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Orthopaedics

Triathlon® Knee System

Anterior Referencing Surgical Protocol

Triathlon Knee System

Anterior Referencing Surgical Protocol

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Acknowledgments

Stryker Orthopaedics wishes to thank Dr. Steven F. Harwin, principal contributor, for his extensive help in the writing of the A/R Surgical Protocol.

Stryker Orthopaedics also wishes to thank the following orthopaedic surgeons for their expertise and guidance in the development of the Triathlon A/R instrumentation and for editing and reviewing the A/R Surgical Protocol.

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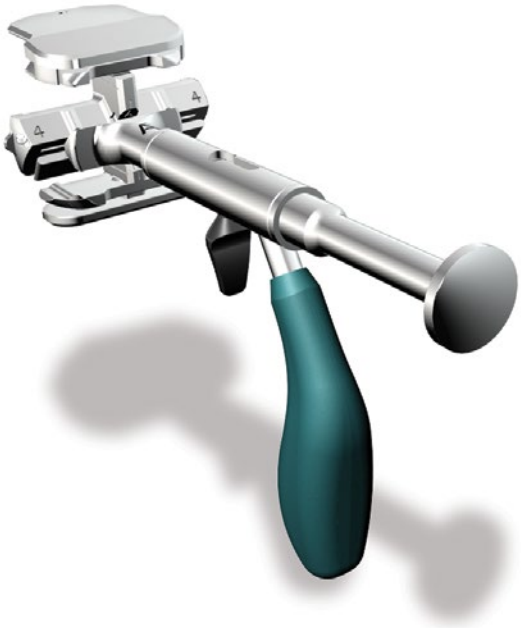

Assembly Instructions

The Triathlon Knee System Instrumentation features mechanisms that provide surgeons and OR Staff a more simplified and efficient surgical experience. Assembly instructions are included in the first section of this surgical technique to assist with instruments that may be pre-assembled on the back table, as well as other instruments that need to be assembled. All of the actuating mechanisms that allow instruments to be adjusted and/or assembled have been color-coded. Those that correspond to femoral preparation are black, those for tibial preparation are bronze and those for patella preparation are gold.

Black **Bronze** **Gold**

Note: Any instrument that has been dropped should be returned to Stryker for evaluation prior to further use.

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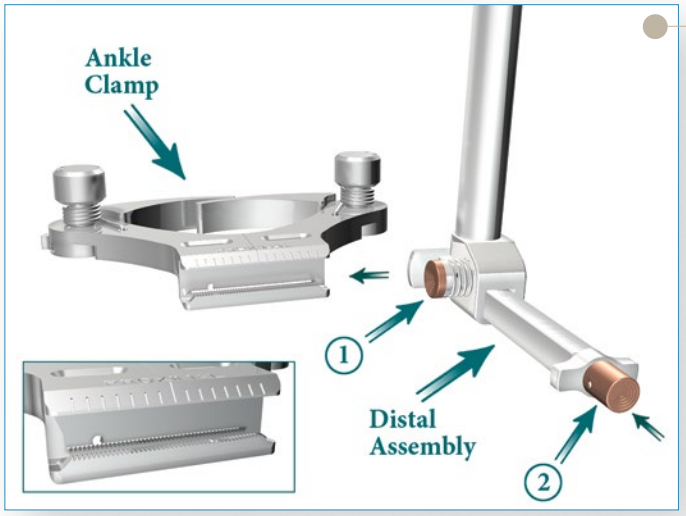
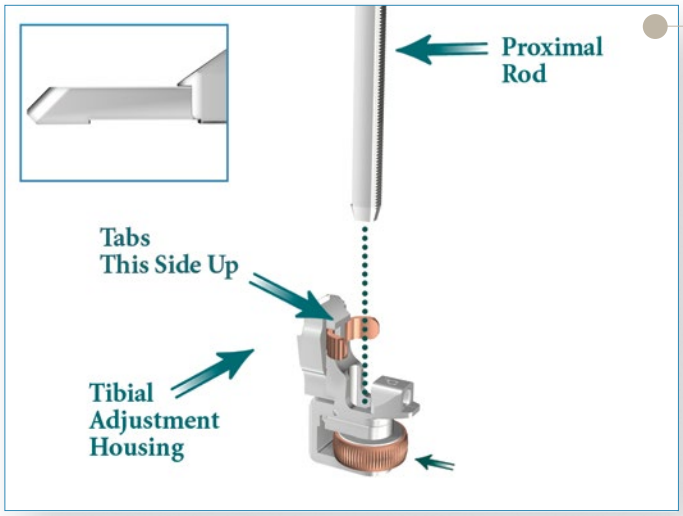


Assembly 1A

Tibial Alignment Ankle Clamp EM, Tibial Alignment Distal Assembly EM, MIS Proximal Rod EM, Tibial Stylus, MIS Tibial Resection Guide, and Tibial Adjustment Housing Assembly:

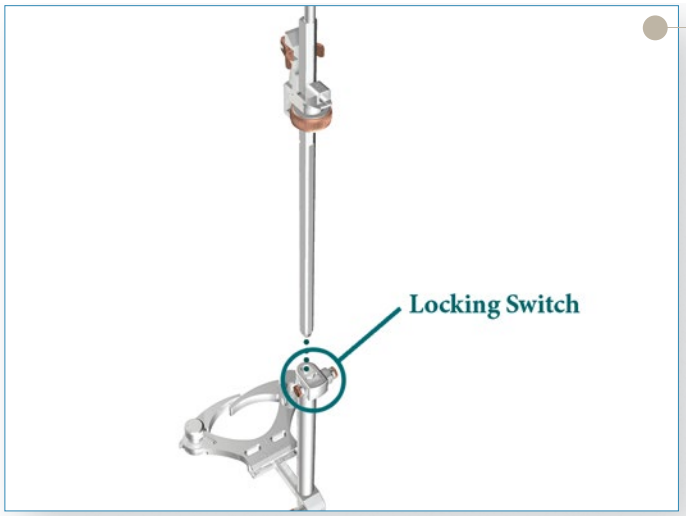
- Press the bronze button (1) and advance the Distal Assembly arm forward approximately halfway.
- Press the bronze button (2) on the Distal Assembly; put the arm into the grooves on the Ankle Clamp. Ensure that the side of the Ankle Clamp reading "proximal" is visible from above.



Assembly 1B

- Press the bronze wheel on the inferior portion of the Tibial Adjustment Housing with your thumb and insert the Proximal Rod from the superior side.
- With the bronze wheel depressed, slide the Tibial Adjustment Housing up to approximately 5cm from the arm of the Proximal Rod.
- Release the bronze wheel to engage the teeth of the Proximal Rod and lock the Adjustment Housing in place.

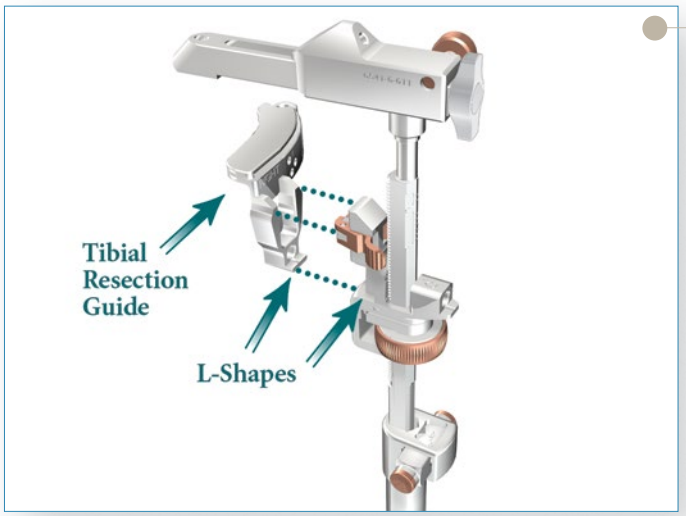
Note: The Tibial Adjustment Housing is available in 0 degree slope (posterior stabilized) and 3 degree slope (cruciate retaining).



Assembly 1C

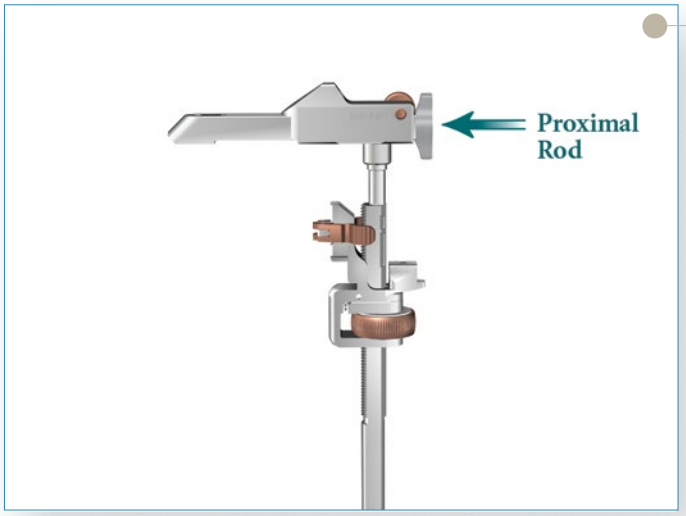
- Ensure that the bronze slide lock on the superior portion of the Distal Assembly is in the unlocked position prior to insertion of the Proximal Rod and Tibial Adjustment Housing assembly.
- Insert the Proximal Rod and Tibial Adjustment Housing assembly into the hole on the superior portion of the Distal Assembly.

Note: Ensure the Proximal Rod arm extends in the same direction as the assembled Ankle Clamp.



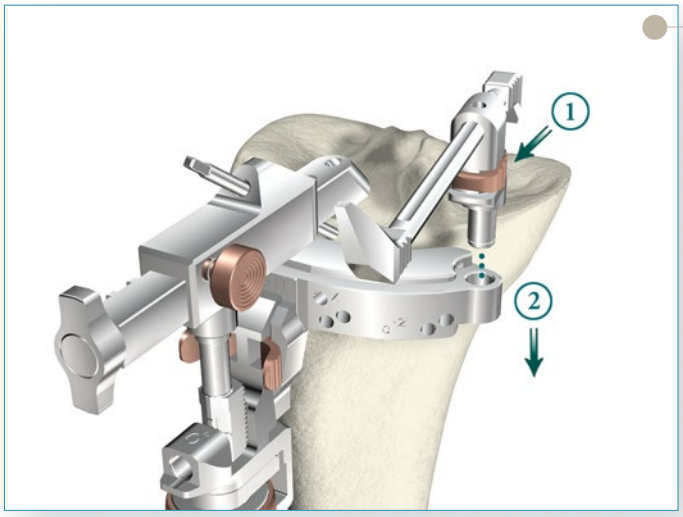
Assembly 1D

- Squeeze the bronze tabs on the Tibial Adjustment Housing and assemble the MIS Captured, MIS Uncaptured, or Standard Uncaptured Tibial Resection Guide with the resection surface facing up.
- Release the bronze tabs and ensure that the Tibial Resection Guide is locked in place.



Assembly 1E

- The MIS Proximal Rod has a retractable tibial plateau referencing arm. Ensure that the arm position is fully extended; to extend or retract the fixation arm, depress the bronze button on the left side of the MIS Proximal Rod and slide the fixation arm.



Assembly 1F

- Squeeze the bronze swing trigger on the Tibial Stylus and insert the post into either the medial or lateral hole located on the resection plane of the Tibial Resection Guide.
- Release the bronze swing trigger to lock the Tibial Stylus in place.

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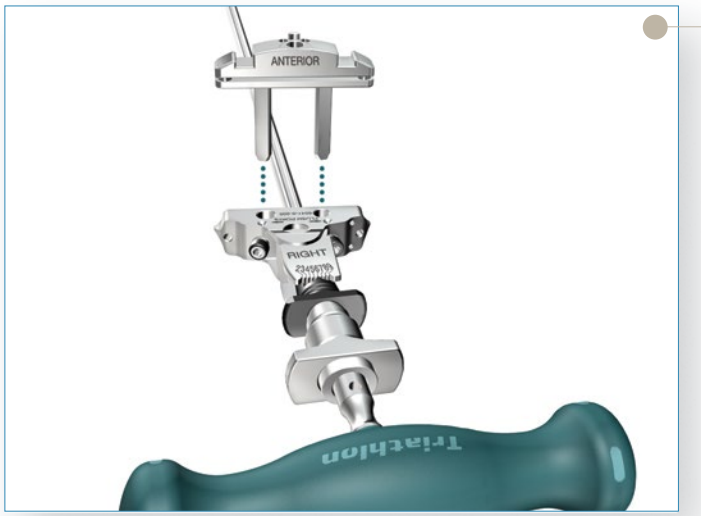
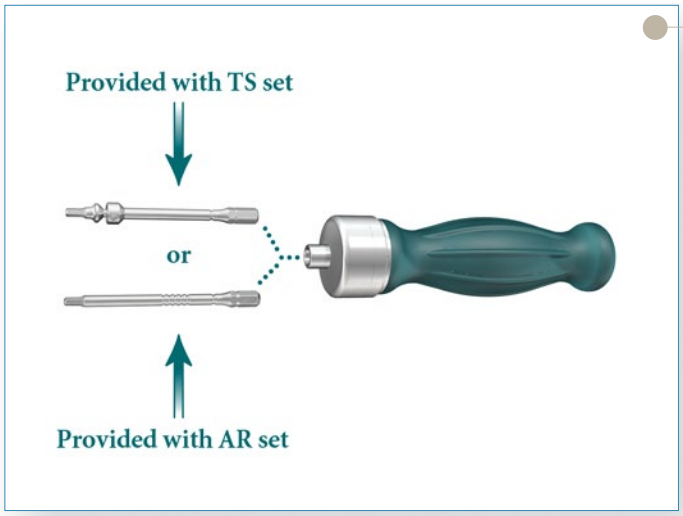


Assembly 2

MIS Femoral Alignment Guide and Anterior Skim Cut Guide Assembly:

- Orient the MIS Femoral Alignment Guide such that the TKR being performed "Right" or "Left" faces anteriorly.
- Insert the Anterior Skim Cut Guide into the two anterior holes on the MIS Femoral Alignment Guide with the label "THIS SIDE TOWARDS BONE" appropriately positioned.



Assembly 3

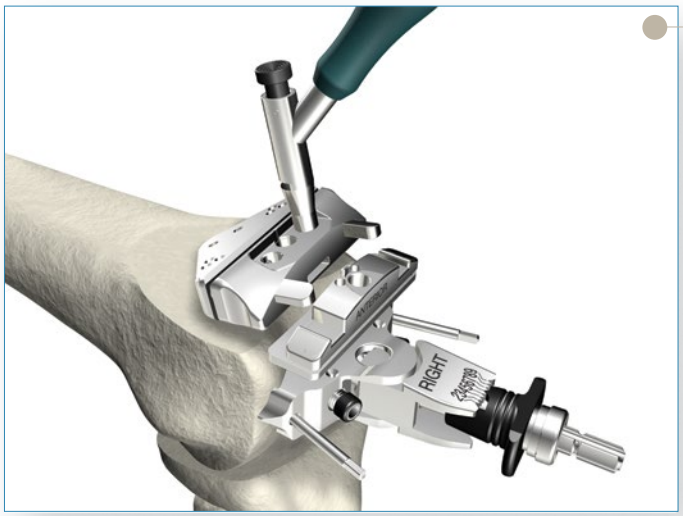
1/8" Hex Driver Assembly:

- Snap the 1/8" Hex Drive into the Slip Torque Handle

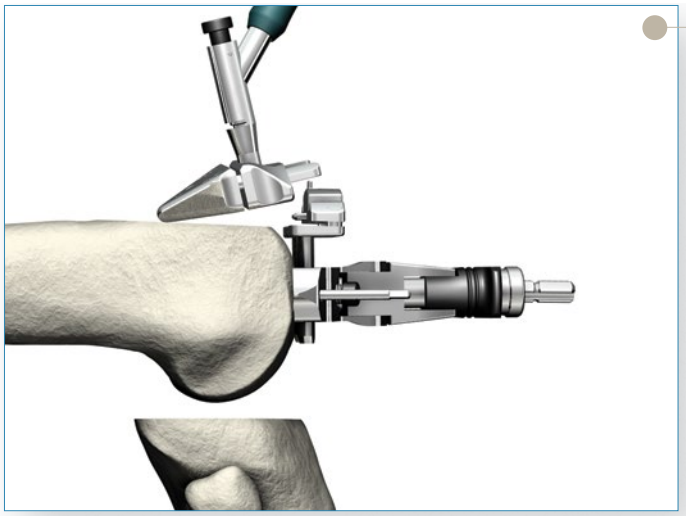
Assembly 4

3 Degree Posterior Condylar Reference Guide Assembly:

- Slide the 3 Degree Posterior Condylar Reference Guide hooks over the set screws.



Assembly 5A

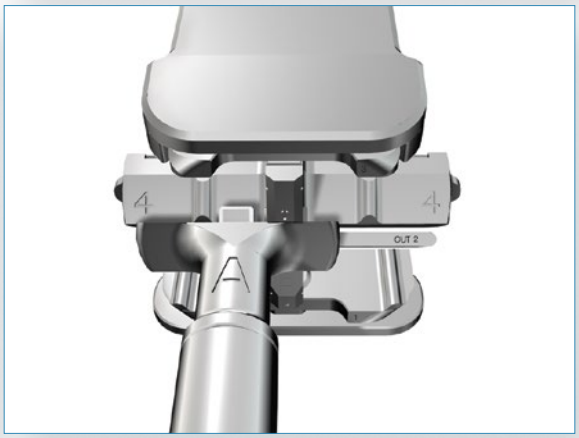
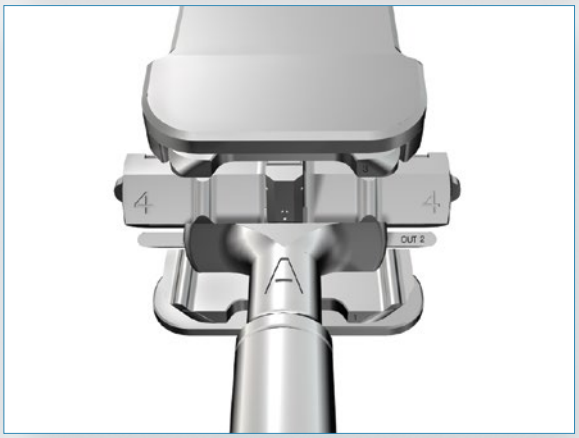
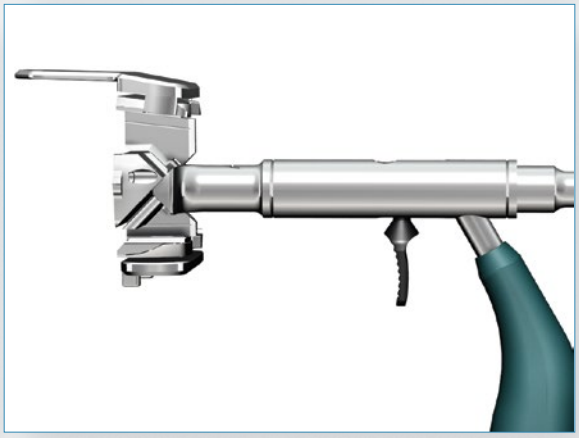
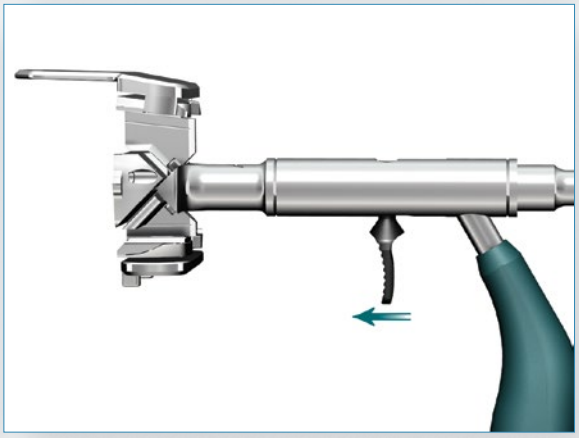


Assembly 5B

MIS Distal Resection Guide Assembly:

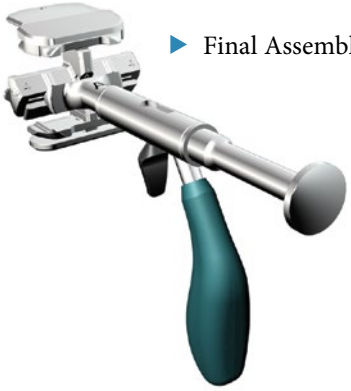
- Select the 8mm or 10mm MIS Distal Resection Guide
- Assemble the Triathlon Modular Handle to the selected distal resection guide by depressing the black button on the modular handle and inserting the tip into the medial or lateral hole on the top of the distal resection guide.
- Release the black button and rotate the handle 20 degrees away from center to lock.
- Align the oval hole on the Distal Resection Guide with the tab on the superior face of the Anterior Skim Cut Guide.
- Slide the Distal Resection Guide towards the Skim Cut Guide to insert the tab into the oval hole.
- These guides are magnetized to facilitate correct assembly. This will be done intra-operatively by resting the Distal Resection Guide on the cut surface of the anterior femur and then sliding it into place, connecting it to the Anterior Skim Cut Guide.

4:1 Block Assembly:

	Step 1: Align and Insert	Step 2: Slide and Lock
Top View		
Side View		

- Align the Impactor / Extractor about 5mm to the left or right of the AR 4:1 Block central spine.

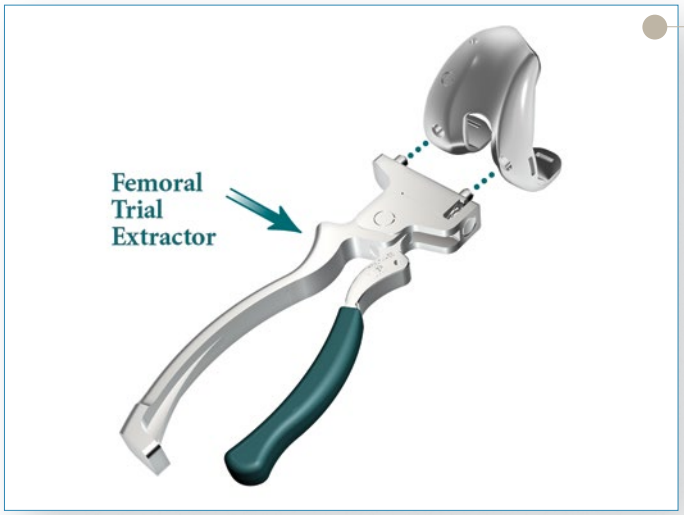
- Maintaining forward pressure, release the trigger and slide the 4:1 Impactor/Extractor handle to the center. A click indicates a successful lock.



- Final Assembly

- To disengage the 4:1 Impactor/ Extractor from the Cutting Block, reverse the above steps.

Assembly 6



Assembly 7A

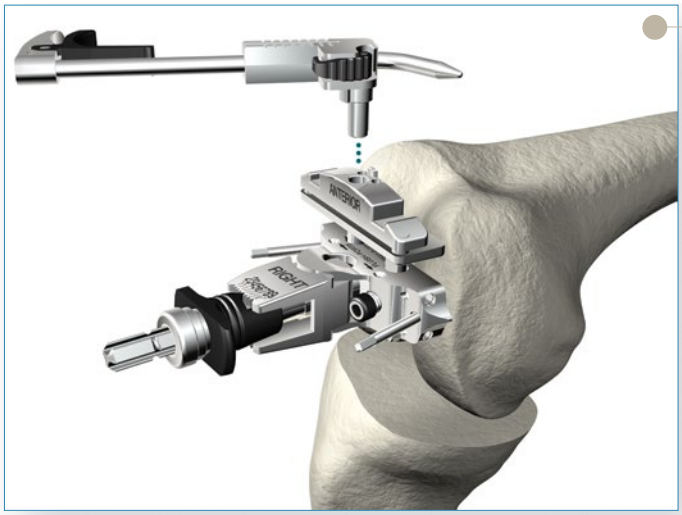
MIS Femoral Trial Extractor and Femoral Trial, PS Box Guide, or AR 4-in-1 Cutting Guide:

Orient the non-rubber coated side of the MIS Femoral Trial Extractor towards the patella.

- Without squeezing the handle, insert the posts firmly into the lugholes of the femoral trial, PS box guide.

