DRAFT

stryker

Orthopaedics

Triathlon® Knee System Surgical Protocol

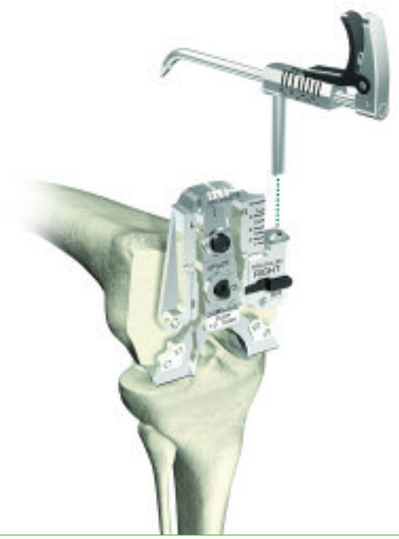
The Right Procedure with the Right Implant for Your Patient

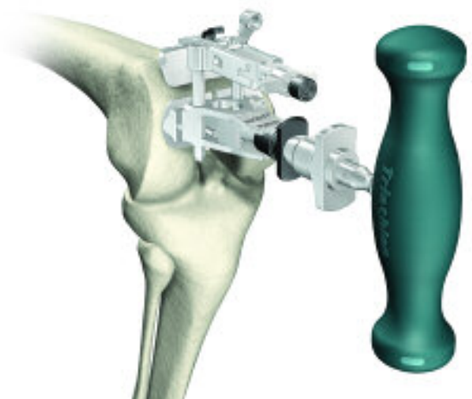
Triathlon® Knee System
Surgical Protocol

Table of Contents

Triathlon® Knee System
Surgical Protocol

Stryker Orthopaedics wishes to thank the entire Triathlon® MIS Surgeon Panel and the dozens of surgeons worldwide who guided the design and development of the Triathlon® MIS Instrumentation.



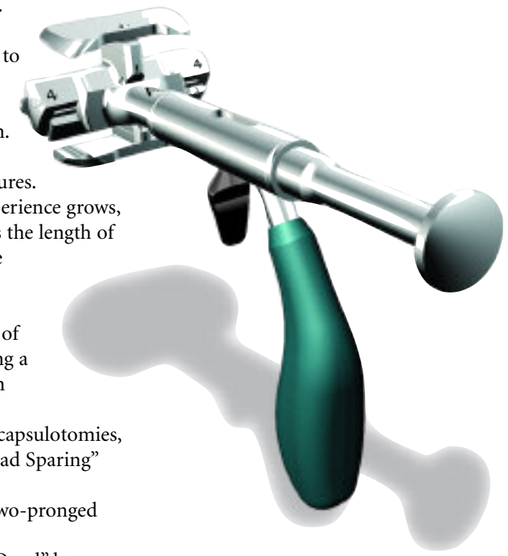


Introduction

The transition from traditional TKA to MIS-TKA should be considered a process of "evolution rather than revolution."

The following strategic actions are involved in this "evolutionary" approach:

- Progressively reduce the incision
- Minimize quadriceps trauma
- Retract rather than evert patella
- Decrease trauma to peri-articular soft tissues
- Incremental exposure of the relevant joint anatomy into a smaller wound utilizing "mobile windows" rather than full exposure of the joint through a larger wound and total visualization.



- Experience with the MIS-TKA is best gained using a traditional leg holder method. This allows for variable flexion and extension while providing an effective and familiar resource for the orthopaedic surgeon.
- The surgeon may choose to utilize a suspended leg technique in which the leg, resting on a bolster, is hanging over the table. This approach allows gravity to distract the joint and may enhance posterior soft tissue exposure.
- With either the adjustable leg holder or the suspended leg technique, the MIS-TKA utilizes the natural elasticity of the skin to enhance exposure while reducing the necessary incision length.
- Progressive utilization of flexion and extension presents the relevant joint anatomy without the need for a traditional incision.
- The surgeon's goal should be to reduce the incision length to a minimum without causing excessive traction to soft tissue structures. This does not need to be an immediate adjustment. As one's experience grows, it will be possible to gradually reduce incision length to 2.5 times the length of the patella. During the learning curve, the incision can always be extended to match the surgical circumstance and the surgeon's preference.
- Recognize that the primary patient concerns are pain and length of rehabilitation. Cosmetics are a secondary consideration. Adopting a "Quad Sparing" strategy helps to address these issues, resulting in greater patient satisfaction.
- A VMO snip, 2cm to 2.5cm in length with superior and inferior capsulotomies, rather than cutting the muscle or over-retracting, begins the "Quad Sparing" strategy.
- "Quad Sparing" is enhanced by elevating the quadriceps with a two-pronged retractor rather than cutting the muscle to allow exposure.
- Gentle retraction of the patella rather than eversion "Spares the Quad" by avoiding over-extending the quadriceps mechanism. This potentially results in long-term muscle damage and longer rehabilitation periods.
- Minimizing capsular damage may also significantly improve postoperative recovery. The damage can be avoided by cutting the tibia and femur *in-situ*, thus avoiding dislocation of the tibiofemoral joint.
- Specialized instrumentation minimizes the need for extensive exposure and allows for the substitution of gentle patellar retraction rather than the traumatic practice of patellar eversion.
- By using sequential bone removal, the extensor mechanism is decompressed without violating its integrity. This allows a progressively larger working space for greater visibility.

Surgical Approaches

The following section explains the main types of MIS surgical techniques, mid-vastus and sub-vastus, as well as the standard open medial parapatellar approach. Additionally, it highlights the key differences between approaches and clinical advantages/disadvantages of each.

Standard Medial Parapatellar

This is the standard open incision approach. The large incision (16-22cm) runs up the medial side of the patella from below the tibial tubercle to 5-7cm above the patella through the quadriceps tendon. Invasion of the quad tendon allows the patella to be everted (flipped-over) for better visualization of the joint line.

Advantages: Medial parapatellar is a well-known technique. Many surgeons have long utilized this technique and are confident in their ability to implant within the incision because anatomical landmarks (i.e., transepicondylar axis, Whiteside's Line, tibial tubercle) are all visible.

Disadvantages: Significant invasion of underlying soft tissue may be the biggest disadvantage of the medial parapatellar approach. Cutting into the quad tendon, which works in concert with the quadriceps muscles to extend the leg in gait, rise from a chair and ascend/descend stairs, means that rehabilitation will be significantly slower. In fact, Silva reported that there was up to a 30% reduction in quadriceps strength as far as 2 years postoperatively in TKA patients.[1]

MIS Mid-Vastus

The mid-vastus technique is characterized by a 6-12cm skin incision medial to the patella from just above the tibial tubercle to just above the patella. What differentiates the MIS mid-vastus incision from other surgical approaches is a small 1.5-3cm snip of the VMO muscle and the subluxing (sliding) of the patella laterally.[2]

Advantages: MIS mid-vastus incision does not violate the quadriceps tendon and, as a result, speed of rehabilitation increases, pain is decreased and function is improved at 6 weeks post-op as compared to a medial parapatellar approach.[2,3] If necessary, this approach can be expanded for increased visualization. It is also the only approach supported by a published prospective randomized study.[3]

Disadvantages: Critics of the mid-vastus cite the risk of denervation (severing) of the neurovascular bundles of the VMO, which could cause numbness and reduced propioception. However, Cooper et al. performed a cadaveric evaluation and found that the neurovascular structures of the VMO reside, on average, 8cm proximal to the VMO-patella insertion point.[4] With proper soft tissue mobilization it is unlikely that a 1.5-3cm VMO snip will extend an additional 5-6.5cm during the course of the procedure.

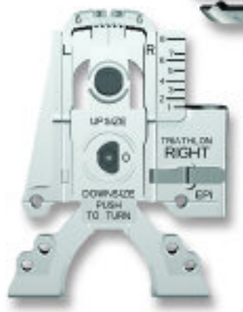
MIS Sub-Vastus

The sub-vastus does not incise the quad tendon or VMO, instead the incision runs up the medial side of the patella, stops below the VMO and makes a 90° turn into the medial retinaculum. Incision size is typically 6-10cm and the patella is subluxed like in the mid-vastus.

Advantages: No invasion of the quad could lead to even faster rehabilitation. However, to date there has not been a randomized study to show faster rehabilitation with sub-vastus when compared to a 1.5-3cm snip of the VMO in a mid-vastus. Despite the lack of clinical data, many surgeons currently perform sub-vastus techniques, which is why Stryker's Triathlon® MIS instruments are designed to be used in different techniques, including the sub-vastus incision.

Disadvantages: The MIS sub-vastus offers less visualization of the lateral tibial plateau when compared to mid-vastus approach, which could lead to problems sizing, aligning and seating the tibial implant.[2] Ease of the procedure is dependent on the type of patient. Short, muscular, stocky and obese legs exacerbate the issue of reduced visualization.[3] Anecdotally, this sub-vastus "Quad Sparing" technique may be analogous to a 2-incision hip technique, where only a small percentage of patients are indicated.

Triathlon® Knee System
Surgical Protocol



Instruments

Each of these approaches, along with the instruments described in this surgical technique, can be utilized for a standard procedure even though they are designed for MIS.

The Triathlon® Knee System Instrumentation has incorporated experiences from Stryker's 30-year orthopaedic history. The system combines the expertise of orthopaedic and human factors engineers with that of surgeons and OR staff worldwide. The MIS Triathlon® Knee System Instrumentation provides OR efficiency and intra-operative flexibility through Orthonomic™ designs.

Orthonomics™: The science of incorporating ergonomic principles into the design of orthopaedic instruments.

Efficiency

The Triathlon® MIS Knee System Instrumentation design team focused on identifying ways to increase the accuracy and simplicity of the surgical procedure, which are two variables that may affect OR efficiency. The features incorporated include:

- Open design cutting blocks to enhance visualization
- Bold markings and color-coding for ease of use and clear identification
- Quick attach and release mechanisms to facilitate easy assembly
- A logically organized tray layout based on the operational sequence for a streamlined process

Flexibility

The proprietary instrumentation design also delivers intra-operative flexibility. The following features help surgeons adapt to multiple surgical realities and surgical preferences:

- Modular cutting captures, handles and cases facilitate customized surgical flow
- A common platform that allows for seamless transition through the indications continuum
- Navigation ready
- Minimally Invasive Orthonomic™ Design of the Triathlon® Knee System Instrumentation is designed to become the standard in the industry. Advanced design principles incorporating Orthonomic™ features include:
- Ergonomic soft grip handles for optimized surgeon hand fit and comfort
- Procedural enhancing mechanisms
- Lightweight trays for ease of handling

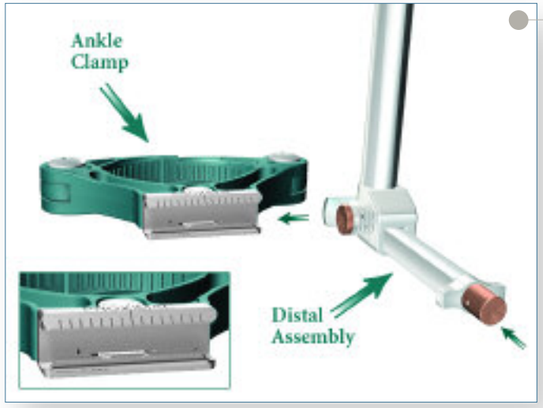
Assembly Instructions

Triathlon® Knee System
Surgical Protocol

Assembly Instructions

Many of the Triathlon® Knee System Instruments have unique mechanisms incorporated to assist surgeons and OR Staff in a simplified, efficient surgical experience. Therefore, assembly instructions have been 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 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**

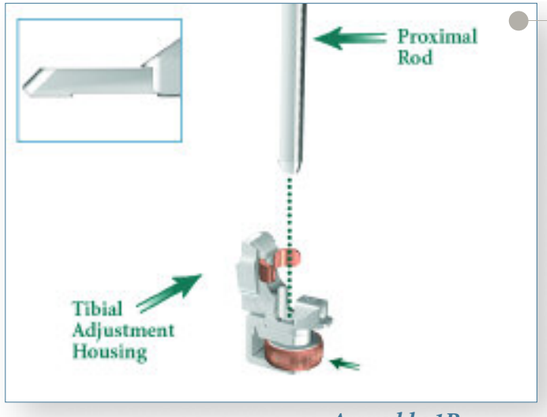


Assembly 1A

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

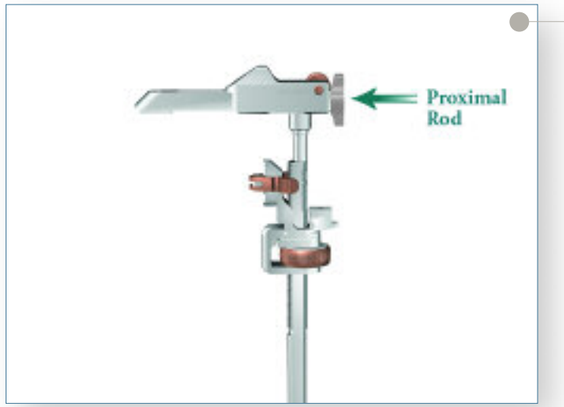
Note: The Tibial Adjustment Housing is available in 0° slope (posterior stabilized) and 3° slope (cruciate retaining):

- Press the bronze button on the Distal Assembly and slide into the grooves on the Ankle Clamp. Ensure that the side of the Ankle Clamp reading "proximal" is visible from above.



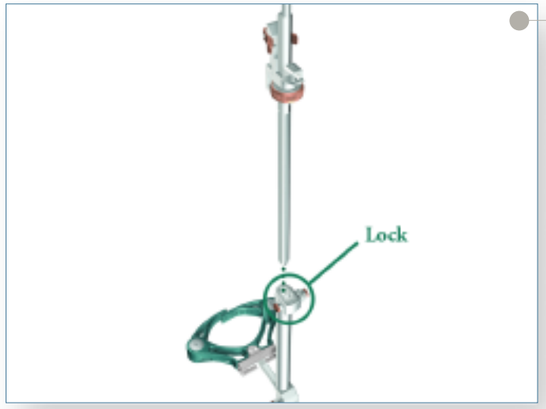
Assembly 1B

- Press the bronze wheel on the Tibial Adjustment Housing with your thumb and insert the Proximal Rod. Ensure that the two fixation pins on the superior portion of the Proximal Rod are facing posteriorly.



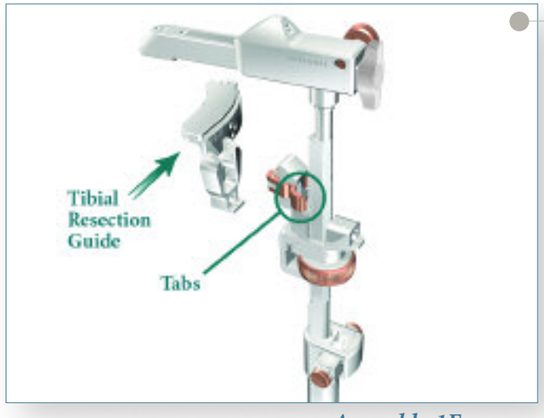
Assembly 1C

- Slide the Proximal Rod until the Tibial Adjustment Housing engages the teeth on the Proximal Rod. Ensure that the bronze tabs are above the bronze wheel when assembling.



