fig. 6.1

For ease of insertion, attach the Adaptor Handle to the anterior attachment of the Femoral Sizer/Finishing Guide. Place the leg in 100 degrees of flexion, and Insert the foot of the guide into the joint and rest the flat surface against the cut distal condyle. Pull the foot of the guide anteriorly until it contacts the cartilage/bone of the posterior condyle. There should be 2mm-3mm of exposed bone above the anterior edge of the guide. Repeat with additional guides until the proper size is selected (Fig. 6.2). If the condyle appears to be between two sizes, choose the smaller size. This helps prevent the patella from impinging on the prosthesis.

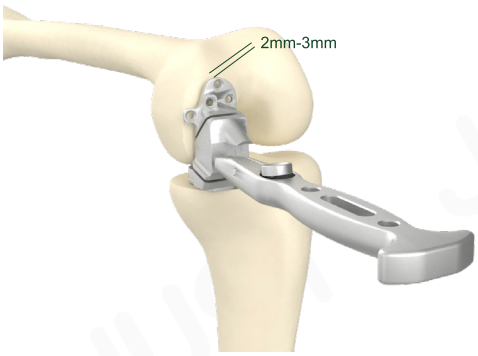


Fig. 6.2

Note: Be sure that there is no soft tissue or remaining osteophytes between the Femoral Sizer/Finishing Guide and the cut distal condyle. The Femoral Sizer/Finishing Guide must sit flush against the bone. Any gaps between the guide and the bone will compromise the accuracy of the cuts, and, subsequently, the component fit may be compromised. Do not allow the patella to cause improper alignment of the guide. The patella may move the finishing guide laterally in a lateral UKA.

VII Finish the Femur

Fig. 7.1

The following order is recommended to maximize the stability and fixation of the Femoral Sizer/Finishing Guide. This will help ensure that the cuts and holes are precise.

1. With the proper size Femoral Sizer/Finishing Guide in position, insert a 33mm screw into the top pin hole. Make sure there is exposed bone on both sides of the guide to ensure that the Femoral Sizer/Finishing Guide does not overhang.

2. Insert one 33mmscrew into the pin hole closest to the intercondylar notch, which is parallel to the chamfer cut (Fig. 7.1). For best fixation, seat the screw head slowly. This should stabilize the guide sufficiently to finish the femur. For knees that do not achieve adequate fixation with the two Screws, additional Screws can be placed into the pinhole farthest away from the patella.

3. Insert the Femoral Drill into the anterior post hole, and orient it to the proper angle (Fig. 7.2). Do not attempt to insert or align the drill bit while the drill is in motion. When the proper alignment is achieved, drill the anterior post hole and, if necessary, insert a Femoral Holding Peg for additional stability.

4. Drill the posterior post hole in the same manner. This hole is angled the same as the anterior post hole (Fig. 7.3).

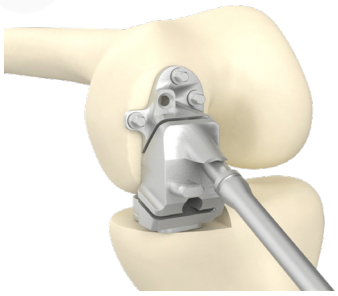


Fig. 7.2

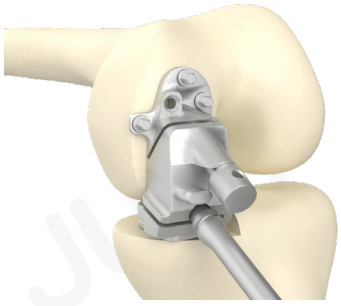


Fig. 7.3

5. Hold the anterior Femoral Holding Peg and cut the posterior chamfer through the cutting slot in the guide. The remaining island of bone can then be resected after removing the Femoral Sizer/ Finishing Guide. (Fig. 7.4).

6. Remove the anterior Femoral Holding Peg and cut the posterior condyle through the cutting slot in the guide
(Fig. 7.5).