Assembly 7B

- Squeeze the handle of the MIS Femoral Trial Extractor to hold securely. Releasing the handle will release the coupled instrument.
- Final assembly with Femoral Trial.
- Assembly with PS Box Guide is performed similarly (inset).

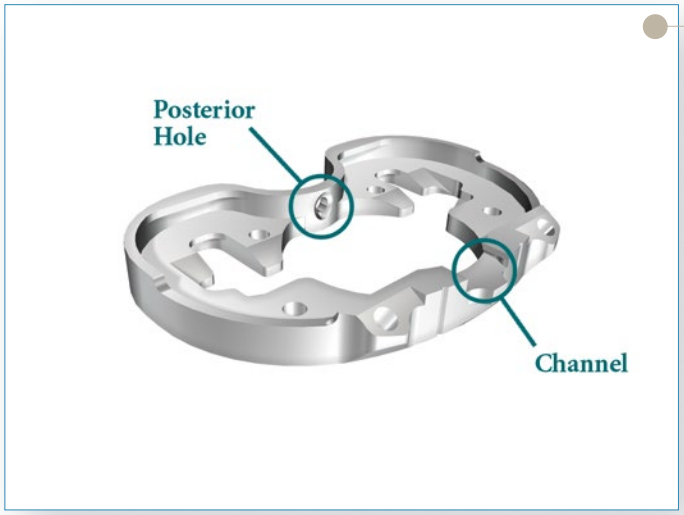


Assembly 8

Skim Cut Stylus Assembly:

- Squeeze the smaller black swing trigger on the body of the Femoral Stylus.
- Insert the Femoral Stylus into the hole on the top surface of the Anterior Skim Cut Guide.

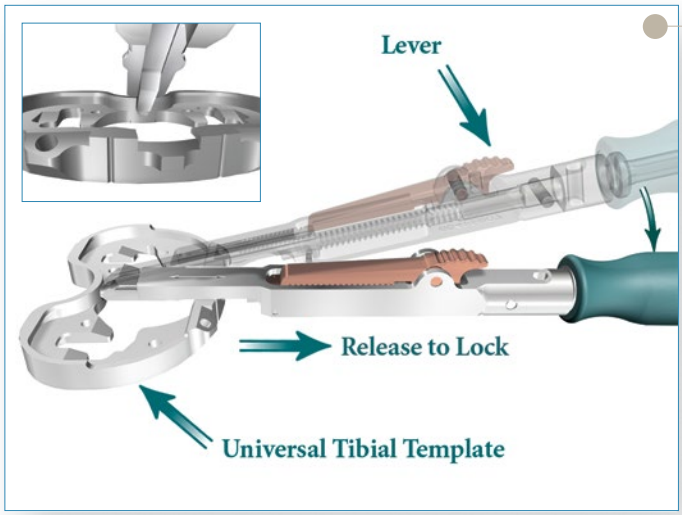
Note: As a safety measure, the stylus will fully engage only when the skim cut guide is properly oriented and the tip of the stylus is facing towards bone.



Assembly 9A

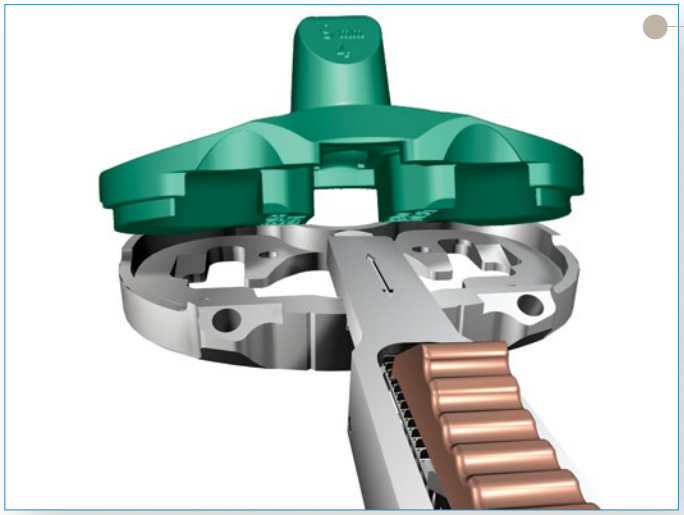
Tibial Template, Alignment Handle and PS or CR Tibial Insert Trial Assembly:

- Posterior hole and Channel of Universal Tibial Template.



Assembly 9B

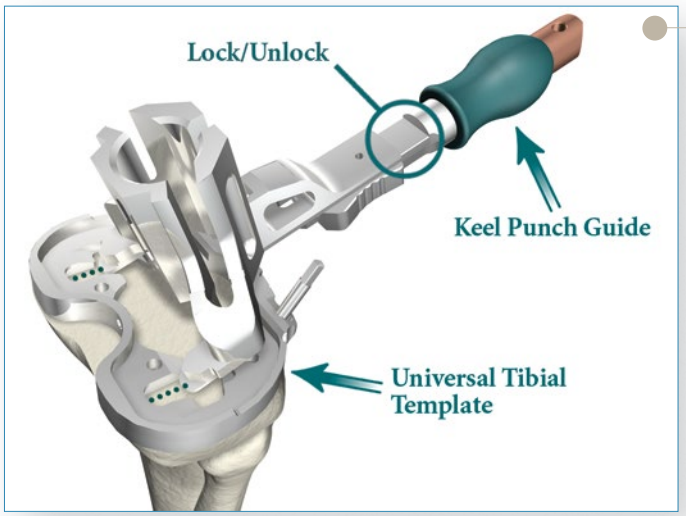
- Press the back of the bronze lever on the Alignment Handle to disengage the pawl. With the handle at a slight angle to the top surface of the template, insert the spring-loaded tip of the Alignment Handle into the central posterior hole of the Universal Tibial Template.
- Compress the spring-loaded tip by pushing it forward and lower the Alignment Handle into the channel on the anterior portion of the Universal Tibial Template. Release the spring tension and allow the Alignment Handle to engage the Universal Tibial Template channel tabs.



Assembly 9C

- The Tibial Insert Trial can be assembled with the Tibial Alignment Handle in place. Insert the posterior catches into the tray's posterior undercuts at a slight angle. Lower the trial until it seats firmly.

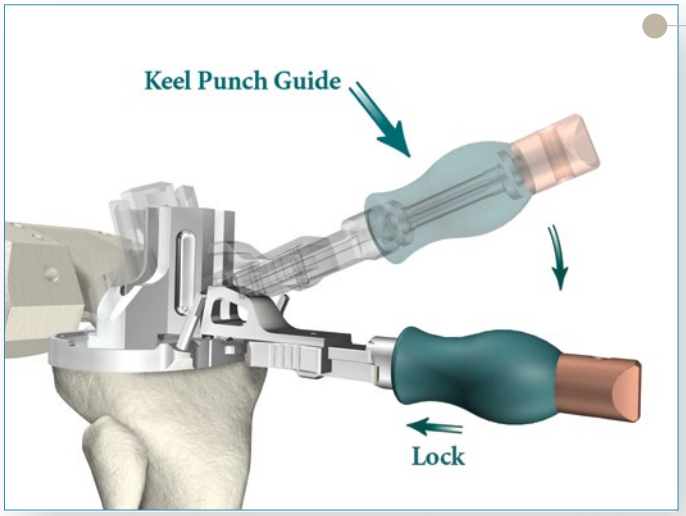
Note: The insert trial does not lock into place.



Assembly 10A

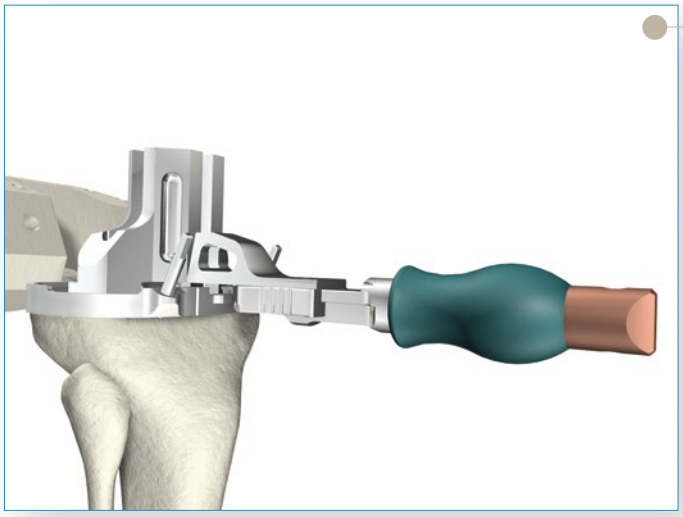
Universal Tibial Template and Keel Punch Guide Assembly:

- Ensure that the handle of the Keel Punch Guide is unlocked – pull back on the handle to unlock.
- Assemble the Keel Punch Guide to the Universal Tibial Template by inserting the Keel Punch Guide, at a slight angle to the Universal Tibial Template, into the two locating slots towards the posterior portion of the Universal Tibial Template.



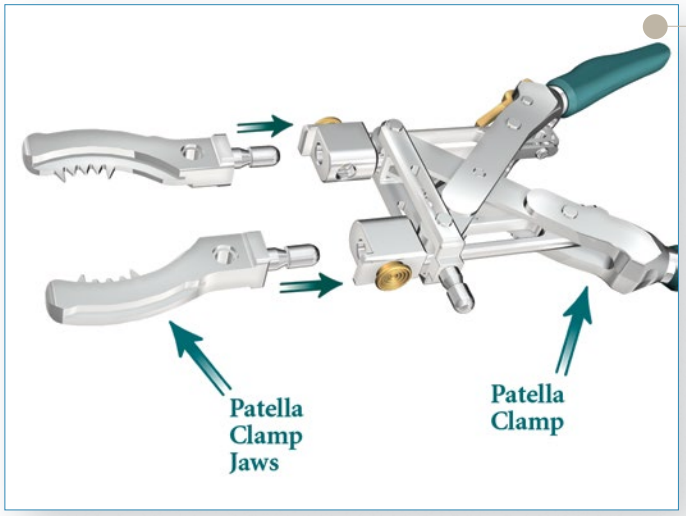
Assembly 10B

- Rotate the Keel Punch Guide down to sit flat on the Universal Tibial Template and push forward on the handle of the Keel Punch Guide to lock it to the Universal Tibial Template. Ensure that the Keel Punch Guide is seated flat on the Universal Tibial Template prior to locking.



Assembly 10C

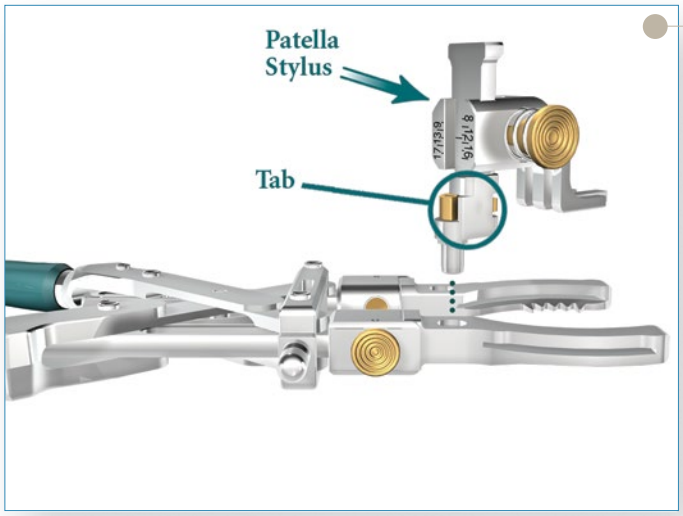
- Final Assembly



Assembly 11A

Patella Clamp, Patella Stylus and Patella Clamp Jaws Assembly (this may also be used to assemble the Patella Clamp Base, Patella Drill Template and Patella Cement Cap to the Patella Clamp):

- Snap the Patella Clamp Jaws into the holes on the Patella Clamp.



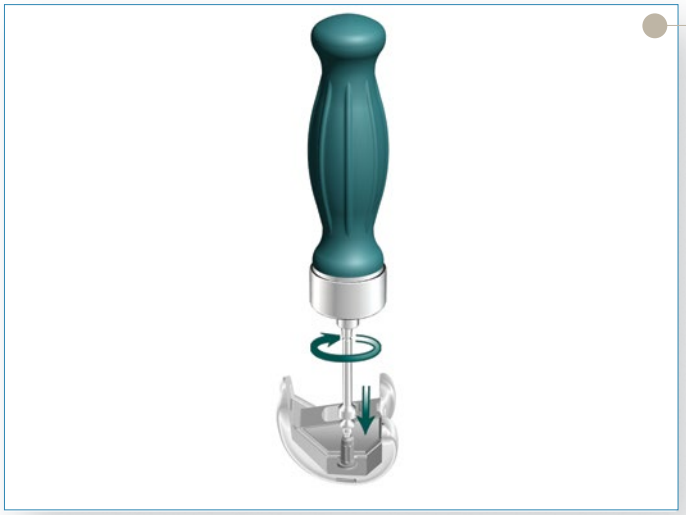
Assembly 11B

- Squeeze the gold tab on the Patella Stylus and insert the post into the hole on either jaw. Use the holes on the top surface of the jaws if using the bone removing method or on the bottom surface if using the bone remaining method.
- The top surface has circular holes, which allow the stylus to rotate, and the bottom surface has hex shaped holes fixing the stylus in the center of the patella.
- Release the gold tab to lock the Patella Stylus in place.

Assembly 12

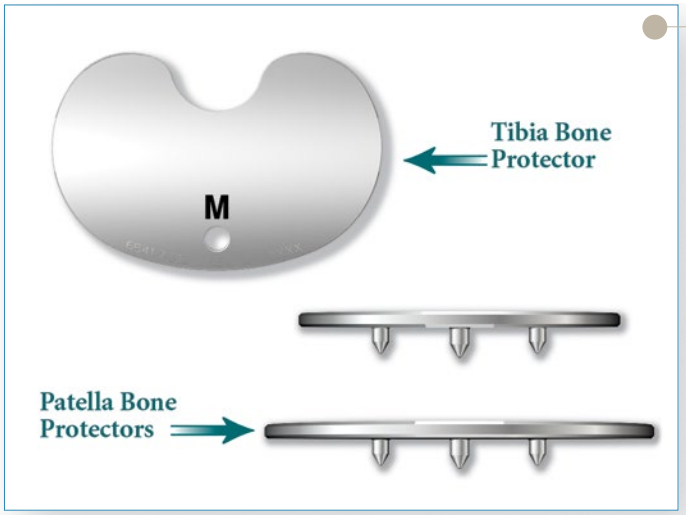
MIS Femoral Flexion Impactor:

- Connect the MIS Femoral Flexion Impactor to the Impaction Handle.
- The MIS Femoral Flexion Impactor is placed in the intertrochlear groove of the femoral implant and used to begin impaction of the implant onto the distal femur.



Assembly 13

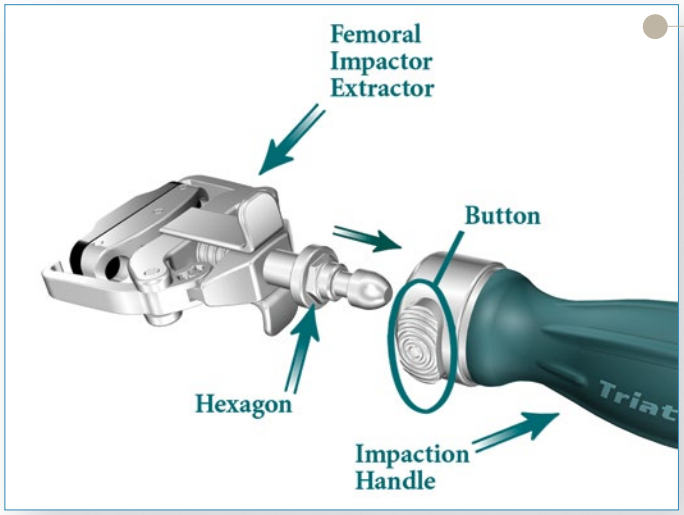
- Insert the tip of the 1/8" Hex Drive into the Modular Femoral Distal Fixation Peg and turn the Slip Torque Handle to tighten.



Assembly 14

Patella and Tibia Protector Plate (optional):

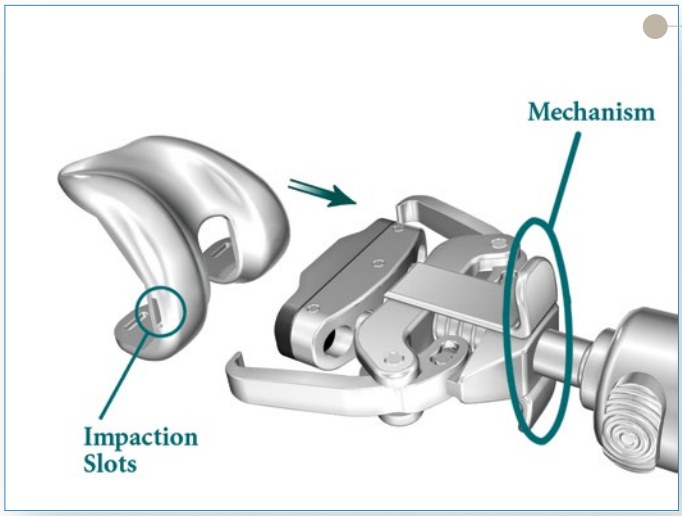
- The intended use of the patella and tibia protector plates are to protect trabecular bone on the cut surface of the patella and tibia after osteotomies are made.



Assembly 15A

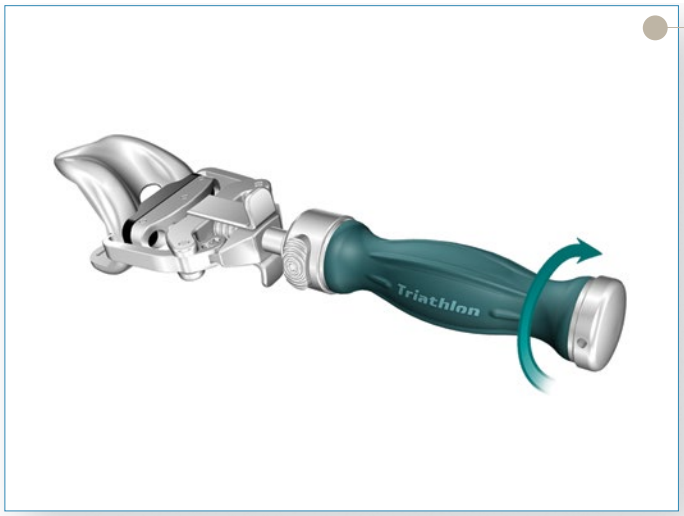
Femoral Impactor/Extractor, Impaction Handle, and Femoral Trial or Femoral Component Assembly:

- Press the handle button on the Impaction Handle and insert the the Femoral Impactor/Extractor into the Impaction Handle.
- Ensure the hexagon on the Femoral Impactor/Extractor is fully seated in the Impaction Handle. When fully seated, there will be an audible snap.



Assembly 15B

- Turn the Impaction Handle counterclockwise until there is enough space (approximately 10mm) between the black impaction surface and the ends of the jaws to insert the Femoral Trial or Femoral component.
- Pull back on the mechanism to open the jaws. Engage the jaws into the impaction slots on the Femoral Trial or Femoral Component.



Assembly 15C

- Turn the Impaction Handle clockwise to tighten, ensuring the impaction surface locks against the distal condyles of the Femoral Trial or Femoral Component.

Surgical Procedure

Triathlon Knee System

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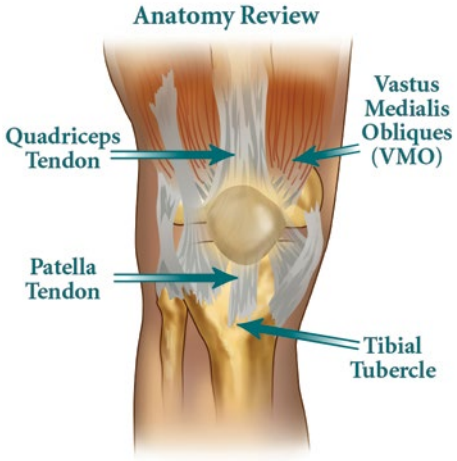


Figure 1

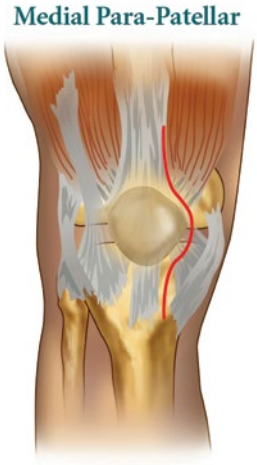


Figure 2

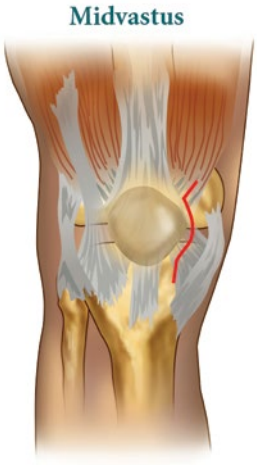


Figure 3

Exposure

- Total knee arthroplasty should be performed using the least invasive approach with which the surgeon is comfortable. The Triathlon Knee System instrumentation is suitable for use with any minimally or less invasive approach such as the midvastus, subvastus, or quadriceps-sparing approach, and of course, a standard medial parapatellar approach.

- The skin incision, unless prior incisions are present, is in the midline slightly medial to the tibial tubercle to avoid the bony prominence. The incision is straight although could be curved into varus or valgus if a severe deformity is present. Modifying the straight incision will allow the incision to appear straight once the correction is made. Most arthroplasties can be done with an incision 6 inches (15cm) or less. This usually corresponds to approximately one fingerbreadth above the superior pole of the patella ending at or just below the tibial tubercle. Larger patients will need larger incisions and the surgeon should lengthen the incision so as not to sacrifice orientation and adequate exposure.

- With a standard tendon splitting medial parapatellar approach, the quadriceps tendon is incised in its medial third from its superior portion, skirting the medial aspect of the patella leaving a small cuff of tissue for subsequent reattachment. The incision is carried distally approximately 1cm medial to the patella tendon and carried down at least to the tibial tubercle and further if necessary. An alternative approach would be to bring the incision straight over the medial quarter of the patella and then reflecting the quadriceps tendon from the patella sharply. The distal portion of the incision is the same.

- If the midvastus approach is chosen, the deep incision in the quadriceps expansion begins approximately 2 to 3cm above the patella. The distal portion is the same as in the above approach, but proximally the vastus medialis is then split in the line of its fibers for approximately 2 to 3cm. In either the medial parapatellar or midvastus approach, the patella is either slid laterally or everted. In patients with severe deformity and in the obese patient, the midvastus approach may not provide adequate exposure.

- If the subvastus approach is chosen, the inferior border of the vastus medialis is identified and split away from its distal and posterior attachments and the muscle belly is mobilized proximally and laterally. The medial retinaculum is incised at the medial border of the patella. The distal portion of the incision is the same as above. Once mobilization is adequate, the patella and entire extensor mechanism can be slid laterally for exposure. With significant deformity and obesity, this approach may not offer adequate exposure.

- If the surgeon elects to use a minimally invasive approach, the quadriceps sparing approach can be utilized. In this approach, the quadriceps tendon is not detached at all but rather the medial retinaculum is opened from the proximal patella down to the tibial tubercle. The procedure is done using "moving windows" and MIS instrumentation. Triathlon instrumentation is suitable for all of the above approaches.

- For a knee which has a varus deformity, the next step would be to release the medial collateral ligament back to the posterior-medial corner of the tibia. Depending on the extent of deformity, the deep and superficial medial collateral ligament can be released, as well as the pes anserinus, semimembranosus, and posterior capsule, to the midline if needed. The release of the medial collateral ligament is performed subperiosteally. The release is performed in a step-wise fashion releasing only enough to correct the deformity. The lateral flap including the tissue just medial to the patella tendon is then released up to the patella tendon and the fat pad is incised across to the lateral tibial plateau allowing full mobilization of the extensor mechanism. The fat pad is trimmed as needed for exposure. The ACL is excised and the PCL as well (if a PS knee is used). This will allow for external rotation of the tibia and anterior translation and/or dislocation forward when needed. If a cruciate-retaining procedure is being performed (CR), then the PCL is not excised. Recession of the PCL is carried out later on if tightness is demonstrated.