Assembly 1D

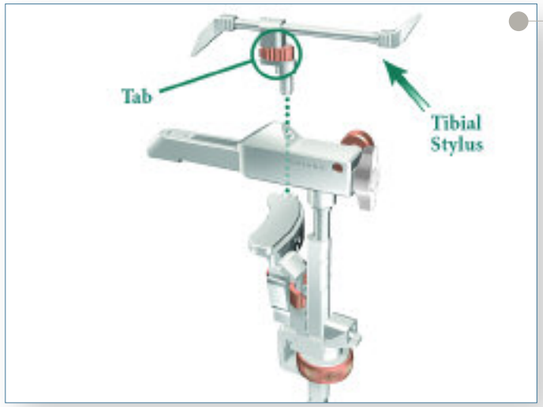
- Insert the Proximal Rod and Tibial Adjustment Housing assembly into the hole on the top of the Distal Assembly.



Assembly 1E

- Insert the Proximal Rod and Tibial Adjustment Housing assembly into the hole on the top of the Distal Assembly.

(Continued)

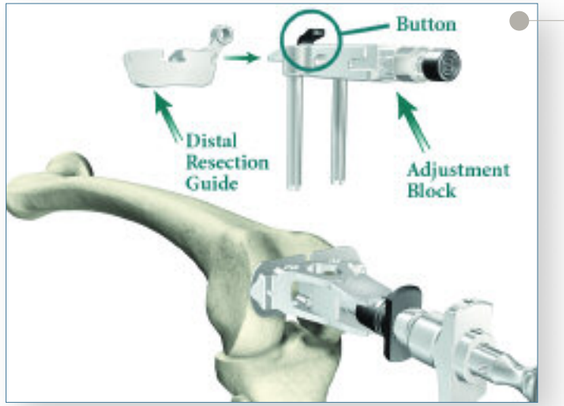


Assembly 1F

- Squeeze the bronze tabs on the Tibial Adjustment Housing and insert entire assembly into the MIS Captured or Uncaptured Tibial Resection Guide.
- Squeeze the bronze tab on the Tibial Stylus and insert the post into the appropriate side of the Tibial Resection Guide.
- Release the bronze tab to lock the Tibial Stylus in place.

Assembly 1G

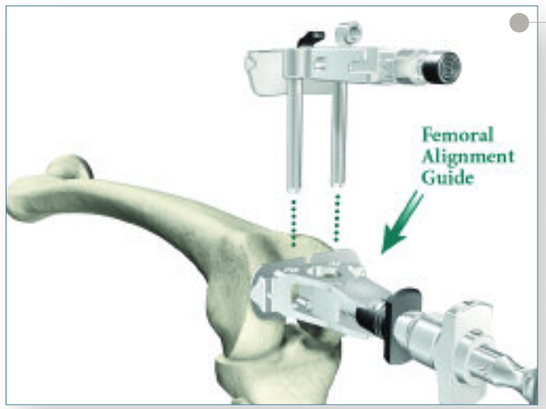
- The MIS Proximal Rod has a retractable fixation arm. Ensure that the arm position is fully extended; to extend or retract the fixation arm, depress the bronze button on the side of the MIS Proximal Rod and slide the fixation arm to the desired location.



Assembly 2A

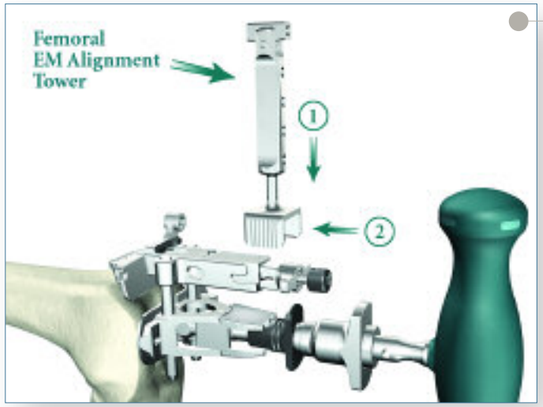
MIS Distal Resection Guide, MIS Adjustment Block and MIS Femoral Alignment Guide Assembly:

- Select the appropriate Left or Right Distal Resection Guide and assemble it onto the MIS Adjustment Block.



Assembly 2B

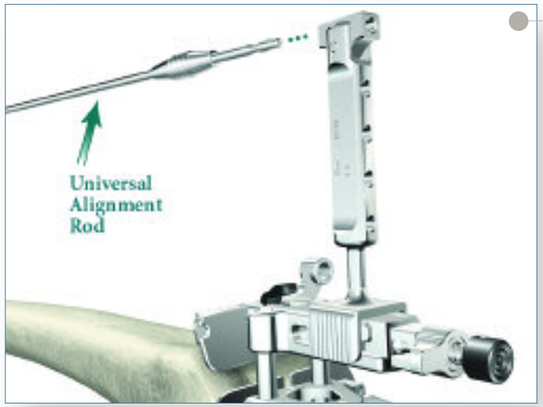
- Insert the two posts of the Adjustment Block into the holes on the Femoral Alignment Guide (for use on the left or right side).



Assembly 3A

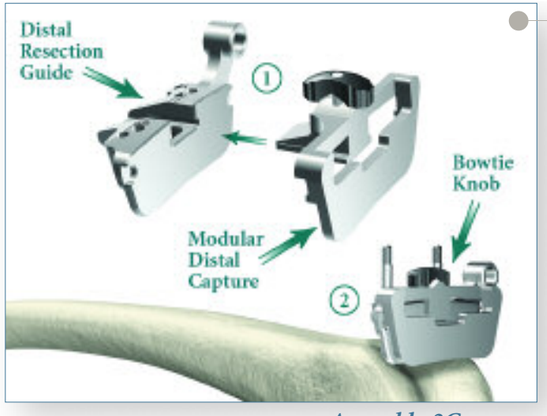
Femoral EM Alignment Tower, MIS Femoral Adjustment Block, and Universal Alignment Rod Assembly:

- Slide the EM Alignment Tower onto the MIS Femoral Adjustment Block.



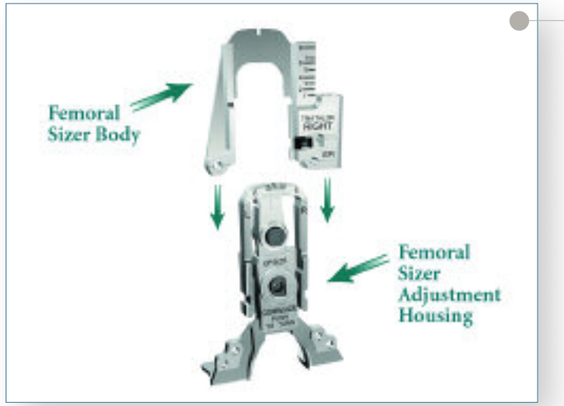
Assembly 3B

- Insert the Universal Alignment Rod through the hole on the Femoral EM Alignment Tower.



Assembly 3C

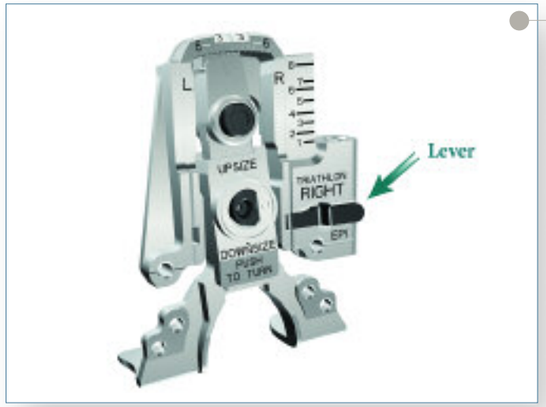
- Assembly of the optional Modular Distal Capture.
- Once in place, rotate the 'bow-tie" knob to lock the capture into place.



Assembly 4A

MIS Femoral A/P Sizer and MIS Femoral Stylus Assembly:

- Assemble the Left/Right modular body onto the MIS Femoral A/P Sizer Adjustment Housing by first unlocking the assembly latch, sliding the Left or Right body onto the Adjustment Housing, then turning the latch to the lock position.

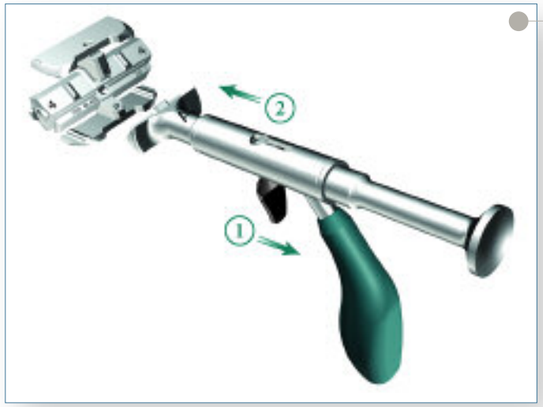


Assembly 4B

- Final Assembly.

Assembly 4C

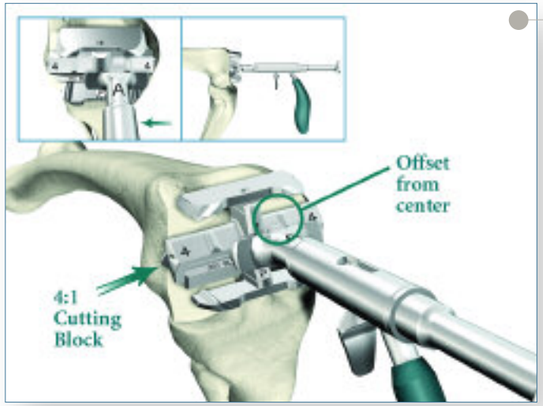
- Slide the MIS Femoral Stylus into the medial hole of the MIS Femoral A/P Sizer.
- For A/P translation, insert the male hex of the MIS Femoral Flexion Impactor into the black hex interface of the A/P Sizer Adjustment Housing. Press and rotate to adjust A/P translation up or down by up to 1.5mm.



Assembly 5A

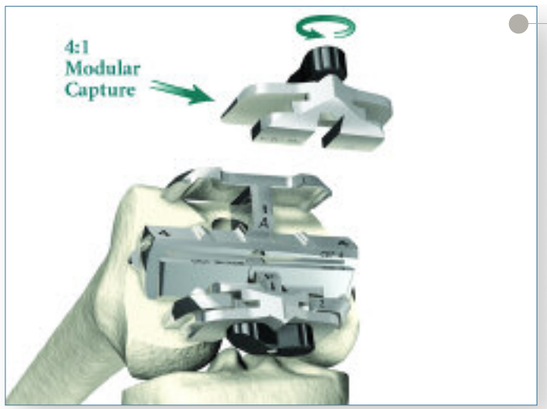
MIS 4:1 Cutting Block, MIS 4:1 Impactor/Extractor and MIS 4:1 Modular Capture Assembly:

- Position the 4:1 Impactor/Extractor perpendicular to the flat face of the desired size 4:1 Cutting Block.
- While depressing the trigger on the MIS 4:1 Impactor/Extractor, position the Impactor/Extractor about 5mm to the left or right of the 4:1 block's central spine.



Assembly 5B

- Insert the upturned tabs of the MIS 4:1 Impactor/Extractor into the anterior chamfer slot of the 4:1 block.
- Release the trigger and slide the MIS 4:1 Impactor/Extractor handle to the center.
- An audible click indicates that the Impactor/Extractor has successfully locked to the 4:1 Cutting Block.
- To disengage the MIS 4:1 Impactor Extractor from the MIS 4:1 Cutting Block, pull and hold the trigger and slide the handle medially within the anterior chamfer slot and extract the handle from the guide. Release the Impactor/Extractor handle.



Assembly 5C

- To attach the MIS 4:1 Modular Capture, rotate the black "bow-tie" knob.
- Attach the MIS 4:1 Modular Capture to the anterior or posterior resection surfaces by positioning it over the juncture of the 4:1 block and resection so that the capture surface is parallel to the resection surface.
- Once fully seated, rotate the "bow-tie" knob to lock the capture into place.

Assembly 6A

MIS Femoral Trial Extractor and Femoral Trial or PS Box Guide Assembly:

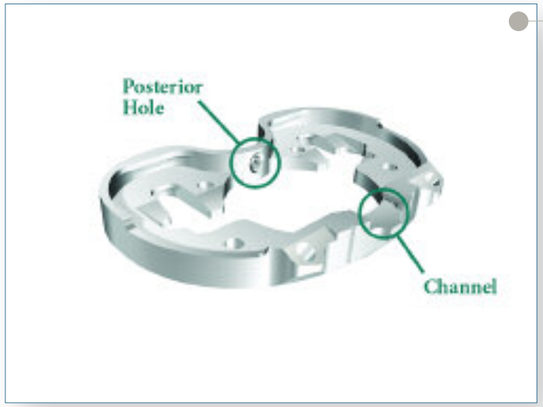
- Insert the posts of the MIS Femoral Trial Extractor into the lugholes of the femoral trial and squeeze the handle of the MIS Femoral Trial Extractor to hold the femoral trial. Releasing the handle will release the trial.
- The Femoral Trial Extractor can be used to hold, impact, and extract the MIS PS Box Cutting Guide.

Assembly 6B

- Final Assembly with Femoral Trial.

Assembly 6C

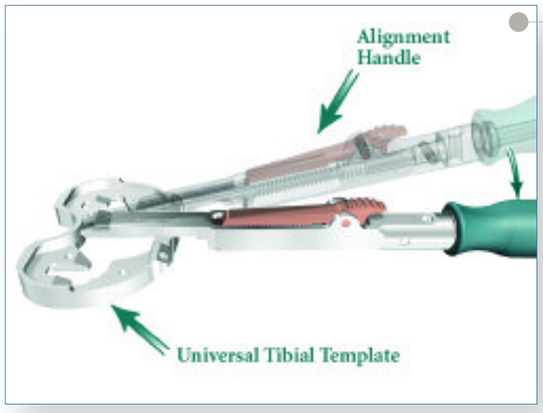
- Assembly with PS Box Guide.



Assembly 7A

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

- Posterior hole and Channel of Universal Tibial Template.

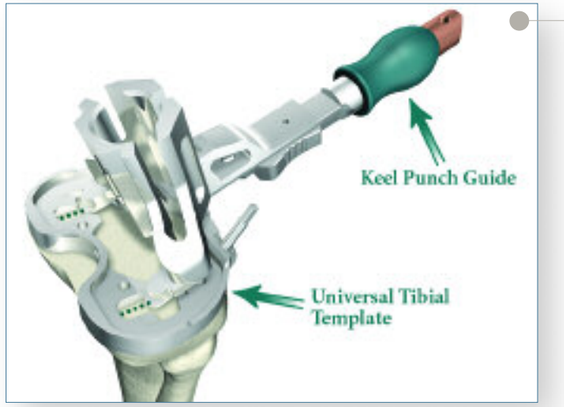


Assembly 7B

- Press the bronze button on the Alignment Handle. Insert the spring-loaded tip of the Alignment Handle into the central posterior hole of the Universal Tibial Template. Hold the handle at a slight angle to the top surface of the 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.