7. Remove the screws/pins and the Femoral Sizer/Finishing Guide and finish any incomplete bone cuts.

8. Ensure that all surfaces are flat. Remove any prominences or uncut bone. Debride the joint

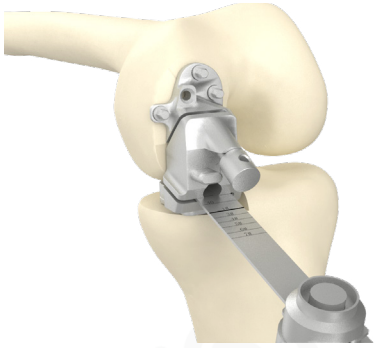


Fig. 7.4

and inspect the posterior condyle. If any prominent spurs or osteophytes are present, especially in the area of the superior posterior femoral condyle, remove them with an oscillating saw or an osteotome, as they could inhibit flexion or extension (Fig. 33).

Technique Tip: The Femoral Provisional may be put in place and the knee flexed. This would aid in identifying and removing any residual posterior condylar bone which could limit flexion.

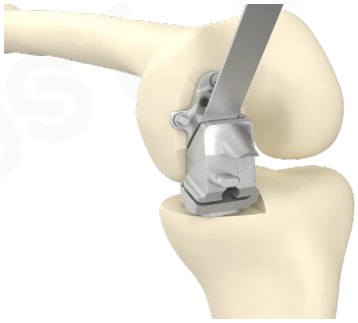


Fig. 7.5

VIII Size the Tibia

Resect the remaining meniscus and remove any osteophytes, especially those interfering with the collateral ligament. Place the Tibial Sizer on the resected tibia surface. The hook will reference the posterior cortex of the tibia and pull forward.

Place the head of the Tibial Sizer on the cut surface of the tibia with the straight edge against the surface created by the sagittal cut. Read tibia size with no overhang via reference marks on the Tibial Sizers. The appropriate size will be the largest available size with no overhang (Figure 8.1). Select the Tibial Sizer that best covers the resected proximal tibia in both the A/P and M/L dimensions. If desired, use the resected tibial bone fragment as an aid in sizing.

Technique tip 1: If desired, use the resected tibial bone fragment as an aid in sizing.

Technique tip 2: Tibial Sizers feature notches along the periphery to indicate the next smaller size and a notch on the handle to indicate the next larger size. If necessary, a second sagittal cut can be made to allow for optimal coverage with the next larger size tibial base plate.

Technique tip 3: To facilitate insertion of the Tibial Sizer Provisional, externally rotate the tibia while the knee is flexed.

Use the Tibial Osteotome(or Bone Curet) to gently remove the bone from the keel slot (Figure 8.3). Do not impact forcefully as this can cause a break of the posterior tibia. Ensure the correct osteotome is used to create the keel slot. Remove the Tibial Sizer. Then remove all soft tissue debris from the popliteal region.

Technique tip: In sclerotic bone, use a reciprocating saw to prepare the keel in advance. Use caution not to cut too deep as the tibial component keel has a maximum depth of 7 mm.

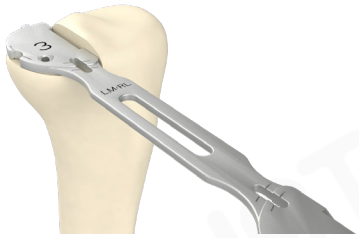


Fig. 8.1

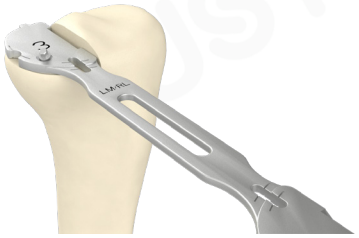


Fig. 8.2

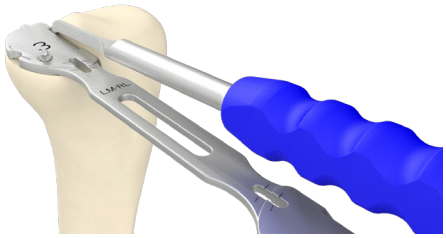


Fig. 8.3

IX Finish the Tibia

For ease of insertion, attach the Adaptor Handle to the anterior attachment of the corresponding size Tibial Template. Place the Tibial Template Provisional onto the cut surface of the tibia so the central fin engages the bone and the provisional sits flush on the tibial surface (Fig. 9.1).
Insert a 20mm screw into the anterior fixation hole (Fig. 9.2).
Use the Tibial Drill to drill the two tibial peg holes (Fig. 9.3).
Note that these holes are angled 20° posteriorly to facilitate drilling. Although the pegs on the implant are at 90,° the drill is designed so that the pegs will fit into these angled holes.
Leave the Tibial Template Provisional in place on the bone for trial reduction.