- If the knee has a valgus deformity, a limited 'release' of the MCL is carried out. This usually includes the deep fibers, as well as a small portion of the superficial fibers just enough to get back to the posteromedial corner for exposure only. After adequate mobilization of the extensor mechanism, the knee is flexed 90 degrees or more and the patella is everted or slid laterally. Appropriate retractors are placed and the tibia may be subluxed or dislocated anteriorly, or left in situ, depending on surgeon choice and technique. Both menisci are excised, as well as all debris from the posterior recesses as well as the intracondylar notch. For the valgus knee, the lateral capsule including the lateral collateral ligament is released back to the posterolateral corner. Further release of the iliotibial band and/or the popliteus tendon can be performed later if necessary.

- At this point, the knee may well be balanced in extension. If the knee cannot be brought back to neutral alignment, then further medial or lateral release may be necessary. The final completed release may be performed after the bone cuts are made.

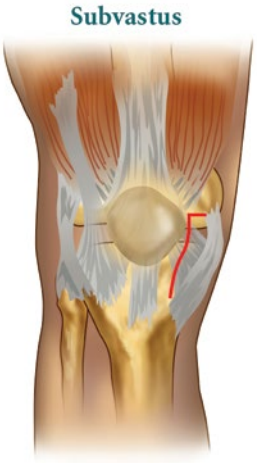


Figure 4

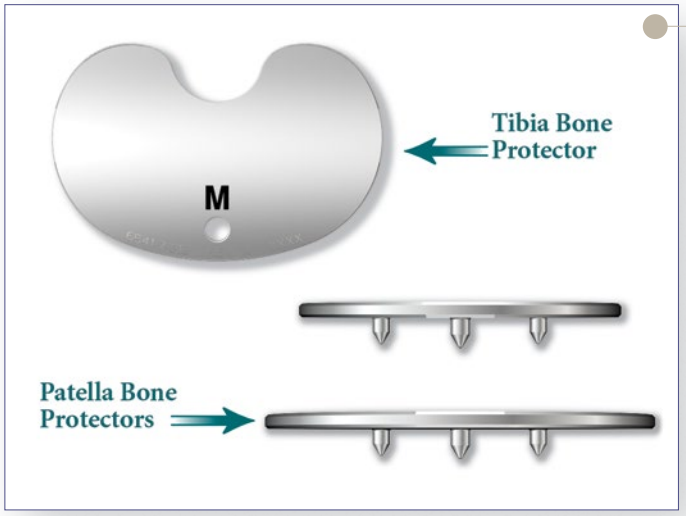


Figure 5

- At this point, the surgeon has the choice as to whether to cut the femur, tibia or patella first. Cutting the tibia first provides more exposure of the posterior femoral condyles. Cutting the femur first provides excellent exposure to the entire plateau and makes proximal resection easier.
- If the patella or tibia is resected early in the procedure, then a patella or tibia bone protector may be applied to prevent damage from retractors or sawblades.

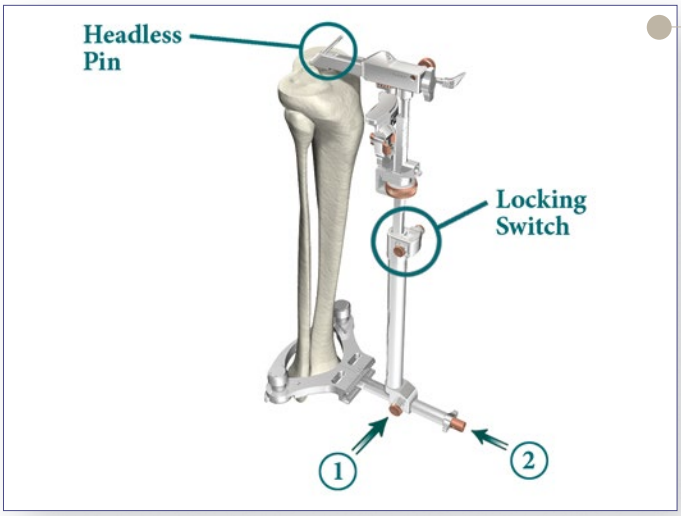


Figure 6

This surgical technique describes cutting the tibia first, followed by the femur and then patella.

Tibial Preparation

- The tibia is prepared using the Triathlon extramedullary alignment system. Retractors are placed medially, laterally, and posteriorly to expose the tibial plateau for preparation. All menisci and remaining soft tissues are removed. If the PCL has been retained, a retractor is provided to cradle the PCL for adequate exposure. The knee is flexed anywhere from 45 degrees to more than 90 degrees of flexion depending on surgeon preference. The tibia may be subluxed or dislocated as required. The tibial resection guide is used to resect the proximal tibia.
- The tibial plateau referencing arm of the proximal rod is placed on the proximal tibia just anterior to the ACL insertion. A rongeur may remove any osteophytes that prevent satisfactory positioning.

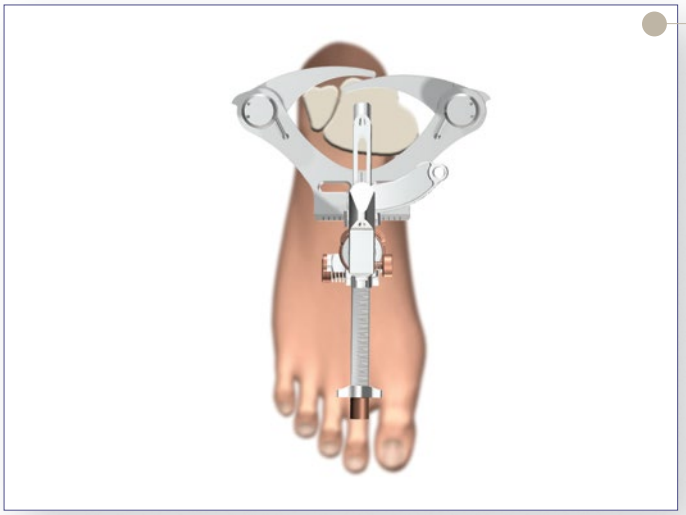


Figure 7

Rotational Alignment

- The assembly must be in the proper rotational alignment. The most common landmark referenced is the tibial tubercle. The assembly should be aligned with the medial third of the tibial tubercle.
- Once the rotational alignment is determined, a headless pin is placed through the posterior fixation hole in the proximal assembly to lock it in place. Either the anterior or posterior fixation holes may be used to set the flexion extension and rotational alignment.

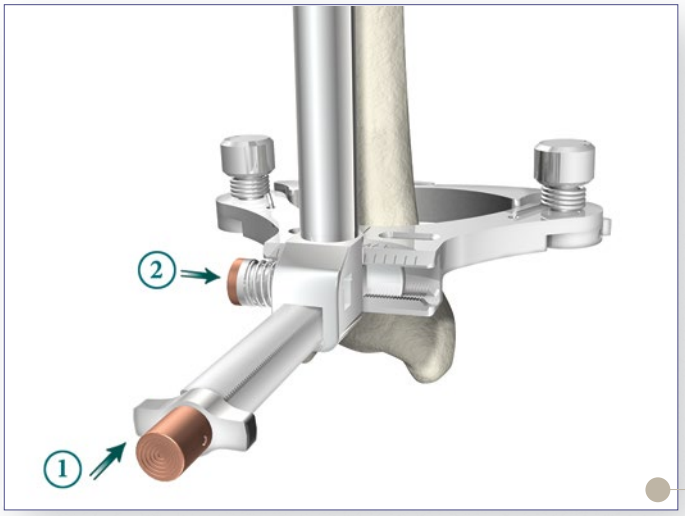


Figure 8

Varus-Valgus Alignment

- Once the proximal portion of the assembly is fixed, varus-valgus alignment can be attained by adjusting the distal assembly to the proper medial/lateral position. The position should be in the center of the talus, not the center of the ankle. The center of the talus usually resides 5 to 10mm medial to the mid-point between the medial and lateral malleoli.
- Medial/lateral offset can be adjusted by pushing the bronze button on the anterior portion of the distal assembly. (2) Once alignment is achieved, the bronze button is released and the assembly is fixed in place.
- The proper tibial resection should be 0 degrees in the coronal plane of the tibia.

Flexion-Extension Alignment

- Once rotational alignment is determined, the ankle clamp is placed proximal to the ankle. The distal assembly locking switch, located approximately halfway up the rod, is then locked. Adjustments to the flexion extension alignment can be made by depressing the button located on the inferior left hand side of the distal assembly. (1)
- Flexion and extension alignment is proper when the long axis of the assembly parallels the weight-bearing axis of the tibia in both the coronal and sagittal planes. Usually, there is less space between the assembly and the tibia proximally than there is distally. Alignment can be verified using the universal alignment tower and universal alignment rod, which can be assembled to the anterior inferior hole on the tibial adjustment housing.
- The proper tibial resection should be 0 to 3 degrees in the sagittal plane, depending on surgeon preference and the type of implant used.

Instrument Bar

6541-6-700
MIS Uncaptured Tibial Resection Guide-Right

6541-6-701
MIS Uncaptured Tibial Resection Guide-Left

6541-6-702
MIS Captured Tibial Resection Guide-Right

6541-6-703
MIS Captured Tibial Resection Guide-Left

6541-2-610
Tibial Alignment Distal Assembly EM

6541-2-609
Tibial Alignment Ankle Clamp EM

6541-2-429
Tibial Stylus

6541-2-807
Tibial Alignment Handle

0° slope 6541-2-704
3° slope 6541-2-705
Tibial Adjustment Housing

6541-6-611
MIS Proximal Rod EM

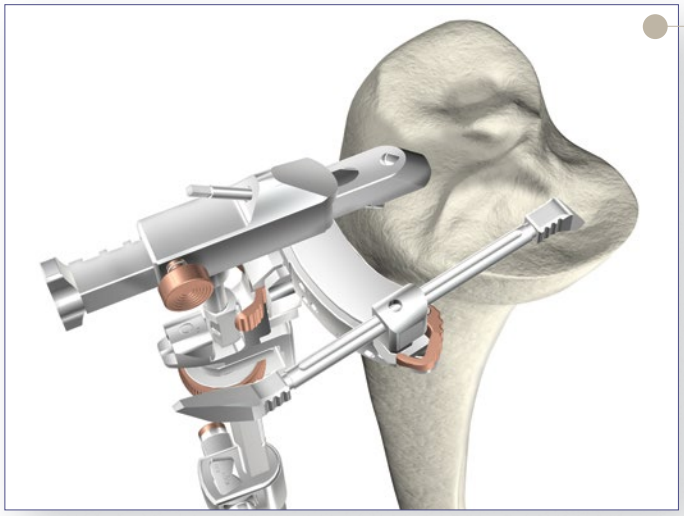


Figure 10

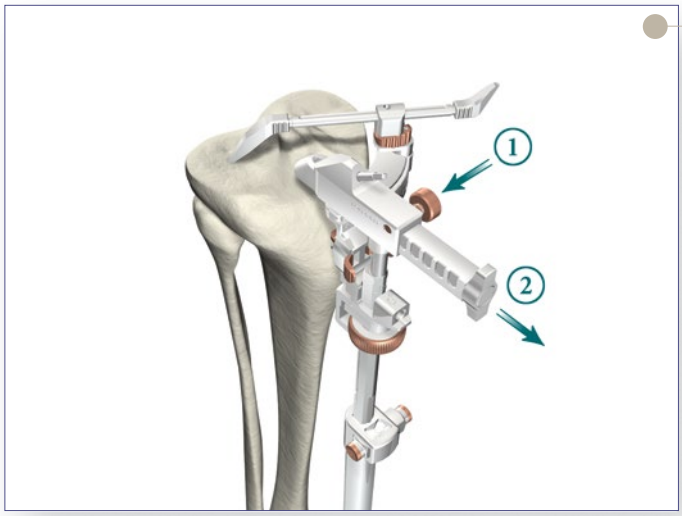


Figure 11

Establishing the Tibial Resection Level

- Once the tibial assembly is fixed in place, the tibial resection level must be established using the tibial stylus. This attaches to the tibial resection guide referencing either the lowest level of the affected compartment or the highest level of the unaffected compartment. Typically, in a varus knee, the lateral compartment is relatively unaffected so placing the "9" referencing end on the unaffected lateral side will insure at least a 9mm thickness for the tibial component. If the surgeon desires a thicker tibial component or if there is a defect on the medial side of the tibia necessitating resection, further resection can be made.
- Alternatively, by placing the tibial resection guide with the "2" referencing end, the resection carried out would be 2mm lower then the point chosen. For a coarse gross adjustment, the bronze wheel can be pressed and the assembly slid up or down. For the final fine adjustment, the bronze wheel is turned to the right to move the assembly up the proximal rod or turned left to move the assembly down the proximal rod.
- Once the final position is chosen, two headless pins are drilled into the "0" neutral holes securing the level of the tibial resection guide. For additional stability, the oblique "X" pinhole can be utilized. Once the tibial resection guide is secured, all alignment instruments are removed.
- Alternatively, one can reference a 14mm resection off of the ACL footprint. This correlates with a 10mm resection level off of the lateral tibial plateau and an 8mm resection off of the medial tibial plateau.

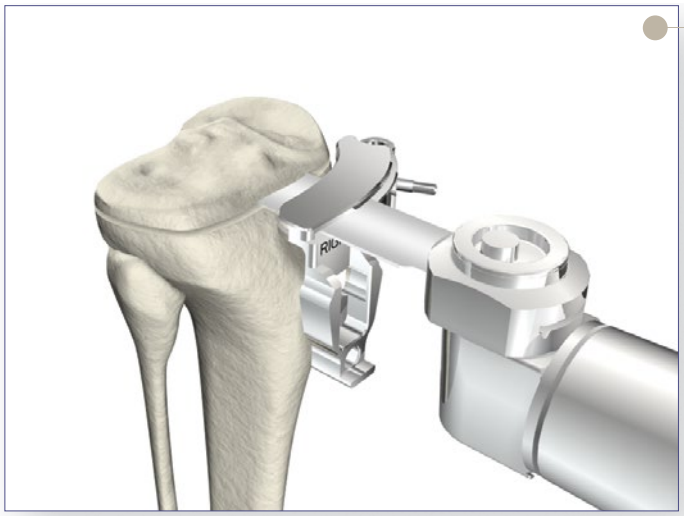


Figure 12

Final Tibial Resection

- Once all alignment instruments are removed leaving the tibial resection guide in place, the proximal tibia is osteotomized using either the right or left captured or uncaptured tibial resection guide. If the entire resection cannot be completed, the guide is removed and the resection completed free-hand. Care must always be taken not to injure the patella tendon or collateral ligaments. Often some bone is left unresected near the posterior aspect of the lateral tibial plateau and the anterior aspect of the lateral tibial plateau near Gerdy's tubercle. Once the resection guide is removed, final resection can be completed either with an oscillating saw or a rongeur.

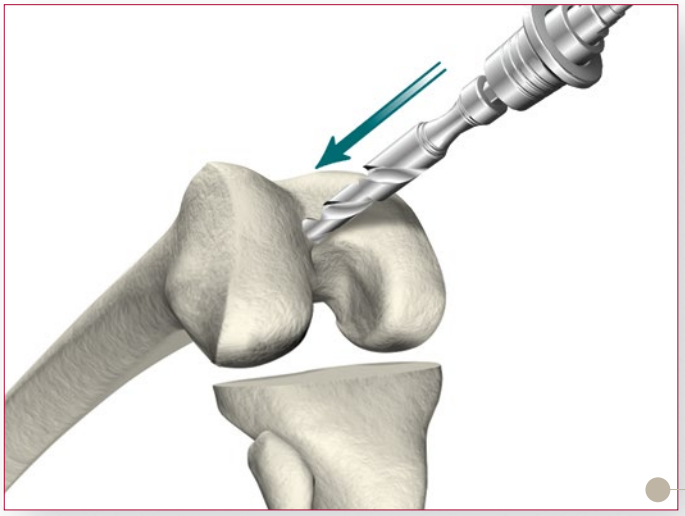


Figure 13

Preparation of the femur is usually carried out using femoral intramedullary alignment. An extramedullary alignment rod is also provided as a secondary alignment check, as well as for use when extraarticular deformity is present or the femoral canal is blocked.

Femoral Preparation

- The intracondylar notch is located and a point approximately 1cm anterior to the femoral attachment of the posterior cruciate ligament is located. This is slightly medial to the midline of the femur. If necessary, intracondylar osteophytes can be removed with a chisel or rongeur.
- The 3/8 inch intramedullary drill with a trocar point is attached to the universal driver and a hole is drilled in the intramedullary canal parallel to the shaft of the femur in both coronal and sagittal plane. Inserting the tapered drill completely will create a hole slightly larger than the intramedullary rod to be used. The medullary canal can then be decompressed with a suction device to help reduce the incidence of fat or marrow emboli.

Instrument Bar

6541-2-429
Tibial Stylus

6541-6-611
MIS Proximal Rod EM

0° slope 6541-2-704
3° slope 6541-2-705
Tibial Adjustment Housing

6541-6-700
MIS Uncaptured Tibial Resection Guide-Right

6541-6-701
MIS Uncaptured Tibial Resection Guide-Left

6541-6-702
MIS Captured Tibial Resection Guide-Right

6541-6-703
MIS Captured Tibial Resection Guide-Left

3.5" - **7650-1038**
2.5" - **7650-1039**
Headless 1/8" Pin

6541-4-801
Universal Driver

6541-4-538
3/8" IM Drill

6541-4-800
T-Handle Driver

6541-4-516
5/16" IM Rod

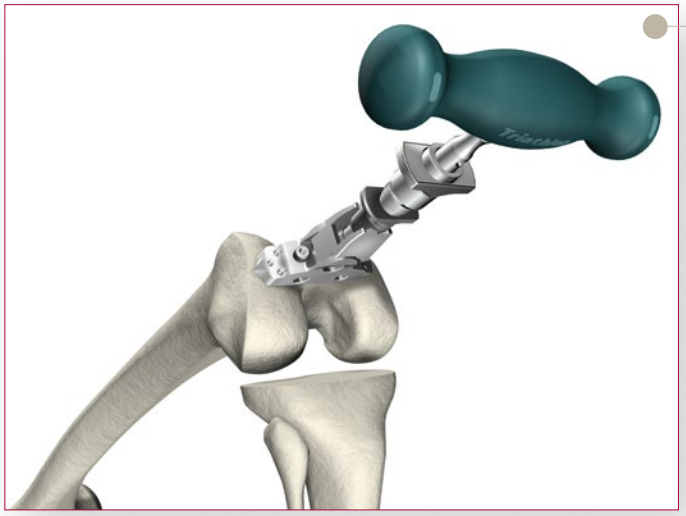


Figure 14

- The T-handle driver is attached to the 5/16 inch IM rod. The rod is inserted into the anterior referencing femoral alignment assembly. This assembly will facilitate the skim cut of the femur and then the distal femoral cut. The femoral alignment guide is designed for use on either the left or right knee and can be set between 2 degrees and 9 degrees of valgus. The desired angle is set by pulling back on the black knob of the femoral alignment guide and placing it in the desired notch.
- Once the angle is set, the rod assembly is slowly advanced into the intramedullary canal until it engages the isthmus. The alignment guide is then placed flush up against the most prominent distal femoral condyle.

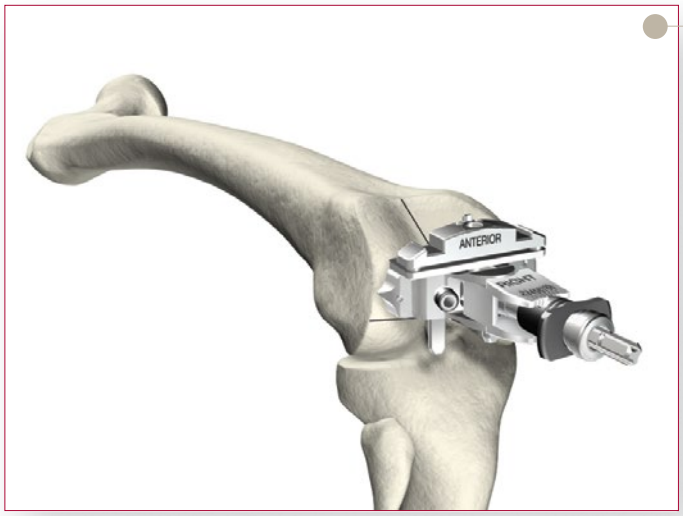


Figure 15

Before permanently fixing the femoral alignment guide, the rotational position must be confirmed. This position can be referenced in any one of four ways: Whiteside's line, Epicondylar axis, cut surface of the tibia, or 3 degrees of external rotation. Using more than one of these four methods is recommended.

Rotational Alignment

Option 1

- Whiteside's line defines the anterior/posterior axis of the femur and corresponds to the central sulcus of the trochlea. This may be drawn on the femur using a marker and the jig aligned with it by using 2 1/8 inch pins in the holes provided. Whiteside's line should be parallel to the pins.

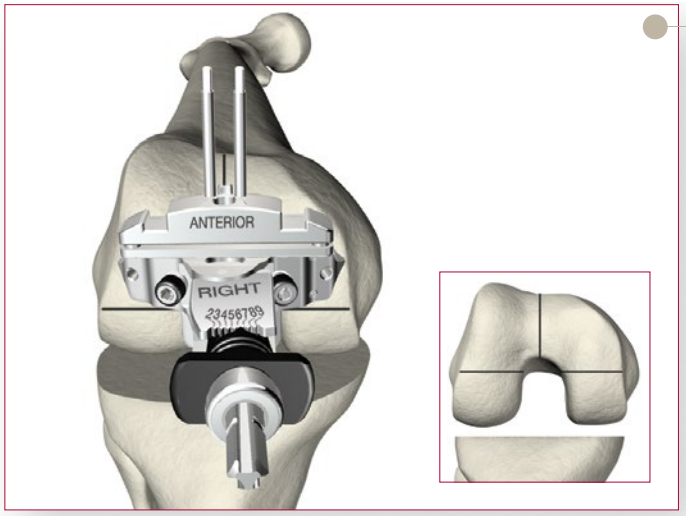


Figure 16

Option 2

- The epicondylar axis is referenced by finding the most prominent portion of the lateral epicondyle and marking it with a marker. The medial epicondyle is less defined. Therefore the synovium and soft tissue overlying the epicondyle should be removed so the epicondyle can be identified. The epicondyle should be outlined with a marker and the central point located. The medial and lateral reference points are marked and a line is drawn on the distal femur joining the two.

Figure 17

Option 3

- Proper femoral rotation can also be referenced by orienting the guide parallel to the cut surface of the tibia (this requires that the tibia be cut first, or the line of resection marked). Using this method assures the surgeon of a rectangular flexion space.

Figure 18

Option 4

- Rotation can also be set empirically, placing the guide in 3 degrees of external rotation in reference to the posterior femoral condylar line. This can be easily accomplished using the hanging external rotation guide from the femoral alignment guide and aligning the guide parallel to the posterior aspect of both condyles.

Once proper rotation has been set, the headless pins are driven through the medial and lateral side of the femoral alignment guide.