Assembly 7C

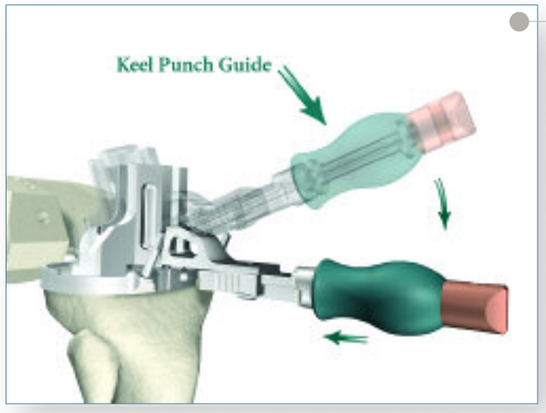
- Release the bronze button to secure the assembly.



Assembly 8A

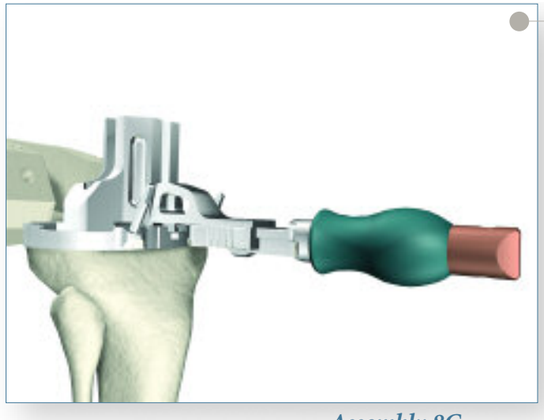
Universal Tibial Template and Keel Punch Guide Assembly:

- 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.



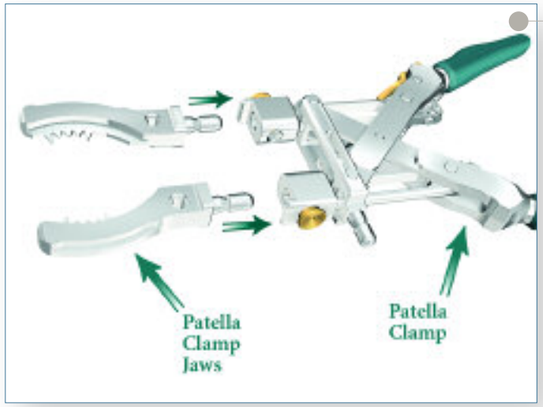
Assembly 8B

- Allow the Keel Punch Guide 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.



Assembly 8C

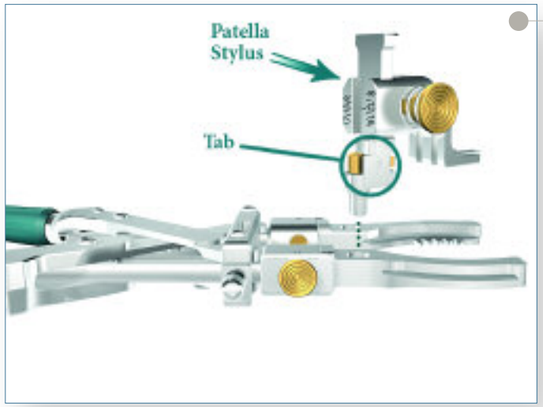
- Final Assembly.



Assembly 9A

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.



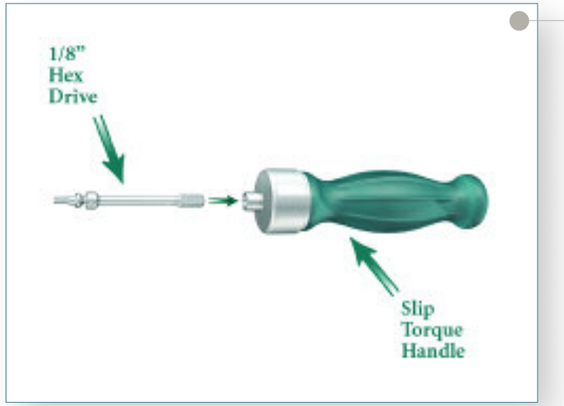
Assembly 9B

- 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 10

MIS Femoral Flexion Impactor

- Connect the MIS Femoral Flexion Impactor to the Impaction Handle.
- The MIS Femoral Flexion Impactor is placed on the anterior portion of the intercondylar notch of the femoral implant and used to finish seating the implant onto the distal femur.



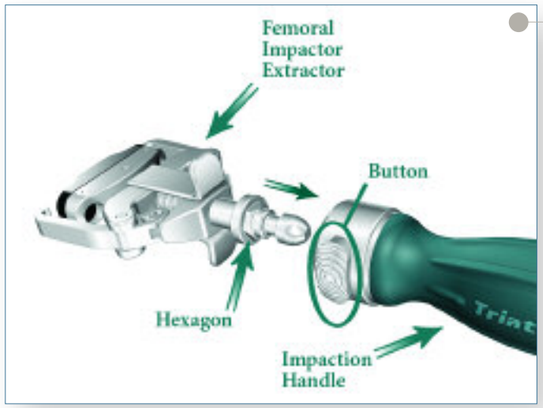
Assembly 11A

1/8" Hex Drive, Slip Torque Handle and Modular Femoral Distal Fixation Pegs Assembly:

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

Assembly 11B

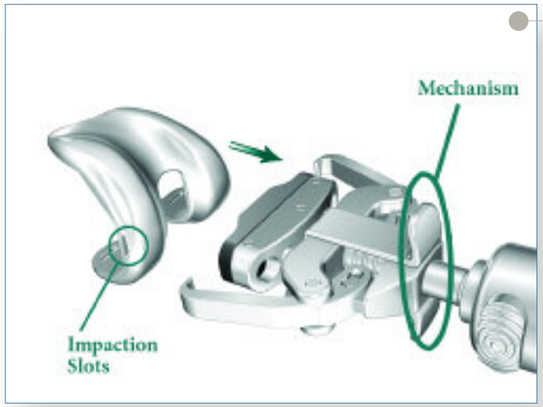
- Insert the tip of the 1/8" Hex Drive into the Modular Femoral Distal Fixation Peg and turn the Slip Torque Handle to tighten.



Assembly 12A

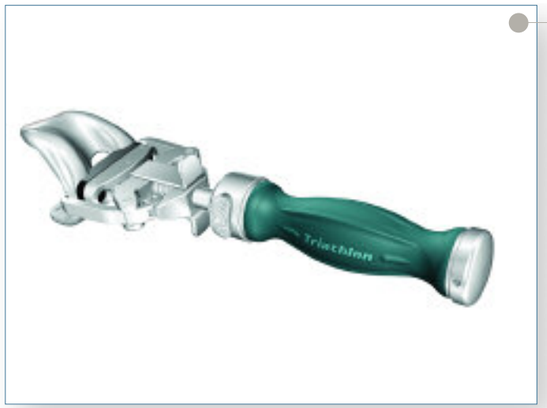
Femoral Impactor Extractor, Impaction Handle and Femoral Trial or Femoral Component Assembly:

- Snap 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 12B

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



Assembly 12C

- Final Assembly

Surgical Procedure

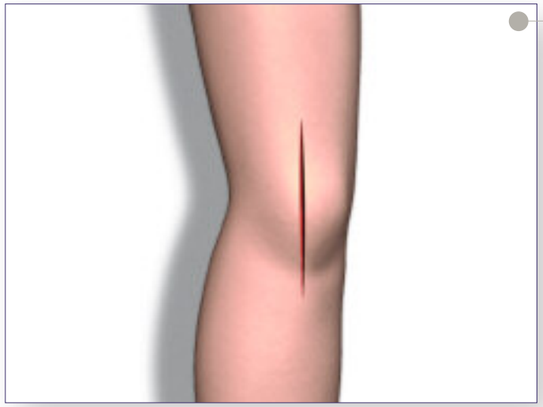


Figure 1

Surgical Procedure

Exposure

- A standard anterior midline incision is utilized. Any previous incision can be used or incorporated to decrease risk of skin slough.
- The capsule is entered through a modified mid-vastus approach, which makes a 6-12cm skin incision medial to the patella from just above the tibial tubercle to just above the patella.
- Use a soft tissue approach that allows adequate patella visualization and sufficient knee flexion.

Figure 2

For the purpose of this surgical technique, tibial preparation will be done first, followed by the femoral preparation. However, procedural sequence can vary according to surgeon preference.

Tibial Preparation

- Triathlon® MIS Tibial preparation utilizes an extramedullary alignment system.
- Move the leg to 90° of flexion.
- The Tibial Resection Guide, available in Left and Right configurations, is designed to avoid soft tissue impingement.

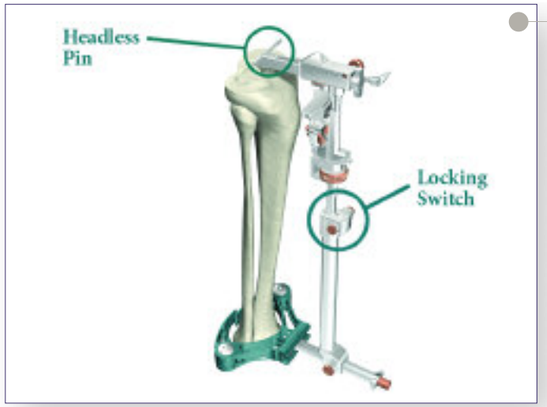


Figure 3

Extramedullary Referencing

- The tibial resection assembly has five parts: the appropriate Tibial Resection Guide, the Ankle Clamp, the Distal Assembly, the Proximal Rod and the Tibial Adjustment Housing. These are assembled first.

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

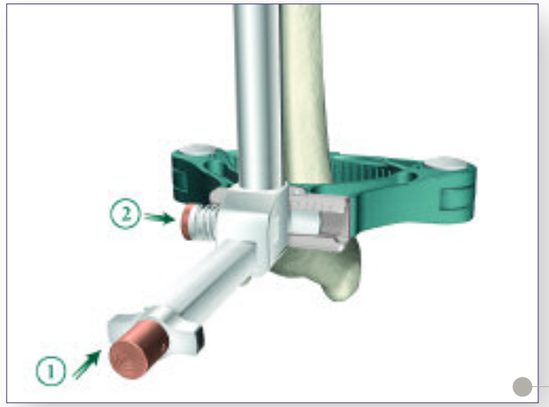


Figure 4

Flexion/Extension Alignment

- Place the ankle clamp around the ankle and unlock the locking switch.
- Flexion/Extension alignment is correct when the long axis of the assembly parallels the mid-coronal plane of the tibia. Flexion/Extension alignment can be checked by verifying that the long axis of the assembly is parallel to the fibula.

Varus/Valgus Alignment

- Medial/Lateral offset can be adjusted by pushing the bronze button and sliding the assembly medially until the shaft intersects the center of the tibia.
- Once alignment is achieved, release the bronze button.

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

6541-4-429
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

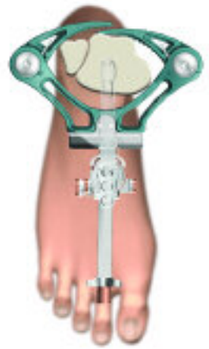


Figure 5

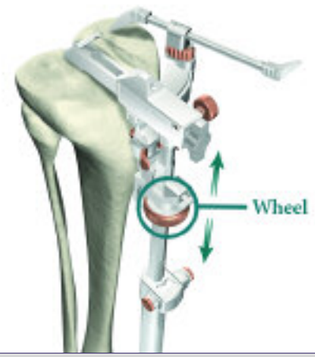


Figure 6

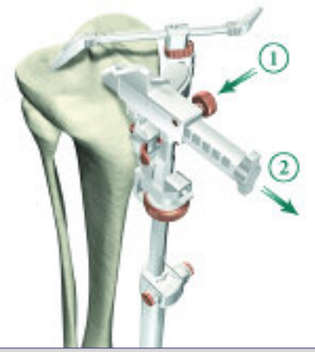


Figure 7

Rotational Alignment

- Rotate the entire assembly to ensure that the base of the assembly is aligned with the center of the ankle. The center of the ankle is generally in line with the second metatarsal.
- Once alignment is confirmed, set the bronze locking switch on the Distal Assembly to the locked position.
- The fixation arm of the MIS Tibial Alignment Proximal Rod is fully extended to reach the tibial eminence. A headless pin is then placed through the posterior fixation hole to lock the assembly in place.

Note: Either the anterior or posterior fixation holes may be used to set flexion/extension and rotational alignment.

Tibial Slope Adjustment

Note: If the MIS Proximal Rod is parallel to the tibia, the slope is 0° or 3° depending on which Tibial Adjustment Housing is used.

- Tibial slope can be adjusted by pressing the anterior bronze button on the Distal Assembly.

Establish Tibial Resection Level

- The Tibial Stylus attaches to the MIS Tibial Resection Guide with the "2" end referencing the lowest level of the affected compartment (typically, the medial side).

Note: If referencing off of the unaffected (typically, the lateral) side, insert a Headless Pin into the anterior fixation hole and remove the Headless Pin from the posterior fixation hole. Then press the bronze button on the side of the proximal rod and retract the head of the proximal rod anteriorly. Attach the Tibial Stylus with the "9" end extended posteriolaterally to reference the lowest level of the unaffected side. To save time during initial fixation of the MIS Tibial Alignment Proximal Rod, use the anterior fixation hole.

(Continued)

- 2mm of bone will be resected. Alternatively, If the "9" end of the Tibial Stylus is used, the amount of bone resected will be 9mm below the tip of the stylus.
- The height of the MIS Tibial Resection Guide, Tibial Stylus and Tibial Adjustment Housing can be adjusted using the bronze wheel on the Tibial Adjustment Housing. For coarse adjustment, press the bronze wheel and slide the assembly up or down. For fine adjustment, turn the bronze wheel to the right to move the assembly up the Proximal Rod or turn left to move the assembly down the Proximal Rod.
- Place two Headless Pins into the "0" angled holes, fixing the level of the Tibial Resection Guide.
- If additional stability of the guide is required, utilize the untangled "X" pin hole.
- Remove all alignment instruments leaving only the Tibial Resection Guide in place.
  - The Ankle Clamp, Distal Assembly, Proximal Rod and Tibial Adjustment Housing are removed. To remove the assembly:
    1. Remove the headless pins from the anterior and/or posterior hole(s) of the Proximal Rod.
    2. Squeeze the Bronze Tabs with one hand and hold the lower end of the Ankle Clamp Assembly with the other hand. Slide the entire assembly anteriorly, leaving just the resection guide on the bone.