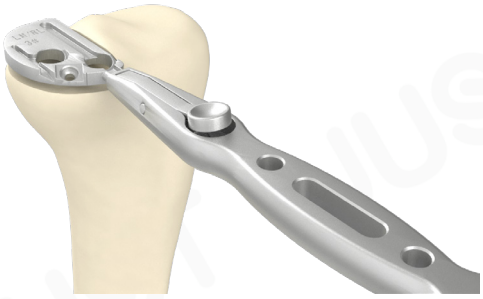


Fig. 9.1

Fig. 9.2

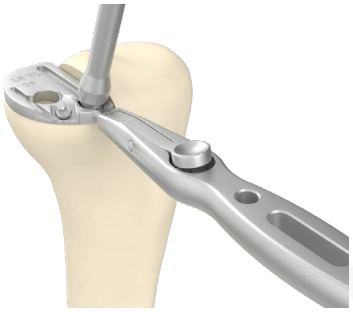


Fig. 9.3

X Perform Trial Reduction

Joint tension and component alignment are assessed and finalized at this step.
Remove the IM Patellar Retractor. With all bone surfaces prepared, perform a trial reduction with the appropriate size Femoral Trial, Tibial Template, and Tibial Bearing Trial. Insert the prongs on the Insertion Handle into the corresponding holes on the Femoral Trial (Fig. 10.1). Thread the handle into the provisional and tighten it securely.
To help guide the Femoral Trial past the patella, place the leg in deep flexion to begin the insertion. Insert the long post first. hen, adjust the leg to a midflexion position, rotating the provisional around and in the back of the patella. Reposition the leg in deep flexion to complete the insertion. Impact the Femoral Trial onto the femur with the Mallet (Fig. 10.2).

Fig. 10.1

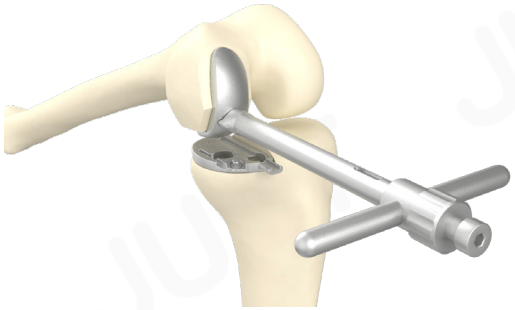


Fig. 10.2

Slide the rails on the bottom of the Tibial Bearing Trial into the grooves on the Tibial Template (Fig. 10.3). Check the fit of the provisional components. If necessary, perform minor trimming of bone surfaces. With all trial components in place, check for proper range of motion and ligament stability. The Tibial Bearing Trial used should permit full flexion and full extension. Overstuffing should be avoided, as this will transfer stress to the contralateral compartment. Evaluate soft tissue tension in flexion and extension. Use the 2mm end of the Tensor Gauge to help ensure that flexion and extension gaps are not too tight (Figs. 10.4, Figs. 10.5).

The correct thickness of the prosthesis produces the desired alignment and does not cause excessive stress on the collateral ligaments. As a rule, the correct prosthesis should allow the joint space to be opened approximately 2mm when stress is applied, with the knee in full extension and without soft tissue release. The knee must also be tested in 90°of flexion to allow a 2mm flexion gap. Excessive flexion tightness will prevent postoperative flexion and may cause the tibial prosthesis to lift anteriorly as the femoral component rolls posteriorly on the tibial component. If the joint is too tight in flexion, try using a thinner tibial articular surface component or increasing the posterior slope of the tibial resection.

Technique Tip: Use the 2mm end of the Tension Gauge to help balance the knee in both flexion and extension. With the knee flexed 90°, position the 2mm end of the Tension Gauge between the Femoral Trial and the Tibial Bearing Trial. This should be a snug, but not an overly tight fit. Then use the same test with the knee in full extension.