Instrument Bar

6541-4-800
T-Handle Driver

6541-4-516
5/16" IM Rod

6541-0-600
AR Femoral Alignment Guide

6541-0-601
AR Skim Cut Guide

6541-0-603
3 Degree Posterior Condylar Reference Guide

3.5" - **7650-1038**
2.5" - **7650-1039**
Headless 1/8" Pin

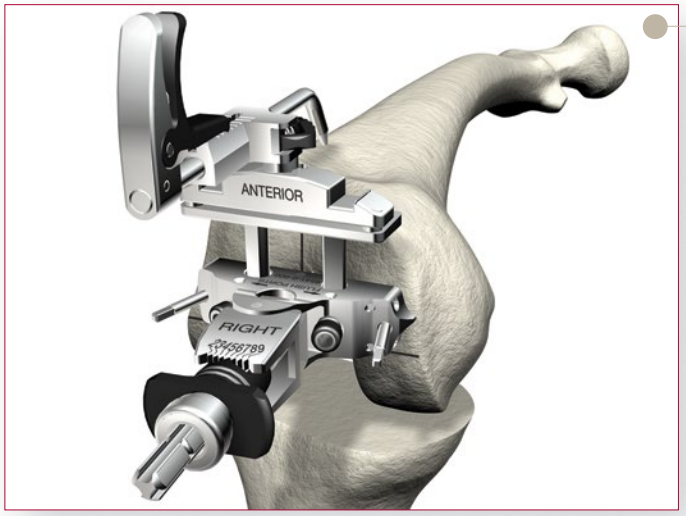


Figure 19

Anterior Skim Cut Resection

- The anterior skim cut guide can be applied to the femoral alignment guide at this point. It is now necessary to determine the level of resection. This is accomplished by assembling the skim cut stylus to the anterior skim cut guide by depressing the smaller black swing trigger on the skim cut stylus and placing it into the hole on the top surface of the skim cut guide. The guide is then lifted anteriorly and the stylus is rotated first laterally, then down to the anterior aspect of the femur.
- Once the satisfactory point is located, the stylus point is held firmly against the femur and the anterior skim cut guide is secured in that position by tightening both black locking screws using the 1/8 inch hex driver assembly.
- If the surgeon is using an MIS approach and full visualization of the anterior femur is not possible, then the tip of the stylus is slid distally to its full distal position. It can then be advanced under the skin to its proper position and secured. The length of the femoral stylus may be easily adjusted by sliding it to the appropriate position on the anterior cortex both proximally and distally, as well as medially and laterally.
- The tip of the stylus will indicate the exit point of the saw blade for the provisional skim cut and will also indicate the point of exit of the final femoral anterior resection when it is made with the femoral resection guide. The exit point can be further checked using a blade runner.

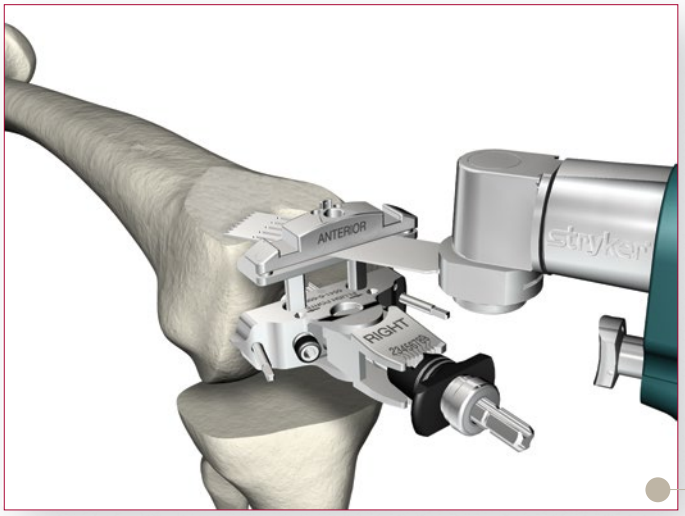
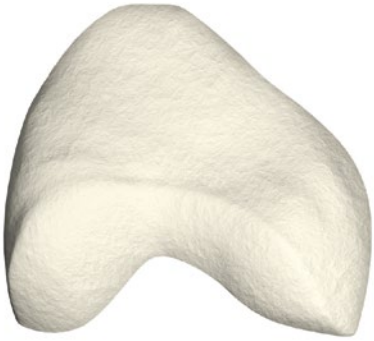


Figure 20

- The anterior skim cut is then made using .050 inch (1.27mm) blade. The width of the blade is determined by surgeon choice. Commonly an 18mm blade is suitable.
- Since rounded posts are built into the medial and lateral walls of the skim cut resection guide to improve medial and lateral excursion, usually the cut can be made completely. If it cannot, the resection guide is removed and the cut is completed free-hand. After the anterior skim cut resection is complete, the anterior skim cut resection guide and the femoral alignment guide is left in place. Now that the anterior skim cut has been made, the rotational alignment of the femoral component has been finalized.



- Resected bone from the anterior cortex (Baby-grand piano shape).

Instrument Bar

6541-4-516
5/16" IM Rod

6541-0-600
AR Femoral Alignment Guide

6541-0-601
AR Skim Cut Guide

6541-0-602
AR Skim Cut Stylus

6541-4-802
1/8" Hex Drive

6541-4-825
Slip Torque Handle

6541-4-400
Bladerunner

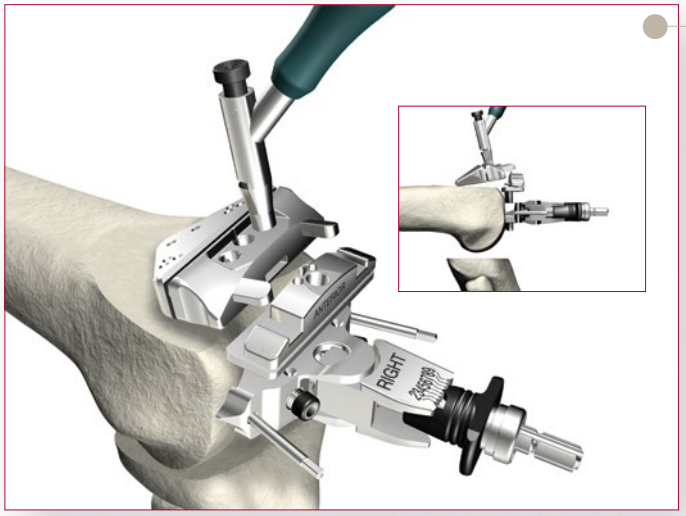


Figure 21

Distal Femoral Resection

- Depending on surgeon's preference, either an 8mm or 10mm distal femoral resection guide is applied to the anterior skim cut resection guide by aligning the slot on the distal femoral resection guide with the tab on the anterior skim cut resection guide. These guides are magnetized to facilitate assembly.
- Once the anterior bone is removed, assembling the distal femoral resection guide is facilitated by resting it on the cut surface of the anterior femur and then sliding it into place, connecting it into the anterior skim cut resection guide. Assembly is also facilitated by retracting the proximal soft tissues more proximally. Extension of the knee will also aid in this maneuver.
- The surgeon may also elect to use the Triathlon modular handle which connects to the medial hole of the distal resection guide to aid in assembly. In order to assure proper assembly, all bone fragments from the anterior femoral resection must be removed.

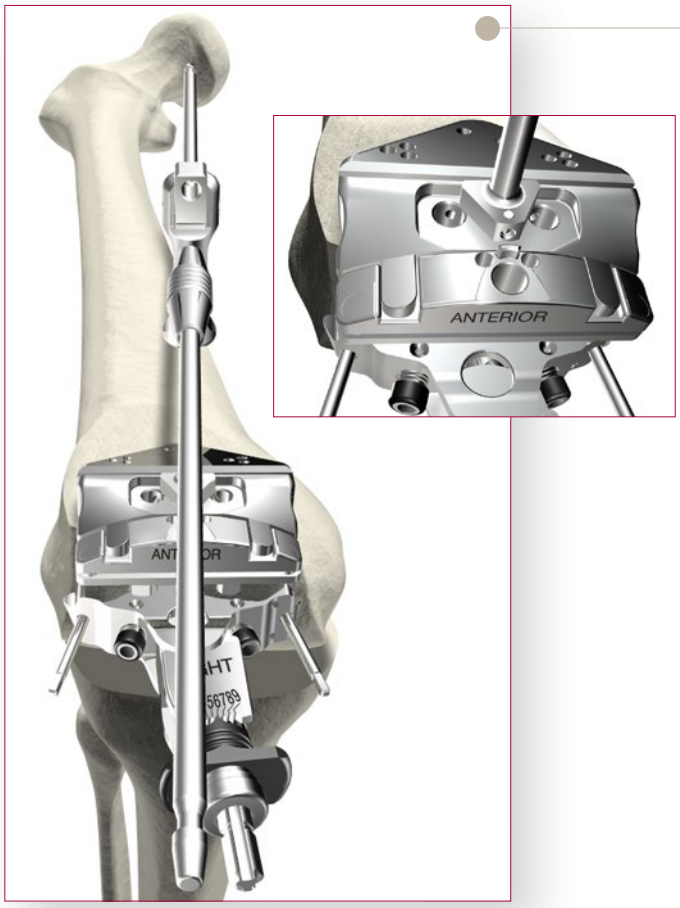


Figure 22

- Final position is accomplished by pinning the distal femoral resection guide to the femur using two 1/8 x 2.5 inch headless pins. Placing the pins in the holes marked "0" will allow the surgeon to take 2 or 4mm off the distal femur later on if necessary. Prior to final fixation, an optional external alignment rod may be applied in order to further check the alignment, especially in the face of an extraarticular deformity or a blocked femoral canal. The universal alignment tower may be attached to the distal femoral resection guide and an external alignment rod is inserted. Correct alignment is achieved when the rod intersects the center of the femoral head and is parallel to the axis of the femur in both the coronal and sagittal planes. The distal portion of the rod should exit in the center of the knee.

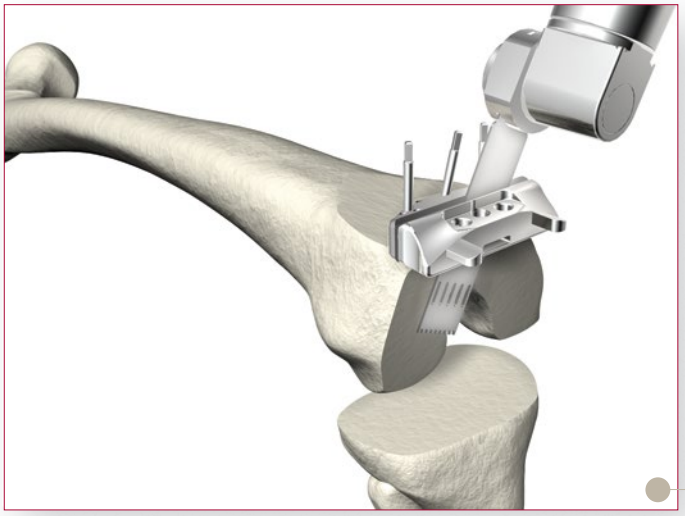


Figure 23

- Once the distal femoral resection guide is pinned in place, the 1/8 inch pins securing the femoral alignment guide and the anterior skim cut guide are removed. The IM rod, femoral alignment guide, and anterior skim cut resection guide are removed from the femur leaving only the distal femoral resection guide in place. If desired, an 1/8 inch "X" cross pin can be used to prevent the distal cutting guide from backing off the bone. The distal femur is then resected using the same blade as for the anterior skim cut.
- Similar to the anterior skim cut resection guide, the distal femoral resection guide also has rounded posts to increase the excursion of the blade. If the full distal resection cannot be accomplished, the guide is removed and the rest of the resection is carried out in a free-hand manner. Should an additional 2 or 4 mm of distal femur need to be resected, then the resection guide is replaced over the pins through either the +2 or +4 holes.
- Following resection of the distal femur, all medial and lateral osteophytes are removed to prevent impingement and tenting of the medial or lateral ligament complexes.

Instrument Bar

6541-4-808
Modular Handle (Optional)

6541-0-600
AR Femoral Alignment Guide

6541-0-601
AR Skim Cut Guide

8mm - **6541-0-608**
10mm - **6541-0-610**
AR Distal Resection Guide

6541-4-806
Universal Alignment Handle

6541-4-602
Universal Alignment Rods

3.5" - **7650-1038**
2.5" - **7650-1039**
Headless 1/8" Pin

Figure 24

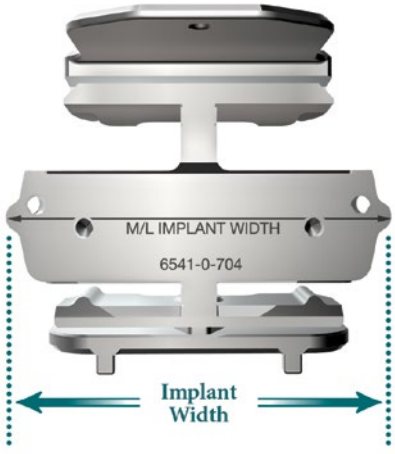
Figure 25

Femoral Sizing

- The proper size for the femoral implant is determined by using the anterior referencing femoral sizer. The wide anterior flange of the femoral sizer is placed on the resected anterior femur and the feet are placed under the femoral condyles so that one of the feet rests on the most prominent posterior condyle. The sizer is then placed flat against the distal femur. The central post of the sizer will indicate the proper size.
- Since this is an anterior referencing system, the anterior point is fixed and if the size is in-between two sizes, the smaller femoral component may be selected. This assures the proper anterior femoral size and avoids overstuffing the patellofemoral joint. The medial-lateral width of the femur is also sized using the sizing guide on the blade runner. Based upon the combination of results, the proper size is chosen. The Triathlon implant is designed for an improved medial/lateral and anterior/posterior fit.

Figure 26

- The proper size 4-in-1 cutting block is chosen and the impactor/extractor is assembled. The cutting block is seated flush on to the anterior and distal femur. Alternatively, the cutting block can be placed against the femur by hand. At this point, the size of the cutting block is compared to the distal femur. The true medial/lateral size of the implant for the standard style 4-in-1 cutting block is represented by the outside edges of the engraved numeral indicating size of the cutting block 1, 2 etc.
- For the MIS 4-in-1 cutting blocks, medial/lateral implant width is represented by the most medial and lateral extents (nubs) of the cutting block.



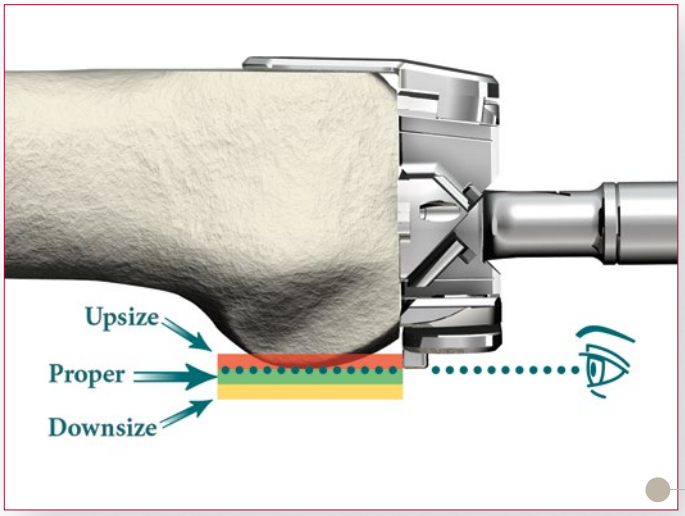


Figure 27

Alternative A/P Sizing Reference

- From the posterior resection plane, the bottoms of the tabs on the posterior capture represent the posterior implant thickness and the amount of bone the Triathlon implant will replace. Sizing is done by sighting across the bottom surface of the tabs and comparing that plane with the most posterior aspect of the femur (typically, on the medial condyle). The color coded bands in Figure 27 each represent 3mm of height and provide sizing information as follows:

  Indicates potential laxity of the flexion space. Upsizing may be appropriate.

  Indicates that an appropriate size has probably been selected.

  Indicates potential stuffing of the flexion space. Downsizing may be appropriate.

- The cutting block should be placed centrally on the femur or laterally if some exposed bone is remaining. Care must be taken to avoid any significant implant overhang which can cause impingement and pain. The blade runner is used to confirm satisfactory position of the anterior cut to prevent notching. The 7 degree anterior slope of the anterior flange of the Triathlon femoral component reduces the risks of notching, even when in-between sizes.

Instrument Bar

6541-0-620
AR Femoral Sizer

1 - **6541-0-701**
2 - **6541-0-702**
3 - **6541-0-703**
4 - **6541-0-704**
5 - **6541-0-705**
6 - **6541-0-706**
7 - **6541-0-707**
8 - **6541-0-708**

AR MIS 4:1 Cutting Block

6541-7-806
MIS 4:1 Impactor / Extractor

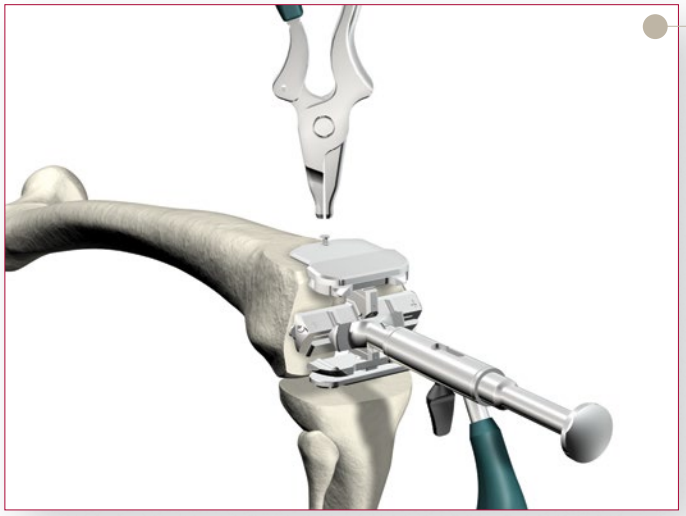


Figure 28

- Once the size is confirmed, the block should be stabilized with pins medially and laterally, as well as anteriorly if necessary. Once the block is stabilized, the anterior posterior and chamfer cuts are made.

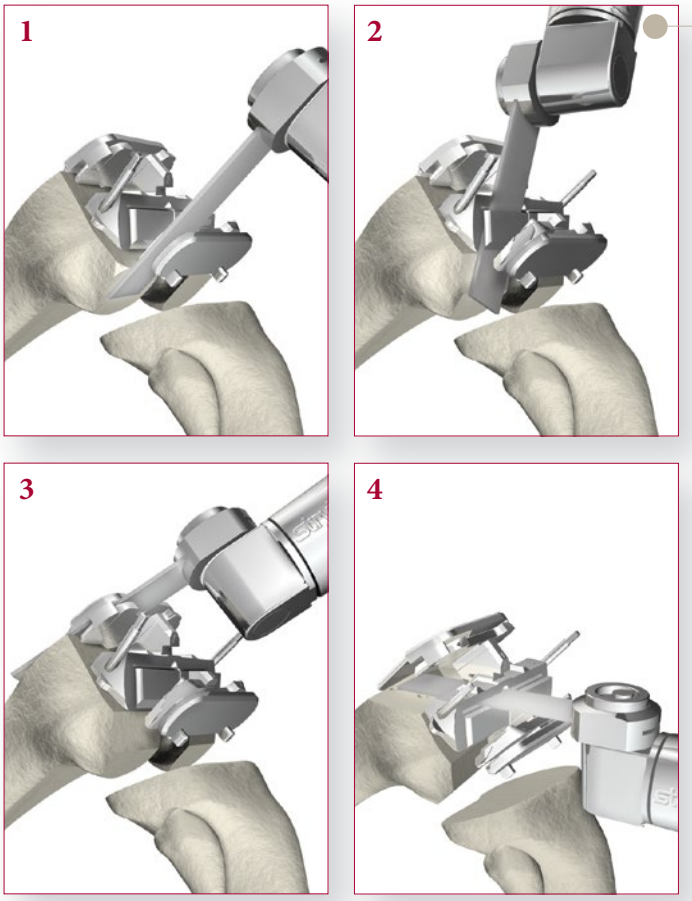


Figure 29

- The following order of cuts provides the most continuing stability for the blocks: The posterior condyles are resected first followed by the posterior chamfer, the anterior cortex, and then the anterior chamfer.
- Prior to any cuts, the blade runner is placed in the anterior cutting slot and the anterior femur is referenced to assure that the cut will not notch the femur. If it appears that a notch will occur, then a larger cutting block will be necessary. In the rare event that not enough femur will be resected, a smaller size will be chosen. A .050 inch saw blade is recommended.
- The width of the blade will be dictated by the size of the patient's bone. Several passes of the blade should be made in order to assure satisfactory flat resection. The block should be checked for movement during and after each cut.

Note: It is imperative that the saw blade be controlled so as not to skive or injure the medial or lateral collateral ligaments or the patella tendon. With small incisions, blade excursion must be anticipated.

Following posterior condyle and tibial resection, flexion and extension gaps may be assessed and adjustments made, if needed. Please refer to the Gap and Ligament Balancing section on page 34.

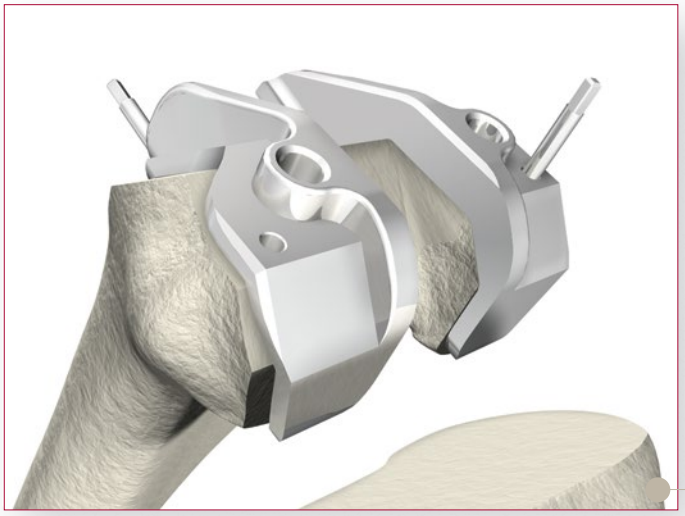


Figure 30

PS Box Preparation

- If the surgeon has chosen a PS knee, then the intercondylar notch must be resected. In order to accomplish this, the PS box guide is placed onto the distal femur. This is accomplished using the Femoral Trial Impactor/Extractor. The cutting guide is placed on the distal femur and impacted in place. Since the width of the distal portion of the guide represents the exact width of the implant, it should be centered and placed in the desired position flush with the distal resection. The box guide is then pinned to the femur using the headless pins through the holes on the anterior surface, as well as the distal surface of the cutting guide.