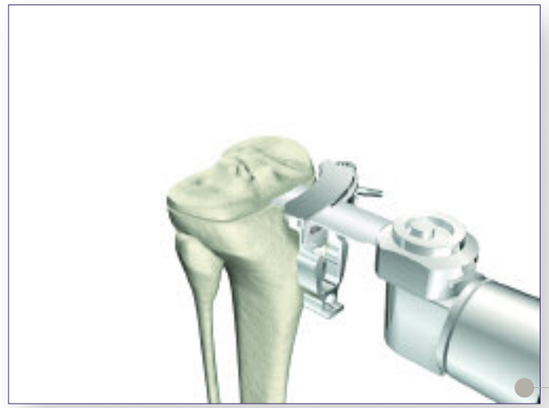


Figure 8

Tibial Resection

- Resection of the proximal tibia is now completed using either the Left or Right Captured or Uncaptured MIS Tibial Resection Guide.
- Remove the Tibial Resection Guide.

Instrument Bar

6541-2-610
Tibial Alignment Distal Assembly EM

6541-2-609
Tibial Alignment Ankle Clamp EM

6541-2-807
Tibial Alignment Handle

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

6541-4-003
Headless Drill-Pins - 3"

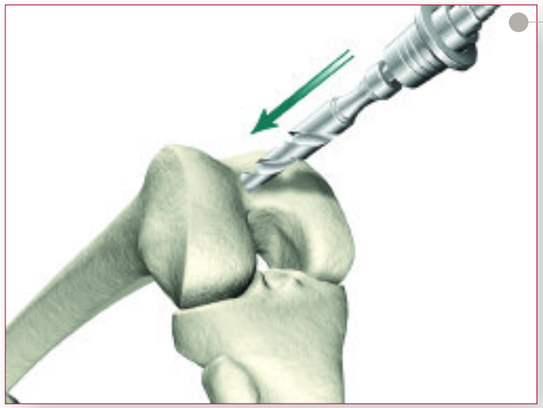


Figure 9

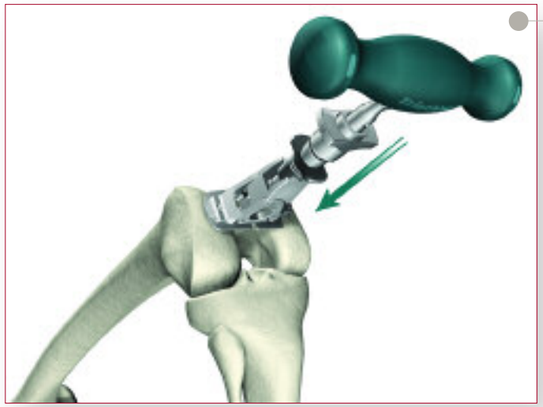


Figure 10

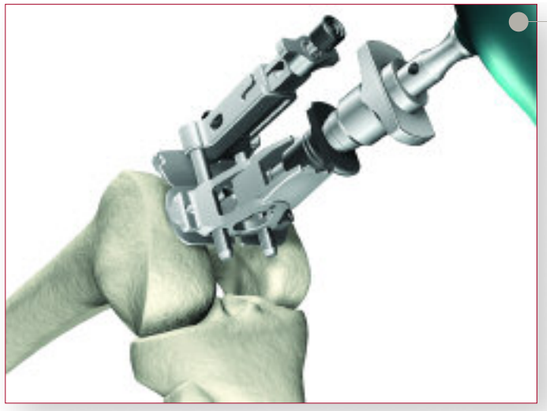


Figure 11

Femoral Preparation

Femoral Intramedullary Alignment

- The Universal Driver allows for attachment of all drills and pins. The Universal Driver may be attached directly to a reamer, drill, or a Jacob's Chuck.
- Locate the IM drill hole; it is approximately 1cm anterior to the femoral attachment of the posterior cruciate ligament and slightly medial to the midline of the distal femur.
- Identification of landmarks may be aided by removal of osteophytes from the margins of the intercondylar notch.
- Attach the ⅜" IM Drill to the Universal Driver and drill into the IM canal ensuring that the drill is parallel to the shaft of the femur. The first diameter will create a tight fit around the IM Rod. If further clearance is desired, continue to drill until the larger step diameter opens the hole. This will allow the IM canal to dictate the position of the rod avoiding the need to "toggle" the drill to create clearance.
- Attach the T-Handle Driver to the 5/16" IM Rod. Insert the IM Rod into the MIS Femoral Alignment Guide. The MIS Femoral Alignment Guide is designed for use on either the left or right knee and may be set between 2° and 9° of valgus (Note: this is typically set between 5° and 7°). Set the instrument to the desired angle by pulling back on the black knob of the MIS Femoral Alignment Guide and placing it in the appropriate notch. Advance the rod, with attached guide, slowly up the IM canal until the desired depth is reached ensuring that the alignment guide is flush against the most prominent condyle.
- Snap the MIS Distal Resection Guide onto the MIS Adjustment Block and insert the posts of the MIS Adjustment Block into the two holes in the MIS Femoral Alignment Guide.
- Place the MIS Femoral Alignment Guide in contact with the more prominent distal femoral condyle and align the guide in neutral I/E rotation. The guide face has built in 3° of slope and a tick mark to reference Whiteside's Line to set I/E rotation, if desired.
- Insert ⅛" headless pins into the converging pinholes on the MIS Femoral Alignment Guide to aid in stabilization.

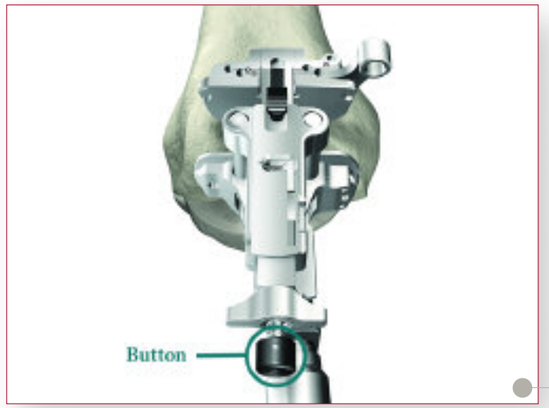


Figure 12

- Position the leg in 45°-60° of flexion.
- The MIS Adjustment Block allows for a 2mm through 12mm resection level.
- Press the black button on the end of the MIS Adjustment Block and push/pull the carrier to set the resection to the desired level.

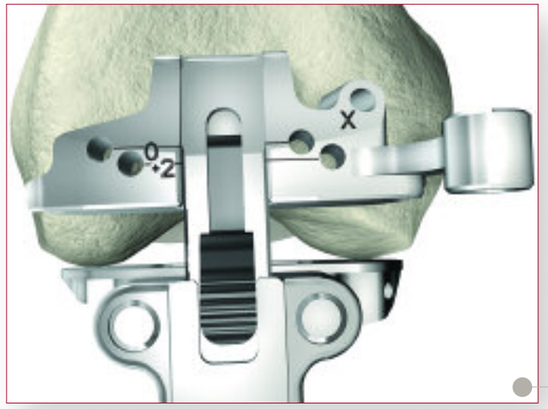


Figure 13

- The Triathlon® MIS Knee System Instruments allow for a clear view of the bone that is being resected to ensure the appropriate level is set.
- Slide the Adjustment Block Assembly posteriorly within the Femoral Alignment Guide until the Distal Resection Guide contacts the anterior surface of the femur.

Instrument Bar

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

6541-5-629
MIS Femoral Alignment Guide

6541-5-721
MIS Distal Resection Guide - Left

6541-5-722
MIS Distal Resection Guide - Right

6541-5-601
MIS Femoral Adjustment Block

6541-4-003
Headless Pins - 3"

Figure 14

- Prior to pinning the Distal Resection Guide to the femur, an optional external alignment check may be performed. Attach the Femoral EM Alignment Tower to the MIS Femoral Adjustment Block and insert a Universal Alignment Rod into the handle.
- Alignment is correct when the rod intersects the center of the femoral head and roughly parallels the axis of the femur in the lateral view.

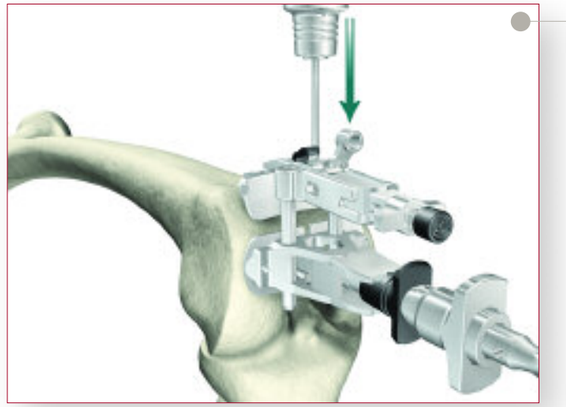


Figure 15

- Once alignment is confirmed, remove the Femoral EM Alignment Tower and the Universal Alignment Rod.
- Pin the Distal Resection Guide to the anterior femur using Headless Pins. Insert the pins into the Headless Pin Driver (which is inserted into the Universal Driver) and drill through the set of holes marked "0" on the Distal Resection Guide. The pins are automatically released from the driver as it is pulled back.

Note: Ensure that 1/2" of the pin is protruding from all guides after insertion. This will aid in pin removal.

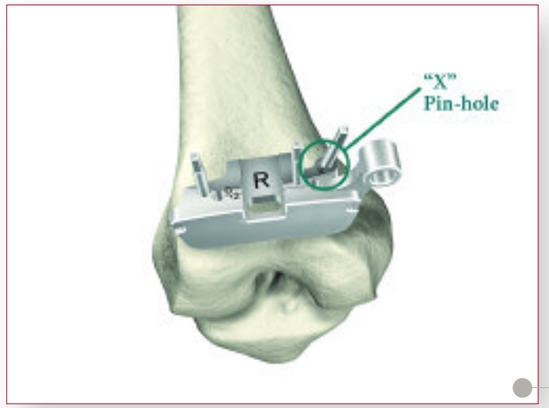


Figure 16

- After the Distal Resection Guide is pinned in place, remove headless pins from the Femoral Alignment Guide and remove the IM rod. The Femoral Alignment Guide and the Adjustment Block may be removed by pressing the black button on top of the Adjustment Block.
- Pinning through the "X" pin hole will aid in further securing the guide.

Instrument Bar

6541-7-808
MIS Femoral EM Alignment Tower

6541-5-601
MIS Femoral Adjustment Block

6541-4-602
Universal Alignment Rods

6541-5-721
MIS Distal Resection Guide - Left

6541-5-722
MIS Distal Resection Guide - Right

6541-4-801
Universal Driver

6541-4-809
Headless Pin Driver

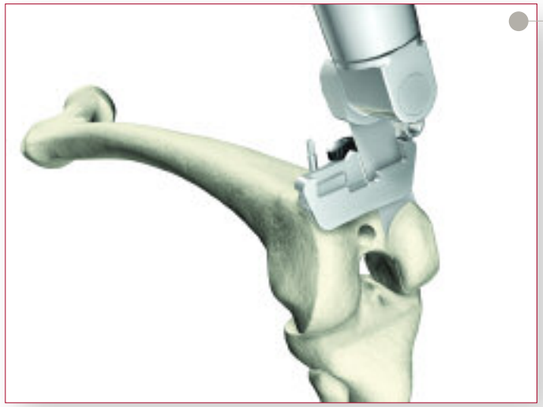


Figure 17

Distal Femoral Resection

- Make the distal resection.
- The distal resection level may be altered by repositioning the Distal Resection Guide in the 2 holes. This will remove an additional 2mm of bone.
- Once the final resection level is determined, the distal femoral resection is made. An optional Modular Capture - Distal Resection may be attached to the Distal Resection Guide.
- The Triathlon® MIS Knee System Instruments are designed to provide control of the saw blade during bone resections. When using captures or cutting through slots, a .050" (1.25mm) thick blade is used.

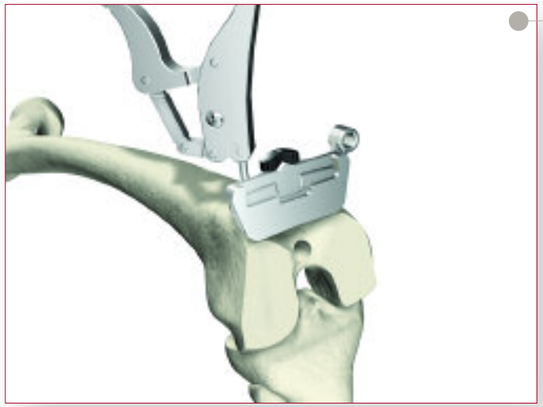


Figure 18

- Remove the Headless Pins in the Femoral Alignment Guide by placing the Headless Pin Extractor over the pin and place it flush on the Femoral Alignment Guide. Squeeze the handle approximately three times, ensuring that after each squeeze, the Headless Pin Extractor is placed flushed with the Distal Resection Guide. This will allow the tongue on the Headless Pin Extractor to back out the pin.
- Remove the Femoral Alignment Guide and check the resection for flatness.

Note: If the "X" pin hole is used, the pin must be removed prior to repositioning or removing the Distal Resection Guide.

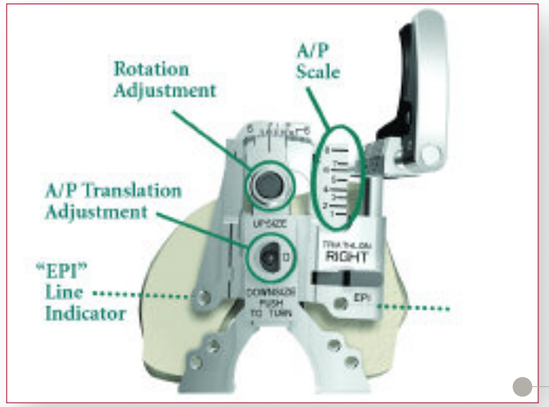


Figure 19

Femoral A/P Sizing

- Pre-assemble the MIS Femoral Sizer Body (Left or Right) onto the MIS Femoral Sizer Adjustment Housing
- Place the MIS Femoral Sizer Assembly onto the resected distal femur, sliding the feet of the Sizer under the posterior condyles.
- External rotation (0-6° Left or Right) is set by depressing the black button on the top of the Femoral A/P Sizer and rotating mediolateral.
- Assemble the MIS Femoral Stylus to the MIS Femoral Sizer and extend the stylus over the lateral flange to rest on the anterior cortex of the femur at the desired run-out point of the anterior resection.

Note: The MIS Femoral Stylus uses two sizing references. First, read the A/P scale by viewing the position of the indicator lip of the femoral stylus against the A/P scale on the medial side of the A/P sizer. Second, adjust the superior/inferior position of the stylus to match the first A/P scale reading. Check to verify the two sizing references match. If the A/P scale reading then changes, reset the S/I stylus position to the newly indicated reading. Repeat steps until the two readings converge.