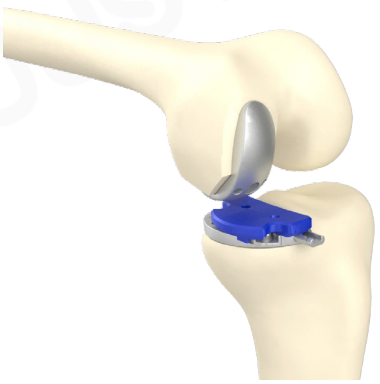


Fig. 10.3

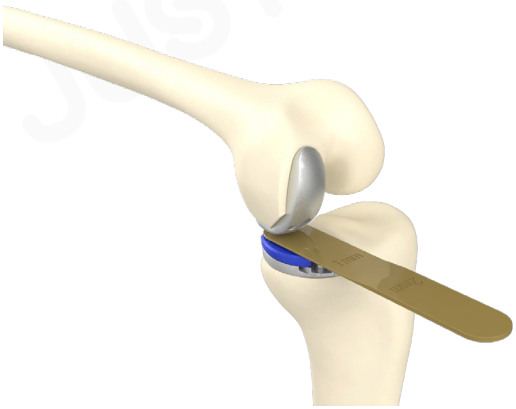


Fig. 10.4

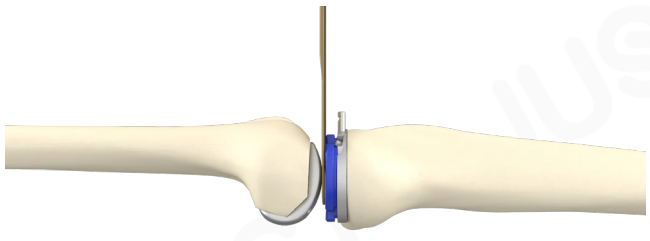


Fig. 10.5

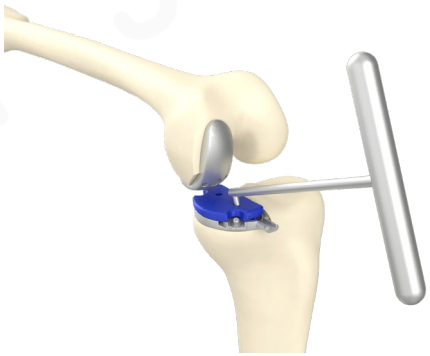


Fig. 10.6

Fig. 11.1

XI Implanting Final Components

Obtain the final components and implant the tibial component first.

Technique tip: With the modest amount of bone removed, particularly from the tibia, there may be a sclerotic cut surface. If the resected surfaces of the tibia and/or femur are sclerotic, drill multiple holes with the Step Drill to improve cement intrusion. (Fig. 11.1).

Tibial Component

To facilitate insertion, flex the knee and externally rotate the tibia. If desired, place an opened and slightly moist sterile gauze sponge behind the tibia before implanting the components to help collect excess cement behind the tibia. Apply cement and press the tibial base plate onto the tibia. Position and press down the posterior portion of the component first. Then press the anterior portion of the component, expressing excess cement anteriorly. Use the Tibial Impactor to impact the tibial base plate (Fig. 11.2).

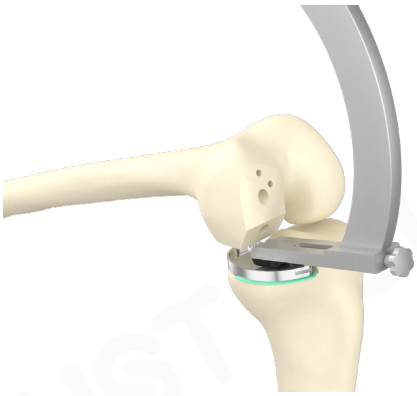


Fig. 11.2

Technique tip: Remove the sterile gauze sponge slowly from behind the joint, and use the Cement Removal Tool to remove any excess cement.