Instrument Bar

1 - **6541-0-701**
2 - **6541-0-702**
3 - **6541-0-703**
4 - **6541-0-704**
5 - **6541-0-705**
6 - **6541-0-706**
7 - **6541-0-707**
8 - **6541-0-708**

AR MIS 4:1 Cutting Block

6541-7-806
MIS 4:1 Impactor / Extractor

6541-4-515
Headed Nails - 1 1/2”

6541-4-300
Headed Nail Impactor Extractor

1 - **6541-5-711**
2 - **6541-5-712**
3 - **6541-5-713**
4 - **6541-5-714**
5 - **6541-5-715**
6 - **6541-5-716**
7 - **6541-5-717**
8 - **6541-5-718**

MIS PS Box Cutting Guide

6541-7-807
MIS Femoral Trial Extractor

3.5” - **7650-1038**
2.5” - **7650-1039**

Headless 1/8” Pin

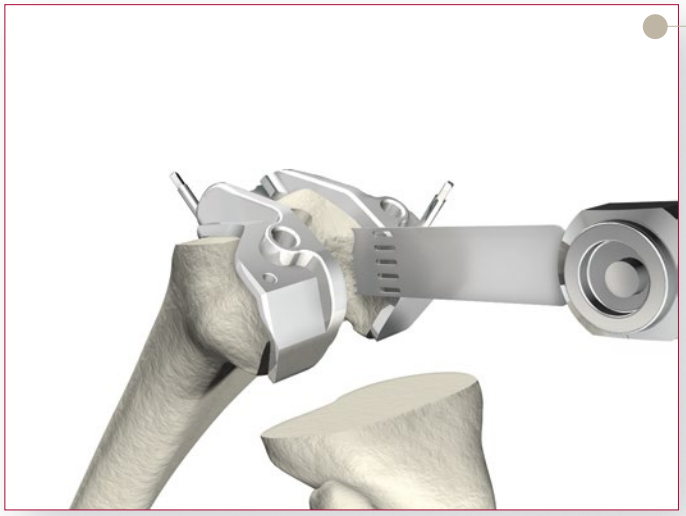


Figure 31

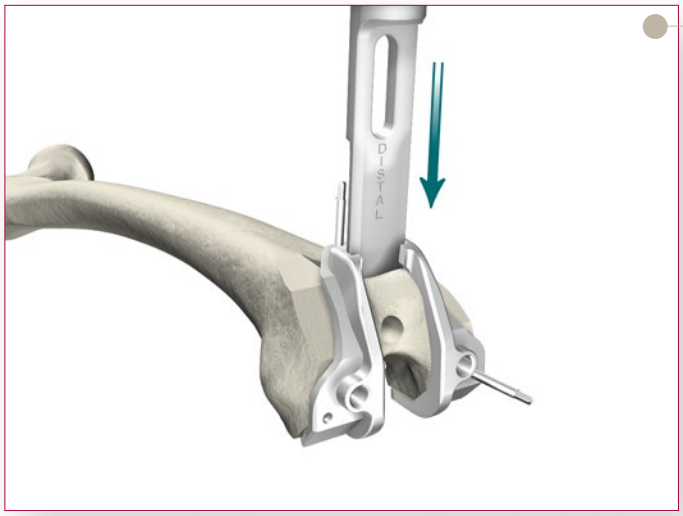


Figure 32

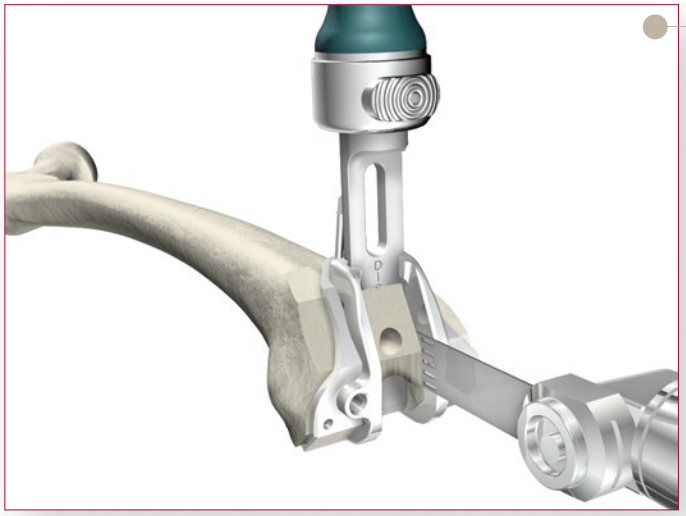
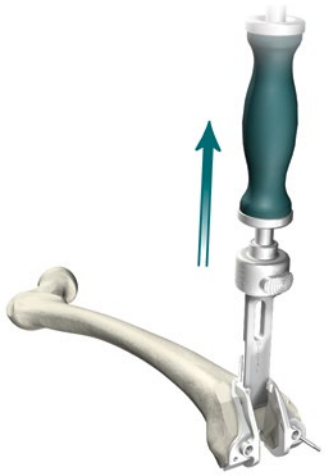


Figure 33

- The intercondylar region can be resected in two ways. The surgeon may elect to resect the proximal portion of the intracondylar notch using the box chisel. First, using the inside surfaces of the box opening as guides, score the posterior cortex on both sides of the posterior portion of the intercondylar notch using an oscillating saw. The chisel is assembled to the impaction handle and then the chisel placed within the slot of the box cutting guide with the surface "distal" towards the distal portion of the femur. The chisel is then fully engaged with a mallet and left in place. The rest of the box is then cut using either a reciprocating saw or oscillating saw. The box chisel is then removed either by hand or by using a slap hammer.
- Alternatively, a small reciprocating saw can be used to resect the medial and lateral borders of the intercondylar notch to the proximal portion of the cutting guide. A thin, narrow oscillating saw is then used through the proximal slot to resect the distal portion of the femur. The cuts are connected and the intracondylar bone is removed. Care should be taken to avoid injury to the tibial plateau and either a retractor should be used to lift the distal femur from below or the tibial plateau can be protected with the tibial plateau protector provided in the Triathlon instrumentation.
- The 1/8-inch pins are then removed followed by removal of the PS box cutting guide.

Note: In order to prepare a proper rectangular box, care should be taken not to bias the saw blade. Preparation of a proper rectangular shape will facilitate an accurate implantation of the PS component with minimal bone resection.



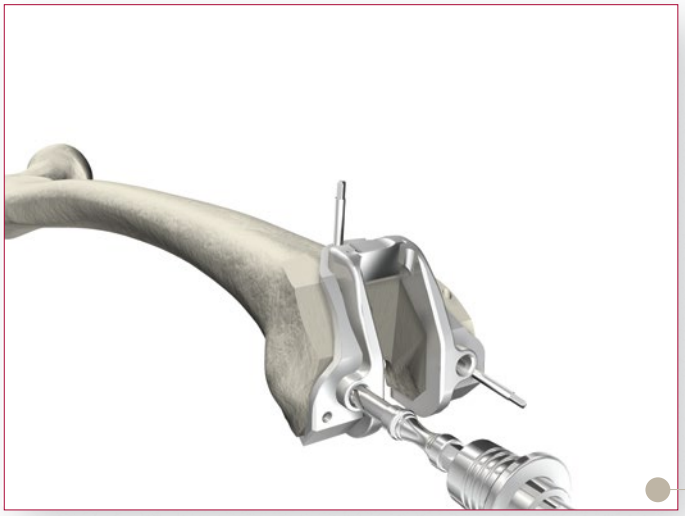


Figure 34

- If Modular Femoral Distal Fixation Pegs are to be used, the location holes may be prepared at this stage using the 1/4" Peg Drill attached to the Universal Driver. (The peg holes may also be prepared later through the PS Femoral Trial.)

Instrument Bar

1 - **6541-5-711**
2 - **6541-5-712**
3 - **6541-5-713**
4 - **6541-5-714**
5 - **6541-5-715**
6 - **6541-5-716**
7 - **6541-5-717**
8 - **6541-5-718**

MIS PS Box Cutting Guide

6541-4-709

Box Chisel

6541-4-810

Impaction Handle

6541-4-803

Slap Hammer

6541-4-525

1/4" Peg Drill

6541-4-801

Universal Driver

6541-7-807

MIS Femoral Trial Extractor

3.5'' - **7650-1038**
2.5'' - **7650-1039**

Headless 1/8" Pin

6541-4-804

Headless Pin Extractor

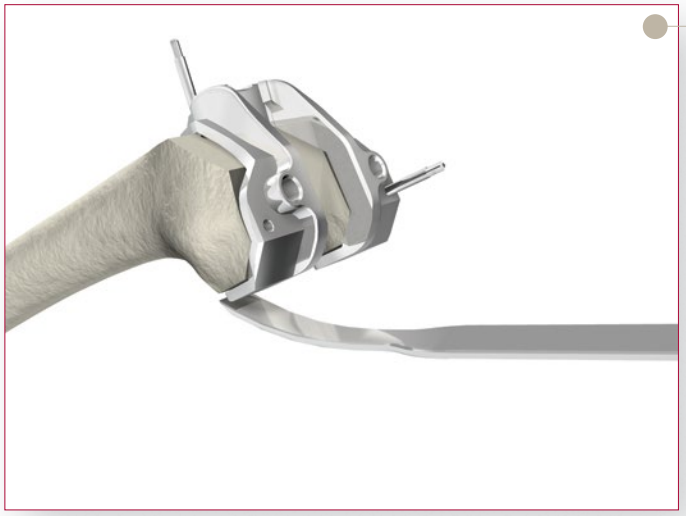


Figure 35

- To avoid femoral component impingement and to improve flexion, all osteophytes beyond the posterior condyles as well as those medially and laterally may be removed with an osteotome.
- Remove the PS Box Cutting Guide with the MIS Femoral Trial Impactor / Extractor.

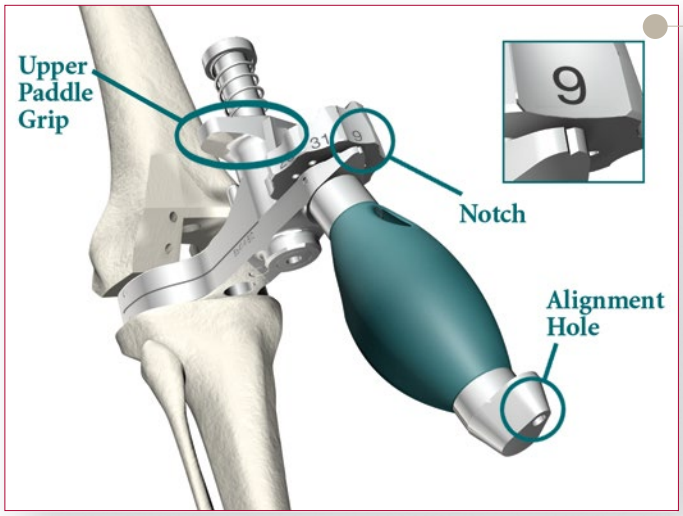


Figure 36

Gap and Ligament Balancing

- Once the femur and tibia have been cut, the flexion and extension gaps are assessed. This may be accomplished using the Triathlon Adjustable Spacer Block (optional), general Spacer Blocks, or a balancer. A 9mm spacer block may be inserted with the knee in extension and then in flexion.
- In extension, the knee must come fully straight with symmetrical stability/laxity. If more than a few mm of laxity is present, a thicker spacer block should be inserted. If laxity is not symmetrical, then further medial or lateral release should be carried out. Once stability is satisfactory in extension, with full extension being achieved, then the spacer block is placed between the posterior femur and tibial plateau with the knee in 90 degrees of flexion. Similar stability should be accomplished.
- If full extension cannot be achieved, then further resection should be considered from the femur and/or the tibia. It must be recognized that further resection from the femur will affect only extension. Resection from the tibia will affect both flexion and extension.
- Once the spacer block is inserted in both flexion and extension, a universal alignment rod can be inserted through the hole to check alignment. When the gap balancing and ligament stability are satisfactory, tibial component sizing can be carried out.

Figure 37

Femoral Trial Assessment

- The femoral impactor extractor is applied to the femoral trial by inserting the two pegs of the Impactor Extractor into the two peg holes on the trial. Pegs should be inserted while the handle is in the unlocked ('unsqueezed') position. The trial implant is then impacted on to the femur. The implant is examined to assure that it is flush with the bone on all cut surfaces. At this point, the back of the knee is examined and any remaining posterior condylar bone beyond the trial implant is removed using an osteotome. The bone is chiseled away and removed with a pituitary rongeur. Care must be taken not to penetrate the popliteal space as injury to the neurovascular structures can occur.

Instrument Bar

6541-4-610
Adjustable Spacer Block

6541-4-602
Universal Alignment Rods

1 - **6541-5-711**
2 - **6541-5-712**
3 - **6541-5-713**
4 - **6541-5-714**
5 - **6541-5-715**
6 - **6541-5-716**
7 - **6541-5-717**
8 - **6541-5-718**
MIS PS Box Cutting Guide

6541-7-807
MIS Femoral Trial Extractor

See Catalog
PS Femoral Trial

See Catalog
CR Femoral Trial

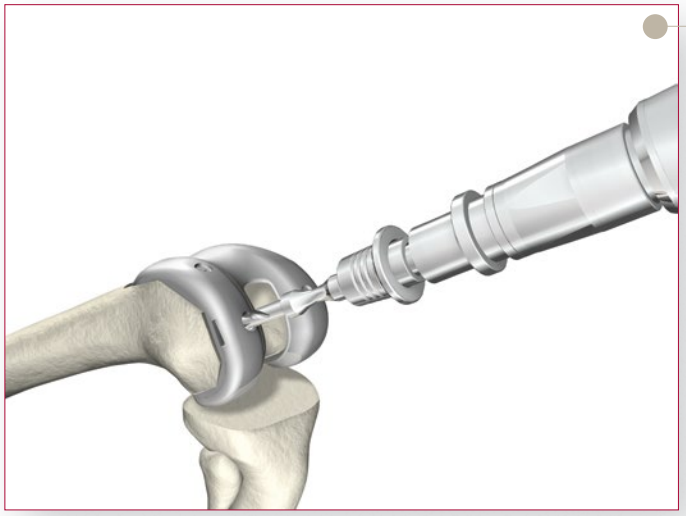


Figure 38

- The assessment of the fit of the femoral trial is similar for both the CR and PS implants. The appropriate size and side femoral implant trial is applied to the femoral trial Impactor/Extractor. The implant is then impacted onto the prepared distal femur and the Impactor/Extractor is removed. The fit of the implant is checked to ensure that there is a flush fit.
- The Triathlon CR knee has integral medial and lateral femoral pegs. Therefore, if a CR implant is chosen, the 1/4 inch peg drill is assembled to the universal driver and distal fixation peg holes are drilled through the left and condylar right holes.

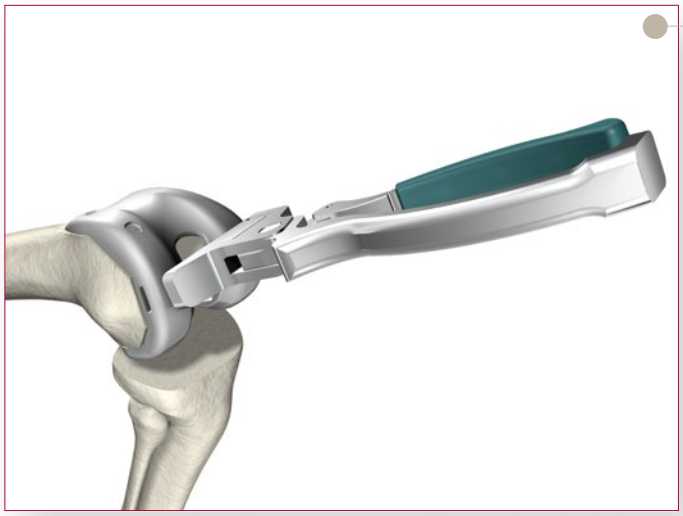


Figure 39

- The posteriorly stabilized knee does not come with integral pegs but rather modular capability. Should the surgeon choose to use distal fixation pegs, the holes are drilled in a similar fashion. Once this has been accomplished, the trial may be removed. At this point, the tibia, if not already prepared, must be prepared for the tibial implant. Keeping the femoral trial in place assures adequate exposure, but it may be removed for tibial preparation if desired.

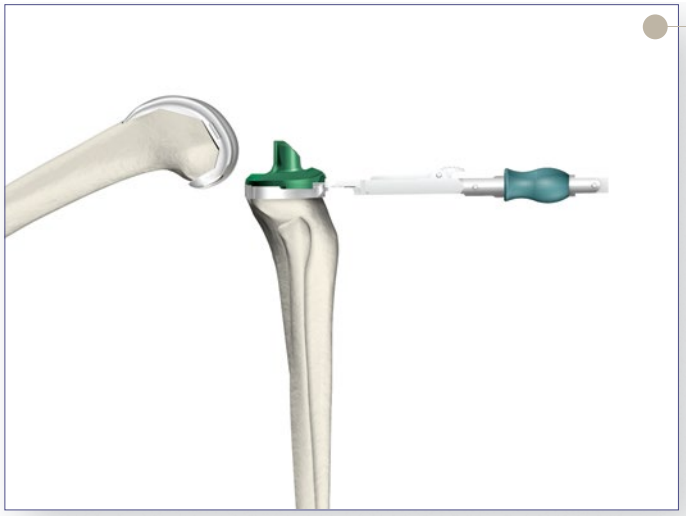


Figure 40

Tibial Component Sizing

- Retractors are placed to expose the tibial plateau. The femoral trial may be left in place. The universal tibial template is assembled using the alignment handle. The assembly is placed on the resected tibial plateau and the appropriate size that fits the tibia is chosen. The implant should contact the cortical rim but no overhang should exist.
- Perform a trial reduction to assess overall component fit, ligament stability and joint range of motion.

Note: Do not impact the Tibial Insert Trial.

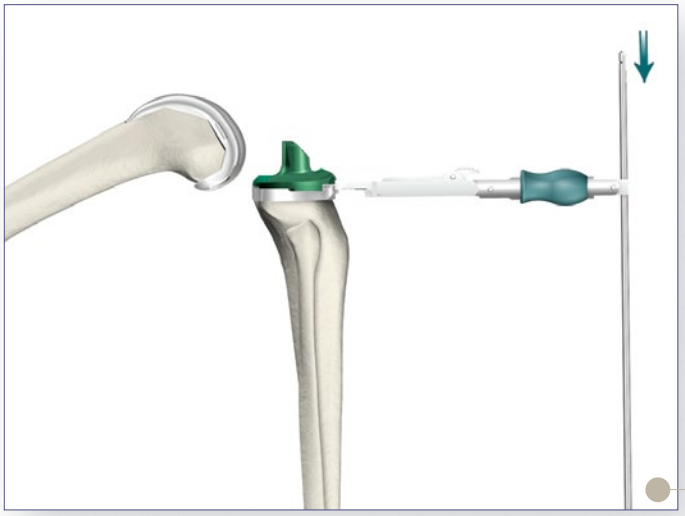


Figure 41

- Once the appropriate size is chosen, two methods of rotational alignment can be utilized. The first method relies on orientation to the tibial tubercle. The medial third of the tibial tubercle is referenced and the tibial template is aligned using the alignment handle.

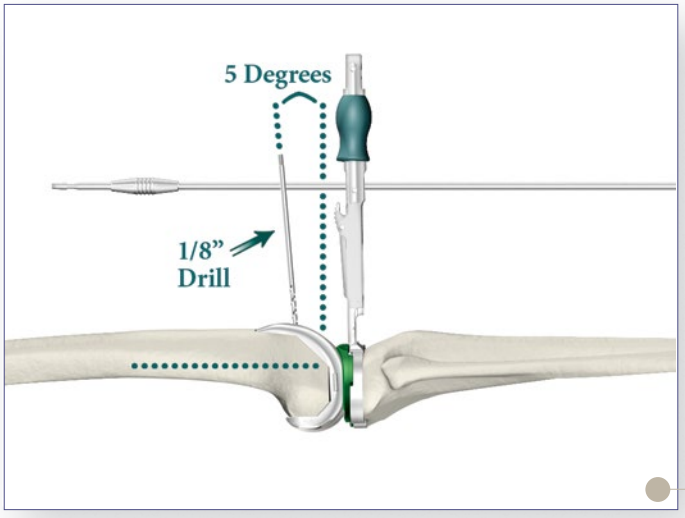


Figure 42

- Extend the knee to full extension and assess overall alignment in the A/P and M/L planes.
- A 1/8" drill can be inserted into the lateral hole on the anterior surface of the Femoral Trial to aid in alignment.

Instrument Bar

See Catalog
PS Femoral Trial

See Catalog
CR Femoral Trial

6541-7-807
MIS Femoral Trial Extractor

6541-4-602
Universal Alignment Rods

1 - **6541-2-601**
2 - **6541-2-602**
3 - **6541-2-603**
4 - **6541-2-604**
5 - **6541-2-605**
6 - **6541-2-606**
7 - **6541-2-607**
8 - **6541-2-608**

Universal Tibial Template

6541-2-807
Tibial Alignment Handle

3170-0000
1/8" Drill

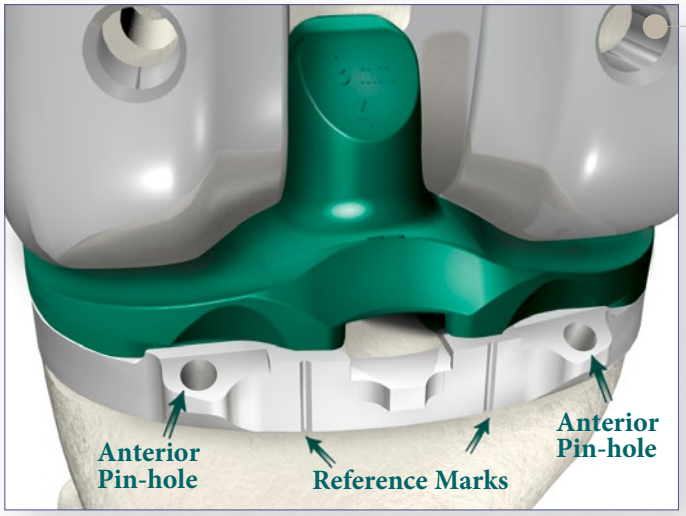


Figure 43

- Once the rotational assessment is determined and the alignment in the coronal and sagittal plane is confirmed, the tibial template is fixed to the tibia using 1/8 inch headed or headless pins.
- Another option is to leave the tibial template unsecured and apply a trial tibial insert. Once the tibial insert is applied, the knee is placed through a range of motion and the center of the tibial template is marked on the tibia in extension.
- Regardless of the method used, once the proper position is determined, the tibial template is secured using the headed or headless pins. Once that is accomplished, the tibial keel must be prepared.

Note: The Tibial Insert Trial can be removed by hand or with the aid of a retractor.

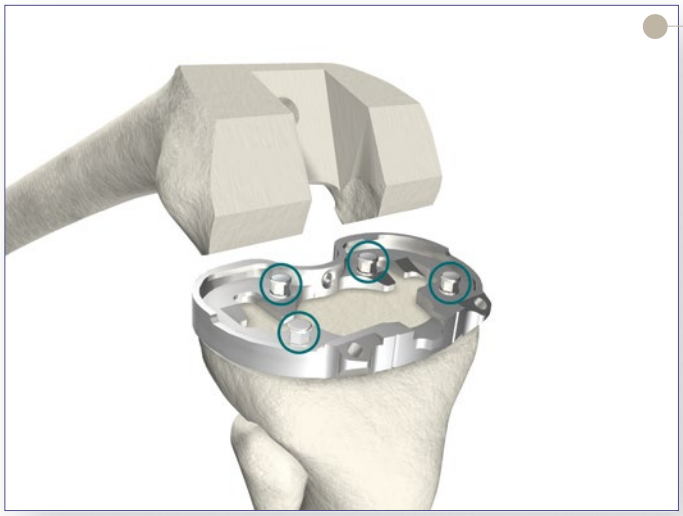


Figure 44

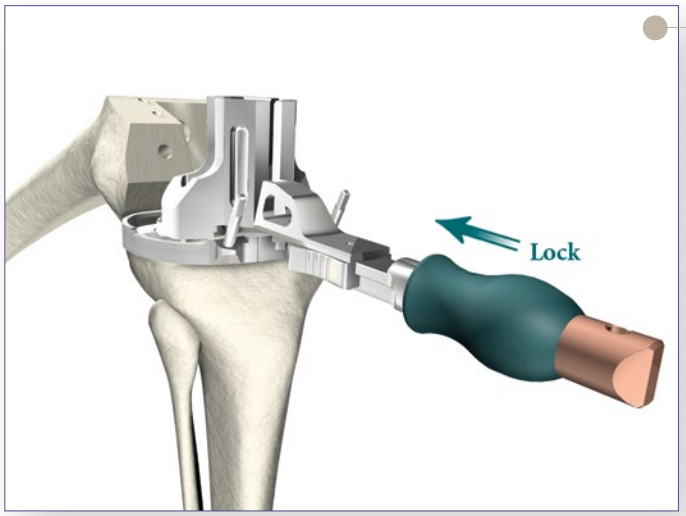


Figure 45

Tibial Keel Preparation

- The tibial keel punch guide is assembled to the universal template by inserting it at a slight angle to the top of the template into the two locating slots in the posterior portion of the universal tibial template. The keel punch is then allowed to sit flat on the universal tibial template and the handle is pushed forward to lock the keel punch guide to the template.

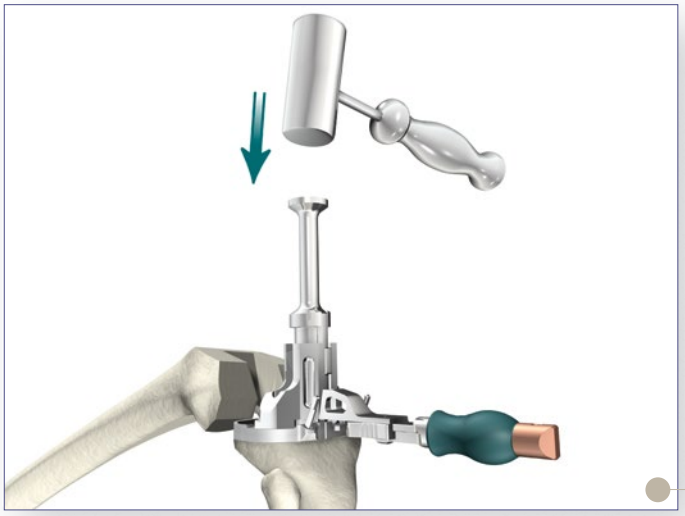


Figure 46

- Once this is secured, the appropriate size keel punch is placed into the keel punch guide. A mallet is used to impact the punch into the tibia.
- If a cemented component is to be used, the keel punch should be impacted until it fully sits into the guide ensuring that it is flat against the bone. If an uncemented implant is used, the surgeon may elect to make only a slight impression into the tibia, with approximately 1/3 to 1/2 of the tibial keel punch, allowing for a press-fit of the tibial keel into the tibia.