Instrument Bar

6541-5-721
MIS Distal Resection Guide - Left

6541-5-722
MIS Distal Resection Guide - Right

6541-5-723
MIS Modular Distal Capture

6541-4-003
Headless Pins - 3"

6541-4-804
Headless Pin Extractor

6541-5-500
MIS AP Sizer Adjustment Housing

6541-5-508
MIS AP Sizer Body - Left

6541-5-509
MIS AP Sizer Body - Right

6541-5-510
MIS Femoral Stylus

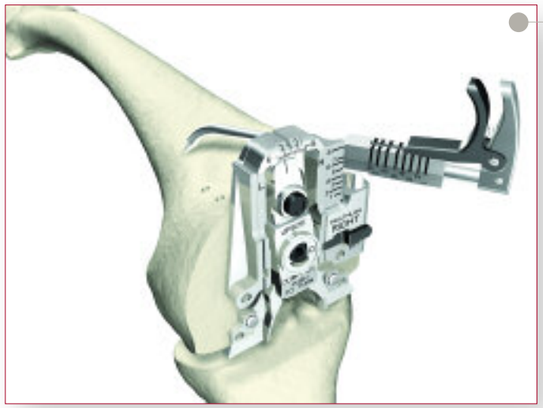


Figure 20

- It is important that the Femoral Stylus point rest on bone and not soft tissue.

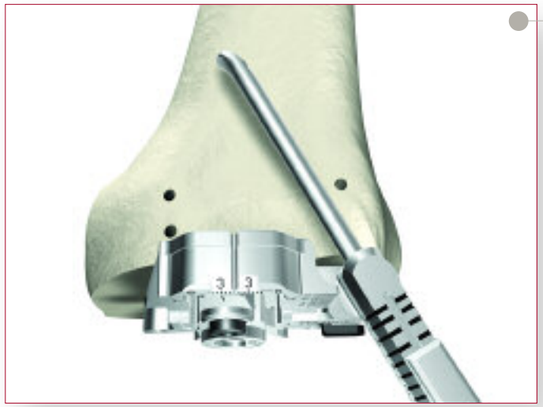


Figure 21

- The Femoral Sizer should be pinned in place through the holes marked “X” with Headed Pins.

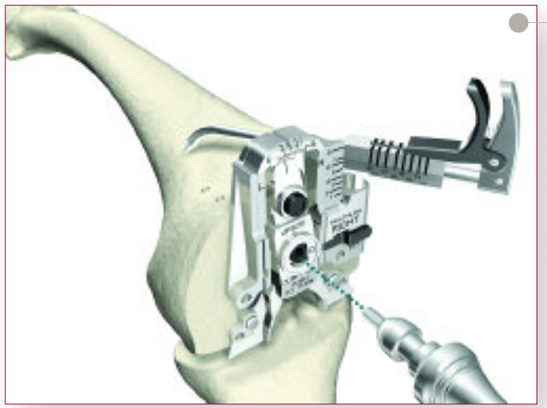


Figure 22

Note: If the femoral stylus reads in-between sizes, an optional A/P translation feature may be used. Simply use the Hex Driver found on the reverse side of the Femoral Flexion Impactor to translate the A/P Femoral Sizer up or down 1.5mm. (Triathlon Primary prosthesis grows in the anterior direction exactly 3mm between sizes.)

- A tertiary check to verify external rotation is to assess A/P axis with the Blade Runner through the slot in the top of the guide.

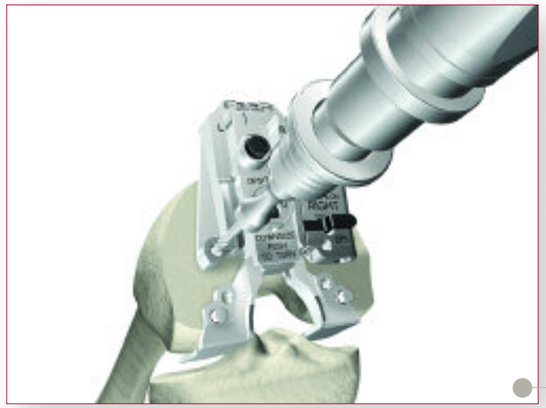


Figure 23

- Once size confirmation is complete, attach the 1/8" Peg Drill to the Universal Driver and create fixation pin holes (for the 4:1 Cutting Block) through the holes on the face of the Femoral Sizer marked “EPI”.
- Remove the Headed Pins using the Headed Pin Extractor.

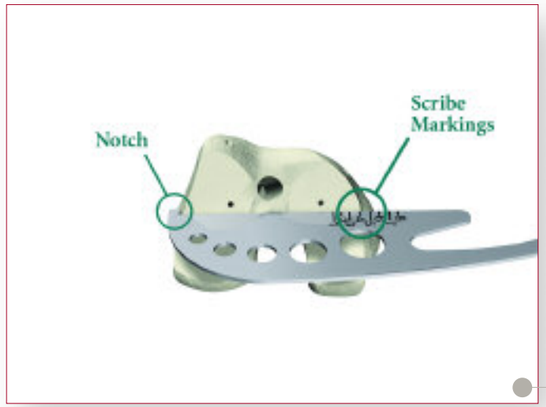


Figure 24

- As a secondary sizing check, use the Blade Runner to check the M/L width of the Femoral component.
- Line the Blade Runner up with the epicondyles and determine the component size. Ensure that the notch of the Blade Runner is on the outside of the femur. The Blade Runner scribe marks correspond to component sizes 1 through 8. If the M/L width is between sizes, the 4:1 Cutting Block can be downsized if needed.

Note: For accurate size determination, ensure that all osteophytes on the medial and lateral condyles are removed prior to sizing.

Instrument Bar

6541-5-500
MIS AP Sizer Adjustment Housing

6541-5-508
MIS AP Sizer Body - Left

6541-5-509
MIS AP Sizer Body - Right

6541-5-510
MIS Femoral Stylus

6541-4-400
Bladerunner

6541-4-802
1/8" Hex Drive

6541-4-518
1/8" Peg Drill

6541-4-801
Universal Driver

6541-4-300
Headed Nail Impactor Extractor

6541-4-515
Headed Nails - 1 1/2"

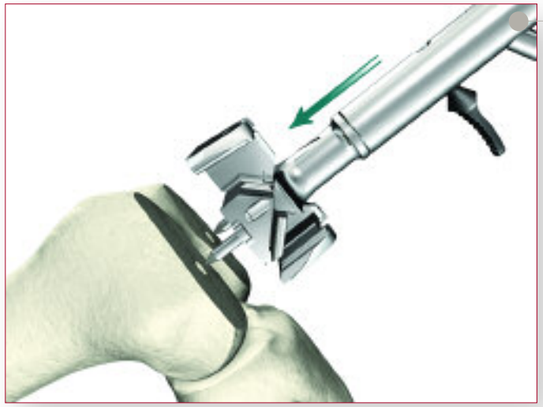


Figure 25

Femoral Anterior, Posterior, and Chamfer Resections

- Locate the fixation pegs of the appropriate size 4:1 Cutting Block into the pin holes created on the distal femur.
- Attach the 4:1 Impactor Extractor to the 4:1 Cutting Block.

Figure 26

- Impact the 4:1 Impactor Extractor until the 4:1 Cutting Block is seated flush onto the distal femur.

Note: Do not impact the 4:1 Cutting Block without the 4:1 Impactor Extractor in place.

Figure 27

- Remove the 4:1 Impactor Extractor from the 4:1 Cutting Block.

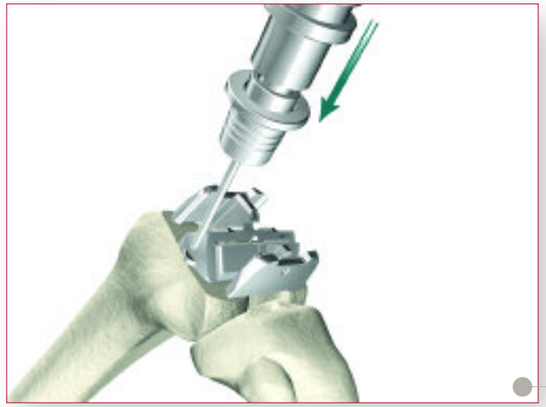


Figure 28

- Headless Pins should be utilized for further stabilization.

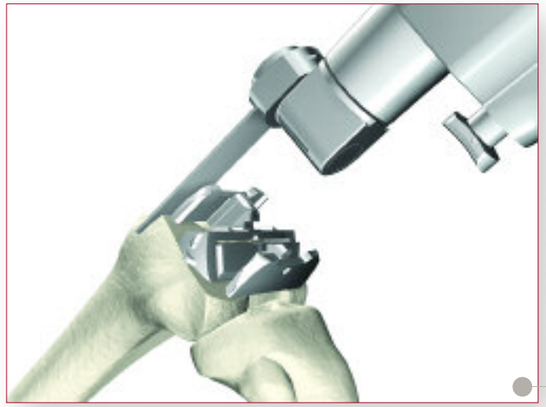


Figure 29

- The use of a .050" (1.25mm) thick saw blade is recommended.
- Complete the remaining four femoral bone resections.
- The order of bone resections is not critical; however, a recommended sequence for improved stability of the 4:1 Cutting Block is:
- 1. Anterior cortex. The 4:1 Modular Capture may be added for the anterior resection.

Note: Check run-out of the anterior cut. If there is a pronounced positive step, consider selecting the next smaller size 4:1 Cutting Block if the anterior femur preparation is not adequate.

Instrument Bar

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

MIS 4:1 Cutting Block

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

6541-5-806
MIS 4:1 Modular Capture

6541-4-003
Headless Pins - 3"

6541-4-801
Universal Driver

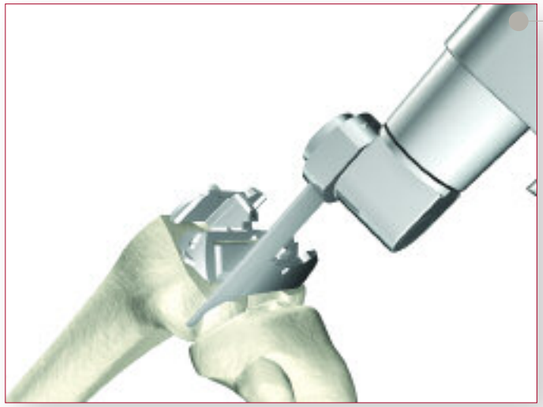


Figure 30

- 2. Posterior condyles. The 4:1 Modular Capture may be added for the posterior resection.

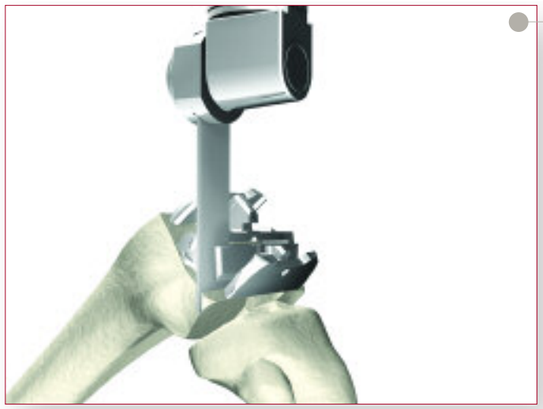


Figure 31

- 3. Posterior chamfer through the permanent capture on the 4:1 Cutting Block.

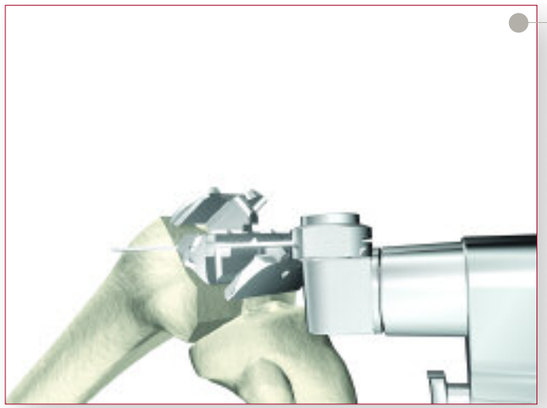


Figure 32

- 4. Anterior chamfer through the permanent capture on the 4:1 Cutting Block.
- When performing the anterior chamfer resection, the saw blade should pass over the midline of the femur so that the center portion of bone is resected.
- Care should be taken not to bias the blade while resecting the bone, as it will cause excess friction between the blade and the 4:1 Cutting Block.

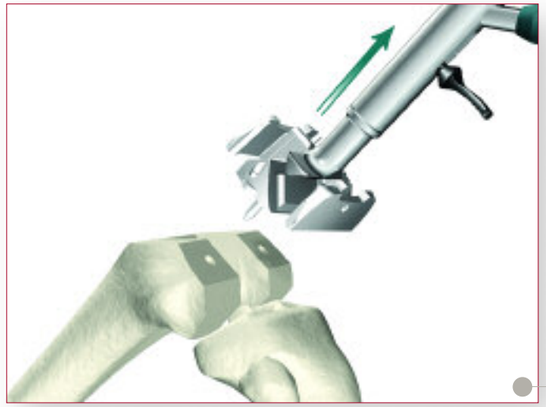


Figure 33

- Remove the 4:1 Cutting Block.
- If preparing for a Cruciate Retaining Knee, where no PS box preparation is needed, proceed to Femoral Trial Assessment on page 40.

Instrument Bar

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

MIS 4:1 Cutting Block

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

6541-5-806
MIS 4:1 Modular Capture

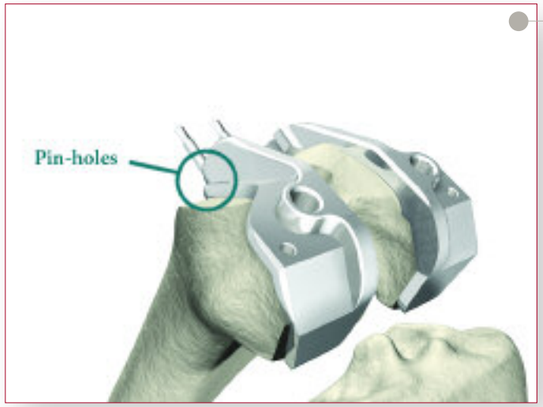


Figure 34

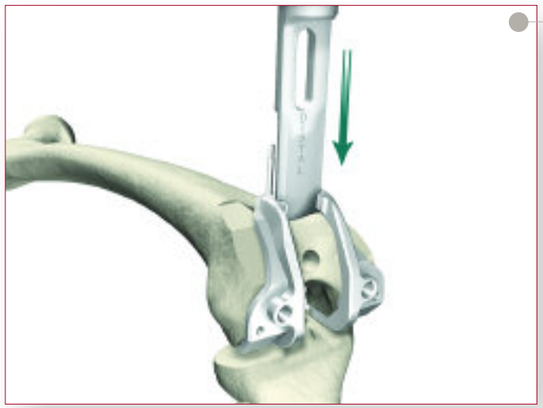


Figure 35

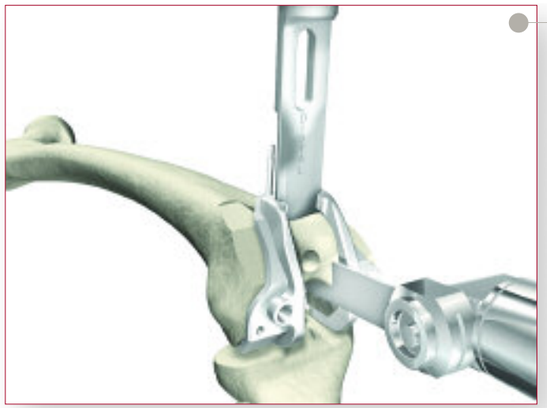


Figure 36

PS Box Preparation

- If it is determined that a PS component will be used, the box must be prepared on the distal femur.
- Use the Femoral Trial Extractor to place the appropriate sized MIS PS Box Guide onto the prepared femur.
- The distal face width of the MIS PS Box Cutting Guide is representative of the M/L width of the implant and facilitates proper M/L alignment of the MIS PS Box Guide. The primary reference should be assessed when the PS Box Cutting Guide is flush on the distal resection.
- Pin the PS Box Cutting Guide using Headless Pins in the holes on the anterior surface of the PS Box Cutting Guide.
- Additional Headless Pins can be placed in the distal pin holes if additional fixation is required.