Femoral Component

Apply an even layer of cement on the femoral prosthesis, minimizing the amount applied posteriorly. Pressurize cement into the cut bone surface or with a stiff, flat surface with sufficient cement to pressurize cement into the femoral lug holes and any supplemental drill holes made in sclerotic bone. Begin the femoral component insertion with the leg in deep flexion. Insert the long post first. Adjust the leg to a midflexion position, rotating the implant around and in the back of the patella. Then reposition the leg in deep flexion and seat the component with the Femoral Impactor. Remove excess cement from the periphery of the component. (Fig. 11.3)

Tibial Bearing

After the cement has cured, remove any remaining excess cement before the final placement of the tibial bearing. Do not proceed with locking the final articular surface component until the cement has fully cured.

With the engraved side down, slide the edge of the polyethylene component under the posterior lip of the base plate. Then insert the tab on the lower jaw of the Tibial Bearing Locking Tool into the notch on the front of the tibial base plate. Bring the polyethylene tip on the upper jaw of the Tibial Bearing Locking Tool down until it contacts the articular surface implant. Squeeze the handles of the Tibial Bearing Locking Tool together until the articular surface implant snaps into place (Fig. 11.4).

Fig. 11.3

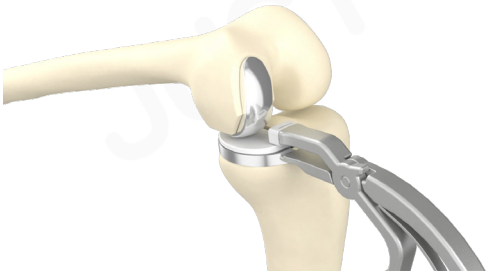
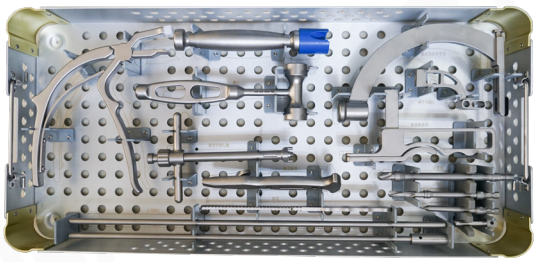


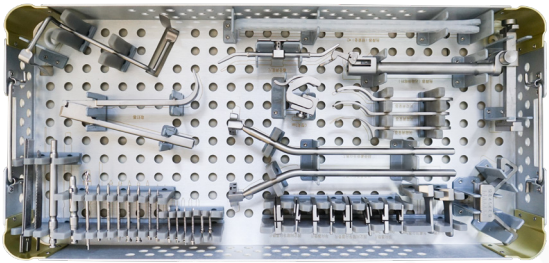
Fig. 11.4

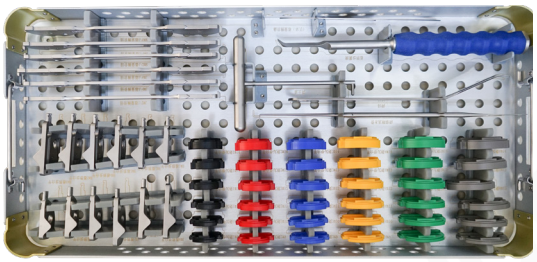
Closure

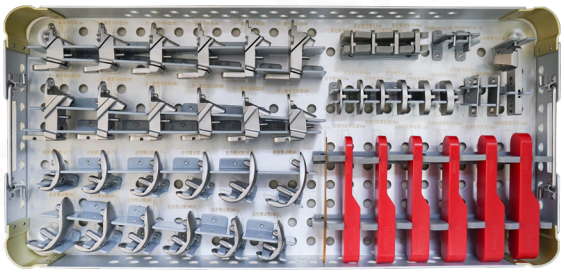
Irrigate the knee for the final time and close. Cover the incision with a sterile dressing and wrap the leg with an elastic bandage from the toes to the groin.

Instruments









Tibial Instruments

Femoral Instruments

JUST MEDICAL DEVICE(TIANJIN)CO.,LTD

Add: No.27, Ziyang Road, Nankai District, Tianjin, China
Tel：+86 22 2339 9501　　Web：www.just-ortho. com
Mobile：+86 178 2201 3519 (Whatsapp)
E-mail：sales@justmedical.cn　Version：202408-01