Instrument Bar

1 - **6541-2-601**
2 - **6541-2-602**
3 - **6541-2-603**
4 - **6541-2-604**
5 - **6541-2-605**
6 - **6541-2-606**
7 - **6541-2-607**
8 - **6541-2-608**

Universal Tibial Template

3.5'' - **7650-1038**
2.5'' - **7650-1039**

Headless 1/8" Pin

6541-4-515

Headed Nails - 1 1/2"

6541-4-575

Headed Nails - 3/4"

6541-4-300

Headed Nail Impactor Extractor

Size 1, 2, 3 - **6541-2-713**
Size 4, 5, 6, 7, 8 - **6541-2-748**

Keel Punch Guide

Sizes 1, 2, 3 - **6541-2-013**
Sizes 4, 5, 6 - **6541-2-046**
Sizes 7, 8 - **6541-2-078**

Keel Punch

Size 1, 2, 3 - **6541-2-113**
Size 4, 5, 6 - **6541-2-146**
Size 7, 8 - **6541-2-178**

Low Profile Keel Punch

6541-4-804

Headless Pin Extractor

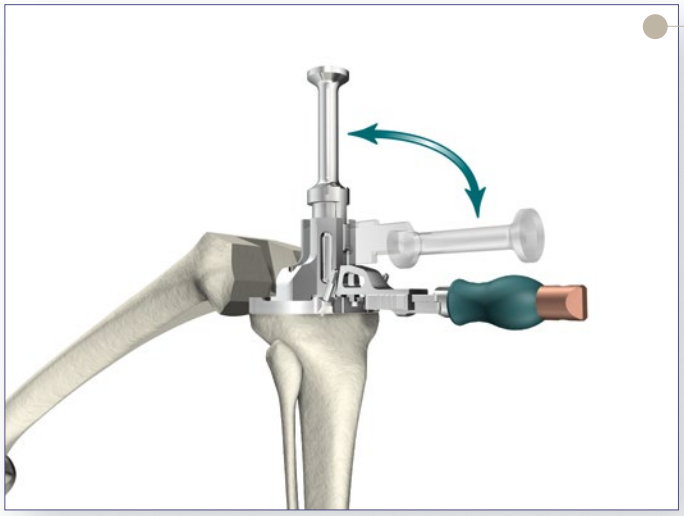


Figure 47

- Once the desired depth is achieved, the keel punch guide handle is lifted up and rotated anteriorly. The handles of the Keel Punch Guide and Keel Punch are then squeezed together to cantilever the punch out of the tibia. The Keel Punch is removed along with the Keel Punch Guide.

Trial Reduction

- Sequential trial inserts are used to confirm that full extension is achieved as well as satisfactory flexion. The Triathlon Total Knee System allows for hyperextension of 5 degrees with flexion greater than 150 degrees. This degree of motion may not be achieved because of tightness of the quadriceps mechanism or the size of the patient's thigh. Stability in flexion and extension is verified.
- Once the appropriate tibial insert is identified, it is left in place and the patella is prepared.

Figure 48

It is important not to overstuff the patellofemoral joint. Anterior referencing assures that overstuffing will not occur on the femoral side. In order not to overstuff on the patella side, the patella/implant construct should be less than or equal to the original thickness of the patella and its cartilage (present or eroded), but never thicker.

Patella Preparation

- The thickness of the patella should be determined by using the patella caliper. Once the thickness is determined and the approximate width is estimated, the surgeon can determine the thickness of the component to be used. The Triathlon patella implant becomes somewhat thicker with increased width. Implants range from 8 to 11mm of thickness and width from 29 to 40mm.

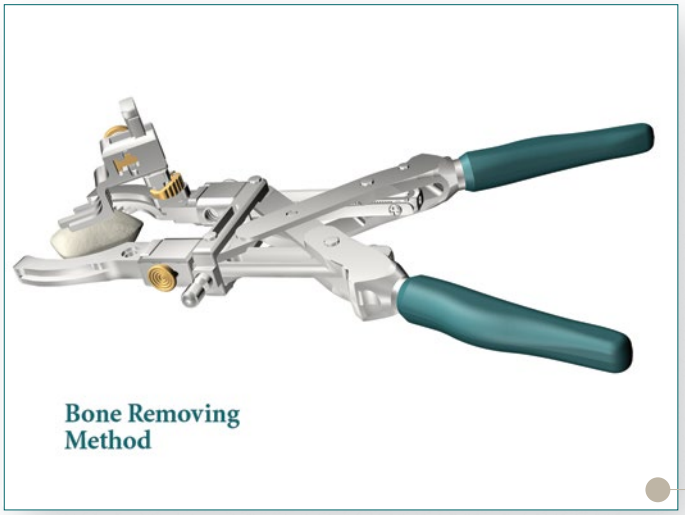


Figure 49

- Patella preparation is facilitated by placing the leg in full extension. The patella can be prepared by turning either 90 degrees or up to 180 degrees.
- The surgeon can elect to prepare the patella by removing a predetermined amount of bone or by allowing a predetermined amount of bone to remain. If the surgeon chooses the bone-removing method, the surgeon measures the patella thickness and determines how much bone will be resected from the native patella. The patella clamp is applied to the patella in a position so that more medial facet will be removed than lateral facet, assuring a symmetrical residual bone. The patella stylus swivels to be able to sweep over the highest portion of the articular surface determining the appropriate level for resection.
- The amount of resection is set on the stylus by pressing the gold button and moving the body of the stylus to the resection line. Once this is accomplished, the patella clamp is secured around the patella. The resection is made through one of the resection slots.

Instrument Bar

Size 1, 2, 3 - **6541-2-713**
Size 4, 5, 6, 7, 8 - **6541-2-748**
Keel Punch Guide

Sizes 1, 2, 3 - **6541-2-013**
Sizes 4, 5, 6 - **6541-2-046**
Sizes 7, 8 - **6541-2-078**
Keel Punch

Size 1, 2, 3 - **6541-2-113**
Size 4, 5, 6 - **6541-2-146**
Size 7, 8 - **6541-2-178**
Low Profile Keel Punch

6541-3-602
Patella Caliper

6541-3-702
Small Patella Clamp Jaw Right

6541-3-703
Small Patella Clamp Jaw Left

6541-3-600
Patella Clamp

6541-3-601
Patella Stylus

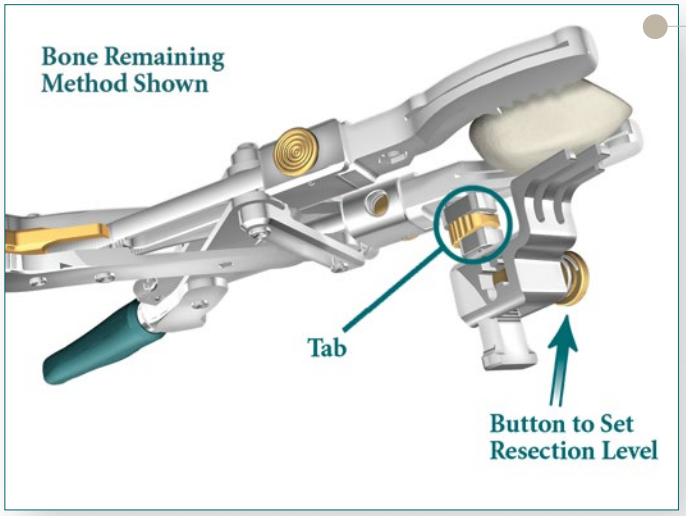


Figure 50

- The surgeon may also elect to use the bone-remaining method. With this technique, the patella clamp is assembled and the patella stylus is attached to the hex shaped hole on either jaw by squeezing the gold tab. The patella stylus will determine how much bone will remain. The desired resection amount is set on the patella stylus by pressing the gold bar and removing the body of the patella stylus to the resection line. The patella clamp is closed around the patella. Residual bone should be at least 12mm in order to reduce the possibility of patella fracture. Once the proper position is secured, the resection is carried out through one of the resection slots.

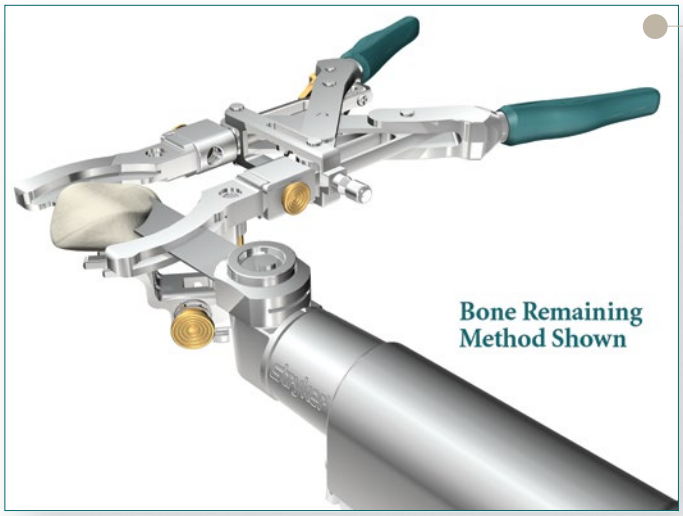


Figure 51

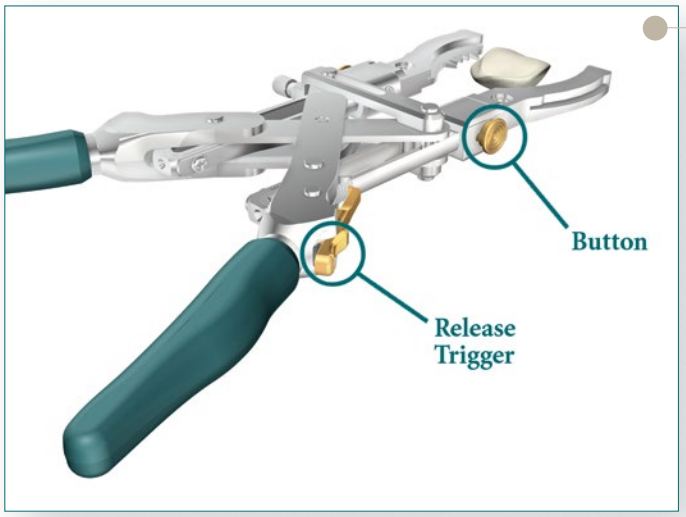


Figure 52

- The clamp is then removed.

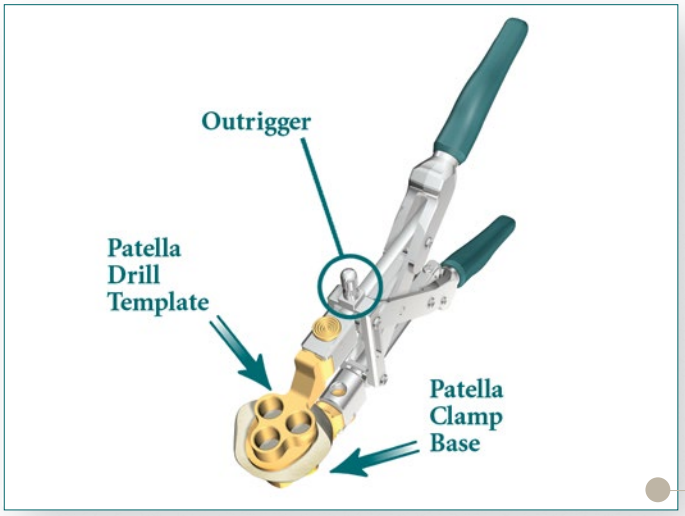


Figure 53

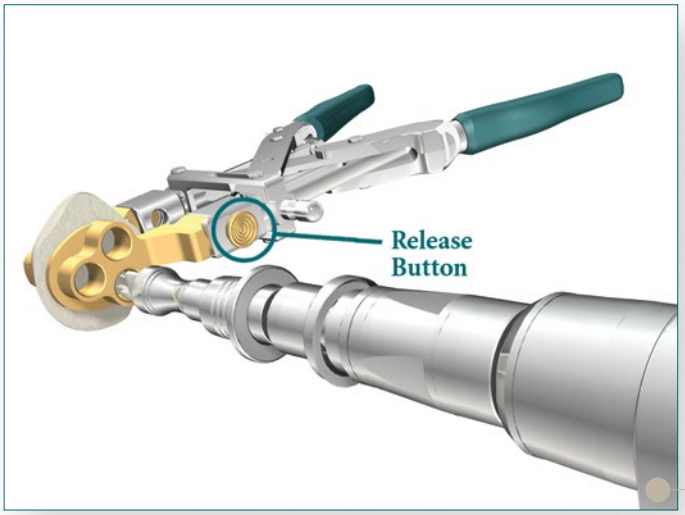


Figure 54

- At this point, the medial/lateral width of the patella is measured and the appropriate size patella template is chosen. Care should be taken to avoid any overhang. Any degree of overhang can cause anterior knee pain by impingement.
- Once the appropriate size template is applied, the clamp is secured and the patella drill is used to drill the three holes of the patella. The drill is engaged to the full depth. Once all three drill holes are made, the patella clamp is removed by depressing the release trigger.The template is also released by pressing the gold button.

Instrument Bar

29mm - **6541-3-617**
32mm - **6541-3-618**
35mm - **6541-3-619**
38mm - **6541-3-620**
40mm - **6541-3-621**

Asymmetric Patella Drill Template

27mm - **6541-3-627**
29mm - **6541-3-629**
31mm - **6541-3-631**
33mm - **6541-3-633**
36mm - **6541-3-636**
39mm - **6541-3-639**

Symmetric Patella Drill Template

6541-3-801
Patella Clamp Base

6541-3-600
Patella Clamp

6541-3-524
All-Poly Patella Drill w/Stop

6541-4-801
Universal Driver

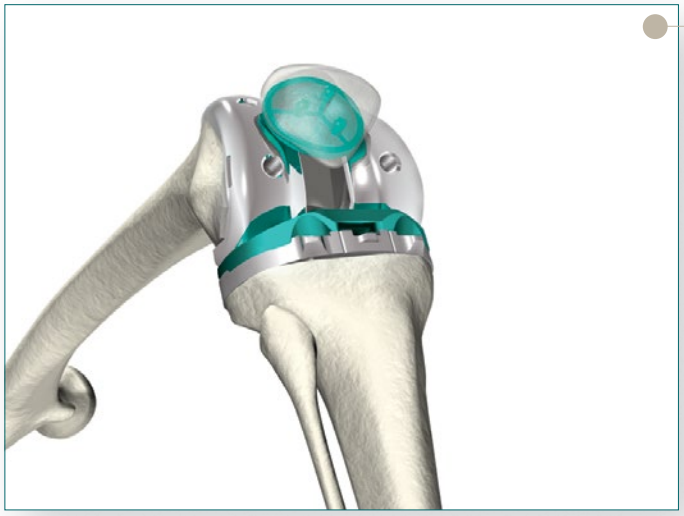


Figure 55

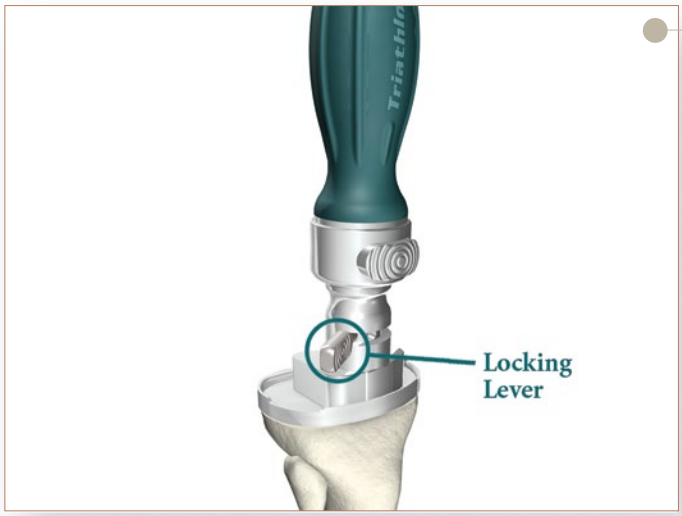


Figure 56

Figure 57

Patella Trial Assessment

- Once the patella has been drilled, the patella trial is applied. If there is any overhang, a smaller implant is chosen. The surgeon can elect to use either a symmetric or asymmetric implant. An asymmetric implant improves patella tracking by medializing the dome of the patella.
- The patella trial is applied and the knee is placed through a range of motion. It is acceptable to place a tenaculum on the edge of the quadriceps tendon and pull proximally to stabilize the extensor mechanism especially if one has used a tendon splitting medial parapatella approach. No external pressure should be applied nor should any medial force be applied.
- The patella should track satisfactorily throughout the range of motion without any tilting or subluxation. If tilting or subluxation occurs, the rotation and alignment of the femoral and tibial components should be checked. If they are satisfactory, a lateral retinacular release should be considered. Prior to a lateral retinacular release, the surgeon could consider deflating the tourniquet to reduce any external pressure on the quadriceps mechanism causing 'false' subluxation.
- Once patella tracking has been determined to be satisfactory, final implantation may be accomplished.

Final Preparation and Implantation

The trial components are removed. The knee should be thoroughly irrigated of all debris. This may be best accomplished by a pulsating lavage. If cemented implants are used, the bone may be further prepared using a hemostatic agent and then dried again. Any "high" spots may be removed using an osteotome, oscillating saw, or bone file.

Tibia

- Cementless: The knee is flexed and the tibia is exposed with appropriate retractors. The peri-apatite coated tibial implant is then impacted into the tibia. The implant must be stable and flush with the bone, with no gaps present.
- Cemented: A batch of methyl-methacrylate Simplex cement is mixed. The tibial component is coated with cement, as well as the upper tibia and the keel punch area. The tibial component is impacted and excess cement is removed.

Figure 58

Figure 59

Femur

- Cementless: The femoral component is impacted, again assuring that the implant is flush with the bone with no gaps. Care must be taken to avoid scratching any of the real implants. If there is any question about stability of the implants, a cemented implant should be considered.
- Cemented: Cement is applied to the femoral component and the cut surface of the femur and the femoral component is impacted. Excess cement is removed.
- Posterior Stabilized Knee: If Modular Femoral Distal Fixation Pegs are to be used, assemble the pegs to the Femoral Component using the 1/8" Hex Drive and the Slip Torque Handle prior to implantation.

Instrument Bar

6541-4-807
Femoral Impactor Extractor

6541-4-810
Impaction Handle

See Catalog
PS Femoral Component - Cemented

See Catalog
CR Femoral Component - Cemented

6541-4-802
1/8" Hex Drive

6541-4-825
Slip Torque Handle

See Catalog
Modular Femoral Distal Fixation Pegs

6541-4-811
Femoral Impactor

6541-4-805
Baseplate Impactor/Extractor

6541-4-812
Tibial Baseplate Impactor

See Catalog
Primary Tibial Baseplate - Cemented

See Catalog
Low Profile Tibial Baseplate

6541-7-811
MIS Femoral Flexion Impactor

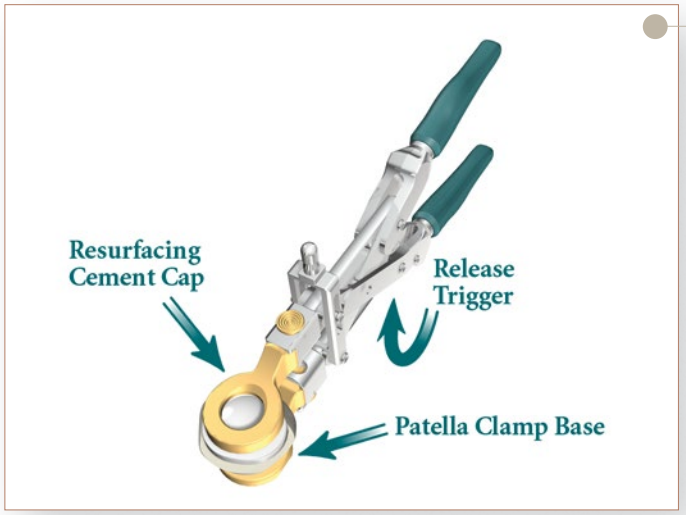


Figure 60

Symmetric or Asymmetric Patella

- Cementless: The peri-apatite coated patellar implant is pressed into the patella using the patella clamp. The implant must be stable and flush with the bone.
- Cemented: The cement is applied to both the implant and the cut surface of the bone and the implant applied and held with the patella clamp. All excess cement is removed. After the cement is hard, the clamp is removed and the knee is again examined.

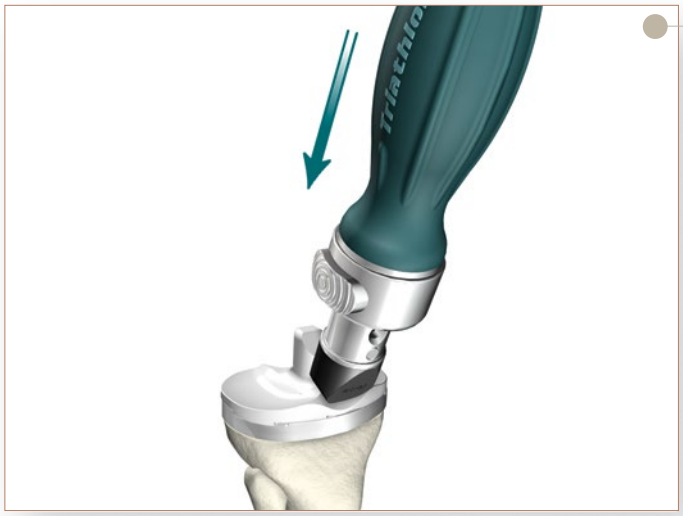


Figure 61

CR or PS Tibial Insert

- The trial tibial component is applied to the tibia and the knee is then placed through a range of motion to check the stability, kinematics, range of motion, and patella tracking. If all is satisfactory, the trial component is removed and an implant tibial insert is applied. Bringing the leg into 45 degrees of flexion may help engage the posterior locking features of the insert.

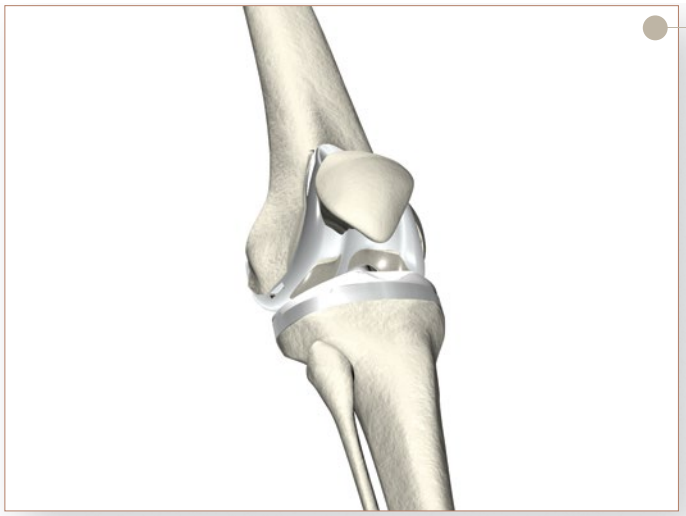


Figure 62

Closure

- The knee is then reduced and again placed through a range of motion where all aspects are checked again. Once the surgeon is satisfied with the reconstruction, the knee is closed in a routine fashion. A drain may or may not be used at the surgeon's discretion. The quadriceps expansion is then repaired using strong interrupted slowly absorbable sutures. The subcutaneous tissue is closed with smaller absorbable suture, and the skin is closed with surgical staples or sutures. The wound is cleansed, dried and a large bulky dressing is applied. The tourniquet is deflated.

Rehabilitation

- The Triathlon Total Knee System has been designed for early recovery. Depending on surgeon preference, patients may be instructed to be fully weight-bearing and allowed to perform full range of motion exercises as early as tolerated.