There are two methods for PS box preparation:

1. Sawblade Method:

- Use a reciprocating sawblade to cut the anterior portion of the PS Box and the medial/lateral edges.

2. Chisel Method:

- Cut the articular cartilage on both sides of the posterior most portion of the intracondylar notch using the oscillating saw.
- Insert the Box Chisel into the Impaction Handle by pressing the button on the Impaction Handle and snapping the Box Chisel in place. Insert this assembly into the slot marked PS and impact until seated to the stop. The surface marked "DISTAL" on the Box Chisel should be anterior to ensure proper orientation.
- Leave the Box Chisel in place to act as a stop when cutting the edges of the box.
- Cut the box area using the edges of the box opening as guides. Avoid biasing the blade during resection for optimal bone conservation.

Figure 37

- Attach the Slap Hammer to the Box Chisel. Remove the Box Chisel from the PS Box Cutting Guide and remove the bone fragment.

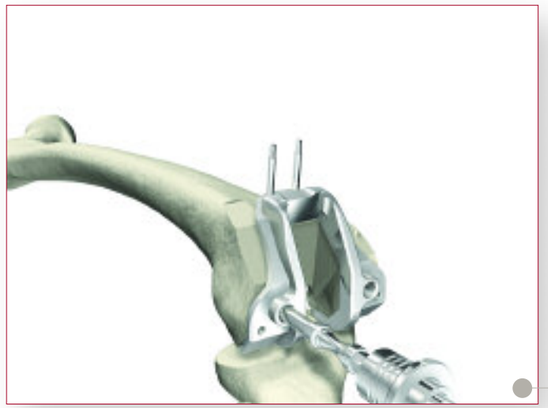


Figure 38

- 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

6541-4-003

Headless Pins - 3"

6541-4-809

Headless Pin Driver

6541-4-810

Impaction Handle

6541-4-801

Universal Driver

6541-4-709

Box Chisel

6541-4-803

Slap Hammer

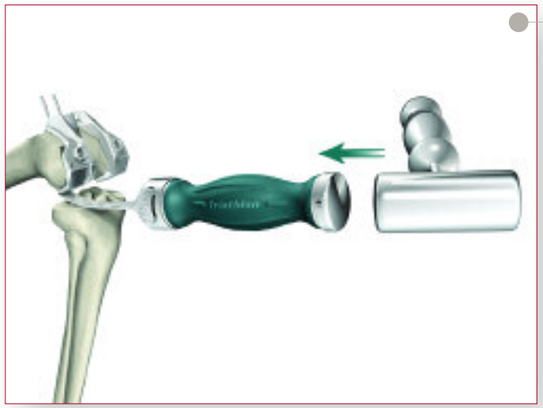


Figure 39

- To avoid impingement of the femoral component and improve flexion, attach the Posterior Osteophyte Removal Tool to the Impaction Handle and remove the osteophytes beyond the posterior aspect of the PS Box Cutting Guide.
- Remove the Headless Pins with the Headless Pin Extractor.
- Remove the PS Box Cutting Guide using the MIS Femoral Trial Impactor/Extractor.

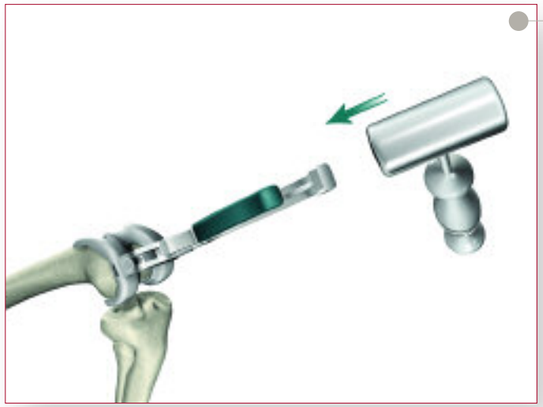


Figure 40

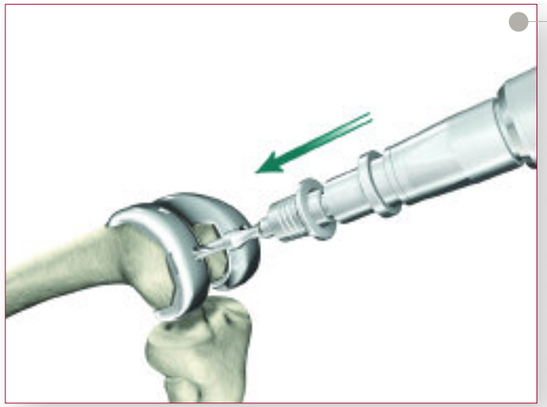


Figure 41

Femoral Trial Assessment

(The remaining portion of the technique should be used for a Posterior Stabilized or Cruciate Retaining knee)

- Assemble the appropriate size and side (Left/Right) PS or CR Femoral Trial to the MIS Femoral Trial Extractor.
- Impact the PS or CR Femoral Trial onto the prepared distal femur. Use the Femoral Trial Extractor to ensure the Femoral Trial is aligned with the distal plane.
- If Modular Femoral Distal Fixation Pegs are to be used for the PS knee, 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.)
- Remove the MIS Femoral Trial Extractor and assess the fit of the PS or CR Femoral Trial. Care must be taken to ensure that all of the osteophytes beyond the end of the posterior femoral condyles are removed.
  - Cruciate Retaining Knee: Attach the 1/4" Peg Drill to the Universal Driver and create the Modular Femoral Distal Fixation Peg holes. Attach the Posterior Osteophyte Removal Tool to the Impaction Handle and remove posterior osteophytes.
  - Posterior Stabilized Knee: If the Modular Femoral Distal Fixation Pegs are to be used, and the holes were not prepared through the PS Box Cutting Guide, use the 1/4" Peg Drill, attached to the Universal Driver to prepare the distal femoral peg holes.

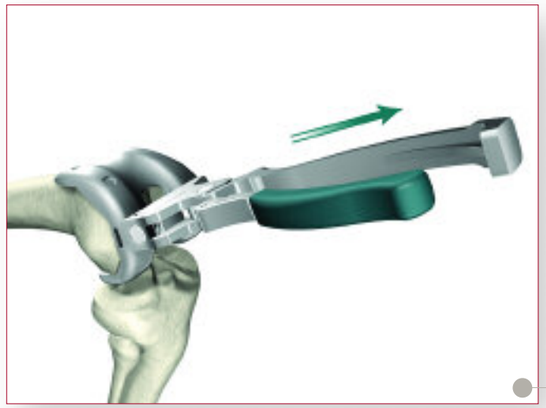


Figure 42

- Attach the Femoral Trial Extractor to the PS or CR Femoral Trial and remove from the femur.

Instrument Bar

6541-4-525
1/4" Peg Drill

6541-4-801
Universal Driver

\# 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

6541-4-710
Posterior Osteophyte Removal Tool

6541-4-810
Impaction Handle

6541-4-300
Headed Nail Impactor Extractor

6541-7-807
MIS Femoral Trial Extractor

See Catalog
PS Femoral Trial

See Catalog
CR Femoral Trial

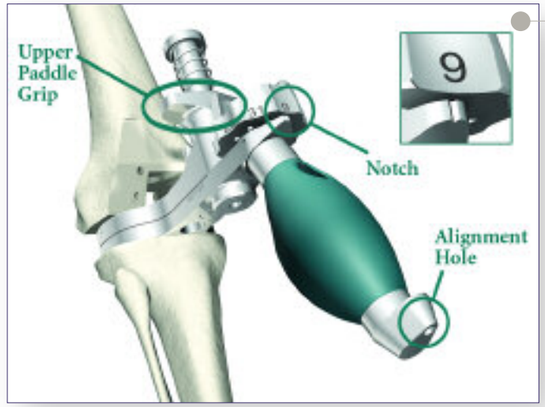


Figure 43

Figure 44

Figure 45

Gap Balancing and Tibial Sizing

Flexion and Extension Gaps

- The flexion gap (90º) and extension gap (0º) may be assessed using the Adjustable Spacer Block. The numbers on the thumbwheel correspond to the implant insert thickness. Align the notch with the appropriate thickness.
- A Universal Alignment Rod can be placed through the hole on the Adjustable Spacer Block to check alignment.

Tibial Component Sizing

- Place the PS or CR Femoral Trial on the femur using the MIS Femoral Trial Extractor.
- Assemble a Universal Tibial Template, Alignment Handle and a PS or CR Tibial Insert Trial.
- Place the assembly on the resected tibial plateau and choose the size that best addresses rotation and coverage.
- Perform a trial reduction to assess overall component fit, ligament stability and joint range of motion.

Note: Ensure all excess debris (bone and soft tissue) is cleared from the Universal Tibial Template.

Tibial Trial Assessment

- For an optional tibial alignment check, insert a Universal Alignment Rod into the most anterior hole of the Alignment Handle and check alignment.

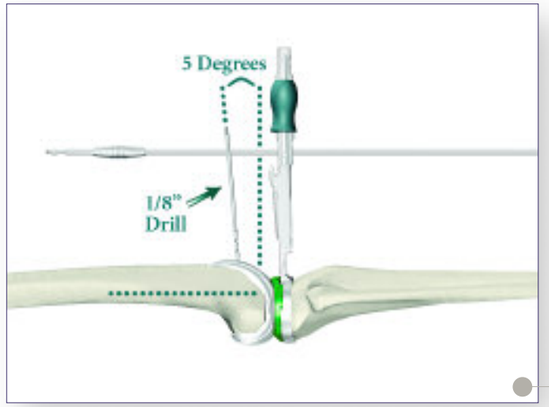


Figure 46

- 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.

6541-4-610
Adjustable Spacer Block

6541-4-602
Universal Alignment Rods

See Catalog
PS Femoral Trial

See Catalog
CR Femoral Trial

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

Universal Tibial Template

6541-2-807
Tibial Alignment Handle

6541-7-807
MIS Femoral Trial Extractor

3170-0000
1/8" Drill

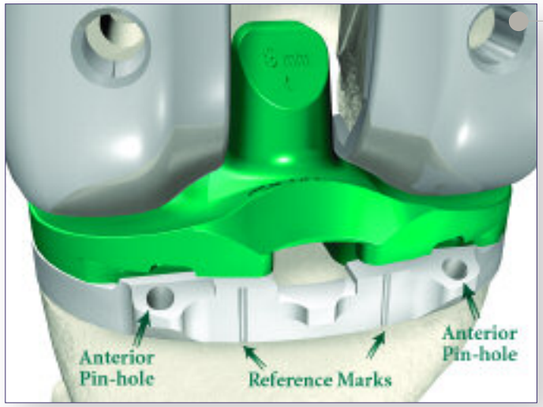


Figure 47

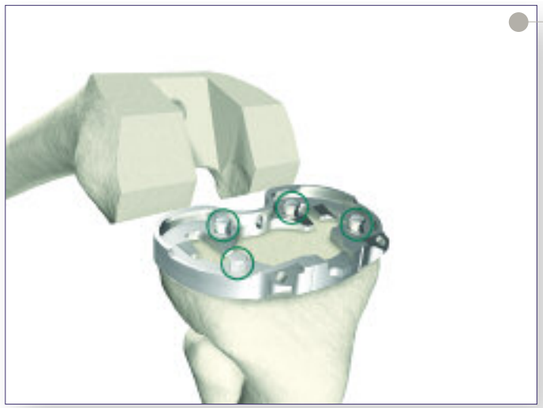


Figure 48

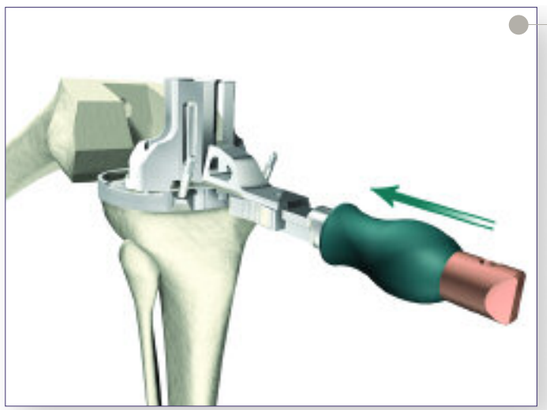


Figure 49

- There are two options to secure the Universal Tibial Template to the tibia:
  - Option 1: Once satisfactory alignment and tibial component orientation are achieved, remove the PS or CR Femoral Trial. Place two Headless Pins in the anterior holes to secure the Universal Tibial Template. Disassemble the Tibial Trial Insert from the Universal Tibial Template.
  - Option 2: Once satisfactory alignment and tibial component orientation are achieved, mark the anterior tibial cortex in line with the reference marks on the anterior border of the Universal Tibial Template. Remove the PS or CR Femoral Trial and disassemble the Tibial Trial Insert from the Universal Tibial Template. Reposition the Universal Tibial Template (if required) by aligning the anterior reference marks on the template with the reference marks on the anterior cortex. The template is positioned flush to the anterior tibial cortex. Place two Headless Pins in the anterior holes to secure the Universal Tibial Template.
- If additional fixation is required after either Option 1 or 2 are used, place up to four Headed Nails in the holes on the Universal Tibial Template into the tibial plateau.
- Trials may be reassembled to the pinned template for any subsequent trial reductions.

Tibial Keel Punching

- Assemble the Keel Punch Guide to the Universal Tibial Template by inserting, at a slight angle to the top of the Universal Tibial Template, into the two locating slots toward the posterior portion of the Universal Tibial Template. Allow the Keel Punch Guide to sit flat on the Universal Tibial Template and push forward on the handle to lock the Keel Punch Guide to the Universal Tibial Template.