Instrument Bar

6541-4-810
Impaction Handle

6541-4-813
Tibial Insert Impactor

See Catalog
PS Tibial Insert

See Catalog
CR Tibial Insert

6541-3-800
Patella Cement Cap

6541-3-801
Patella Clamp Base

6541-3-600
Patella Clamp

See Catalog
Symmetric Patella

See Catalog
Asymmetric Patella

Catalog #	Description	Quantity in Kit
AR MIS Miscellaneous Instruments Kit Contents		
3170-0000	1/8” Drill	1
6541-4-300	Headed Pin Impactor Extractor	1
6541-4-400	Bladerunner	1
6541-4-515	Headed Nails- 1 1/2”	2
6541-4-516	5/16” IM Rod	1
6541-4-525	1/4” Peg Drill	1
6541-4-538	3/8” IM Drill	1
6541-4-575	Headed Nail- 3/4”	2
6541-4-602	Universal Alignment Rod	1
6541-4-610	Adjustable Spacer Block	1
6541-4-709	Box Chisel	1
6541-4-800	T- Handle Driver	1
6541-4-801	Universal Driver	1
6541-4-802	1/8” Hex Drive	1
6541-4-803	Slap Hammer	1
6541-4-804	Headless Pin Extractor	1
6541-4-805	Baseplate Impactor Extractor	1
6541-4-806	Universal Alignment Handle	1
6541-4-807	Femoral Impactor Extractor	1
6541-4-808	Modular Handle	1
6541-4-809	Headless Pin Driver	1
6541-4-810	Impaction Handle	1
6541-4-811	Femoral Impactor	1
6541-4-812	Tibial Baseplate Impactor	1
6541-4-813	Tibial Insert Impactor	1
6541-4-825	Slip Torque Handle	1
6541-8-004	Miscellaneous Instruments - Upper Tray	1
6541-8-104	Miscellaneous Instruments - Lower Tray	1
6541-9-000	Triathlon Case	1
QIN 4333	Package Insert	1
		Total Quantity 32

MIS AR Size 1, 2, 7, 8 4:1 Cutting Block Mini Case Kit Contents		
6541-0-701	Triathlon AR 4:1 Cutting Block - Size 1	1
6541-0-702	Triathlon AR 4:1 Cutting Block - Size 2	1
6541-0-707	Triathlon AR 4:1 Cutting Block - Size 7	1
6541-0-708	Triathlon AR 4:1 Cutting Block - Size 8	1
6541-9-410	Triathlon AR 4:1 Mini Case	1
		Total Quantity 5

Catalog #	Description	Quantity in Kit
Patella Preparation and Trialing Kit Contents		
5550-T-278	Symmetric Patella 27mm x 8mm	1
5550-T-298	Symmetric Patella 29mm x 8mm	1
5550-T-319	Symmetric Patella 31mm x 9mm	1
5550-T-339	Symmetric Patella 33mm x 9mm	1
5550-T-360	Symmetric Patella 36mm x 10mm	1
5550-T-391	Symmetric Patella 39mm x 11mm	1
5551-T-299	Asymmetric Patella 29mm(S/I) x 33mm(M/L) x 9mm	1
5551-T-320	Asymmetric Patella 32mm(S/I) x 36mm(M/L) x 10mm	1
5551-T-350	Asymmetric Patella 35mm(S/I) x 39mm(M/L) x 10mm	1
5551-T-381	Asymmetric Patella 38mm(S/I) x 42mm(M/L) x 11mm	1
5551-T-401	Asymmetric Patella 40mm(S/I) x 44mm(M/L) x 11mm	1
6541-3-524	All-Poly Patella Drill w/ Stop	1
6541-3-600	Patella Clamp	1
6541-3-601	Patella Stylus	1
6541-3-602	Patella Caliper	1
6541-3-617	Asymmetric Patella Drill Template - 29mm	1
6541-3-618	Asymmetric Patella Drill Template - 33mm	1
6541-3-619	Asymmetric Patella Drill Template - 35mm	1
6541-3-620	Asymmetric Patella Drill Template - 38mm	1
6541-3-621	Asymmetric Patella Drill Template - 40mm	1
6541-3-627	Symmetric Patella Drill Template - 27mm	1
6541-3-629	Symmetric Patella Drill Template - 29mm	1
6541-3-631	Symmetric Patella Drill Template - 31mm	1
6541-3-633	Symmetric Patella Drill Template - 33mm	1
6541-3-636	Symmetric Patella Drill Template - 36mm	1
6541-3-639	Symmetric Patella Drill Template - 39mm	1
6541-3-702	Small Patella Clamp Jaw Right	1
6541-3-703	Small Patella Clamp Jaw Left	1
6541-3-800	Patella Cement Cap	1
6541-3-801	Patella Clamp Base	1
6541-8-005	Patella Preparation and Trialing - Upper Tray	1
6541-8-105	Patella Preparation and Trialing - Lower Tray	1
6541-9-000	Triathlon Case	1
QIN 4333	Package Insert	1
	Total Quantity 34	

*S/I = Superior/Inferior

Catalog #	Description	Quantity in Kit
AR MIS Size 3-6 Femoral & Tibial Preparation Kit Contents		
7650-1038	Headless 1/8" Pin – 3.5"	4
7650-1039	Headless 1/8" Pin – 2.5"	1
6541-0-600	Triathlon AR Femoral Alignment Guide	1
6541-0-601	Triathlon AR Skim Cut Guide	1
6541-0-602	Triathlon AR Skim Cut Stylus	1
6541-0-603	Triathlon AR 3 Degree Posterior Condylar Reference Guide	1
6541-0-608	Triathlon AR Distal Resection Guide - 8mm	1
6541-0-610	Triathlon AR Distal Resection Guide - 10mm	1
6541-0-620	Triathlon AR Femoral Sizer	1
6541-0-703	Triathlon AR 4:1 Cutting Block - Size 3	1
6541-0-704	Triathlon AR 4:1 Cutting Block - Size 4	1
6541-0-705	Triathlon AR 4:1 Cutting Block - Size 5	1
6541-0-706	Triathlon AR 4:1 Cutting Block - Size 6	1
6541-0-936	Triathlon AR 3-6 Femoral Tibial Prep Lower Tray	1
6541-2-013	Size 1-3 Keel Punch	1
6541-2-046	Sizer 4-6 Keel Punch	1
6541-2-429	Tibial Stylus	1
6541-2-603	#3 Universal Tibial Template	1
6541-2-604	#4 Universal Tibial Template	1
6541-2-605	#5 Universal Tibial Template	1
6541-2-606	#6 Universal Tibial Template	1
6541-2-609	Tibial Alignment Ankle Clamp EM	1
6541-2-610	Tibial Alignment Distal Assembly EM	1
6541-2-704	Tibial Adjustment Housing - 0 Degree Slope	1
6541-2-705	Tibial Adjustment Housing - 3 Degree Slope	1
6541-2-713	Size 1-3 Keel Punch Guide	1
6541-2-748	Size 4-8 Keel Punch Guide	1
6541-2-807	Tibial Alignment Handle	1
6541-6-611	MIS Proximal Rod EM	1
6541-7-806	MIS 4:1 Impactor / Extractor	1
6541-7-807	MIS Femoral Trial Extractor	1
6541-7-811	MIS Femoral Flexion Impactor	1
6541-8-030	MIS Size 3-6 Femoral & Tibial Preparation - Upper	1
6541-9-000	Triathlon Case	1
QIN 4333	Package Insert	1
	Total Quantity 38	

MIS Tibial Resection Guides (Either Captured or Uncaptured Required)		
6541-6-700	MIS Uncaptured Tibial Resection Guide - Right	1
6541-6-701	MIS Uncaptured Tibial Resection Guide - Left	1
6541-6-702	MIS Captured Tibial Resection Guide - Right	1
6541-6-703	MIS Captured Tibial Resection Guide - Left	1
	Total Quantity 4	

Catalog #	Description	Quantity in Kit
Size 3-6 PS Femoral & Tibial Trialing Kit Contents		
5511-T-301	PS Femoral Trial #3 Left	1
5511-T-302	PS Femoral Trial #3 Right	1
5511-T-401	PS Femoral Trial #4 left	1
5511-T-402	PS Femoral Trial #4 Right	1
5511-T-501	PS Femoral Trial #5 Left	1
5511-T-502	PS Femoral Trial #5 Right	1
5511-T-601	PS Femoral Trial #6 Left	1
5511-T-602	PS Femoral Trial #6 Right	1
5532-T-309A	PS Tibial Insert Trial #3-9MM	1
5532-T-311A	PS Tibial Insert Trial #3-11MM	1
5532-T-313A	PS Tibial Insert Trial #3-13MM	1
5532-T-316A	PS Tibial Insert Trial #3-16MM	1
5532-T-319A	PS Tibial Insert Trial #3-19MM	1
5532-T-409A	PS Tibial Insert Trial #4-9MM	1
5532-T-411A	PS Tibial Insert Trial #4-11MM	1
5532-T-413A	PS Tibial Insert Trial #4-13MM	1
5532-T-416A	PS Tibial Insert Trial #4-16MM	1
5532-T-419A	PS Tibial Insert Trial #4-19MM	1
5532-T-509A	PS Tibial Insert Trial #5-9MM	1
5532-T-511A	PS Tibial Insert Trial #5-11MM	1
5532-T-513A	PS Tibial Insert Trial #5-13MM	1
5532-T-516A	PS Tibial Insert Trial #5-16MM	1
5532-T-519A	PS Tibial Insert Trial #5-19MM	1
5532-T-609A	PS Tibial Insert Trial #6-9MM	1
5532-T-611A	PS Tibial Insert Trial #6-11MM	1
5532-T-613A	PS Tibial Insert Trial #6-13MM	1
5532-T-616A	PS Tibial Insert Trial #6-16MM	1
5532-T-619A	PS Tibial Insert Trial #6-19MM	1
6541-5-713	#3 PS Box Cutting Guide	1
6541-5-714	#4 PS Box Cutting Guide	1
6541-5-715	#5 PS Box Cutting Guide	1
6541-5-716	#6 PS Box Cutting Guide	1
6541-8-009	Size 3-6 Femoral and Tibial Trialing- Upper Tray	1
6541-8-109	Size 3-6 PS Femoral and Tibial Trialing-Lower Tray	1
6541-9-000	Triathlon Case	1
QIN 4333	Package Insert	1
	Total Quantity	**36**

*S/I = Superior/Inferior

Catalog #	Description	Quantity in Kit
MIS AR Size 2, 7 PS Preparation & Trialing Kit Contents		
5511-T-201	PS Femoral Trial #2 Left	1
5511-T-202	PS Femoral Trial #2 Right	1
5511-T-701	PS Femoral Trial #7 Left	1
5511-T-702	PS Femoral Trial #7 Right	1
5532-T-209A	PS Tibial Insert Trial # 2- 9MM	1
5532-T-211A	PS Tibial Insert Trial # 2 -11MM	1
5532-T-213A	PS Tibial Insert Trial # 2 -13MM	1
5532-T-216A	PS Tibial Insert Trial # 2 -16MM	1
5532-T-219A	PS Tibial Insert Trial # 2 -19MM	1
5532-T-709A	PS Tibial Insert Trial # 7 -9MM	1
5532-T-711A	PS Tibial Insert Trial # 7 -11MM	1
5532-T-713A	PS Tibial Insert Trial # 7 -13MM	1
5532-T-716A	PS Tibial Insert Trial # 7 -16MM	1
5532-T-719A	PS Tibial Insert Trial # 7 -19MM	1
6541-5-712	#2 MIS PS Box Cutting Guide	1
6541-5-717	#7 MIS PS Box Cutting Guide	1
6541-2-078	Size 7-8 Keel Punch	1
6541-2-602	#2 Universal Tibial Template	1
6541-2-607	#7 Universal Tibial Template	1
6541-8-022	2,7 PS Preparation and Trialing- Upper Tray	1
6541-9-000	Triathlon Case	1
QIN 4333	Package Insert	1
		Total Quantity 22

MIS AR Size 1, 8 PS Preparation & Trialing Kit Contents		
5511-T-101	PS Femoral Trial # 1Left	1
5511-T-102	PS Femoral Trial # 1Right	1
5511-T-801	PS Femoral Trial # 8 Left	1
5511-T-802	PS Femoral Trial # 8 Right	1
5532-T-109A	PS Tibial Insert Trial # 1 - 9mm	1
5532-T-111A	PS Tibial Insert Trial # 1 - 11mm	1
5532-T-113A	PS Tibial Insert Trial # 1 - 13mm	1
5532-T-116A	PS Tibial Insert Trial # 1 - 16mm	1
5532-T-119A	PS Tibial Insert Trial # 1 - 19mm	1
5532-T-809A	PS Tibial Insert Trial # 8 - 9mm	1
5532-T-811A	PS Tibial Insert Trial # 8 - 11mm	1
5532-T-813A	PS Tibial Insert Trial # 8 - 13mm	1
5532-T-816A	PS Tibial Insert Trial # 8 - 16mm	1
5532-T-819A	PS Tibial Insert Trial # 8 - 19mm	1
6541-2-601	#1 - Universal Tibial Template	1
6541-2-608	#8 - Universal Tibial Template	1
6541-5-711	#1 PS Box Cutting Guide	1
6541-5-718	#8 PS Box Cutting Guide	1
6541-8-113	1-8 PS Lower Tray	1
		Total Quantity 19

Catalog #	Description	Quantity in Kit
Size 3-6 CR Femoral & Tibial Trialing Kit Contents		
5510-T-301	CR Femoral Trial #3 Left	1
5510-T-302	CR Femoral Trial #3 Right	1
5510-T-401	CR Femoral Trial #4 Left	1
5510-T-402	CR Femoral Trial #4 Right	1
5510-T-501	CR Femoral Trial #5 Left	1
5510-T-502	CR Femoral Trial #5 Right	1
5510-T-601	CR Femoral Trial #6 Left	1
5510-T-602	CR Femoral Trial #6 Right	1
5530-T-309A	CR Tibial Insert Trial # 3 -9MM	1
5530-T-311A	CR Tibial Insert Trial # 3 -11MM	1
5530-T-313A	CR Tibial Insert Trial # 3 -13MM	1
5530-T-316A	CR Tibial Insert Trial # 3 -16MM	1
5530-T-319A	CR Tibial Insert Trial # 3 -19MM	1
5530-T-409A	CR Tibial Insert Trial # 4 -9MM	1
5530-T-411A	CR Tibial Insert Trial #4 -11MM	1
5530-T-413A	CR Tibial Insert Trial # 4 -13MM	1
5530-T-416A	CR Tibial Insert Trial # 4 -16MM	1
5530-T-419A	CR Tibial Insert Trial # 4 -19MM	1
5530-T-509A	CR Tibial Insert Trial # 5 -9MM	1
5530-T-511A	CR Tibial Insert Trial # 5 -11MM	1
5530-T-513A	CR Tibial Insert Trial # 5 -13MM	1
5530-T-516A	CR Tibial Insert Trial # 5 -16MM	1
5530-T-519A	CR Tibial Insert Trial # 5 -19MM	1
5530-T-609A	CR Tibial Insert Trial # 6 -9MM	1
5530-T-611A	CR Tibial Insert Trial #6 -11MM	1
5530-T-613A	CR Tibial Insert Trial # 6 -13MM	1
5530-T-616A	CR Tibial Insert Trial # 6 -16MM	1
5530-T-619A	CR Tibial Insert Trial # 6 -19MM	1
6541-8-008	Size 3-6 CR Femoral and Tibial Trialing- Upper Tray	1
6541-8-108	Size 3-6 CR Femoral and Tibial Trialing- Lower Tray	1
6541-9-000	Triathlon Case	1
QIN 4333	Package Insert	1
		Total Quantity 32

Low Profile Tibial Tray Keel Punch Kit Contents

6541-2-113	Size 1-3 MIS Keel Punch	1
6541-2-146	Size 4-6 MIS Keel Punch	1
6541-2-178	Size 7-8 MIS Keel Punch	1
		Total Quantity 3

Catalog #	Description	Quantity in Kit
MIS AR Size 2, 7 CR Preparation & Trialing Kit Contents		
5510-T-201	CR Femoral Trial #2 Left	1
5510-T-202	CR Femoral Trial #2 Right	1
5510-T-701	CR Femoral Trial #7 Left	1
5510-T-702	CR Femoral Trial #7 Right	1
5530-T-209A	CR Tibial Insert Trial # 2 -9MM	1
5530-T-211A	CR Tibial Insert Trial # 2 -11MM	1
5530-T-213A	CR Tibial Insert Trial # 2 -13MM	1
5530-T-216A	CR Tibial Insert Trial # 2 -16MM	1
5530-T-219A	CR Tibial Insert Trial # 2 -19MM	1
5530-T-709A	CR Tibial Insert Trial # 7 -9MM	1
5530-T-711A	CR Tibial Insert Trial # 7 -11MM	1
5530-T-713A	CR Tibial Insert Trial # 7 -13MM	1
5530-T-716A	CR Tibial Insert Trial # 7 -16MM	1
5530-T-719A	CR Tibial Insert Trial # 7 -19MM	1
6541-2-078	Size 7-8 Keel Punch	1
6541-2-602	#2 Universal Tibial Template	1
6541-2-607	#7 Universal Tibial Template	1
6541-8-021	2,7 CR Preparation and Trialing- Upper Tray	1
6541-9-000	Triathlon Case	1
QIN 4333	Package Insert	1
		Total Quantity 20

MIS AR Size 1, 8 CR Preparation & Trialing Kit Contents		
5510-T-101	CR Femoral Trial # 1 Left	1
5510-T-102	CR Femoral Trial # 1 Right	1
5510-T-801	CR Femoral Trial # 8 Left	1
5510-T-802	CR Femoral Trial # 8 Right	1
5530-T-109A	CR Tibial Insert Trial #1 - 9mm	1
5530-T-111A	CR Tibial Insert Trial #1 - 11mm	1
5530-T-113A	CR Tibial Insert Trial #1 - 13mm	1
5530-T-116A	CR Tibial Insert Trial #1 - 16mm	1
5530-T-119A	CR Tibial Insert Trial #1 - 19mm	1
5530-T-809A	CR Tibial Insert Trial #8 - 9mm	1
5530-T-811A	CR Tibial Insert Trial #8 - 11mm	1
5530-T-813A	CR Tibial Insert Trial #8 - 13mm	1
5530-T-816A	CR Tibial Insert Trial #8 - 16mm	1
5530-T-819A	CR Tibial Insert Trial #8 - 19mm	1
6541-2-601	#1 - Universal Tibial Template	1
6541-2-608	#8 - Universal Tibial Template	1
6541-8-112	1-8 CR Lower Tray	1
		Total Quantity 17

Catalog #	Description	Quantity in Kit

Size 1-8 Max PS Tibial Trialing Kit Contents

5532-T-122	PS Femoral Trial # 1 - 22mm	1
5532-T-125	PS Femoral Trial # 1 - 25mm	1
5532-T-222	PS Femoral Trial # 2 - 22mm	1
5532-T-225	PS Femoral Trial # 2 - 25mm	1
5532-T-322A	PS Tibial Insert Trial # 3 - 22mm	1
5532-T-325A	PS Tibial Insert Trial # 3 - 25mm	1
5532-T-422A	PS Tibial Insert Trial # 4 - 22mm	1
5532-T-425A	PS Tibial Insert Trial # 4 - 25mm	1
5532-T-522A	PS Tibial Insert Trial # 5 - 22mm	1
5532-T-525A	PS Tibial Insert Trial # 5 - 25mm	1
5532-T-622A	PS Tibial Insert Trial # 6 - 22mm	1
5532-T-625A	PS Tibial Insert Trial # 6 - 25mm	1
5532-T-722A	PS Tibial Insert Trial # 7 - 22mm	1
5532-T-725A	PS Tibial Insert Trial # 7 - 25mm	1
5532-T-822A	PS Tibial Insert Trial # 8 - 22mm	1
5532-T-825A	PS Tibial Insert Trial # 8 - 25mm	1
6541-8-120	Triathlon 1-8 Max PS - Upper Tray	1
6541-9-0000	Triathlon Case	1
		Total Quantity 18

Primary Tibial Baseplate - Cemented Part Numbers

5520-B-100	Low Profile Tibial Baseplate – Cemented #1
5520-B-200	Low Profile Tibial Baseplate – Cemented #2
5520-B-300	Low Profile Tibial Baseplate – Cemented #3
5520-B-400	Low Profile Tibial Baseplate – Cemented #4
5520-B-500	Low Profile Tibial Baseplate – Cemented #5
5520-B-600	Low Profile Tibial Baseplate – Cemented #6
5520-B-700	Low Profile Tibial Baseplate – Cemented #7
5520-B-800	Low Profile Tibial Baseplate – Cemented #8

Low Profile Tibial Baseplate - Cemented Part Numbers

5520-M-100	Low Profile Baseplate #1
5520-M-200	Low Profile Baseplate #2
5520-M-300	Low Profile Baseplate #3
5520-M-400	Low Profile Baseplate #4
5520-M-500	Low Profile Baseplate #5
5520-M-600	Low Profile Baseplate #6
5520-M-700	Low Profile Baseplate #7
5520-M-800	Low Profile Baseplate #8

Catalog # Cementless	Description
Primary Tibial Baseplate - Beaded Part Numbers	
5523-B-100	Primary Tibial Baseplate - Beaded - #1
5523-B-200	Primary Tibial Baseplate - Beaded - #2
5523-B-300	Primary Tibial Baseplate - Beaded - #3
5523-B-400	Primary Tibial Baseplate - Beaded - #4
5523-B-500	Primary Tibial Baseplate - Beaded - #5
5523-B-600	Primary Tibial Baseplate - Beaded - #6
5523-B-700	Primary Tibial Baseplate - Beaded - #7
5523-B-800	Primary Tibial Baseplate - Beaded - #8
Primary Tibial Baseplate - Beaded with Peri-Apatite Part Numbers	
5526-B-100	Primary Tibial Baseplate - Beaded w/PA - #1
5526-B-200	Primary Tibial Baseplate - Beaded w/PA - #2
5526-B-300	Primary Tibial Baseplate - Beaded w/PA - #3
5526-B-400	Primary Tibial Baseplate - Beaded w/PA - #4
5526-B-500	Primary Tibial Baseplate - Beaded w/PA - #5
5526-B-600	Primary Tibial Baseplate - Beaded w/PA - #6
5526-B-700	Primary Tibial Baseplate - Beaded w/PA - #7
5526-B-800	Primary Tibial Baseplate - Beaded w/PA - #8

Catalog # Cemented	Description
PS Femoral Component - Cemented Part Numbers	
5515-F-101	PS Femoral Component – Cemented #1 Left
5515-F-102	PS Femoral Component – Cemented #1 Right
5515-F-201	PS Femoral Component – Cemented #2 Left
5515-F-202	PS Femoral Component – Cemented #2 Right
5515-F-301	PS Femoral Component – Cemented #3 Left
5515-F-302	PS Femoral Component – Cemented #3 Right
5515-F-401	PS Femoral Component – Cemented #4 Left
5515-F-402	PS Femoral Component – Cemented #4 Right
5515-F-501	PS Femoral Component – Cemented #5 Left
5515-F-502	PS Femoral Component – Cemented #5 Right
5515-F-601	PS Femoral Component – Cemented #6 Left
5515-F-602	PS Femoral Component – Cemented #6 Right
5515-F-701	PS Femoral Component – Cemented #7 Left
5515-F-702	PS Femoral Component – Cemented #7 Right
5515-F-801	PS Femoral Component – Cemented #8 Left
5515-F-802	PS Femoral Component – Cemented #8 Right

Catalog # Cementless	Description

PS Femoral Cementless Component - Beaded Part Numbers

5514-F-101	PS Femoral Component - Beaded - #1, Left
5514-F-102	PS Femoral Component - Beaded - #1, Right
5514-F-201	PS Femoral Component - Beaded - #2, Left
5514-F-202	PS Femoral Component - Beaded - #2, Right
5514-F-301	PS Femoral Component - Beaded - #3, Left
5514-F-302	PS Femoral Component - Beaded - #3, Right
5514-F-401	PS Femoral Component - Beaded - #4, Left
5514-F-402	PS Femoral Component - Beaded - #4, Right
5514-F-501	PS Femoral Component - Beaded - #5, Left
5514-F-502	PS Femoral Component - Beaded - #5, Right
5514-F-601	PS Femoral Component - Beaded - #6, Left
5514-F-602	PS Femoral Component - Beaded - #6, Right
5514-F-701	PS Femoral Component - Beaded - #7, Left
5514-F-702	PS Femoral Component - Beaded - #7, Right
5514-F-801	PS Femoral Component - Beaded - #8, Left
5514-F-802	PS Femoral Component - Beaded - #8, Right

PS Femoral Cementless Component - Beaded with Peri-Apatite Part Numbers

5516-F-101	PS Femoral Component - Beaded w/PA - #1, Left
5516-F-102	PS Femoral Component - Beaded w/PA - #1, Right
5516-F-201	PS Femoral Component - Beaded w/PA - #2, Left
5516-F-202	PS Femoral Component - Beaded w/PA - #2, Right
5516-F-301	PS Femoral Component - Beaded w/PA - #3, Left
5516-F-302	PS Femoral Component - Beaded w/PA - #3, Right
5516-F-401	PS Femoral Component - Beaded w/PA - #4, Left
5516-F-402	PS Femoral Component - Beaded w/PA - #4, Right
5516-F-501	PS Femoral Component - Beaded w/PA - #5, Left
5516-F-502	PS Femoral Component - Beaded w/PA - #5, Right
5516-F-601	PS Femoral Component - Beaded w/PA - #6, Left
5516-F-602	PS Femoral Component - Beaded w/PA - #6, Right
5516-F-701	PS Femoral Component - Beaded w/PA - #7, Left
5516-F-702	PS Femoral Component - Beaded w/PA - #7, Right
5516-F-801	PS Femoral Component - Beaded w/PA - #8, Left
5516-F-802	PS Femoral Component - Beaded w/PA - #8, Right

Catalog # Cemented	Description
CR Femoral Component - Cemented Part Numbers	
5510-F-101	CR Femoral Component – Cemented #1 Left
5510-F-102	CR Femoral Component – Cemented #1 Right
5510-F-201	CR Femoral Component – Cemented #2 Left
5510-F-202	CR Femoral Component – Cemented #2 Right
5510-F-301	CR Femoral Component – Cemented #3 Left
5510-F-302	CR Femoral Component – Cemented #3 Right
5510-F-401	CR Femoral Component – Cemented #4 Left
5510-F-402	CR Femoral Component – Cemented #4 Right
5510-F-501	CR Femoral Component – Cemented #5 Left
5510-F-502	CR Femoral Component – Cemented #5 Right
5510-F-601	CR Femoral Component – Cemented #6 Left
5510-F-602	CR Femoral Component – Cemented #6 Right
5510-F-701	CR Femoral Component – Cemented #7 Left
5510-F-702	CR Femoral Component – Cemented #7 Right
5510-F-801	CR Femoral Component – Cemented #8 Left
5510-F-802	CR Femoral Component – Cemented #8 Right

Catalog # Cementless	Description
CR Femoral Cementless Component - Beaded Part Numbers	
5513-F-101	CR Femoral Component - Beaded - #1, Left
5513-F-102	CR Femoral Component - Beaded - #1, Right
5513-F-201	CR Femoral Component - Beaded - #2, Left
5513-F-202	CR Femoral Component - Beaded - #2, Right
5513-F-301	CR Femoral Component - Beaded - #3, Left
5513-F-302	CR Femoral Component - Beaded - #3, Right
5513-F-401	CR Femoral Component - Beaded - #4, Left
5513-F-402	CR Femoral Component - Beaded - #4, Right
5513-F-501	CR Femoral Component - Beaded - #5, Left
5513-F-502	CR Femoral Component - Beaded - #5, Right
5513-F-601	CR Femoral Component - Beaded - #6, Left
5513-F-602	CR Femoral Component - Beaded - #6, Right
5513-F-701	CR Femoral Component - Beaded - #7, Left
5513-F-702	CR Femoral Component - Beaded - #7, Right
5513-F-801	CR Femoral Component - Beaded - #8, Left
5513-F-802	CR Femoral Component - Beaded - #8, Right

Catalog # Cementless	Description
CR Femoral Cementless Component - Beaded with Peri-Apatite Part Numbers	
5517-F-101	CR Femoral Component - Beaded w/PA - #1, Left
5517-F-102	CR Femoral Component - Beaded w/PA - #1, Right
5517-F-201	CR Femoral Component - Beaded w/PA - #2, Left
5517-F-202	CR Femoral Component - Beaded w/PA - #2, Right
5517-F-301	CR Femoral Component - Beaded w/PA - #3, Left
5517-F-302	CR Femoral Component - Beaded w/PA - #3, Right
5517-F-401	CR Femoral Component - Beaded w/PA - #4, Left
5517-F-402	CR Femoral Component - Beaded w/PA - #4, Right
5517-F-501	CR Femoral Component - Beaded w/PA - #5, Left
5517-F-502	CR Femoral Component - Beaded w/PA - #5, Right
5517-F-601	CR Femoral Component - Beaded w/PA - #6, Left
5517-F-602	CR Femoral Component - Beaded w/PA - #6, Right
5517-F-701	CR Femoral Component - Beaded w/PA - #7, Left
5517-F-702	CR Femoral Component - Beaded w/PA - #7, Right
5517-F-801	CR Femoral Component - Beaded w/PA - #8, Left
5517-F-802	CR Femoral Component - Beaded w/PA - #8, Right

PS Tibial Insert Part Numbers

Catalog #	Description
5532-P-109	PS Tibial Insert #1 – 9mm
5532-P-111	PS Tibial Insert #1 – 11mm
5532-P-113	PS Tibial Insert #1 – 13mm
5532-P-116	PS Tibial Insert #1 – 16mm
5532-P-119	PS Tibial Insert #1 – 19mm
5532-P-122	PS Tibial Insert #1 – 22mm
5532-P-125	PS Tibial Insert #1 – 25mm
5532-P-209	PS Tibial Insert #2 – 9mm
5532-P-211	PS Tibial Insert #2 – 11mm
5532-P-213	PS Tibial Insert #2 – 13mm
5532-P-216	PS Tibial Insert #2 – 16mm
5532-P-219	PS Tibial Insert #2 – 19mm
5532-P-222	PS Tibial Insert #2 – 22mm
5532-P-225	PS Tibial Insert #2 – 25mm
5532-P-309	PS Tibial Insert #3 – 9mm
5532-P-311	PS Tibial Insert #3 – 11mm
5532-P-313	PS Tibial Insert #3 – 13mm
5532-P-316	PS Tibial Insert #3 – 16mm
5532-P-319	PS Tibial Insert #3 – 19mm
5532-P-322	PS Tibial Insert #3 – 22mm
5532-P-325	PS Tibial Insert #3 – 25mm
5532-P-409	PS Tibial Insert #4 – 9mm
5532-P-411	PS Tibial Insert #4 – 11mm
5532-P-413	PS Tibial Insert #4 – 13mm
5532-P-416	PS Tibial Insert #4 – 16mm
5532-P-419	PS Tibial Insert #4 – 19mm
5532-P-422	PS Tibial Insert #4 – 22mm
5532-P-425	PS Tibial Insert #4 – 25mm
5532-P-509	PS Tibial Insert #5 – 9mm
5532-P-511	PS Tibial Insert #5 – 11mm
5532-P-513	PS Tibial Insert #5 – 13mm
5532-P-516	PS Tibial Insert #5 – 16mm
5532-P-519	PS Tibial Insert #5 – 19mm
5532-P-522	PS Tibial Insert #5 – 22mm
5532-P-525	PS Tibial Insert #5 – 25mm
5532-P-609	PS Tibial Insert #6 – 9mm
5532-P-611	PS Tibial Insert #6 – 11mm
5532-P-613	PS Tibial Insert #6 – 13mm
5532-P-616	PS Tibial Insert #6 – 16mm
5532-P-619	PS Tibial Insert #6 – 19mm
5532-P-622	PS Tibial Insert #6 – 22mm
5532-P-625	PS Tibial Insert #6 – 25mm

Continued

Catalog #	Description

PS Tibial Insert Part Numbers - Continued

5532-P-709	PS Tibial Insert #7 – 9mm
5532-P-711	PS Tibial Insert #7 – 11mm
5532-P-713	PS Tibial Insert #7 – 13mm
5532-P-716	PS Tibial Insert #7 – 16mm
5532-P-719	PS Tibial Insert #7 – 19mm
5532-P-722	PS Tibial Insert #7 – 22mm
5532-P-725	PS Tibial Insert #7 – 25mm
5532-P-809	PS Tibial Insert #8 – 9mm
5532-P-811	PS Tibial Insert #8 – 11mm
5532-P-813	PS Tibial Insert #8 – 13mm
5532-P-816	PS Tibial Insert #8 – 16mm
5532-P-819	PS Tibial Insert #8 – 19mm
5532-P-822	PS Tibial Insert #8 – 22mm
5532-P-825	PS Tibial Insert #8 – 25mm

PS Tibial Insert - X3 Part Numbers

5532-G-109	PS Tibial Insert - X3 # 1 - 9mm
5532-G-111	PS Tibial Insert - X3 # 1 - 11mm
5532-G-113	PS Tibial Insert - X3 # 1 - 13mm
5532-G-116	PS Tibial Insert - X3 # 1 - 16mm
5532-G-119	PS Tibial Insert - X3 # 1 - 19mm
5532-G-122	PS Tibial Insert - X3 # 1 - 22mm
5532-G-125	PS Tibial Insert - X3 # 1 - 25mm
5532-G-209	PS Tibial Insert - X3 # 2 - 9mm
5532-G-211	PS Tibial Insert - X3 # 2 - 11mm
5532-G-213	PS Tibial Insert - X3 # 2 - 13mm
5532-G-216	PS Tibial Insert - X3 # 2 - 16mm
5532-G-219	PS Tibial Insert - X3 # 2 - 19mm
5532-G-222	PS Tibial Insert - X3 # 2 - 22mm
5532-G-225	PS Tibial Insert - X3 # 2 - 25mm
5532-G-309	PS Tibial Insert - X3 # 3 - 9mm
5532-G-311	PS Tibial Insert - X3 # 3 - 11mm
5532-G-313	PS Tibial Insert - X3 # 3 - 13mm
5532-G-316	PS Tibial Insert - X3 # 3 - 16mm
5532-G-319	PS Tibial Insert - X3 # 3 - 19mm
5532-G-322	PS Tibial Insert - X3 # 3 - 22mm
5532-G-325	PS Tibial Insert - X3 # 3 - 25mm

Continued

Catalog #	Description
PS Tibial Insert - X3 Part Numbers - Continued	
5532-G-409	PS Tibial Insert - X3 # 4 - 9mm
5532-G-411	PS Tibial Insert - X3 # 4 - 11mm
5532-G-413	PS Tibial Insert - X3 # 4 - 13mm
5532-G-416	PS Tibial Insert - X3 # 4 - 16mm
5532-G-419	PS Tibial Insert - X3 # 4 - 19mm
5532-G-422	PS Tibial Insert - X3 # 4 - 22mm
5532-G-425	PS Tibial Insert - X3 # 4 - 25mm
5532-G-509	PS Tibial Insert - X3 # 5 - 9mm
5532-G-511	PS Tibial Insert - X3 # 5 - 11mm
5532-G-513	PS Tibial Insert - X3 # 5 - 13mm
5532-G-516	PS Tibial Insert - X3 # 5 - 16mm
5532-G-519	PS Tibial Insert - X3 # 5 - 19mm
5532-G-522	PS Tibial Insert - X3 # 5 - 22mm
5532-G-525	PS Tibial Insert - X3 # 5 - 25mm
5532-G-609	PS Tibial Insert - X3 # 6 - 9mm
5532-G-611	PS Tibial Insert - X3 # 6 - 11mm
5532-G-613	PS Tibial Insert - X3 # 6 - 13mm
5532-G-616	PS Tibial Insert - X3 # 6 - 16mm
5532-G-619	PS Tibial Insert - X3 # 6 - 19mm
5532-G-622	PS Tibial Insert - X3 # 6 - 22mm
5532-G-625	PS Tibial Insert - X3 # 6 - 25mm
5532-G-709	PS Tibial Insert - X3 # 7 - 9mm
5532-G-711	PS Tibial Insert - X3 # 7 - 11mm
5532-G-713	PS Tibial Insert - X3 # 7 - 13mm
5532-G-716	PS Tibial Insert - X3 # 7 - 16mm
5532-G-719	PS Tibial Insert - X3 # 7 - 19mm
5532-G-722	PS Tibial Insert - X3 # 7 - 22mm
5532-G-725	PS Tibial Insert - X3 # 7 - 25mm
5532-G-809	PS Tibial Insert - X3 # 8 - 9mm
5532-G-811	PS Tibial Insert - X3 # 8 - 11mm
5532-G-813	PS Tibial Insert - X3 # 8 - 13mm
5532-G-816	PS Tibial Insert - X3 # 8 - 16mm
5532-G-819	PS Tibial Insert - X3 # 8 - 19mm
5532-G-822	PS Tibial Insert - X3 # 8 - 22mm
5532-G-825	PS Tibial Insert - X3 # 8 - 25mm

Catalog #	Description
CR Tibial Insert - X3 Part Numbers	
5530-G-109	CR Tibial Insert - X3 # 1 - 9mm
5530-G-111	CR Tibial Insert - X3 # 1 - 11mm
5530-G-113	CR Tibial Insert - X3 # 1 - 13mm
5530-G-116	CR Tibial Insert - X3 # 1 - 16mm
5530-G-119	CR Tibial Insert - X3 # 1 - 19mm
5530-G-209	CR Tibial Insert - X3 # 2 - 9mm
5530-G-211	CR Tibial Insert - X3 # 2 - 11mm
5530-G-213	CR Tibial Insert - X3 # 2 - 13mm
5530-G-216	CR Tibial Insert - X3 # 2 - 16mm
5530-G-219	CR Tibial Insert - X3 # 2 - 19mm
5530-G-309	CR Tibial Insert - X3 # 3 - 9mm
5530-G-311	CR Tibial Insert - X3 # 3 - 11mm
5530-G-313	CR Tibial Insert - X3 # 3 - 13mm
5530-G-316	CR Tibial Insert - X3 # 3 - 16mm
5530-G-319	CR Tibial Insert - X3 # 3 - 19mm
5530-G-409	CR Tibial Insert - X3 # 4 - 9mm
5530-G-411	CR Tibial Insert - X3 # 4 - 11mm
5530-G-413	CR Tibial Insert - X3 # 4 - 13mm
5530-G-416	CR Tibial Insert - X3 # 4 - 16mm
5530-G-419	CR Tibial Insert - X3 # 4 - 19mm
5530-G-509	CR Tibial Insert - X3 # 5 - 9mm
5530-G-511	CR Tibial Insert - X3 # 5 - 11mm
5530-G-513	CR Tibial Insert - X3 # 5 - 13mm
5530-G-516	CR Tibial Insert - X3 # 5 - 16mm
5530-G-519	CR Tibial Insert - X3 # 5 - 19mm
5530-G-609	CR Tibial Insert - X3 # 6 - 9mm
5530-G-611	CR Tibial Insert - X3 # 6 - 11mm
5530-G-613	CR Tibial Insert - X3 # 6 - 13mm
5530-G-616	CR Tibial Insert - X3 # 6 - 16mm
5530-G-619	CR Tibial Insert - X3 # 6 - 19mm
5530-G-709	CR Tibial Insert - X3 # 7 - 9mm
5530-G-711	CR Tibial Insert - X3 # 7 - 11mm
5530-G-713	CR Tibial Insert - X3 # 7 - 13mm
5530-G-716	CR Tibial Insert - X3 # 7 - 16mm
5530-G-719	CR Tibial Insert - X3 # 7 - 19mm
5530-G-809	CR Tibial Insert - X3 # 8 - 9mm
5530-G-811	CR Tibial Insert - X3 # 8 - 11mm
5530-G-813	CR Tibial Insert - X3 # 8 - 13mm
5530-G-816	CR Tibial Insert - X3 # 8 - 16mm
5530-G-819	CR Tibial Insert - X3 # 8 - 19mm

Catalog #	Description
CR Tibial Insert Part Numbers	
5530-P-109	CR Tibial Insert #1 – 9mm
5530-P-111	CR Tibial Insert #1 – 11mm
5530-P-113	CR Tibial Insert #1 – 13mm
5530-P-116	CR Tibial Insert #1 – 16mm
5530-P-119	CR Tibial Insert #1 – 19mm
5530-P-209	CR Tibial Insert #2 – 9mm
5530-P-211	CR Tibial Insert #2 – 11mm
5530-P-213	CR Tibial Insert #2 – 13mm
5530-P-216	CR Tibial Insert #2 – 16mm
5530-P-219	CR Tibial Insert #2 – 19mm
5530-P-309	CR Tibial Insert #3 – 9mm
5530-P-311	CR Tibial Insert #3 – 11mm
5530-P-313	CR Tibial Insert #3 – 13mm
5530-P-316	CR Tibial Insert #3 – 16mm
5530-P-319	CR Tibial Insert #3 – 19mm
5530-P-409	CR Tibial Insert #4 – 9mm
5530-P-411	CR Tibial Insert #4 – 11mm
5530-P-413	CR Tibial Insert #4 – 13mm
5530-P-416	CR Tibial Insert #4 – 16mm
5530-P-419	CR Tibial Insert #4 – 19mm
5530-P-509	CR Tibial Insert #5 – 9mm
5530-P-511	CR Tibial Insert #5 – 11mm
5530-P-513	CR Tibial Insert #5 – 13mm
5530-P-516	CR Tibial Insert #5 – 16mm
5530-P-519	CR Tibial Insert #5 – 19mm
5530-P-609	CR Tibial Insert #6 – 9mm
5530-P-611	CR Tibial Insert #6 – 11mm
5530-P-613	CR Tibial Insert #6 – 13mm
5530-P-616	CR Tibial Insert #6 – 16mm
5530-P-619	CR Tibial Insert #6 – 19mm
5530-P-709	CR Tibial Insert #7 – 9mm
5530-P-711	CR Tibial Insert #7 – 11mm
5530-P-713	CR Tibial Insert #7 – 13mm
5530-P-716	CR Tibial Insert #7 – 16mm
5530-P-719	CR Tibial Insert #7 – 19mm
5530-P-809	CR Tibial Insert #8 – 9mm
5530-P-811	CR Tibial Insert #8 – 11mm
5530-P-813	CR Tibial Insert #8 – 13mm
5530-P-816	CR Tibial Insert #8 – 16mm
5530-P-819	CR Tibial Insert #8 – 19mm

Catalog #	Description
Symmetric Patella Part Numbers	
5550-L-278	Symmetric Patella S27mm x 8mm
5550-L-298	Symmetric Patella S29mm x 8mm
5550-L-319	Symmetric Patella S31mm x 9mm
5550-L-339	Symmetric Patella S33mm x 9mm
5550-L-360	Symmetric Patella S36mm x 10mm
5550-L-391	Symmetric Patella S39mm x 11mm
Symmetric Patella - X3 Part Numbers	
5550-G-278	Symmetric Patella - X3 - S27mm x 8mm
5550-G-298	Symmetric Patella - X3 - S29mm x 8mm
5550-G-319	Symmetric Patella - X3 - S31mm x 9mm
5550-G-339	Symmetric Patella - X3 - S33mm x 9mm
5550-G-360	Symmetric Patella - X3 - S36mm x 10mm
5550-G-391	Symmetric Patella - X3 - S39mm x 11mm
Asymmetric Patella Part Numbers	
5551-L-299	Asymmetric Patella A29mm (S/I*) x 9mm
5551-L-320	Asymmetric Patella A32mm (S/I*) x 10mm
5551-L-350	Asymmetric Patella A35mm (S/I*) x 10mm
5551-L-381	Asymmetric Patella A38mm (S/I*) x 11mm
5551-L-401	Asymmetric Patella A40mm (S/I*) x 11mm
Asymmetric Patella - X3 Part Numbers	
5551-G-299	Asymmetric Patella - X3 - A29mm (S/I*) x 9mm
5551-G-320	Asymmetric Patella - X3 - A32mm (S/I*) x 10mm
5551-G-350	Asymmetric Patella - X3 - A35mm (S/I*) x 10mm
5551-G-381	Asymmetric Patella - X3 - A38mm (S/I*) x 11mm
5551-G-401	Asymmetric Patella - X3 - A40mm (S/I*) x 11mm
Modular Femoral Distal Fixation Peg Part Number	
5575-X-000	Modular Femoral Distal Fixation Peg (2 per pack)

* S/I = Superior/Inferior

Notes

Notes

Triathlon Knee System

Anterior Referencing Surgical Protocol

Indications

General Total Knee Arthroplasty (TKA) Indications include:

- Painful, disabling joint disease of the knee resulting from: non-inflammatory degenerative joint disease (including osteoarthritis, traumatic arthritis or avascular necrosis) rheumatoid arthritis or post-traumatic arthritis.
- Post-traumatic loss of knee joint configuration and function.
- Moderate varus, valgus, or flexion deformity in which the ligamentous structures can be returned to adequate function and stability.
- Revision of previous unsuccessful knee replacement or other procedure.
- Fracture of the distal femur and/or proximal tibia that cannot be stabilized by standard fracture management techniques.

Additional Indications for Posterior Stabilized (PS) Components:

- Ligamentous instability requiring implant bearing surface geometries with increased constraint.
- Absent or non-functioning posterior cruciate ligament.
- Severe anteroposterior instability of the knee joint.

The Triathlon Total Knee System beaded and beaded with Peri-Apatite components are intended for uncemented use only.

The Triathlon Tritanium Tibial Baseplate and Tritanium Metal-Backed Patella components are indicated for both uncemented and cemented use.

Contraindications

- Any active or suspected latent infection in or about the knee joint.
- Distant foci of infection which may cause hematogenous spread to the implant site.
- Any mental or neuromuscular disorder which would create an unacceptable risk of prosthesis instability, prosthesis fixation failure, or complications in postoperative care.
- Bone stock compromised by disease, infection or prior implantation which cannot provide adequate support and/or fixation to the prosthesis.
- Skeletal immaturity.
- Severe instability of the knee joint secondary to the absence of collateral ligament integrity and function.

See package insert for warnings, precautions, adverse effects, information for patients and other essential product information.

Before using Triathlon instrumentation, verify:

- Instruments have been properly disassembled prior to cleaning and sterilization;
- Instruments have been properly assembled poststerilization;
- Instruments have maintained design integrity; and,
- Proper size configurations are available.

For Instructions for Cleaning, Sterilization, Inspection and Maintenance of Orthopaedic Medical Devices, refer to LSTPI-B.

Femoral Component/ Insert Compatibility

Size Matching: One up, one down, e.g., size 5 femur with size 4 or 6 insert/ baseplate.

Note: Cementless implants are not to be used with cement.

	Femoral Components	Insert Type			
		CR	CS	PS	TS
	CR Cemented	✔	✔	No	No
	PS Cemented	No	✔	✔	✔
	TS Cemented	No	No	✔	✔
Cementless	CR Beaded	✔	✔	No	No
Cementless	PS Beaded	No	No	✔	No
Cementless	CR Beaded with PA	✔	✔	No	No
Cementless	PS Beaded with PA	No	No	✔	No

Femoral Component/ Patella Compatibility

Size Matching: Every patella articulates with every femur due to a common radius across all sizes.

	Femoral Components	Patella Type			
		Asymmetric	Asymmetric Metal Backed	Symmetric Metal Backed	Symmetric
	CR Cemented	✔	✔	✔	✔
	PS Cemented	✔	✔	✔	✔
	TS Cemented	✔	✔	✔	✔
Cementless	CR Beaded	✔	✔	✔	✔
Cementless	PS Beaded	✔	✔	✔	✔
Cementless	CR Beaded with PA	✔	✔	✔	✔
Cementless	PS Beaded with PA	✔	✔	✔	✔

Tibial Insert/Baseplate Compatibility

Size Matching: Size Specific, e.g., size 4 insert to be used only with size 4 baseplate.

Note: TS insert can only be used with the cemented universal baseplate.

	Tibial Baseplates	Insert Type			
		CR	CS	PS	TS
	Cemented Cruciform	✔	✔	✔	No
	Cemented Universal	✔	✔	✔	✔
Cementless	Beaded Cruciform	✔	✔	✔	No
Cementless	Beaded Screw Fix	✔	✔	✔	No
Cementless	Beaded with PA Cruciform	✔	✔	✔	No
Cementless	Beaded with PA Screw Fix	✔	✔	✔	No
Cementless	Tritanium	✔	✔	✔	No

Triathlon TS Augments

Distal Augments are for use with both the medial and lateral portions of the side indicated, e.g. #4 right is used for medial and lateral compartments on a right femur.

Posterior Augments are universal size specific, e.g. size 4 posterior augments are for the size 4 femur.

Tibial Augments are size specific and come in left medial/right lateral or right medial/left lateral configurations.

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