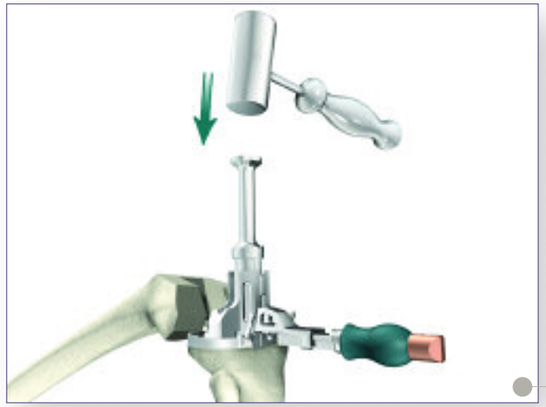


Figure 50

- Place the appropriate Keel Punch into the Keel Punch Guide. Use a mallet to impact the punch. Advance the Keel Punch until it seats fully in the Keel Punch Guide ensuring that it is flat against the bone.

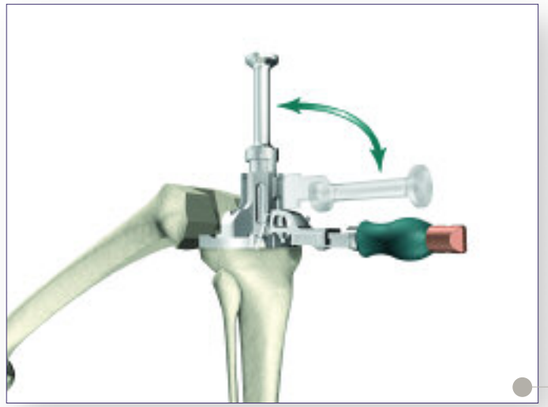


Figure 51

- To extract the Keel Punch, lift up on the Keel Punch Guide handle and pull the handle to cantilever the Keel Punch out of the tibia.
- Remove the Headless Pins with the Headless Pin Extractor and remove the Universal Tibial Template.

Instrument Bar

6541-4-003
Headless Pins - 3"

6541-4-809
Headless Pin Driver

6541-4-801
Universal Driver

6541-4-515
Headed Nails - 1 1/2"

6541-4-575
Headed Nails - 3/4"

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

6541-4-804
Headless Pin Extractor

Figure 52

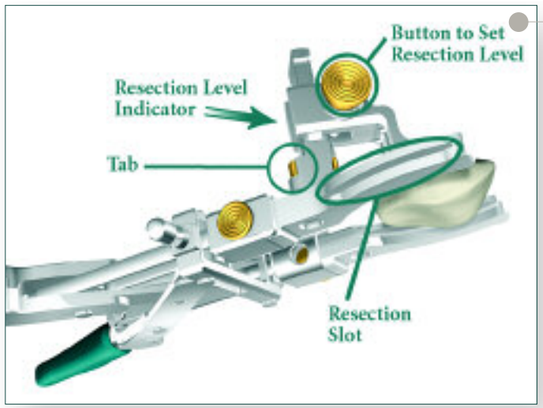


Figure 53

Patella Preparation

- Determine the total thickness of the patella by using the Patella Caliper.
- There are two options for the patella preparation: bone removing method and bone remaining method.
- The patella should be prepared with the leg in full extension and the patellar bone turned 90 degrees to the joint line.

Option 1– Bone Removing Method

- Assemble Patella Clamp Jaws to the Patella Clamp. Attach the Patella Stylus to the circular hole on the topside of either jaw by squeezing the gold tab
- The Patella Stylus may swivel in this position to sweep over the highest portion of the articular surface.
- The Patella Stylus references the articular surface of the patella in order to determine how much bone to remove.
- Close the Patella Clamp around the patella.
- Set the desired resection amount on the Patella Stylus by pressing the gold button and moving the body of the Patella Stylus to the resection line.
- The resection level should be set to match the thickness of the appropriate size patella implant.
- Ensure that the Patella Stylus is touching the desired point(s) on the articular surface of the patella.
- Make resection through one of the resection slots.

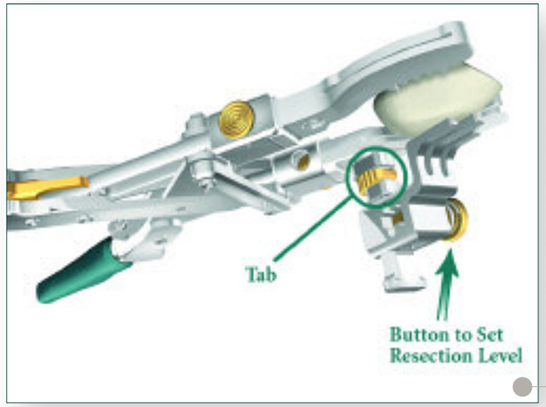


Figure 54

Option 2– Bone Remaining Method

- Assemble Patella Clamp Jaws to the Patella Clamp. Attach the Patella Stylus to the hex shaped hole on the bottom side of either jaw by squeezing the gold tab.
- The Patella Stylus locks in a position that will ensure the referencing prongs are pointed toward the clamping area.
- The Patella Stylus determines how much bone will remain.
- Close the Patella Clamp around the patella.
- Set the desired resection amount on the Patella Stylus by pressing the gold button and moving the body of the Patella Stylus to the resection line.

Note: The resection level should not be set at a value less than 12mm.

Instrument Bar

6541-3-602
Patella Caliper

6541-3-702
Small Patella Clamp Jaw Right

6541-3-703
Small Patella Clamp Jaw Left

6541-3-704
Large Patella Clamp Jaw Right

6541-3-705
Large Patella Clamp Jaw Left

6541-3-600
Patella Clamp

6541-3-601
Patella Stylus

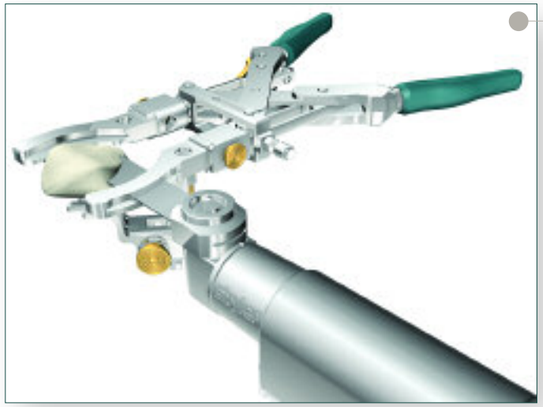


Figure 55

- Ensure that the Patella Stylus is touching the desired point(s) on the patella tendon.
- Make resection through one of the resection slots.

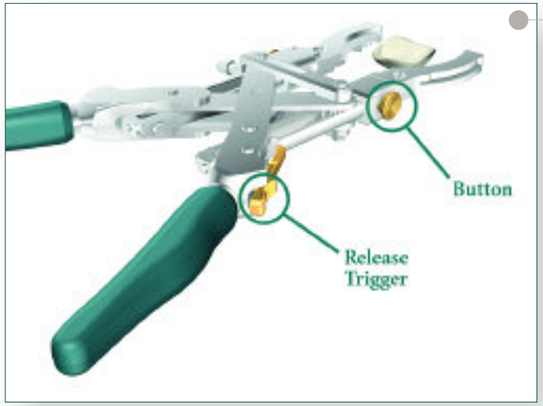


Figure 56

(The following applies to both bone removing method and bone remaining method)

- Disengage the Patella Clamp by pressing the gold release trigger.
- Press the gold buttons on the Patella Clamp to remove the Patella Clamp Jaws.

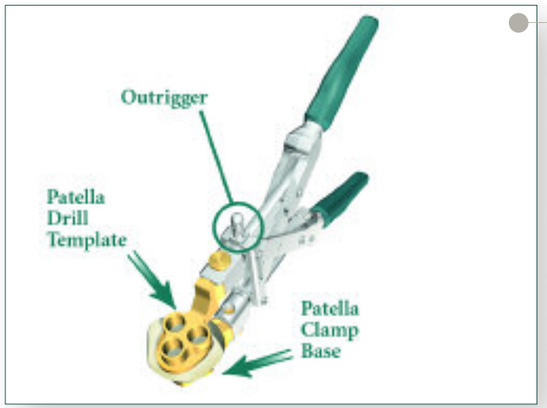


Figure 57

- Assess the size of the patella with a Patella Drill Template (Symmetric and Asymmetric are available).
- Assemble the desired Patella Drill Template and the Patella Clamp Base to the Patella Clamp. These are inserted in the same fashion as the Patella Clamp Jaws. Assemble the Patella Clamp Base first with the Patella Clamp's outrigger pointing superiorly.
- Close the Patella Clamp around the patella so that the Patella Clamp Base is touching the patella tendon and the base of the Patella Drill Template is touching the resected surface of the patella. Align the Patella Drill Template so that it is horizontal with respect to the poles of the patella.

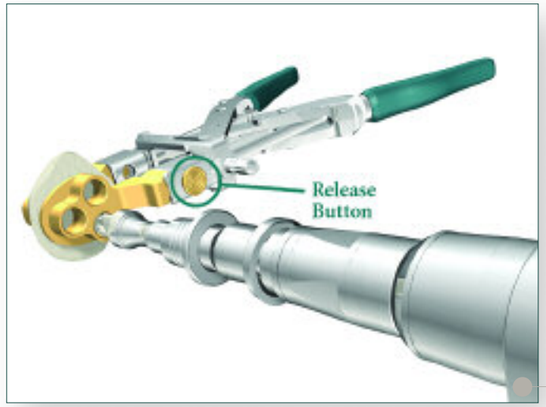


Figure 58

- Attach the All Poly Patella Drill with Stop to the Universal Driver and drill through each fixation peg hole of the Patella Drill Template.
- Disengage the Patella Clamp by pressing the release trigger. Press the gold buttons on the Patella Clamp to remove the Patella Template.

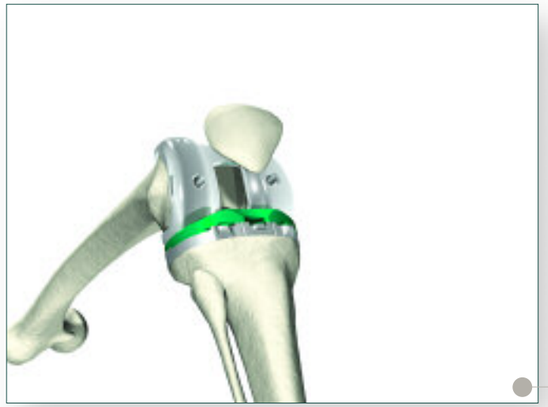


Figure 59

Patella Trial Assessment

- Remove any residual cartilage and wash away all debris. Place correct size Patella Trial (Symmetric or Asymmetric) onto the prepared patella.
- Replace all Trials and assess patellar tracking by taking the knee through a ROM. The patella should track normally throughout the ROM without tendency for tilting or lateral subluxation.

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

See Catalog
Symmetric Patella Trial

See Catalog
Asymmetric Patella Trial

Figure 60

Figure 61

Figure 62

Component Implantation

- If needed, prepare the resected bone surfaces using the Bone File, which is attached to the Impaction Handle.

PS or CR Femoral Component – Cemented/Cementless

- Attach the Femoral Impactor Extractor to the Impaction Handle and attach to the appropriate size and side Femoral Component. Place the Femoral Component on the femur and impact it until fully seated.

  • 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.

- The Femoral Flexion Impactor or the Femoral Impactor can be attached to the Impaction Handle to further seat the Femoral Component onto the prepared femur.

Note: Clear all excess bone cement (does not apply to cementless component).

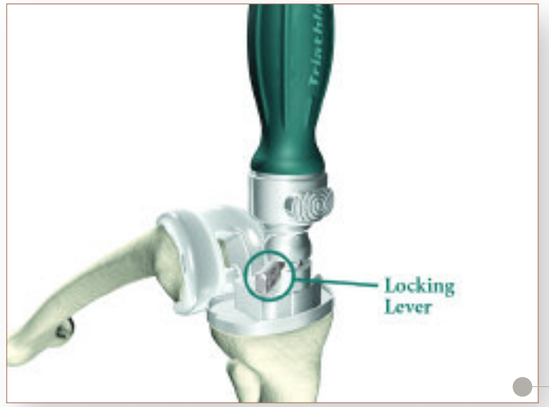


Figure 63

Component Implantation Primary Tibial Baseplate – Cemented/Cementless

- Connect the Tibial Baseplate Impactor Extractor to the Impaction Handle. To connect this assembly to the Primary Tibial Baseplate, ensure the locking lever is in the unlocked position and place the head onto the Primary Tibial Baseplate straddling the central island. Ensure the Tibial Baseplate Impactor Extractor sits flat on the top surface of the Primary Tibial Baseplate and move the locking lever to the locked position.

- Introduce the Primary Tibial Baseplate onto the prepared tibia and impact until the baseplate is seated. Unlock the locking lever and remove the assembly from the Primary Tibial Baseplate.

Instrument Bar

6541-4-700
Bone File

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

See Catalog
Primary Tibial Baseplate - Cemented

6541-7-811
MIS Femoral Flexion Impactor

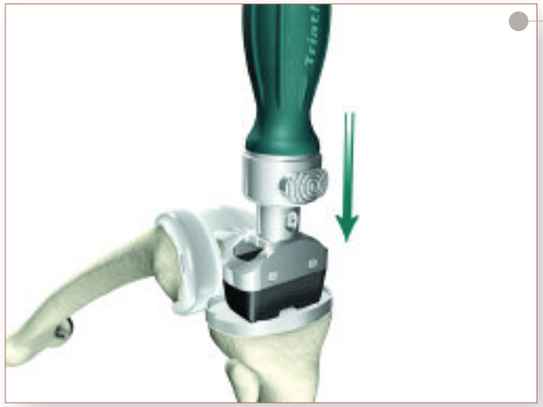


Figure 64

Figure 65

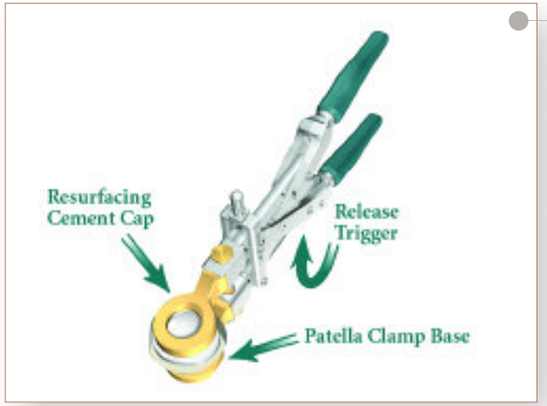


Figure 66

- To further seat the baseplate, attach the Tibial Baseplate Impactor to the Impaction Handle.
- Place the Tibial Baseplate Impactor on to the Primary Tibial Baseplate straddling the central island.
- Ensure the Tibial Baseplate Impactor sits flat on the top surface of the Primary Tibial Baseplate.
- Impact until the Primary Tibial Baseplate is fully seated.

Note: Clear all excess bone cement (does not apply to cementless component) while maintaining position of the Primary Tibial Baseplate.

PS or CR Tibial Insert

- Prior to assembly of the PS or CR Tibial Insert, the PS or CR Tibial Trial Insert may be placed on the Primary Tibial Baseplate to once more assess joint stability and range of motion.
- To assemble the PS or CR Tibial Insert, distract the joint and angle the insert posteriorly into the Primary Tibial Baseplate. The posterior lip of the Tibial Insert must fit beneath the lip on the posterior Primary Tibial Baseplate wall.
- Attach the Tibial Insert Impactor to the Impaction Handle and impact to snap the Insert in place anteriorly. The PS or CR Tibial Insert is fully seated once the locking wire locks under the barbs on the anterior/interior surface of the Primary Tibial Baseplate wall.

Symmetric or Asymmetric Patella

- Assemble the Patella Cement Cap and the Patella Clamp Base to the Patella Clamp.

Note: If necessary, use a curette to mark the locations of the fixation peg holes.

- Place the Patella Component onto the prepared patella, making certain the fixation peg holes are aligned to the corresponding holes.
- Seat the Patella Component onto the prepared patella by clamping the Patella Cement Cap, Patella Clamp Base and Patella Clamp assembly.

Note: Insure that the silicon O-ring of the Patella Cement Cap is placed on the articulating surface of the Patella Component.

Note: Leave the assembly clamped to the patella while excess cement is cleared and polymerization is complete.

- Disengage the Patella Clamp by pressing the gold release trigger.

Figure 67

- Assess the joint in flexion and extension.

Closure

For Cemented Components

- After cement polymerization and removal of all residual cement, thoroughly irrigate the joint. Hemostasis is achieved after deflation of the tourniquet. Close soft tissues in the normal layered fashion.

Instrument Bar

6541-4-810
Impaction Handle

6541-4-812
Tibial Baseplate Impactor

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
MIS Miscellaneous Instruments Kit Contents		
3170-0000	1/8” Drill	1
6541-4-003	Headless pin- 3"	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
6541-4-518	1/8" Peg Drill	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	2
6541-4-610	Adjustable Spacer Block	1
6541-4-700	Bone File	1
6541-4-709	Box Chisel	1
6541-4-710	Posterior osteophyte removal tool	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
6541-4-809	Headless Pin Driver	1
6541-4-810	Impaction Handle	2
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 37

Catalog #	Description	Quantity in Kit
Patella Preparation & 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
6541-3-704	Large Patella Clamp Jaw Right	1
6541-3-705	Large 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
8050-5001L	Left Lateral Tibial Retractor	1
8050-5001R	Right Lateral Tibial Retractor	1
8050-5002	Anterior Femoral Retractor	1
6541-9-000	Triathlon Case	1
QIN 4333	Package Insert	1
		Total Quantity 39

*S/I = Superior/Inferior

Catalog #	Description	Quantity in Kit
MIS Size 3-6 Femoral & Tibial Preparation Kit Contents		
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
6541-5-500	MIS AP Sizer Adjustment Housing	1
6541-5-508	MIS AP Sizer Body - Left	1
6541-5-509	MIS AP Sizer Body - Right	1
6541-5-510	MIS Femoral Stylus	1
6541-5-601	MIS Femoral Adjustment Block	1
6541-5-610	MIS Femoral Navigation Stylus	1
6541-5-629	MIS Femoral Alignment Guide	1
6541-5-703	#3 MIS 4:1 Cutting Block	1
6541-5-704	#4 MIS 4:1 Cutting Block	1
6541-5-705	#5 MIS 4:1 Cutting Block	1
6541-5-706	#6 MIS 4:1 Cutting Block	1
6541-5-721	MIS Distal Resection Guide - Left	1
6541-5-722	MIS Distal Resection Guide - Right	1
6541-5-723	MIS Modular Distal Capture	1
6541-5-806	MIS 4:1 Modular Capture	2
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
6541-7-808	MIS Femoral EM Alignment Tower	1
6541-7-811	MIS Femoral Flexion Impactor	1
6541-7-812	Tibial Protector Plate - S	1
6541-7-813	Tibial Protector Plate - M	1
6541-7-814	Tibial Protector Plate - L	1
6541-7-815	Patella Protector Plate - S/M	1
6541-7-816	Patella Protector Plate - M/L	1
6541-8-030	MIS Size 3-6 Femoral & Tibial Preparation - Upper	1
6541-8-130	MIS Size 3-6 Femoral & Tibial Preparation - Lower	1
6541-9-000	Triathlon Case	1
QIN 4333	Package Insert	1
	Total Quantity 44	

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-309	PS Tibial Insert Trial # 3 -9MM	1
5532-T-311	PS Tibial Insert Trial # 3- 11MM	1
5532-T-313	PS Tibial Insert Trial # 3- 13MM	1
5532-T-316	PS Tibial Insert Trial #3 -16MM	1
5532-T-319	PS Tibial Insert Trial # 3 -19MM	1
5532-T-409	PS Tibial Insert Trial # 4 -9MM	1
5532-T-411	PS Tibial Insert Trial # 4 -11MM	1
5532-T-413	PS Tibial Insert Trial # 4 -13MM	1
5532-T-416	PS Tibial Insert Trial # 4 -16MM	1
5532-T-419	PS Tibial Insert Trial # 4 -19MM	1
5532-T-509	PS Tibial Insert Trial # 5 -9MM	1
5532-T-511	PS Tibial Insert Trial # 5 -11MM	1
5532-T-513	PS Tibial Insert Trial # 5 -13MM	1
5532-T-516	PS Tibial Insert Trial # 5 -16MM	1
5532-T-519	PS Tibial Insert Trial # 5 -19MM	1
5532-T-609	PS Tibial Insert Trial # 6 -9MM	1
5532-T-611	PS Tibial Insert Trial # 6 -11MM	1
5532-T-613	PS Tibial Insert Trial # 6 -13MM	1
5532-T-616	PS Tibial Insert Trial # 6 -16MM	1
5532-T-619	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
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-309	CR Tibial Insert Trial # 3 -9MM	1
5530-T-311	CR Tibial Insert Trial # 3 -11MM	1
5530-T-313	CR Tibial Insert Trial # 3 -13MM	1
5530-T-316	CR Tibial Insert Trial # 3 -16MM	1
5530-T-319	CR Tibial Insert Trial # 3 -19MM	1
5530-T-409	CR Tibial Insert Trial # 4 -9MM	1
5530-T-411	CR Tibial Insert Trial #4 -11MM	1
5530-T-413	CR Tibial Insert Trial # 4 -13MM	1
5530-T-416	CR Tibial Insert Trial # 4 -16MM	1
5530-T-419	CR Tibial Insert Trial # 4 -19MM	1
5530-T-509	CR Tibial Insert Trial # 5 -9MM	1
5530-T-511	CR Tibial Insert Trial # 5 -11MM	1
5530-T-513	CR Tibial Insert Trial # 5 -13MM	1
5530-T-516	CR Tibial Insert Trial # 5 -16MM	1
5530-T-519	CR Tibial Insert Trial # 5 -19MM	1
5530-T-609	CR Tibial Insert Trial # 6 -9MM	1
5530-T-611	CR Tibial Insert Trial #6 -11MM	1
5530-T-613	CR Tibial Insert Trial # 6 -13MM	1
5530-T-616	CR Tibial Insert Trial # 6 -16MM	1
5530-T-619	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**

Catalog #	Description	Quantity in Kit
MIS 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 # 8Right	1
5532-T-109	PS Tibial Insert Trial # 1 - 9mm	1
5532-T-111	PS Tibial Insert Trial # 1 - 11mm	1
5532-T-113	PS Tibial Insert Trial # 1 - 13mm	1
5532-T-116	PS Tibial Insert Trial # 1 - 16mm	1
5532-T-119	PS Tibial Insert Trial # 1 - 19mm	1
5532-T-809	PS Tibial Insert Trial # 8 - 9mm	1
5532-T-811	PS Tibial Insert Trial # 8 - 11mm	1
5532-T-813	PS Tibial Insert Trial # 8 - 13mm	1
5532-T-816	PS Tibial Insert Trial # 8 - 16mm	1
5532-T-819	PS Tibial Insert Trial # 8 - 19mm	1
6541-2-601	#1 - Universal Tibial Template	1
6541-2-608	#8 - Universal Tibial Template	1
6541-5-701	#1 MIS 4:1 Cutting Block	1
6541-5-708	#8 MIS 4:1 Cutting Block	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	**21**

Catalog #	Description	Quantity in Kit
MIS 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-109	CR Tibial Insert Trial #1 - 9mm	1
5530-T-111	CR Tibial Insert Trial #1 - 11mm	1
5530-T-113	CR Tibial Insert Trial #1 - 13mm	1
5530-T-116	CR Tibial Insert Trial #1 - 16mm	1
5530-T-119	CR Tibial Insert Trial #1 - 19mm	1
5530-T-809	CR Tibial Insert Trial #8 - 9mm	1
5530-T-811	CR Tibial Insert Trial #8 - 11mm	1
5530-T-813	CR Tibial Insert Trial #8 - 13mm	1
5530-T-816	CR Tibial Insert Trial #8 - 16mm	1
5530-T-819	CR Tibial Insert Trial #8 - 19mm	1
6541-2-601	#1 - Universal Tibial Template	1
6541-2-608	#8 - Universal Tibial Template	1
6541-5-701	#1 MIS 4:1 Cutting Block	1
6541-5-708	#8 MIS 4:1 Cutting Block	1
6541-8-112	1-8 CR Lower Tray	1
	Total Quantity 19	

Catalog #	Description	Quantity in Kit
MIS 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-209	PS Tibial Insert Trial # 2- 9MM	1
5532-T-211	PS Tibial Insert Trial # 2 -11MM	1
5532-T-213	PS Tibial Insert Trial # 2 -13MM	1
5532-T-216	PS Tibial Insert Trial # 2 -16MM	1
5532-T-219	PS Tibial Insert Trial # 2 -19MM	1
5532-T-709	PS Tibial Insert Trial # 7 -9MM	1
5532-T-711	PS Tibial Insert Trial # 7 -11MM	1
5532-T-713	PS Tibial Insert Trial # 7 -13MM	1
5532-T-716	PS Tibial Insert Trial # 7 -16MM	1
5532-T-719	PS Tibial Insert Trial # 7 -19MM	1
6541-5-702	#2 MIS 4:1 Cutting Block	1
6541-5-707	#7 MIS 4:1 Cutting Block	1
6541-5-712	#2 PS Box Cutting Guide	1
6541-5-717	#7 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 24	

Catalog #	Description	Quantity in Kit
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-209	CR Tibial Insert Trial # 2 -9MM	1
5530-T-211	CR Tibial Insert Trial # 2 -11MM	1
5530-T-213	CR Tibial Insert Trial # 2 -13MM	1
5530-T-216	CR Tibial Insert Trial # 2 -16MM	1
5530-T-219	CR Tibial Insert Trial # 2 -19MM	1
5530-T-709	CR Tibial Insert Trial # 7 -9MM	1
5530-T-711	CR Tibial Insert Trial # 7 -11MM	1
5530-T-713	CR Tibial Insert Trial # 7 -13MM	1
5530-T-716	CR Tibial Insert Trial # 7 -16MM	1
5530-T-719	CR Tibial Insert Trial # 7 -19MM	1
6541-5-702	#2 MIS 4:1 Cutting Block	1
6541-5-707	#7 MIS 4:1 Cutting Block	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 22	

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-322	PS Tibial Insert Trial # 3 - 22mm	1
5532-T-325	PS Tibial Insert Trial # 3 - 25mm	1
5532-T-422	PS Tibial Insert Trial # 4 - 22mm	1
5532-T-425	PS Tibial Insert Trial # 4 - 25mm	1
5532-T-522	PS Tibial Insert Trial # 5 - 22mm	1
5532-T-525	PS Tibial Insert Trial # 5 - 25mm	1
5532-T-622	PS Tibial Insert Trial # 6 - 22mm	1
5532-T-625	PS Tibial Insert Trial # 6 - 25mm	1
5532-T-722	PS Tibial Insert Trial # 7 - 22mm	1
5532-T-725	PS Tibial Insert Trial # 7 - 25mm	1
5532-T-822	PS Tibial Insert Trial # 8 - 22mm	1
5532-T-825	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	

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

Catalog #	Description
PS Tibial Insert Part Numbers	
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

Note: 5532-P-109 through 5532-P-125 are not available for sale in the US.

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

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

* Not available for sale in the United States

Continued

Catalog #	Description

CR Tibial Insert Part Numbers - Continued

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

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

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

* S/I = Superior/Inferior

Modular Femoral Distal Fixation Peg Part Number

5575-X-000	Modular Femoral Distal Fixation Peg (2 per pack)

Notes

References:

1. Silva M., Schmalzried TP et al. Knee Strength after Total Knee Arthroplasty. The Journal of Arthroplasty. Vol. 18 (5) 605-11. 2003. LIT# LRP100

2. Bonutti PM et al. Minimally Invasive Total Knee Arthroplasty. JBJS. Vol. 86-A. Suppl 2 26-32. 2004. LIT# LRP124

3. Dalury DF et al. A Comparison of the Mid-vastus and Paramedian Approaches for Total Knee Arthroplasty. Vol. 14 (1) 33-37. 1999. LIT# LRP98

4. Cooper RE et al. Mid-vastus Approach in Total Knee Arthroplasty: A Description and a Cadaveric Study Determining the Distance of the Popliteal Artery From the Patellar Margin of the Incision. The Journal of Arthroplasty. Vol. 14 (4) 505-08. 1999. LIT# LRP116

Triathlon® Knee System is marketed in the United States for use with bone cement.

A surgeon must always rely on his or her own professional clinical judgment when deciding to use which products and/or techniques on individual patients. Stryker is not dispensing medical advice and recommends that surgeons be trained in knee implant surgeries before performing any knee surgeries.

The information presented in this brochure is intended to demonstrate the breadth of Stryker product offerings. Always refer to the package insert, product label and/or user instructions before using any Stryker product. Products may not be available in all markets. Product availability is subject to the regulatory or medical practices that govern individual markets. Please contact your Stryker representative if you have questions about the availability of Stryker products in your area.

Literature Number: **LTMIS-ST rev.1**
MS/GS 0m 3/06

stryker®

Joint Replacements

Trauma, Extremities & Deformities

Craniomaxillofacial

Spine

Biologics

Surgical Products

Neuro & ENT

Interventional Pain

Navigation

Endoscopy

Communications

Imaging

Patient Handling Equipment

Patient Handling Equipment

EMS Equipment

325 Corporate Drive
Mahwah, New Jersey 07430
t: 201 831 5000

www.stryker.com